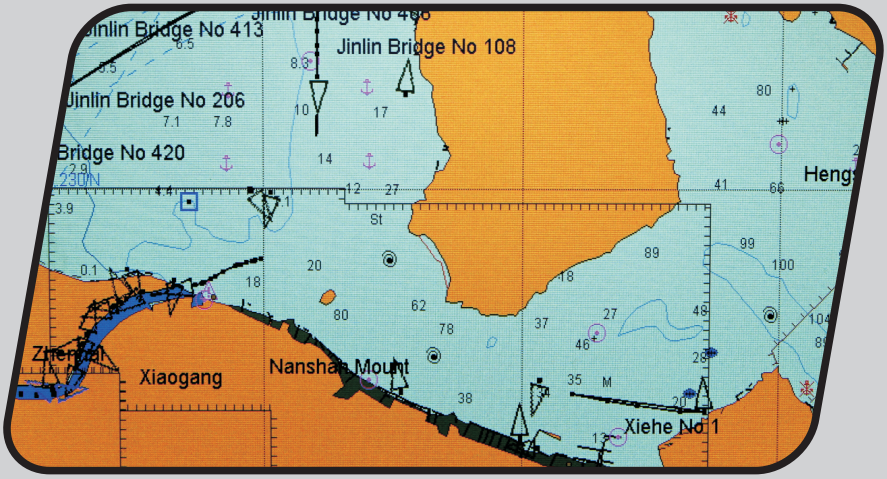
HG-6M/8M/12M

GPS PLOTTER



INSTRUCTION MANUAL

Hanten

High Tech Technology Development Limited

Ningbo Chengdian Marine Electronics Co.,Ltd.

NOTICE TO USERS

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- High Tech Technology Development Limited will assume no responsibility for the damage caused by improper use or modification of the product or claims of loss of profit by a third party.

- Please read this manual carefully to ensure proper use before installation and use of the product.

- Please keep the manual for your future reference.

SAFETY INSTRUCTIONS for the operator

Warning

Keep away from heat source or direct sunshine.

Prohibition

Don't open the equipment.Only qualified personnel should perform work on the inside of the equipment. Don't disassemble or try to modify the equipment.

Dangerous

Turn off the power immediately when smoke or fire is emitted.

SAFETY INSTRUCTIONS for the installer

Warning

Connect the earthing cord to ship's body.
Observe the compass safe distance to prevent deviation of an onboard magnetic compass.

Prohibition

Don't open the equipment unless you have fully understood the structure and circuits of the equipment. Only qualified personnel should perform work on the inside of the equipment. Don't disassemble or try to modify the equipment.

Dangerous

Turn off the power at power distribution board before installation.

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FOREWORD

The HG-6M/8M/12M HANTEN GPS PLOTTER aid are specially designed for the vessel traffic management, HANTEN is a professional brand of the domestic and foreign navigation products.

The products are designed to be all-sealed and waterproof, to have rapid position-fixing and to be resistant to poor environment. The software is powerful, by using the advanced ARM9 processors, and provides fast display function.The operation design is professional, reasonable and user-friendly. The built-in Large-capacity map storage space provides intuitive and accurate indication to navigation. It's applicable to the navigation and position-fixing of various vessels at sea and rivers, as well as the hydrographic information collection, river management, etc. For the application for different types of the products please refer to the following:

FEATURES

- 5 Major Display Mode
- Support K-chart system
- C-Map MAX Compatible
- AIS Interface
- Large Capacity of User Data
- Track Return Function

1. OPERATION OVERVIEW

1.1 Keypad Instruction (Figure 1-1)

MENU Pressing it displays the menu of the current page, pressing twice enters the main-menu.

MODE Display the five main screens circularly, turn over the listed interfaces.

ESC Withdraw from the optional operation, or display the previous page in reverse-cycle order.

ENT Confirms the input or data.

Enlarges the scale of the maps and charts.
Display the listed items of the page by revers e-scrolling.

Reduces the scale of the maps and charts.
Displays the listed items of the page by scrolling.

F Display other function (GOTO, tide table, search, Etc.) menu.

MOB The MOB mark denotes man overboard position.

POWER Turn the power on/off, adjust the back light brightness.

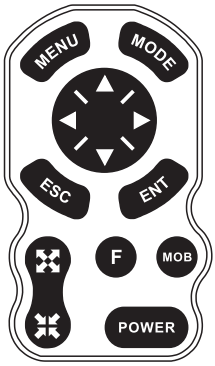


Figure1-1

The basic input principles for the equipment: Press [**MENU**] key to enter the menu setting accordingly, then press the [**Arrow**] keys to move the cursor to select items, press [**ENT**] to enter.
The required state. Press [**Arrow**] keys to select the letter or number.
The number contains from 0 to 9, the letter contains from A to Z and a to z.
Press [**left/right Arrow**] keys to move the cursor.
During the input, press [**ESC**] key at any time to cancel the current operation and return to the previous menu or operation; Press [**ENT**] key to confirm the current input, and continue to enter the next operation or menu. In relation to the similar operations, this manual will not repeat again.

1.2 Turning ON and OFF Power

Turning On the Power

Press the [**ON/OFF**] key. The unit beeps and display "HANTEN" logo. After a few seconds starts up with the last-used display mode.

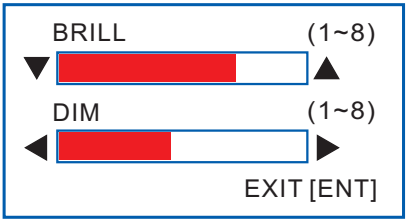
Turning Off the Power

Press and hold down the [**ON/OFF**] key unit the screen goes blank (about four seconds).

1.3 Adjusting Brilliance and DIM

You can adjust display brilliance as shown below.

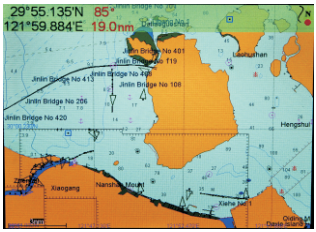
1. Press the [**POWER**] key. The adjusting window appears.



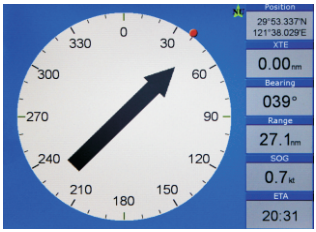
1.4 Display Modes

Your unit has five display modes: **PLOTTER SCREEN, NAVIGATOR SCREEN, POSITION SCREEN, SATELLITE SCREEN and AIS SCREEN.**

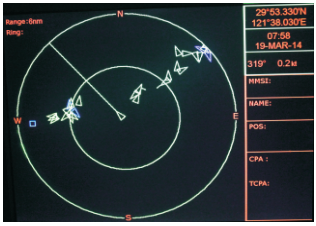
Press the [**MODE**] key to choose a display mode. Each time the key is pressed, the display mode changes in the sequence shown below.



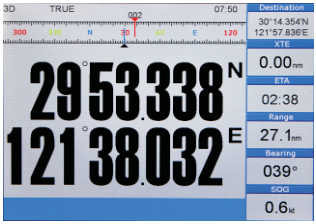
PLOTTER



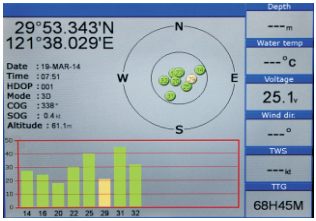
NAVIGATOR



AIS DISPLAY



POSITION



SATELLITE

2. PLOTTER DISPLAY OVERVIEW

2.1 Choosing the Display Range

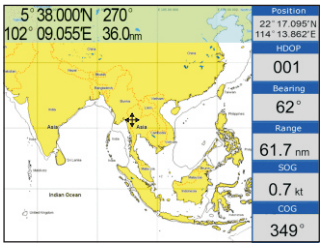
You may press ⊗ ⊗ to choose display range on plotter and highway displays.

2.2 Shifting the Cursor

Use the cursor pad to shift the cursor. The cursor moves in the direction of the arrow or diagonal pressed on the cursor pad.

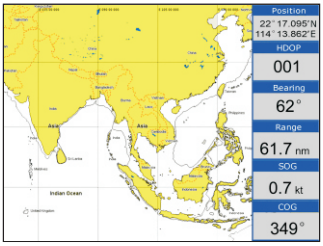
Cursor Turn On

Cursor position is displayed in latitude and longitude at the top left corner of the plotter display when the cursor is on. The range and bearing from own ship to the cursor appear at the top left corner of the display too.



Cursor Turned Off

Press [**ESC**] to clear the cursor. Cursor position data will be disappear when the cursor is off.



2.3 Shifting the Display

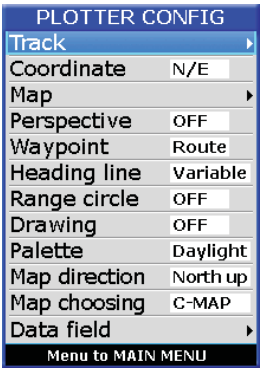
The display can be shifted on the plotter display. Operate the cursor pad to place the cursor at an edge of the screen. The display shifts in the direction opposite to cursor pad operation.

2.4 Centering Own Ship's Position

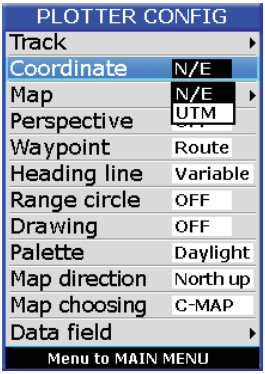
Press the [**ESC**] key for centering own Ship's position.

2.5 Coordinates

1. Press [**MENU**] key in PLOTTER screen.

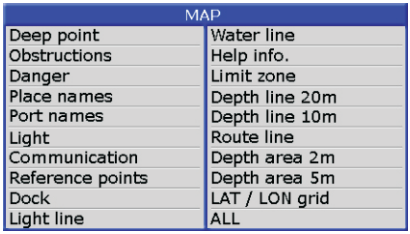


2. Choose COORDINATES and then press [**ENT**] key.

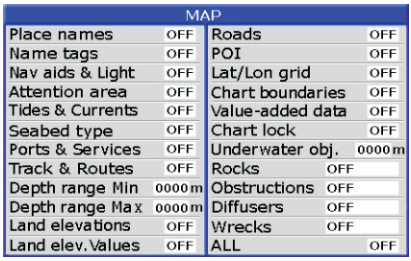


2.6 Map Data

1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **MAP** and then press [▶] key.
3. Choose the layer "ON" or "OFF" as appropriate and then press [**ENT**] key to finish.



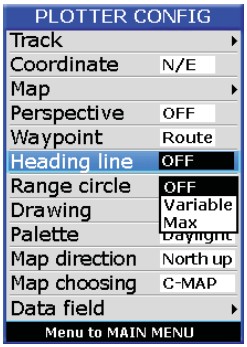
(K-Chart)



(C-MAP)

2.7 Heading Line

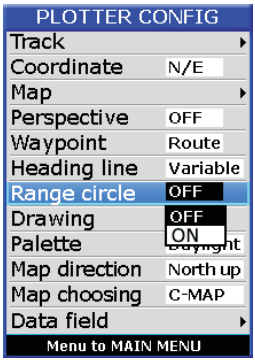
1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **HEADING LINE** and then press [**ENT**] key.



3. Choose "OFF", "VARIABLE" or "MAX" as appropriate and then press [**ENT**] key to finish.

2.8 Range Circle

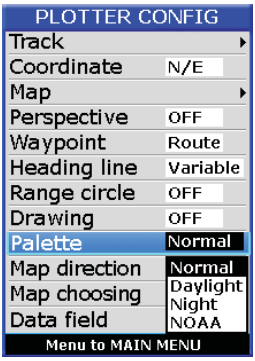
1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **RANGE CIRCLE** and then press [**ENT**] key.



3. Choose "ON" (if choose "ON" you need input the circle radius manually) or "OFF" as appropriate and then press [**ENT**] key to finish.

2.9 Palette

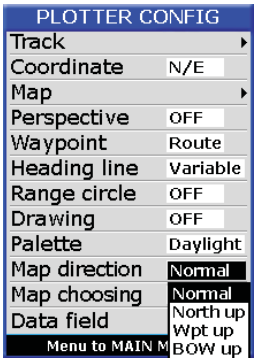
1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **PALETTE** and then press [**ENT**] key.



3. Choose the mode as appropriate and then press [**ENT**] key to finish.

2.10 Map Orientation

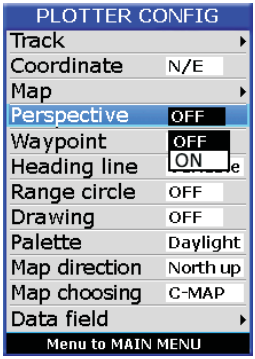
1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **MAP DIRECTION** and then press [**ENT**] key.



3. Choose "Normal", "NORTH Upward", "WPT Upward" or "BOW Upward" as appropriate and then press [**ENT**] key to finish.

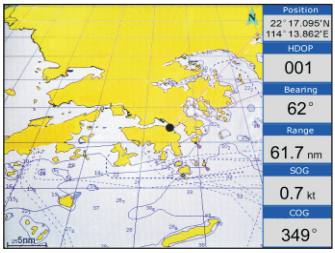
2.11 Perspective View

1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **PERSPECTIVE** and then press [**ENT**] key.

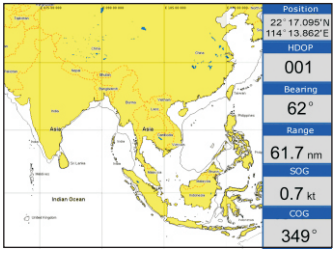


Choose the layer **ON** or **OFF** as appropriate and then press [**ENT**] key to finish.

3. Choose the layer **ON** as appropriate and then press [**ENT**] key to finish.



4. Choose the layer **OFF** as appropriate and then press [**ENT**] key to finish.

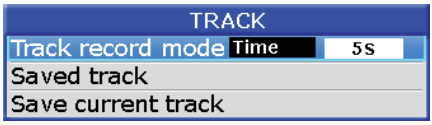


3. TRACK

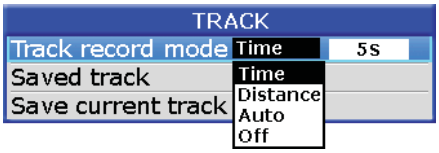
3.1 Changing Track Plotting Interval, Stopping Plotting

When the track memory becomes full, the oldest track is erased to make room for the latest.

1. Press the [**MENU**] key twice to main menu.
2. Choose **TRACK RECORD** and then press [►] key.



3. Choose **MODE** and then press [►] key.



4. Choose **TIME**, **DISTANCE**, **AUTO** or **OFF**.

TIME: Track is recorded and plotted at the time interval setting.

DISTACNE: Track is recorded and plotted at the distance interval setting.

AUTO: Plotting and recording interval changes with display range selected.

OFF: Track is neither recorded nor plotted.

5. For **TIME** and **DISTANCE**, enter the recording interval as follows:

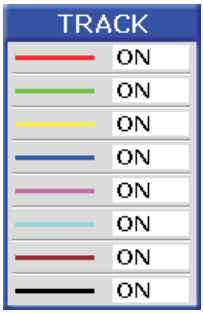
a) Press the [►] key.

b) Use ▲ or ▼ select value.

6. Press [**ENT**] key to finish.

3.2 Displaying the Track

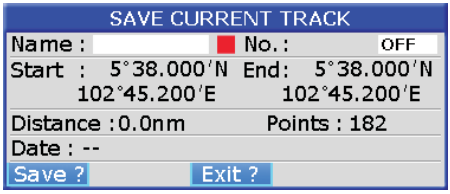
1. Press [**MENU**] key in **PLOTTER** screen.
2. Choose **TRACK** and then press [▶] key.



3. Choose the color and choose turning it **ON** or **OFF**.
4. Press [**MENU**] key to finish.

3.3 Creating Track Data

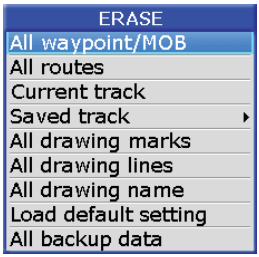
1. Press the [**MENU**] key twice to main menu.
2. Choose **TRACK RECORD** and then press [▶] key.
3. Choose **SAVE CURRENT TRACK** and then press [**ENT**] key.
   The following window will appear.



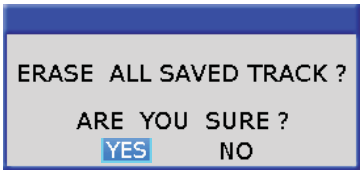
Track data can use for navigation.

3.4 Erasing Track

1. Press [**MENU**] twice to main menu.
2. Choose [**ERASE**] and then press [►] key.

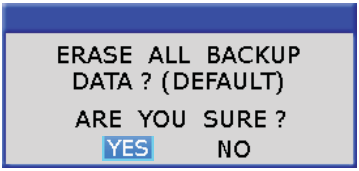


3. For saved track then press [►] key to choose Current track or Saved track.
4. Choose the color that you want to erase or choose **ALL** if you want to erase all. and then Press [**ENT**] key.
   The following window will appear:



3.5 Erasing All Backup Data

1. Press [**MENU**] twice to main menu.
2. Choose [**ERASE**] and then press [►] key.
3. Choose **ALL BACKUP DATA** and then press [**ENT**] key.
   The following window will appear.



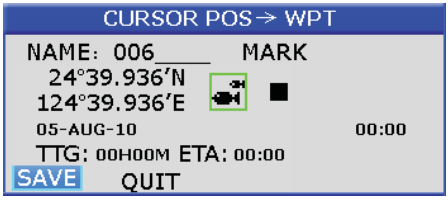
4. WAYPOINT/MOB

4.1 Entering Waypoints

Waypoints can be entered on the plotter display three ways: at cursor position, at own ship's position, and from the waypoint edit.

Entering a Waypoint with the Cursor

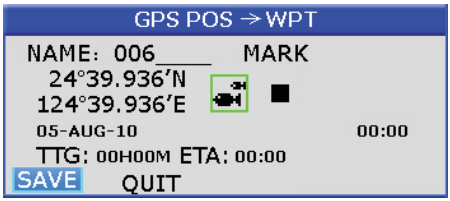
1. Use the cursor pad to place the cursor on the location desired for a waypoint.
2. Press the [**ENT**] key. The following window appears.



3. This window is where you can rename, edit **LON** and **LAT**, choose mark shape and color and enter a comment.
4. Choose **SAVE** to finish.

Entering a Waypoint at Own Ship Position

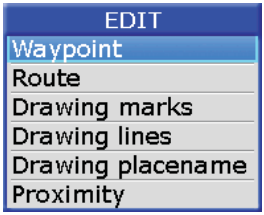
1. Momentary press [**ENT**] key when no cursor is appear.
   The following window appears.



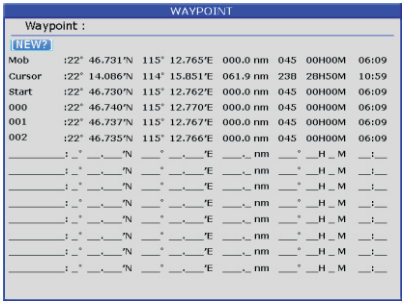
2. If you no need to change anything, choose **SAVE** to finish.

Entering a Waypoint From the Waypoint List

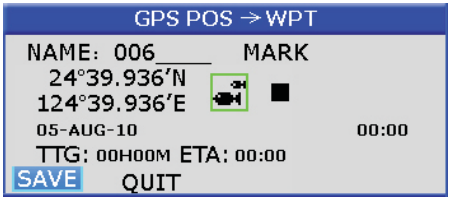
1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [►] key.



3. Choose **WAYPOINT** and then press [**ENT**] key.
   The following window will appear.



4. Choose **NEW** then press [**ENT**] key.
   The following window appears.



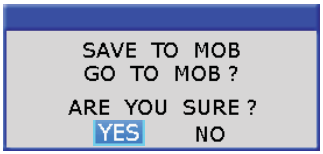
5. If you no need to change anything, choose **SAVE** to finish.

4.2 Entering the MOB Mark

Only one MOB mark may be entered.

Each time the MOB mark is entered the previous MOB mark and its position data are written over.

1. Long Press the [**MOB**] key on any display unit.
   The following display appears.

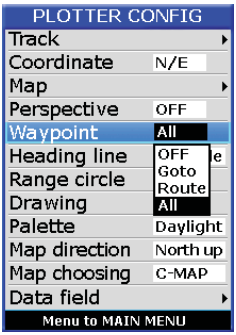


2. To set MOB position as destination, press [►] to choose YES and then press [**ENT**] key. Choose NO saves the position as a waypoint call "MOB".

4.3 Displaying Waypoint Name

You may display waypoint name as Follows:

1. Press the [**MENU**] key on the **PLOTTER SCREEN**.
2. Choose **WAYPOINT** and then press the [**ENT**] key, the following window will appear.



3. Choose **ALL, GOTO, ROUTE** or **ALL** as appropriate and then press the [**ENT**] key.

ALL: Displays all waypoint names.

GOTO: Displays only the GOTO waypoint name.

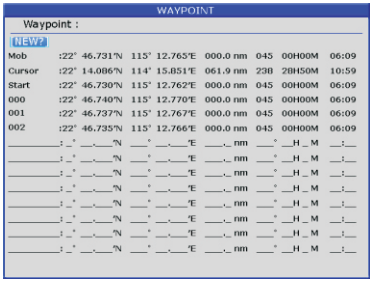
ROUTE: Displays all waypoint names when a route is set as destination.

OFF: Do not display any waypoint name.

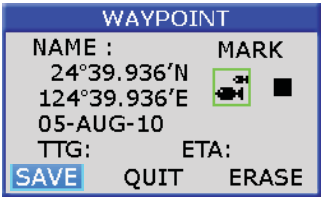
4.4 Operation on the Waypoint Editing

Waypoint position, waypoint name, mark shape, mark color and comment can be edited from the Waypoint Edit.

1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [►] key.
3. Choose **WAYPOINT** and then press the **[ENT]** key.
   The following window will appear.



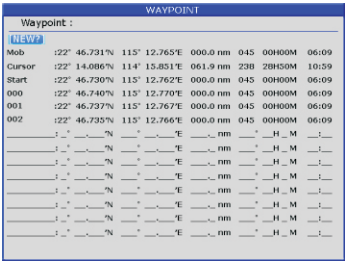
4. Choose waypoint to edit and then press the [**ENT**] key.
   The following window will appear.



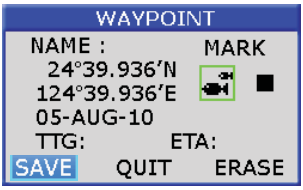
5. Choose objective desired and then press the [**ENT**] key.
6. Change name, position, mark shape, mark color, comment as desired.
7. Choose **SAVE** and then press [**ENT**] to finish.

4.5 Erasing Waypoints

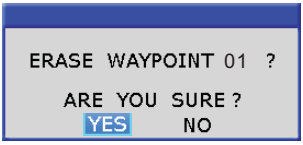
1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [►] key.
3. Choose **WAYPOINT** and then press the [**ENT**] key.



4. Select a WPT and press [**ENT**] key.
5. The confirm window will appear, choose **ERASE** and then press [**ENT**] key.

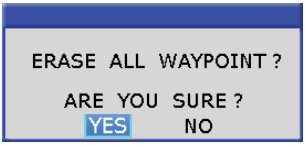


6. choose YES and then press [**ENT**] to finish.



Erase All Waypoints

1. Press the [**MENU**] key twice to main menu.
2. Choose **ERASE** and then press [►] key.
3. Choose **ALL WAYPOINT/MOB** and then press [**ENT**] key.
   The confirming window will appear.

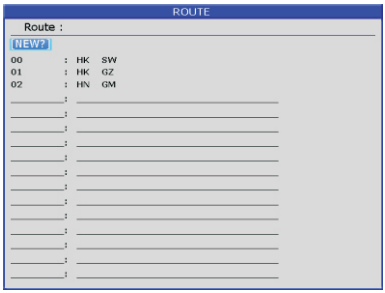


4. Choose YES and then press [**ENT**] to erase all wayp-oints.

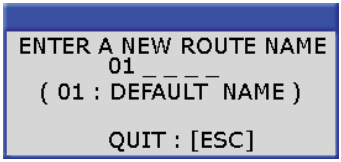
5. ROUTES

5.1 Creating Routes

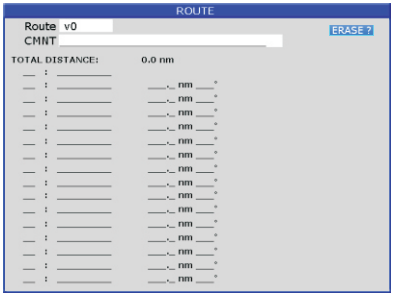
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **ROUTE** and then press [**ENT**] key.
   The following window will appear.



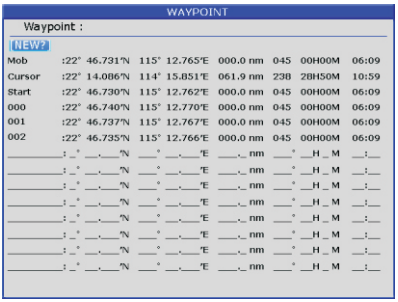
4. Choose "NEW" and then press [**ENT**] key.
The following window will appear.



5. Use ▲or ▼enter the route name and then press [**ENT**] key.
   The following will appear.



6. Choose location (e.g. 01) and then press [**ENT**] key.
   It will open a new window to let you choose waypoint.

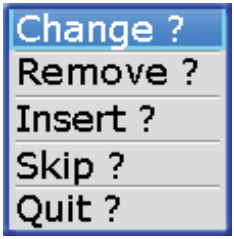


7. Choose the waypoint name and then press [**ENT**] key. (In example, 001)
   You can also create a new waypoint if needed.
8. Repeat step 6 and 7 until complete the route.

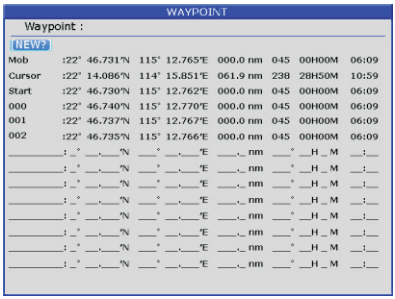
5.2 Editing Routes

Replacing Waypoints in a Route

1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **ROUTE** and then press [**ENT**] key.
4. Choose the route to edit and then press [**ENT**] key.
5. Place the cursor on the waypoint to replace, press the [ENT] to show the route options.



6. Choose "**CHANGE**" and then press [**ENT**] key.
   It will show the waypoint select window.



7. Choose the waypoint name that you want to replace and then press [**ENT**] key.
8. Repeat step 5 to 8 until finish edit.

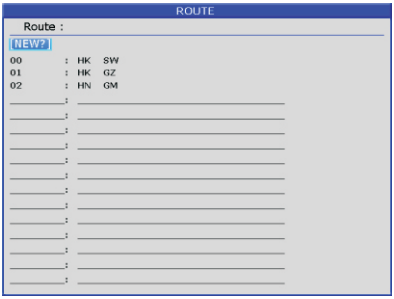
Permanently Deleting a Waypoint From a Route

1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press the [▶] Key.
3. Choose **ROUTE** and then press [**ENT**] key.
4. Choose the route desired and then press [**ENT**] key.
5. Choose the waypoint you want to delete and then press [**ENT**] key to show the route edit options.

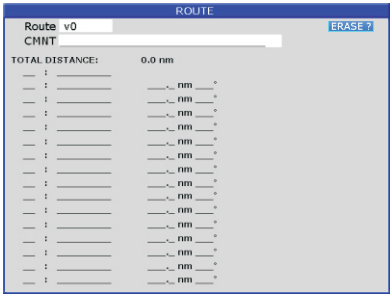
6.Choose "**REMOVE**" and then press [**ENT**] key to finish.

5.3 Erasing Routes

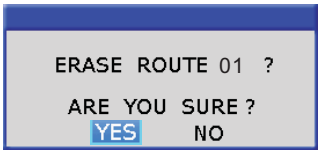
1. Press the [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **ROUTE** and then press the [**ENT**] key.



4. Select a Route then press [**ENT**].
5. The confirm window will appear, choose ERASE and then press [**ENT**].

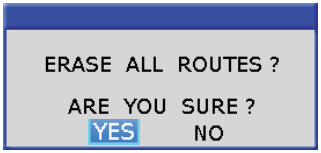


6. Choose YES and then press [**ENT**] to finish.



Erase All Routes

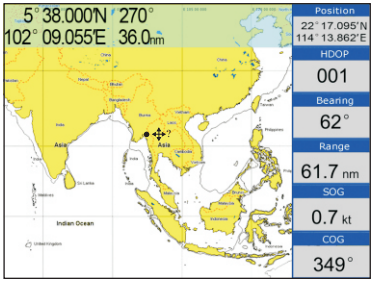
1. Press the [**MENU**] key twice to main menu.
2. Choose **ERASE** and then press [►] key.
3. Choose **ALL ROUTE** and then press [**ENT**] key.
   The confirming window will appear.



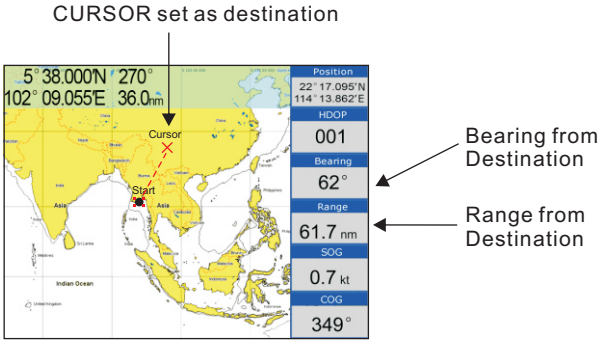
4. Choose YES and then press [**ENT**] to erase all routes.

6.1 Setting Destination by Cursor

1. Press [**F**] key.
2. Choose [**GOTO CURSOR**] and then press [**ENT**] key.
3. The cursor appears with "?".



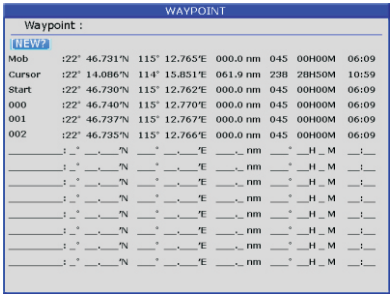
4. Use the cursor pad to place the cursor on the location desired for destination.
5. Press the [**ENT**] key.



6.2 Setting Destination by Waypoint

1. Press the [**F**] key.

2. Choose **GOTO WPT** and then press [**ENT**] key.
3. The **SELECT GOTO** WPT list appears.

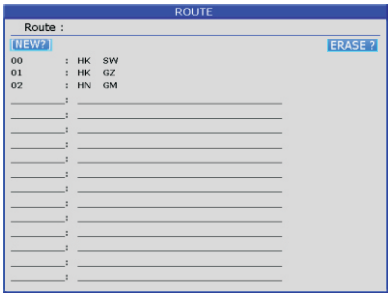


4. Choose a Waypoint and then press [**ENT**] key.

6.3 Setting Route as Destination

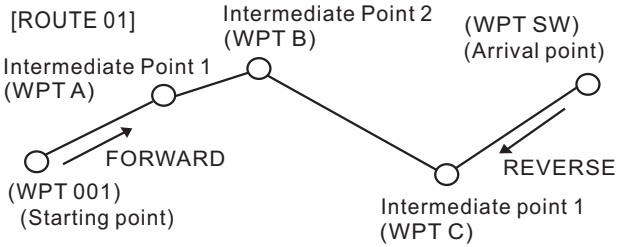
1. Press the [**F**] key.

2. Select **GOTO ROUTE**.
3. The **SELECT GOTO ROUTE** list appears.



4. Choose a route and then press [**ENT**] key. The following window appears.

5. Choose Forward or Reverese in order in which to traverse the route waypoints, and then press [**ENT**] key.



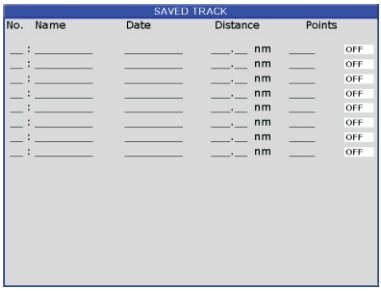
Meaning of forward and reverse

6.4 Setting Track Data as Destination

Track Data can use for navigation.

1. Press the [**F**] key to display the GOTO options window.

2. Choose "**GOTO TRACK**".
3. Press the [**ENT**] key.



4. Choose Track Log to display the following menu.

5. Choose Forward or Reverese to start **GOTO TRACK** navigation.

Once a GOTO TRACK has been activated, the track will divides it into segments. Up to 200 temporary "waypoint" are created (named T1,T2, T3, etc. and END) to mark the most significant features of the track, duplicating your exact path as closely as possible. To get the most out of the GOTO TRACK feature, remember the following tips:

- Always clear the track log at the point that you want to go back to.
- There must be at least two track log points stored in memory to create a track route.
- If the receiver is turned off or satellite coverage is lost during your trip, it will draw a straight line between any point where coverage was lost and where it resumed.
- If your track's changes in distance and direction are too complex, 200 waypoints may not mark your path accurately.

The receiver then assigns the 200 waypoints to the most significant points of your track, and simplifies segments with fewer changes in direction.

6.5 Cancelling Destination

You can cancel destination as follows.

1. Press the [**F**] key.

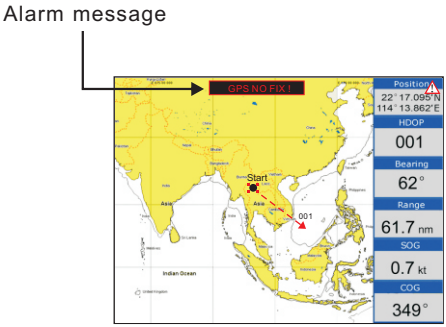
2. Choose **STOP GOTO** and press [**ENT**] key.

7. ALARM

There are six alarm conditions which generate both audio and visual alarms: Arrival alarm, Anchor drag alarm, XTE (Cross-Track Error) alarm, Speed alarm, Buzzer alarm, Voltage alarm and Time alarm.

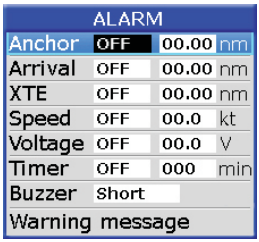
When the alarm setting is violated, the buzzer sounds and the name of offending alarm and the alarm icon appear on the display.

You can silence the buzzer and remove the alarm name indication by pressing any key. The alarm icon remains on the screen until the reason for the alarm is cleared.

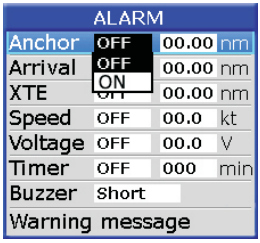


7.1 Anchor Drag Alarm

1. Press [**MENU**] key twice to main menu.
2. Choose **ALARM** and then press [►] key to display alarm menu.



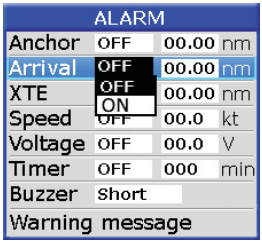
3. Choose **ANCHOR** and then press [**ENT**] key. The alarm options appear.



4. Choose item 3 and then press [**ENT**] to setup the alarm value.
5. Choose ON and then press [**ENT**] key to enable the alarm.

7.2 Arrival Alarm

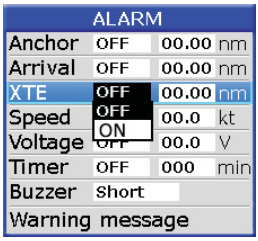
1. Press [**MENU**] key to display MAIN MENU.
2. Choose **ALARM** and then press [▶] key to display alarm menu.
3. Choose **ARRIVAL** and then press [**ENT**] key.
   The alarm options appear.



4. Choose item 3 and then press [**ENT**] to setup alarm value.
5. Choose **ON** and then press [**ENT**] key to enable the alarm.

7.3 XTE (Cross-Track Error) Alarm

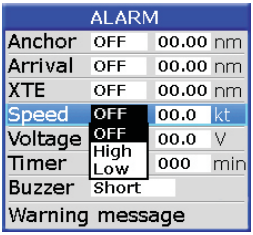
1. Press [**MENU**] key twice to main menu.
2. Choose **ALARM** and then press [►] key to display alarm menu.
3. Choose **XTE** and then press [**ENT**] key.
   The alarm options appear.



4. Choose item 3 and then press [**ENT**] to setup alarm value.
5. Choose **ON** and then press [**ENT**] key to enable the alarm.

7.4 Speed Alarm

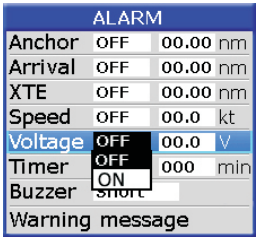
1. Press [**MENU**] key twice to main menu.
2. Choose **ALARM** and then press [►] Key to display alarm menu.
3. Choose **SPEED** and then press [**ENT**] key.
   The alarm options appear.



4. Choose item 3 and then press [**ENT**] to setup alarm value.
5. Choose **ON** and then press [**ENT**] key to enable the alarm.

7.5 Voltage Alarm

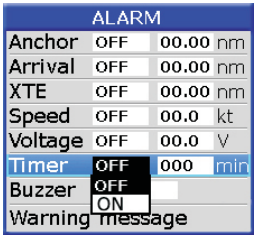
1. Press [**MENU**] key to main menu.
2. Choose **ALARM** and then press [▶] key to display alarm menu.
3. Choose **VOLTAGE** and then press [**ENT**] key.
   The alarm options appear.



4. Choose item 3 and then press [**ENT**] to setup alarm value.
5. Choose ON and then press [**ENT**] key to enable the alarm.

7.6 Time Alarm

1. Press [**MENU**] key to main menu.
2. Choose **ALARM** and then press [▶] key to display alarm menu.
3. Choose **TIMER** and then press [**ENT**] key.
   The alarm options appear.

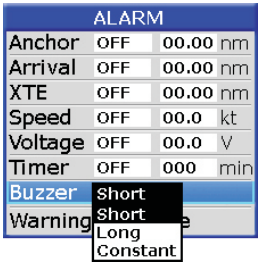


4. Choose item 3 and then press [**ENT**] to setup alarm value.
5. Choose ON and then press [**ENT**] key to enable the alarm.

7.7 Buzzer Type Selection

The buzzer sounds whenever an alarm setting is violated.

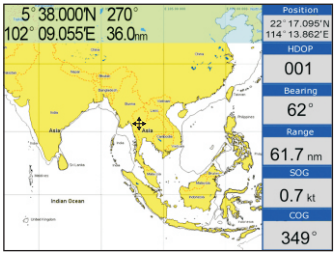
1. Press the [**MENU**] twice to main menu.
2. Choose **ALARM** and then press [►] key.
3. Choose **BUZZER** and then press [►] key.
4. Choose buzzer type desired and then Press [**ENT**] key.



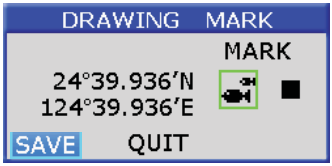
SHORT: Two short beeps
LONG: Three long beeps
CONSTANT: Continuous beeps

8.1 Drawing Marks

1. Press [**F**] key.
2. Choose [**DRAWING**] and then press [►] key.
3. Choose [**MARK**] and then press [**ENT**] key .
   The cursor appears with "+?" On the PLOTTER SCREEN.



4. Use the cursor pad place the cursor on the location desired add a mark and then press [**ENT**] key.
   The following window appears.



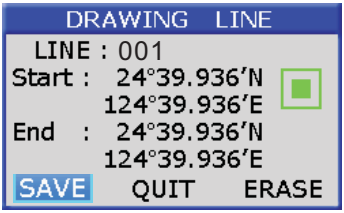
5. Edit Lat/Lon or mark, and then choose SAVE to finish.

*Changing the SYMBOB and COLOR

1. Move the cursor to MARK and press [**ENT**].
2. Use▲or ▼select color or symbol then press [**ENT**].
3. Select [**SAVE**] to finish.

8.2 Drawing Lines

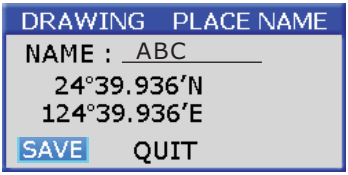
1. Press [**F**] key.
2. Choose [**DRAWING**] and then press [▶] key.
3. Choose [**LINE**] and then press [**ENT**].
   The cursor appears with "+?" On the PLOTTER SCREEN.
4. The cursor appear with a "?".
5. Use the cursor pad place the cursor on the location desired add a point of the line and then press [**ENT**] key.
6. Repeat step 5 to complete the line.
7. Press [**ESC**] key to finish, and then the save confirmation window will appear.



7. Move cursor to **COLOR** and press [**ENT**] for modify color if required.
8. Choose SAVE and press [**ENT**] to save the line.

8.3 Drawing Place name

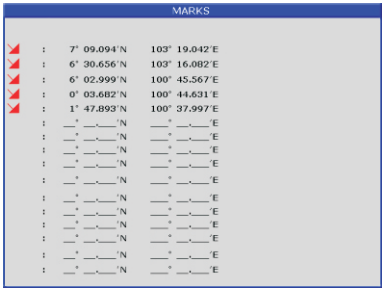
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **DRAWING PLACENAME** and then press [**ENT**] key.
4. The cursor appears with a "+?" On the **PLOTTER SCREEN**.
5. Use the cursor pad place the cursor on the location desired add a name and then press [**ENT**] key



6. Enter the name and then choose SAVE to finish.

8.4 Editing Drawing Marks

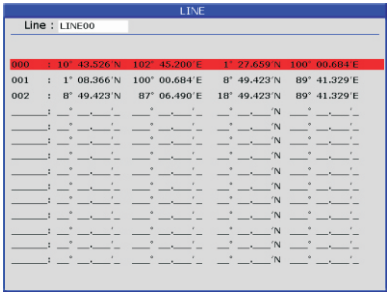
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose Drawing marks and then press [**ENT**] key.
   The following window appears.



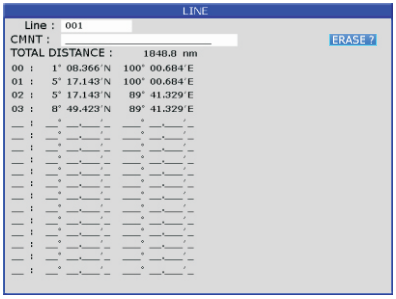
4. Select a mark for edit then press [**ENT**].
5. After edit, choose **SAVE** and then press [**ENT**] key to finish.

8.5 Editing Drawing Lines

1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **DRAWING LINES** and then press [**ENT**] key.
   The following window appears.



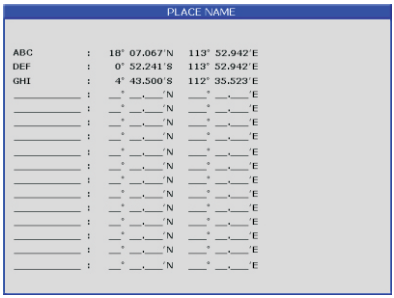
4. Choose the line that you want to edit and then press [**ENT**] key.
   The following window appears.



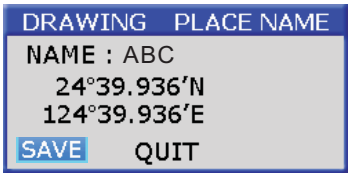
5. Choose the point that you want to edit and then press [**ENT**] key
6. After edit, choose **SAVE** and then press [**ENT**] key to finish.

8.6 Editing Drawing Place Name

1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **DRAWING PALCENAME** and then press [**ENT**] key.
   The following window appears.



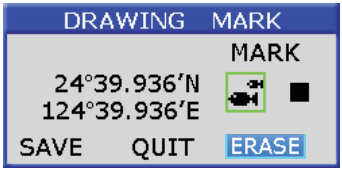
5. Choose the place name that you want to edit and then press [**ENT**] key.
   The following window appears.



6. After edit, choose **SAVE** and then press [**ENT**] key tofinish.

8.7 Erasing Drawing Marks

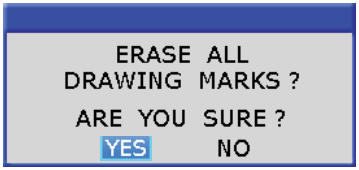
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] Key.
3. Choose **DRAWING MARKS** and the press [**ENT**] Key.
4. Choose the mark that you want to clear, and then press [**ENT**] key.
   The confirmation window will appear.



5. Choose **ERASE** and then press [**ENT**] to finish.

Erasing All Drawing Marks

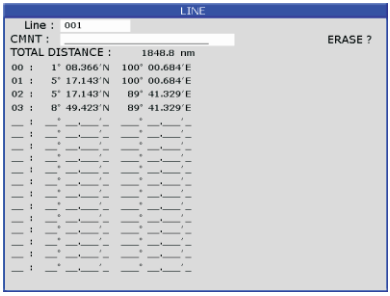
1. Press [**MENU**] key twice to main menu.
2. Choose **ERASE** and then press [▶] Key.
3. Choose **ALL DRAWING MARKS** and then press [**ENT**] key.
   The confirmation window will appear.



4. Choose **YES** to erase all drawing marks.

8.8 Erasing Drawing Lines

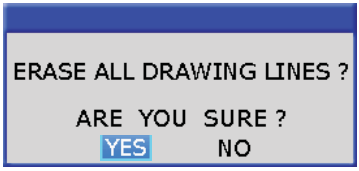
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [▶] key.
3. Choose **DRAWING LINES** and the press [**ENT**] Key.
4. Choose the line that you want to erase, and then press [**ENT**] key.
   The confirmation window appears.



5. Choose **ERASE** and then press [**ENT**] to finish.

Erasing All Drawing Line

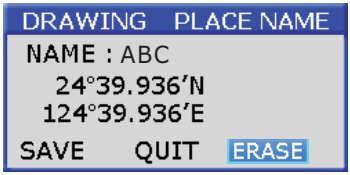
1. Press [**MENU**] key twice to main menu.
2. Choose ERASE and then press [▶] key.
3. Choose ALL DRAWING LINES and then press [**ENT**] key.
   The confirmation window will appear.



4. Choose **YES** to erase all drawing lines.

8.9 Erasing Drawing Place Name

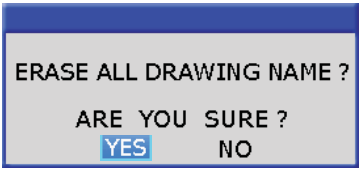
1. Press [**MENU**] key twice to main menu.
2. Choose **EDIT** and then press [►] key.
3. Choose **DRAWING PALCENAME** and then press [**ENT**] key.
4. Choose the place name that you want to erase, and then press [**ENT**] key.
   The confirmation window appears.



5.Choose **ERASE** and then press [**ENT**] to finish.

Erasing All Drawing Place Name

1. Press [**MENU**] key twice to main menu.
2. Choose **ERASE** and then press [►] key.
3. Choose **ALL DRAWING NAME** and then press [**ENT**] key.
   The confirmation window will appear.



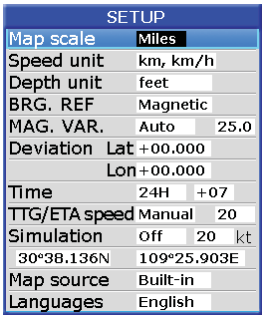
4. Choose **YES** to erase all place names.

9. OTHER SETTING

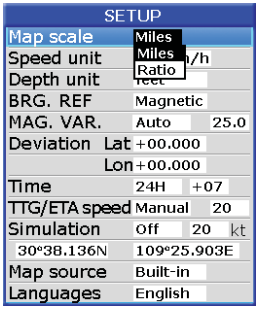
9.1 Map Scale

You can change the map scale display format.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [►] key.



3. Choose **MAP SCALE** and then press [**ENT**] key.

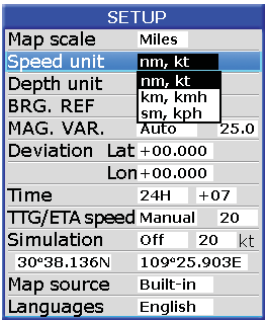


4. Choose "**RATIO**" or "**MILES**" as appropriate and then press [**ENT**] key to finish.

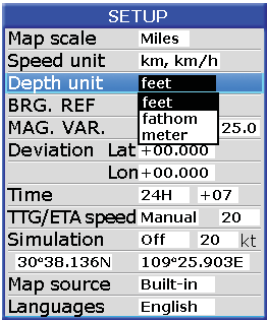
9.2 Unit of Measurement

Distance/speed can be displayed in nautical miles/knots, kilometers/kilometers per hour, or statute miles/miles per hour.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [▶] key.
3. Choose **SPEED UNIT** and then press [**ENT**] key.



4. Choose "nm, kt" , "km, km/h" or "sm, mph" as appropriate and then press [**ENT**] key to finish.
5. Choose **DEPTH** and then press [**ENT**] key.

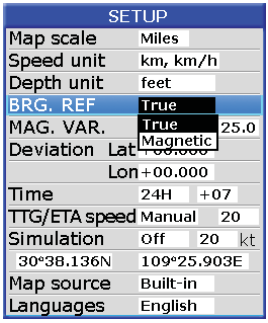


6. Choose "Feet(ft)" , "Fathom(fa)" or "Meter(m)" as appropriate and then press [**ENT**] key to finish.

9.3 Bearing Reference

Ship's course and bearing to a waypoint may be displayed in true or magnetic bearing. Magnetic bearing is true bearing plus (or minus) earth's magnetic deviation. Use the bearing reference in accordance with the compass interfaced: magnetic for magnetic compass, true for gyrocompass.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [►] key.
3. Choose **BRG. REF.** and then press [**ENT**] key.



4. Choose "TRUE" or "MAGNETIC" as appropriate and then press [**ENT**] key to finish.

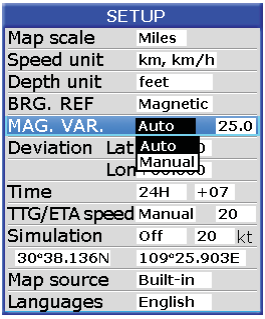
9.4 Magnetic Variation

The location of the magnetic north pole is different from the geographical North Pole.This causes a difference between the true and magnetic north direction. This difference is called magnetic variation, and varies with respect to the observation point on earth.

Your unit is preprogrammed with all the earth's magnetic variation. However, you may wish to enter variation manually to refine accuracy. Set. BRG REF. on the PLOTTER is set to "**MAGNETIC**" to use magnetic variation.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [►] key.

3. Choose **MAG. VAR.** and then press [**ENT**] key.

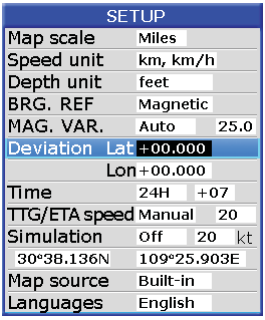


4. Choose "AUTO" or "Manual" (for choose Manual you need input the value manually) as appropriate and then press [**ENT**] key to finish.

9.5 Deviation

You can input the deviation of ship or map manually to correct the position error from GPS error or map error.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [►] key.
3. Choose **DEVIATION** and then press [**ENT**] key.



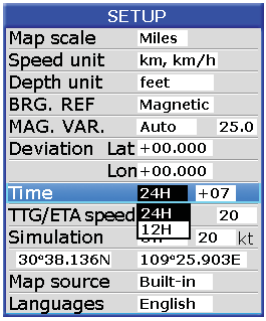
4. Input the value as appropriate and then press [**ENT**] to finish.
   To disable deviation, input "0" into the value.

9.6 Time

GPS uses UTC time. If you would rather use local time, enter the Time difference (range: -13:30 to +13:30) between it and UTC time.

It can display the time in 12 or 24 hour format.

1. Press [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press [►] key.
3. Choose **TIME** and then press [►] key.

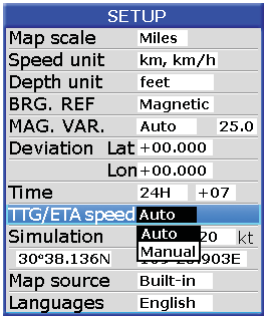


4. Input the time different if necessary. Choose "24HOUR" or "12HOUR" as appropriate and then press [**ENT**] key to finish.

9.7 TTG/ETA Speed

To calculate time-to-go and estimated time of arrival, enter your speed as below.

1. Press the [**MENU**] key twice to main menu.
2. Choose **SETUP** and then press[►] key.
3. Choose **TTG/ETA SPEED** and thenpress [**ENT**] key.



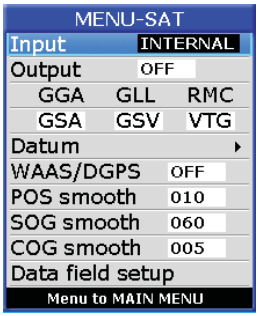
4. Choose **AUTO** for automatic speed input (GPS calculated speed), or Manual for manual input.

9.8 GPS Setting

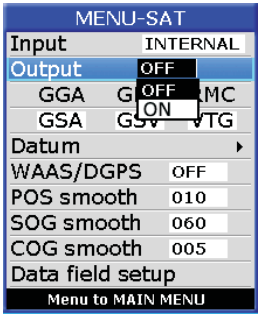
9.8.1 Choosing GPS output data

The unit default using GPS module single for position fixing. On the other hand, you can use external GPS data for position fixing.

1. Press [**MENU**] key on the **SATELATE SCREEN**.



2. Choose **OUTPUT** and then press [**ENT**] key.

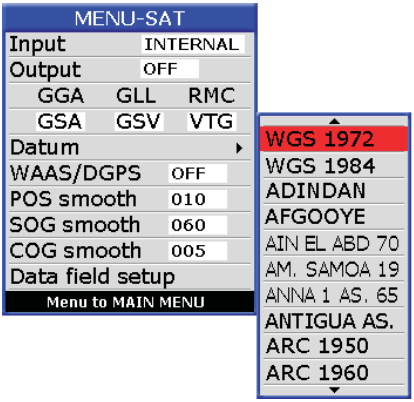


3. Select your desired output data, press [**ENT**] to finish.

9.8.2 Datum Setting

You can choose 6 types data output at the same time.

1. Press [**MENU**] on the **SATELATE SCREEN**.
2. Choose **DATUM** and press [**ENT**] key.

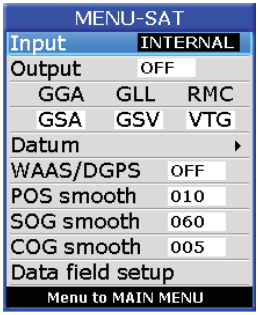


3. Choose your desired datum and press [**ENT**] to confirm.

9.8.3 Smoothing

You can setup position smoothing, speed smoothing and course smoothing.

1. Press [**MENU**] key on the **SATELATE SCREEN.**

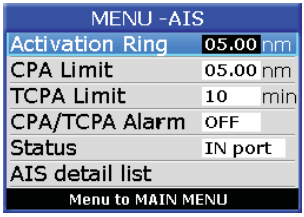


2. Choose **POS** smooth for enter position smoothing data.
3. Choose **SOG** smooth for enter speed smoothing data.
4. Choose **COG** smooth for enter course smoothing data.

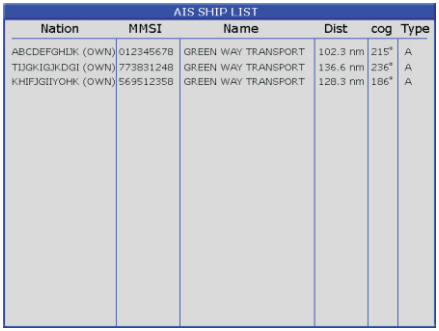
10. THE AIS FUNTION

10.1 Vessels List

1. Press [**MENU**] on the **AIS SCREEN.**

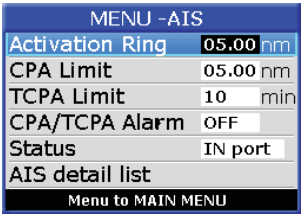


2. Choose **AIS Detail LIST** and then press [**ENT**] key.



10.2 The Collision Alarm

1. Press [**MENU**] on the **AIS SCREEN**.

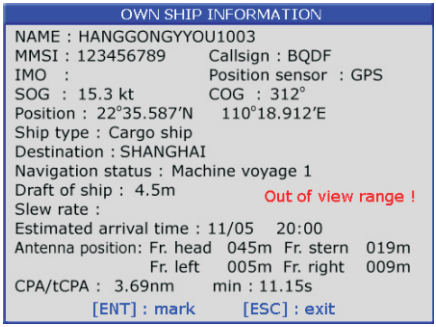


2. Select **CPA Limit** or **TCPA limit** enter value.
3. Select **CPA Alarm** or **TCPA Alarm** and select **ON** or **OFF**.

10.3 Own Ship's Information

There are tow way to display "Own Ship Info"

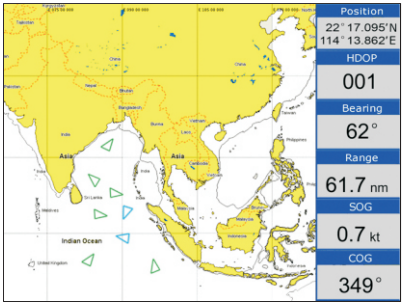
*Enter the "vessels list", and press the [**MENU**] key, and then select the "Own Ship Info" to check all the information of own ship



10.4 Chart Screen

Users can check all AIS vessels being received in real-time on the chart screen, as well as the specific position and track of the own ship on the charts.

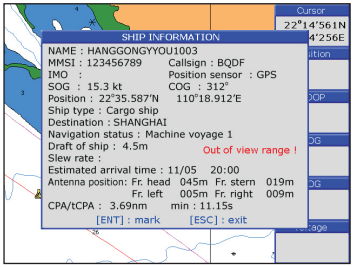
The track length of AIS vessels depends on the equipment memory space, generally not less than 20 track points.



10.5 View AIS Vessels' Information on Chart Screen

There're two ways to view AIS vessels' information: one is to move the cursor to select AIS vessel on the charts screen, and press the [ENT] key.

The other is to select the AIS vessel from the AIS vessels list, and press the [ENT] key.

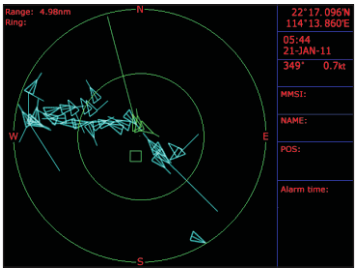


10.6 Check All AIS Ships Within the Scope of Radar(AIS Screen)

Displays all AIS ships within the current scope of the Radar, the current location of the own ship is at the center of the map, appearing as a white hollow triangle, and the vertex angle of the triangle stands for the current direction of the own ship, the blue hollow triangle stands for the vessels of CLASS B, the green hollow triangle stands for CLASS A vessels, the green hollow square stands for BASE STATION, and the vertex angle of the triangle stands for the direction of the vessel, such as round, and the circle stands for no direction.

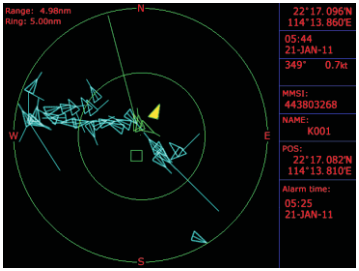
The collision alarm setting and the current scope of radar can be displayed on the upper left corner of the radar, and the scope be adjusted by pressing the [ ] key and [ ] key.

The message display frame on the upper right corner of the radar displays the following information: the own ship's position, the current time, the current speed/direction of the own ship.



10.7 Emergency Alarm

The information of the emergency alarm received is displayed on the bottom right corner. The emergency alarm is always available and can not be deleted, if the emergency alarm information is not read, after exiting the alarm menu, the "emergency alarm" window will pop up a little latter. The warning ship displayed on the Radar will be yellow and flashing.

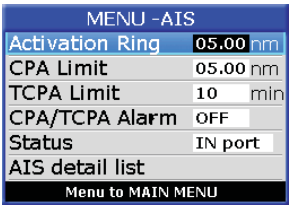


The relevant data (including the time, place, the relevant ship's information, etc.) will also be saved by the display terminals, it can be the basis of analysis in the event of any accident.

10.8 Entry/Departure Setting

The Entry/Departure setting is for temporarily shut down or restart the collision alarm, when entering the port the collision alarm will be temporarily closed, when leaving the port the collision alarm will be opened.

1. Press the [**MENU**] key at the **AIS SCREEN**.
2. select **In Port** or **Out Port** and Press [**ENT**].



11. Main Performance and Specifications

11.1 Plotter Characteristics

Waypoints/icons:	15,000 waypoints with name, symbol, 10 proximity waypoints
Routes:	waypoint up to 200 points each, plus MOB and Track Navigation or Goto Track modes
Tracks:	30,000 point automatic track log; 15 saved track (up to 2000 track points each) let you retrace your path in both directions
Alarms:	XTE, Anchor drag, arrival, speed, voltage, proximity waypoint and time, AIS alarm.
Palette:	Normal Daylight exposed to sunlight Night in dark environment NOAA paper chart colors
Tides:	Tide data
Projection:	Mercator projection
Position format:	Lat/Lon
Basemap:	Built-in C-Map Basemap
External map:	SD Cards slot for C-Map MAX
User data storage:	nternal backup of user settings, or external SD-card
Plot interval:	1s to 99h or 0.01nm to 9.99nm
Plotting scales:	0.01nm to 1,000nm

Nav data:	Inputs: $--BWC, $--BWR, $--DBT, $--DPT, $--GGA, $--GLL, $--HDG, $--HDM $--HDT, $--MDA, $--MTW, $--RMA, $--RMB, $--RMC, $--TLL, $--TTM, $--VDR, $--VHW, $--VTG, $--WPL, $--ZDA Outputs: $--AAM, $--APB, $--BOD, $--BWC, $--GGA, $--GLL, $--RMB, $--RMC, $--VTG, $--XTE, $--ZDA Outputs for autopilot: $--AAM, $--APB, $--BOD, $--VTG
Perspective view:	On/off

11.2 Power Supply

HG-6M: 12 to 32 VDC, current drain<300mA at 12V
HG-8M: 12 to 32 VDC, current drain<350mA at 12V
HG-12M: 12 to 32 VDC, current drain<600mA at 12V

11.3 Gps Receiver Characteristics

Receiver:	50 parallel channel GPS receiver continuously Tracks and uses up to 50 satellites to compute and update your position
Acquisition times:	Cold start: 27 seconds average Warm start: 27 seconds average Hot start: 1 seconds average
Update rate:	1/second,continuous Position: 2.5 meters(95%) without S/A Velocity: 0.1 Meter/sec without S/A Time: ±100ns synchronized to GPS time
SBAS:	WAAS EGNOS MSAS
Datum:	WGS 84 & others
Interfaces:	NEMA 0183 input and ouput, RS232 and RS422 output
Antenna:	HA-07 with 10 meter antenna cable

11.4 Ais Interface

Data intput:	NMEA0183, RS232 or RS422
Baud rate:	38,400

11.5 Physical

Size:	HG-6M: 224mm(H)×151mm(W)×89mm(D)
	HG-8M: 290mm(H)×195.5mm(W)×99.5mm(D)
	HG-12M: 364mm(H)×268mm(W)×106mm(D)
Weight:	HG-6M: 0.9kg
	HG-8M: 2.43kg
	HG-12M: 3.95kg
Display:	HG-6M: 5.6-inches Color TFT day-view LCD 640×480 pixels
	HG-8M: 8-inches Color TFT day-view LCD 800×600 pixels
	HG-12M: 12.1-inches Color TFT day-view LCD 800×600 pixels
Waterproofing:	Display unit: IPX5
	Antenna unit: IPX6
Temperature range:	Display unit: -15℃ to +55℃
	Antenna unit: -25℃ to +70℃

11.6 Equipment List

Standard

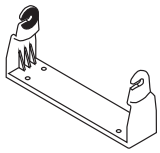
1. Display unit
2. Antenna unit with 10m cable
3. Operator manual
4. Installation materials and standard spare parts

12. INSTALLATION

12.1 Verifying the Contents

When opening the box,please verify that all items in the following drawing are present.

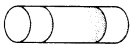
Control/Display Unit



Mounting Bracket

GPS Antenna

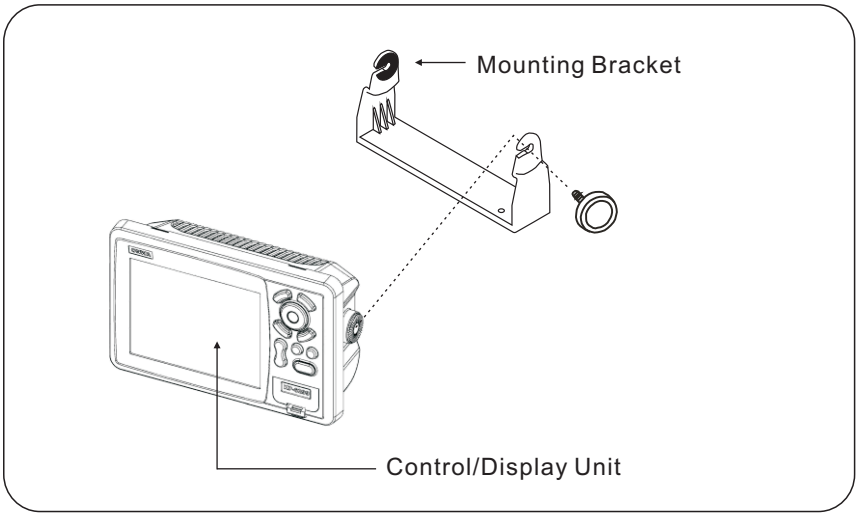
Operation Manual



*1 Spare Fuses

*1● 0.5A fuse should be used for power voltage 12v.

12.2 Installing the Unit



Notice: The unit should be mounted on a flat, solid surface for maximum stability. Be sure to fix the mounting bracket with screws. Otherwise, the display unit may fall down by the boat's pitching and rolling to the lead to the fire or the injury.

(1) The mounting bracket should be fixed with 6mm screws.
- Do not install the unit at the places that affected with vibration or get wet with spary or rain.
- Avoid the places where the sun comes in because it is difficult to see the screen or the unit is heated too much.
- Be sure that the space between the rear side of the unit and the wall is more than 10cm.

(2) Fix the unit to the mounting bracket firmly with the knobs so as to prevent it to get out of the bracket while running.

12.3 HG-6M Table of Connecting

DATA INPUT/OUTPUT

① 0183IN +（Brown）

② 0183IN －（Red）

③ RS-422OUT A（Orange）

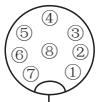
④ RS-422OUT B（Yellow）

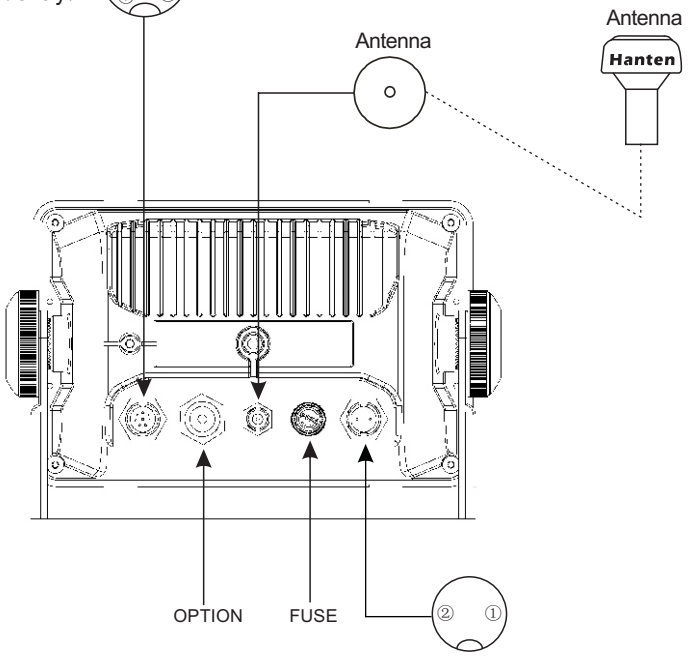
⑤ RS-232OUT （Green）

⑥ Temp

⑦ +5V（Purple）

⑧ GND（Gray）





Power Supply Receptacle

① Dc input(-)

② Dc input(+), 12 to 32V

12.4 HG-8M Table of Connecting

DATA INPUT/OUTPUT

① 0183IN +（Brown）

② 0183IN－（Red）

③ RS-422OUT A（Orange）

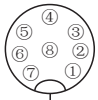
④ RS-422OUT B（Yellow）

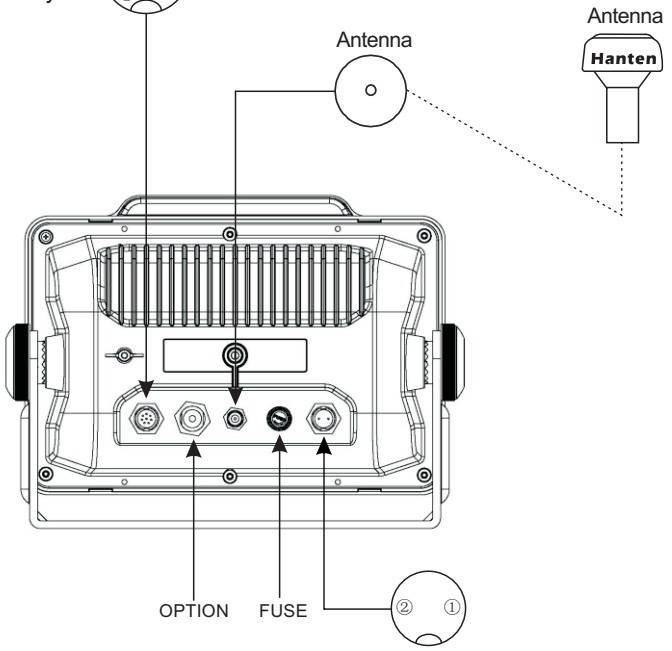
⑤ RS-232OUT （Green）

⑥ Temp

⑦ +5V（Purple）

⑧ GND（Gray）





Power Supply Receptacle

① Dc input(-)

② Dc input(+), 12 to 32V

12.5 HG-12M Table of Connecting

DATA INPUT/OUTPUT

① 0183IN +（Brown）

② 0183IN－（Red）

③ RS-422OUT A（Orange）

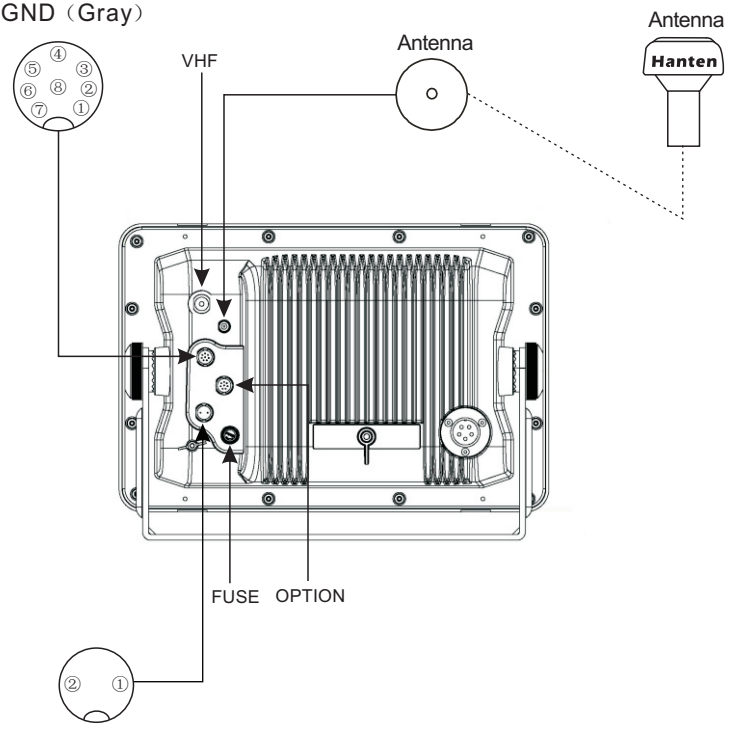
④ RS-422OUT B（Yellow）

⑤ RS-232OUT （Green）

⑥ Temp

⑦ +5V（Purple）

⑧ GND（Gray）

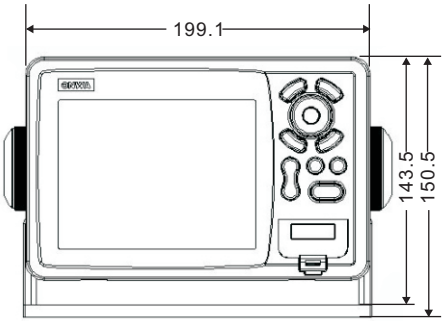


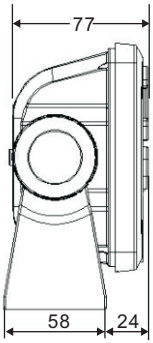
Power Supply Receptacle

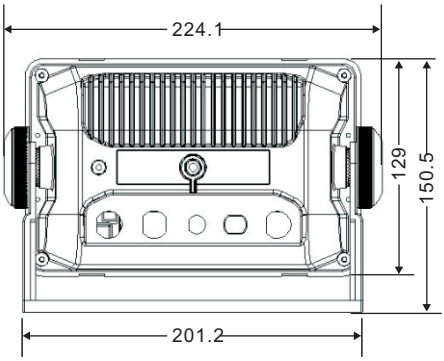
① Dc input(-)

② Dc input(+), 12 to 32V

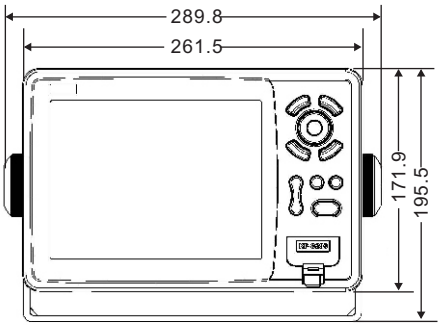
12.6 HG-6M Display Unit Size

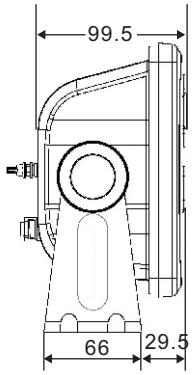


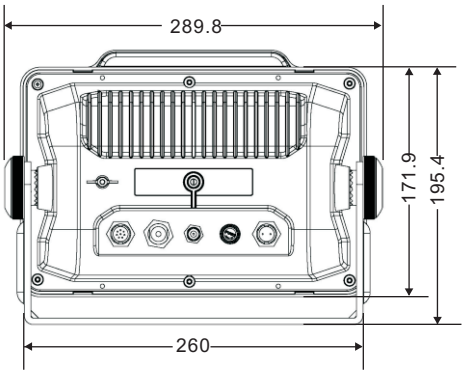




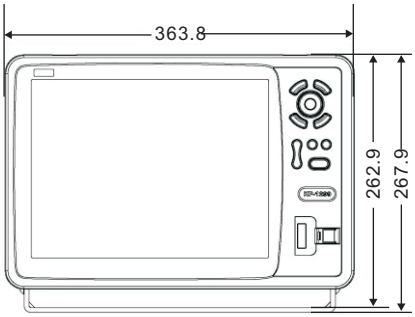
12.7 HG-8M Display Unit Size

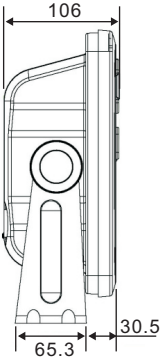


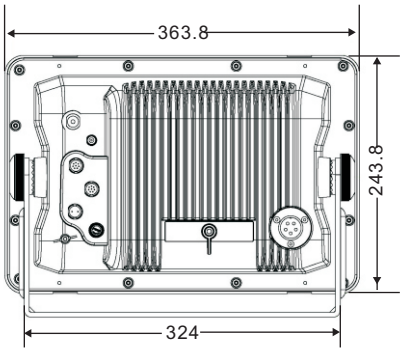




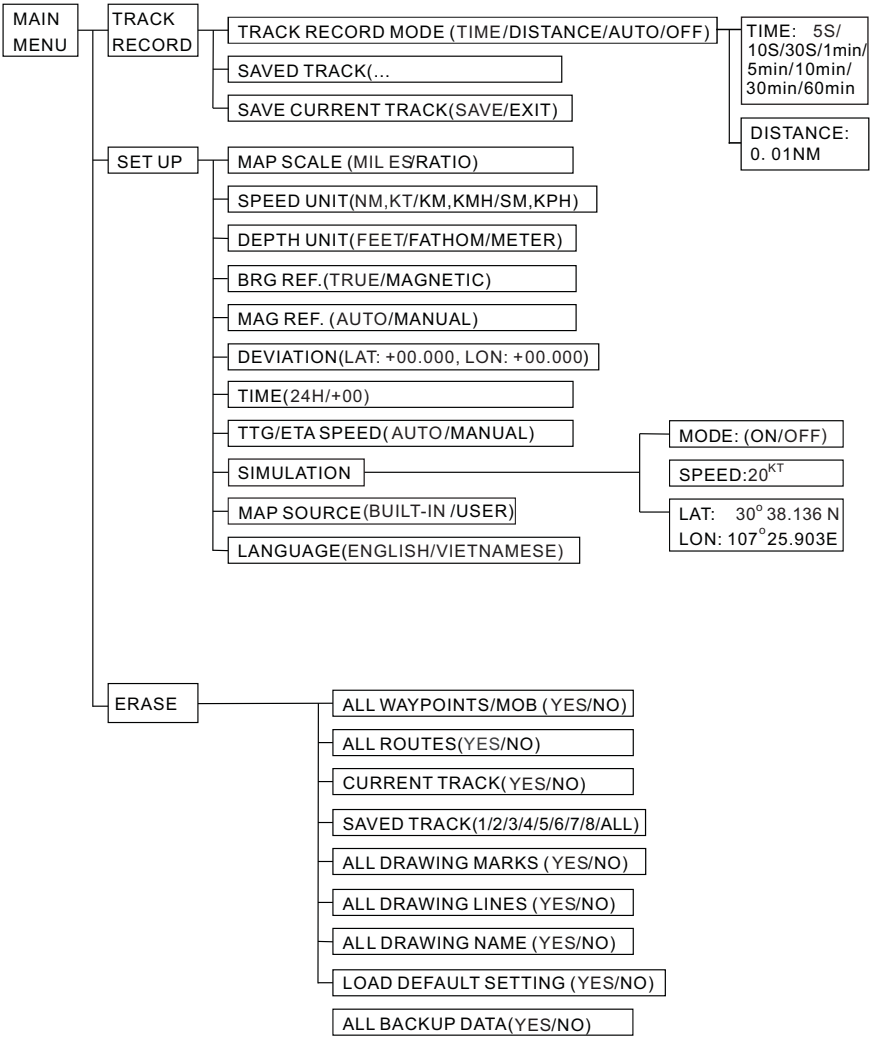
12.8 HG-12M Display Unit Size

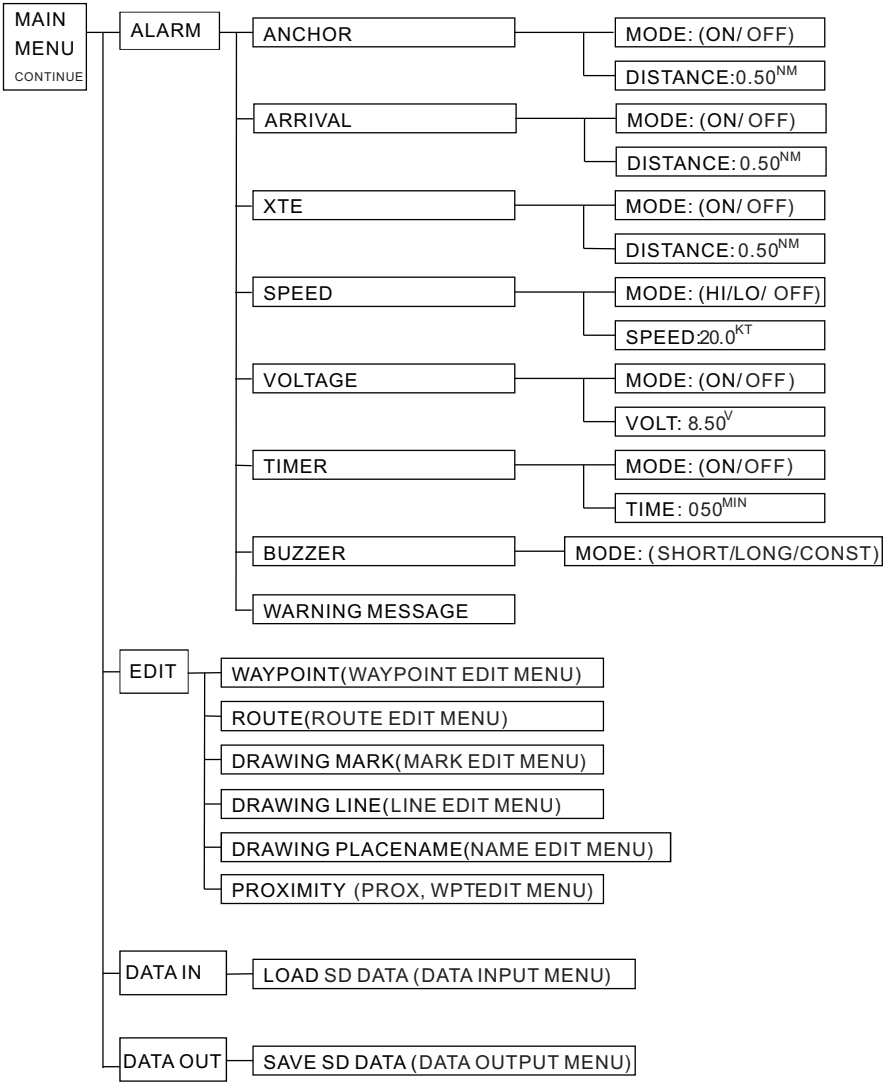


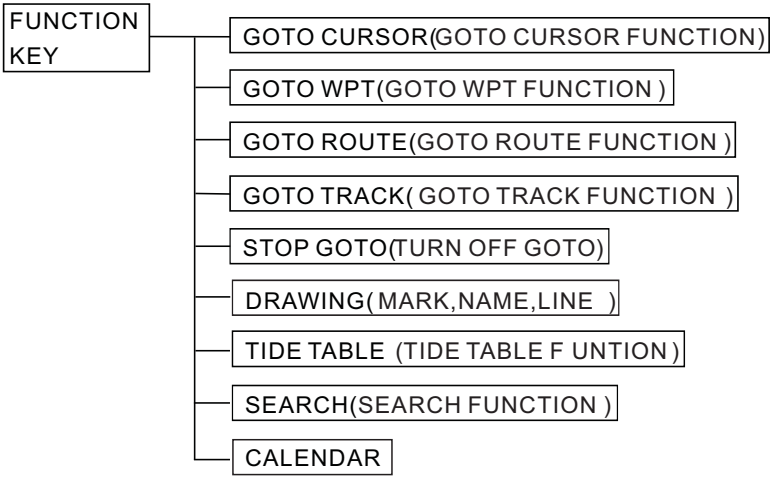


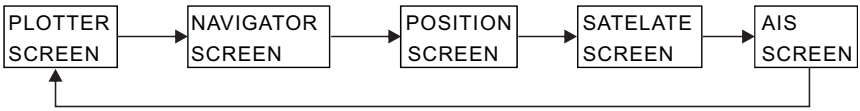


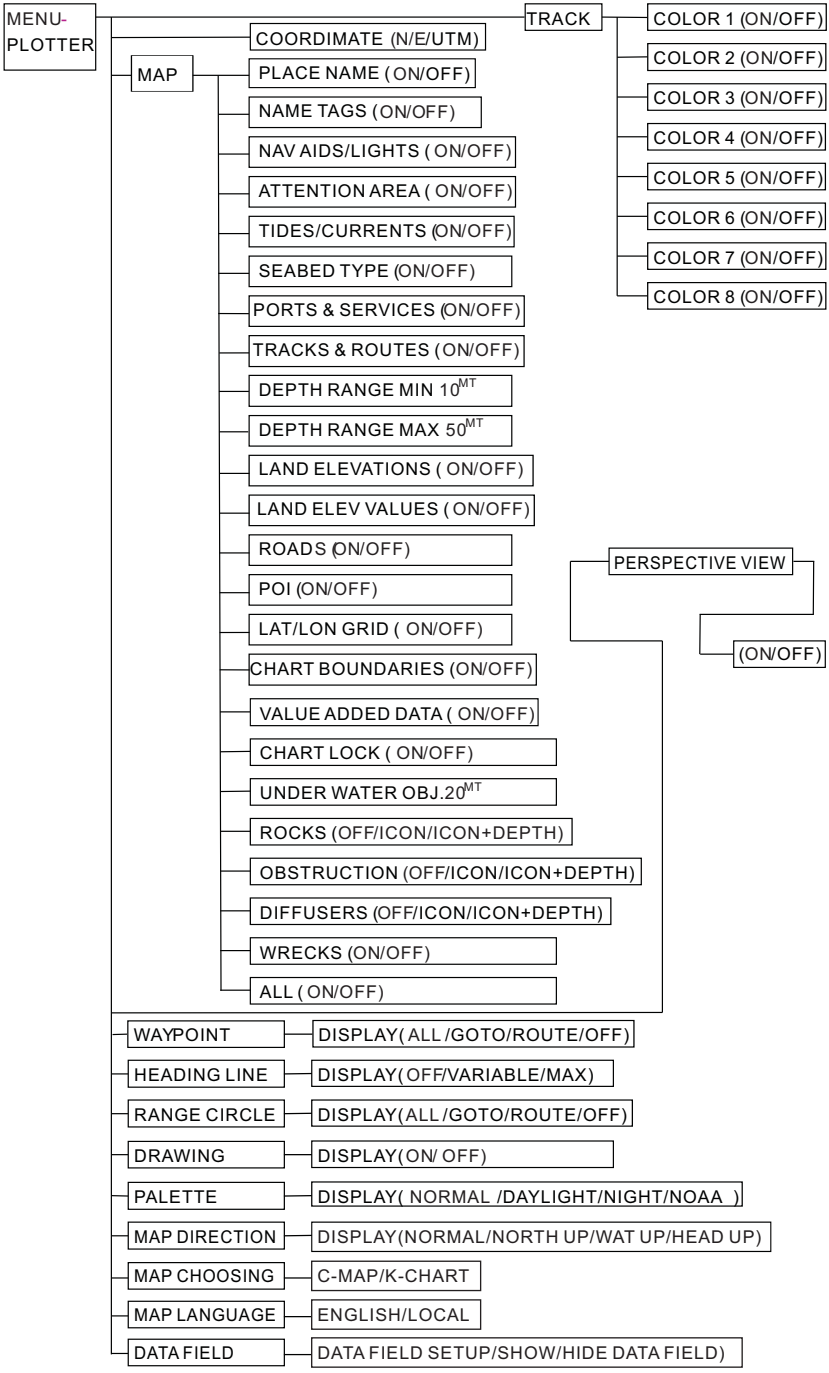
13. MENU TREE

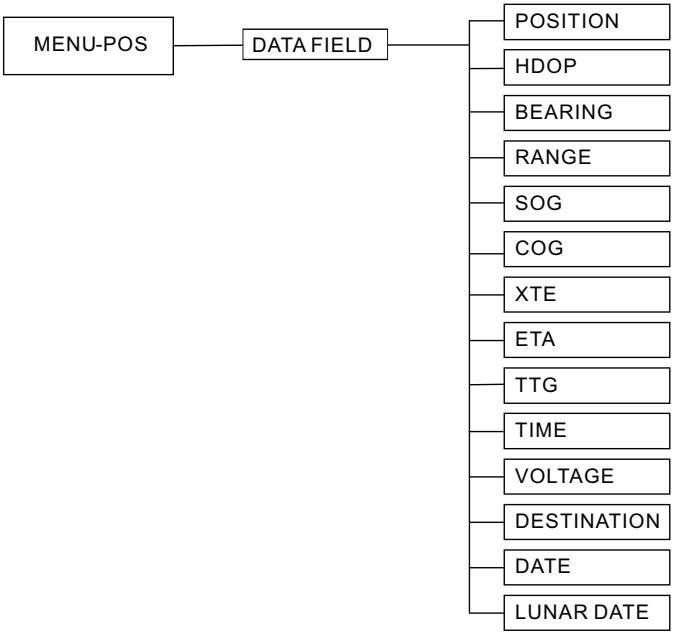

MAIN MENU
TRACK RECORD
TRACK RECORD MODE (TIME/DISTANCE/AUTO/OFF)
TIME: 5S/ 10S/30S/1min/ 5min/10min/ 30min/60min
DISTANCE: 0. 01NM
SAVED TRACK(...
SAVE CURRENT TRACK(SAVE/EXIT)
SET UP
MAP SCALE (MIL ES/RATIO)
SPEED UNIT(NM,KT/KM,KMH/SM,KPH)
DEPTH UNIT(FEET/FATHOM/METER)
BRG REF.(TRUE/MAGNETIC)
MAG REF. (AUTO/MANUAL)
DEVIATION(LAT: +00.000, LON: +00.000)
TIME(24H/+00)
TTG/ETA SPEED(AUTO/MANUAL)
SIMULATION
MODE: (ON/OFF)
SPEED:20KT
LAT: 30° 38.136 N
LON: 107° 25.903E
MAP SOURCE(BUILT-IN /USER)
LANGUAGE(ENGLISH/VIETNAMESE)
ERASE
ALL WAYPOINTS/MOB (YES/NO)
ALL ROUTES(YES/NO)
CURRENT TRACK(YES/NO)
SAVED TRACK(1/2/3/4/5/6/7/8/ALL)
ALL DRAWING MARKS (YES/NO)
ALL DRAWING LINES (YES/NO)
ALL DRAWING NAME (YES/NO)
LOAD DEFAULT SETTING (YES/NO)
ALL BACKUP DATA(YES/NO)

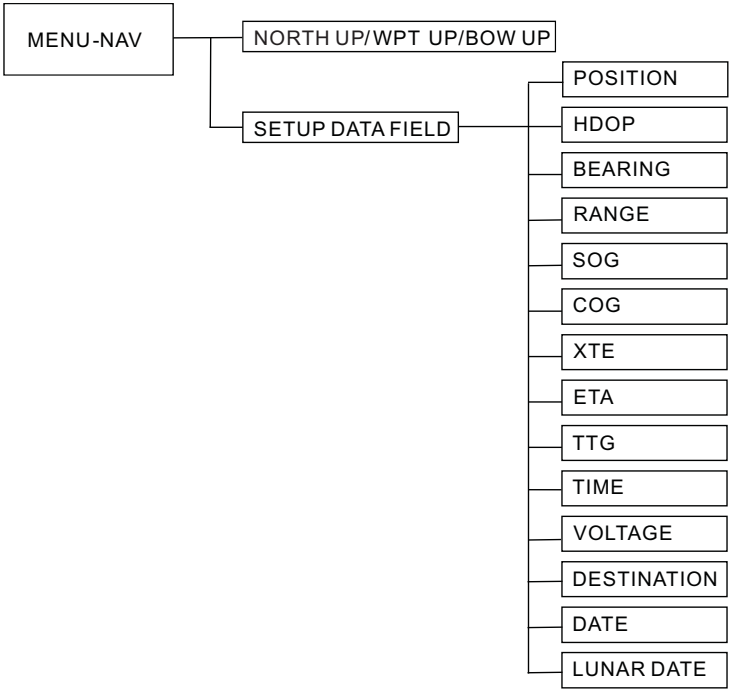

MAIN MENU
CONTINUE
ALARM
ANCHOR
MODE: (ON/ OFF)
DISTANCE:0.50NM
ARRIVAL
MODE: (ON/ OFF)
DISTANCE: 0.50NM
XTE
MODE: (ON/ OFF)
DISTANCE: 0.50NM
SPEED
MODE: (HI/LO/ OFF)
SPEED:20.0KT
VOLTAGE
MODE: (ON/ OFF)
VOLT: 8.50V
TIMER
MODE: (ON/OFF)
TIME: 050MIN
BUZZER
MODE: (SHORT/LONG/CONST)
WARNING MESSAGE
EDIT
WAYPOINT(WAYPOINT EDIT MENU)
ROUTE(ROUTE EDIT MENU)
DRAWING MARK(MARK EDIT MENU)
DRAWING LINE(LINE EDIT MENU)
DRAWING PLACENAME(NAME EDIT MENU)
PROXIMITY (PROX, WPTEDIT MENU)
DATA IN
LOAD SD DATA (DATA INPUT MENU)
DATA OUT
SAVE SD DATA (DATA OUTPUT MENU)

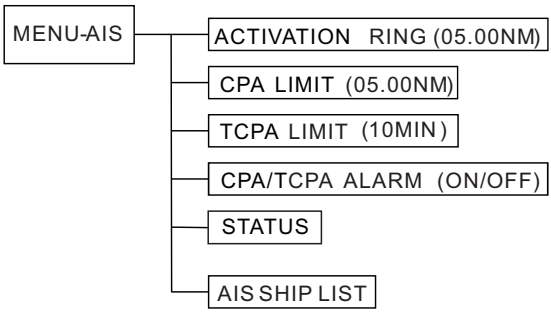

FUNCTION KEY
GOTO CURSOR(GOTO CURSOR FUNCTION)
GOTO WPT(GOTO WPT FUNCTION)
GOTO ROUTE(GOTO ROUTE FUNCTION)
GOTO TRACK(GOTO TRACK FUNCTION)
STOP GOTO(TURN OFF GOTO)
DRAWING(MARK,NAME,LINE)
TIDE TABLE (TIDE TABLE F UNTION)
SEARCH(SEARCH FUNCTION)
CALENDAR

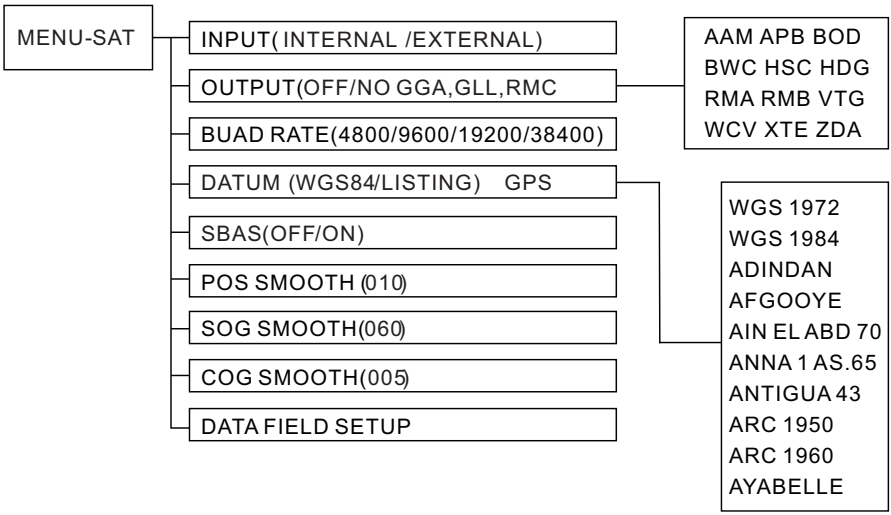

PLOTTER SCREEN
NAVIGATOR SCREEN
POSITION SCREEN
SATELATE SCREEN
AIS SCREEN


MENU-PLOTTER
TRACK
COLOR 1 (ON/OFF)
COLOR 2 (ON/OFF)
COLOR 3 (ON/OFF)
COLOR 4 (ON/OFF)
COLOR 5 (ON/OFF)
COLOR 6 (ON/OFF)
COLOR 7 (ON/OFF)
COLOR 8 (ON/OFF)
COORDIMATE (N/E/UTM)
MAP
PLACE NAME (ON/OFF)
NAME TAGS (ON/OFF)
NAV AIDS/LIGHTS (ON/OFF)
ATTENTION AREA (ON/OFF)
TIDES/CURRENTS (ON/OFF)
SEABED TYPE (ON/OFF)
PORTS & SERVICES (ON/OFF)
TRACKS & ROUTES (ON/OFF)
DEPTH RANGE MIN 10MT
DEPTH RANGE MAX 50MT
LAND ELEVATIONS (ON/OFF)
LAND ELEV VALUES (ON/OFF)
ROADS (ON/OFF)
POI (ON/OFF)
LAT/LON GRID (ON/OFF)
CHART BOUNDARIES (ON/OFF)
VALUE ADDED DATA (ON/OFF)
CHART LOCK (ON/OFF)
UNDER WATER OBJ.20MT
ROCKS (OFF/ICON/ICON+DEPTH)
OBSTRUCTION (OFF/ICON/ICON+DEPTH)
DIFFUSERS (OFF/ICON/ICON+DEPTH)
WRECKS (ON/OFF)
ALL (ON/OFF)
PERSPECTIVE VIEW
(ON/OFF)
WAYPOINT
DISPLAY(ALL /GOTO/ROUTE/OFF)
HEADING LINE
DISPLAY(OFF/VARIABLE/MAX)
RANGE CIRCLE
DISPLAY(ALL /GOTO/ROUTE/OFF)
DRAWING
DISPLAY(ON/ OFF)
PALETTE
DISPLAY(NORMAL /DAYLIGHT/NIGHT/NOAA)
MAP DIRECTION
DISPLAY(NORMAL/NORTH UP/WAT UP/HEAD UP)
MAP CHOOSING
C-MAP/K-CHART
MAP LANGUAGE
ENGLISH/LOCAL
DATA FIELD
DATA FIELD SETUP/SHOW/HIDE DATA FIELD)


MENU-POS
DATA FIELD
POSITION
HDOP
BEARING
RANGE
SOG
COG
XTE
ETA
TTG
TIME
VOLTAGE
DESTINATION
DATE
LUNAR DATE


MENU-NAV
NORTH UP/WPT UP/BOW UP
SETUP DATA FIELD
POSITION
HDOP
BEARING
RANGE
SOG
COG
XTE
ETA
TTG
TIME
VOLTAGE
DESTINATION
DATE
LUNAR DATE


MENU-AIS
ACTIVATION RING (05.00NM)
CPA LIMIT (05.00NM)
TCPA LIMIT (10MIN)
CPA/TCPA ALARM (ON/OFF)
STATUS
AIS SHIP LIST


MENU-SAT
INPUT(INTERNAL /EXTERNAL)
OUTPUT(OFF/NO GGA,GLL,RMC
BUAD RATE(4800/9600/19200/38400)
DATUM (WGS84/LISTING) GPS
SBAS(OFF/ON)
POS SMOOTH (010)
SOG SMOOTH(060)
COG SMOOTH(005)
DATA FIELD SETUP
AAM APB BOD
BWC HSC HDG
RMA RMB VTG
WCV XTE ZDA
WGS 1972
WGS 1984
ADINDAN
AFGOOYE
AIN EL ABD 70
ANNA 1 AS.65
ANTIGUA 43
ARC 1950
ARC 1960
AYABELLE

Hanten Issued: 20/3/2014
Page: 1/1

Declaration of Conformity

Application of council directive: **2004/108/EC**

Standard to which conformity is declared:

EN 61000-6-3: 2007+A1: 2011 Generic emission standard for residential environments

- IEC 61000-3-2 / EN 61000-3-2:2006 +A1:2009 +A2:2009 Limits for harmonic current emissions
- IEC 61000-3-3 / EN 61000-3-3:2008 Limitation of voltage changes, voltage fluctuations and flicker
- EN 55011:2009 +A1:2010 class B and EN 55022:2010 class B radio disturbance

EN 61000-6-1: 2007 Generic immunity standard for residential environments

Manufactured by: **Ningbo Chengdian Marine Electronics Co.,Ltd.**
Manufacturer's address: **Room7-3, No.5, Lane999,Yangfan Road, High-tech Zone, Ningbo, Zhejiang, China**

Authorized Representative: **High Tech Technology Development Limited**
Address: **7F, No.5, Lane999, Yangfan Road, High-tech Zone, Ningbo, Zhejiang, China**

Type of Equipment: **Marine navigation equipment(GPS plotter)**
Model(s): **HG-6M, HG-8M, HG-12M**

The undersighed does hereby declare that the equipment complies with the above directives.

Zhang Yimin
General Manager
High Tech Technology Development Limited

Data: 20th March 2014

CERTIFICATE OF CONFORMITY

CERTIFICATE

of Conformity

Reference No.: LCS140313323TE

Applicant	:	High Tech Technology Development Limited
Address	:	7F, No.5, Lane999, Yangfan Road, High-tech Zone, Ningbo, Zhejiang, China
Manufacturer	:	Ningbo Chengdian Marine Electronics Co., Ltd.
Address	:	Room7-3, No.5, Lane999, Yangfan Road, High-tech Zone, Ningbo, Zhejiang, China
Product	:	GPS Plotter
Model(s)	:	HG-6M, HG-8M, HG-12M
Trade Mark	:	Hanten

The submitted products have been tested by us with the listed standards and found in compliance with the following European Directives:

The EMC Directive 2004/108/EC

EN 61000-6-3: 2007+A1: 2011, EN 61000-6-1: 2007

The tests were performed in normal operation mode. The test results apply only to the particular sample tested and to the specific tests carried out. This certificate applies specifically to the sample investigated in our test reference number only.

The CE markings as shown below can be affixed on the product after preparation of necessary technical documentation.

Other relevant Directives have to be observed.

CE

Centre of Testing Service

Manager

March 18, 2014

Shenzhen LCS Compliance Testing Laboratory Ltd.
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