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Important Notice

Manual Handling	Keep this manual in a safe place where you can access it quickly.
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The Global Positioning System (GPS) consists of a total 24 GPS satellites that orbit the earth, enabling you to determine your position anywhere in the world, 24 hours a day, if you can receive satellite signals. During actual navigation, carefully compare the position data with all available navigation sources such as Loran C, Decca, other navigators, charts, visual navigation, and others. It is your responsibility to make navigation judgments.

The Electronic Chart :

Only official authorized charts and notices to mariners contain all the information needed for the safety of navigation and, as always remember, the user is responsible for their prudent use.

Pictorials

This manual uses the following symbols for easy understanding safety instructions. Always follow these instructions carefully.

 WARNING	Always follow this safety instruction to prevent death or injury.
 CAUTION	Follow this safety instruction to avoid possible injury or damage to your property. Symbol “△” is a CAUTION or WARNING label indicating the safety instruction.
 WARNING	This symbol is an Electrical Shock WARNING label.
	Symbol is an instruction that you must not violate. (This symbol instructs NOT to disassemble the system components)
	Symbol is an operation instruction that you must follow. (This symbol shows the main power OFF instruction.)



WARNING <For System Operators>

Always follow this instruction to prevent death or personal injury.

	Turn power off During abnormality.	If smoke or a small of burning occurs, a fire or an electrical short circuit may result. Turn the power switch OFF and shut down the power supply immediately. Never try to repair the system yourself. Call for service.
	Do not open Cabinet.	High voltage exists in the instrument. Contact with voltage may cause possible injury or death.
	Do not touch back side of the equipment.	Harmful line voltage is present on back side of the equipment. Never try to touch back side while power is turned on.
	Avoid excessive shock to display unit.	The LCD display module contains a liquid. Do not apply any mechanical shock to the display. If the display broken, liquid may leak and injure your skin and eyes.
	Do not use with poor ventilation.	If you cover this unit or use in an enclosed place, it may malfunction or become damaged as a result of overheating. Use only where there is sufficient ventilation.

Installation Cautions <For service Personnel>

Follow installation instructions to avoid personal injury and system malfunction.

Installation in rigid location.	Mount your HIS-550Bon a rigid frame or base to prevent your unit from working loose.
Use correct Installation materials.	Use the installation materials provided in the standard accessory pack only. If you use hardware of insufficient strength, your system may loosen causing damaged.
Keep away from direct sunlight.	Keep your system out of direct sunlight as it may become damaged by overheating.
Keep away from water.	Take care not to get water on or in your unit as it may be damaged and/or cause an electrical shock.
Keep away from heat source.	Keep your system away from other heat source as it may malfunction, be damaged, or burn.

Use correct power source.	Operate your system within the specified power voltage. An incorrect power supply may cause
----------------------------------	---



Maintenance Cautions<For Maintenance Personnel>

Use the following safety precaution internal inspection.

Discharge capacitors.	High voltage may be retained in the capacitors if the high-tension circuit several minutes after you have turned the power switch off.
Check that power is OFF	To prevent an electrical injury due to erroneous power switching, make sure that the main power supply and the system power switch are both in the off position. Additionally, attach a safety label showing that service is in progress.
Avoid EMI.	Take care not to damage the ESDs (Electrostatic Sensitive Devices) by static electricity from carpet and cloths.
Avoid dust.	Wear a safety mask so as not to breath in dust during inspection or cleaning inside your system instruments.

Operation Notes <For operators>

Observe the following operation notes, otherwise the system failure or deterioration can result. And periodical inspection and maintenance are required for keeping the system in an optimum condition.

Backup important data.	The waypoint and other registered data may become unreadable by unexpected failure. We recommend recording this data separately.
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WARNING

This product is designed to assist navigation.
When you are sailing, use the certified chart from the Government or IMO.

HIS-550B System

Welcome

HIS-550B opens a new chapter of performance and integration in vessel navigation system display and management. Whether you are a Cruiser or Sport fisherman or both, HIS-550B gives you the information you need.



CAUTION

HIS-550B is Color LCD Charting Systems employs the latest in proven technology to provide accurate navigation information. The Plotter functions of HIS-550B are totally dependent upon the capability of the navigation source to provide accurate position information. This device is only an aid to navigation. It should be used in conjunction with all other navigation accuracy. For safety, always resolve any uncertainty before continuing navigation.



CAUTION

The performance of LCD displays are degraded by continuous direct exposure to ultraviolet rays. Locate your HIS-550B Display away from direct sunlight. When not in use. Keep the display covered.



DISPLAY BREAKAGE WARNING

The LCD display module contains a liquid. If the display is broken and the liquid contacts your skin, wash it off immediately in running water for 15 minutes. If the liquid contacts your eyes, immediately flush your eyes with running water for 15 minutes. Contact a physician if any abnormal symptom is experienced.

HIS-550B System

Welcome

The Color LCD Fishfinder System opens a new chapter of performance and integration in vessel navigation system display and management. Whether you are a Cruiser or Sport fisherman or both, 650 gives you the information you need.



CAUTION

The HIS-550B employs the latest in proven technology to provide accurate navigation information. The Plotter functions of HIS-550B are totally dependent upon the capability of the navigation source to provide accurate position information. This device is only an aid to navigation. It should be used in conjunction with all other navigation accuracy. For safety, always resolve any uncertainty before continuing navigation.

There is no direct relationship between the color of water areas and their depth. The navigator shall always query the area for depth information and use the official paper chart.



CAUTION

The performance of LCD displays is degraded by continuous direct exposure to ultraviolet rays. Locate your HIS-550B Display away from direct sunlight. When not in use. Keep the display covered.

HIS-550B System



DISPLAY BREAKAGE WARNING

The LCD display module contains a liquid. If the display is broken and the liquid contacts your skin, wash it off immediately in running water for 15 minutes. If the liquid contacts your eyes, immediately flush your eyes with running water for 15 minutes. Contact a physician if any abnormal symptom is experienced.



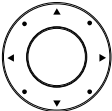
INDICATION NOTICE

*: It is important or warning notice on front of article

[]: Keyboard.

Getting Started

1. The Keyboard

KEY	Description
	Use this to select menu items, move the on-screen cursor
	Push the end of the everything to confirm a selection or entry
	Change the chart of scale
	Open the menu
	Select the configuration & modification you wish.
	Keep pressing to MOB.
	Setting up Using Frequently key function
	Cancel the setting or exists from the menu.
	Power "on/off", brightness and day/night mode.

1.1. How to **POWER** use



(Fig.1.1)

1.1.1. Turn on

POWER Switch on.

1.1.2 Turn off

POWER Keep pressing to switch off.

1.1.3. Adjust brightness

POWER Pressing (Fig.1.1) and controlling the brightness with [◀] [▶].

1.1.4. Use day/night mode

POWER Pressing (Fig.1.1) and changing the day and night with [▲][▼].

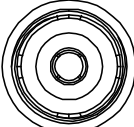
1.2. How to **FUNC** use

FUNC Keep pressing to display the [FUNC] key menu.

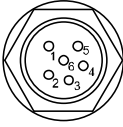
2. SPEC of the connectors

2.1. Metal connectors

VHF ANT

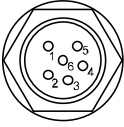


AIS



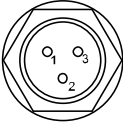
NO	NAME
1	GND
2	NC
3	GND
4	TX +
5	GND
6	NC

NMEA0183



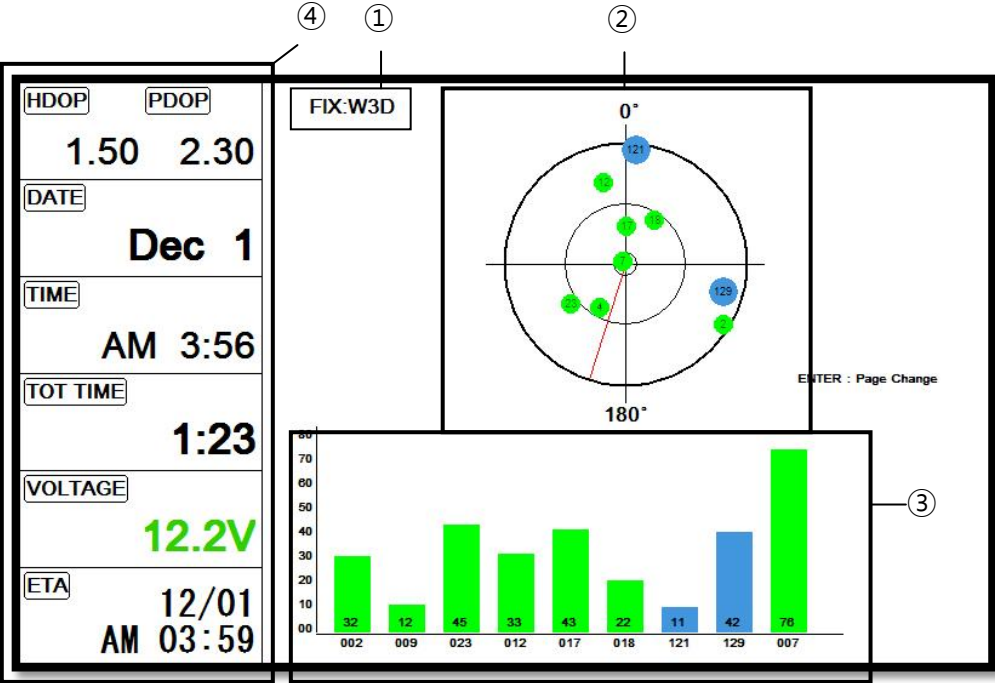
NO	NAME
1	GND
2	TX +
3	GND
4	RX +
5	RX -
6	NC

POWER



NO	NAME
1	DC +(12V~36V)
2	DC -
3	NC

3. GPS Status Page



①	Receiver status	The current GPS status.
②	Position of SAT.	Position of the satellites.
③	SNB Graph	Showing the WPT and the bearing.
④	Navigation Data	Information of the various data.

* Color of the GPS status

- Black: Tracked, but no signal
- Blue: Tracked, but not used, Satellite
- Green: Used Satellite
- Light Blue: SBAS Satellite

4. Databar

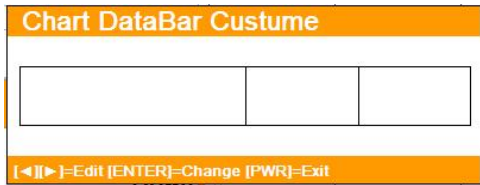
Showing various data on the top or bottom.



4.1. Customizing

Showing various data as what the user wants.

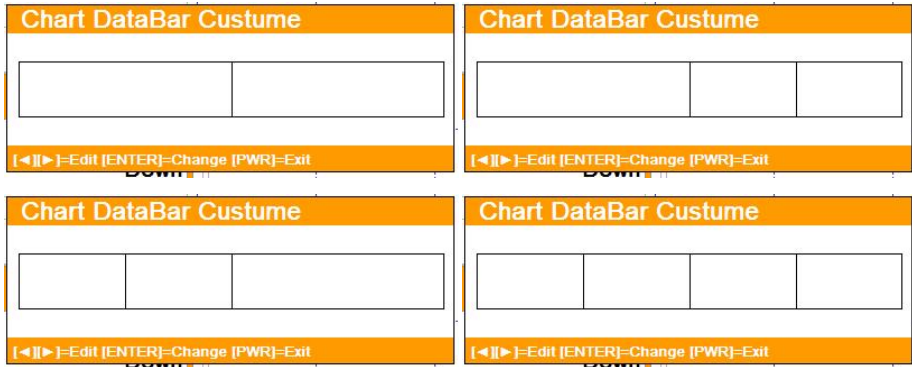
► [MENU]-> Setup->Customizing->Databar->Edit



(Fig.1.2.1)

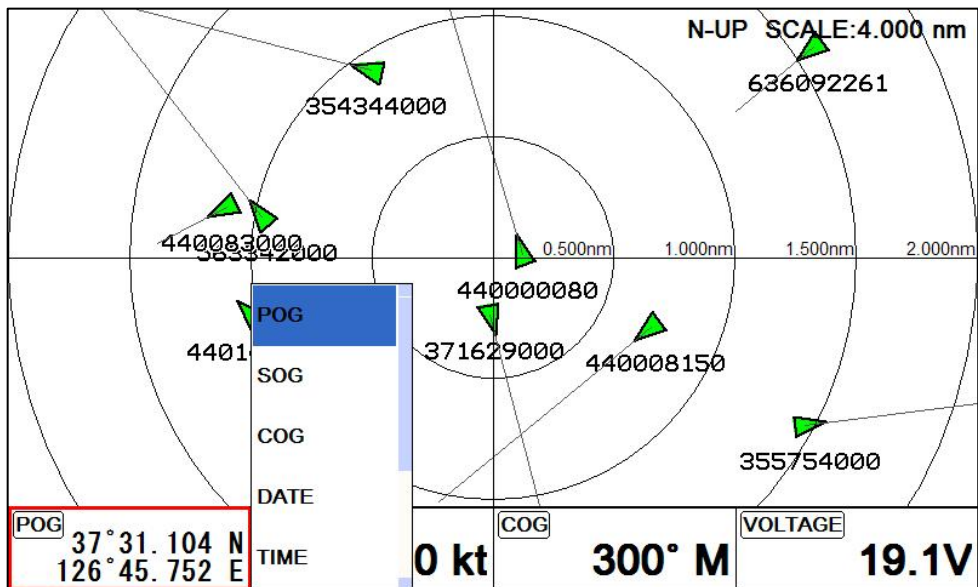
The databar is coming as (Fig.1.2.1), and choose the frame with [◀||▶].

Four frames are available as (Fig 1.2.2).



(Fig.1.2.2)

When choosing the frame, setting up in each box as (Fig.1.2.3).



(Fig.1.2.3)

When finishing the set up, press **CLEAR** to exit.

(*Please, refer “Customizing” for further question.)

4.2. Display

► [MENU]-> Setup->Customizing->Databar->Display

Setting the databar, “Shown/Hidden”.

4.3. Position

► [MENU]->Advance->Setup->Customizing->Databar->Position

Setting the databar position on the top or bottom.

5. Cursor

5.1. Calling the cursor

Press [◀][▶][▼][▲] on the chart, the cursor comes out.

5.2. Moving

Press [◀][▶][▼][▲], the cursor is moving to the direction.

Press [◀][▼] together, the cursor is moving to “↙”.

Press [▶][▼] together, the cursor is moving to “↘”.

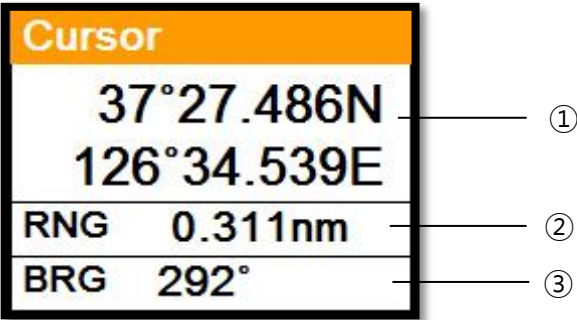
Press [◀][▲] together, the cursor is moving to “↖”.

Press [▶][▲] together, the cursor is moving to “↗”.

5.3. Removing the cursor

Press CLEAR to remove the cursor.

5.4. Cursor information window



①	Latitude/Longitude	LAT/LON of the cursor.
②	Range	Distance between the cursor and the present position.
③	Bearing	Bearing from the present position to the cursor.

5.5 . Cursor information window shown/hidden

▶ [MENU]-> Setup->Customizing->INFO window->Cursor

Cursor information window “Shown/Hidden”.

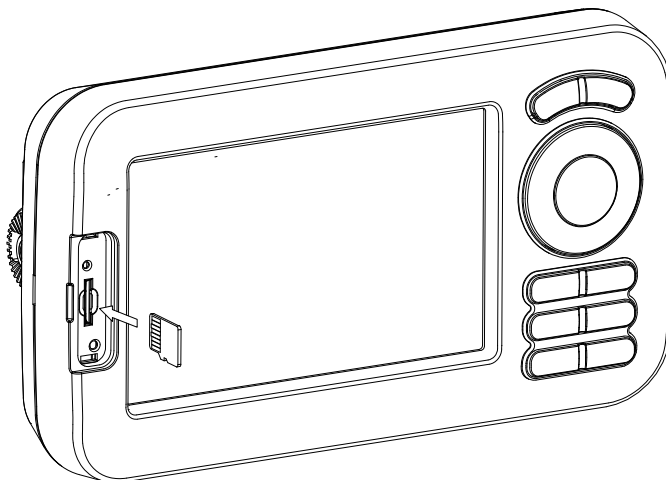
6. Page

► [MENU]->[PAGE]Key

You can change the screen sequentially by pressing the key.

7. MicroSD

Inserting the micro SD as (Fig.1.6).



(Fig.1.6)

AIS getting started

1. What is AIS?

AIS is an Automatic Identification System. It has been introduced to improve the safety of navigation by assisting in the efficient operation of ship to ship, ship reporting and VTS applications. The system should enable operators to obtain information from the ship automatically, requiring a minimum of involvement of ship's personnel, and should have a high level of availability.

Connecting to the chart plotter an AIS receiver, vessels with AIS transponder within VHF range are displayed on screen giving the skipper or navigator a visual interpretation of the data of nearby vessels. This improves safety, and specifically for collision avoidance reasons.

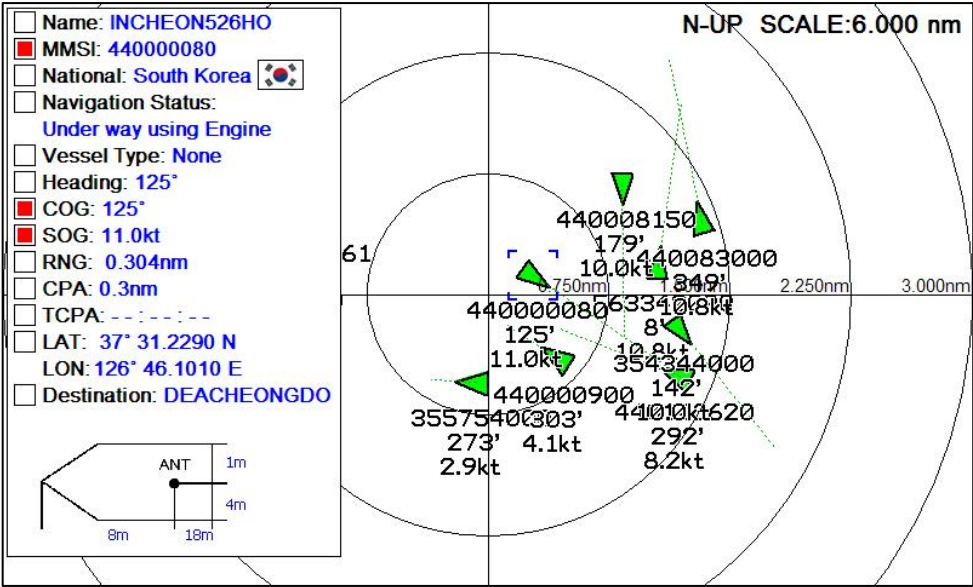
2. AIS system definitions

CPA	Closest Point of Approach is the closest distance that will be achieved between your vessel and the tracked target, based on your vessel's speed and direction and the target's speed and direction.
TCPA	Time to Closest Point of Approach is the time remaining until the CPA will occur.
Name	Name of ship, 20 characters.
MMSI	Maritime Mobile Service Identity.
MMSI number	A unique 9 digit number that is assigned to DSC radio station. It primarily registers the boat information in the U.S. Coast Guard's national distress database for use in emergency situations.
Target 	It is a vessel equipped with AIS. Information about the targets is being received by AIS Receiver and displayed on the screen.
Active Target 	Target located within the Activation Range. Active target is represented by oriented triangle with COG and Heading vectors. Rate of turn may also be displayed.
Selected Target 	Target selected with cursor. Can view AIS information window.
Dangerous	Target detected by CPA or TCPA Alarm. Dangerous target is Active Target by definition. For better visibility Dangerous Target symbol is changed from basic color

Target 	to red color.
Sleeping Target 	Target located outside the Activation Range. Sleeping target is represented by a small oriented triangle.
Lost Target 	When the AIS info is not received from that vessel. The presentation will be marked X on the target.

3. AIS information window

Press [ENTER] key on Target which wants to see. It shows Information of “AIS INFO” window.

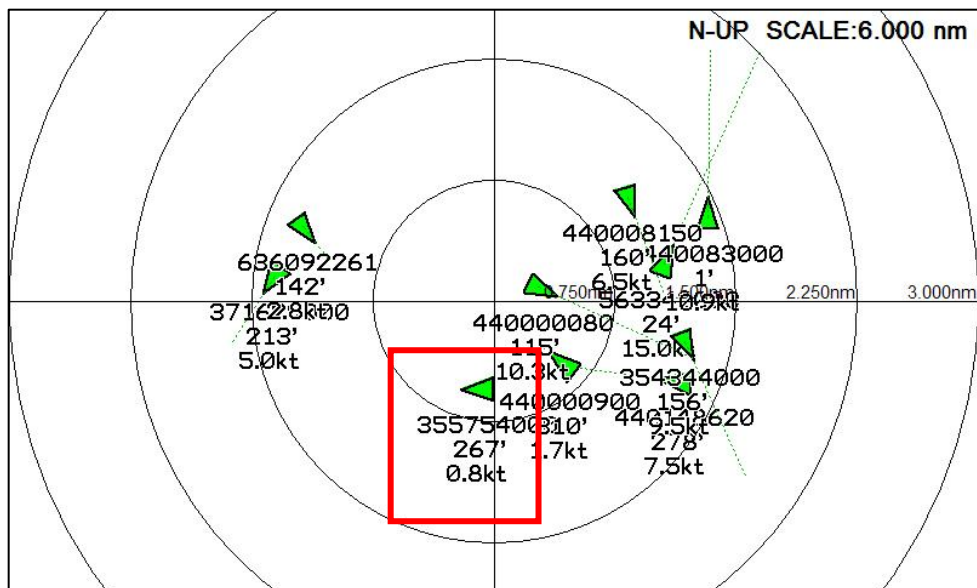


(Fig.2.1)

4. Quick INFO on AIS target

Choose "AIS information window" on (Fig.2.1) and AIS data shows under the AIS target.

(*See page 25 for instructions on how to set it up.)



5. List

Press **PAGE** key to select the screen sequentially.

AIS LIST			PAGE [1/2]
① Name	② MMSI	③ RNG	④ BRG
KOTA KASTURI	563342000	0.4nm	203'
MOL ASPIRATION	371629000	0.4nm	180'
DAEBOK GAS	440148620	0.6nm	260'
ORIENTAL PEARL 6	354344000	1.0nm	66'
MUGUNGHWA 19	440083000	0.4nm	331'
PEARL ACE	355754000	0.5nm	335'
M/V PAN DYNAMIC	440000900	1.3nm	335'
IL MOOK NO.1	440008150	1.0nm	212'

[ENTER]=Detail [MENU]=Sort

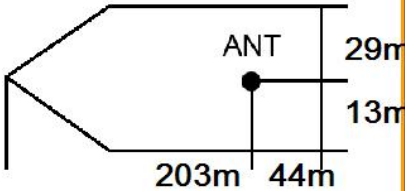
(Fig.2.4)

①	Name	Name of the AIS target
②	MMSI	MMSI of the AIS target
③	Range	Distance between the AIS target and the present position
④	BRG	Bearing between the AIS target and the present position

5.1. Detail

Choose the AIS target and press [ENTER].

VICTOR KONETSKY

MMSI	IMO	Latitude/Longitude
209110000	C4UK2	37° 30.1060 N 126° 36.1530 E
Callsign	Type of Vessel	
C4UK2	None	
Nationality	Nav Status	Destination
Cyprus	Moored	IN'CHON
COG	SOG	ETA
187°	0.0kt	None
Heading	Rate of Turn	Dimensions
0°	0.0 degrees/minute	
CPA	TCPA	
3.6nm	----	

5.2. Sort

Press **MENU** to choose how to sort on (Fig.2.4).

AIS LIST

PAGE [1/2]

Name	MMSI	RNG	BRG
KOTA KASTURI	563342000	0.5nm	202'
MOL ASPIRATION	371629000	0.4nm	180'
DAEBOK GAS	440148620	0.6nm	260'
ORIENTAL PEARL 6	354344000	1.0nm	67'
MUGUNGHWA 19	440083000	0.4nm	330'
PEARL ACE	355754000	0.4nm	329'
M/V PAN DYNAMIC	440000900	1.3nm	334'
IL MOOK NO.1	440008150	1.0nm	209'

Sort by [MENU]=Vessel Name [PAGE]=MMSI Sort
[MOB]=Rng Sort [FUNC]=Brg Sort

①	MENU	Sort by vessel name.
②	PAGE	Sort by MMSI number.
③	MOB	Sort by Range.
④	FUNC	Sort by Bearing.

6. Setting ClassB

►[MENU]->AIS->Setting ClassB

6.1. Enter Information

Press [ENTER] and input vessel data in (Fig.2.5). Press **MENU** to store.

Program Transponder

Name ①

MMSI ②

000000000

Type of Vessel ④

00 :

Dimensions ⑤

ANT

00m

00m

00m

000m

000m

[ARROW]=Move [ENTER]=Select/Input

[DWD]=Cancel/Exit

(Fig.2.5)

①	Name	Name of the vessel (*20 characters maximum.)
②	MMSI	Inputting the MMSI. (*Inputting the MMSI is available only once)
③	Call Sign	Inputting "Call sign".
④	Type of Vessel	Inputting the vessel type. (*Refer "Type of Vessel")
⑤	Dimensions	Inputting the vessel size.

- 23 -

6.2. Setting Vessel

You can transmit it by entering the destination, ETA, and Draught information..

6.2.1. Enter Information

Press [ENTER] and input vessel data in (Fig.2.6). Press **MENU** to store.

Setting Vessel

Destination

ETA

MM/ DD

HH : Min

01

/

01

00

:

00

Draught

00.0

m

[ENTER]=Edit [MENU]=Trans

(Fig.2.6)

6.2.2. transmit

You can choose whether or not to transmit the information saved in 6.2.1.

( The default setting is Off.)

6.3. Upgrade Scallop

You can upgrade the firmware on the AIS module.

(*Please ask the place of purchase for the upgrade.)

Menu operation

► Press [MENU]

1. Map Orientation

You can select North/ South/ East/ West/ Head –up.

North/ South/ East/ West-up

They setting the vessel present position remains fixed in the center of the Main Screen while the map moves under it.

Head-up

vessel present position is fixed in the center of the Main Screen and vessel heading is upward. As your present position changes, the map moves under the vessel symbol.

( The default setting is North Up.)

2. AIS

2.1. Setting ClassB

Refer to 6. Setting ClassB in AIS getting started.

2.2. AIS target size

Choose the size of AIS target.

( The default setting is Large.)

2.3. Labels on vessels

You can set 4.Quick INFO on AIS target in AIS setting started.

2.4. Cursor box INFO

When you move the cursor in chart mode over an AIS target a box appears showing details of that vessel.

2.5. Message

2.5.1. Message

You can set whether or not to use the message.

( The default setting is Off.)

2.5.2. Message List

You can manage the messages received in the message list.

★ AIS SART Messages

If an AIS SART message is received it will immediately be displayed on whatever screen you are viewing. If the “Status” shows “Test” then no further action is required as it is just a test transmission. If the “Status” shows “Active” it will also show the MMSI, Name and position, the SART icon should now be displayed on your chart screen at that location. Monitor your VHF radio on Channel 16 and establish whether any other station has received this SART message, if not take the appropriate action.

2.6. Silence Mode

If you turn on the Silence mode, you will receive it without transmitting.

( The default setting is Off.)

3. Alarm

3.1. CPA Alarm

The CPA alarm is the closest approach alarm, this allows you to set a distance when the alarm will sound if a vessel comes within that distance .

( The default setting is OFF.)

3.2. CPA Range

The values allowed are from 0.1nm to 10nm.

( The default setting is OFF.)

3.3. TCPA Alarm

The TCPA alarm is the time that a vessel will take to be in the same position as you currently are.

( The default setting is OFF.)

3.4. TCPA Limit

The values allowed are from 1 to 60 min.

( The default setting is 1 min.)

3.5. Radius Alarm

When any AIS target breaks into the radius, alarming.

3.6. Radius

The values allowed are from 0.1nm to 10nm.

( The default setting is OFF.)

4. WPT

4.1. List

You can manage the WPT.

4.2. Save Userdata

Userdata is stored in the external Micro SD. So if you want to save the userdata, a micro SD must be inserted in the slot.

(*Userdata is in “..\HY\UserData”)

4.3. Load Userdata

Userdata loads from the stored micro SD. If you need to load the userdata, the stored micro SD must be inserted in the slot.

5. Setup

5.1. Unit

5.1.1. DIST/Speed

Select desired unit of measure for distance and speed. Choose from: nautical mile/knots (nm/kt), kilometer/kilometers per hour(km/kmh), yard/knot(yd/kt).

cf) 1nm = 1.852km, 1kt /h= 1.852km/h, less than 1nm display in yard and over 1nm display in mile

( The default setting is Nm/Kt.)

5.1.2. Depth

Select desired unit of measure for depth of water. Choose from: meter(M), foot(ft), fathom(fm), Italian Fathom(lfm), Japanese fathom(Jfm).

cf) 1m = 3.281ft = 0.549fm = 0.609lfm = 0.660jfm

( The default setting is Meter.)

5.2. Time & Date

5.2.1. Reference

Available to adjust the collect local time by the UTC time from the GPS.

( The default setting is incorrect every the country.)

5.2.2. Time Format

Sets you preferred time between 12 hour or 24 hour.

( The default setting is 12 hour.)

5.2.3. Date Format

Sets you preferred date among YY-MM-DD, MM-DD-YY or DD-MM-YY.

( The default setting is MM-DD-YY.)

5.2.4. Month format

Sets you preferred date between Character or Number.

( The default setting is Number.)

5.3. Input/Output

5.3.1. Output Sentences

The chartplotter allows customizing the NMEA-0183 sentence.

DESCRIPTIONS	CONTENTS OF DATA FIELD	DEFAULT
\$PGGA	Global Positioning System Fix Data	ON
\$GPVTG	Course and Ground Speed	ON
\$GPZDA	Time and Date	OFF
\$GPRMB	Recommended minimum navigation information	OFF
\$GPRMC	Recommended Minimum Specific GPS/TRANSIT DATA	OFF
\$GPAPB	Heading/track controller (Autopilot) sentence B	ON
\$GPXTE	Cross-track error, measured	OFF
\$GPBOD	Bearing, origin to destination	OFF
\$GPBWC	Bearing and distance to waypoint	ON

5.3.2. Transmit

Available to adjust transmit speed of input/output in each ports.

5.3.3. Output Version

Available to adjust Output Version.

( The default setting is NMEA 2.3.)

5.4. Buzzer

It is can be buzzer on/off.

( The default setting is on.)

5.5. Customizing

5.5.1. Databar

5.5.1.1. Display

Setting up shown/hidden the databar on the display.

( The default setting is Hidden.)

5.5.1.2. Position

Setting up up/down the position of databar on the display.

( The default setting is Down.)

5.5.1.3. Edit

It customizes the data bar information.

5.6. INFO Window

5.6.1. Cursor

When the cursor is on the screen, shown/hidden the cursor window.

( The default setting is Hidden.)

5.6.2. Position Setup

Choose the position of Information window.

( The default setting is Auto.)

5.7. Alpha Blending

You can set the transparency of the background in databar and INFO window.

( The default setting is 100%.)

6. Maintenance

6.1. Program Version

It contains ID and the program version, and it has important information for maintenance and upgrade.

6.2. OS Version

It contains the version of OS, which is necessary for maintenance and upgrade

6.3. MAP Version

It contains the version of the chart, the datum and the number, which is necessary for maintenance and upgrade

6.4. Simulator

It is necessary for an indoor demonstration. The simulations of AIS in the memory..

6.5. Language

Select the language.

6.6. Initialization

6.6.1. Setup Initialization

reset without deleting user data.

6.6.2. Factory Initialization

returning to the initial system from the releasing of factory.

(*All user data will be deleted)

HIS-550B

General specification

- | | |
|---------------------------|------------------------------------|
| 1. Display Screen: | 5inch Color LCD with LED backlight |
| 2. Resolution: | WVAG (800 X 480 pixels) |
| 3. Power Supply: | DC 12V~36V(+/-10%) 5W |
| 4. Operating Temperature: | -15°C~+50°C |
| 5. Performance Standard: | IMO Resolution MSC.112(73) |
| 6. Option: | MicroSD, Exteral GPS Antena |

GPS Receiver specification

- | | |
|------------------------------------|-------------|
| 1. GNSS Receiver Capabilities | |
| GPS | L1 C/A code |
| 2. Number of Channel: | 50 channels |
| 3. Horizontal Positioning Accuracy | |
| Autonomous | 2.5m |
| 4. Sensitivity | |
| Acquisition | -140 dBm |
| Tracking | -149 dBm |
| 5. Data Update Rate: | 1 second |

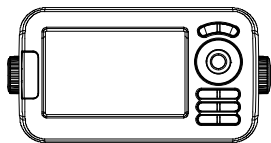
Chartplotter specification

- | | |
|---------------------|---|
| 1. Display Method: | Mercado Projection |
| 2. Display Mode: | True motion / N/S/E/W up / Course up / Head up |
| 3. Latitude Limits: | Between 85°N to 85°S |
| 4. Map Scale: | 0.05nm to 1500nm |
| 5. Map Datum: | WGS-84 |
| 6. Waypoint: | 20,000 points
*Total of 16 colors and 16 icons are selectable each point with name tag (8 alphanumeric characters) |
| 7. Track Point: | 50,000 points(2 types) |
| 8. Route: | Max capacity 100 Routes
*20 WPTs per each Route. Each with name tags (8 alphanumeric characters) |
| 9. Draw Point: | 1,000 points |
| 10. Area Name: | 1,000 points |
| 11. Chart Data: | HY-MAP(Built-in or External)/ C-MAP |
| 12. Output Data: | NMEA-0183 |
| 13. Input Data: | NMEA-0183 |
| 14. Alarm: | Arrival, Anchor, XTE, Interval timer, User line |

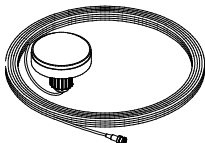
AIS specification

- | | |
|-----------------------------|---|
| 1. Connector | VHF antenna(PI-259)
GPS antenna(BNC) |
| 2. Channel Spacing | 25KHz |
| 3. Frequency stability rate | ±10RPM(-20°C ~ +60°C) |
| 4. Display stats | ON, TX, RX1, RX2 |
| 5. Demodulation | GMSK |

Standard Equipment Configuration List



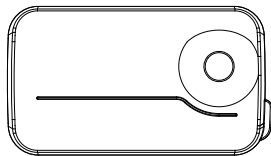
Display unit



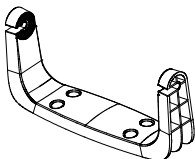
External GPS ANT



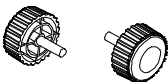
Manual



Protector



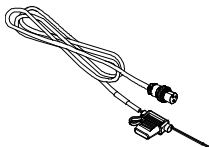
Mounting Bracket



Knobs

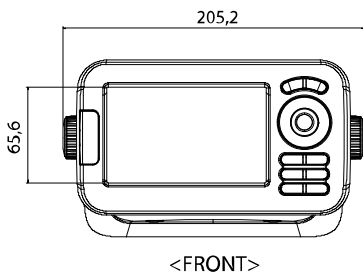


Fuse & Bolt

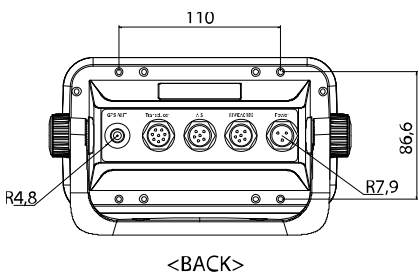


Power cable

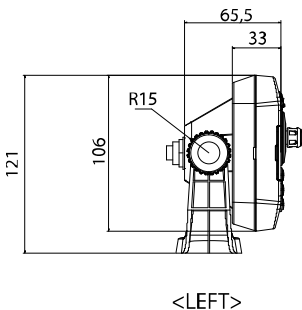
Dimension



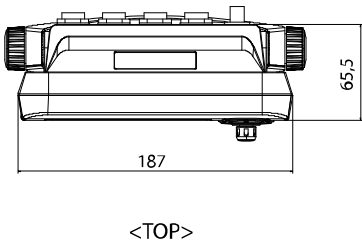
<FRONT>



<BACK>



<LEFT>



<TOP>

Type of Vessel

Number	Description
30	Fishing vessel
31	Vessels engaged in towing
32	Vessel engaged in towing, tow exceeds 250m
33	Vessel engaged in dredging or underwater operations
34	Vessel engaged in diving operations
35	Vessel engaged in military operations
36	Sailing
37	Pleasure craft
50	Pilot vessel
51	Search and Rescue vessel
52	Tugs
53	Port Tenders
54	Anti pollution vessel
55	Law enforcement vessel
58	Medical transport
60	Passenger ship
70	Cargo ship
80	Tanker ship

|| Display Unit Installation

HIS-550B brings expandable display technology to your bridge or navigation station. A careful installation will assure maximum benefit from HIS-550B integrated features.

Display Unit Location

Select a location for your HIS-550B display unit that provides easy viewing from all likely operator's positions. The display unit is designed to be mounted on either a console or from an overhead surface. The HIS-550B display is also designed for flush mounting using six threaded holes on the rear panel. Locate the display in an area with protection from the elements and avoid direct sunlight on the viewing window. Also, consider access to the rear panel of the unit for connecting power and cables to the various remote sensors. The mounting surface must be flat and solid to support the unit and prevent vibration. There should be access to the inside of the surface to permit through bolt fastening for the mounting bracket.

Display Unit Installation

Temporarily install the mounting bracket on the Genesis display unit and place the unit at the selected location.

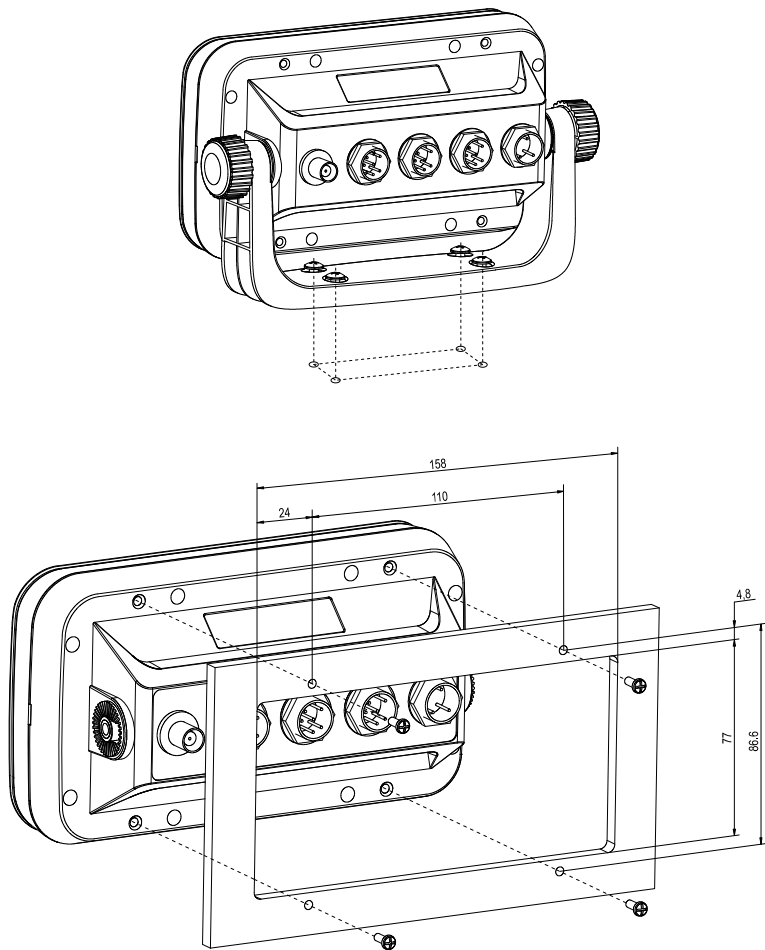


The HIS-550B display unit is unstable when the mounting bracket is not secured. Hold the unit in place at all times.

Check the suitability of the location and make any adjustments. When all is satisfactory, use the holes in the mounting bracket as a guide and mark the holes locations on the mounting surface.

Drill a 1/4 in. diameter hole at each marked location. Mount the HIS-550B display bracket using bolts through the mounting surface. Place large flat washers on the opposite side of the mounting surface from the bracket and then install lock washers and nuts. Tighten securely.

Install the display unit into the mounting bracket. Check alignment and operation of the pivots and security of the mounting. Make any adjustments necessary to prevent binding and assure even meshing of the pivot locking washers. It is advised to remove the display unit and store it in a safe place to prevent damage during the rest of the installation process.



- Power Connection

Power is supplied to the HIS-550B Charting System through a connector on the rear panel of the display unit.

Route the power cable from the HIS-550B location to the ship's power distribution panel.

Connect the black wire to a battery negative (-) terminal of the power panel.

Connect the white wire to a fused battery positive (+) terminal of the power panel (12 to 24 Vdc nominal). If a fused terminal is not available, install an in-line fuse holder.

- Care and Cleaning

HIS-550B is made to withstand marine elements but a little care ensures a trouble free life.

Accumulations of salt and sand, if not removed, will eventually mar the finish. No solvents or harsh cleaners should be used. The display unit may be wiped down with a damp cloth while avoiding the display window. Be careful not to scratch the display window surface. Gently remove any sand or other grit particles before cleaning the display window. The display window should be cleaned only with water and a clean soft cloth using very light pressure.

Reference

- NMEA

A standard developed by the National Marine Electronics Association and used by most marine equipment manufacturers for data communication is known as NMEA 0183 version 1.5 and version 2.0. NMEA0183 specifications offer many recognized sentences for exchanging data between many types of marine equipment.

The following technical information is provided for reference and is accurate to the best of our knowledge at the time of printing. Please refer to the appropriate NMEA specifications for details and the latest information.

The data sentences used by the HGP-660 are as follows.

Output sentences:

Descriptions	Contents of data field
\$GPGGA	Global Positioning System Fix Data
\$GPGLL	Geographic Position, Latitude/Longitude
\$GPGSA	GPS DOP and active satellites
\$GPGSV	GPS Satellites in View
\$GPVTG	Course and Ground Speed
\$GPZDA	Time & Date
\$GPRMC	Recommended Minimum Specific GPS/TRANSIT DATA
\$GPAPB	Heading/track controller (Autopilot) sentence B
\$GPXTE	Cross-track error, measured
\$GPBOD	Bearing, origin to destination
\$GPRMB	Recommended minimum navigation information

GPS Antenna Installation

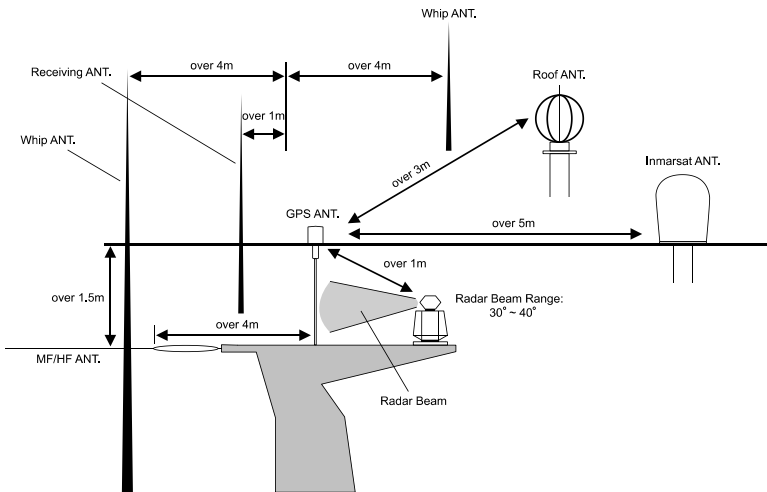
For centuries, sailors have been searching for a reliable and precise method of travelling the world's waterways. From celestial navigation to the modern navigation techniques as Loran, Decca navigator, Omega or Transit Satnav, each system has had its problems with weather, range and reliability. Without doubt, the "Global Positioning System", or GPS for short, is the most significant advance in navigation: it gives the navigator a position 24 hours a day, 365 days a year in any weather condition. GPS is a satellite based navigation system which provides suitably equipped users with accurate position, velocity and time data. Originally the GPS, developed by the U.S. Department of Defense, was conceived for military purposes, but now it is used in a host of civilian applications. GPS navigation uses satellite signals to determine your position in relation to a set of satellites orbiting the earth. The GPS constellation of satellites continuously send radio signals, containing the precise position for each satellite back to earth. By knowing the position of 3 or 4 satellites and calculating various time differences between transmitted signals, the GPS receiver can determine its present position anywhere on earth, and thanks to continuous updates, calculate speed and course information.

The installation of the GPS ANT.

The GPS ANT must be installed at the highest area of the boat and the easiest place to catch the signal from the satellites. If there are obstacles around the GPS ANT, it isn't able to catch all signals. The receiving time would be longer or the receiving power would be weaker. Please, follow the instruction for your installation.

1. Keep from a metal.
2. Over 4m away from a MF/HF ANT, VHF or HF whip ANT.
3. Over 1.5m upper away from MF/HF ANT.
4. Over 1m away from a receiving ANT.
5. Don't put the GPS ANT into the range of radar's beam. (Range: 30° ~ 40°)

6. Over 1m away from the scanner of the radar.
7. Over 5m away from the ANT of the inmarsat.
8. Over 3m away from the ANT of the roof.
9. Over 2m away from the engine.
10. Over 0.5m away from the metal surface.



⊗ Warning: Not less than 0.5m away from the metal surface.

If the environment can't be satisfied from 1 to 10, have NO. 10 satisfied and consider the others.

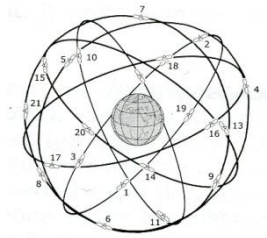
GPS

HOW GPS WORKS

Currently, the GPS constellation consists of 26 orbiting satellites (including 3 spares), but this number will increase in the future.

The GPS receiver computes an accurate position by calculating the distance to the GPS satellites that orbit the earth. Signals are required from 3 satellites for two dimensional (2D) position calculation whilst 4 satellites are required for three dimensional (3D) position calculation.

As mentioned earlier, GPS satellites are not geostationary, but they are orbiting the earth as illustrated on the following figure:

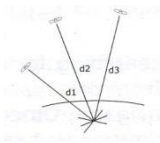


[The GPS constellation]

Note that position is repeatedly fixed through the following three steps while any 3 satellites are in line of sight.

The position calculation procedure is indicated in the following three steps:

1. GPS satellites continuously transmit their own precise orbital data and the GPS receiver computes their locations by receiving this data.
2. In this receiving process, the GPS receiver measures very accurate distances to the satellites, using the "Spread Spectrum Modulation" method. Excellence in GPS's position-fixing accuracy is mainly due to this technology.
3. When the satellite locations and their distances are known, the GPS receiver fixes its own position by triangulation:

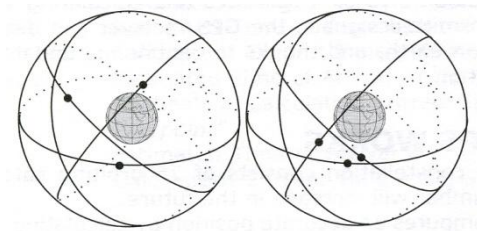


[The GPS position calculation]

As illustrated in the previous figure, the position is calculated as the meeting point of three spheres which are drawn around the three satellites with diameters d_1 , d_2 and d_3 .

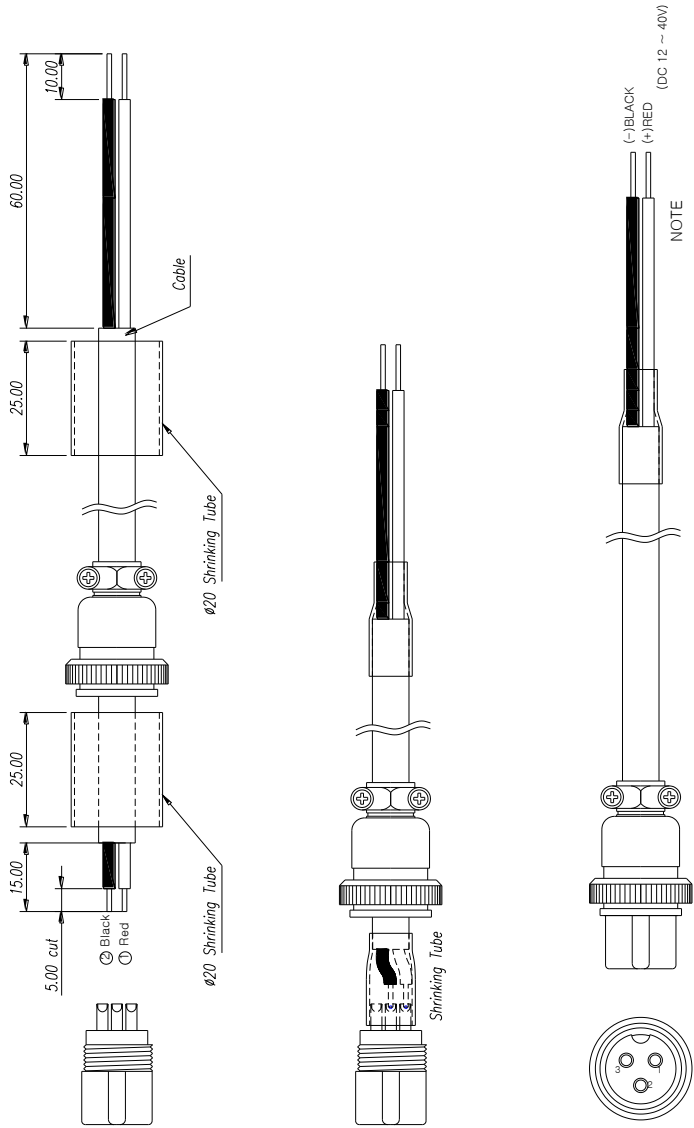
Position Fixing Accuracy: HDOP

The GPS fix accuracy is due to the locations of 3 satellites in the sky. High accuracy is obtainable when the satellites are widely scattered in the sky; on the contrary, accuracy is reduced when the satellites have gathered in a narrow space. In the following figure, in both cases it is possible to obtain the GPS fix, but in the left case the accuracy will be higher than the right:



[HDOP]

The index for position-fixing accuracy is called HDOP (*"Horizontal Dilution Of Precision"*). The smaller the HDOP value, the more accurately the position can be fixed.



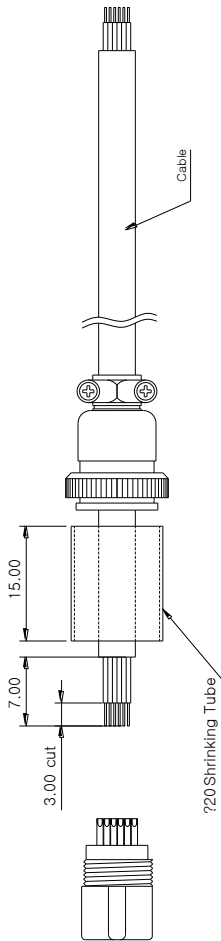
MATERIAL		DESCRIPTION	
SCALE	NONE	MODEL	Smart Series
PERN	Y.S.KIM	CHK. BY	DES. BY
Y.S.KIM	Y.S.KIM	DATE	05.07.2012
		DWG. NO.	S7-DC10303M
		HAIYANG POLIX CO.,LTD	

Power Cable

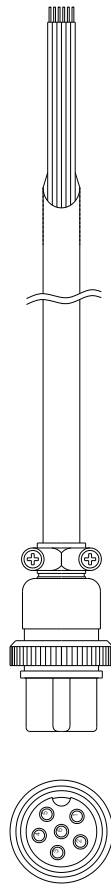
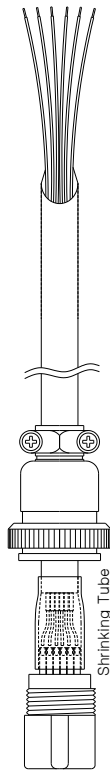
S7-DC10303M

HAIYANG POLIX CO.,LTD

16-03P



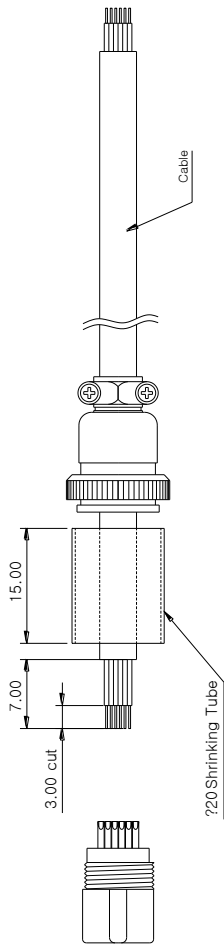
Data Cable	
Pin #	FUNCTION
1	GND
2	Tx+
3	GND
4	Rx+
5	Rx-
6	NC



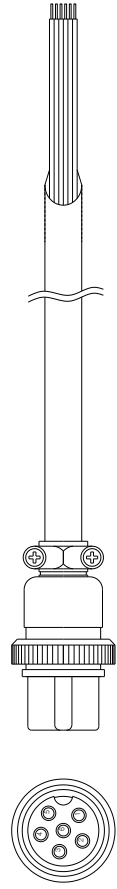
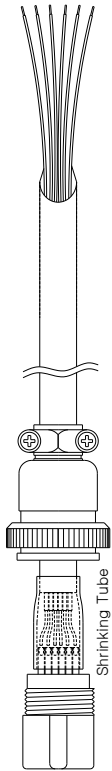
16-06P
To HD-70 series (J2/J3)

MATERIAL		DESCRIPTION	
SCALE	MODEL	Data Cable	
PERIN	Smart Series		
CHK. BY	DES. BY	DWG. NO.	
Y. S. KIM	Y. S. KIM	S7-DC10103M	
Y. S. KIM	Y. S. KIM	DATE	
Y. S. KIM	Y. S. KIM	05.07.2012	

HAIYANO OLIX CO.,LTD

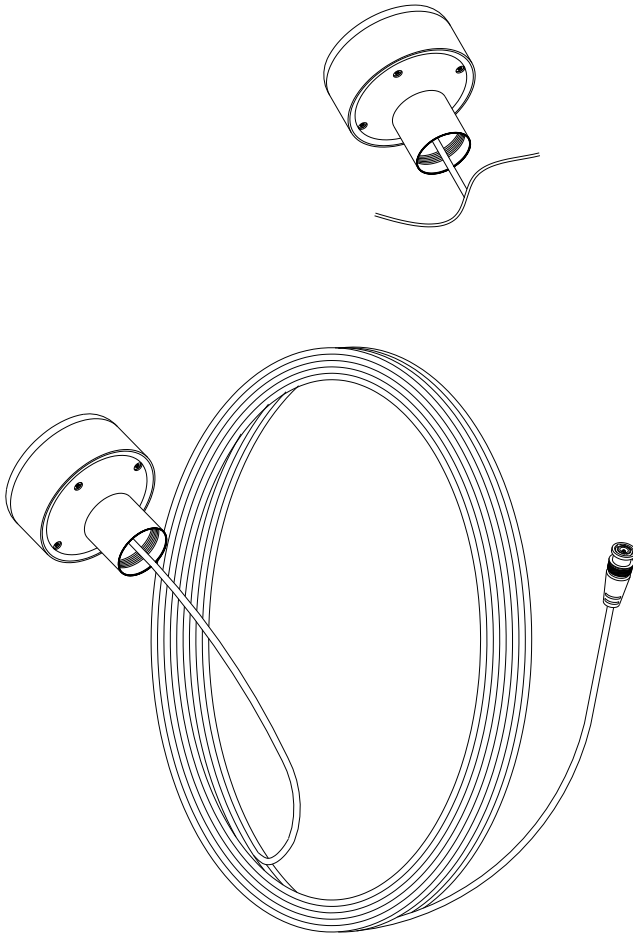


AIS Data Cable	
PIN #	FUNCTION
1	GND
2	NC
3	GND
4	TX+
5	GND
6	NC



16-06P
To HD-70 series (J2/J3)

DESCRIPTION	
AIS Data Cable	
DWG. NO.	
S7-DC10103A	
HAIYANO OLUX CO.,LTD	



	MATERIAL		Smart Series		DESCRIPTION	
	SCALE	MODEL	CHK. BY	DES. BY	DRA. BY	DATE
1/1	PERN	KIM Y.S	KIM Y.S	KIM Y.S	D.J.PARK	2012.05.07
						DWG. NO.
						S7-PA90101
						HAIYANO OLIX CO.,LTD

Declaration of Warranty

Declares of under his sole responsibility that the produced Plotter with Fish Finder manufactured by

HAIYANG OLIX Co., LTD.

103-903 BucheonTechnopark 22 Samjakro

Ojeonggu Bucheonsi Gyeonggi, Korea

TEL +82 32 327 4712 FAX +82 32 327 4713

Web-site: <http://www.haiyang.co.kr>

Guarantee for One Year

Haiyang Electronic Equipment Co., LTD warrants the produced equipment, Equipment for One (1) year for guarantee as bellows.

1. Main Unit: One (1) year guarantee after a user purchases the product within one (1) year
2. Accessories: One (1) year for consumed accessories (including TD) after a user purchases them.

Service in Charge

1. Over the term from the guarantee
2. Damage from user's carelessness (inundation, impact)
3. Intentional dismantle, modification or remodeling of the unit.
4. Unauthorized parts, components or accessories are used in the unit.
5. Installed or maintained by unauthorized person
6. Consumed parts and components (batteries, LCD, etc) run out.
7. Faults or damages from other reasons.

Model		Serial No.	
Date of Purchase		Customer Name	
Name of Dealer		Price	

※ Caution – Keep this warranty card with the receipt for fast and good service