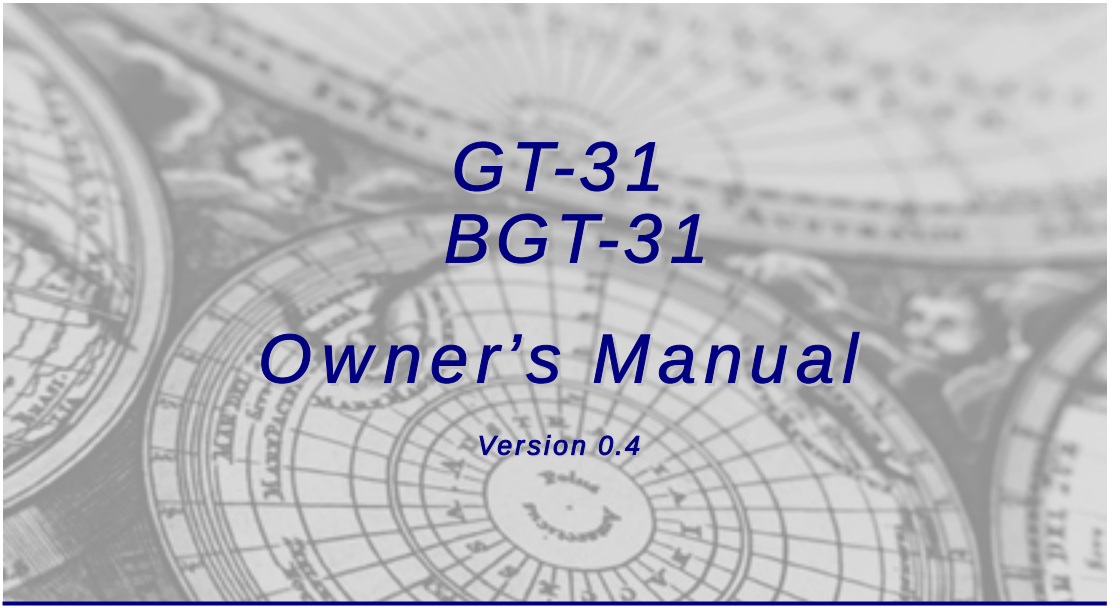


GT-31
BGT-31

Owner's Manual

Version 0.4

Welcome

Congratulations for choosing **GT-31*!*** We hope you will agree it is an excellent navigator. We want you to have a very pleasant outdoor experience with **GT-31** so please check the content in the package first. If you find any items missing, please contact the authorized dealer immediately. All our dealers are ready and willing to help.

This manual provides detailed instructions for operating **GT-31.** To fully understand all the features and functions, please take time to read through this manual before using your **GT-31**. Some useful tips are also included in this manual. We hope **GT-31** will enhance your enjoyment of outdoor activities.

Please visit www.locosystech.com and send us your comments. From time to time, we will have updates and upgrades available - based on your suggestions and recommendations. Have fun with your **GT-31*!***

Sincerely yours,
LOCOSYS Technology Incorporated

Package Check List

Standard package:

1 **GT-31**
1 USB data/charge cable
1 Installation CD, containing Owner's Manual, Drivers, and Utilities

* Contact your dealer if any parts are missing.

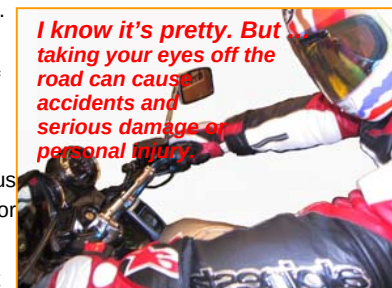
Options:

- USB Car Charger
- USB Travel AC/DC adapter
- Bike Mounting Kit
- Arm Strap

* Ask your dealer for detail

Warning and Cautions

Taking your eyes off the road can cause accidents and serious damage or personal injury. Do not operate **GT-31** while driving or riding. Come to a complete stop or have your passenger make any changes. Do not secure **GT-31** over airbag panels or in a place where the driver or passengers are likely to come into contact with it in the event of an accident or collision. Never dispose of the **GT-31** in a fire. This can cause the built-in lithium-ion polymer rechargeable battery to explode. If, for any reason, the electrolytic liquid of the battery comes into contact with the skin or the eyes, flush with plenty of water and call for medical help immediately.



The GPS system is operated and maintained by the government of the United States, which is solely responsible for the accuracy and maintenance of the GPS. The system is subject to change which could affect the accuracy and performance of all GPS equipment.

Accuracy can also be affected by poor satellite geometry and by various other causes. Do not rely solely on this device for precision measurement or navigation.

The **GT-31** does not contain any user serviceable parts. Please contact our authorized dealers for repair. Unauthorized repair will void the warranty.

Table of Contents

Treasure your GT-31 GPS the same way treasure your sailboat

Introduction

The **GT-31** is a wonderfully compact, business card sized navigator, carefully designed to embody ergonomic principles. It will comfortably fit in the palm of your hand, mount on the handlebar of bike or motorcycle, and can even be worn on your arm. The stylish unit can stand on your desk as a funky gadget, or, more usefully, can be placed on the dashboard in your car.

The **GT-31** can run for up to **46 hours** in power saving mode, backlight off with the built-in lithium ion polymer rechargeable battery. It can be recharged while connected to car cigarette lighter, mains power outlet, or your PC/Notebook. When traveling where no car or mains power is available, you may purchase an AA battery adapter, or a rechargeable power bank (Solar charger) to extend the usage.

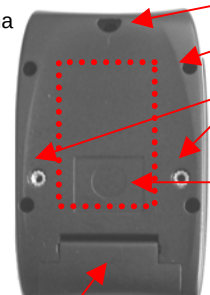
A state-of-the-art Thumb Stick (TS) allows for simple, one-handed operation. This rugged navigator is waterproof to IPX7 standards or, immersible in the water for 30 minutes at a depth of 1 meter, and, **it floats!**

GT-31 is not only developed to handle outdoor activities, but also to handle various professional uses, such as speed, hazard area, zone alerts, altitude or other alerts defined by the user. To store trip data for longer journeys, there is a SD/MMC slot for extra data storage capacity. And, it can be used as a **Real-Time GPS Receiver** by connecting to your PC/Notebook.

FRONT

- LED
- Thumb Stick
- Power/ESC Button
- LCD
- Built-in Antenna

BACK



- Strap Hole
- Internal Buzzer
- Mounting Screw Holes
- Built-in Rechargeable Battery
- Waterproof compartment

BOTTOM

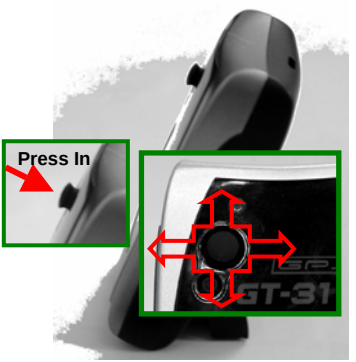
- USB Slot
- SD/MMC Card Slot

Controls

POWER/ESC BUTTON

- Press this button and hold to **Power ON or Power OFF**
- When power is turned on this button functions the same as **ESC.**
- Press **in** to escape the current page
- Under any Main Pages, it is also used as a toggle key to turn on/off LCM backlight if [SETTINGS]/[BACKLIGHT] is set to ON and [SETTINGS] \[BACKLIGHT TIME] is set to OFF.

THUMB STICK (TS) OPREATION



- It's a 5-way directional controller.
- Move the **TS Up, Down, Left** or **Right** to highlight the option.
- Press **In** the **TS** to confirm, or execute the option.
- Press **Power/ESC** button to escape the current page.

HOLD KEY

- At any stage, press **In** and **Hold** the **TS** to activate hold key function. The hold key function can be defined in **[SETTINGS] /[HOLD KEY]**. If **[MARK]** is defined, **HOLD KEY** will save the current location if available, as a new waypoint. If **[KEY LOCK]** is defined, **HOLD KEY** is used to lock or unlock **TS** and **ESC.** The key icon(🔑) shown in status bar indicates the unit is in key lock stage**.**

Before Getting Started

GT-31 is designed for easy operation. If this is your first time to own a GPS navigator, just follow the instructions in the following pages and you will quickly get familiar with this unit.

.

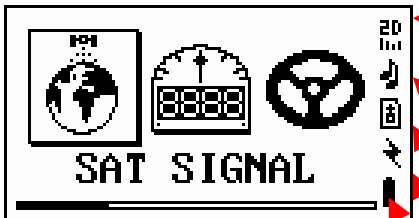
Before Use

1) **Charge the battery**. It takes around 4 hours for the built-in battery to be fully charged.
2) **Initialize the receiver.** Leave the **GT-31**outside with a clear view of sky until it gets position fix. After that, it needs only around 45 seconds to find its location. When the unit has not been used for long time or it's taken to a far distance from where you initialized it, you will need to re-initialize the unit before use.
3) **Configure the system**. Set up the parameters under the **[SETTINGS]** page. The system will store your configuration in its built-in flash memory.
4) **Consult with your dealer or contact us.** If you have any question about setting up the **GT-31** we will be pleased to assist you to get familiar with the unit.
5) **Mark and edit waypoints, and create a route** (refer to **[MARK], [WAYPOINT]** and **[ROUTE]** pages for details)

GT-31 can now tell you:

- Where you are
- Where you have been
- Where you are going
- How did you made up your trip, and
- Many other interesting possibilities…

Status Indicators



Position fix and Bluetooth Indicators

- 3D — Positioning with 3D fix(highlighted for DGPS fix)
- 2D — Positioning with 2D fix
- Acquiring signal
- Bluetooth on
- Bluetooth connected

Available only on BGT31

Audio Indicators

- Enabled
- Disabled

Battery&Key Lock Indicators

- Full Battery
- Key Locked

Other Indicators

- External Power: appears when USB connected
- Target Alert: appears when approaching predefined waypoints
- Over Speed: appears when speed exceeds preset value

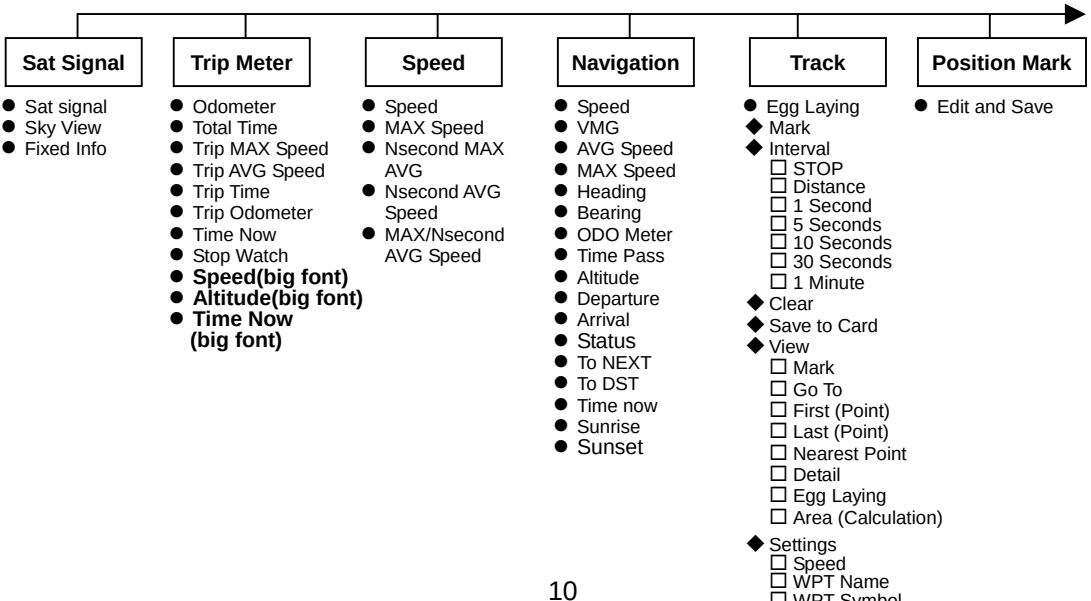
Memory card Indicators:

- card access in progress. Do not remove card.
- card access stopped, safe to remove card
- card write-protected
- card full, safe to remove card
- card unknown or unformatted

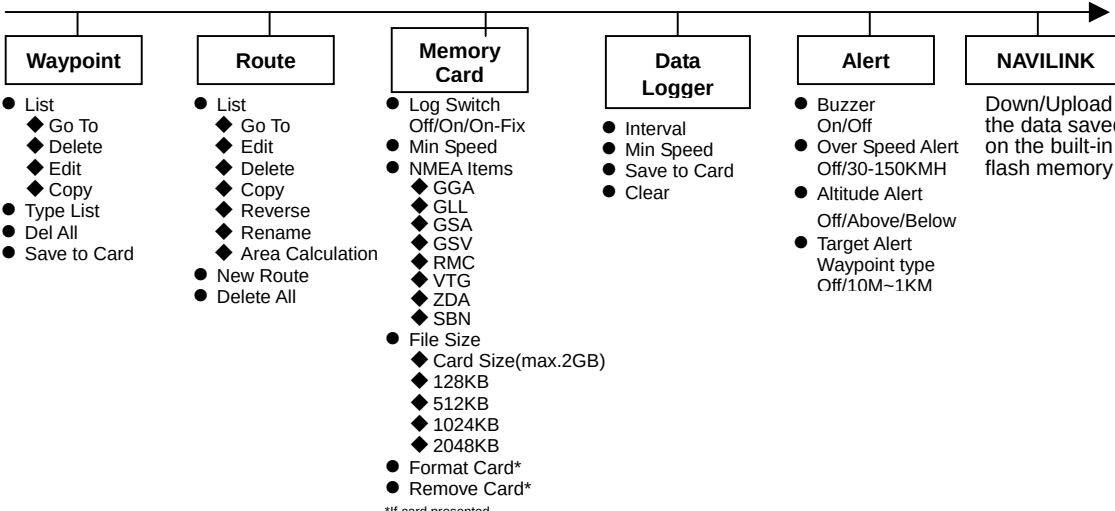
Altitude Alert Indicator

appears when altitude reaches the preset altitude.

Page System Tree



Page System Tree (continued)



Page System Tree (continued)

Settings

- Language
- Time Zone
- Unit (of Measurement)
- Time Format
- Date Format
- Time Zone
- Arrived
- Map Datum
- Position (Format)
- User Grid
- Power Mode
- DGPS Source
- Interface
- Backlight Time
- Contrast
- External Power Mode
- BLUETOOTH*
- BT SNIFF
- User Name
- Usage
- Default&Reset

- NAVILINK Port*
- Speed AVG Time
- Speed Genie
- Hold Key
- Serial No.
- Version
- Cold Start

*BGT31 only

MISC

- Calendar
- Reserved

Main Menu

Page Tree

- Satellite Signal
- Trip Meter
- Speed
- Navigation
- Track
- Position Mark
- Waypoint
- Route
- Memory Card
- Data Logger
- Alert
- NAVILINK
- Settings
- MISC

Satellite signal and position fix info

Provides the information on your movement

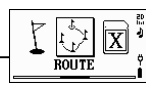
Showing&managing instant, average & maximum speeds (Speed Genie)

Navigating along your waypoints or routes

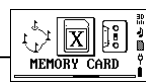
The current and historical direction of movement

Marking a location for future reference or for other uses

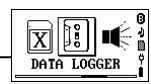
The database of destination points



The courses you plan to navigate along



Logging position an speed data into SD card (in NMEA or SBN)



Logging position and speed data into internal flash memory (in SBP format)

Setting up alarms

Data exchange with host PC

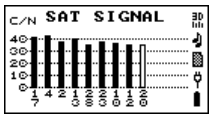
Configuring the system

A calendar up to the year 2060

Satellite Signal

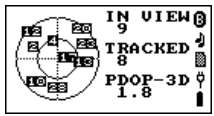
Page Tree

- Sat Signal
- Sky View
- Fixed Info



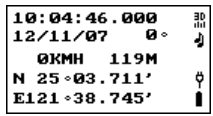
GPS Signal

- Satellite signal strength bars. A hollow signal bar indicates the corresponding SAT is not used for positioning.
- The ID of the GPS Satellites GPS in view



SKY View

- Satellite position. The two circles indicate satellite elevation as seen from your current position
- Satellite number being seen
- Satellite number being tracked
- PDOP - Position Dilution of Precision. The lower the better



GPS Fixed Info

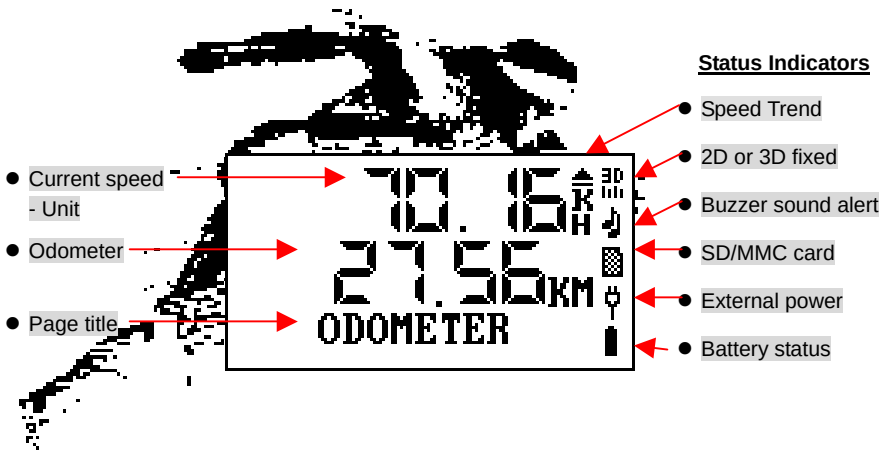
- Time in UTC
- Date in UTC, Heading
- Velocity, Altitude
- Current Location Coordinates (in DDMM.MMM)

Trip Meter

Page Tree

- Odometer
- Total Time
- Trip MAX Speed
- Trip AVG Speed
- Trip Time
- Trip Odometer
- Time Now
- Time Now
- Stop Watch
- Speed(big font)
- Time Now (big font)
- Altitude(big font)

The Trip Meter pages provide Current Speed, Trip Timer, Average Speed, ODO Meter, and more. All the meter pages have a similar format below.



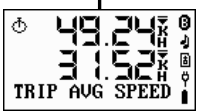
Trip Meter (continued)

Page Tree

- Odometer
- Total Time
- Trip MAX Speed
- Trip AVG Speed
- Trip Time
- Trip Odometer
- Time Now
- Stop Watch
- Speed(big font)
- Time Now (big font)
- Altitude(big font)

- Total accumulated operating time since last reset

- Maximum speed during the trip since last trip reset



- Average speed during the trip - derived from trip odometer and trip time

- Time elapsed for the trip since last trip reset

- Accumulated mileage during the trip since last trip reset

- Current local time ([SETTINGS]/ [UTC] must be set properly)

- Press TS to reset, pause or start Stopwatch

- Current altitude in big font

- Current local Time in big font

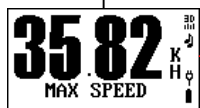
- Current speed in big font

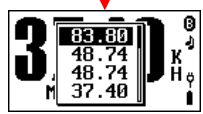
Speed

Page Tree

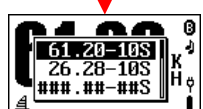
- Speed
- MAX Speed
- NS MAX AVG
- NS AVG Speed
- MAX/NS MAX
- Time Now

- GT-31 will automatically switch to this screen if [SPEED GENIE] threshold is set and the current speed is above it. Then if the current speed goes below the threshold, GT-31 will switch to [MAX/NS MAX] page to report the result. Refer to how to active speed genie for details.





- Up to 14 history maximum speeds can be saved automatically. The available commands:
  - RESET: zero the current max.speed
  - SAVE: save the current max.speed if [SPEED GENIE] is off
  - RESTORE: display a max speed from history and set it as the current max. speed
  - CLEAR: zero all history max. speeds.



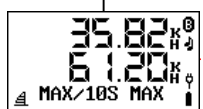
- Up to 10 history maximum average speeds can be saved automatically. The available commands:
  - RESET: zero the current max.avg.speed
  - SAVE: save the current max.avg.speed if [SPEED GENIE] is off
  - RESTORE: display max avg speed from history and set it as current max.avg. speed
  - CLEAR: zero all history max.avg.speeds.

Continued to next page

Page Tree

- Speed
- MAX Speed
- NS MAX AVG
- NS AVG Speed
- MAX/NS MAX
- Time Now

- Display the current average speed for N-second (10S) time interval. The time interval can be specified in [SETTINGS]/[SPEED AVG TIME]
- The value of [NS MAX AVG] page is the maximum value of [NS AVG SPEED]

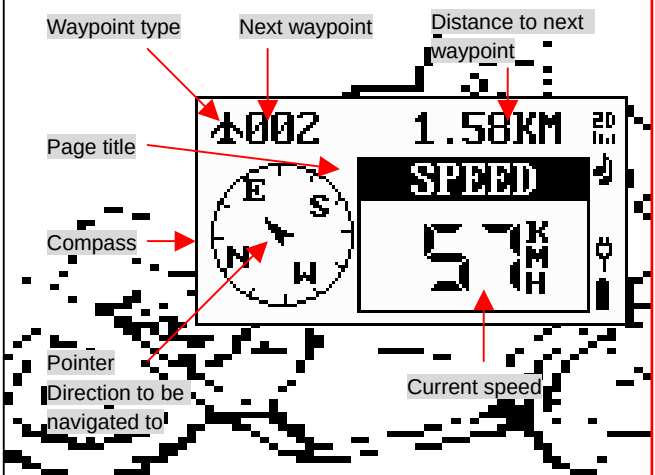


Navigation

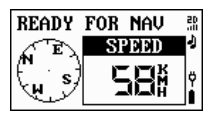
Page Tree

- Speed
- AVG Speed
- MAX Speed
- Heading
- Bearing
- ODO Meter
- Time Pass
- Altitude
- Departure
- Arrival
- Status
- To NEXT
- To DST
- Time now
- Sunrise
- Sunset

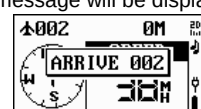
The navigation pages provide the direction you are moving, current time, speed, altitude and other trip computer information.



- Navigation features will be activated only when a route or waypoint has been selected for navigation. Otherwise the page will show READY FOR NAV.



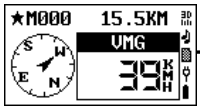
- When the waypoint has been reached, the arrival message will be displayed



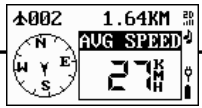
- The distance for reaching waypoint can be specified in [SETTINGS]/[ARRIVED]

Page Tree

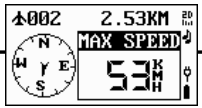
- Speed
- VGM
- AVG Speed
- MAX Speed
- Heading
- Bearing
- ODO Meter
- Time Pass
- Altitude
- Departure
- Arrival
- Status
- To NEXT
- To DST
- Time now
- Sunrise
- Sunset
- Large Compass



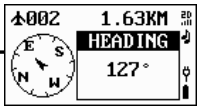
- Velocity Made Good (VMG)



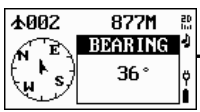
- The average peed of this navigation trip



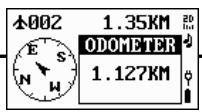
- The maximum speed of this trip



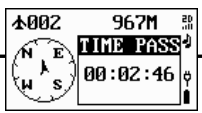
- The direction you are traveling



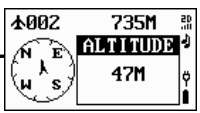
- The direction of your destination



- Accumulated mileage

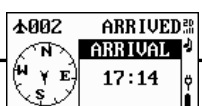


- Total time elapsed of this trip

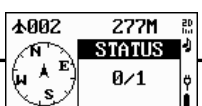


- Current altitude

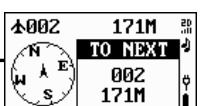
- The time of departure



- The time arrived at the destination



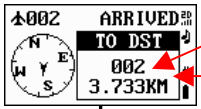
- Progress Info
  - ◆ Waypoints reached. /Total waypoint



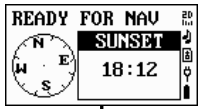
- Next waypoint info
  - ◆ Name
  - ◆ Distance

Page Tree

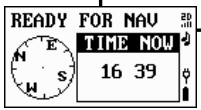
- Speed
- AVG Speed
- MAX Speed
- Heading
- Bearing
- ODO Meter
- Time Pass
- Altitude
- Departure
- Arrival
- Status
- To NEXT
- To DST
- Time Now
- Sunrise
- Sunset
- Large Compass

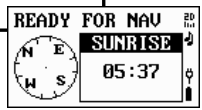


- Name of destination waypoint
- Distance to destination



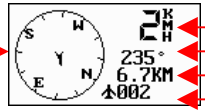
- The sunset time at the current location





- The sunrise time at the current location

- At any pages under Navigation, you may press in the **TS** to select the larger compass display.



- Current speed
- Bearing
- Distance to destination
- Type and Name of destination waypoint

For any reason, you may cancel, or skip current navigation of the trip.

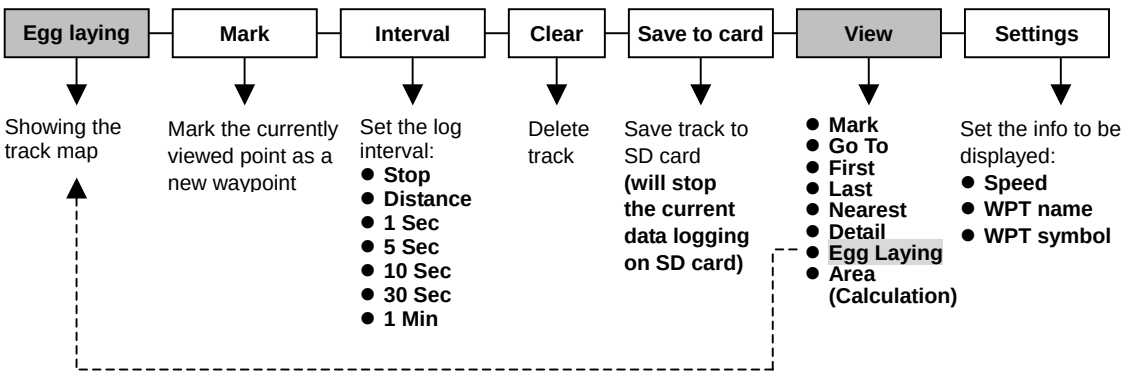
- When CANCEL is selected, current navigation function will be disabled
- When SKIP is selected, the current navigation function will remain effective, but will skip the waypoint that is navigating to, and jump to the next waypoint.

Track

Track pages provide two types of movement information:

- The active movement of the trip (**Egg Laying** page)
- The historical movement of the trip (**View** page)

- The track data is logged on the built-in flash memory.
- Up to 8192 points can be logged
- **To log the track data, you first need to set the Interval.**
- **In View mode, the system will stop to log active movement.**

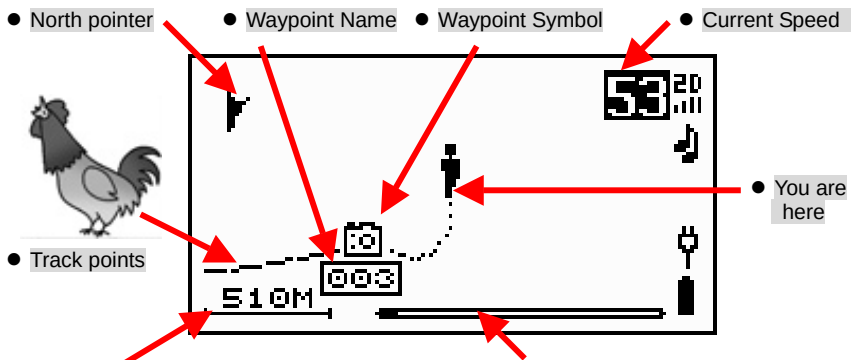


Track (Egg Laying)

Page Tree

- Egg Laying
- Mark
- Interval
  - STOP
  - Distance
  - 1 Second
  - 5 Seconds
  - 10 Seconds
  - 30 Seconds
  - 1 Minute
- Clear
- Save to Card
- Detail
- View
  - Mark
  - Go to
  - First Point
  - Last Point
  - Nearest Point
  - Detail
  - Navigation
  - Area Calculation
- Settings
  - Speed
  - WPT Name
  - WPT Symbol

Under Track page, when press in the **TS,** under Track page, the screen will show the current movement with an egg laying drawing. The Current Speed, Waypoint Name, and Waypoint Symbol can be selected to display or not to display under Setting page.

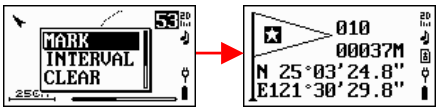


The scale can be adjusted by scrolling the **TS Up** or **Down,** from 15m to 260KM

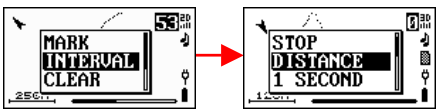
Up to 8192 track points can be logged in the track database

Page Tree

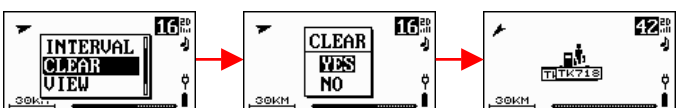
- Egg Laying
- Mark
- Interval
  - STOP
  - Distance
  - 1 Second
  - 5 Seconds
  - 10 Seconds
  - 30 Seconds
  - 1 Minute
- Clear
- Save to Card
- View
  - Mark
  - Go To
  - First
  - Last
  - Nearest
  - Detail
  - Egg Laying
  - Area Calculation
- Settings
  - Speed
  - WPT Name
  - WPT Symbol



- While the **TS** is pressed in, the current location will be marked as a waypoint.
- Refer to Position Mark page for further details.



- To set the log frequency
- It can be set to log from 1, 5, 10, 30 second, to 1 minute intervals.
- Or if Distance is selected, distance interval from 10m to 400m can be specified.



- To clear the logged tracking data

- When Clear is selected, it will jump to the Egg Laying page automatically, and the Usage Status Bar Chart will be cleared.

Track (continued)

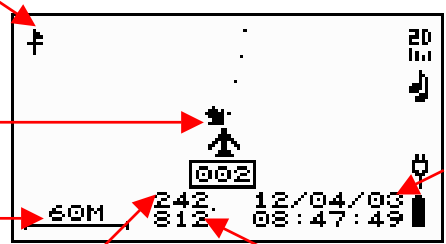
Page Tree

- Egg Laying
- Mark
- Interval
  - STOP
  - Compact
  - 1 Second
  - 5 Seconds
  - 10 Seconds
  - 30 Seconds
  - 1 Minute
- Clear
- Save to Card
- View
  - Mark
  - Go To
  - First
  - Last
  - Nearest
  - Detail
  - Egg Laying
  - Area Calculation
- Settings
  - Speed
  - WPT Name
  - WPT Symbol

View: When View page is selected, it will show the detail of the tracked information:

Note: While View Page is selected, the system will stop the track logging.

- North Up pointer
  In View mode, it always shows north up.
- The point being requested to display the detail.
- Range scale
  Scroll **Up** and **Down** with the **TS** to adjust. It can be adjusted from 15m to 260 KM.

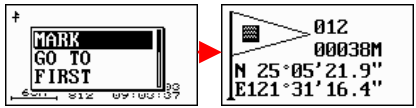


- The date and time the point was logged.
- Total number of points being logged
- The number of logged point being displayed. Use **Left/Right key** to select previous or next logged point.

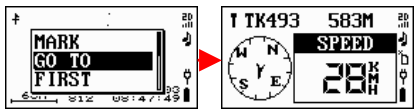
Track (continued)

Page Tree

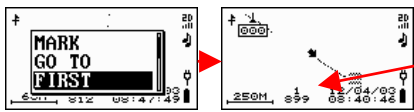
- Egg Laying
- Mark
- Interval
  - STOP
  - Compact
  - 1 Second
  - 5 Seconds
  - 10 Seconds
  - 30 Seconds
  - 1 Minute
- Clear
- Save to Card
- View
  - Mark
  - Go To
  - First
  - Last
  - Nearest
  - Detail
  - Egg Laying
  - Area Calculation
- Settings
  - Speed
  - WPT Name
  - WPT Symbol



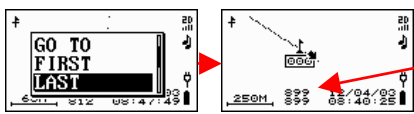
- Pressing in the **TS** will mark the track point you have selected. The marked point will be automatically assigned a numerical waypoint name. You may edit it with new name and new type.



- While GO TO is selected, the page will jump to Navigation page automatically.



- While pressing in the **TS,** the page will show the first logged point of this trip.

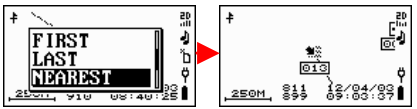


- While pressing in the **TS,** the page will show the last logged point of this trip.

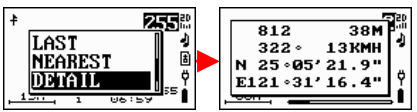
Track (continued)

Page Tree

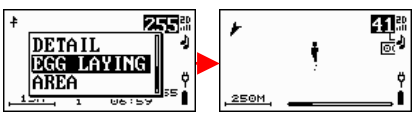
- Egg Laying
- Mark
- Interval
  - Compact
  - STOP
  - 1 Second
  - 5 Seconds
  - 10 Seconds
  - 30 Seconds
  - 1 Minute
- Clear
- Save to card
- View
  - Mark
  - Go To
  - First
  - Last
  - Nearest
  - Detail
  - Egg Laying
  - Area Calculation
- Settings
  - Speed
  - WPT Name
  - WPT Symbol



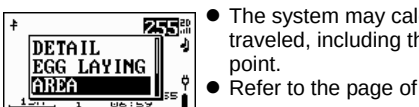
- The page will show the nearest track point logged to current position.
- Any one of the track points can be marked as a waypoint by pressing in the **TS.**



- Pressing in the **TS**, the page will show number of the track point, altitude, heading, speed, and the coordinates of the point being selected.



- Pressing in the **TS**, the page will jump to the Egg Laying page and resume the track logging.



- The system may calculate the area based on the track points traveled, including the distance from the first point to the last point.
- Refer to the page of **How to Calculate Area** for further details

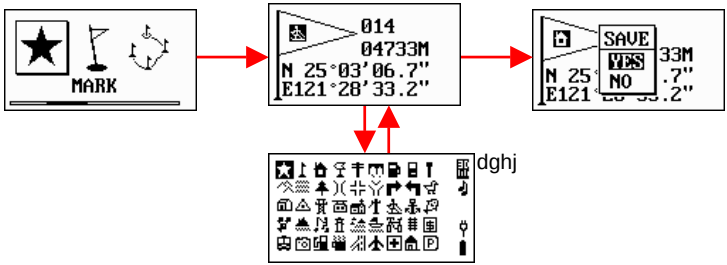
Position Mark

Description

You may mark the current location as a waypoint and then edit it for future reference.

Pressing in the **TS,** the page will show the detail of current location, and automatically generate a waypoint name in numerical order.

- All the items can be edited
- Scroll **TS** to highlight the item and press **in** to edit it
- Press **ESC** to show the saving selection
- Scroll **TS** to highlight next item or press **ESC** to save



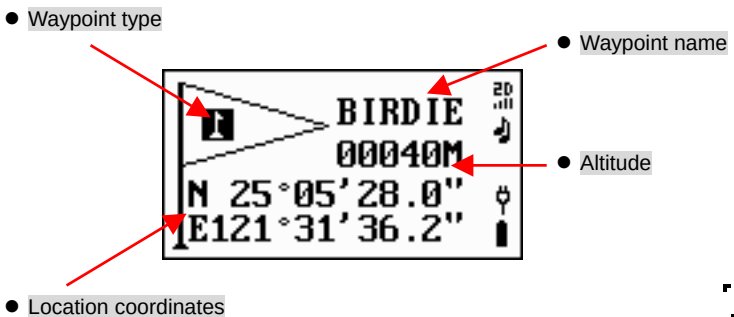
The Ways to create new waypoints

1.Mark current position: through [POSITION MARK] page or Hold Key if it is defined as [MARK] key.
2.Copy existing waypoint: refer to [WAYPOINT]
3.Mark a track point: refer to [TRACK]
4.Imported from a host PC via NAVILINK: refer to [NAVILINK]

Waypoint

Description

Waypoint is the basic element of navigation. You will need to either mark a position of interest, or edit a known location as a waypoint to activate the **Navigation** function. The location information in the Waypoint is described below. The coordinate format of waypoint can be specified in [SETTINGS]/[POSITION]

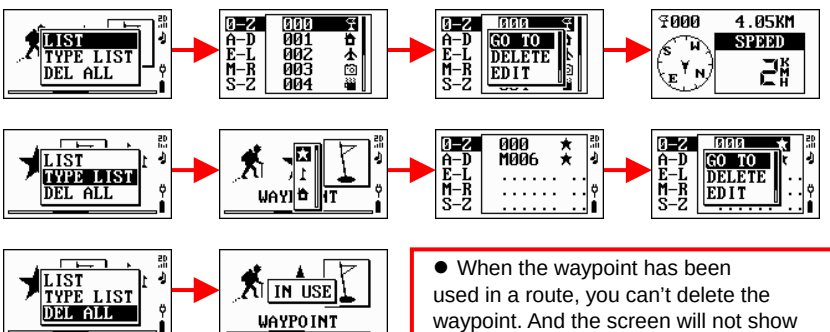


Page Tree

- List
  - Go To
  - Delete
  - Edit
  - Copy
  - Project
- Type List
  - Go To
  - Delete
  - Edit
  - Copy
  - Project
- Delete All
  - In use
  - Yes or No
- Save to Card

Description

All the waypoints in database can be displayed by name in alphabetical order (LIST) or by types (TYPE LIST). Then you may select GO TO, Delete, Edit or Copy. Or, you can delete all the waypoints in the database.



- When the waypoint has been used in a route, you can't delete the waypoint. And the screen will not show DEL ALL
- [Save to card] saves waypoints to SD card. The current data logging will be stopped while saving waypoints

Page Tree

- List
  - Go To
  - Delete
  - Edit
  - Copy
  - Project
- Type List
  - Go To
  - Delete
  - Edit
  - Copy
  - Project
- Delete All
  - In use
  - Yes or No
- Save to Card

GO TO

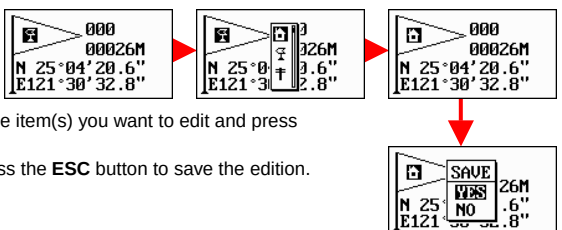
Select the waypoint to navigate

- Highlight the waypoint you want to navigate to.
- Press in the **TS,** the page will jump to Navigation page automatically.

EDIT

You can change the waypoint type, name, coordinates, and distance:

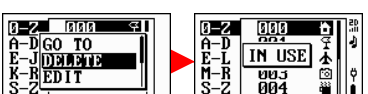
- When EDIT is selected, the screen will display the details of the waypoint
- Scroll the **TS Up** or **Down** to select the item(s) you want to edit and press in the **TS** to confirm the selection.
- When EDIT has been completed, press the **ESC** button to save the edition.



DELETE

When a waypoint is no longer required, you can delete it from database:

- Highlight the waypoint you want to delete.
- Press in the **TS,** and select Delete to delete the waypoint.



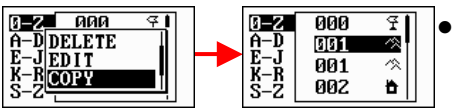
- When the waypoint is being used in a route, you can't delete it

Page Tree

- List All
  - Go To
  - Delete
  - Edit
  - Copy
- By Type
  - Go To
  - Delete
  - Edit
  - Copy
  - Project
- Delete All
  - In use
  - Yes or No
- Save to Card

COPY

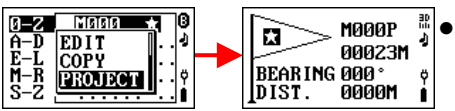
You can copy the waypoint in the database for future use.



- Waypoint 001 created

Project

You can create a new waypoint by projecting the old waypoint.



- Distance and bearing to M000 must be specified.

Always carry a first aid kit

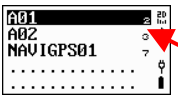
There are many bad things that can happen in the outdoors, from minor cuts and bruises, bites or stings, to more serious things like broken bones and head injuries. It always pays to be prepared, and the added weight of a first aid kit is fairly insignificant. Contact your local stores. There are several available specifically designed for day-trippers and backpackers, and…

- Carry a GT-31 with you -

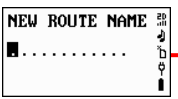
Route

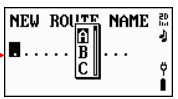
Page Tree

- List
  - Go To
  - Edit
  - Delete
  - Copy
  - Reverse
  - Rename
  - Area Calculation
- New Route
  - Edit
- Delete All



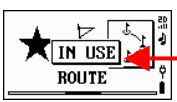
- When selected, the page will display all the routes in the database, and,
- The total number of waypoints in each route.





- A total of 20 routes can be created.
- Up to 13 alphabetical characters can be used for the route name
- Max 125 waypoints can be added to a route

- When selected, all the routes in the database will be deleted.

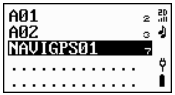


- When system is in navigating mode, the route cannot be deleted.

Route (continued)

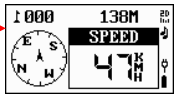
Page Tree

- List
  - Go To
  - Edit
  - Delete
  - Rename
  - Copy
  - Reverse
  - Area
- New Route
  - Edit
- Delete All



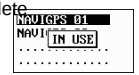
- Scroll with the **TS** to highlight the route and press in. The page will show related features for this route.

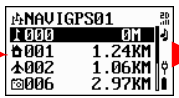
- Press in the **TS**, the page will jump to Navigation and navigate to the first waypoint in that route.

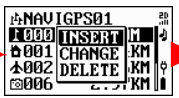


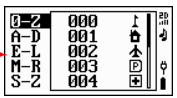
- When a route is no longer required, you can delete it from the database.

When navigating, you can't delete the route.





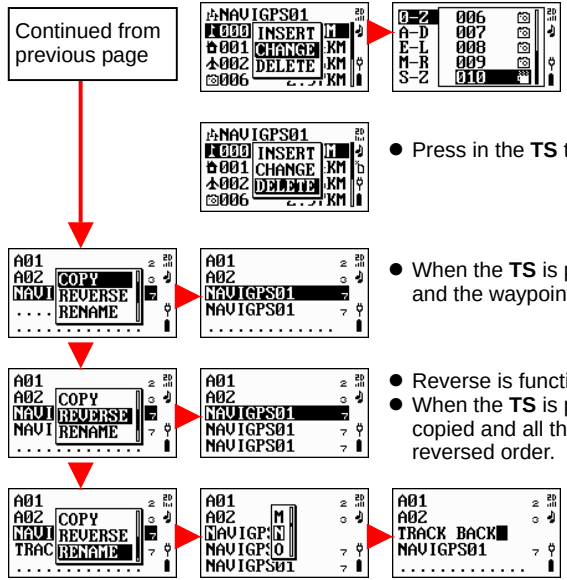




- You can edit the route with the waypoints in the database.
- When pressed in the **TS,** it will show all the waypoints in this route.
- Press the **TS** in again to show all the waypoints in the waypoint database.
- You can edit the route with the waypoints in the database.
- Scroll with the **TS** to select.
- Press in to confirm the selection.

Page Tree

- List All
  - Go To
  - Delete
  - Edit
  - Copy
  - Reverse (track back)
  - Rename
  - Area
- New Route
  - Edit
- Delete All



- Select the waypoint you wish to insert and press in to confirm the selection.
- Press in the **TS** to delete the waypoint from the route
- When the **TS** is pressed in, the route name and the waypoints in the route will be copied.
- Reverse is functioned similar to backtracking.
- When the **TS** is pressed in, the route name will be copied and all the waypoints in this route will be in reversed order.
- Press the **TS** in again to edit the name of route

Memory Card

Page Tree

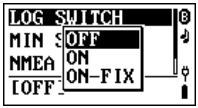
- Log Switch
- Min Speed
- NMEA Items
- File Size

When the card is correctly inserted

- Format Card
- Remove Card

- Insert SD/MMC card here properly and make sure the compartment closed firmly

- The system accepts SD or MMC cards up to 2GB.
- When a memory card inserted, the screen will display CARD FOUND message and proper card status icon will be displayed in status bar. Refer to “Status Indicators” for details.



- Set the log switch for memory card
  - OFF: disable card logging
  - ON: activate card logging, all points will be logged
  - ON-FIX: active card logging, only points with valid position and speed above [MIN SPEED] is logged

- Set the minimum speed threshold value from 0 to 50
- The speed unit is specified in [SETTINGS]/[UINT]
- GT-31 will only log points to memory with speed above this value
- The minimum speed valid only if [LOG SWITCH] set to ON-FIX.

Page Tree

- Log Switch
- Min Speed
- NMEA Items
- File Size

When the card is correctly inserted

- Format Card
- Remove Card

- GGA is being set to log at 1-second rate.
- GLL is being set not to log.

- Highlighted items are being activated.
- SBN format is mutually exclusive with other NMEA items.

NMEA-0183 sentences:

GGA: Global Positioning System fixed data

GLL: Geographic position - latitude/longitude

GSA: GNSS DOP and active satellites

GSV: GNSS satellites in view

RMC: Recommended minimum specific GNSS data

VTG: Course over ground and ground speed

ZDA: Date and time

SBN: SiRF binary logging (non-NMEA)

Please refer to NMEA 0183 format for further details.

- **NMEA-0183** format is defined by the National Marine Electronics Association (NMEA), Standard for Interfacing Marine Electronic Devices, Version 2.20, January 1, 1997.

Memory Card (continued)

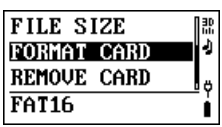
Page Tree

- Log Switch
- Min Speed
- NMEA Items
- File Size

When the card is correctly inserted
- Format Card
- Remove Card

- Select proper size to log the track data.
- File sizes can be set:128,512,1024,2048KB or card size
- When CARD SIZE is selected, GT-31 stores the data on the card continuously until the card memory is full.

Note: To prevent data lost on the memory card, **GT-31** will store the data up to the file size selected, and generates a new file automatically. And then, start again to store the data until file size selected has been reached. Therefore, it is safer to select small file size. However, it also depends on post-processing requirement to select file sizes.



If the card is properly inserted, the following pages will be shown:

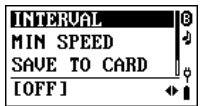
- **Format Card:** Format the card to FAT16 file system.
  Note: All data on memory card will be erased when the Format Card has been selected.
- **Remove Card:** Before taking out the memory card, execute this function to save the file, or the file could be damaged.

Total data logged/ card size
Data logged since power on(TXT or SBN)

Data Logger

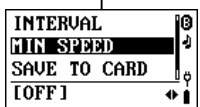
Page Tree

- Interval
- Min Speed
- Save to Card
- Clear

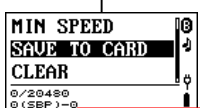


- Select log time interval from 0 to 60 seconds.
- “0” will disable data logger.

GT-31 has a built-in data logger up to 20480 points. You can either save the logged data into SD cards or use NAVILINK Utility to download it to a host PC.

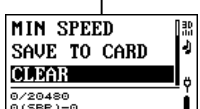


- Set the minimum speed threshold value from 0 to 50
- The speed unit is specified in [SETTINGS]/[UINT]
- GT31 will only log points with speed above this value



- Save the logged data to SD card (in SBP format)
- The original SD logging operation will be stopped while copying the logged data to SD card.

Total points logged / Maximum points
Points logged since power on (SBP)



- Clear logged data in flash memory
- GT-31 logs data in cyclic mode. After filling memory, the oldest data is overwritten by the new data.

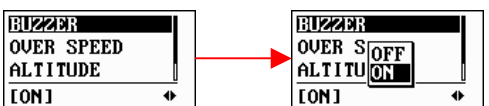
Alert

Page Tree

- Buzzer
  - On/Off
- Over Speed
  - On/Off
  - Speed Setting
- Altitude
  - On/Off
  - Above/Below
  - Altitude Setting
- Target
  - On/Off
  - Waypoint type
  - Setting

Description

GT-31 generates audio and visual signals through a Buzzer and red LED. These signals can be used to provide Over Speed, Altitude or other alerts defined by the user.



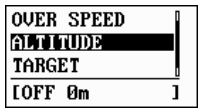
- Select to turn on the audio alert.
- Red LED will be on automatically when anyone of the alerts is

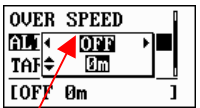
- Select the Speed or disable (OFF) the Over Speed alert.
- The over speed alert can be set from 30KM/H to 150 KM/H.

Alert (continued)

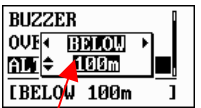
Page Tree

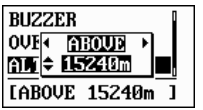
- Buzzer
  - On/Off
- Over Speed
  - On/Off
  - Speed Setting
- Altitude
  - On/Off
  - Above/Below
  - Altitude Setting
- Target
  - On/Off
  - Waypoint type
  - Setting



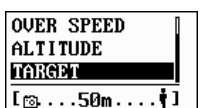


- Move the **TS Left** or **Right** to select **Below** or **Above** alerts

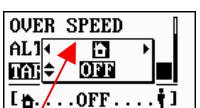




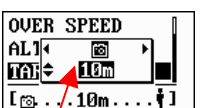
- Scroll **up** or **down** the **TS** to select altitude for the alert
- The range is from **0M** to **15240M.**
- **GT-31** will automatically alert you when above or below the selected altitude.

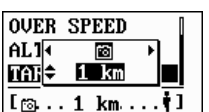


- This product can automatically alert you when approaching the target.



- Move the **TS Left** or **Right** to select the **target** alert (using waypoint types).





- Scroll **up** or **down** the **TS** to select the approaching distance for the alert.
- The range is from **10M** to **1KM.**

NAVILINK

NAVILINK provides the connection between the unit and the host PC/Notebook to download or upload the data. For firmware update please check [SETTINGS] page.

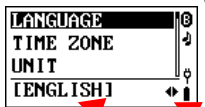
- Download data includes: **Waypoints, Routes, track points** and data logger (SBP data) stored on the built-in flash memory.
- Upload data includes: **Way points, Routes** and track

- Before downloading or uploading, make sure the driver for USB has been successfully installed on your host PC/Notebook. This driver is coming with the package in the Installation CD. Or you can download the driver from our web.
- When data transfer has been completed, press the **Power/ESC** button (or remove USB cable) to reset the unit.
- Please refer to **How to Download and Upload the Data** in this manual for further details
- Besides USB, BGT31 also supports NAVILINK connection through Bluetooth. The NAVILINK port can be specified in [SETTINGS]\ [NAVILINK PORT]

Settings

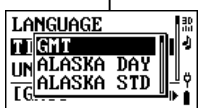
Page Tree

- Language
- Time Zone
- Unit
- Time Format
- Date Format
- Arrived
- Map Datum
- Position Format
- User Grid
- Power Mode
- DGPS Source
- Interface
- Backlight
- Backlight Time
- Contrast
- External Power
- Bluetooth
- Bluetooth Sniff
- …

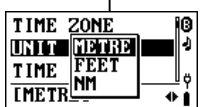


- Multiple languages are supported. However, due to the limited display space, some terms are in shortened format. Please check this manual for clear definition.

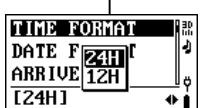
- This item supports **LEFT/RIGHT key** for value change
- The current value for the highlighted item is shown here



- Select the time zone you are in. More than 25 cities or states are built.
- If you can't find the time zone you need in the table, select **Others** and set the time difference.



- Metric (meter), Imperial (feet) measuring systems and Nautical Mile(NM) can be selected



- Select 24-Hour or 12-Hour time format

Continued to next page

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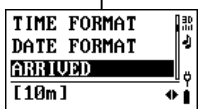
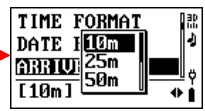
- Backlight Time
- Contrast
- External Power
- Bluetooth
- Bluetooth Sniff
- …

Available Date formats:

- Date-Month-Year
- Month-Date-Year,
- Year-Month-Date





Set the distance to indicate the arrival at destination waypoint in 10 meters or up to 400 meters

The GT31 navigation function relies on the value of [ARRIVED] to judge if the next waypoint is reached or not. An arrived message will be displayed to notify you if the distance to the next waypoint is less than the value of [ARRIVED]. GT31 will load the next waypoint automatically and continue navigating until the last waypoint is reached.

Continued to next page

Page Tree

- Language
- Time Zone
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- User Grid
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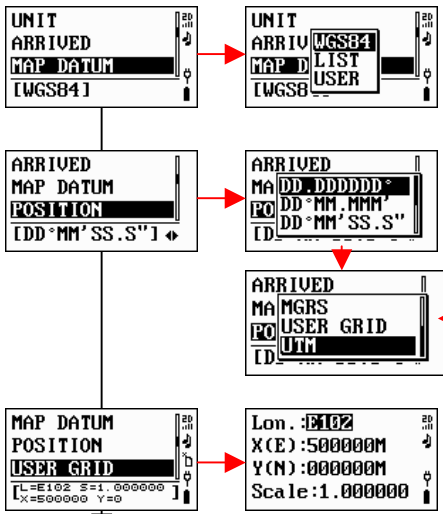
- DGPS Source
- Interface
- Backlight
- Backlight Time
- Contrast
- External Power
- Bluetooth
- Bluetooth Sniff
- …



- The default map datum setting is WGS-84.
- There are over 180 map data that can be selected in the database. Refer to Map Datum List.
- You may define your own map datum in the USER GRID page.

- **MGRS**
  – Military Grid Reference System
- **User Grid**
  – The format defined in the USER GRID page
- **UTM**
  – Universal Transverse Mercator Projection Grid System
- **OSGB**
  - Great Britain Grid System
- **LMBT EST97**
  - Estonian Grid System

Settings (continued)

Page Tree

- Language
- Time Zone
- Unit
- Time Format
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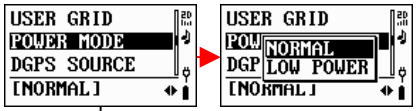
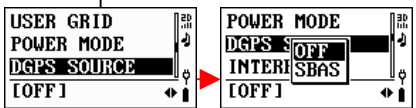
- …

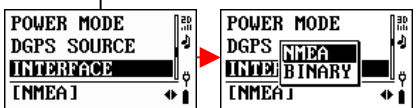


- To select normal or low power mode
- It is recommended to use LOW POWER mode in a clear sky view environment.



- To enabled or disabled SBAS.
- It is recommended to enable SBAS only in the area coved by SBAS

DGPS feature will be disabled automatically when Low Power mode is activated.

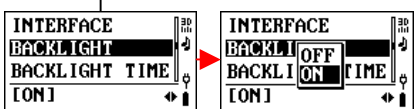


Two protocols for USB interfaces:

- NMEA protocol
- SiRF Binary protocol

NMEA Output rate

- GGA: 1 second
- GSA: 1 second
- RMC: 1 second
- GSV: 5 seconds



LCM backlight Control:

- OFF: disable
- ON: backlight can be controlled by
  - Backlight Time
  - Backlight toggle key: Refer to Power/ESE key definition.

Continued to next page

Settings (continued)

Page Tree

- Language
- Time Zone
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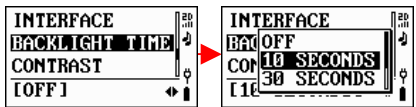
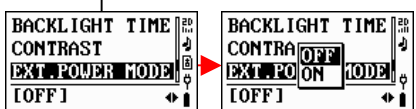
- Bluetooth Sniff
- …



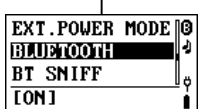
Set the timer for the backlight.

- OFF – backlight timer disabled.
- 10 Seconds – turned off automatically after 10 seconds.
- 30 seconds – turned off automatically after 30 seconds.
- 1 Minute – turned off automatically after 1 minute.

- Adjust the LCD contrast by moving the thumb stick **Right** or **Left.**



- When **On** is selected, the power to the unit can be controlled by external USB power source.

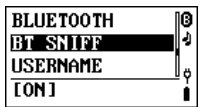


- This selection is only available on **BGT-31** Bluetooth version.
- Pressing in the **TS** to enable the Bluetooth wireless communication
- The B icon will be displayed every 4 seconds when Bluetooth wireless communication is activated.

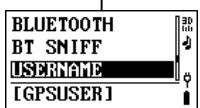
Continued to next page

Page Tree

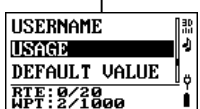
- …
- DGPS Source
- Interface
- Backlight
- Backlight Time
- Contrast
- External Power
- Bluetooth
- Bluetooth Sniff
- Username
- Usage
- Default Value
- Navilink port
- Speed AVG Time
- Speed Genie
- Hold Key
- Serial No.
- Version
- Cold Start



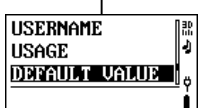
- Bluetooth Sniff mode reduces power consumption. It is recommended to always turn on this mode. However some Bluetooth hosts do not support it and may cause the communication failure. In such case, please turn off sniff mode and try again. Turn off sniff mode while Bluetooth connection is established will cause Bluetooth module reset. A reconnection from the host is needed.



- Maximum 13 characters for username string
- The file name of logged data in SD card will include username string



- The usage of waypoints and routes
- Format:
  - RTE: routes created/Maximum routes
  - WPT: waypoints created/Maximum routes

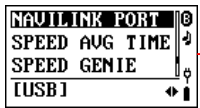


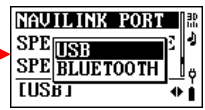
- Set the settings back to factory defaults.

Continued to next page

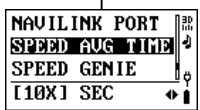
Page Tree

- …
- DGPS Source
- Interface
- Backlight
- Backlight Time
- Contrast
- External Power
- Bluetooth
- Bluetooth Sniff
- Username
- Usage
- Default Value
- Navilink port
- Speed AVG Time
- Speed Genie
- Hold Key
- Serial No.
- Version
- Cold Start

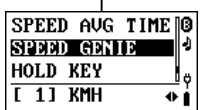




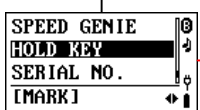
- BGT31 supports Navilink port selection.
- GT31 can only USB port for NAVILINK

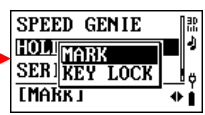


- SPEED AVG TIME defines the time interval for speed averaging. The available interval is from 1 to 60 seconds [SPEED] page calculates maximum average speed based this value.



- SPEED Genie defines the minimum threshold speed to activate “speed genie” function. Please refer [SPEED] page for details.





- Define “Hold key” function

Continued to next page

Page Tree

- …
- DGPS Source
- Interface
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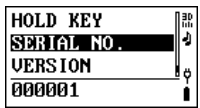
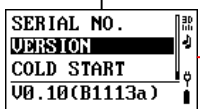
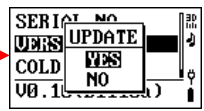
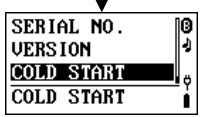


- The product serial number





- The version number of firmware.
- Press TS and select [YES] to start firmware update. USB cable must be connected in advance.
- Refer to “How to update firmware”



- Cold start will initialize GPS receive completely.
- Use cold start if the unit cannot get position fix in 60-80 seconds with a clear sky view

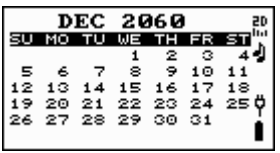
Miscellanies

Description

This page provides a 120-year calendar for the date information from the year of 1940 to 2060

Operation

- Move the Thumb Stick **up** or **down** to select the **year**
- Move the Thumb Stick **right** or **left** to select the **month**
- Press **in** the Thumb Stick to show the date of **today**

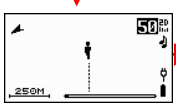


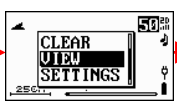
How To: Track Back to Where You Came from

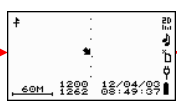
To return to the point where you started the trip:

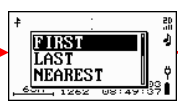
- View the logged data under the Track page
- Select the first point where you started the trip
- Press in the **TS** to display the table
- Select Go To and press in the **TS**
- The page will jump to Navigation and guide you the way to go back home.

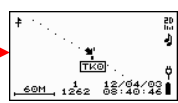
- Highlight Track and press in **TS** to display the Egg Laying page.











- Press in the **TS** to show the table.
- Highlight VIEW.
- Press in the **TS** again to display the tracking info.

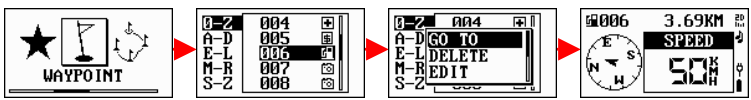
- Press in the **TS** to display the table.
- Highlight First to display the 1st point.
- Press in the **TS** again to display the sub-table
- Highlight Go To, the system will guide you to the first point of your trip.

How To: Track Back to Where You Came from (continued)

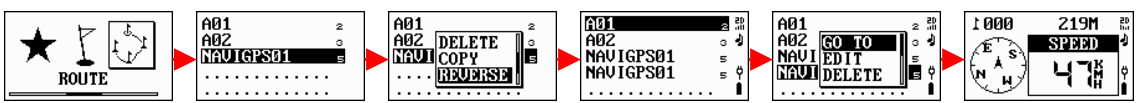
In addition to using saved waypoints or routes to navigate back where you came from, you may either

- search the waypoint under Waypoint page, then select GO TO, or
- execute the Reverse function to reverse the order of the waypoints in that route, then select GO TO to navigate back the same route you came on:

For Example: If you started from a Gas Station (Waypoint 006), and came here following the Route NAVIGPS01, now you want go back to Gas Station:

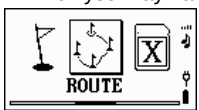


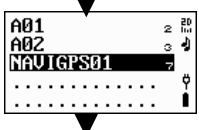
- When Reverse function is activated, the waypoints will be listed in reversed order.
- Highlight the reversed Route, and press in the **TS** to display the table
- Select GO TO.
- The system will navigate you back where you came from.

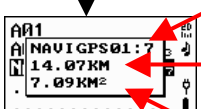


How To: Calculate the Area (Area Calculation)

Area Calculation is a useful feature when you wish to measure an area. There are two pages **ROUTE** or **TRACK** in which you may have the access to this feature:





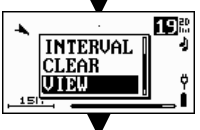


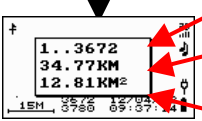
ROUTE Page

It calculates the area based on the waypoints in a route.

- Press in the **TS** to display the table.
- Select the route you want to calculate the area.
- Press in and select AREA
- Press in to calculate.

- Route name, total waypoints in the route to be calculated
- The distance from the first point to the last point
- The result calculated





TRACK Page

It calculates the area based on the track logged.

- Press in the **TS** and select VIEW page.
- Press in the **TS** again to display the table.
- Move the **TS** to highlight AREA.
- Press in the **TS** to calculate.

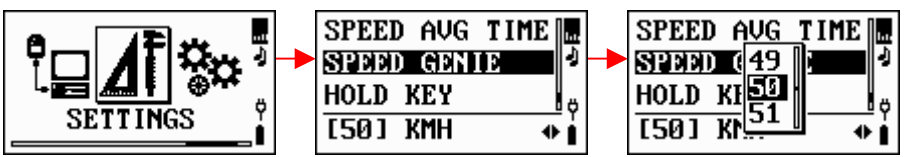
- Total points calculated
- The total distance from the first point to the last point
- The result

How to: Activate Speed Genie

GT-31 can anticipate what you want to see on the screen during Speed Sailing or other speed-based sport. This function is called SPEED GENIE. SPEED GENIE automatically changes SPEED screens shown on the right and resets MAX and AVG speeds at the best possible time. After each speed run you will see your MAX speed and your best N-second average speed without having to use buttons.

To set up the SPEED GENIE

1. Set [SETTINGS]/[SPEED GENIE] to the speed threshold of your choice. When you reach this speed, your GT-31 will automatically show your speed in big font.



2. Set [SETTINGS]/[SPEED AVG TIME]. For example, when you aim for 10-second speed runs set this time to 10s. If you aim for a 500m World Sailing Speed Record, set it to 21 seconds.

3. Enter the SPEED page in GT-31 main menu. Once your settings 1&2 above are in place this is the only thing to do to activate SPEED GENIE

SPEED GENIE is only active in the SPEED page of GT-31. You can operate your GT31 manually as usual, but you need to come back to the SPEED section when you need the GENIE to work.

*Special thanks to Dr. Tom Chalko, who designed the Speed Genie function of GT31/BGT31.

How To: Download and Upload Data

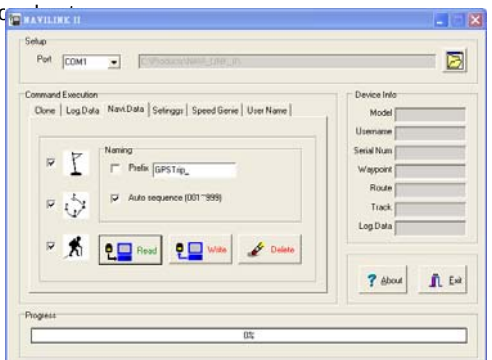
The data stored on the internal flash memory, including the routes, waypoints, track data and logger data can be

- Saved to SD card and then read on PC/notebook directly from the SD card
- Downloaded to a PC or Notebook via USB cable.

USB cable also enables upload of routes and waypoints edited on PC or Notebook to GT31.

Basic Operation of Downloading or Uploading via USB cable:

- Make sure the USB driver has been successfully installed on yo
- Connect the USB data
- Power on the unit, go to NAVILINK page, press in the TS to enter NAVILINK mode



- Execute the utility, **NAVILINKII.exe** on your host
- You will see the screen on the right displayed.
  In [Navi.Data] command page, you can select the items and Click the command button to start upload or download.
- When data transfer has been completed, press the **Power/ESC** button to reset the unit.

To Download Navigation Data to a host PC

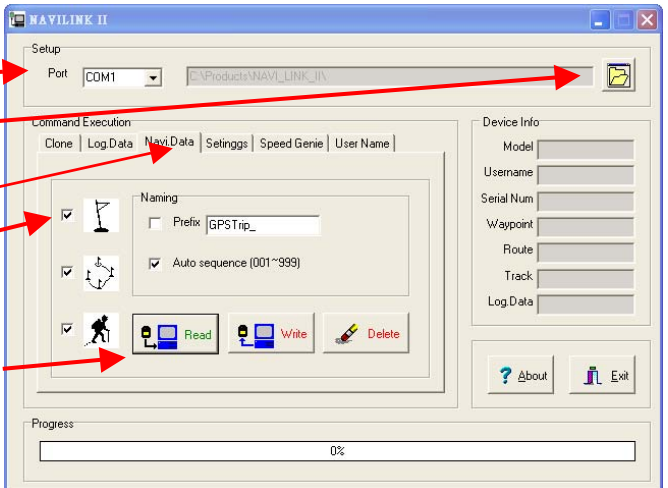
Step 1: Select "**COM Port**"

Step 2: Change the default folder if needed

Step3: Select **"Navi.Data"** command page

Step 4: Select the desired data items

Step 5: Click [**Read**] button to start downloading data. While data downloading, the progress bar will display the progress and the related messages are shown in the message box below.

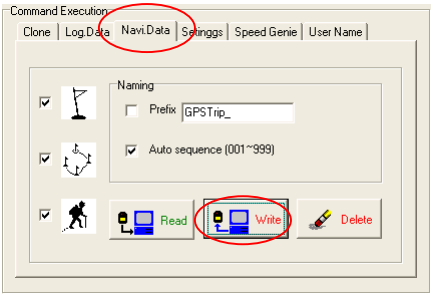


To Upload Navigation Data from a host PC to GT-31

Step 1: Select "**COM Port**"

Step 2: Select the data items to be uploaded

Step 3: Click [**Write**] command and select the file (refer to NAVILINK file naming) to start uploading data.



NOTE: Routes will have reference to waypoints.
Follow the steps below to ensure data consistence:
(1) Backup the routes/waypoints if needed
(2) Delete all routes and waypoints
(3) Upload the new waypoints (*.wpt) first then upload new routes (*.rte). All waypoints referred in the new routes should be already uploaded before uploading routes.

NOTE: The uploaded track will override the original track in the device.

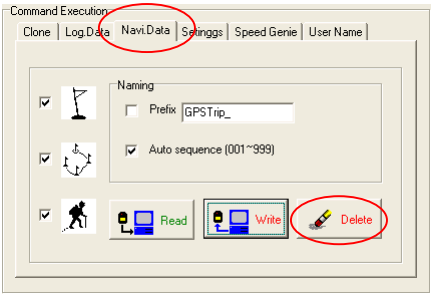
To Delete Navigation Data in GT-31

Step 1: Select "**COM Port**"

Step 2: Select the data items to be deleted

Step 3: Click [**Delete]** to start deleting data

NOTE: Waypoints cannot be deleted if waypoints are referenced by routes.

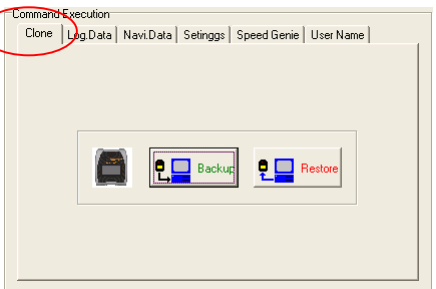


To Backup/Restore All Data in GT-31

Step 1: Select "**COM Port**"

Step 2: Change default folder if needed.

Step 3: Select "Clone" command page. Click **[Backup]** or **[Restore]** to start back up or restore.



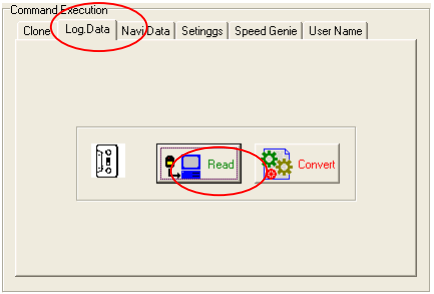
To Download Logger Data(SBP) in GT-31

Step 1: Select "**COM Port**"

Step 2: Change default folder if needed.

Step 3: Select "Log.Data" command page. Click **[Read]** to start downloading logger data.

The downloaded data is saved as SBP file and can be converted to plt,gpx,kml,nmea files. Click **[Convert]** to start SBP file conversion.



NAVILINK File Naming

The file names are composed of device serial number and proper file extension. The file extensions include:

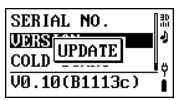
- **wpt** - **Oziexplorer Waypoint**
- **rte** - **Oziexplorer Route**
- **plt** - **Oziexplorer Track**
- **plt.nmea** - **Track in NMEA format**
- **spd** - **history speeds file**
- **sbp** - **binary packet binary data file (for DATA LOGGER)**
- **sbn** - **binary data file (for MEMORY CARD)**
- **txt** - **NMEA text file (for MEMORY CARD)**
- **set** - **device settings file**
- **gpx** - **GPS exchange format**
- **kml** - **Google Earth compatible format**

How To: Update the Firmware

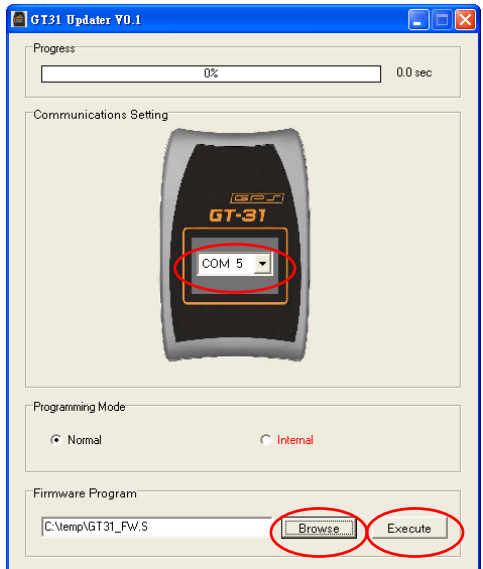
Follow the steps described below to update your **GT-31** firmware.

.

- Make sure that the USB driver has been installed on your PC/Notebook.
- Connect the USB cable between the unit and PC/Notebook.
- Power on the **GT-31.** Go to [SETTINGS]/[VERSION] then Press [ENTER] to set the device to firmware update mode.



- Execute the utility, **GT31Updater.exe**, on your PC/Notebook. You will see the screen on the right displayed.
  1. Select correct COM port that the unit is connected.
  2. Click “Browse” button to select the file that you want to update. The file is always with an extension file name, .s.
  3. Click “Execute” button and wait completion.
- Unplug USB cable. Press POWER to start the unit with the new firmware.



Map Datum List

No	Abbrev	Description
1	ADINDA	Adindan-MEAN FOR Ethiopia, Sudan
2	ADINDB	Adindan-Burkina Faso
3	ADINDC	Adindan-Cameroon
4	ADINDD	Adindan-Ethiopia
5	ADINDE	Adindan-Mali
6	ADINDF	Adindan-Senegal
7	ADINDG	Adindan-Sudan
8	AFGY	Afgooye-Somalia
9	AIN70	Ain el Abd 1970-Bahrain
10	AINSA	Ain el Abd 1970-Saudi Arabia
11	ANA65	Anna 1 Astro 1965-Cocos Islands
12	ANT43	Antigua Island Astro 1943 Antigua (Leeward Islands)
13	ARC50A	Arc 1950 MEAN FOR Botswana, Lesotho, Malawi, Swaziland, Zaire, Zambia, Zimbabwe
14	ARC50B	Arc 1950-Botswana
15	ARC50C	Arc 1950-Burundi
16	ARC50D	Arc 1950-Lesotho
17	ARC50E	Arc 1950-Malawi
18	ARC50F	Arc 1950-Swaziland
19	ARC50E	Arc 1950-Zaire
20	ARC50F	Arc 1950-Zambia
21	ARC50G	Arc 1950-Zimbabwe
22	ARC60	Arc 1960-MEAN FOR Kenya, Tanzania

23	ASC58	Ascension Island 1958 Ascension Island
24	ASC45	Astro Beacon E 1945-Iwo Jima
25	ASTHI	Astro DOS 71/4-St Helena Island
26	AST61	Astro Tern Island (FRIG) 1961 Tern Island
27	AST52	Astronomical Station 1952 Marcus Island
28	AUST66	Australian Geodetic 1966 Australia & Tasmania
29	AUST84	Australian Geodetic 1984 Australia & Tasmania
30	AYABE	Ayabelle Lighthouse-Djibouti
31	BELLE	Bellevue (IGN) Efate & Erromango Islands
32	BERM57	Bermuda 1957-Bermuda
33	BISSAU	Bissau-Guinea-Bissau
34	BOGOTA	Bogota Observatory-Columbia
35	BUKIT	Bukit Rimpah Indonesia (Banka & Belitung Islands)
36	CAMP	Camp Area Astro Antarctica (McMurdo Camp Area)
37	CAMPO	Campo Inchauspe - Argentina
38	CANTO	Canton Astro 1966 - Phoenix Islands
39	CAPESA	Cape - South Africa
40	CAPCAN	Cape Canaveral - Bahamas, Florida
41	CARTH	Carthage - Tunisia
42	CHTHM	Chatham Island Astro 1971 New Zealand (Chatham Island)
43	CHUA	Chua Astro - Paraguay
44	COREGO	Corrego Alegra - Brazil
45	DEBOLA	Debola - Guinea
46	DJAKA	Djakarta (Batvia) Indonesia (Sumatra)
47	DOS68	DOS 1968 New Georgia Islands (Gizo Island)
48	EAST67	Easter Island 1967 - Easter Island

49	Eur50	European 1950 MEAN FOR Austria, Belgium, Denmark, Finland, France, West Germany, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzer-land
50	EUR-A	European 1950 MEAN FOR Austria, Denmark, France, West Germany, Netherlands, Switzerland
51	EUR-B	European 1950 MEAN FOR Iraq, Israel, Jordan, Lebanon, Kuwait, Saudi Arabia, Syria
52	EUR-C	European 1950 - Cyprus
53	EUR-D	European 1950 - Egypt
54	EUR-E	European 1950 England, Channel Islands, Ireland, Scotland, Shetland Islands
55	EUR-F	European 1950 - Finland, Norway
56	EUR-G	European 1950 - Greece
57	EUR-H	European 1950 - Iran
58	EUR-I	European 1950 - Italy (Sardinia)
59	EUR-J	European 1950 - Italy (Sicily)
60	EUR-K	European 1950 - Malta
61	EUR-L	European - Portugal, Spain
62	EUR-M	European 1979 MEAN FOR Austria, Finland, Netherlands, Norway, Spain, Sweden, Switzerland
63	FORT55	Fort Thomas 1955 Nevis, St Kitts (Leeward Islands)
64	GAN70	Gan 1970 - Republic of Maldives
65	GEO49	Geodetic Datum 1949 - New Zealand
66	GRA49	Graciosa Base SW 1948 Azores (Faial, Gracias, Pico, Sao Jorge, Terceira)
67	GUAM63	Guam 1963 – Guam
68	GUNSG	Gunung Segara - Indonesia (Kalimantan)
69	GUX	GUX 1 Astro - Guadalcanal Island
70	HERAT	Herat North - Afghanistan
71	HJOR	Hjorsey 1955 - Iceland
72	HK63	Hong Kong 1963 - Hong Kong
73	HUTZU	Hu-Tzu-Shan - Taiwan

74	INDIAB	Indian - Bangladesh
75	INDIAN	Indian - India, Nepal
76	IND54	Indian 1954 - Thailand Vietnam
77	IND75	Indian 1975 - Thailand
78	IRE65	Ireland 1965 - Ireland
79	ISTS68	ISTS 061 Astro 1968 South Georgia Islands
80	ISTS69	ISTS 073 Astro 1969 - Diego Garcia
81	JI61	Johnston Island 1961 - Johnston Island
82	KANDA	Kandawala - Sri Lanka
83	KRG49	Kerguelen Island 1949 Kerguelen Island
84	KERT48	Kertau 1948 - West Malaysia & Singapore
85	KSA51	Kusaie Astro 1951 - Caroline Islands
86	LC61	L.C. 5 Astro 1961 - Cayman Brac Island
87	LEIGO	Leigon - Ghana
88	LIB64	Liberia 1964 - Liberia
89	LUZON	Luzon Philippines (Excluding Mindanao)
90	LUZMD	Luzon - Philippines (Mindanao)
91	MAH71	Mahe 1971 Mahe Island
92	MASWA	Massawa - Ethiopia (Eritrea)
93	MERCH	Merchich - Morocco
94	MIDW61	Midway Astro 1961 - Midway Islands
95	MINAC	Minna - Cameroon
96	MINAN	Minna - Nigeria
97	MNT58	Montserrat Island Astro 1958 Montserrat (Leeward Islands)
98	MPOR	M'Poraloko - Gabon
99	NAHWA	Nahrwan - Oman (Masirah Island)

100	NAHWB	Nahrwan - Saudi Arabia
101	NAHWC	Nahrwan - United Arab Emirates
102	NAPAR	Naparima BWI - Trinidad & Tobago
103	NAD27A	North American 1927 MEAN for antigua, Barbados, Barbuda, Caicos Islands, Cuba, Dominican Republic, Grand Cayman, Jamaica, Turks Islands
104	NAD27B	North American 1927 MEAN for Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua
105	NAD27C	North American 1927 MEAN FOR Canada
106	NAD27D	North American 1927 MEAN FOR CONUS
107	NAD27C	North American 1927 MEAN FOR CONUS (East of Mississippi River) including Louisiana, Missouri, Minnesota
108	NAD27E	North American 1927 MEAN FOR CONUS (West of Mississippi River)
109	NAD27F	North America 1927 Alaska
110	NAD27G	North American 1927 Bahamas (Except San Salvador Island)
111	NAD27H	North American 1927 Bahamas (San Salvador Island)
112	NAD27I	North American 1927 Canada (Alberta, British Columbia)
113	NAD27J	North American 1927 Canada (Manitoba, Ontario)
114	NAD27K	North American 1927 Canada (New Brunswick, Newfoundland, Nova Scotia, Quebec)
115	NAD27L	North American 1927 Canada (Northwest Territories, Saskatchewan)
116	NAD27M	North American 1927 Canada (Yukon)
117	NAD27N	North American 1927 Canal Zone
118	NAD27O	North American 1927 Cuba
119	NAD27P	North American 1927 Greenland (Hayes Peninsula)
120	NAD27Q	North American 1927 Mexico
121	NAD83A	North American 1983 Alaska, Canada, CONUS
122	NAD83B	North American 1983 Central America, Mexico
123	OBS39	Observatorio Metereo 1939 Azores (Corvo & Flores Islands)
124	EGP07	Old Egyptian 1907 - Egypt

125	HAWAME	Old Hawaiian MEAN FOR Hawaii, Kauai, Maui, Oahu
126	HAWAI	Old Hawaiian Hawaii
127	KAUAI	Old Hawaiian Kauai
128	MAUI	Old Hawaiian Maui
129	OAHU	Old Hawaiian Oahu
130	OMAN	Oman - Oman
131	OS36	Ord. Survey Great Britain 1936 MEAN FOR England, Isle of Man, Scotland, Shetland Islands, Wales
132	OS36B	Ord. Survey Great Britain 1936 - England
133	OS36C	Ord. Survey Great Britain 1936 England, Isle of Man, Wales
134	OS36D	Ord. Survey Great Britain 1936 Scotland, Shetland Islands
135	OS36E	Ord. Survey Great Britain 1936 - Wales
136	PICO	Pico de las Nieves - Canary Islands
137	PIT67	Pitcairn Astro 1967 - Pitcairn Island
138	PONT58	Point 58 MEAN FOR Burkina Faso & Niger
139	PONT48	Pointe Noire 1948 - Congo
140	PORT36	Porto Santo 1936 Porto Santo, Madeira Islands
141	PRV56A	Provisional South American 1956 MEAN FOR Bolivia, Chile, Colombia, Ecuador, Guyana, Peru, Venezuela
142	PRV56B	Provisional South American 1956 - Bolivia
143	PRV56C	Provisional South American 1956 Chile(Northern, Near 19South)
144	PRV56D	Provisional South American 1956 Chile(Southern, Near 43South)
145	PRV56E	Provisional South American 1956 Columbia
146	PRV56F	Provisional South American 1956 Ecuador
147	PRV56G	Provisional South American 1956 - Guyana
148	PRV56H	Provisional South American 1956 – Peru
149	PRVVEN	Provisional South American – Venezuela

150	PRV63	Provisional South Chilean 1963 Chile (South, Near 53South) (Hito XVIII)
151	PUERT	Puerto Rico Puerto Rico, Virgin Islands
152	QATAR	Qatar National – Qatar
153	QORNO	Qornoq - Greenland (South)
154	REUNI	Reunion - Mascarene Islands
155	ROME40	Rome 1940 - Italy (Sardinia)
156	SANTO65	Santo (DOS) 1965 Espirito Santo Island
157	SAOBRZ	Sao Braz Azores (Sao Miguel, Santa Maria Islands)
158	SAPPR	Sapper Hill 1943 - East Falkland Island
159	SCHWA	Schwarzeck – Namibia
160	SELVA	Selvagem Grande - Salvage Islands
161	SGS85	SGS 85 - Soviet Geodetic System 1985
162	SA69A	South American 1969 MEAN for Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Trinidad & Tobago, Venezuela
163	SA69B	South American 1969 Argentina
164	SA69C	South American 1969 Bolivia
165	SA69D	South American 1969 Brazil
166	SA69E	South American 1969 Chile
167	SA69F	South American 1969 Colombia
168	SA69G	South American 1969 Ecuador
169	SA69H	South American 1969 Ecuador (Baltra, Galapagos)
170	SA69I	South American 1969 Guyana
171	SA69J	South American 1969 Paraguay
172	SA69K	South American 1969 Peru
173	SA69L	South American 1969 - Trinidad & Tobago
174	SA69M	South American 1969 - Venezuela

175	SASIN	South Asia - Singapore
176	TAN25	Tananarive Observatory 1925 Madagascar
177	TIMBA48	Timbalai 1948 Brunei, East Malaysia (Sabah, Sarawak)
178	TOKTO	Tokyo - MEAN FOR Japan, Korea, Okinawa
179	TKYJP	Tokyo - Japan
180	TKYKR	Tokyo - Korea
181	TKYOK	Tokyo - Okinawa
182	TRST68	Tristan Astro 1968 - Tristan da Cunha
183	VITIL6	Viti Levu 1916 Fiji (Viti Levu Island)
184	WAKE60	Wake - Eniwetok 1960 - Marshall islands
185	WAKE52	Wake Island Astro 1952 - Wake Atoll
186	WGS72	WGS 1972 - Global Definition
187	WGS84	WGS 84-Default
188	YACER	Yacare - Uruguay
189	ZANDR	Zanderiji - Suriname

Water Immersion

The GT31/BGT31 is designed to comply with IEC standard 60529 IPX7, which means that it can withstand immersion in 1 meter of water for 30 minutes. Submersion for more than 30 minutes and/or subjecting the unit to (dynamic) pressures higher than 1m of water may cause water entering and damaging the unit. After submersion, be certain to wipe dry and air dry the unit thoroughly before opening its SD card door. Since moisture condensation may occur inside the unit due to air temperature differences inside and outside the unit, it is important to dry the unit in warm and dry environment with the SD card door open after each use. This regular drying will prevent condensed moisture from accumulating inside the unit. To minimize the possibility of internal condensation the SD card door should only be opened in a dry environment.

WARRANTY

LOCOSYS warrants this product to be free from defect in material and workmanship for 12 months from the date of purchase.

This warranty does not cover the damage due to the shipping of the product, external causes, including accident, abuse, misuse, problems with electrical power, usage not in accordance with product instruction, product that have been repaired or altered by other than LOCOSYS authorized service person, dealer, problem(s) caused by use of parts and components not supplied by LOCOSYS upon request. This warranty does not cover any accessories or parts added to product after the product shipped from LOCOSYS.

Product is treated as out of warranty when it is out of the warranted 12 months period, or it has been repaired or altered by other than LOCOSYS authorized service person, dealer, or which has been subjected to misuse, abuse, accident, or improper installation.

In no event shall LOCOSYS be liable for any incidental, special, indirect or consequential damages, whether resulting from the abuse, misuse, or inability of use this product or from defects in the product.

REPAIR

LOCOSYS will repair the defective products covered under this limited warranty, if they are returned to LOCOSYS. If the product does prove defective, it will be repaired at no charge during the warranty period and at normal repair charge rates when out of the warranty.

To obtain warranty service, contact your local LOCOSYS dealer. An original or copy of the sales receipt from the original dealer is required. LOCOSYS will not repair or replace missing components from any package purchased not from authorized dealer.

The repaired product will be warranted subjected to the original warranty only. SCYTEX reserves the right to charge a "No Fault Found" fee for product returned as defective where no fault could be found by LOCOSYS. LOCOSYS owns all parts removed from repaired product.

Product returned by LOCOSYS to other location beside the Customers' site will bear extra charge and should be credited to the Customers. It is the Customers responsibility to ensure that the package containing the defective product is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurring during the transportation, the repair is treated as “Out of Warranty”.

Authorized Dealer

Revision History

Part Number	Revision	Date	Note

Document Number: