



INSTRUCTION MANUAL



MARINECOMMANDER SYSTEM

MXS-5000

PREFACE

Thank you for purchasing Icom’s **MXS-5000 Icom MarineCommander™** system.

IMPORTANT

READ THIS INSTRUCTION MANUAL CAREFULLY before attempting to operate the MarineCommander™.

SAVE THIS INSTRUCTION MANUAL. This manual contains important safety and operating instructions for the MarineCommander™.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ DANGER!	Personal death, serious injury or an explosion may occur.
⚠ WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

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Always carry and consult current official charts frequently.

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This product includes software developed by the University of California, Berkeley and its contributors.

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Please inquire the purchase of C-MAP Max Chart and the question concerning C-MAP Max Chart to C-MAP Italy S.r.l.

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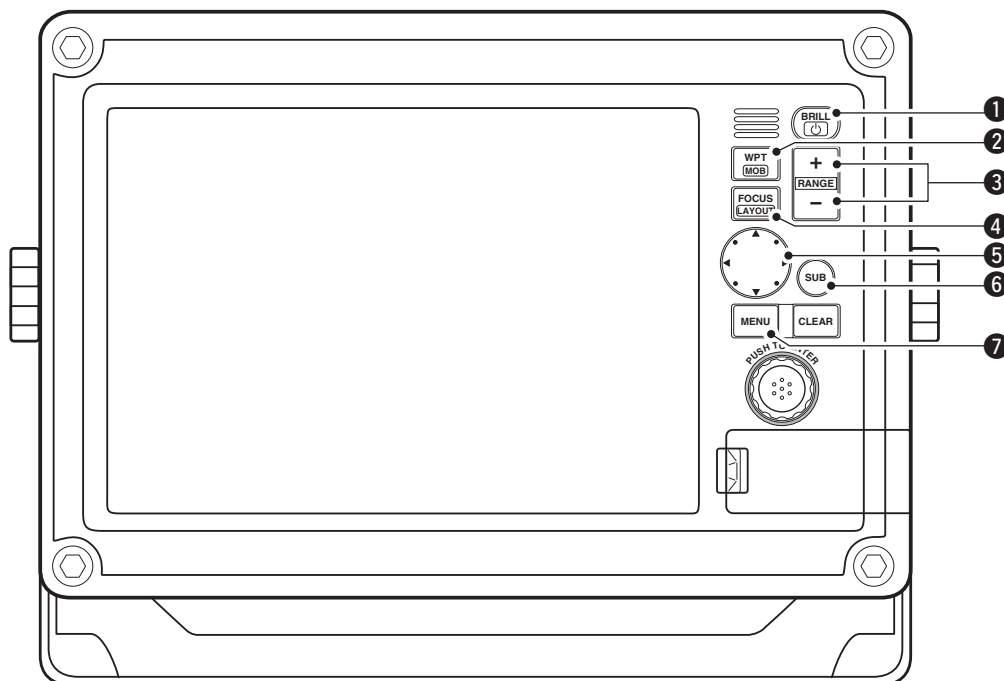
BASIC OPERATION

Section 1

■ MXD-5000 (Display unit).....	1-2
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■ MXD-5000 (Display unit)

◇ Front panel



❶ POWER/DISPLAY BRILLIANCE SWITCH [⏻/BRILL]

- **While the MarineCommander's power is OFF**
Push to turn ON the MarineCommander's power.
- **While the MarineCommander's power is ON**
 - ➔ Push to open Quick Menu 1.
 - The Quick Menu 1 includes the Display Brilliance, Radar TX setting, Panel Brilliant and Color Palette.
 - Push two or more times to increase or decrease the display brilliance level.
 - ➔ Hold down for 3 seconds to turn OFF the MarineCommander's power.

❷ WAYPOINT/MAN OVERBOARD SWITCH [WPT/MOB]

- ➔ Push to open the Waypoint screen.
 - The Waypoint window appears.
- ➔ When a crew member falls overboard, hold down for 3 seconds to mark the man overboard point on the screen.
 - The MOB readout shows the bearing and distance to the MOB point. (Position data is necessary.)
 - Hold down [MOB] for 3 seconds to cancel the function.

❸ RANGE UP/ DOWN SWITCHES [+]/[-]

Push [+] or [-] to set a suitable screen range.

❹ FOCUS/DISPLAY LAYOUT SWITCH [FOCUS/LAYOUT]

- ➔ Push to change the active screen.
 - An orange border indicates the active screen.
- ➔ Hold down for 3 seconds to open the display selection screen.

❺ UP, DOWN, LEFT, RIGHT KEYS [▲] [▼] [◀] [▶]

- ➔ Push arrow [▲], [▼], [◀] or [▶] to move the cursor up, down, left or right on the active screen. Push the dot to move at an angle.
- ➔ In the Menu screen, push [▲] or [▼] to select an item.
- ➔ In Quick Menu 1 or Quick Menu 2, push [◀] or [▶] to select an item.
- ➔ In Quick Menu 1 or Quick Menu 2, push [▲] or [▼] to select an option or adjust a level.

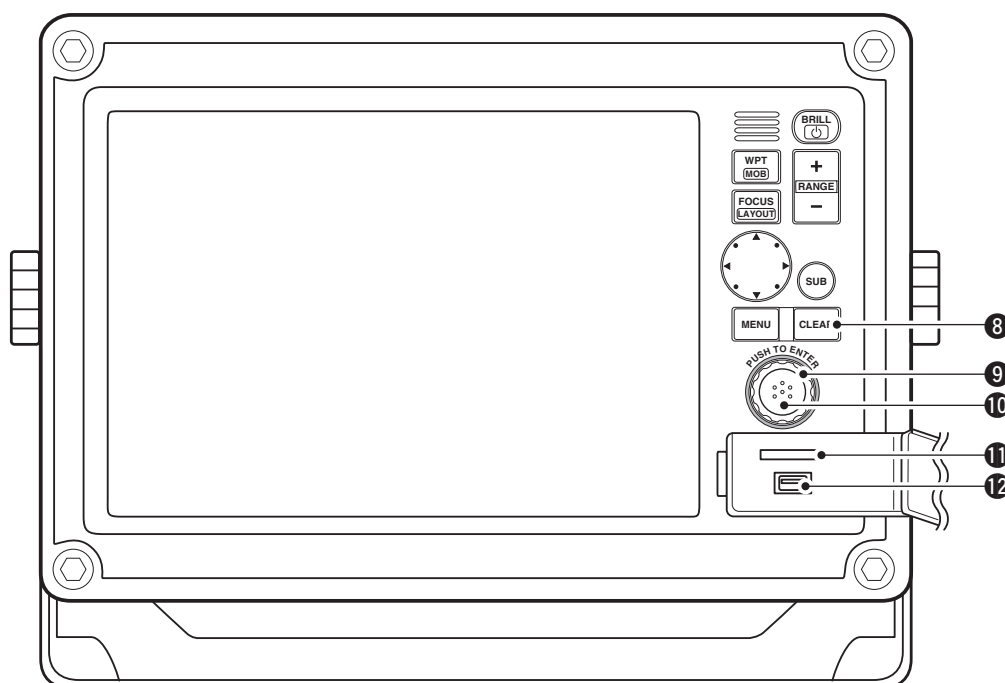
❻ SUB MENU SWITCH [SUB]

- ➔ In the Menu screen, push to enter the Sub Menu.
- ➔ On the Plotter screen, Radar screen or Sounder screen, push to enter the Cursor Menu, depending on the Cursor position.

❼ MENU SWITCH [MENU]

Push to select the Menu screen.

◇ Front panel



8 CLEAR SWITCH [CLEAR]

Push to cancel the current function.

While opening the Menu screen, push to cancel and return to the upper menu, or cancel the Menu screen.

9 SELECTION DIAL [DIAL]

- In the Menu screen, rotate to select a menu item or option.
- In Quick Menu 1 or Quick Menu 2, rotate to select an option or adjust a level.

On the Plotter screen

- Rotate to set the heading position.

10 ENTER SWITCH

- In the Menu screen, push to access the selected menu or function.
- Push to access Quick Menu 2.

On the Plotter screen

- Quick Menu 2 includes the Center Ship and Perspective Angle functions.

On the Radar screen

- Quick Menu 2 includes the GAIN, SEA, RAIN, Radar TX menu and Heading line OFF functions.

On the Sounder screen

- Quick Menu 2 includes the GAIN 50kHz, GAIN 200kHz, STC 50kHz and STC 200kHz control functions.

11 SD CARD PORT

Insert an SD Card which contains C-MAP MAX chart* by C-MAP Italy S.r.l.

* Chart data is not supplied by Icom.

- An unmount operation should be performed before removing the SD Card. If you do not unmount the SD Card, the MarineCommander™ will stop operating.



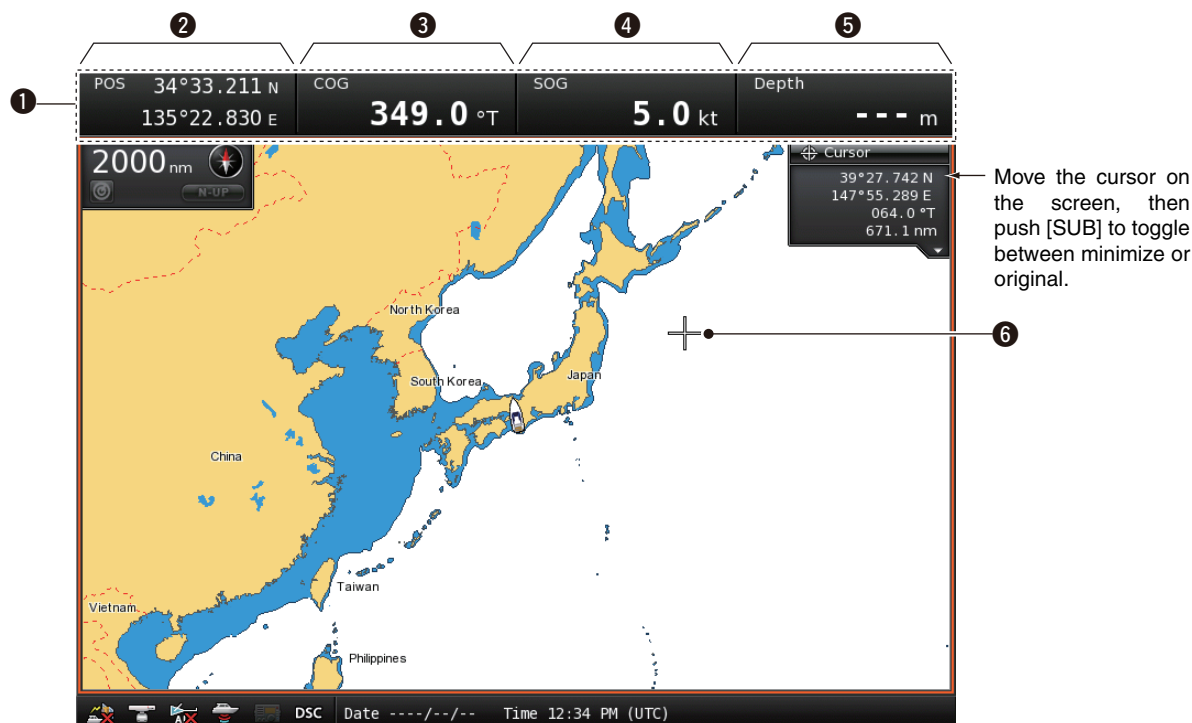
12 USB MEMORY PORT

Connect a USB memory stick.

- An unmount operation should be performed before removing the USB memory stick. If you do not unmount the USB memory stick, the MarineCommander™ will stop operating.

1 BASIC OPERATION

◇ Display



1 DATA-BAR

Shows various information on palettes 1 to 4.

- A total of 20 options are selectable.

The Selectable options are Date/Time, Position, COG/SOG, COG, SOG, Heading/STW, Heading, STW, Depth/Temp., Depth, Temp., Trip Log, Waypoint, XTE, ETA/TTG, ETA, TTG, Cursor, Status and Wind.

2 PALETTE1

Shows various information.

(Default: Position)

Shows the current position data* in latitude/longitude.

*Depending on the presetting, Loran-C Time differences are displayed instead of the position data.

- When the position data is invalid, the position data is shown in red for 1 minute. After 1 minute has passed, “—” (invalid data) will appear.

3 PALETTE2

Shows various information.

(Default: COG)

Shows your vessel's course over ground.

- “T” shows true north bearing, and “M” shows magnetic north bearing.

4 PALETTE3

Shows various information.

(Default: SOG)

Shows your vessel's speed over ground.

If no speed data is found, “—” will appear.

5 PALETTE4

Shows various information.

(Default: Depth)

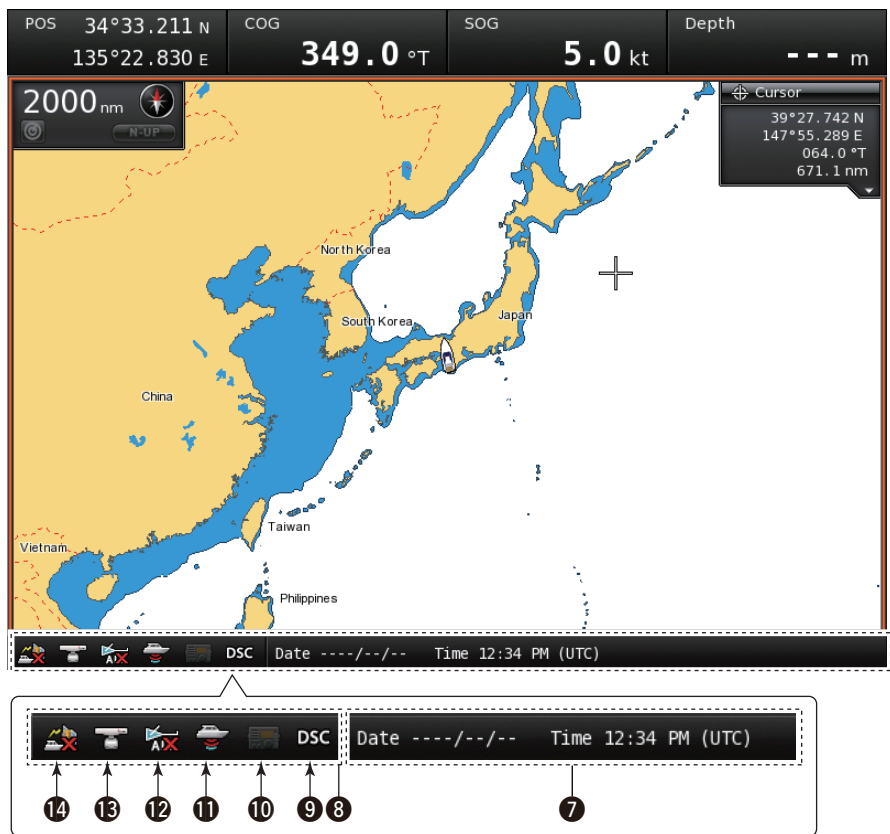
Shows the current depth of the sea bottom, under the vessel.

When a companion Icom fish finder is not connected to the main unit, or the sea bottom is not detected, “—” (invalid data) will appear.

6 CROSS HAIR CURSOR

Appears and moves on the screen when [▲], [▼], [◀] or [▶] is pushed.

◇ Display



7 STATUS-BAR

- Shows the status data.
 - A total of 19 options are selectable.
The selectable options are Date/Time, Position, COG/SOG, COG, SOG, Heading/STW, Heading, STW, Depth/Temp., Depth, Temp., Trip Log, Waypoint, XTE, ETA/TTG, ETA, TTG, Wind and Cursor.
 - When several options are set to be displayed, the data will be displayed in order.

(Default: Date/Time)

- Shows the current time.
 - “--:--” appears when no time data is received.
- Shows the current date.
 - “---/--/---” appears when no date data is received.
- When a menu or dialogue is displayed on the screen, an operation guide for that is displayed here, instead of the status data.



8 FOCUS BAR

This field shows and selects the icons. When this bar is selected, the color of the bar changes to orange.

9 DSC MESSAGE ICON

Blinks when there is an unread message.

10 TRANSCEIVER ICON

Appears when a companion Icom transceiver is connected to the Main unit.

11 FISH FINDER ICON

- Display as an animation when a companion Icom fish finder is connected and operating.
- Appears, but not as an animation, when the fish finder is connected but not operating.
- An “X” appears on the icon when the fish finder is not connected to the main unit.

12 AIS UNIT ICON

Appears, but with an “X” below the icon when the AIS unit is not connected to the Main unit. The “X” disappears when an AIS unit is connected to the Main unit and an AIS signal is received.

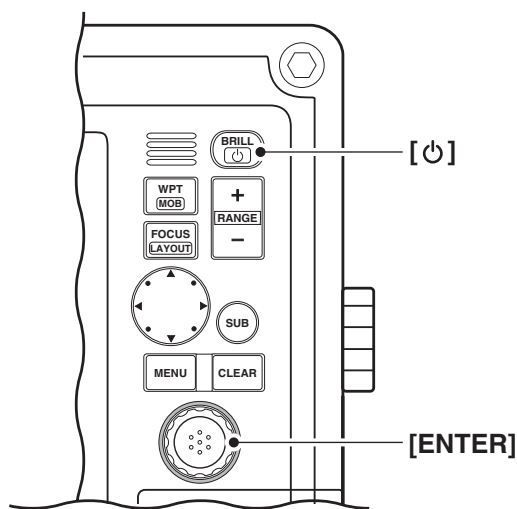
13 RADAR ICON

- Appears when a companion Icom radar unit is connected and is in the stand-by mode.
- Appears and rotates when the radar is operating.
- An “X” appears on the icon when the radar is not connected to the main unit.

14 GPS RECEIVER ICON

- Appears when position data is received.
 - An “X” appears on the icon when no position data is received, or the received signal is invalid.

■ Turn ON or OFF the power



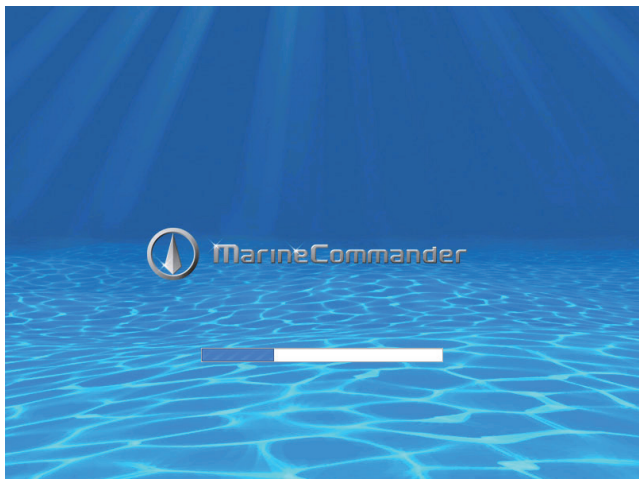
- ① Push [P] to turn ON the power.
 - The system will sound an electronic beep, and then opening screen is displayed.
- ② After you confirm the opening screen, push [ENTER] to enter the operating screen.
- ③ Hold down [P] for 3 seconds to turn OFF the power.

At the first turning ON the MarineCommander™ or after performing Factory Reset, Initial Setting screen (p. 5-32) appears before opening screen is displayed.

✓ INFORMATION

The MarineCommander™ must go through a boot sequence at power ON that includes a long beep sound indicating the boot up has begun. At the beginning of this process, all key backlights light, but the display stays dark for approximately 30 seconds, and then the ICOM logo appears for a brief period. This is just the standard boot up process that the internal computer requires.

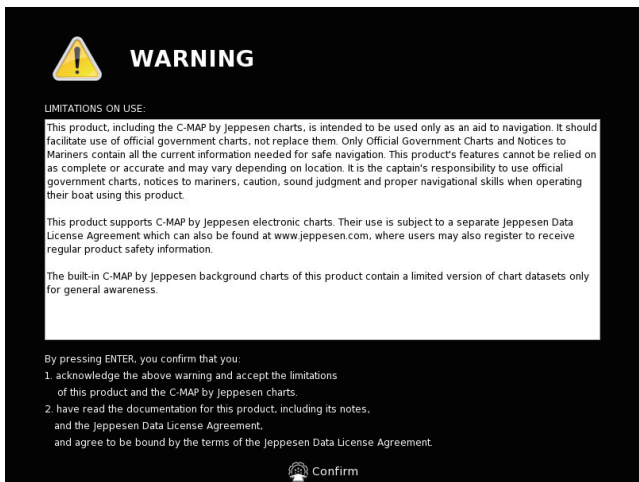
• Opening screen



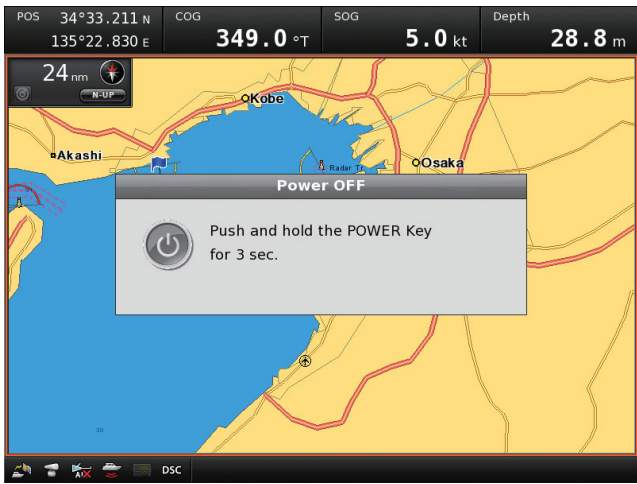
◇ Force power OFF

If the MarineCommander™ has malfunctioned, and it cannot be turned OFF, hold down [P] for 10 or more seconds to force power OFF.

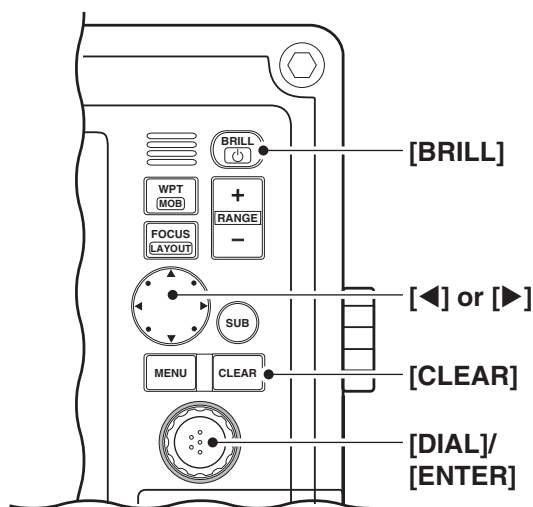
If this operation has been performed, and it still cannot be turned OFF, disconnect the power cable between the MXP-5000 and its power source, then connect the cable again.



• Power OFF screen



■ Quick Menu 1 operation



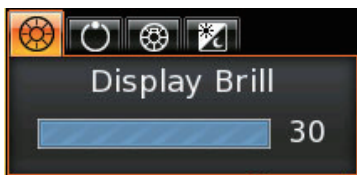
Quick Menu 1 includes the Display Brilliance, Radar TX setting, Panel Brilliant and Color Palette.

- ① Push [BRILL] to open Quick Menu 1.
- ② Push [◀] or [▶] to select the desired tab.
- ③ Rotate [DIAL] to adjust or select the value or option.
- ④ Push [ENTER] to set and exit Quick Menu 1.
 - Push [CLEAR] to cancel and exit Quick Menu 1.

◇ Display Brilliance

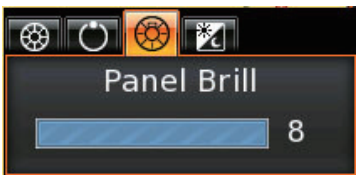
- ① Push to open Quick Menu 1.
- ② Rotate [DIAL] to adjust the Display Brilliance between 0 and 30 in 1 level steps.

Or push [BRILL] two or more times to increase or decrease the display brilliance level.
• The display brilliant includes to 5, 10, 15, 20, 25, 30 or decrease to 0.



◇ Panel Brilliant

- ① Push to open Quick Menu 1.
- ② Push [▶] twice to select the Panel Brilliant.
 - If necessary, push [◀] to move to the left tab.
- ③ Rotate [DIAL] to adjust the Panel Brilliant between 0 to 8 in 1 level steps.



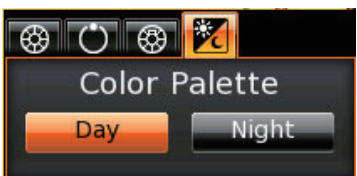
◇ Radar TX setting

- ① Push to open Quick Menu 1.
- ② Push [▶] once to select the Radar TX setting.
 - If necessary, push [◀] to move to left tab.
- ③ Rotate [DIAL] to select the setting, "TX" or "STBY" button.
- ④ Push [ENTER] to set and exit Quick Menu 1.
 - Push [CLEAR] to cancel and exit Quick Menu 1.

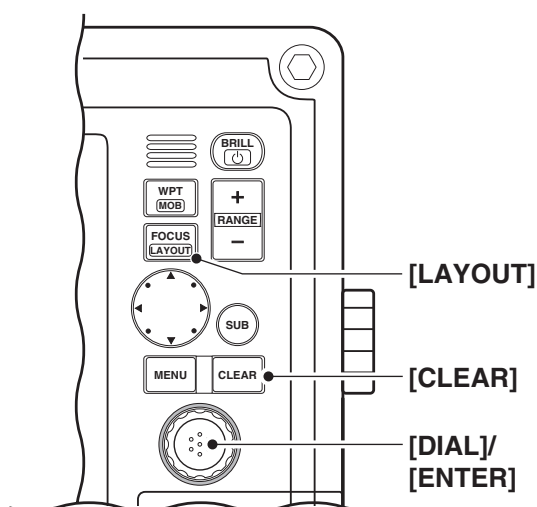


◇ Color Palette

- ① Push to open Quick Menu 1.
- ② Push [▶] three times to select the Color Palette.
- ③ Rotate [DIAL] to select the setting, "Day" or "Night" button.
- ④ Push [ENTER] to set and exit Quick Menu 1.
 - Push [CLEAR] to cancel and exit Quick Menu 1.



■ Screen selection



If you have installed an MXR-5000R/T Radar unit or an MXF-5000 Fish Finder unit, and you want to change the operating screen, following procedure is necessary.

- ① Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
- ② Rotate [DIAL] to select the desired operating screen, then push [ENTER].
 - Two split screens or three split screens can be selected in default setting.
 - Push [CLEAR] to cancel and return to the previous screen before entering the screen selection mode.

The screen layouts can be customized. See page 1-12 for details.

• Screen selection mode



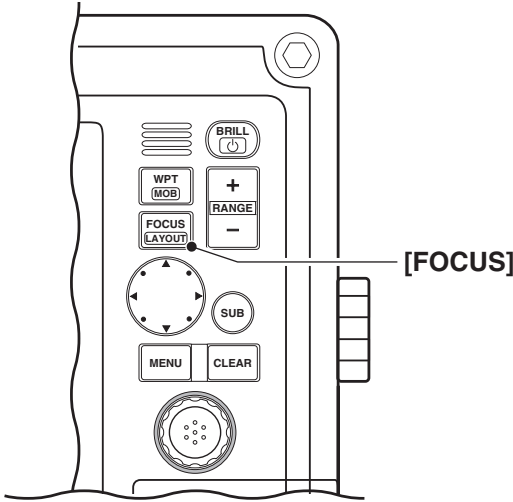
• 2 Screens selection



• 3 Screens selection



◇ Selecting Active screen

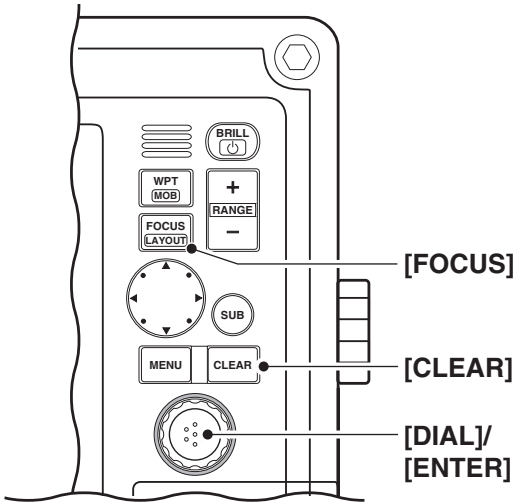


When two or more split screen is selected, and you want to change the active screen, following procedure is necessary.

- ➡ Push [FOCUS] one or more times to select the desired screen.
 - The outside frame of the active screen changes to orange.



◇ Entering Focus bar



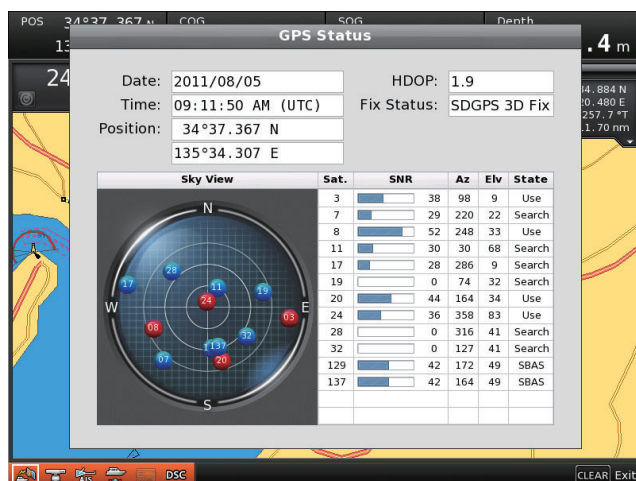
- ① Push [FOCUS] one or more times to select the Focus Bar.
 - The back color of the Focus bar changes to orange.
- ② Rotate [DIAL] to select the desired item, then push [ENTER].
 - The outside frame of the active icon changes to white.
- ③ Push [CLEAR] to cancel and return to the Focus bar.
- ④ Push [FOCUS] to return to the active screen.



1 BASIC OPERATION

◇ Focus menu operation

• GPS Status



GPS Status screen displays the status of the received GPS.

- ① Push [ENTER] to enter the GPS Status screen.
- ② Push [CLEAR] to exit the screen and return to the Focus bar.

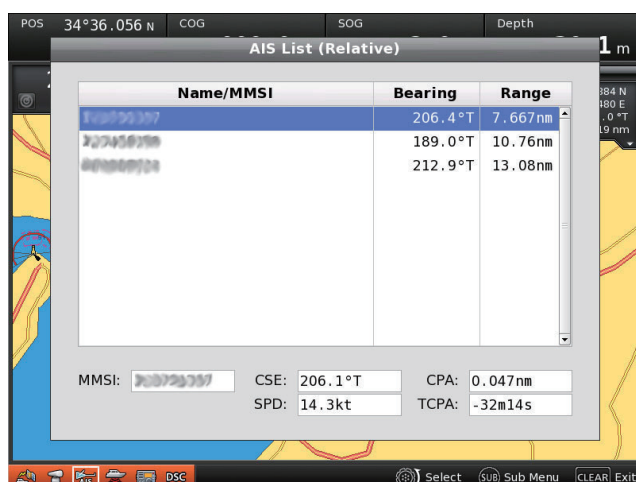
• Radar TX setting (Quick Menu 1)



Radar TX setting selects the Radar TX mode and Standby mode.

- ① Rotate [DIAL] to select the second icon from the left.
 - The outside frame of the active icon changes to white.
- ② Push [ENTER] to enter the Radar TX menu.
 - Quick Menu 1 appears.
- ③ Rotate [DIAL] to select the “TX” or “STBY” button.
- ④ Push [ENTER] to set and return to the Focus bar.

• AIS List



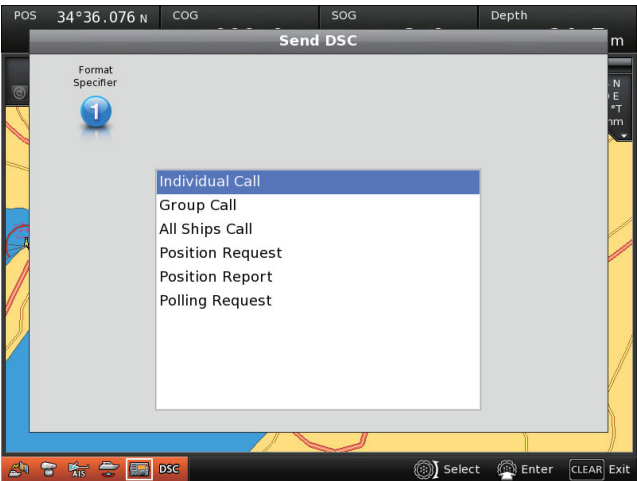
The AIS List displays receiving AIS.

- ① Rotate [DIAL] to select the third icon from the left.
 - The outside frame of the active icon changes to white.
- ② Push [ENTER] to enter the AIS List menu.
- ③ Rotate [DIAL] to select the ship's Name/MMSI.
- ④ Push [SUB] to enter the Sub menu.
- ⑤ Rotate [DIAL] to select the “View Detail,” “Send Individual” or “Register ID.”
- ⑥ Push [CLEAR] to exit the screen and return to the Focus bar.

• Sounder Icon

Sounder Icon shows the transducer is properly connected.

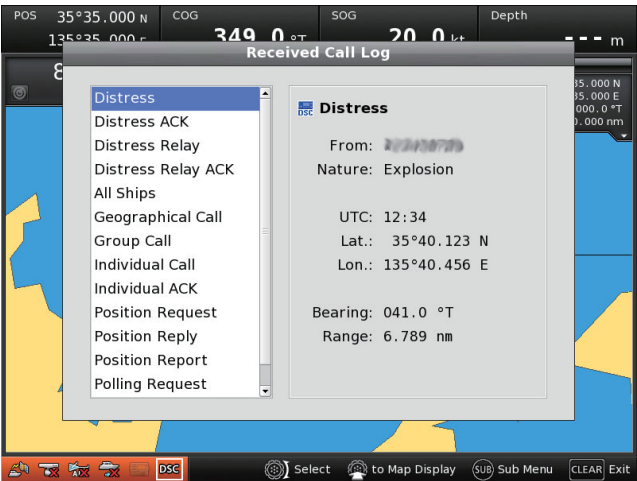
• Send DSC



When Icom transceiver is connected and it's power ON, transceiver icon can be selected.

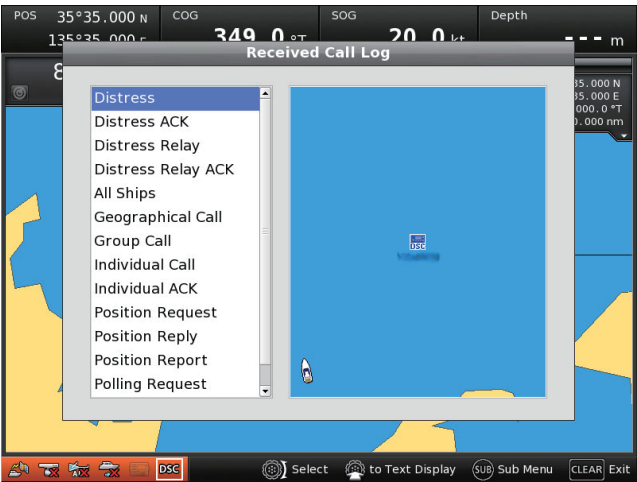
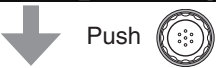
- ① Rotate [DIAL] to select the fifth icon from the left.
 - The outside frame of the active icon changes to white.
- ② Push [ENTER] to enter the Send DSC menu.
- ③ Rotate [DIAL] to select the desired call, "Individual Call," "Group Call," "All Ships Call," "Position Request," "Position Report" or "Polling Request."
 - The selectable calls differ, depending on the connected transceiver.
 - The display guide shows the operating guidance. The operations differ, depending on the selected DSC call.
 - If desired, push [CLEAR] to exit the screen and return to the Focus bar.

• Received Call Log



If the connected transceiver has received a DSC call, you can check the DSC call log in this screen.

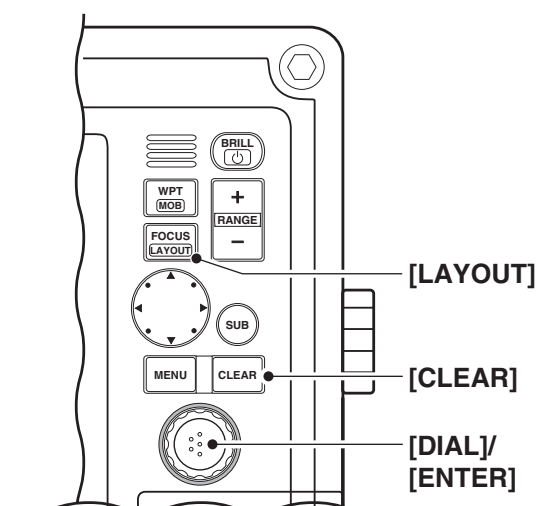
- ① Rotate [DIAL] to select the first icon from the right.
 - The outside frame of the active icon changes to white.
- ② Push [ENTER] to enter the Received Call Log menu.
- ③ Rotate [DIAL] to select a received Call.
- ④ When the selected call included its position data, push [ENTER] to put the transmitted station's position on the map when the Call has been transmitted.
 - Or push [SUB] to open the Sub menu.
 - The Sub Menu includes Filter, Send ACK, Go on Chart, Register ID, Erase Message and Erase All Message.
- ⑥ Push [CLEAR] to exit the screen and return to the Focus bar.



■ Screen arrangement

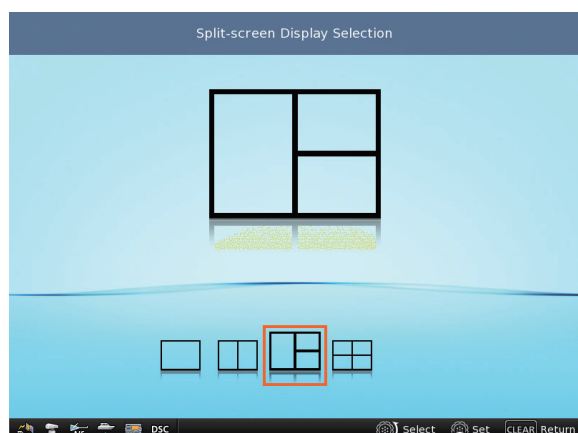
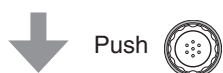
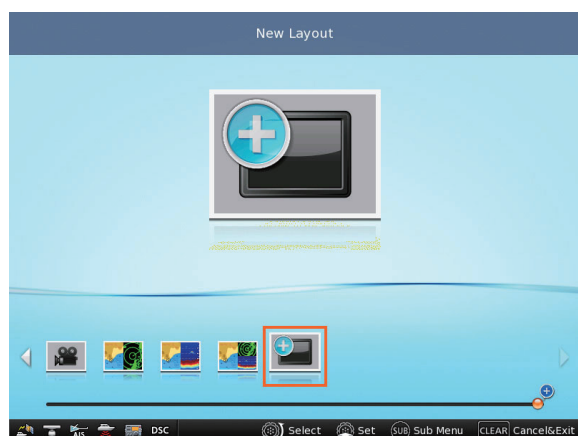
You can make a desired operating screen, changing its application, erasing the screen or changing their order.

◇ Make New Layout



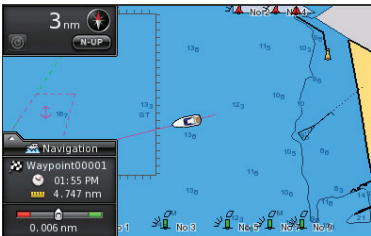
NOTE: The maximum number of screen layouts is 26.

- ① Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
- ② Rotate [DIAL] to select the New Layout, then push [ENTER].
 - Push [CLEAR] to cancel and return to the previous screen before entering the screen selection mode.
- ③ Rotate [DIAL] to select desired screen type.
 - One screen, two split screen, three split screen or four split screen type can be selected.
 - Push [CLEAR] to return to the previous screen.
- ④ Rotate [DIAL] to select the desired application to the screen, then push [ENTER].
 - Push [CLEAR] to return to the previous screen.
- ⑤ Repeat step ④ until all split screens are selected their application.

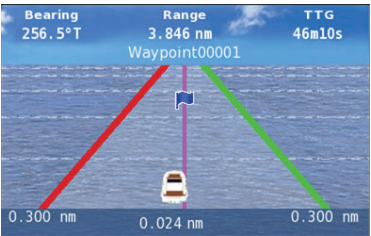


◆ Selectable Application

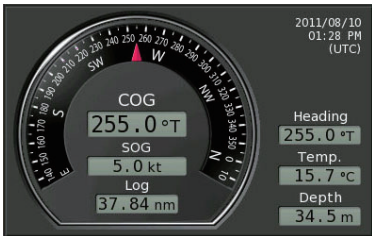
- One or two split screen is selected:
Plotter
Radar
Sounder
Video
 - Three split screen is selected
A part of 1/2 screen is same as one or two split screen.
A part of 1/4 screen is same as four split screen.
- Four split screen is selected
Plotter
Radar
Sounder
Video
Nav-Course Monitor
Nav-Depth Graph
Nav-Navigation
Nav-Temperature Graph
Nav-Navigation (Graphic-Detail)
Nav-Navigation (Graphic-Simple)
Nav-Waypoint
Nav-Engine
Nav-Engine (Graphic)



Plotter



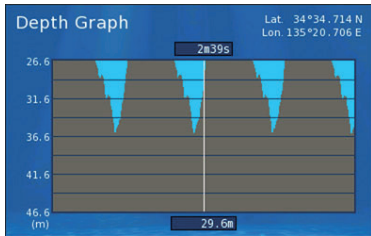
Nav-Course Monitor



Nav-Navigation (Graphic-Detail)



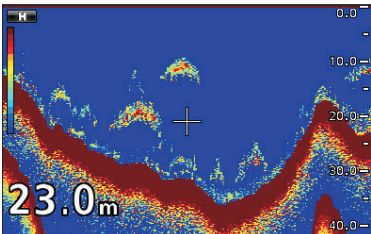
Radar



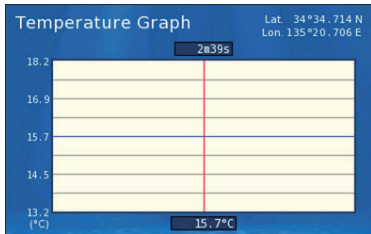
Nav-Depth Graph



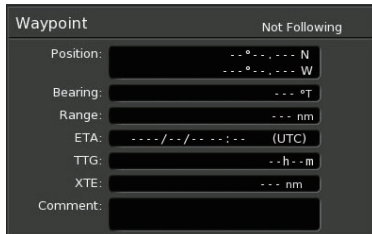
Nav-Navigation (Graphic-Simple)



Sounder



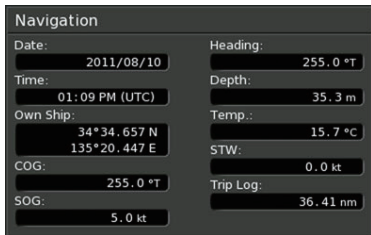
Nav-Temperature Graph



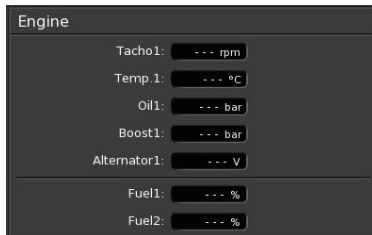
Nav-Waypoint



Video



Nav-Navigation



Nav-Engine



Nav-Engine (Graphic)

■ Screen arrangement (Continued)

◇ Change Layout



The default layouts cannot be changed.

- ① Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
- ② Rotate [DIAL] to select the desired screen to be changed, then push [SUB].
 - Push [CLEAR] to cancel and return to the previous screen before entering the screen selection mode.
- ③ Rotate [DIAL] to select "Edit," then push [ENTER].
 - One screen, two split screen, three split screen or four split screen type can be selected.
 - Push [CLEAR] to return to step ②.
- ④ Rotate [DIAL] to select the desired application to the screen, then push [ENTER].
 - Push [CLEAR] to return to the previous screen.
- ⑤ Repeat step ④ until all split screens are selected their application.

◇ Erase a screen layout



The default layouts cannot be erased.

- ① Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
- ② Rotate [DIAL] to select the desired screen to be erased, then push [SUB].
 - Push [CLEAR] to cancel and return to the previous screen before entering the screen selection mode.
- ③ Rotate [DIAL] to select "Erase," then push [ENTER].
 - Confirmation screen appears.
- ④ Rotate [DIAL] to select "Yes," then push [ENTER].

◇ Move a screen layout



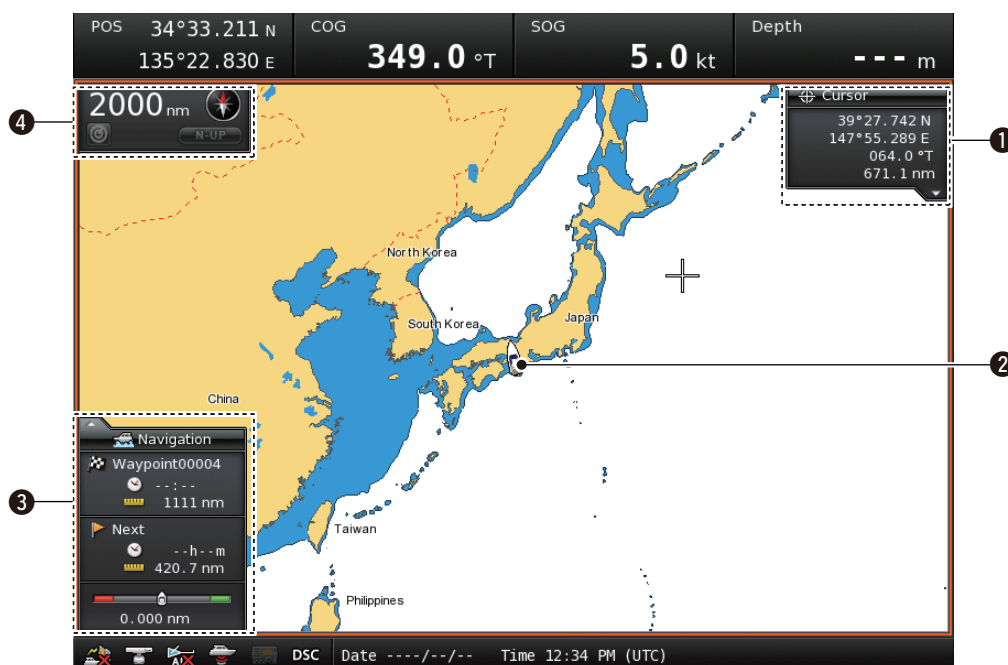
- ① Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
- ② Rotate [DIAL] to select the desired screen to be moved, then push [SUB].
 - Push [CLEAR] to cancel and return to the previous screen before entering the screen selection mode.
- ③ Rotate [DIAL] to select "Move," then push [ENTER].
- ④ Rotate [DIAL] to move the screen, then push [ENTER].

PLOTTER OPERATION

Section 2

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■ Plotter display



① CURSOR POSITION

- Shows the pointed position* of the cross hair cursor in latitude/longitude, the bearing and distance of the pointed position relative to the current vessel position.

*Depending on the presetting, Loran-C Time differences is displayed instead of the position data.

- Placing the cursor directly over the center of the object icon shows the object's position information.

② YOUR VESSEL ICON

Indicates the current vessel's position. The icon represents the current position of your vessel.

- The vessel icon points to the bow.
- When no heading information is received, the vessel icon points to the COG (Course Over Ground).
- When both the heading and COG information are received, the vessel icon is displayed as "O."

③ NAVIGATION SCREEN

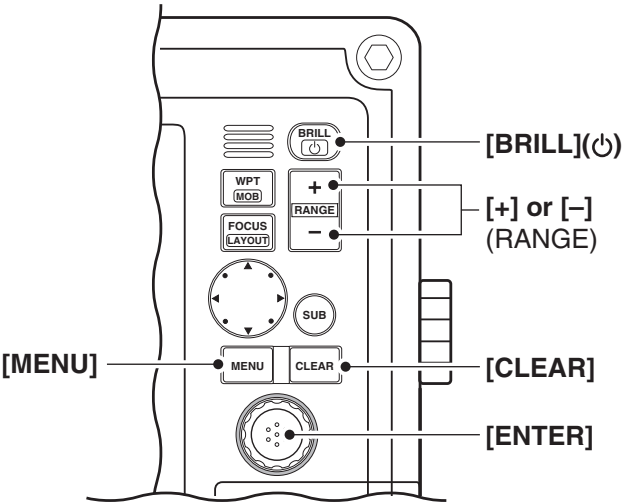
Appears only when the Navigation function is ON. It shows the destination information.

④ PLOTTER DISPLAY INFORMATION

Shows the selected plotter display mode, display scale, radar overlay status and an arrow which indicates the north.

- The selected plotter display mode icon (e.g. "N-UP") is turned ON when it is enabled. (p. 2-5)
- When the cross hair cursor points to the plotter display mode icon, push [SUB] to switch the mode between "N-UP" (North-up), "C-UP" (Course-up), "AC-UP" (Automatic Course-up), "TM" (True Motion) and "AR" (Automatic Range).
- When the cross hair cursor points to the radar overlay icon ("📡"), push [SUB] to turn the Radar Overlay function ON or OFF. (The Radar Overlay function can be turned ON only when the radar unit is in the transmit status.)

Basic operation




Display range readout



Display brilliance adjustment screen

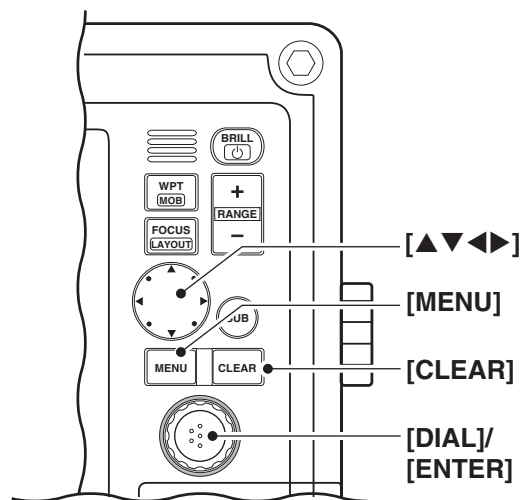


- ① Turn the power ON.
 - The Plotter screen appears.
 - If a screen other than the Plotter appears:
 1. Hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode.
 2. Rotate [DIAL] to select Plotter.
 3. Push [ENTER].
- ② Push [+] or [-] one or more times to select the display range.
 - The display range readout shows the maximum distance range of the screen longitudinal direction.
- ③ Push [BRILL]() , then adjust the display brilliance, backlighting of the keys and a color mode of the display (day/night). (p. 1-7)
- ④ Select the Plotter Display mode.
 - ➔ Push [MENU], then rotate [DIAL] or push [▲], [▼], [◀] or [▶] until the “Plotter Display Mode” menu is highlighted.
 - ➔ Push [ENTER], then rotate [DIAL] or push [▲], [▼], [◀] or [▶] to select one of the following screens:
 - North-up (N-UP)
 - Course-up (C-UP)
 - Automatic Course-up (AC-UP)
 - True Motion (TM)
 - Automatic Range (AR)
 - ➔ Push [ENTER] to exit the menu screen.

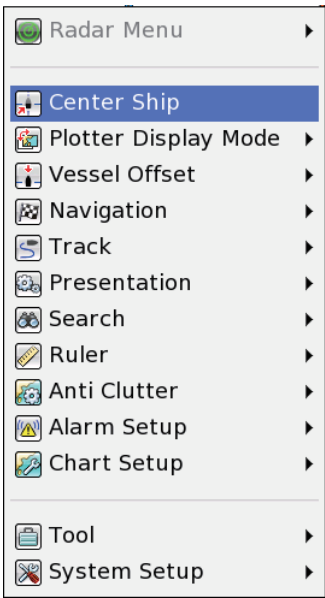
Plotter Display Mode Description

Mode	Description
N-UP	The top of the plotter display represents North.
C-UP	The top of the plotter display represents the direction your course is heading.
AC-UP	The top of the plotter display represents the direction your course is heading. When your course is changed to 6 degrees, the plotter map automatically rotates to set the direction.
TM	The plotter display is fixed, and your vessel icon moves on the map. When your vessel icon approach to the edge of the display, the plotter map will automatically switch.
AR	While in the navigation, in addition to the “AC-UP” action, the range of the plotter display is automatically adjusted according to the distance between your vessel and the destination. While in the not navigation, it is same as the “AC-UP” action.

Menu operation



<Main menu>

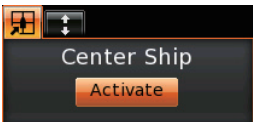


Menu screens enable you to select and execute various system functions, or to change various settings. The following summarizes the operation on the menu screen.

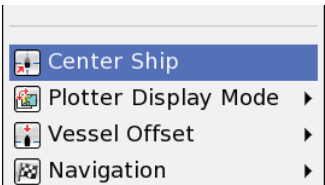
- ① Push [MENU].
 - The Main menu screen appears.
 - The currently selected menu is highlighted.
- ② Rotate [DIAL] to select the desired menu, and push [ENTER].
 - The Submenu screen appears.
 - On the Submenu screen, the currently selected menu is highlighted.
- ③ Rotate [DIAL] to select the desired menu, and push [ENTER].
- ④ Repeat step ③ until the menu option screen appears.
 - To return to the previous screen, push [CLEAR].
- ⑤ Rotate [DIAL] to set the desired option.
- ⑥ Repeat steps ③ and ⑤ to set other items.
- ⑦ Push [CLEAR] one or more times to exit the Menu screen.

Center Ship function

<Quick menu>



<Center Ship menu>



This function makes your vessel locate to the center of the display, and enables the Plotter Display Mode.

Using the Quick menu:

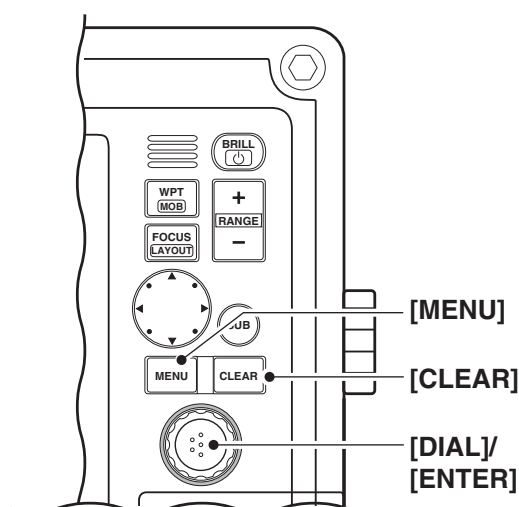
- ➡ Push [ENTER] to open Quick menu, and push [ENTER] to set your vessel to center of the screen.

Using the Center Ship menu:

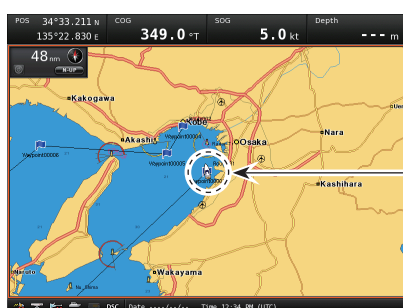
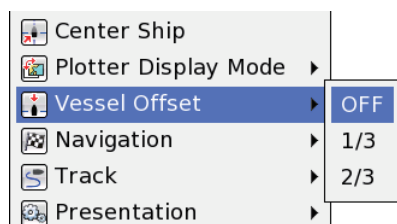
(MENU ▷ Center Ship)

- ① Push [MENU], and push [ENTER] to set your vessel to center of the screen.
- ② Push [CLEAR] one or more times to exit the Menu screen.

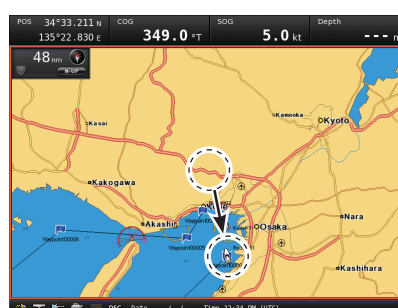
■ Vessel Offset function (MENU ▸ Vessel Offset)



<Vessel Offset menu>



Original position



When the offset value is "2/3," the icon is shifted to two-thirds from the center of the display.

This function locates your vessel icon at a specified offset position from the center of the display to show your COG large. The offset distance is calculated with the specified offset value between the center and the edge of the display.

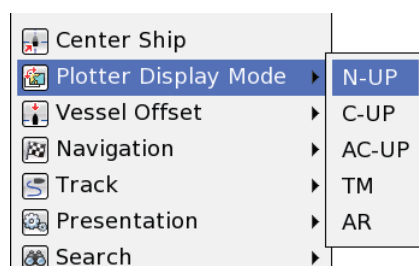
- ① Push [MENU], then rotate [DIAL] until the "Vessel Offset" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to select the offset value, or turn the vessel offset OFF.
- ③ Push [ENTER] to set, then exit the "Vessel Offset" menu.

NOTE: While in the following status, the Vessel Offset function is disabled;

- The Plotter Display mode is "TM" (True Motion).
- The COG data is disabled.
- The SOG data is less than 2 knots.
(When the SOG data rises more than 3 knots, the Vessel Offset function can be used.)
- The Perspective View function is ON. (p. 2-43)

■ Plotter Display Mode selection (MENU ▸ Plotter Display Mode)

<Plotter Display Mode menu>



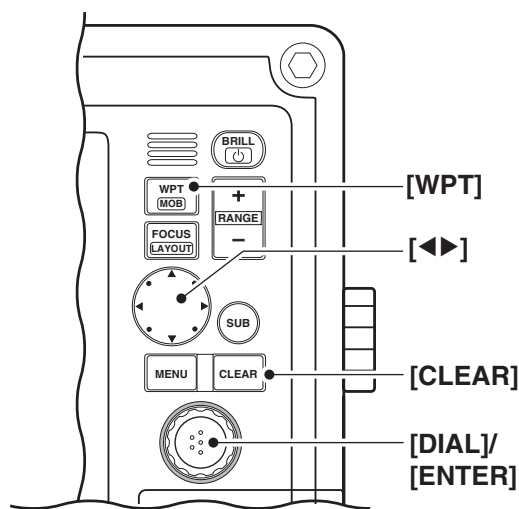
The plotter display has five modes, and it can be selected in the "Plotter Display Mode" menu.

When the Plotter Display Mode is enabled, the plotter map moves to your vessel moving, and display range is changed centering around your vessel.

The Plotter Display Mode is disabled when a cursor is displayed, or the plotter map is rotated by [DIAL].

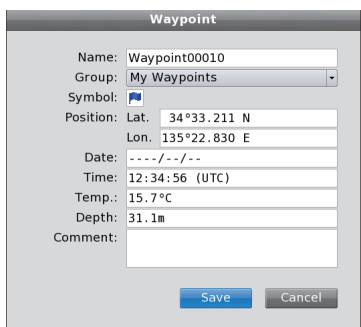
- ① Push [MENU], then rotate [DIAL] until the "Plotter Display Mode" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to select the desired mode between "N-UP" (North-up), "C-UP" (Course-up), "AC-UP" (Automatic Course-up), "TM" (True Motion) and "AR" (Automatic Range). (p. 2-3)
- ③ Push [ENTER] to set, then exit the "Plotter Display Mode" menu.

Waypoint operation



The position information that you want to memorize can be created as a waypoint. When using the Goto Waypoint navigation function, the waypoint should has already created.

- ① Push [WPT] to create the waypoint to the your current position.
 - The Waypoint setting screen appears.
- ② Rotate [DIAL] to select the desired item, and push [ENTER].
 - See the next page for details.
 - If you don't change the waypoint contents, go to step ③.
- ③ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

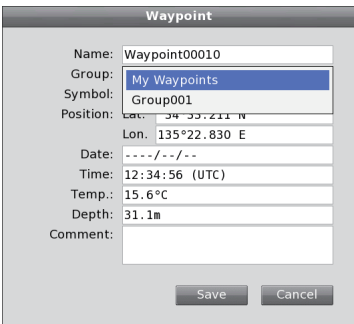


NOTE: The displayed latitude, longitude, date, time, temperature and depth data are your own vessel's information, received when [WPT] is pushed. The contents can be changed, if necessary. When no data is received, "--" is displayed.

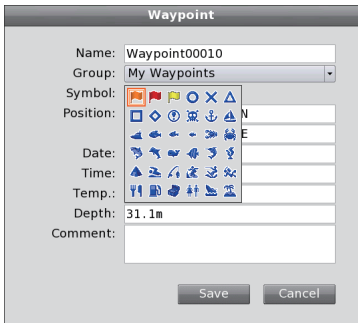
• Name programming screen



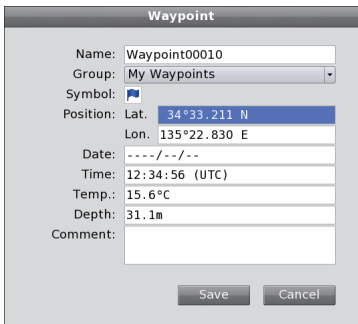
• Group selection screen



• Symbol selection screen



• Latitude data programming screen



Name programming:

The Waypoint name is sequentially numbered when it is created. Change it, if necessary.

- 1 Rotate [DIAL] to select “Name,” and push [ENTER].
- 2 Input a waypoint name of up to 16 characters.
 - See page 5-30 for programming details.
- 3 Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Group selection:

Make sure that the waypoint group has already been created before selecting. (p. 5-6)

- 1 Rotate [DIAL] to select “Group,” and push [ENTER].
- 3 Rotate [DIAL] to select the desired group, then push [ENTER] to set and return to the previous screen.
 - If [CLEAR] is pushed, the setting will be cancelled.

Symbol selection:

- 1 Rotate [DIAL] to select “Symbol,” and push [ENTER].
- 2 Rotate [DIAL] to select the desired symbol to indicate the waypoint on the plotter display, then push [ENTER] to set and return to the previous screen.

Latitude data programming:

- 1 Rotate [DIAL] to select “Position Lat,” and push [ENTER].
- 2 Rotate [DIAL] to set the latitude data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.
 - Select “N” to input N; North latitude.
 - Select “S” to input S; South latitude.

2 PLOTTER OPERATION

■ Waypoint operation (Continued)

• Longitude data programming screen

Waypoint

Name: Waypoint00010

Group: My Waypoints

Symbol:

Position: Lat. 34°33.211 N
Lon. 135°22.830 E

Date: ---/---/---

Time: 12:34:56 (UTC)

Temp.: 15.6°C

Depth: 31.1m

Comment:

Save Cancel

• Date data programming screen

Waypoint

Name: Waypoint00010

Group: My Waypoints

Symbol:

Position: Lat. 34°33.211 N
Lon. 135°22.830 E

Date: ---/---/---

Time: 12:34:56 (UTC)

Temp.: 15.7°C

Depth: 31.1m

Comment:

Save Cancel

• Time data programming screen

Waypoint

Name: Waypoint00010

Group: My Waypoints

Symbol:

Position: Lat. 34°33.211 N
Lon. 135°22.830 E

Date: ---/---/---

Time: 12:34:56 (UTC)

Temp.: 15.6°C

Depth: 31.1m

Comment:

Save Cancel

• Temperature data programming screen

Waypoint

Name: Waypoint00010

Group: My Waypoints

Symbol:

Position: Lat. 34°33.211 N
Lon. 135°22.830 E

Date: ---/---/---

Time: 12:34:56 (UTC)

Temp.: 15.7°C

Depth: 31.1m

Comment:

Save Cancel

Longitude data programming:

- 1 Rotate [DIAL] to select "Position Lon," and push [ENTER].
- 2 Rotate [DIAL] to set the longitude data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.
 - Select "W" to input W; West longitude.
 - Select "E" to input E; East longitude.

Date data programming:

- 1 Rotate [DIAL] to select "Date," and push [ENTER].
- 2 Rotate [DIAL] to set the desired date data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.

Time data programming:

- 1 Rotate [DIAL] to select "Time," and push [ENTER].
- 2 Rotate [DIAL] to set the current UTC time data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.
 - Select "AM" or "PM" when the time format is set to "12 hours."

Temperature data programming:

- 1 Rotate [DIAL] to select "Temp." and push [ENTER].
- 2 Rotate [DIAL] to set the desired temperature data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.

• Depth data programming screen

Waypoint

Name: Waypoint00010

Group: My Waypoints

Symbol: [Icon]

Position: Lat. 34°33.211 N
Lon. 135°22.830 E

Date: ---/---/---

Time: 12:34:56 (UTC)

Temp.: 15.6°C

Depth: 31.1m

Comment:

Save Cancel

• Comment programming screen

Comment

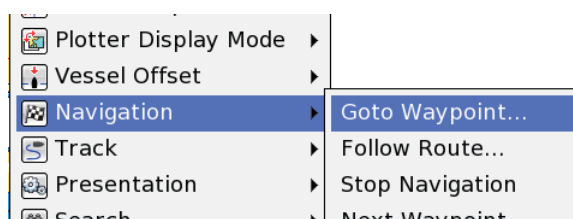
0/32

← → ↶ ↷ ⌫ All Clear

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m
n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 * # \$
() < > ? ! @ , ' : ; - +
& % = / Space

OK Cancel

<Navigation menu>



When the “Goto Waypoint...” menu is selected.



Navigation screen

Depth data programming:

- 1 Rotate [DIAL] to select “Depth,” and push [ENTER].
- 2 Rotate [DIAL] to set the desired depth data, then push [ENTER] to input it.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.

Comment programming:

- 1 Rotate [DIAL] to select “Comment,” and push [ENTER].
- 2 Input a comment of up to 32 characters.
 - See page 5-30 for programming details.
- 3 Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

➔ After setting, rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.

- If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

◇ Goto Waypoint navigation

(MENU ▶ Navigation ▶ Goto Waypoint...)

The Goto Waypoint navigation means that the vessel is navigated from the current position to the specified waypoint (within only one section).

Make sure that the waypoint has already been created. (p. 2-6)

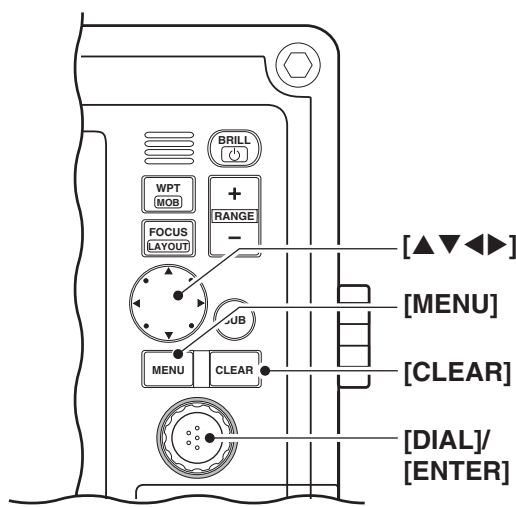
- 1 Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].
- 2 Rotate [DIAL] until the “Goto Waypoint...” menu is highlighted, then push [ENTER].
- 3 Rotate [DIAL] to select the desired waypoint.
- 4 Push [ENTER] to start the waypoint navigation.
 - The navigation screen appears.
- 5 See page 2-12 to stop the navigation.

✓ INFORMATION

While navigation, the Reset XTE function can reset its route to directly navigate to the destination from the current position.

See page 2-13 for details.

■ Route navigation function (MENU ▸ Navigation)



The Route navigation means that the vessel is navigated via some Waypoints to the destination.

◇ Creating navigation routes

(MENU ▸ Navigation ▸ Create Route...)

You can create up to 150 navigation routes, each of which consists of up to 50 waypoints.

If you try to create the 151th route, an error message will be displayed.

The created route can be checked on the Route List screen. (p. 2-14)

① Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].

② Rotate [DIAL] until the “Create Route...” menu is highlighted, then push [ENTER].

- Cursor appears.

③ Push [▲], [▼], [◀] or [▶] to move the cursor to the point where you want to begin the route, and push [ENTER].

- If the cursor points to the present waypoint, the cursor menu shows “At Way point” instead of “At Cursor.” In this case, the navigation route will be created using the present waypoint.

④ Push [▲], [▼], [◀] or [▶] to move the cursor to the next waypoint, and push [ENTER].

- Up to 50 waypoints can be create in one route.
- A blue flag appears on the created waypoint.
- A route between the waypoints are shown as black solid line. (default)

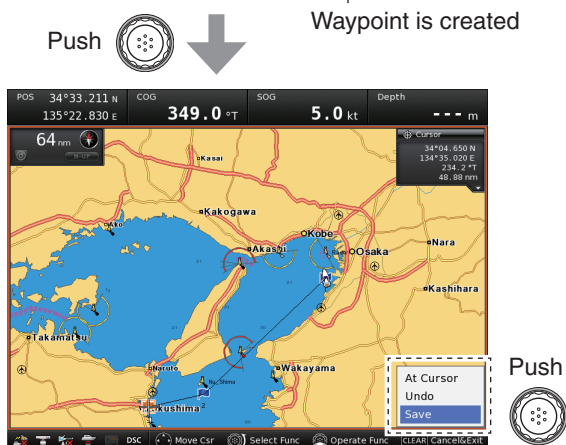
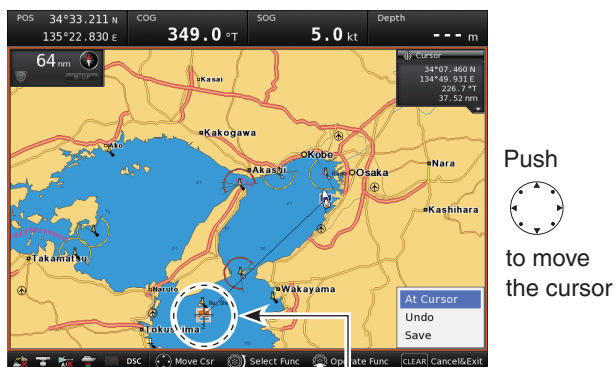
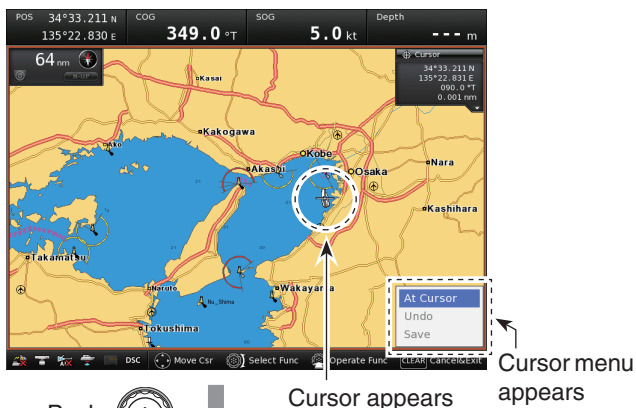
⑤ When you finish to create the route, rotate [DIAL] until “Save” is highlighted on the cursor menu, and push [ENTER].

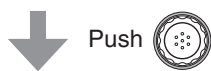
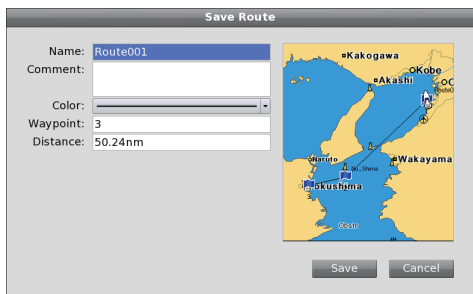
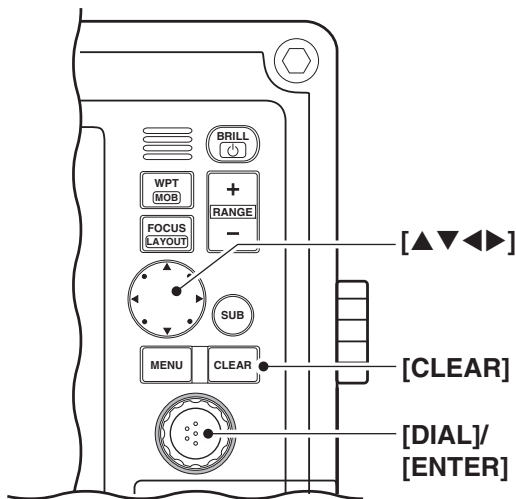
- “Save Route” screen appears.

NOTE: When you cancel the last created waypoint, rotate [DIAL] until “Undo” becomes highlighted on the cursor menu, and push [ENTER].

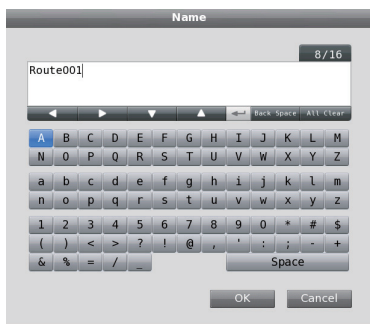
⑥ Rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.

- If “Cancel” is selected, the setting will be cancelled.
- If you change the route contents, see the next page.





• Programming screen



(e.g. Name)

Name programming:

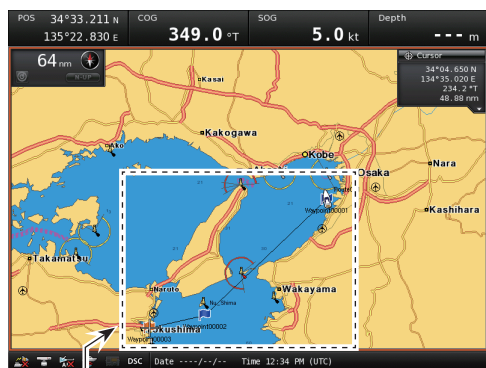
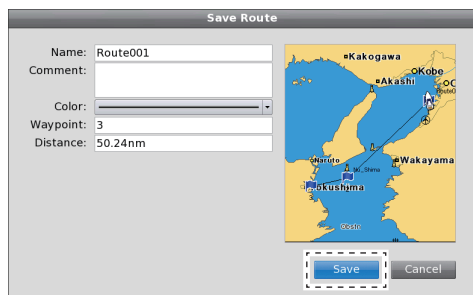
- 1 Rotate [DIAL] to select “Name,” and push [ENTER].
- 2 Input a route name of up to 16 characters.
 - See page 5-30 for programming details.
- 3 Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Comment programming:

- 1 Rotate [DIAL] to select “Comment,” and push [ENTER].
- 2 Input a comment of up to 32 characters.
 - See page 5-30 for programming details.
- 3 Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

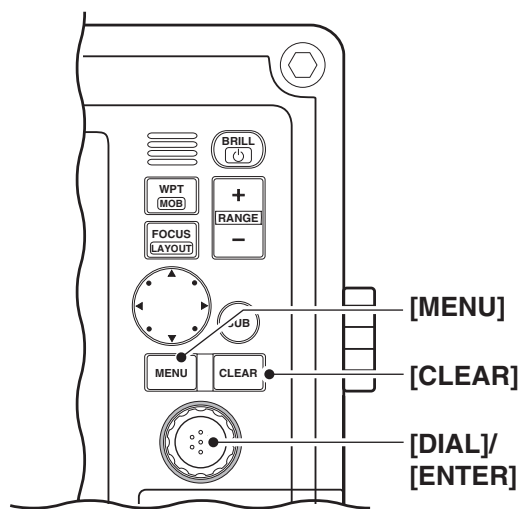
Color selection:

- 1 Rotate [DIAL] to select “Color,” and push [ENTER].
 - 2 Rotate [DIAL] to select the desired color, then push [ENTER] to set and return to the previous screen..
- ➔ After setting, rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
- If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

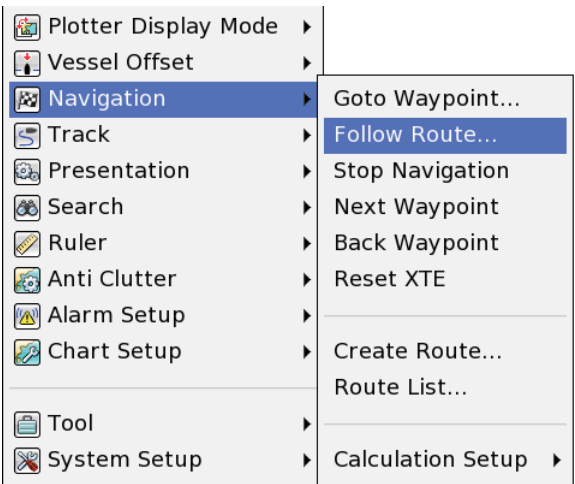


3 waypoints are created in this route.

■ Route navigation function (Continued)



<Navigation menu>



When the “Follow Route...” menu is selected.

◇ Follow Route navigation

(MENU ▸ Navigation ► Follow Route...)

To start the route navigation, follow the steps as described below.

Make sure that the route has already been created before starting the route navigation. (p. 2-10)

The route line indication can be turned OFF. (p. 2-29)

- ① Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Follow Route...” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the desired route from the route list.
 - When [SUB] is pushed, the following operations can be made:
 - View Detail... (p. 2-14)
 - Reverse Route (p. 2-15)
- ④ Push [ENTER] to start the route navigation.
 - The navigation screen appears.

◇ Stop Navigation

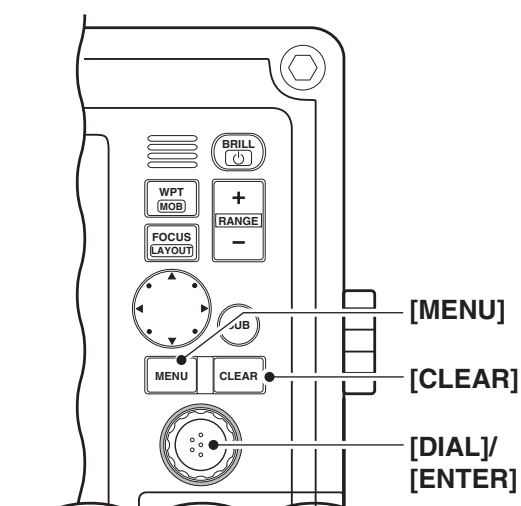
(MENU ▸ Navigation ► Stop Navigation)

To cancel the navigation, follow the steps as described below.

- ① Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Stop Navigation” menu is highlighted, then push [ENTER].
- ③ Push [ENTER] to stop the navigation.
 - The navigation screen disappears.



Navigation screen



◇ Next Waypoint

(MENU ▸ Navigation ► Next Waypoint)

While Follow Route navigation is ON, this function sets the next waypoint as the destination.

- ① Push [MENU], then rotate [DIAL] until the "Navigation" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Next Waypoint" menu is highlighted, then push [ENTER].
 - The next waypoint is set as the destination.

◇ Back Waypoint

(MENU ▸ Navigation ► Back Waypoint)

While Follow Route navigation is ON, this function sets the previous waypoint as the destination.

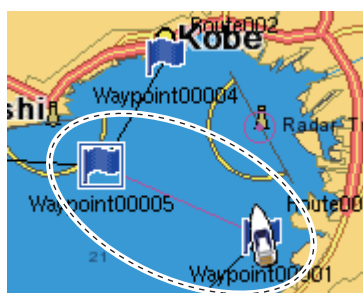
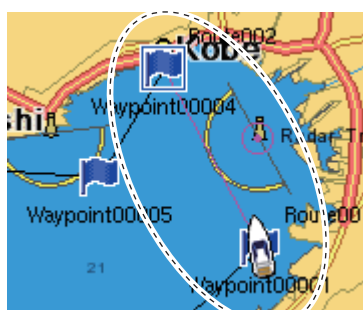
- ① Push [MENU], then rotate [DIAL] until the "Navigation" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Back Waypoint" menu is highlighted, then push [ENTER].
 - The previous waypoint is set as the destination.

◇ Reset XTE (Cross Track Error)

(MENU ▸ Navigation ► Reset XTE)

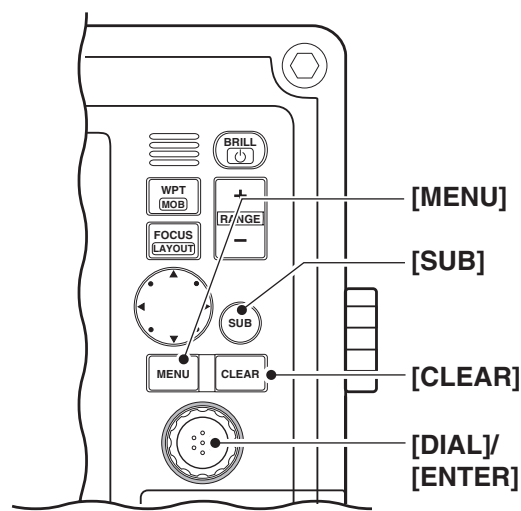
While navigation, you can reset its route. This function enables you to step off the preset track, and directly navigate to the destination from the current position.

- ① Push [MENU], then rotate [DIAL] until the "Navigation" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Reset XTE" menu is highlighted, then push [ENTER].
 - The navigation route is reset.

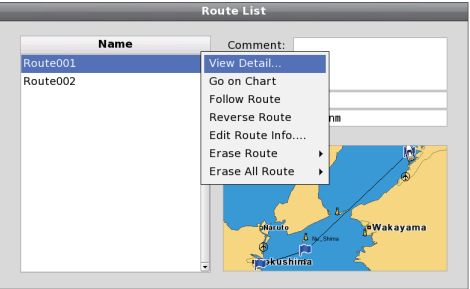


When the "Next Waypoint" is selected.

■ Route navigation function (Continued)



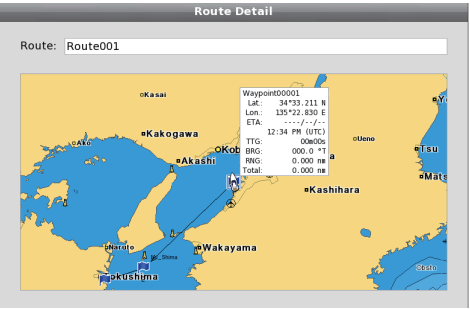
<Route List—View Detail menu>



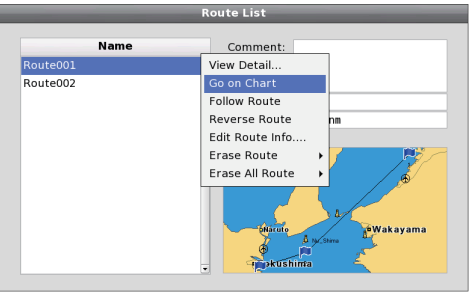
When the “View Detail” menu is selected.



• Route detail screen



<Route List—Go on Chart menu>



◇ Route List

(MENU ▸ Navigation ▸ Route List...)

The created route information can be checked or edited.

- ① Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Route List...” menu is highlighted, then push [ENTER].
 - The Route List screen is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - View Detail... (p. 2-14)
 - Go on Chart (p. 2-14)
 - Follow Route (p. 2-15)
 - Reverse Route (p. 2-15)
 - Edit Route Info... (p. 2-16)
 - Erase Route (p. 2-17)
 - Erase All Route (p. 2-17)
- ③ Push [CLEAR] to return to the previous screen.

• Route List—View Detail

You can check a route detail information on the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Push [ENTER] to enter the “View Detail...” menu.
- ③ Rotate [DIAL] to select the waypoint of the route to show its detail information.
- ④ Push [CLEAR] to return to the previous screen.

NOTE: When the Route Detail screen is displayed, pushing [▲] or [▼] sequentially selects the next (or previous) waypoint.

• Route List—Go on Chart

This function enables the cursor to move to the start point of the selected route on the plotter display.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Go on Chart” menu is highlighted, then push [ENTER].
 - The Route List Sub Menu screen disappears, and the cursor automatically moves to the start point of the selected route.

<Route List—Follow Route menu>



When the “Follow Route” menu is selected.



Navigation screen

• Route List—Follow Route

The route navigation can be started from the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Follow Route” menu is highlighted, then push [ENTER].
 - The route navigation starts.
 - The navigation screen appears.

When you make the Nav-Course Monitor screen for the new layout, the navigation course can be monitored as shown below.

Nav-Course Monitor screen

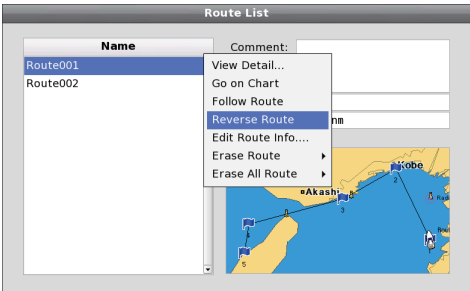


• Route List—Reverse Route

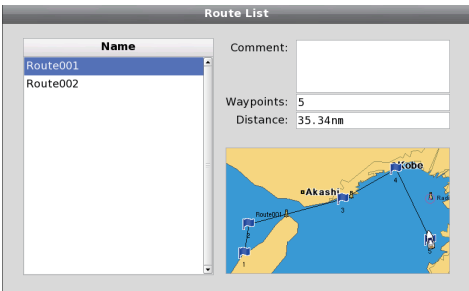
Waypoint order of a route can be reversed on the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Reverse Route” menu is highlighted, then push [ENTER].
 - The Waypoint order of the route are reversed.

<Route List—Reverse Route menu>



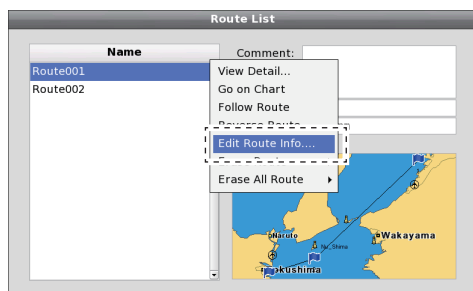
When the “Reverse Route” menu is selected.



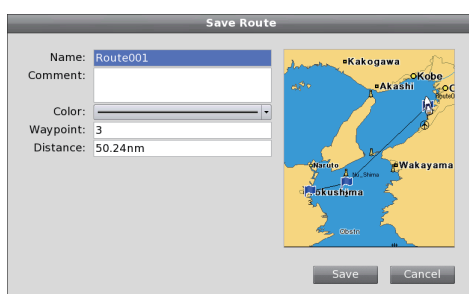
2 PLOTTER OPERATION

■ Route navigation function (Continued)

<Route List—Edit Route Info menu>



When the “Edit Route Info” menu is selected.



• Route List—Edit Route Info

A route information can be edited on the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Edit Route Info...” menu is highlighted, then push [ENTER].
 - “Save Route” screen appears.
- ③ Rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.
 - If you change the route contents, see below.

Name programming:

- ① Rotate [DIAL] to select “Name,” and push [ENTER].
- ② Input a route name of up to 16 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Comment programming:

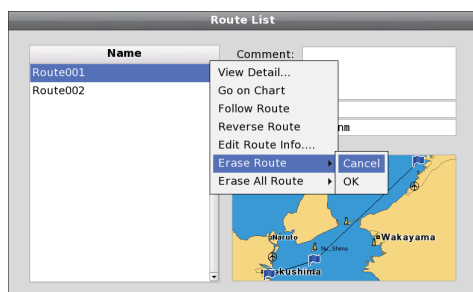
- ① Rotate [DIAL] to select “Comment,” and push [ENTER].
- ② Input a comment of up to 32 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Color selection:

- ① Rotate [DIAL] to select “Color,” and push [ENTER].
- ② Rotate [DIAL] to select the desired color, then push [ENTER] to set and return to the previous screen..

- ➡ After setting, rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
- If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

<Route List—Erase Route list menu>

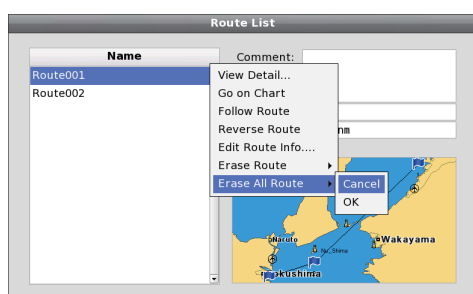


• Route List—Erase Route list

A route list can be erased on the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase Route” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the route and return to the previous screen.
 - If “Cancel” is selected, the Route List erasing will be cancelled.

<Route List—Erase All Route list menu>

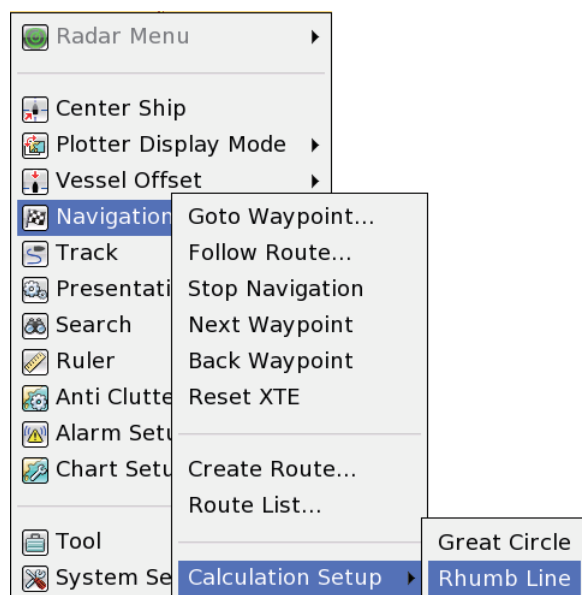


• Route List—Erase All Route list

All route list can be erased on the Route List Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase All Route” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all route and return to the previous screen.
 - If “Cancel” is selected, the Route List erasing will be cancelled.

<Calculation Setup menu>



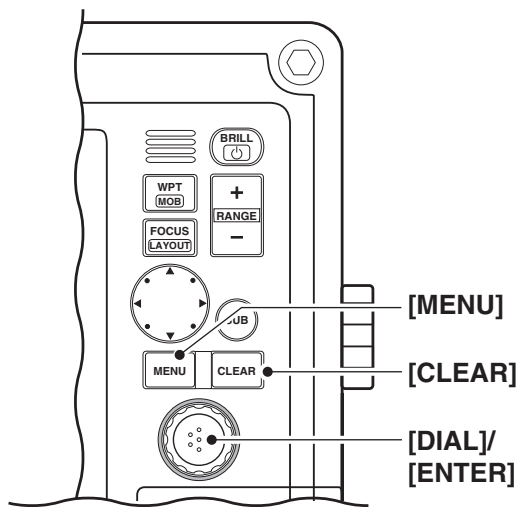
◇ Calculation Setup

(MENU ▸ Navigation ▸ Calculation Setup)

The calculation method for distance, bearing and points can be selected between Great Circle and Rhumb line.

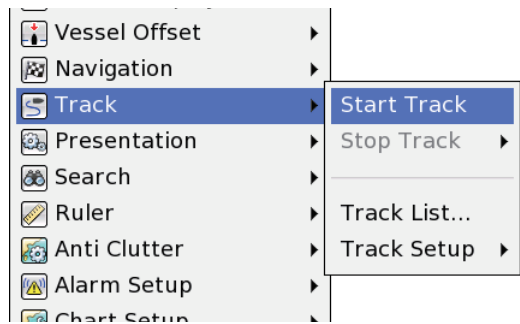
- ① Push [MENU], then rotate [DIAL] until the “Navigation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Calculation Setup” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select Great Circle or Rhumb line.
 - Great Circle : Calculates on great circle (assumed the earth is a perfect globe).
 - Rhumb line : Calculates on rhumb line (assumed the earth is flat).
- ④ Push [ENTER] to set, then exit the “Calculation Setup” menu.

■ Track function (MENU ▸ Track)



The system stores and plots maximum 10 track consisting of up to 1,000 points in a track through which the vessel passed.
If the number of the points exceeds 1,000, excess track data is deleted in chronological order.
The track data is updated at specified tracking intervals. (p. 2-23)
Note that longer tracking (track update) intervals allow the system to cover a longer track, but may cause a lower resolution of the track image when zoomed in.

<Start Track menu>

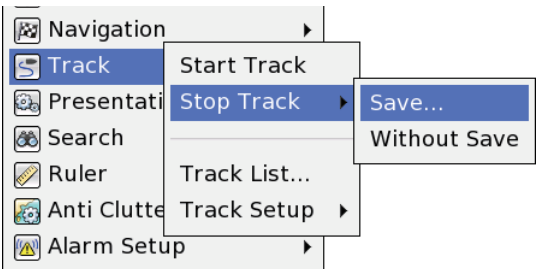


◇ Start Track

- (MENU ▸ Navigation ► Start Track)
- ① Push [MENU], then rotate [DIAL] until the “Track” menu is highlighted, then push [ENTER].
 - ② Rotate [DIAL] until the “Start Track” menu is highlighted, then push [ENTER].
 - The track function starts.

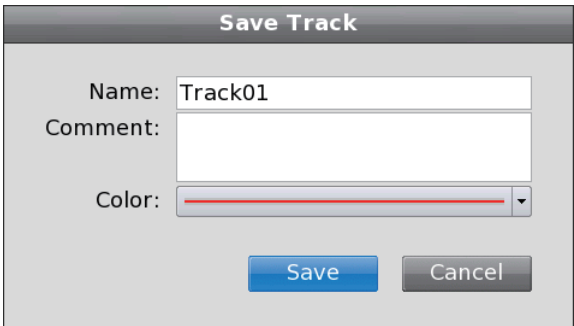
NOTE: When 10 track is stored, the track function cannot start. In this case, delete one track data before starting the track function.

<Stop Track menu>



When “Save...” is selected.

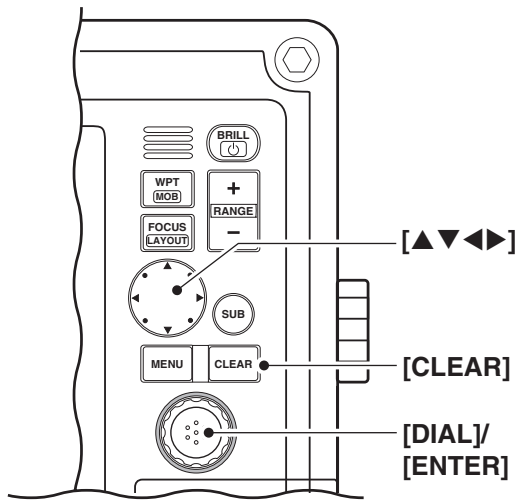
• Save Track screen



◇ Stop Track

- (MENU ▸ Navigation ► Stop Track)
- To cancel the tracking, follow the steps as described below.
- ① Push [MENU], then rotate [DIAL] until the “Track” menu is highlighted, then push [ENTER].
 - ② Rotate [DIAL] until the “Stop Track” menu is highlighted, then push [ENTER].
 - ③ Rotate [DIAL] to select “Save...” or “Without Save.”
 - ④ When “Save...” is selected in step ③, the “Save Track” screen appears. Rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
 - If you change the contents, see the next page.
 - If “Cancel” is selected, the setting will be cancelled.

When “Without Save” is selected in step ③, track operation is cancelled and return to the previous screen. In this case, the tracking data is not stored.

**Name:**

- ① Rotate [DIAL] to select "Name," and push [ENTER].
- ② Input a track name of up to 16 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select "OK," then push [ENTER] to set and return to the previous screen.
 - If "Cancel" is selected, the "Setting Change" screen will appear. Select "Yes" if you want to continue to program, or select "No" if you want to cancel the program.

Comment:

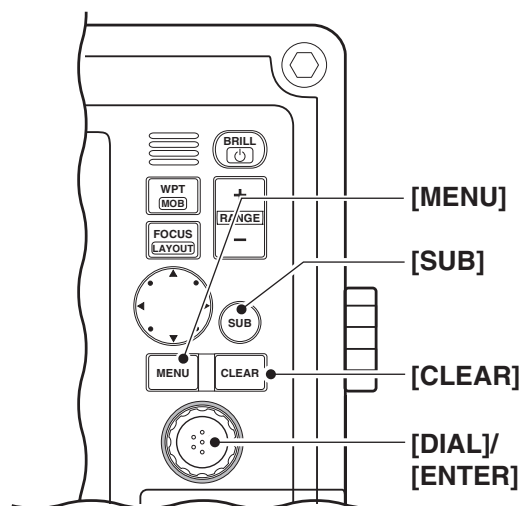
- ① Rotate [DIAL] to select "Comment," and push [ENTER].
- ② Input a comment of up to 32 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select "OK," then push [ENTER] to set and return to the previous screen.
 - If "Cancel" is selected, the "Setting Change" screen will appear. Select "Yes" if you want to continue to program, or select "No" if you want to cancel the program.

Color:

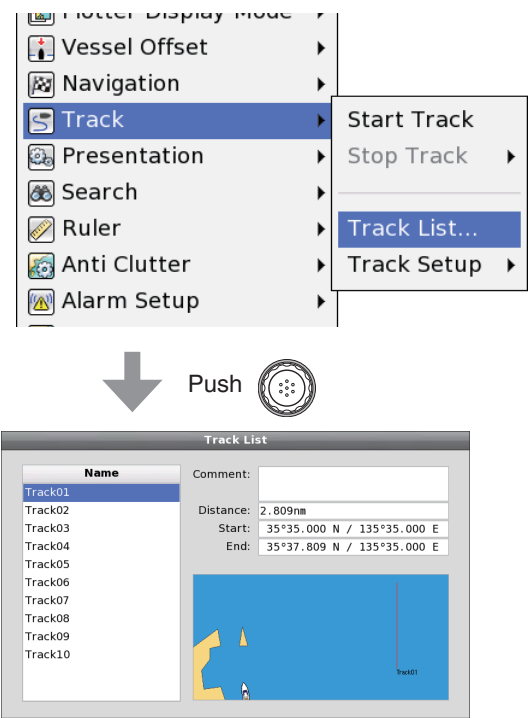
- ① Rotate [DIAL] to select "Color," and push [ENTER].
- ② Rotate [DIAL] to select the desired color, then push [ENTER] to set and return to the previous screen.

- ➡ After setting, rotate [DIAL] to select "Save," then push [ENTER] to save the Waypoint and return to the previous screen.
- If "Cancel" is selected, the "Setting Change" screen will appear. Select "Yes" if you want to continue to program, or select "No" if you want to cancel the program.

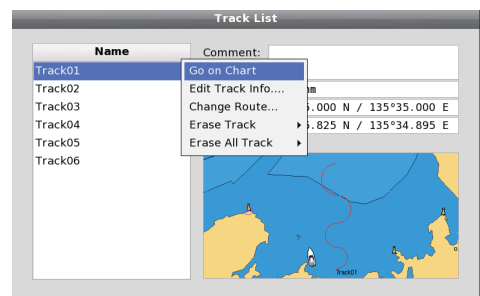
■ Track function (Continued)



<Track List menu>



<Track List—Go on Chart menu>



◇ Track List

(MENU ▸ Navigation ► Track List...)
The track list can be checked.

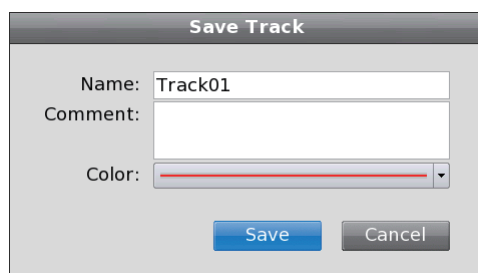
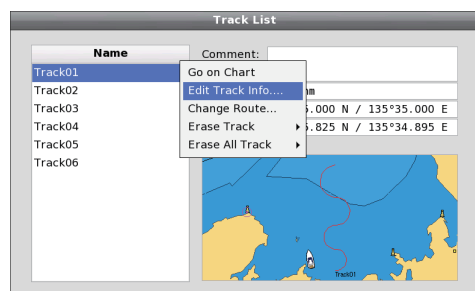
- ① Push [MENU], then rotate [DIAL] until the “Track” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Track List...” menu is highlighted, then push [ENTER].
 - The Track List screen is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Go on Chart (p. 2-20)
 - Edit Track Info... (p. 2-21)
 - Change Route... (p. 2-22)
 - Erase Track (p. 2-22)
 - Erase All Track (p. 2-22)
- ③ Push [CLEAR] to return to the previous screen.

•Track List—Go on Chart

This function enables the cursor to move to the start point of the selected track on the plotter display.

- ① When the Track List screen is displayed, rotate [DIAL] until the desired track is highlighted, then push [SUB].
 - The Track List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Go on Chart” menu is highlighted, then push [ENTER].
 - The Track List Sub Menu screen disappears, and the cursor automatically moves to the start point of the selected track.

<Track List—Edit Route Info menu>



• Track List—Edit Track Info

A track information can be edited on the Track List Sub Menu screen.

- ① When the Track List screen is displayed, rotate [DIAL] until the desired track is highlighted, then push [SUB].
 - The track List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Edit Track Info...” menu is highlighted, then push [ENTER].
 - “Save Track” screen appears.
- ③ Rotate [DIAL] to select “Save,” then push [ENTER] to save the track and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.
 - If you don’t change the route contents, see below.

Name programming:

- ① Rotate [DIAL] to select “Name,” and push [ENTER].
- ② Input a route name of up to 16 characters.
 - See page 5-31 for programming details.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Comment programming:

- ① Rotate [DIAL] to select “Comment,” and push [ENTER].
- ② Input a comment of up to 32 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

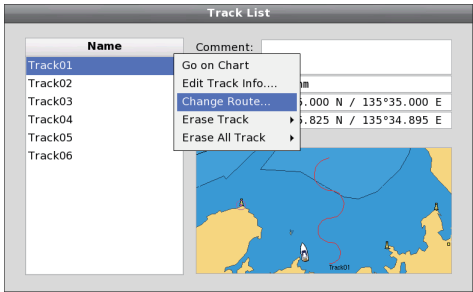
Color selection:

- ① Rotate [DIAL] to select “Color,” and push [ENTER].
- ② Rotate [DIAL] to select the desired color, then push [ENTER] to set and return to the previous screen.

- ➡ After setting, rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.
- If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

■ Track function (Continued)

<Track List—Change Route... menu>



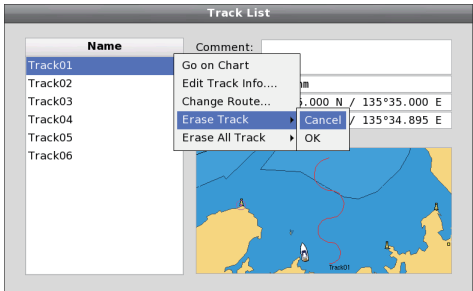
•Track List—Change Route...

This function enables a Waypoint to be automatically added to the saved track line.

- ① When the Track List screen is displayed, rotate [DIAL] until the desired track is highlighted, then push [SUB].
- ② Rotate [DIAL] until the “Change Route” menu is highlighted, then push [ENTER].
 - The Change Route screen is displayed.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER].
 - The Save Route screen is displayed.
- ④ Edit Name, Comment or select Color, if necessary.
(p. 2-21)
If you don’t change the contents, go to step ④.
- ⑤ Rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

/// **NOTE:** The changed route may differ from the actual track. Before starting the navigation, be sure to check the changed route is safe.

<Track List—Erase Track list menu>

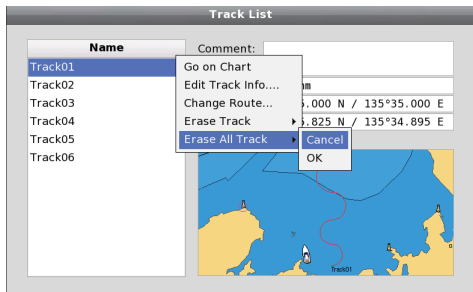


•Track List—Erase Track list

A track list can be erased on the Track List Sub Menu screen.

- ① When the Track List screen is displayed, rotate [DIAL] until the desired track is highlighted, then push [SUB].
 - The Track List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase Track” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the track and return to the previous screen.
 - If “Cancel” is selected, the track erasing will be cancelled.

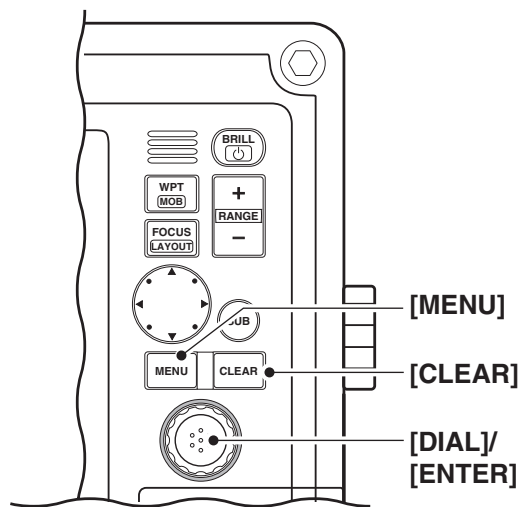
<Track List—Erase All Track list menu>



•Track List—Erase All Track list

All track list can be erased on the Track List Sub Menu screen.

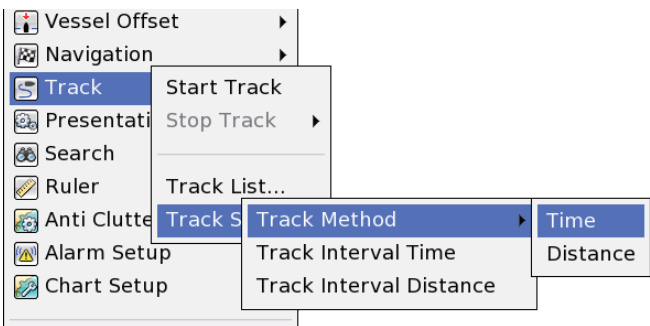
- ① When the Track List screen is displayed, rotate [DIAL] until the desired track is highlighted, then push [SUB].
 - The Track List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase All Track” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all track and return to the previous screen.
 - If “Cancel” is selected, the track erasing will be cancelled.



◆ Track Setup

- (MENU ▸ Track ► Track Setup)
- ① Push [MENU], then rotate [DIAL] until the “Track” menu is highlighted, then push [ENTER].
 - ② Rotate [DIAL] until the “Track Setup” menu is highlighted, then push [ENTER].
 - ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Track Method menu>



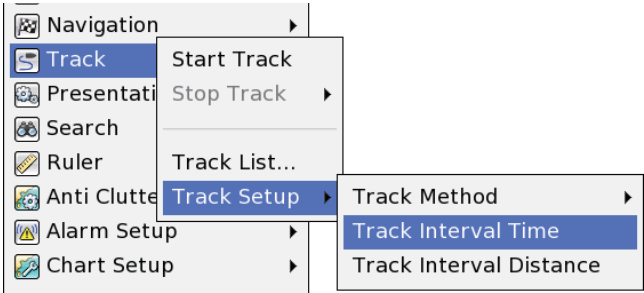
• Track Method

To select the Track method, follow the steps as described below.

- ➔ Rotate [DIAL] to select the track method to between Time and Distance.
 - Time : The system stores and plots the track at the specified interval time.
 - Distance : The system stores and plots the track at the specified interval distance.

The tracking interval can be set in the “Track Interval Time” or “Track Interval Distance” menu.

<Track Interval Time>

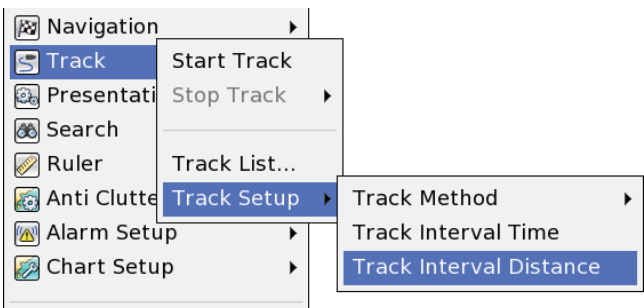


• Track Interval Time

To change the tracking interval time, follow the steps as described below.

- ➔ Rotate [DIAL] to adjust the interval time to between 00m01s and 99m59s in 00m01s step. (Default: 00m10s)

<Track Interval Distance>

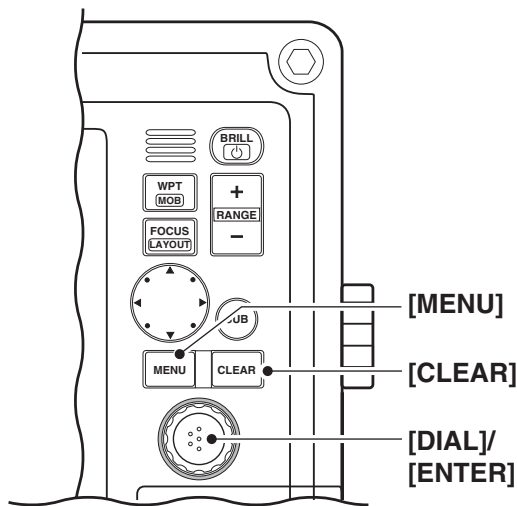


• Track Interval Distance

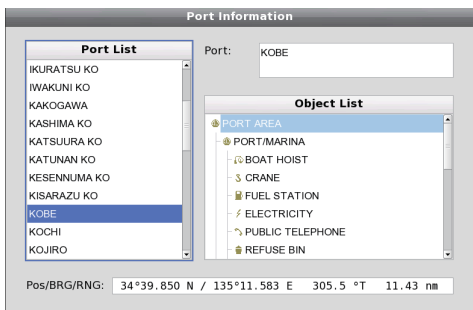
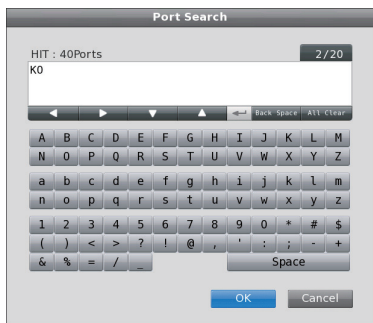
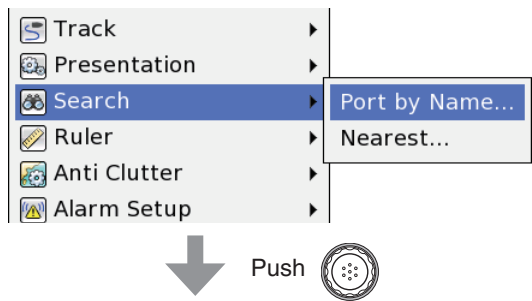
To change the tracking interval distance, follow the steps as described below.

- ➔ Rotate [DIAL] to adjust the interval distance to between 0.01 nm and 100.00 nm in 0.01 nm step. (Default: 0.10 nm)

■ Search function (MENU ▸ Search)



<Port by Name menu>



To search a port, the SD Card which contains C-MAP MAX chart* by C-MAP Italy S.r.l should be inserted to the SD card slot.

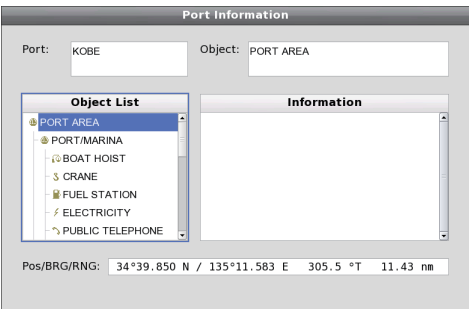
* Chart data is not supplied by Icom.

◇ Searching a port by name

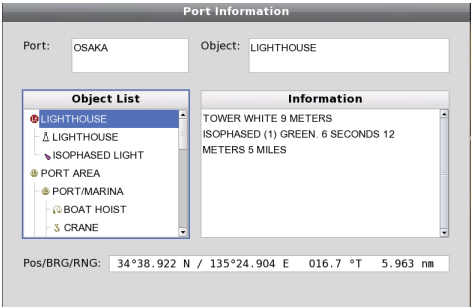
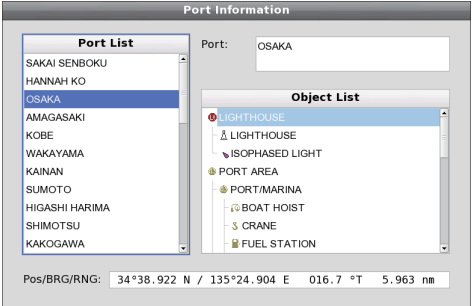
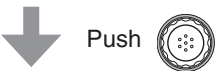
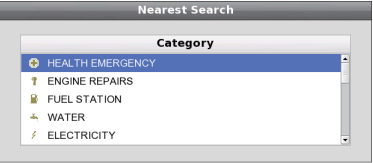
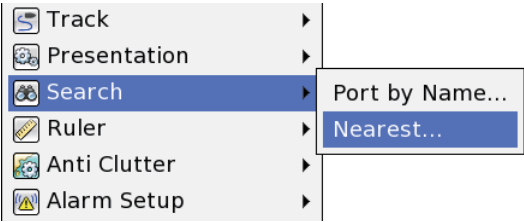
(MENU ▸ Search ► Port by Name)

- ① Push [MENU], then rotate [DIAL] until the “Search” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Port by Name...” menu is highlighted, then push [ENTER].
 - “Port Search” screen appears.
- ③ Rotate [DIAL] to select the desired character in the table, then push [ENTER] to input it.
 - See page 5-30 for programming details.
- ④ Repeat step ③ to input a keyword for a port name of up to 20 characters.
- ⑤ Rotate [DIAL] to select “OK,” then push [ENTER] to search the port by the edited port name.
 - If “Cancel” is selected, the setting will be cancelled.
- ⑥ Rotate [DIAL] until the desired port name is highlighted, then push [ENTER].
 - The Port Information screen is displayed.
 - On the Port Information screen, rotate [DIAL] to select an object. The selected object’s information is shown on the Information screen.
 - When [SUB] is pushed, the following operations can be made:
 - Goto (p. 2-26)
 - Go on Chart (p. 2-26)

• Port Information screen



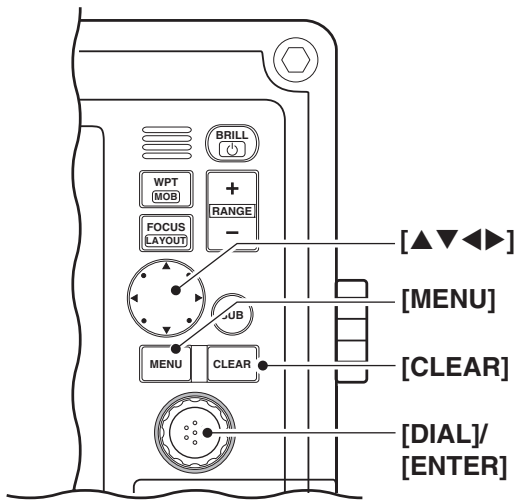
<Nearest menu>



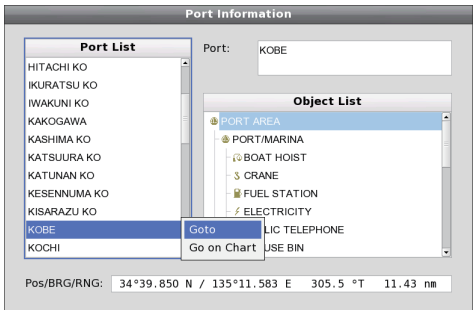
◇ Searching the nearest port
(MENU ▸ Search ▸ Nearest)

- ① Push [▲], [▼], [◀] or [▶] to move the cursor to the area where you want to search the port.
 - ② Push [MENU], then rotate [DIAL] until the “Search” menu is highlighted, then push [ENTER].
 - ③ Rotate [DIAL] until the “Nearest...” menu is highlighted, then push [ENTER].
 - “Nearest Search” screen appears.
 - ④ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].
 - ⑤ Rotate [DIAL] until the desired port name is highlighted, then push [ENTER].
 - The Port Information screen is displayed.
- On the Port Information screen, rotate [DIAL] to select an object. The selected object’s information is shown on the Information screen.
- When [SUB] is pushed, the following operations can be made:
 - Goto (p. 2-26)
 - Go on Chart (p. 2-26)

■ Search function (MENU ▸ Search) (Continued)



• Port Information Sub Menu screen



• Port Information—Goto

The Goto means that the vessel is navigated from the current position to the specified port position.

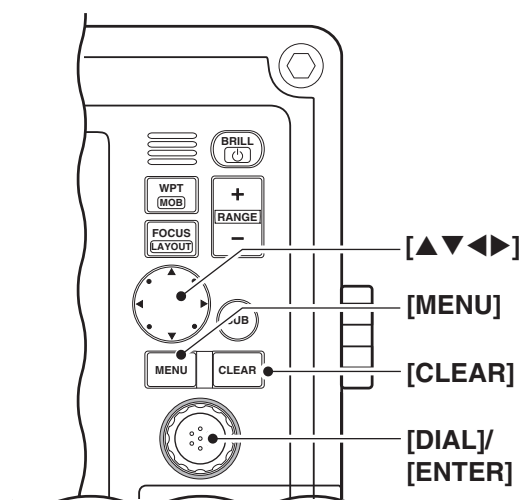
- ① When the Port Information screen is displayed, rotate [DIAL] until the desired port is highlighted, then push [SUB].
 - The Port Information Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Goto” menu is highlighted, then push [ENTER] to start the navigation.
 - The Port Information Sub Menu screen disappears, and the navigation screen appears.
- ③ See page 2-12 to stop the navigation.

• Port Information—Go on Chart

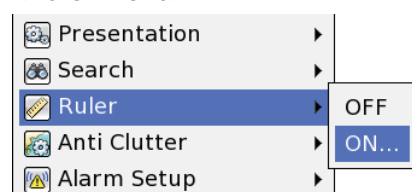
This function enables the cursor to move to the specified port position on the plotter display.

- ① When the Port Information screen is displayed, rotate [DIAL] until the desired port is highlighted, then push [SUB].
 - The Port Information Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Go on Chart” menu is highlighted, then push [ENTER].
 - The Port Information Sub Menu screen disappears, and the cursor automatically moves to the specified port position.

■ Ruler function (MENU ▸ Ruler)



<Ruler menu>



Using the cross hair cursor permits you to measure the distance and bearing between two points easily.

The distance and bearing that can be measured are between the vessel mark and the cursor position or between two points specified with the cursor.

- ① Push [MENU], then rotate [DIAL] until the “Ruler” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “ON...” menu is highlighted, then push [ENTER].
 - Cursor appears.
 - “From” appears on upper right of the cursor.
- ③ Push [▲], [▼], [◀] or [▶] to move the cursor to the desired position, and push [ENTER].
 - “To” appears on upper right of the cursor instead of “From.”
- ④ Push [▲], [▼], [◀] or [▶] to move the cursor to the destination position, and push [ENTER].
- ⑤ The distance and the bearing between the two positions are displayed in the cursor field.
- ⑥ If you want to continuously measure the distance to another point, push [ENTER] on the same point as step ④.
 - Maximum of nine points can be measured.
- ⑦ Repeat step ④ to measure to another point.
- ⑧ Push [ENTER] to set.

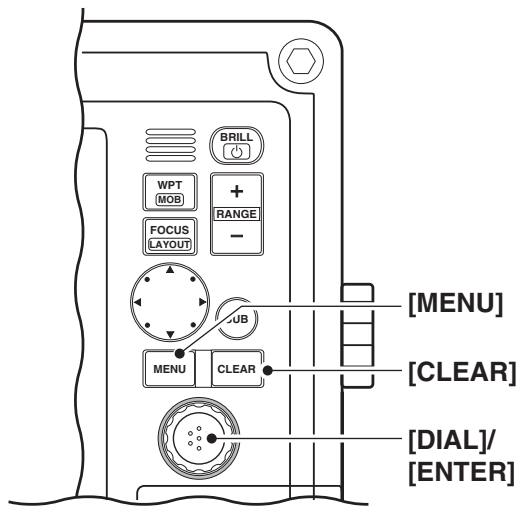
To clear the indication of the ruler information, turn the Ruler function OFF.

- ① Push [MENU], then rotate [DIAL] until the “Ruler” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to select “OFF,” then push [ENTER].
 - The distance and the bearing are cleared.
- ③ Push [ENTER] to set, then exit the “Ruler” menu.



(The distance and the bearing are displayed.)

■ Presentation (MENU ▸ Presentation)

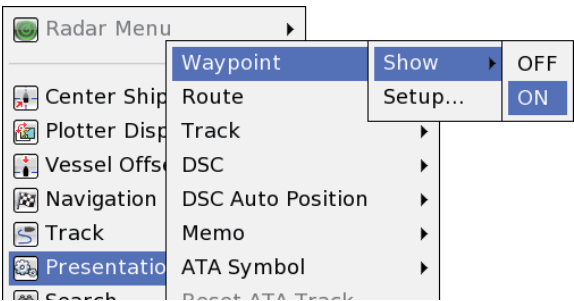


In this menu, the display presentation can be set.

◆ Waypoint

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Waypoint” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Waypoint Show menu>



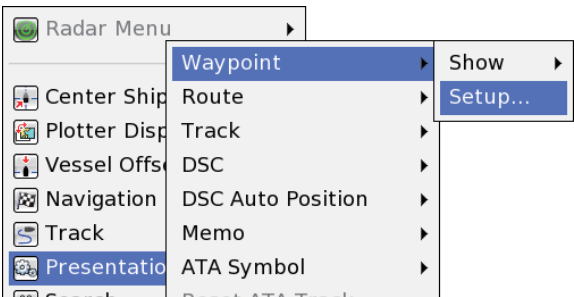
• Show

(MENU ▸ Presentation ▸ Waypoint ▸ Show)

The Waypoint icon indication can be turned ON or OFF.

- OFF : The Waypoint icon is not displayed on the plotter display.
- ON : The Waypoint icon is displayed on the plotter display.

<Waypoint Setup menu>



• Setup...

(MENU ▸ Presentation ▸ Waypoint ▸ Setup...)

This item can be set only when the Waypoint icon is turned ON in the “Show” item as described above.

The Waypoint indication type can be specified to each icon or group.

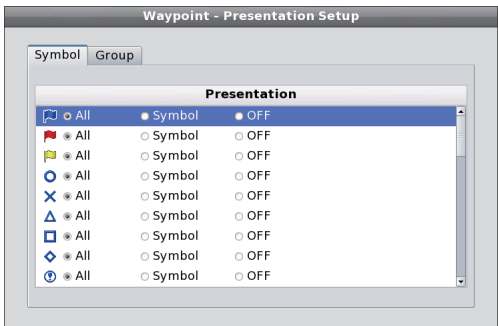
The Waypoint icon and group is specified in the Waypoint List screen. (p. 2-7)

- ① Push [SUB] to display the Sub menu, then push [ENTER] to select the desired tab.
- ② Rotate [DIAL] until the desired icon or group is highlighted, then push [ENTER].
- ③ Push [ENTER] to select the option.

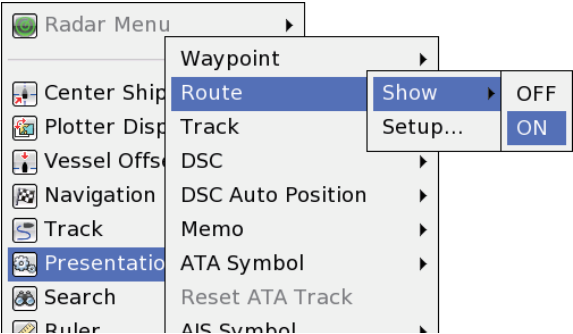
- All : The Waypoint icon and its name are displayed.
- Symbol : The Waypoint icon is displayed.
- OFF : The Waypoint icon and its name are not displayed.

- ④ Push [CLEAR] to set, then exit the “Setup...” menu.

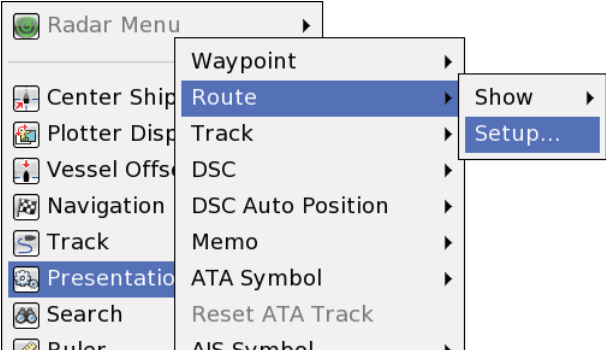
• Waypoint Presentation Setup screen



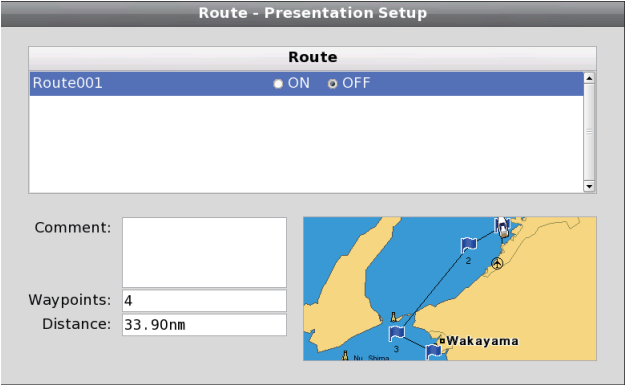
<Route Show menu>



<Route Setup menu>



• Route–Presentation Setup screen



◇ Route

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Route” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

• Show

(MENU ▸ Presentation ▸ Route ▸ Show)
The Route line indication can be turned ON or OFF.

- OFF : The Route line is not displayed on the plotter display.
- ON : The Route line is displayed on the plotter display.

• Setup...

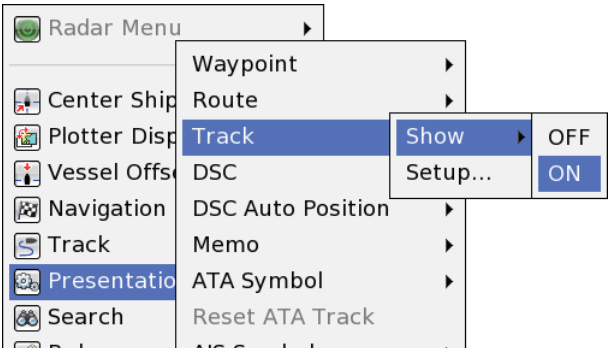
(MENU ▸ Presentation ▸ Route ▸ Setup)
The individual Route line indication can be turned ON or OFF.
This item can be set only when the Route line is turned ON in the “Show” item as described above.

NOTE: Maximum twenty Route lines can be displayed on the plotter display.

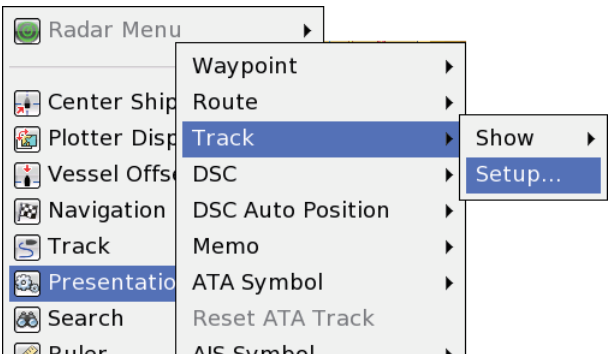
- ① Push [ENTER] then rotate [DIAL] until the desired route becomes highlighted.
- ② Push [◀] or [▶] to turn the selected Route line indication ON or OFF.
 - OFF : The selected Route line is not displayed on the plotter display.
 - ON : The selected Route line is displayed on the plotter display.
- ③ Push [CLEAR] to set, then exit the “Setup...” menu.

■ Presentation (MENU ▸ Presentation) (Continued)

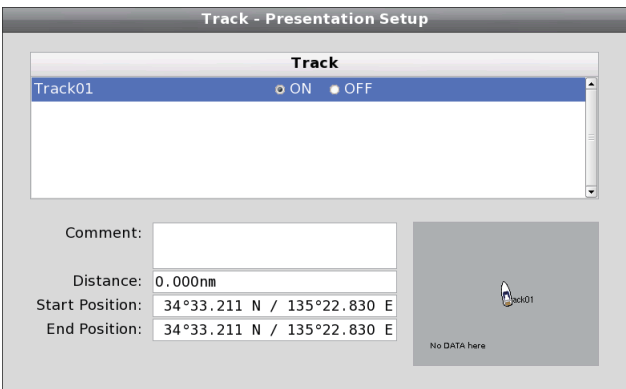
<Track Show menu>



<Track Setup menu>



• Track–Presentation Setup screen



◇ Track

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Track” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

• Show

(MENU ▸ Navigation ► Track ► Show)

The Track Route line indication can be turned ON or OFF.

- OFF : The Track Route line is not displayed on the plotter display.
- ON : The Track Route line is displayed on the plotter display.

• Setup...

(MENU ▸ Navigation ► Track ► Setup...)

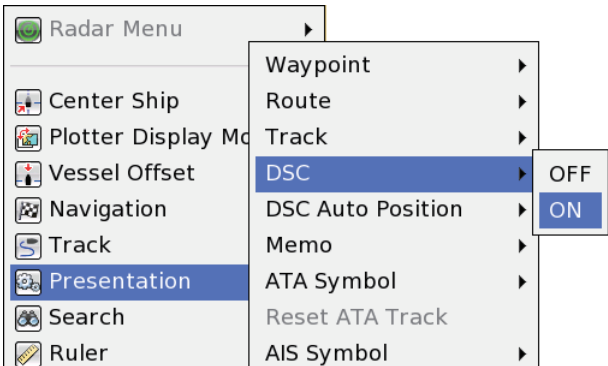
The individual Track Route line indication can be turned ON or OFF.

This item can be set only when the Track Route line is turned ON in the “Show” item as above.

/// **NOTE:** Only one Track Route line can be displayed on the plotter display, except for the “Current.”

- ① Push [ENTER] then rotate [DIAL] until the desired track is highlighted.
- ② Push [◀] or [▶] to turn the selected Track Route line indication ON or OFF.
 - OFF : The selected Track Route line is not displayed on the plotter display.
 - ON : The selected Track Route line is displayed on the plotter display.
- ③ Push [CLEAR] to set, then exit the “Setup...” menu.

<DSC menu>



◇ DSC

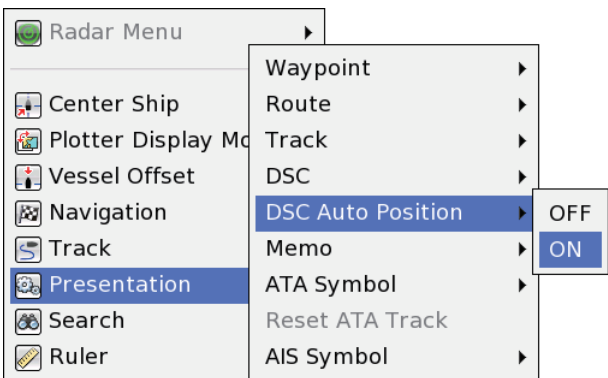
(MENU ▸ Presentation ▸ DSC)

The DSC position icon ("DSC") indication can be turned ON or OFF.

The MarineCommander™ should receive time/date data from the GPS receiver.

- ① Push [MENU], then rotate [DIAL] until the "Presentation" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "DSC" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the DSC position icon indication ON or OFF.
 - OFF : The DSC position icon is not displayed.
 - ON : When the DSC call, stored in "Received Call Log," has position information, the DSC position icon is displayed on that point where the call is transmitted to.
- ④ Push [ENTER] to set, then exit the "DSC" menu.

<DSC Auto Position menu>



◇ DSC Auto Position

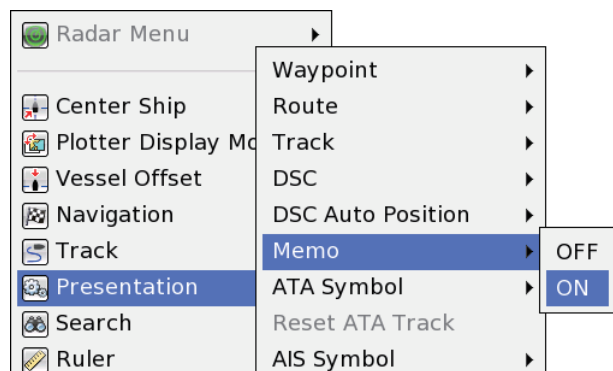
(MENU ▸ Presentation ▸ DSC Auto Position)

The DSC Automatic Position Log indication can be turned ON or OFF.

- ① Push [MENU], then rotate [DIAL] until the "Presentation" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "DSC Auto Position" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the DSC Automatic Position Log indication ON or OFF.
 - OFF : The DSC Automatic Position Log is not displayed on the plotter display.
 - ON : The DSC Automatic Position Log is displayed on the plotter display.
- ④ Push [ENTER] to set, then exit the "DSC Auto Position" menu.

■ Presentation (MENU ▷ Presentation) (Continued)

<Memo menu>



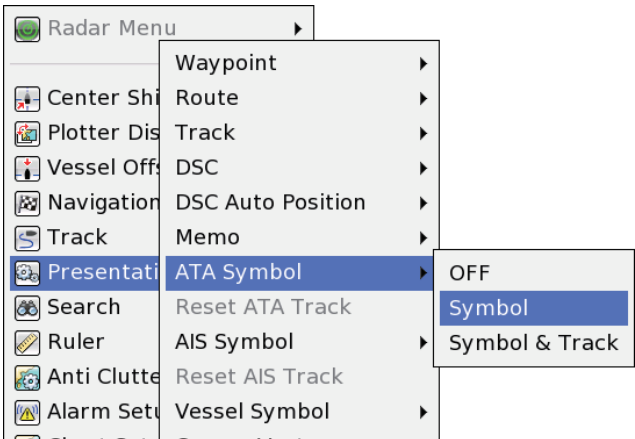
◇ Memo

(MENU ▷ Presentation ► Memo)

The Memo icon indication on the plotter display can be turned ON or OFF.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Memo” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Memo icon indication ON or OFF.
 - OFF : The Memo icon is not displayed on the plotter display.
 - ON : The Memo icon is displayed on the plotter display.
- ④ Push [ENTER] to set, then exit the “Memo” menu.

<ATA Symbol menu>



◇ ATA Symbol

(MENU ▸ Presentation ► ATA Symbol)

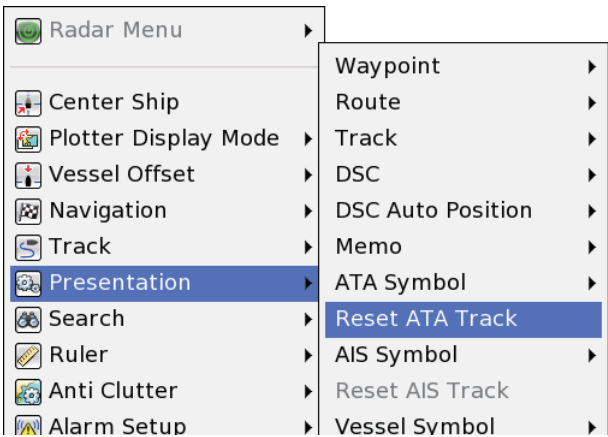
The ATA symbol and track data indication can be selected.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “ATA Symbol” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the ATA symbol indication type.
 - OFF : ATA symbol and track are not displayed.
 - Symbol : ATA symbol is displayed.
 - Symbol & Track : ATA symbol and track are displayed.
- ④ Push [ENTER] to set, then exit the “ATA Symbol” menu.

• Description of the icons

Icon	Description
	Selected, uncalculated mark.
	Normal, calculated mark.
	Selected, calculated mark.
	CPA/TCPA alarm mark. The target is close to within a minimum range and time. Alarm emit indicator. Push [CLEAR] to cancel the alarm.
	When the tracking of a target disappears.

<Reset ATA Track menu>



◇ Reset ATA Track

(MENU ▸ Presentation ► Reset ATA Track)

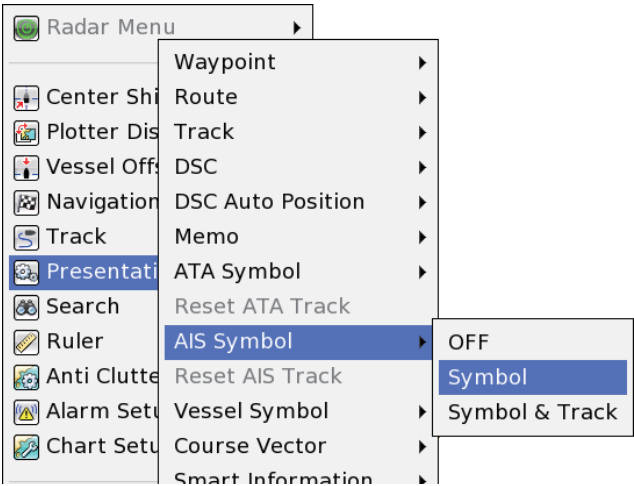
The ATA Track data can be reset.

This item can be set only when “Symbol & Track” is selected in the “ATA Symbol” item as above.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Reset ATA Track” menu is highlighted, then push [ENTER] to reset, and exit the “Reset ATA Track” menu.

■ Presentation (MENU ▸ Presentation) (Continued)

<AIS Symbol menu>



◇ AIS Symbol

(MENU ▸ Presentation ► AIS Symbol)

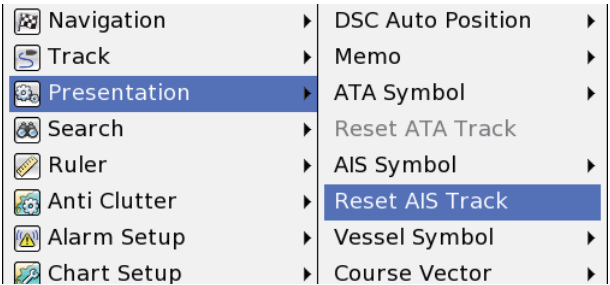
The AIS symbol and track data indication can be selected.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “AIS Symbol” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the AIS symbol indication type.
 - OFF : AIS symbol and track are not displayed.
 - Symbol : AIS symbol is displayed.
 - Symbol & Track : AIS symbol and track are displayed.
- ④ Push [ENTER] to set, then exit the “AIS Symbol” menu.

• Description of the icons

Icon	Description
	Normal mark.
	Selected mark.
	CPA/TCPA alarm mark in Red. The target is close to within a minimum range and time. The icon blinks and alarm emits. Push [CLEAR] to cancel the alarm.
	AIS data error. There is the lack of data in the received AIS signal.
	When the AIS signal has not updated (received) for a specific time of period, the icon starts to blink and alarm emits. If the AIS signal has not still updated (received) for a specific time of period, the target icon disappears.

<Reset AIS Track menu>



◇ Reset AIS Track

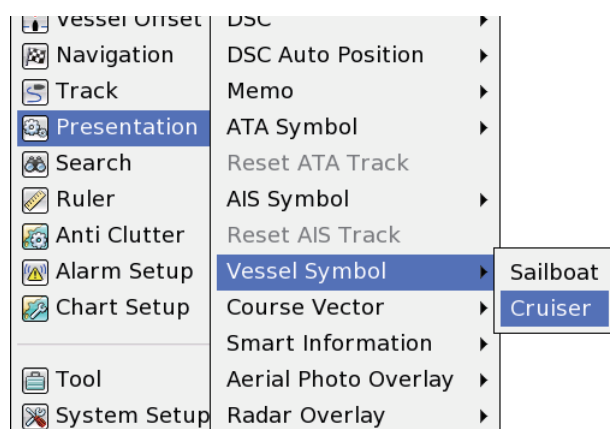
(MENU ▸ Presentation ► Reset AIS Track)

The AIS Track data can be reset.

This item can be set only when “Symbol & Track” is selected in the “AIS Symbol” item as above.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Reset AIS Track” menu is highlighted, then push [ENTER] to reset, and exit the “Reset AIS Track” menu.

<Vessel Symbol menu>

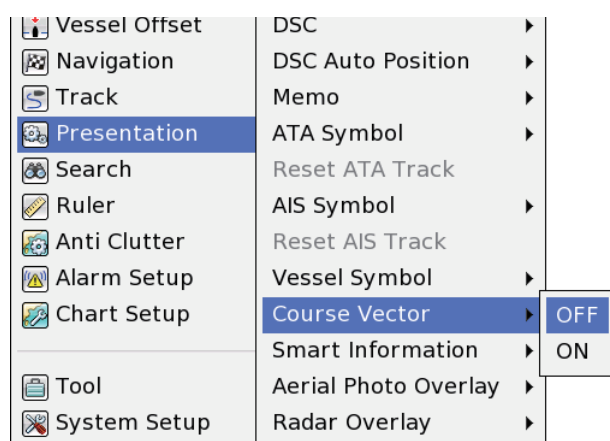


◇ Vessel Symbol

(MENU ▷ Presentation ► Vessel Symbol)
Your vessel symbol can be selected.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Vessel Symbol” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select your vessel symbol between Sailboat and Cruiser.
- ④ Push [ENTER] to set, then exit the “Vessel Symbol” menu.

<Course Vector menu>

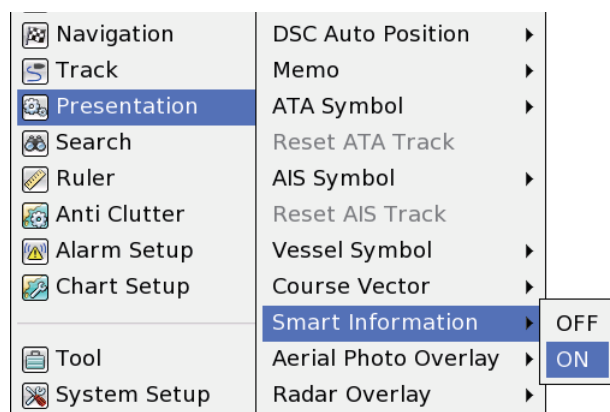


◇ Course Vector

(MENU ▷ Presentation ► Course Vector)
The course vector indication on your vessel's direction can be turned ON or OFF.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Course Vector” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the DSC Automatic Position Log indication ON or OFF.
 - OFF : The course vector is not displayed on your vessel's direction.
 - ON : The course vector is displayed on your vessel's direction.
- ④ Push [ENTER] to set, then exit the “Course Vector” menu.

<Smart Information menu>



◇ Smart Information

(MENU ▷ Presentation ► Smart Information)
The Smart information function shows an object information when the object is pointed by the cursor on the plotter display detail screen.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Smart Information” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Smart information function ON or OFF.
 - OFF : Even if the object is pointed by the cursor, its information is not displayed.
 - ON : When the object is pointed by the cursor, its information is displayed on the plotter display detail screen.
- ④ Push [ENTER] to set, then exit the “Smart Information” menu.

■ Presentation (MENU ▸ Presentation) (Continued)

<Aerial Photo Overlay menu>

Navigation	DSC Auto Position	▸
Track	Memo	▸
Presentation	ATA Symbol	▸
Search	Reset ATA Track	
Ruler	AIS Symbol	▸
Anti Clutter	Reset AIS Track	
Alarm Setup	Vessel Symbol	▸
Chart Setup	Course Vector	▸
	Smart Information	▸
Tool	Aerial Photo Overlay	▸ OFF
System Setup	Radar Overlay	▸ ON

◇ Aerial Photo Overlay

(MENU ▸ Presentation ► Aerial Photo Overlay)
The Aerial Photo Overlay function overlays an aerial photo on the plotter display.
The Aerial Photo cannot be displayed when the display range is set to less than 500 nm.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Aerial Photo Overlay” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Aerial Photo Overlay function ON or OFF.
 - OFF : An aerial photo is not overlaid on the plotter display.
 - ON : An aerial photo is overlaid on the plotter display.
- ④ Push [ENTER] to set, then exit the “Aerial Photo Overlay” menu.

<Radar Overlay menu>

Navigation	DSC Auto Position	▸
Track	Memo	▸
Presentation	ATA Symbol	▸
Search	Reset ATA Track	
Ruler	AIS Symbol	▸
Anti Clutter	Reset AIS Track	
Alarm Setup	Vessel Symbol	▸
Chart Setup	Course Vector	▸
	Smart Information	▸
Tool	Aerial Photo Overlay	▸ OFF
System Setup	Radar Overlay	▸ ON

◇ Radar Overlay

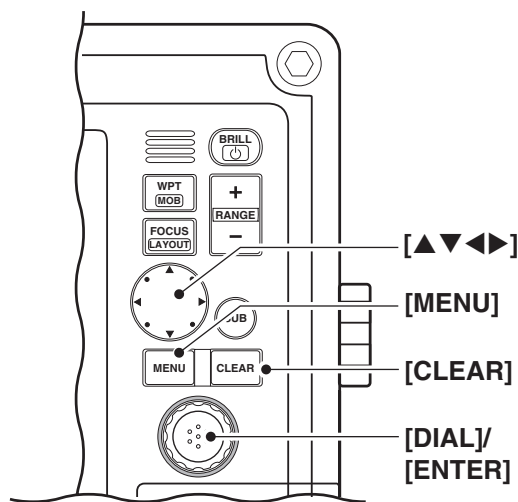
(MENU ▸ Presentation ► Radar Overlay)
The Radar Overlay function overlays a radar display on the plotter display while in the radar transmission status.

- ① Push [MENU], then rotate [DIAL] until the “Presentation” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Radar Overlay” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Radar Overlay function ON or OFF.
 - OFF : A radar display is not overlaid on the plotter display.
 - ON : A radar display is overlaid on the plotter display.
- ④ Push [ENTER] to set, then exit the “Radar Overlay” menu.

NOTE:

- When this function is set to “ON,” the Radar Menu can be accessed.
- While in the following status, the Radar Overlay function is disabled;
 - The Plotter Display mode is “AR” (Automatic Range). (p. 2-5)
 - The Perspective View function is ON. (p. 2-43)
 - The radar unit is in the “STBY” (stand-by) status.
- The Radar Overlay function will be cancelled;
 - When the Plotter Display mode is set to “AR.”
 - When the radar unit status is changed from “TX” (transmit) to “STBY.”

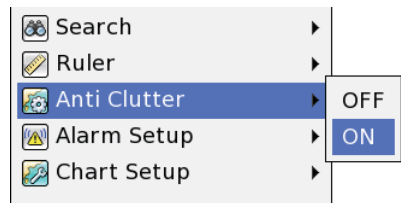
■ Anti Clutter function (MENU ▸ Anti Clutter)



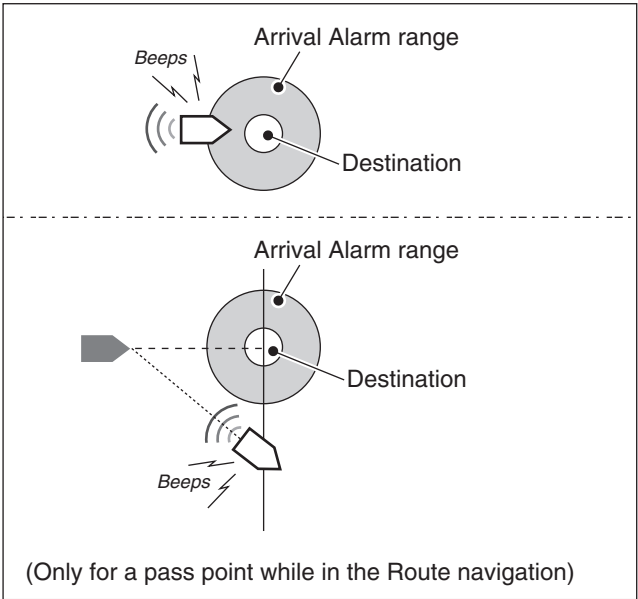
The Anti Clutter function hides some objects to enable you to easily watch the plotter screen.

- ① Push [MENU], then rotate [DIAL] until the “Anti Clutter” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to turn the Anti Clutter function ON or OFF.
 - OFF : Normal display
 - ON : Some objects disappear, and you can easily watch the plotter screen.
- ③ Push [ENTER] to set, then exit the “Anti Clutter” menu.

<Anti Clutter menu>



■ Alarm Setup (MENU ▸ Alarm Setup)



◇ Arrival Alarm

(MENU ▸ Alarm Setup ► Arrival Alarm)

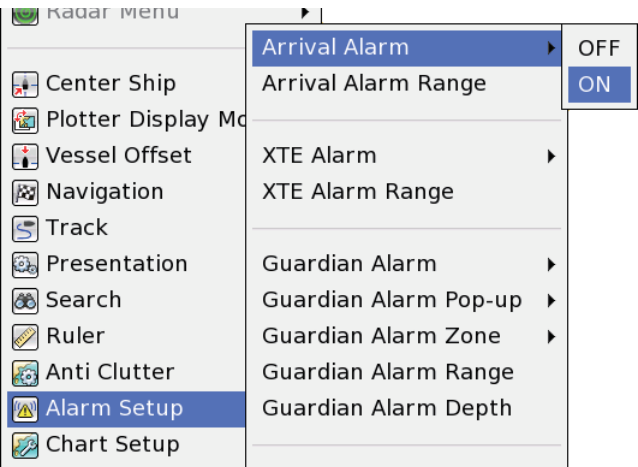
When your vessel enters the alarm zone around the destination, alarm sounds.

While the Route navigation, when your vessel passes the vertical line of the Waypoint, alarm sounds.

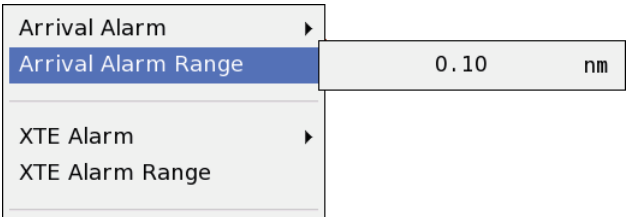
- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Arrival Alarm” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Arrival Alarm function ON or OFF.
 - OFF : The Arrival Alarm function is OFF.
 - ON : Alarm sounds when your vessel enters the alarm zone around the destination.
- ④ Push [ENTER] to set, then exit the “Arrival Alarm” menu.
 - To cancel the setting, push [CLEAR].

To set the arrival alarm range, see ‘Arrival Alarm Range setting’ as described below.

<Arrival Alarm menu>



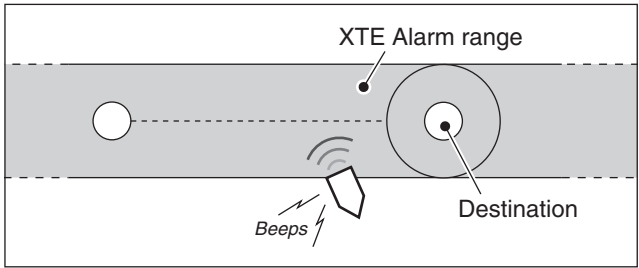
<Arrival Alarm Range menu>



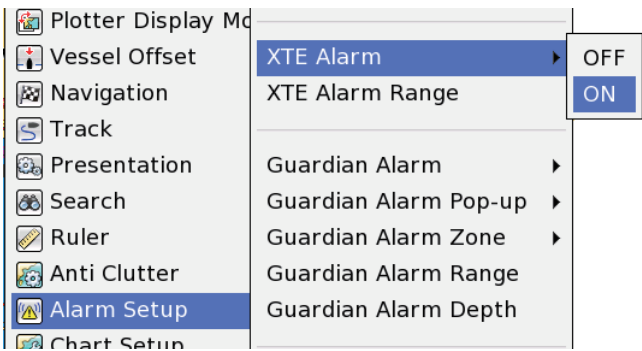
◇ Arrival Alarm Range setting

(MENU ▸ Alarm Setup ► Arrival Alarm Range)

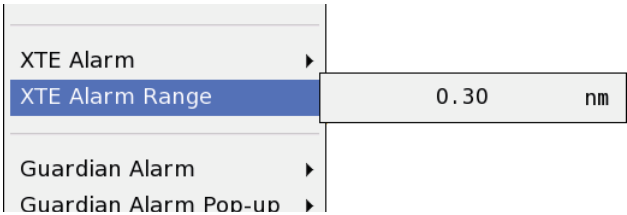
- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Arrival Alarm Range” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the Arrival Alarm Range to between 0.01 nm and 10.00 nm. (Default: 0.10 nm)
- ④ Push [ENTER] to set, then exit the “Arrival Alarm Range” menu.
 - To cancel the setting, push [CLEAR].



<XTE Alarm menu>



<XTE Alarm Range menu>



◇ XTE Alarm

(MENU ▸ Alarm Setup ► XTE Alarm)

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “XTE Alarm” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the XTE Alarm function ON or OFF.
 - OFF : The XTE Alarm function is OFF.
 - ON : The XTE Alarm function is ON. When your vessel exits the XTE (Cross Track Error) alarm zone, a beep sounds. When the vessel reenters the alarm zone, the beeps will stop. If the vessel exits the alarm zone again, beeps sound.
- ④ Push [ENTER] to set, then exit the “XTE Alarm” menu.
 - To cancel the setting, push [CLEAR].

To set the XTE alarm range, see ‘XTE Alarm Range setting’ as described below.

◇ XTE Alarm Range setting

(MENU ▸ Alarm Setup ► XTE Alarm Range)

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “XTE Alarm Range” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the XTE Alarm Range to between 0.01 nm and 10.00 nm. (Default: 0.30 nm)
- ④ Push [ENTER] to set, then exit the “XTE Alarm Range” menu.
 - To cancel the setting, push [CLEAR].

■ Alarm Setup (MENU ▸ Alarm Setup) (Continued)

<Guardian Alarm menu>



◇ Guardian Alarm

(MENU ▸ Alarm Setup ► Guardian Alarm)

The Guardian Alarm function searches for dangerous objects or shallow depth, according to your specified alarm or depth range. If objects or shallow depth are detected in your guardian zone area, alarms sound and your vessel icon turns red.

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Guardian Alarm” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Guardian Alarm function ON or OFF.
 - OFF : The Guardian Alarm function is OFF.
 - ON : A red triangle appears* in your COG direction to search for dangerous objects or shallow depth. If no SOG data is found, and your vessel moves less than 2 knots, the search area is all-round of your vessel.
*Only when the “Guardian zone” menu is set to “Visible.” See ‘Guardian Alarm Zone setting’ as described below.
- ④ Push [ENTER] to set, then exit the “Guardian Alarm” menu.
 - To cancel the setting, push [CLEAR].

To set the Guardian Alarm range, see ‘Guardian Alarm Range setting’ as described to the right.

<Guardian Alarm Pop-up menu>

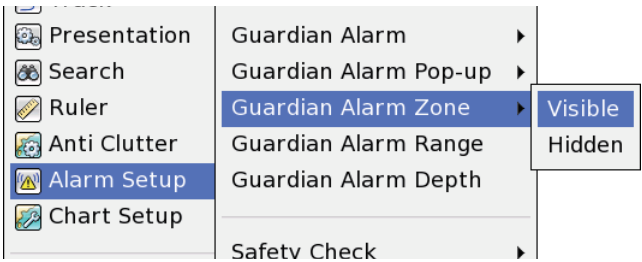


◇ Guardian Alarm Pop-up setting

(MENU ▸ Alarm Setup ► Guardian Alarm Pop-up)

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Guardian Alarm Pop-up” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Guardian Alarm Pop-up function ON or OFF.
 - OFF : The Guardian Alarm Pop-up function is OFF.
 - ON : The Guardian Alarm Pop-up function is ON. If objects or shallow depth are detected in the red triangle area, the pop-up screen appears in the LCD with alarm.
- ④ Push [ENTER] to set, then exit the “Guardian Alarm” menu.
 - To cancel the setting, push [CLEAR].

<Guardian Alarm Zone menu>

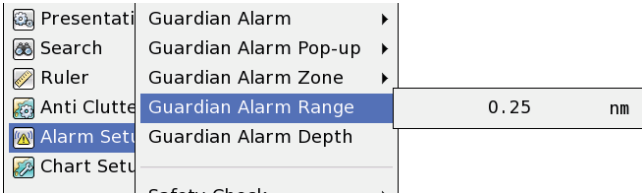


◇ Guardian Alarm Zone setting

(MENU ▸ Alarm Setup ► Guardian Alarm Zone)
The alarm zone appearance as a red triangle can be set. It appears in your COG direction to search for dangerous objects or shallow depth, according to your specified alarm or depth range.

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Guardian Alarm Zone” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the Guardian Alarm zone “Visible” or “Hidden.”
 - Visible : The alarm zone appears in your COG direction according to your specified alarm or depth range.
 - Hidden : The alarm zone does not appear.
- ④ Push [ENTER] to set, then exit the “Guardian Alarm” menu.
 - To cancel the setting, push [CLEAR].

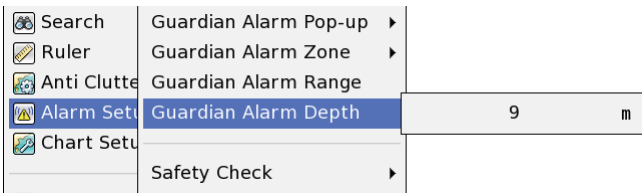
<Guardian Alarm Range menu>



◇ Guardian Alarm Range setting

- (MENU ▸ Alarm Setup ► Guardian Alarm Range)
- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
 - ② Rotate [DIAL] until the “Guardian Alarm Range” menu is highlighted, then push [ENTER].
 - ③ Rotate [DIAL] to set the Guardian Alarm Range to between 0.01 nm and 10.00 nm. (Default: 0.25 nm)
 - ④ Push [ENTER] to set, then exit the “Guardian Alarm Range” menu.
 - To cancel the setting, push [CLEAR].

<Guardian Alarm Depth menu>

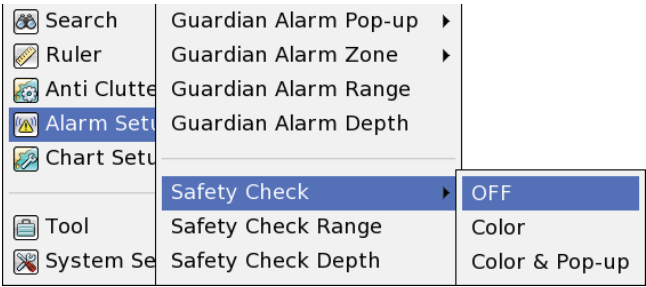


◇ Guardian Alarm Depth setting

- (MENU ▸ Alarm Setup ► Guardian Alarm Depth)
- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
 - ② Rotate [DIAL] until the “Guardian Alarm Depth” menu is highlighted, then push [ENTER].
 - ③ Rotate [DIAL] to set the Guardian Alarm Depth to between 1 m and 2800 m. (Default: 9 m)
 - ④ Push [ENTER] to set, then exit the “Guardian Alarm Depth” menu.
 - To cancel the setting, push [CLEAR].

■ Alarm Setup (MENU ▷ Alarm Setup) (Continued)

<Safety Check menu>



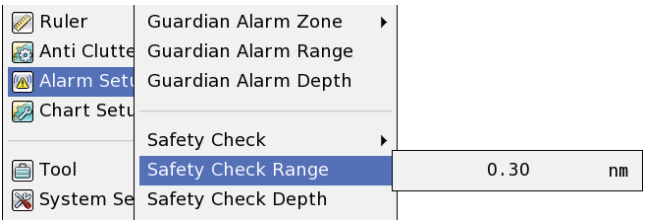
◇ Safety Check

(MENU ▷ Alarm Setup ► Safety Check)

The Safety Check function checks dangerous objects or shallow depth on a way to the destination, before starting the navigation.

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Safety Check” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the Safety Check option.
 - OFF : The Safety Check function is OFF.
 - Color : The Safety Check function is ON.
 - When dangerous objects or shallow depth are detected after the safety check, the navigation line turns red.
 - When no dangerous objects or shallow depth are detected after the safety check, the navigation line turns blue.
 - When the checked route has no detail map, the navigation line turns yellow.
 - Color & Pop-up : The Safety Check function is ON. A pop-up screen appears when the navigation line turns red, blue or yellow after the safety check as described above.
- ④ Push [ENTER] to set, then exit the “Safety Check” menu.
 - To cancel the setting, push [CLEAR].

<Safety Check Range menu>

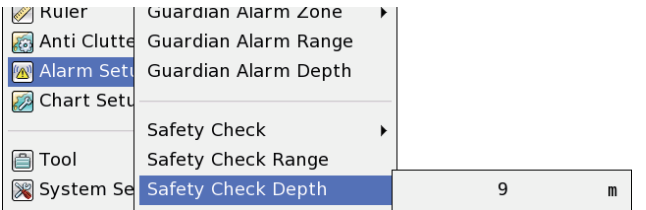


◇ Safety Check Range setting

(MENU ▷ Alarm Setup ► Safety Check Range)

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Safety Check Range” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the Safety Check Range to between 0.01 nm and 10.00 nm. (Default: 0.30 nm)
- ④ Push [ENTER] to set, then exit the “Safety Check Range” menu.
 - To cancel the setting, push [CLEAR].

<Safety Check Depth menu>



◇ Safety Check Depth setting

(MENU ▷ Alarm Setup ► Safety Check Depth)

- ① Push [MENU], then rotate [DIAL] until the “Alarm Set-up” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Safety Check Depth” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the Safety Check Depth to between 1 m and 2800 m. (Default: 9 m)
- ④ Push [ENTER] to set, then exit the “Safety Check Depth” menu.
 - To cancel the setting, push [CLEAR].

■ Chart Setup (MENU ▸ Chart Setup)

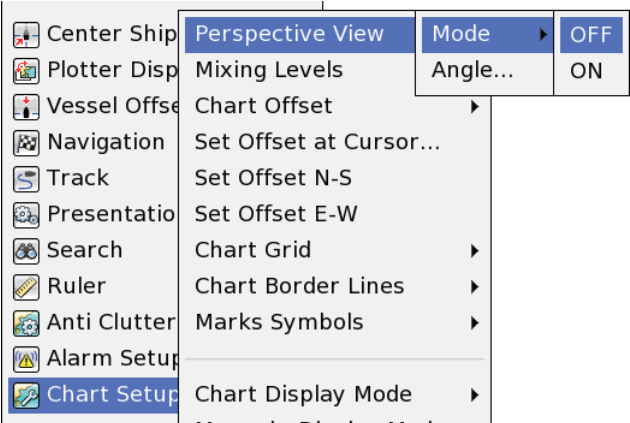
◇ Perspective View

(MENU ▸ Chart Setup ► Perspective View)

When the Perspective View function is ON, you can see the plotter screen from the specified angle view. If this function is OFF, the map is shown from the 90-degree.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Perspective View” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Perspective View Mode menu>



NOTE:

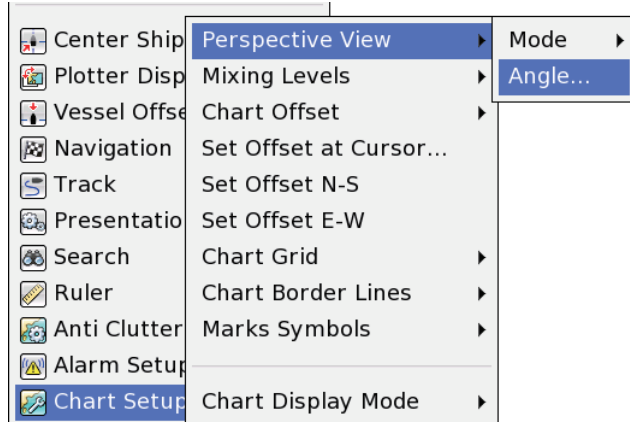
- While in the Perspective View function is ON, “TM” (True Motion) cannot be used. (p. 2-5)
- While in the Radar Overlay function is ON, the Perspective View function cannot be used. (p. 2-36)

• Perspective View–Mode

(MENU ▸ Chart Setup ► Perspective View ► Mode)

- OFF : The Perspective View function is OFF.
- ON : The plotter screen is shown from the specified angle view.

<Perspective View Angle menu>



To set the angle data for this function, see ‘Perspective View Angle setting’ as described below.

• Perspective View–Angle

(MENU ▸ Chart Setup ► Perspective View ► Angle)

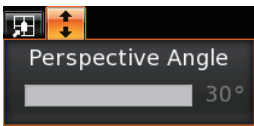
This item can be set only when the Perspective View function is turned ON in the “Mode” item as above.

- ➔ Rotate [DIAL] to adjust the Perspective View Angle to between 30° and 80°. (Default: 30°)

NOTE: The Perspective View Angle can be adjusted using the Quick menu, only when the Perspective View function is turned ON in the “Mode” item as above.

- ① Push [ENTER] to open Quick menu.
- ② Push [◀] or [▶] to select the Perspective Angle tab.
- ③ Rotate [DIAL] to adjust the Perspective View Angle to between 30° and 80°, then push [ENTER] to set.

<Quick menu>

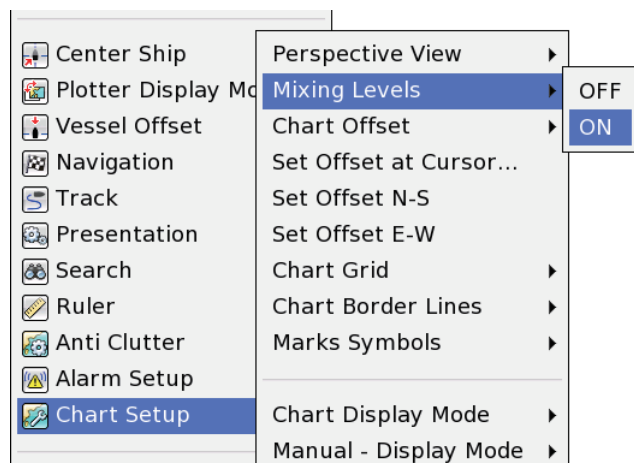


When the Perspective View angle is 30°.



■ Chart Setup (MENU ▷ Chart Setup) (Continued)

<Mixing Levels menu>



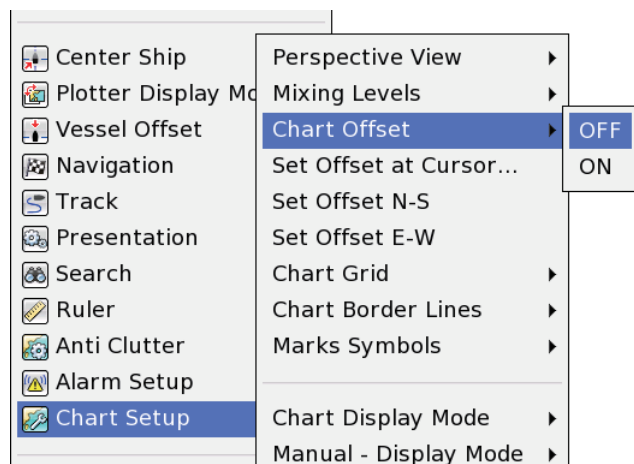
◇ Mixing Levels function

(MENU ▷ Chart Setup ► Mixing Levels)

The Mixing Levels function enables the different scale map to display on the plotter display.

- ① Push [MENU], then rotate [DIAL] until the "Chart Setup" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Mixing Level" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Mixing Level function ON or OFF.
 - OFF : The Mixing Level function is OFF. If the details maps have a different scale, the boundary line of these maps are shown with a gray box.
 - ON : If the details maps have a different scale, the boundary line of these maps are mixed.
- ④ Push [ENTER] to set, then exit the "Mixing Level" menu.
 - To cancel the setting, push [CLEAR].

<Chart Offset menu>



◇ Chart Offset function

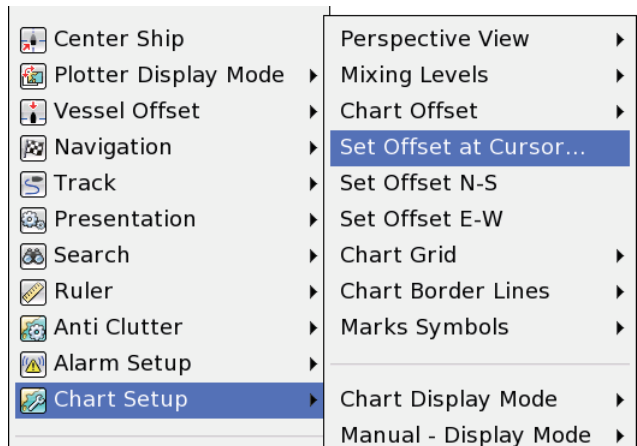
(MENU ▷ Chart Setup ► Chart Offset)

The Chart Offset function shifts the plotter map according to the offset value, without changing vessel's current latitude/longitude data.

- ① Push [MENU], then rotate [DIAL] until the "Chart Setup" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Chart Offset" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Chart Offset function ON or OFF.
 - OFF : The Chart Offset function is OFF.
 - ON : The plotter map shifts according to the offset value, without changing vessel's current position data.
- ④ Push [ENTER] to set, then exit the "Chart Offset" menu.
 - To cancel the setting, push [CLEAR].

To set the offset value for this function, see 'Offset at Cursor setting,' 'Offset N-S setting' or 'Offset E-W setting' as described on the next page.

<Chart Offset at Cursor menu>

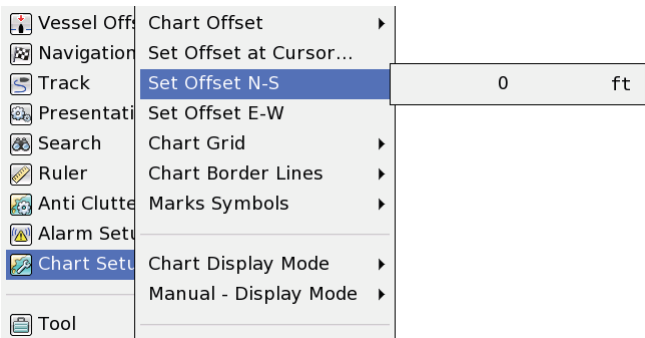


◆ Offset at Cursor setting

(MENU ▸ Chart Setup ► Set Offset at Cursor)
When the Chart Offset function is ON, the vessel's position data can be changed to the point where the cursor positions.
The cursor position should be within ±3280 ft from the current vessel's position.

- ① Push [MENU], then rotate [DIAL] until the "Chart Setup" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Set Offset at Cursor" menu is highlighted, then push [ENTER].
- ③ Push [▲], [▼], [◀] or [▶] to set the cursor position.
- ④ Push [ENTER] to change the vessel's position to the cursor position.
- ⑤ Push [CLEAR] to exit the "Set Offset at Cursor" mode.

<Chart Offset N-S menu>

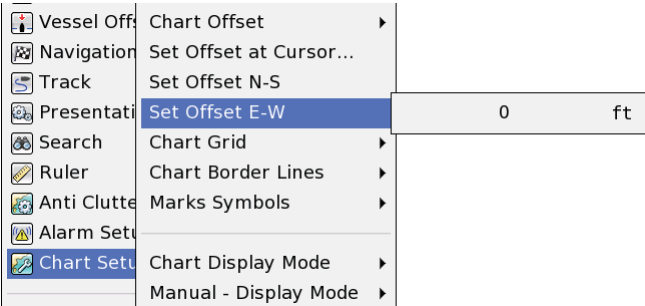


◆ Offset N-S setting

(MENU ▸ Chart Setup ► Set Offset N-S)
Set the offset value at latitude. The Chart Offset function shifts the plotter map up to ±3280 feet from the current latitude position, without changing vessel's current latitude/longitude data.

- ① Push [MENU], then rotate [DIAL] until the "Chart Setup" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Set Offset N-S" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the offset value at latitude to between -3280 ft and +3280 ft in 1 feet steps.
- ④ Push [ENTER] to set, then exit the "Set Offset N-S" menu.
 - To cancel the setting, push [CLEAR].

<Chart Offset E-W menu>



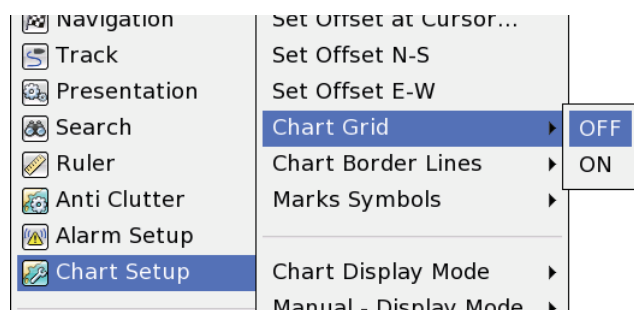
◆ Offset E-W setting

(MENU ▸ Chart Setup ► Set Offset E-W)
Set the offset value at longitude. The Chart Offset function shifts the plotter map up to ±3280 feet from the current longitude position, without changing vessel's current latitude/longitude data.

- ① Push [MENU], then rotate [DIAL] until the "Chart Setup" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "Set Offset E-W" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to set the offset value at longitude to between -3280 ft and +3280 ft in 1 feet steps.
- ④ Push [ENTER] to set, then exit the "Set Offset E-W" menu.
 - To cancel the setting, push [CLEAR].

■ Chart Setup (MENU ▷ Chart Setup) (Continued)

<Chart Grid menu>



When the Chart Grid is displayed.



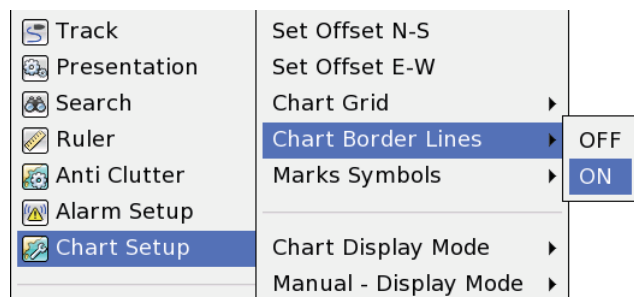
◇ Chart Grid function

(MENU ▷ Chart Setup ► Chart Grid)

When the Chart Grid function is ON, grid line is displayed on the plotter display screen.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Chart Grid” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Chart Grid function ON or OFF.
 - OFF : The Chart Grid function is OFF.
 - ON : The grid line appears on the plotter display screen.
- ④ Push [ENTER] to set, then exit the “Chart Grid” menu.
 - To cancel the setting, push [CLEAR].

<Chart Border Lines menu>



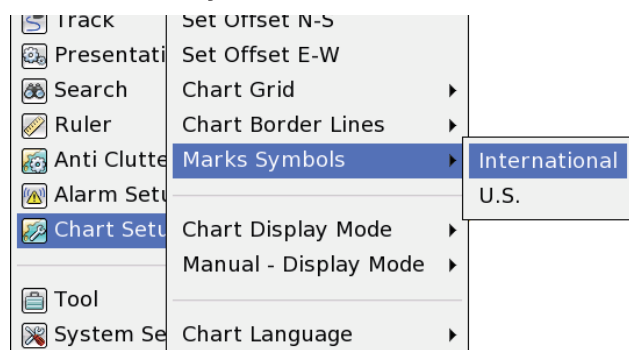
◇ Chart Border Lines function

(MENU ▷ Chart Setup ► Chart Border Lines)

When the Chart Border Lines function is ON, the border line is displayed on the plotter display detail screen.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Chart Border Lines” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to turn the Chart Border Lines function ON or OFF.
 - OFF : The Chart Border Lines function is OFF.
 - ON : The border line appears on the plotter display screen.
- ④ Push [ENTER] to set, then exit the “Chart Border Lines” menu.
 - To cancel the setting, push [CLEAR].

<Chart Marks Symbols menu>



◇ Marks Symbols function

(MENU ▷ Chart Setup ► Marks Symbols)

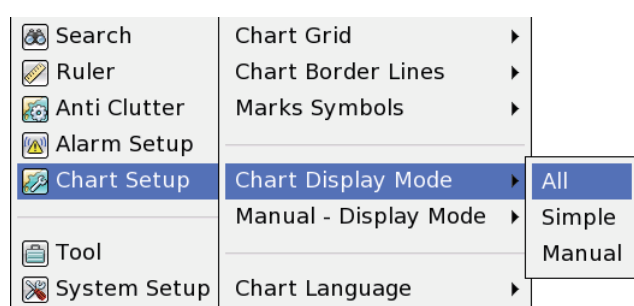
This function sets the object type to between International and U.S. for NAV-AIDS (aids to navigation).

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Marks Symbols” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the symbol type between International and U.S..
- ④ Push [ENTER] to set, then exit the “Marks Symbols” menu.

- To cancel the setting, push [CLEAR].

2

<Chart Display Mode menu>



◇ Chart Display Mode setting

(MENU ▷ Chart Setup ► Chart Display Mode)

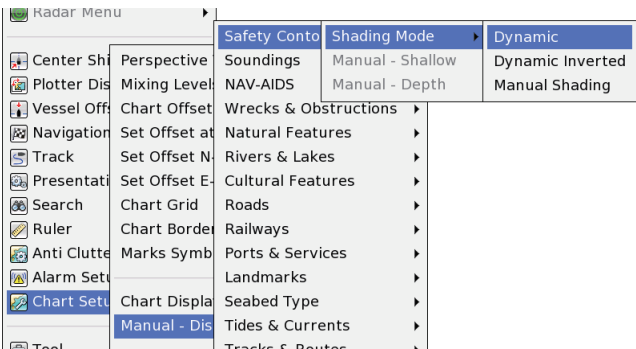
This function sets the object display type on the plotter display screen.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Chart Display Mode” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the Chart Display Mode from All, Simple and Manual.
 - All : All objects appear.
 - Simple :
 - Natural Features, Road, Railway, Seabed Type, Track & Routes, Light Sector and Light Animation objects disappear.
 - The sounding value disappears when it is deeper than 3.0 meters.
 - The water depth value of wrecks and obstructions (Rock/Wreck/Obstruction/Defuses) disappears when each value is deeper than 9.1 meters.
 - Manual : Some objects appear according to the manual setting.
- ④ Push [ENTER] to set, then exit the “Chart Display Mode” menu.
 - To cancel the setting, push [CLEAR].

To set the contents of the manual display mode, see ‘Manual - Display Mode’ as described on the next page.

■ Chart Setup (MENU ▸ Chart Setup) (Continued)

<Safety Contour–Shading Mode menu>



◇ Manual Display Mode setting

(MENU ▸ Chart Setup ► Manual – Display Mode)
This item can be set only when “Manual” is selected in the “Chart Display Mode” item.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Manual – Display Mode” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

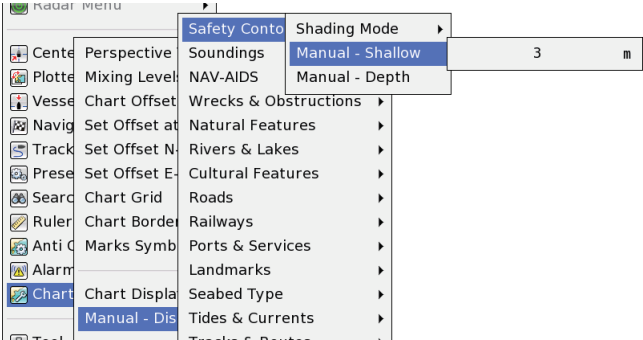
• Safety Contour–Shading Mode

(MENU ▸ Chart Setup ► Manual - Display Mode ► Safety Contour ► Shading Mode)

This item enables the ocean surface on the plotter display to change the color, depending on the settings and depth.

- Dynamic : The color of the ocean surface turns white when the water depth becomes deeper.
- Dynamic Inverted : The color of the ocean surface turns white when the water depth becomes shallower.
- Manual Shading : You can manually set the water depth values (Shallow and Deep) to change the color of the ocean surface.

<Safety Contour–Manual - Shallow menu>



• Safety Contour–Manual - Shallow

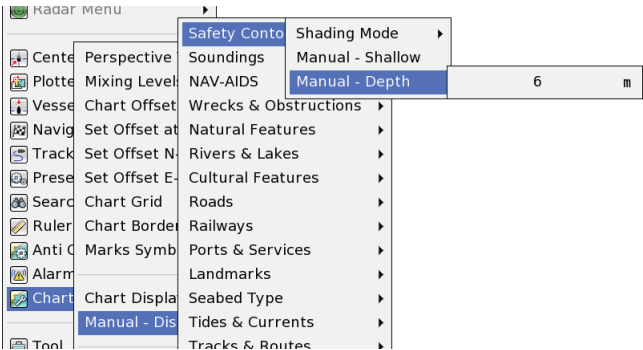
(MENU ▸ Chart Setup ► Manual - Display Mode ► Safety Contour ► Manual - Shallow)

This item can be set only when “Manual Shading” is selected in the “Shading Mode” item.

The color of the ocean surface is changed to the Shallow, when the water depth is shallower than this set value.

- ➡ Rotate [DIAL] to adjust the Shallow value smaller than the “Manual - Depth” value as described below. (Default: 3 m)

<Safety Contour–Manual - Depth menu>



• Safety Contour–Manual - Depth

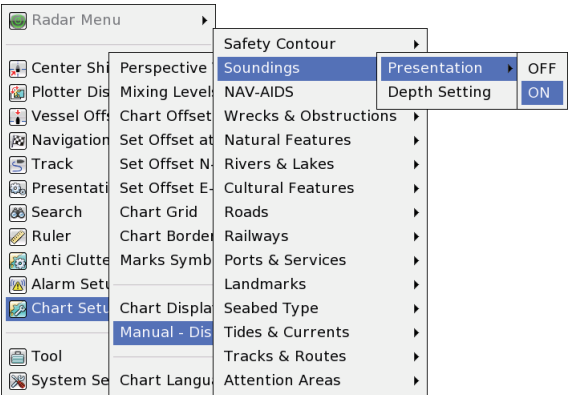
(MENU ▸ Chart Setup ► Manual - Display Mode ► Safety Contour ► Manual - Depth)

This item can be set only when “Manual Shading” is selected in the “Shading Mode” item.

The color of the ocean surface is changed to the Depth, when the water depth is deeper than this set value.

- ➡ Rotate [DIAL] to adjust the Deep value larger than the “Manual - Shallow” value as described above. (Default: 6 m)

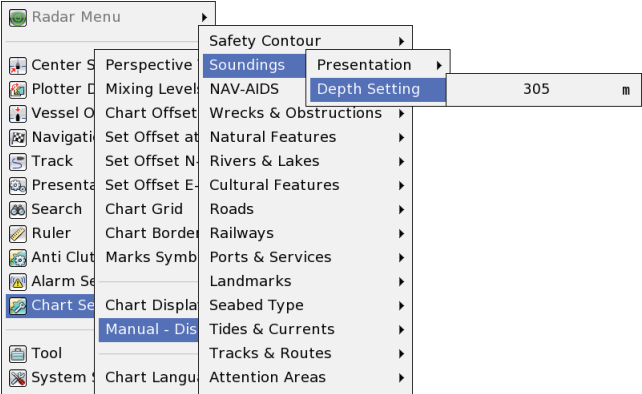
<Sounding–Presentation menu>



• **Sounding–Presentation**
(MENU ▸ Chart Setup ▸ Manual - Display Mode ▸ Sounding ▸ Presentation)
This item enables the water depth value to be displayed on the ocean surface of the plotter display.

- OFF : The water depth value is not displayed on the ocean surface of the plotter display.
- ON : The water depth value is displayed on the ocean surface of the plotter display.

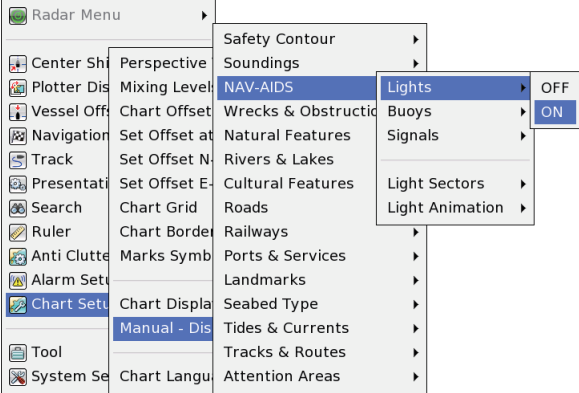
<Sounding–Depth Setting menu>



• **Sounding–Depth Setting**
(MENU ▸ Chart Setup ▸ Manual - Display Mode ▸ Sounding ▸ Depth Setting)
Set the maximum water depth value to be displayed on the plotter display.

- ➡ Rotate [DIAL] to adjust the maximum water depth value to between 0 m and 2800 m in 1 meter step. (Default: 305 m)

<NAV-AIDS–Lights menu>



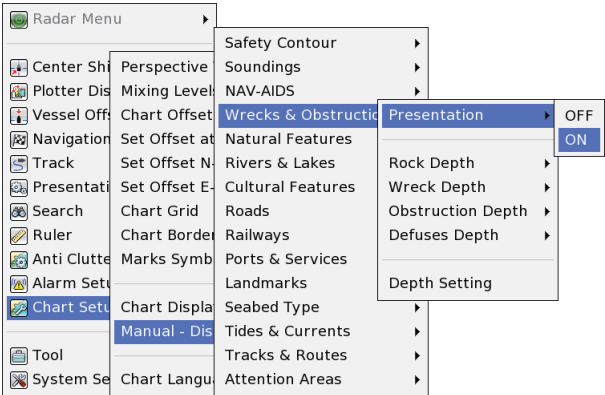
• **NAV-AIDS–Lights, Buoys, Signals, Light Sectors, Light Animation**
(MENU ▸ Chart Setup ▸ Manual - Display Mode ▸ NAV - AIDS ▸ Lights/Buoys/Signals/Light Sectors/Light Animation)

This item enables a “NAV-AIDS” (aids to navigation) icon to be displayed on the plotter display. The following “NAV-AIDS” object’s icon indication can be turned ON or OFF; Light (Lighthouse), Buoys, Signals (Fog signal) Moreover, the Light Sectors and Light Animation can be turned ON or OFF, if necessary.

- ① Rotate [DIAL] until the desired object menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to turn the selected object indication ON or OFF.
 - OFF : The selected object icon is not displayed on the plotter display.
 - ON : The selected object icon is displayed on the plotter display.

■ Chart Setup (MENU ▸ Chart Setup)
◇ Manual Display Mode setting (Continued)

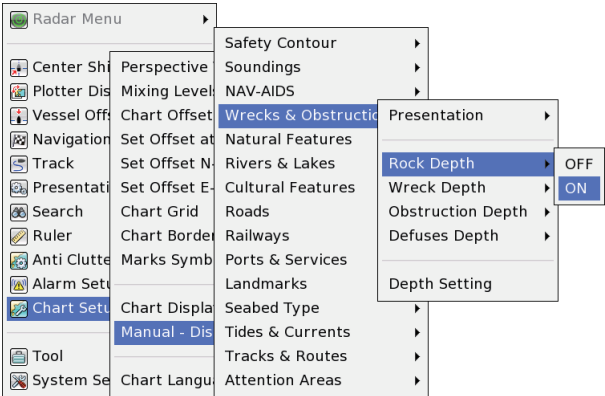
<Wrecks & Obstructions–Presentation menu>



• **Wrecks & Obstructions–Presentation**
(MENU ▸ Chart Setup ► Manual - Display Mode ► Wrecks & Obstructions ► Presentation)
This item enables the wrecks and obstructions to be displayed on the plotter display.

- OFF : The wrecks and obstructions are not displayed on the plotter display.
- ON : The wrecks and obstructions are displayed on the plotter display.

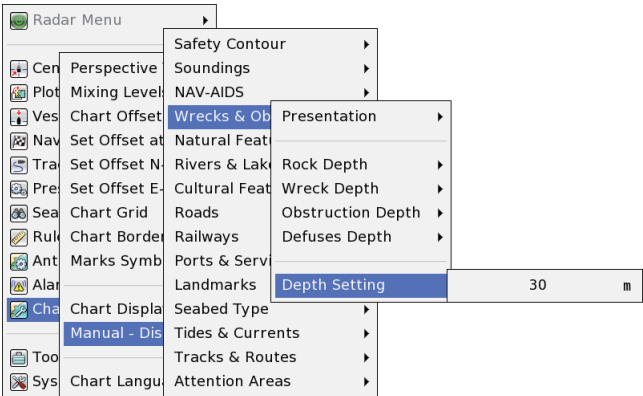
<Wrecks & Obstructions–Rock Depth menu>



• **Wrecks & Obstructions–Rock Depth, Wreck Depth, Obstruction Depth, Defuses Depth**
(MENU ▸ Chart Setup ► Manual - Display Mode ► Wrecks & Obstructions ► Rock Depth/Wreck Depth/Obstruction Depth/Defuses Depth)
This item enables the water depth of wrecks and obstructions to be displayed on the plotter display.

- ① Rotate [DIAL] until the desired object menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to turn the selected object indication ON or OFF.
 - OFF : The selected object's water depth value is not displayed on the plotter display.
 - ON : The selected object's water depth value is displayed on the plotter display.

<Wrecks & Obstructions–Depth Setting menu>



• **Wrecks & Obstructions–Depth Setting**
(MENU ▸ Chart Setup ► Manual - Display Mode ► Wrecks & Obstructions ► Depth Setting)
Set the maximum water depth value to be displayed on the plotter display.

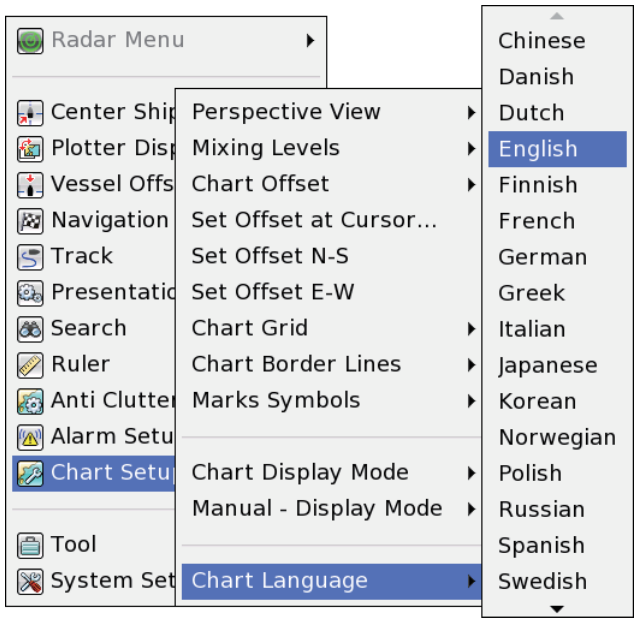
- ➡ Rotate [DIAL] to adjust the maximum water depth value to between 0 m and 2800 m in 1 meter step. (Default: 30 m)

- **Others**
(MENU ▸ Chart Setup ► Manual - Display Mode ► Natural Features/River & Lakes/Cultural Features/Roads/Railways/Ports & Service/Landmarks/Seabed Type/Tide & Currents/Tracks & Routes/Attention Areas)

These items enable the following objects to be displayed on the plotter display; Natural Features, River & Lakes, Cultural Features, Roads, Railways, Ports & Service, Landmarks, Seabed Type, Tide & Currents, Tracks & Routes and Attention Areas.

- OFF : The selected objects are not displayed on the plotter display.
- ON : The selected objects are displayed on the plotter display.

<Chart Language menu>



◇ Chart Language setting

(MENU ▸ Chart Setup ► Chart Language)
Selects the display language from the list.
The contents of the “Object Info” screen in the Cursor menu and the place-name on the map* will be converted to the selected language.
*Only the area where the selected language is used as its mother tongue.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “Chart language” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select the Chart language from the list.
 - Chinese, Danish, Dutch, English, Finnish, French, German, Greek, Italian, Japanese, Korean, Norwegian, Polish, Russian, Spanish, Swedish and Thai are selectable.
- ④ Push [ENTER] to set, then exit the “Chart language” menu.
 - To cancel the setting, push [CLEAR].

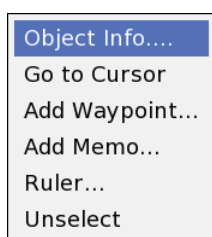
■ Cursor menu operation

◇ On the Plotter display

The cursor menu on the plotter display includes the Object Info, Go to Cursor, Add Waypoint, Add Memo, Ruler and Unselect.

- ① When the cursor is displayed, push [SUB] to display the Plotter display cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Plotter display>



• Object Info...

(CURSOR MENU ▷ Object Info...)

- ➡ Rotate [DIAL] until the desired object is highlighted to display its name and information.

• Go to Cursor

(CURSOR MENU ▷ Go to Cursor)

The Cursor navigation means that the vessel is navigated from the current position to the cursor position (within one section only).

- ➡ After pushing [ENTER], the Cursor navigation starts.
 - See page 2-12 to stop the navigation.

• Add Waypoint

(CURSOR MENU ▷ Add Waypoint...)

The cursor position information can be created as a waypoint.

- ① After pushing [ENTER], the Waypoint setting screen appears.
- ② Rotate [DIAL] to select "Save," then push [ENTER] to save the Waypoint and return to the previous screen.
 - If "Cancel" is selected, the setting will be cancelled.
 - If you change the waypoint contents, see page 2-7.

• Add Memo...

(CURSOR MENU ▷ Add Memo...)

The Memo function allows you to save a short sentence of up to 400 characters, containing position data and date to the cursor position. A picture can be attached to each memo.

When no data is received, "--" is displayed.

- ① After pushing [ENTER], the Memo edit screen appears.
- ② Rotate [DIAL] to select "Save," then push [ENTER] to save the memo and return to the previous screen.
 - If "Cancel" is selected, the setting will be cancelled.
 - If you change the memo contents, see page 5-27.

• Ruler

(CURSOR MENU ▷ Ruler...)

Using the cursor permits you to measure the distance and bearing between two points easily.

- ① After pushing [ENTER], "From" appears on upper right of the cursor.
- ② Push [▲], [▼], [◀] or [▶] to move the cursor to the desired position, and push [ENTER].
 - "To" appears on upper right of the cursor instead of "From."
- ③ Push [▲], [▼], [◀] or [▶] to move the cursor to the destination position.
- ④ The distance and the bearing between the two positions are displayed in the cursor field.
- ⑤ Push [ENTER] to exit.

• Unselect

(CURSOR MENU ▷ Unselect)

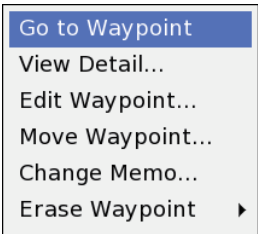
When ATA or AIS information screen is displayed on the lower-right of the screen, it will be cancelled after selecting "Unselect."

◇ On the Waypoint icon

The cursor menu on the Waypoint icon includes the Go to Waypoint, View Detail, Edit Waypoint, Move Waypoint, Change Memo and Erase Waypoint.

- ① When the cursor points to the Waypoint icon, push [SUB] to display the Waypoint cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Waypoint icon>



• Go to Waypoint

(CURSOR MENU ▸ Go to Waypoint)

The Goto Waypoint navigation means that the vessel is navigated from the current position to the specified waypoint (within one section only).

See page 2-9 for details.

• View Detail...

(CURSOR MENU ▸ View Detail...)

The Waypoint detail screen is displayed.

➡ Push [+] or [-] one or more times to adjust the display range.

• Edit Waypoint...

(CURSOR MENU ▸ Edit Waypoint...)

The waypoint contents can be edited.

See page 2-7 for details.

• Move Waypoint...

(CURSOR MENU ▸ Move Waypoint...)

The registered Waypoint can be moved.

➡ Push [▲], [▼], [◀] or [▶] to move the cursor to the desired position, and push [ENTER].

- The selected Waypoint icon moves to the cursor position.

• Change Memo...

(CURSOR MENU ▸ Change Memo...)

The Waypoint changes to the Memo.

➡ Edit the Memo edit screen, and push [ENTER].

- See page 5-27 for details.
- The Waypoint icon changes to the Memo icon.

• Erase Waypoint

(CURSOR MENU ▸ Erase Waypoint...)

A waypoint can be erased.

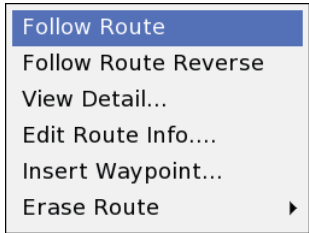
See page 5-5 for details.

◇ On the Route line

The cursor menu on the Route line includes the Follow Route, Follow Route Reverse, View Detail, Edit Route Info, Insert Waypoint and Erase Route.

- ① When the cursor points to the Route line, push [SUB] to display the Route cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Route line>



• Follow Route

(CURSOR MENU ▸ Follow Route)

The Route Navigation can be started

See page 2-15 for details.

• Follow Route Reverse

(CURSOR MENU ▸ Follow Route Reverse)

Waypoint order of a Route can be reversed, and the Route Navigation automatically starts.

➡ See page 2-12 to stop the navigation.

• View Detail...

(CURSOR MENU ▸ View Detail...)

You can check a Route detail information.

See page 2-14 for details.

• Edit Route Info...

(CURSOR MENU ▸ Edit Route Info...)

A Route information can be edited.

See page 2-16 for details.

• Insert Waypoint...

(CURSOR MENU ▸ Insert Waypoint...)

A new Waypoint can be inserted.

➡ Push [▲], [▼], [◀] or [▶] to move the cursor to the desired position, and push [ENTER].

- A new Waypoint is inserted.

• Erase Route

(CURSOR MENU ▸ Erase Route...)

A Route can be erased

See page 2-17 for details.

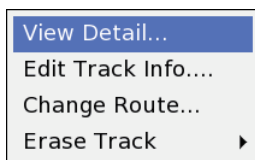
■ Cursor menu operation (Continued)

◇ On the Track line

The cursor menu on the Track line includes the View Detail, Edit Track Info, Change Route and Erase Track.

- ① When the cursor points to the Track line, push [SUB] to display the Track cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Memo icon>



• View Detail...

(CURSOR MENU ▷ View Detail...)
The Track detail screen is displayed.

• Edit Track Info...

(CURSOR MENU ▷ Edit Memo...)
A Track information can be edited
See page 2-21 for details.

• Change Route...

(CURSOR MENU ▷ Move Memo...)
This function enables a Waypoint to be automatically added to the saved Track line.
See page 2-22 for details.

• Erase Track

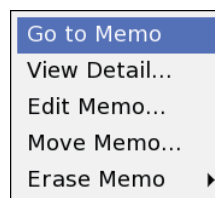
(CURSOR MENU ▷ Erase Erase Memo...)
A Track can be erased.
See page 2-22 for details.

◇ On the Memo icon

The cursor menu on the Memo icon includes the Go to Memo, View Detail, Edit Memo, Move Memo and Erase Memo.

- ① When the cursor points to the Memo icon, push [SUB] to display the Memo cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Memo icon>



• Go to Memo

(CURSOR MENU ▷ Go to Memo)
The Goto Memo navigation means that the vessel is navigated from the current position to the specified Memo position (within one section only).

• View Detail...

(CURSOR MENU ▷ View Detail...)
The Memo detail screen is displayed.

• Edit Memo...

(CURSOR MENU ▷ Edit Memo...)
The Memo contents can be edited.
See page 5-27 for details.

• Move Memo...

(CURSOR MENU ▷ Move Memo...)
The registered Memo can be moved.
➡ Push [▲], [▼], [◀] or [▶] to move the cursor to the desired position, and push [ENTER].
• The selected Memo icon moves to the cursor position.

• Erase Memo

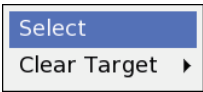
(CURSOR MENU ▷ Erase Erase Memo...)
A Memo can be erased.
See page 5-28 for details.

◆ On the ATA icon

The cursor menu on the ATA icon includes the Select and Clear Target.

- ① When the cursor points to the ATA icon, push [SUB] to display the ATA cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the ATA icon>



• Select

(CURSOR MENU ▸ Select)

The selected ATA target's information appears on the lower right of the display. It shows the ATA No., CSE, SPD, CPA and TCPA information.

• Clear Target

(CURSOR MENU ▸ Clear Target)

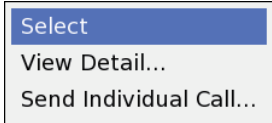
A selected ATA target can be cleared.
See page 5-8 for details.

◆ On the AIS icon

The cursor menu on the AIS icon includes the Select, View Detail and Send Individual Call.

- ① When the cursor points to the AIS icon, push [SUB] to display the AIS cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the AIS icon>



• Select

(CURSOR MENU ▸ Select)

The selected AIS target's information appears on the lower right of the display. It shows the MMSI code, CSE, SPD, CPA and TCPA information.

• View Detail...

(CURSOR MENU ▸ View Detail...)

The detail screen shows information about the selected AIS target.
See page 5-9 for details.

• Send Individual Call...

(CURSOR MENU ▸ Send Individual Call...)

When a transceiver is connected, you can transmit an Individual DSC call to the selected AIS target.
See page 5-10 for details.

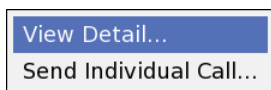
■ Cursor menu operation (Continued)

◇ On the DSC position icon

The cursor menu on the DSC position icon includes the View Detail and Send Individual Call.

- ① When the cursor points to the DSC position icon, push [SUB] to display the DSC cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the DSC position icon>



• View Detail...

(CURSOR MENU ▸ View Detail...)

The detail screen shows information about the selected DSC call.

• Send Individual Call...

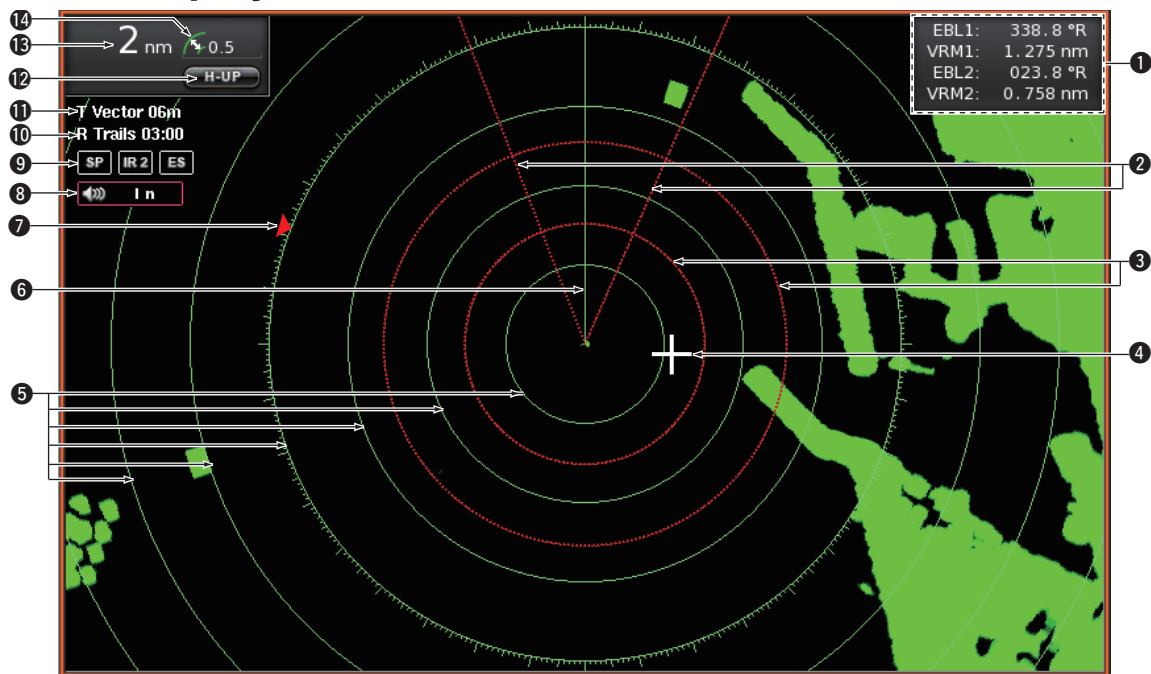
(CURSOR MENU ▸ Send Individual Call...)

When a transceiver is connected, you can transmit an Individual DSC call to the selected DSC caller.

See page 5-16 for details.

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■ Radar display



① CURSOR POSITION/EBL AND VRM READOUT

• CURSOR POSITION

This field shows the intersection position* of the cross hair cursor (in latitude/longitude), the bearing and distance of the intersection relative to the current ship position. Aligning the intersection of the cross hair cursor with the mark yields the position data of the mark.

* Depending on the presetting, Loran-C Time differences are displayed instead of the position data.

• EBL AND VRM READOUT

Shows the bearing of the displayed Electronic Bearing Lines (EBL1 and EBL2), and range of the displayed Variable Range Markers (VRM1 and VRM2), when the EBL or VRM is in use.

② EBL1/EBL2

Used for bearing measurement.

③ VRM1/VRM2

Used for distance measurement.

④ CROSS HAIR CURSOR

- Appears on the screen when [▲▼◀▶] is pushed.
- While the cross hair cursor is displayed, push [SUB] to open the cursor menu. See the page 3-33 for details.

⑤ FIXED RANGE RINGS

Shows the distance in fixed intervals. The interval distance is indicated by the ring range readout.

⑥ HEADING LINE

Heading line indicates the ship bow.

⑦ NORTH MARK

The north mark shows the true north direction.

⑧ ZONE ALARM INDICATOR

Displayed when the Zone Alarm function is ON. (p. 3-26)

⑨ FUNCTION INDICATOR

Displayed when these functions below are ON.

SP/LP: Long Pulse function (p. 3-9)

IR1/IR2: IR (p. 3-16)

ES: Stretch function (p. 3-8)

⑩ TRAIL FUNCTION INDICATOR

Displayed when the Trail function is ON. (p. 3-13)

⑪ VECTOR INDICATOR

Shows the ATA, AIS and OWN vector type.

• T: True vector

• R: Relative vector

⑫ MODE INDICATOR

Head-up, North-up, Course-up and True Motion screens are available. (p. 3-10)

• N-UP and C-UP screens require external Heading data.

• TM screen requires Heading, position, COG and SOG data.

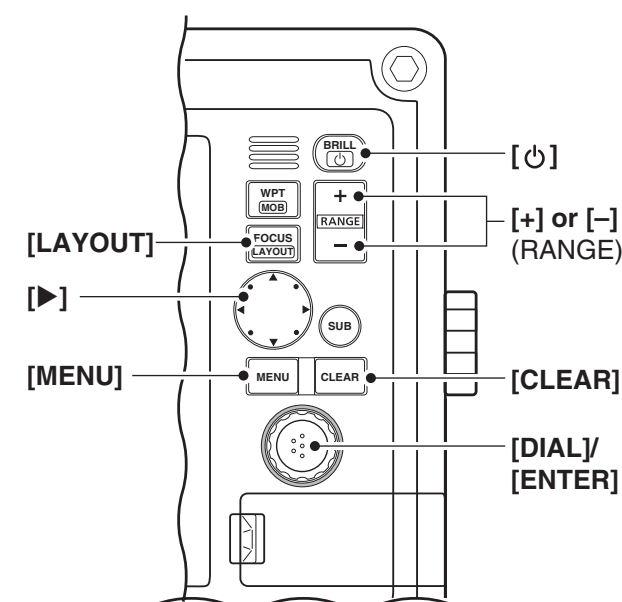
⑬ SCREEN RANGE READOUT

Shows the maximum range of the displayed screen.

⑭ FIXED RANGE RINGS READOUT

Shows the interval range of the fixed ring.

Basic operation



① Turn the power ON.

- If any screen other than Radar screen appears, hold down [LAYOUT](FOCUS) for 2 seconds to enter the screen selection mode.
- Rotate [DIAL] to select Radar, and then push [ENTER].

② Turn the Radar TX ON.

- Push [BRILL], and then push [▶] once, to select the Radar TX menu.
- Rotate [DIAL] to select "TX," and then push [ENTER] to start scanning.
 - The warming up is started. No operation is possible while the warming up (for 90 seconds).
 - After the warming up, targets and Heading Line appear.
 - The screen appears approximately 2 seconds after pushing [ENTER], when "Auto" is selected in the "TUNE" of the "GAIN" menu.

- Push [+] or [-] one or more times to select the display range.
 - The screen range readout shows the distance between the center and top edge of the screen.
- Push [ENTER], and then rotate [DIAL] to set the gain level.
 - Clockwise rotation increases the gain.
 - Increased gain may increase screen noise.
- Push [ENTER], and then [▶] once to select the SEA menu, to set the sensitivity time control, rotate [DIAL] counterclockwise to set the SEA to minimum.

CAUTION: When setting the SEA in maximum level, close targets are blanked.

- Push [ENTER], and then [▶] twice to select the RAIN menu, to set the RAIN clutter control, then rotate [DIAL] counterclockwise to set RAIN to minimum.
- Select Radar Display mode.
 - The external heading data is required. (p. 5-33)
 - Push [MENU], then rotate [DIAL] until the "Radar Display Mode" menu becomes highlighted.
 - Push [ENTER], and then rotate [DIAL] to select one of Head-up; H-UP, North-up; N-UP, Course-up; C-UP or True Motion; TM screens.
 - N-UP and C-UP screens require external Heading data.
 - TM screen requires Heading, position, COG and SOG data.
 - (See p. 3-10 for details)
 - Push [ENTER], and then push [CLEAR], to exit the menu screen.

◇ Heading Line

The Heading Line is a line that shows your ship's bow direction. (This marker will appear in the center of the screen when the Head-up screen H-UP is selected.) The Heading Line can be hidden when the desired target is located under the Heading Line.

- Push [MENU], and then rotate [DIAL] until the "Heading Line OFF" menu becomes highlighted.
- Hold down [ENTER] to hide the heading Line.
 - The Heading Line hides while holding down [ENTER].
- Push [ENTER] to return.

◇ Fixed range rings

The fixed range rings can be used for rough distance measurement. (p. 3-21)

◇ Manual tuning

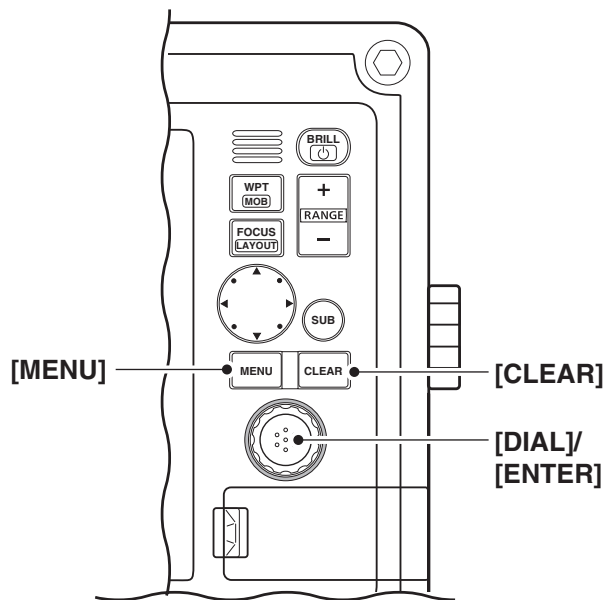
The receiver tuning can be manually adjusted.

- Push [MENU], and then [ENTER], to enter the GAIN menu. Then rotate [DIAL] until the "Tune" menu becomes highlighted.
- Push [ENTER], then rotate [DIAL] to select the "Manual..." menu and push [ENTER] to turn the manual tuning level indicator, and then rotate [DIAL] to set the "Tune Level" meter to the maximum level (p. 3-7).
- Push [ENTER] to exit the manual tuning screen.

3 RADAR OPERATION

The followings are typical basic operation examples, which may hinder radar reception (sea clutter, precipitation interference and echoes from other radar).

■ GAIN function (MENU ▸ GAIN ▸ GAIN...)

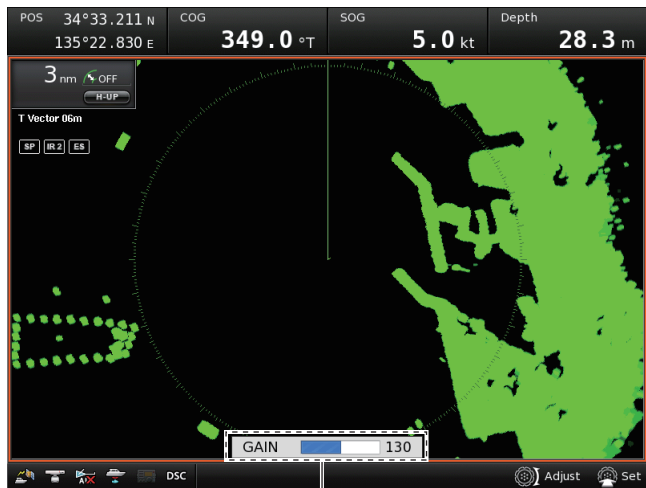
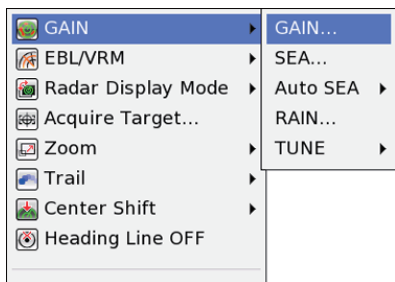


This function allows you to adjust the gain of reflection echoes.

- ① Push [MENU], and then [ENTER] to enter the GAIN menu.
- ② Rotate [DIAL] until the “GAIN...” menu becomes highlighted.
- ③ Push [ENTER] to GAIN level adjustment mode.
 - The GAIN level indicator appears.
- ④ Rotate [DIAL] to adjust the GAIN level.

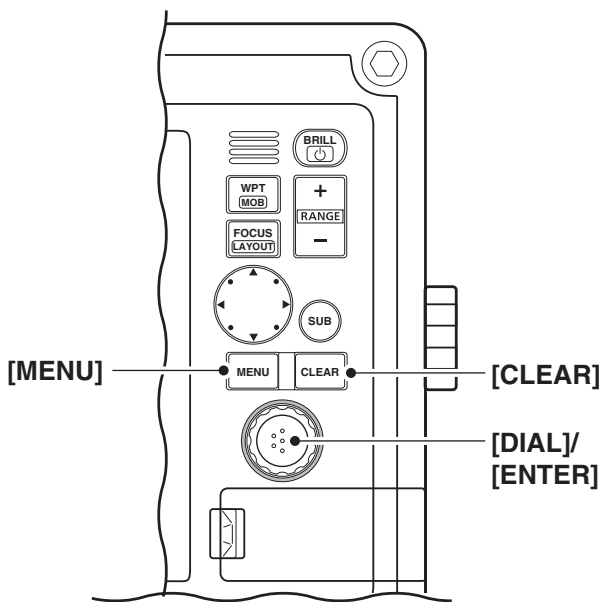
NOTE: DO NOT reduce the reflection echoes too much, otherwise you may miss weaker targets.
- ⑤ Push [ENTER] to exit the GAIN adjustment mode.

<GAIN function menu>



GAIN level indicator

■ SEA function (MENU ▸ GAIN ▸ SEA.../Auto SEA)



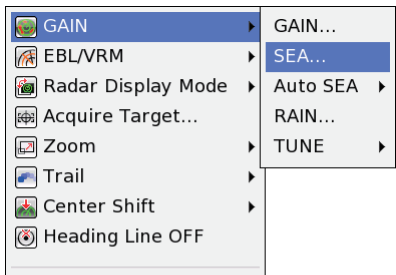
This function serves to eliminate echoes from waves at close range. Reduce the receiver gain for close objects within a radius of 8 nm to eliminate sea clutter.

- ◇ SEA function
- ① Push [MENU], and then [ENTER], to enter the GAIN menu.
 - ② Rotate [DIAL] until the “SEA...” menu becomes highlighted.
 - ③ Push [ENTER] to turn the SEA level indicator.
 - ④ Rotate [DIAL] to adjust SEA level.
 - ⑤ Push [ENTER] to exit the SEA adjustment screen.

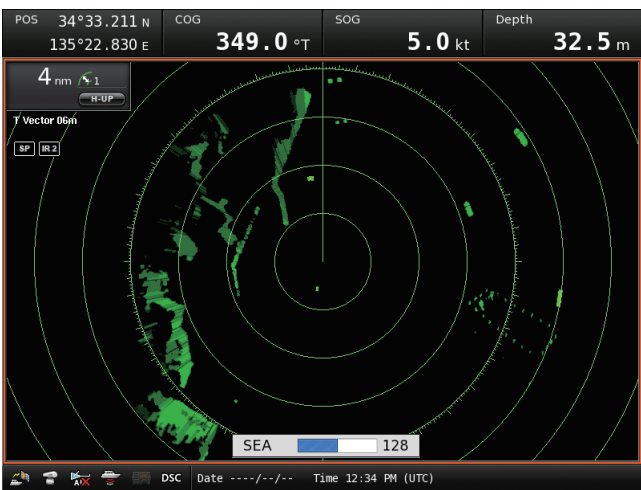
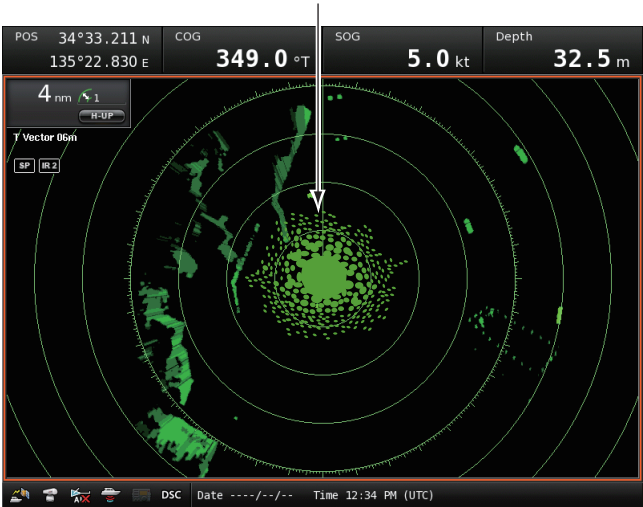
- ◇ Auto SEA function
- ① Push [MENU], and then [ENTER], to enter the GAIN menu.
 - ② Rotate [DIAL] until the “Auto SEA” menu becomes highlighted.
 - The SEA level is automatically adjusted.
 - ③ Push [ENTER], and then select “ON.”
 - ④ Push [ENTER] to turn ON the Auto SEA function.

3

<SEA function menu>



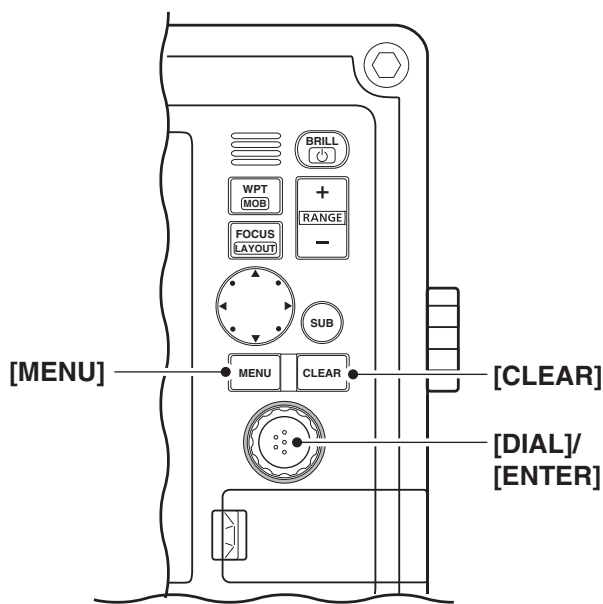
Echoes from the sea waves



Adjust SEA control

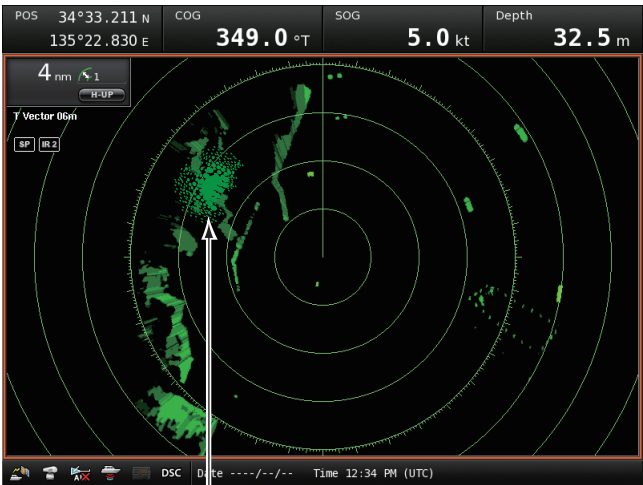
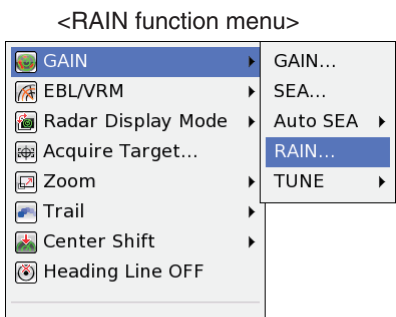
WARNING: The SEA function reduces the receiver sensitivity of objects within 8 nm. Therefore, caution and careful adjustment are necessary when using the SEA function. Small objects may not be displayed on the screen when strong echoes from the rain or the island within 1 nm while automatic SEA function is activating.

■ RAIN function (MENU ▸ GAIN ▸ RAIN...)

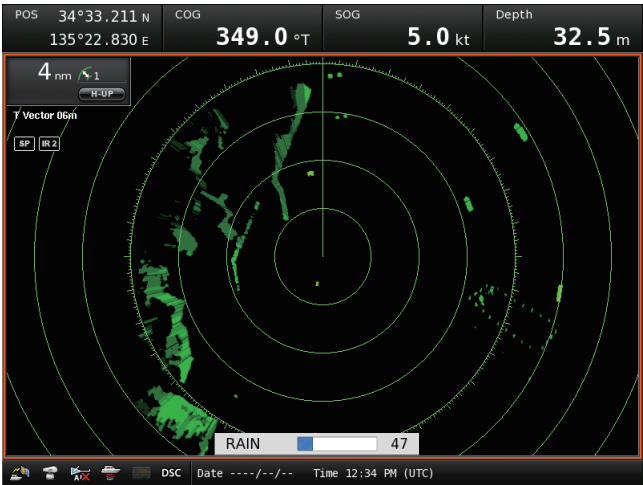


This function eliminates the reflection echoes from rain, snow, fog and so on.

- ① Push [MENU], and then [ENTER] to enter the GAIN menu.
- ② Rotate [DIAL] until the “RAIN...” menu becomes highlighted.
- ③ Push [ENTER] to turn the RAIN level indicator.
- ④ Rotate [DIAL] to adjust the RAIN level.
 - **NOTE: DO NOT** reduce the reflection echoes too much, otherwise you may miss weaker targets.
- ⑤ Push [ENTER] to exit the RAIN adjustment screen.

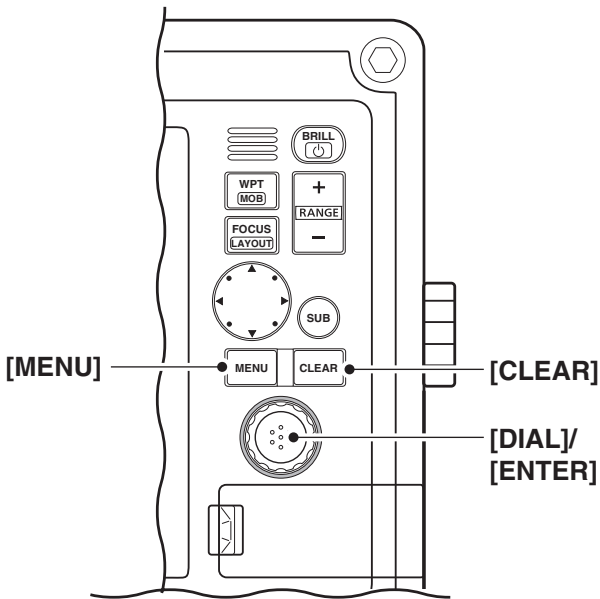


Small echoes



Adjust RAIN control

■ TUNE function (MENU ▸ GAIN ▸ TUNE)



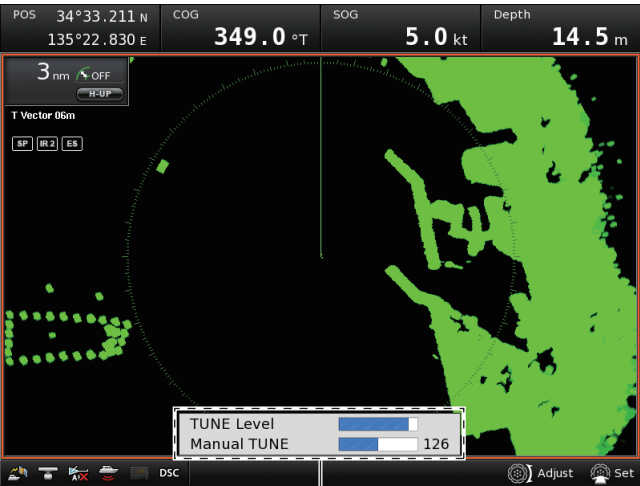
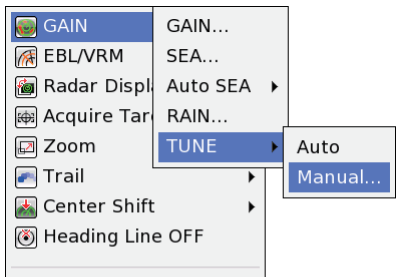
The receiver tuning can be manually adjusted.

- ◇ **Manual tuning**
- ① Push [MENU], and then [ENTER], to enter the GAIN menu.
 - ② Rotate [DIAL] until the “TUNE” menu becomes highlighted.
 - ③ Rotate [DIAL] to select “Manual...” menu.
 - ④ Push [ENTER], and then rotate [DIAL] to adjust the TUNE level.
 - The Tuning window appears.
 - ⑤ Push [ENTER] to exit the TUNE adjustment mode.

- ◇ **Automatic tuning**
- ① Push [MENU], and then [ENTER], to enter the GAIN menu.
 - ② Rotate [DIAL] until the “TUNE” menu becomes highlighted.
 - ③ Rotate [DIAL] to select “Auto” menu.

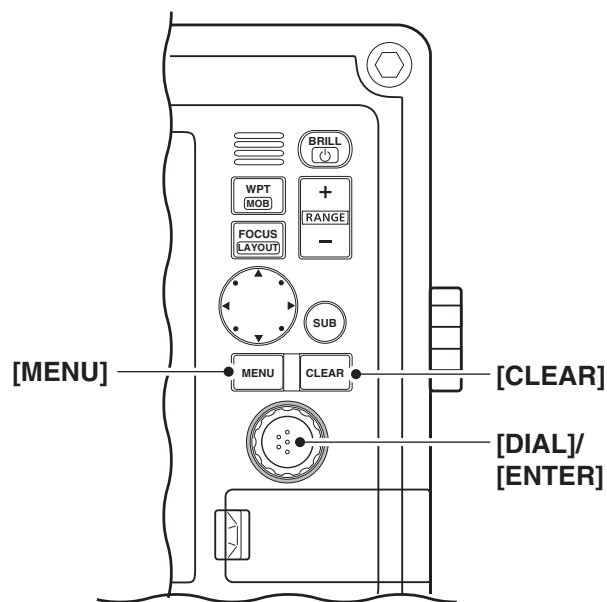
3

<TUNE function menu>



Tuning window

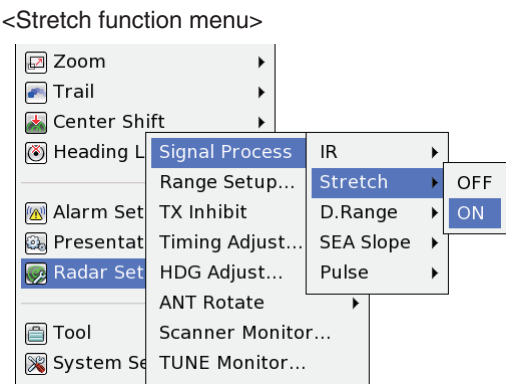
■ **Stretch function** (MENU ▸ Radar Setup ▸ Signal Process ▸ Stretch)



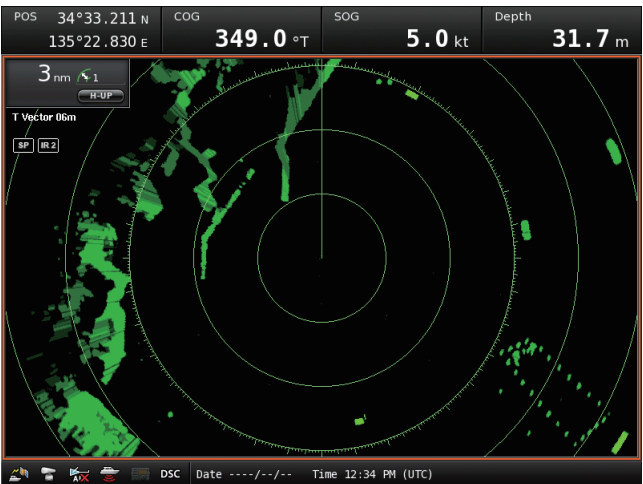
The blips can be magnified electronically for easier viewing of small targets.

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Radar Setup” menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the “Signal Process” menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] until the “Stretch” menu becomes highlighted.
- ⑤ Push [ENTER], and then rotate [DIAL] to turn the function ON. Push [ENTER].
 - “ES” appears in the upper left of the screen, when the function is activated.
- ⑥ Push [ENTER], and then push [CLEAR], to exit the menu screen.

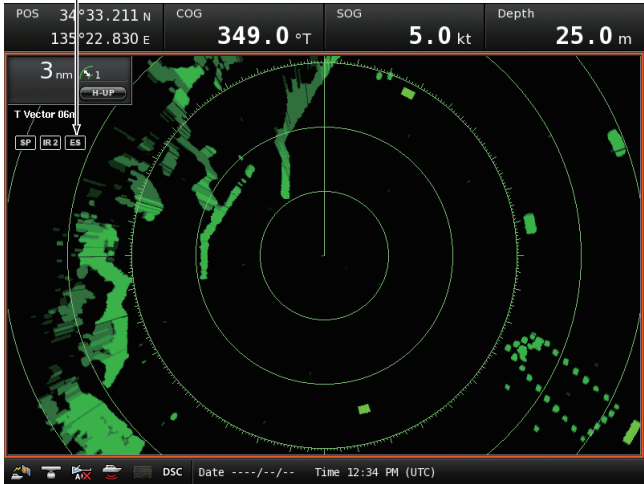
NOTE: Turn OFF this function during normal operation.



Echo Stretch indicator appears

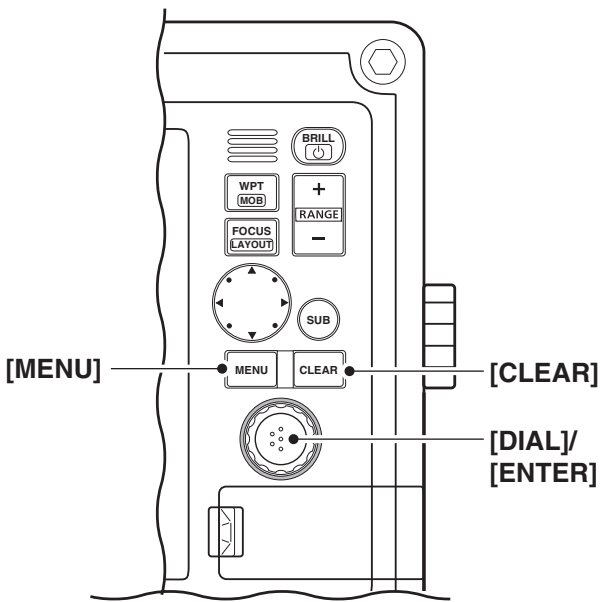


Normal screen



With Stretch function ON

■ Long Pulse function (MENU ▸ Radar Setup ▸ Signal Process ▸ Pulse)

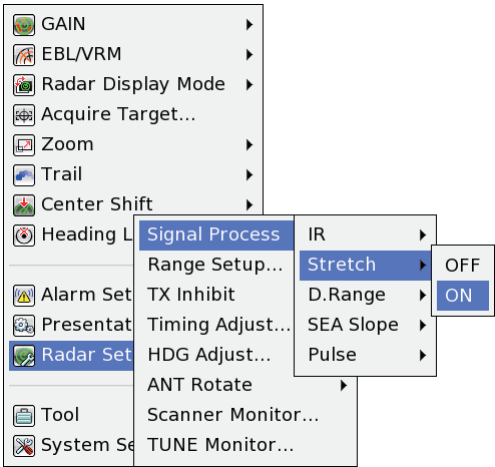


To magnify the blips for easier viewing of small targets, the long pulse and echo stretch (p. 3-8) functions are available. When the long pulse is used in the $\frac{3}{4}$ to 2 nm range, this function magnifies target echoes to the backward direction of the target.

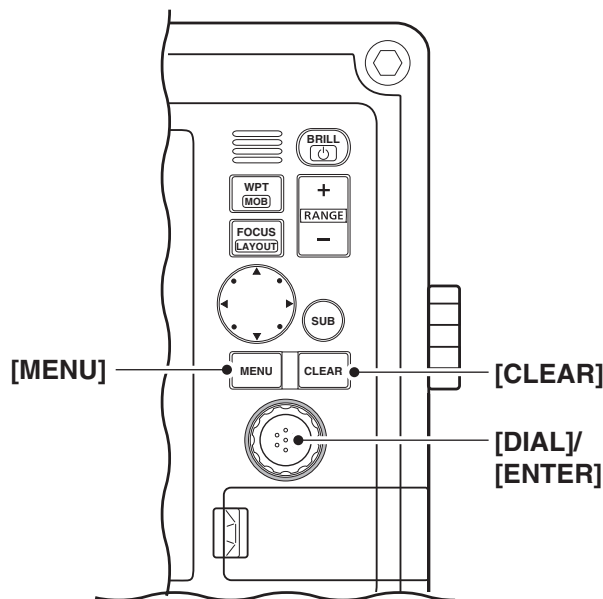
- Pulse selection
- ① Push [MENU] to enter the Menu screen.
 - ② Rotate [DIAL] until the “Radar Setup” menu becomes highlighted.
 - ③ Push [ENTER], and then rotate [DIAL] until the “Signal Process” menu becomes highlighted.
 - ④ Push [ENTER], and then rotate [DIAL] until the “Pulse” menu becomes highlighted.
 - ⑤ Push [ENTER], and then rotate [DIAL] to select a desired pulse type, “Short” or “Long.”
 - ⑥ Push [ENTER].
 - “SP” or “LP” appears in the upper left of the screen.
 - ⑦ Push [CLEAR] to exit the menu screen.

3

<Long Pulse function menu>



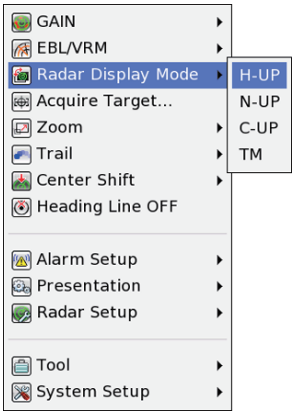
■ Radar Display Mode (MENU ▸ Radar Display Mode)



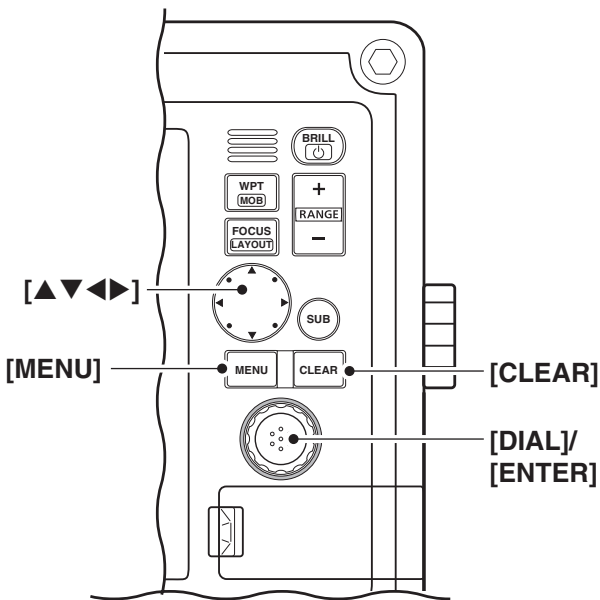
Head-up (H-UP), North-up (N-UP), Course-up (C-UP) and True Motion (TM) screens are available.

- ① Push [MENU], and then rotate [DIAL] until the “Radar Display mode ” menu becomes highlighted.
- ② Rotate [DIAL] to select the display mode.
 - Head-up (H-UP) : The top of the screen indicates own ship’s heading.
 - North-up (N-UP) : The top of the radar display represents North.
 - Course-up (C-UP) : The top of the radar display represents the heading.
 - True Motion (TM) : The radar display is fixed, and your vessel icon moves on the map. When your vessel icon approach to the edge of the display, the radar map will automatically switch.
- ③ Push [ENTER], and then [CLEAR], to exit the menu screen.

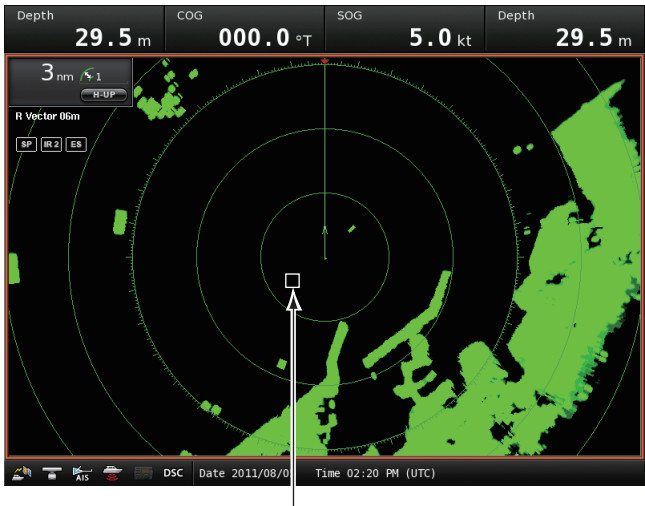
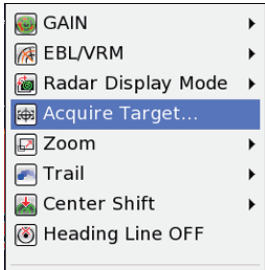
<Radar Display Mode menu>



■ Acquire Target function (MENU ▸ Acquire Target...)



<Acquire Target function menu>



Put this cursor on the target

By automatically tracking the target, the Closest Point of Approach (CPA) and the Time to Closest Point of Approach (TCPA) limit of a own ship and a target are calculated.

ATA tells about to alarm sound, when both CPA and TCPA becomes below a setting value (the approach watch area).

The range of the target which can be registered is taken as a target with a highest luminosity level of 0.1–16 nm.

- Max. 10 ATA targets can be plotted on the screen.
- Plot positions shall be identified by an approved symbol marks (pp. 3-28, 3-30) and associated plot number.
- The vector origin will move across the screen at a rate and direction defined by the calculated true or relative course and speed.
- The vector will be displayed on the target.
- Display accuracy may increase by the self-ship and course change of target or acceleration, slowdown, and so on.

• Tracking the target

- ① Push [MENU], and then rotate [DIAL] until the “Acquire Target” becomes highlighted.
- ② Push [ENTER].
 - A white square cursor appears on the screen.
- ③ Push [▲▼◀▶] to move the “□” cursor on the desired target.
- ④ Push [ENTER] to start tracking the target.

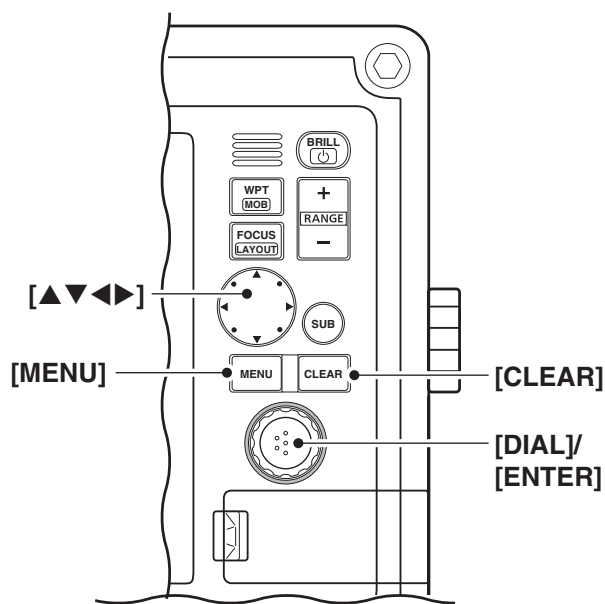
The target can be also tracked as below.

- ① Push [▲▼◀▶] to move the “+” cursor on the desired target.
- ② Push [SUB], select [Acquire Target], and then push [ENTER].
- ③ Select “OK,” and then push [ENTER].

• Cancelling the tracking

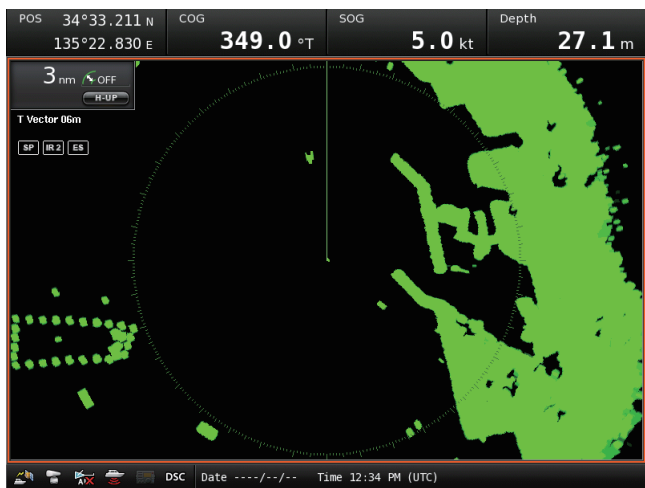
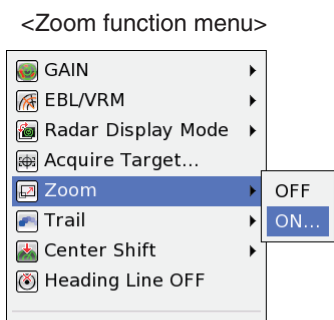
- ① Push [▲▼◀▶] to move the “+” cursor on a tracking target.
- ② Push [SUB], select [Clear Target], and then push [ENTER].
- ③ Select “OK,” and then push [ENTER].

■ Zoom function (MENU ▷ Zoom)

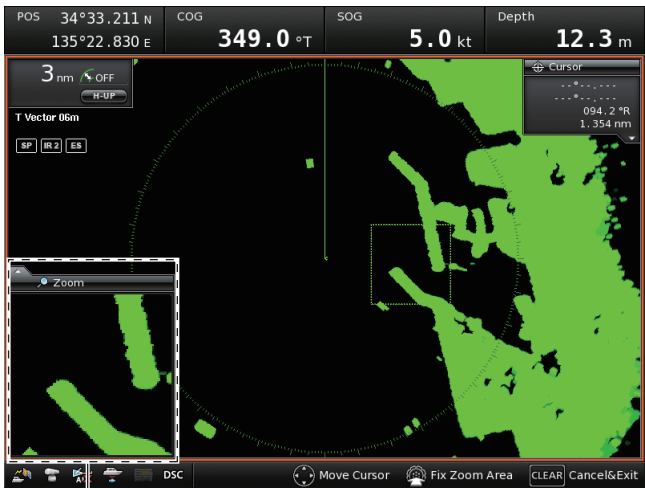


The Zoom function expands the target to two times normal size.

- ① Push [MENU], and then rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ② Push [ENTER], and then rotate [DIAL] to select the “ON...” option.
- ③ Push [ENTER] to activate the Zoom function.
 - The Zoom window appears in the lower left of the screen.
- ④ Push [▲▼◀▶] to move the dotted box to the desired target.
- ⑤ Push [ENTER] to set the focused area.



Normal screen

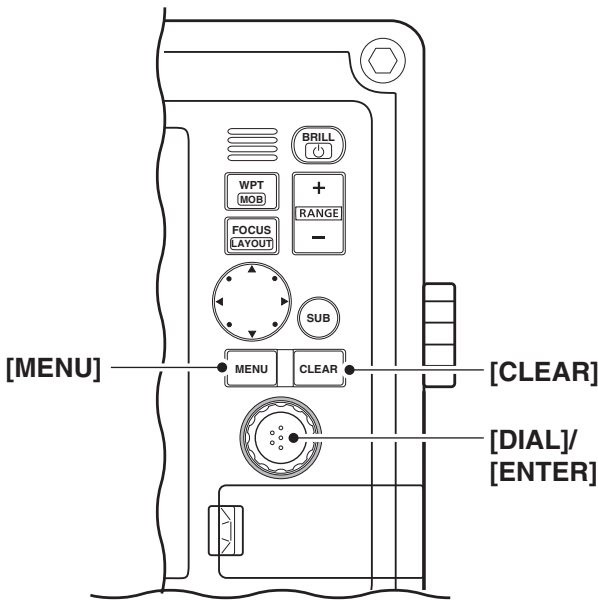


With Zoom function ON

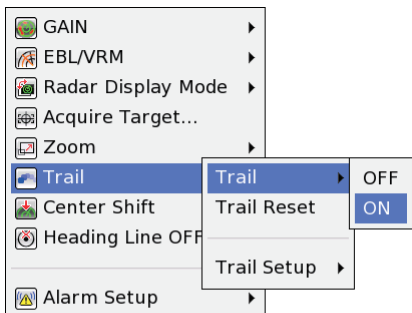
Zoom window

Trail function (MENU ▸ Trail)

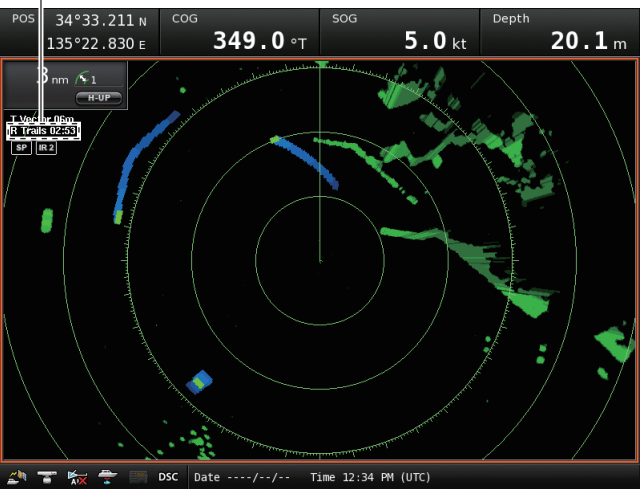
The trail function memorizes echoes continuously or at constant intervals. This is useful for watching other ships' tracks, approximate relative speed, and so on.



<Trail function menu>



Trail interval counter



- **Setting the trail interval time**
(MENU ▸ Trail ▸ Trail Setup ▸ Trail Time)
 - ① Push [MENU] to enter the Menu screen.
 - ② Rotate [DIAL] until the “Trail” menu becomes highlighted.
 - ③ Push [ENTER], and then rotate [DIAL] until the “Trail Setup” menu becomes highlighted.
 - ④ Push [ENTER], and then rotate [DIAL] until the “Trail Time” menu becomes highlighted.
 - ⑤ Push [ENTER], and then rotate [DIAL] to select a desired trail interval time. Push [ENTER].
 - 6 seconds, 15 seconds, 30 seconds, 1 minute, 3 minutes, 6 minutes, 15 minutes, 30 minutes and ∞ (continuous) are selectable. (Default: 6 minutes)
 - ⑥ Push [CLEAR] to exit the menu screen.

- **Setting the trail color**
(MENU ▸ Trail ▸ Trail Setup ▸ Trail Color)
 - ① Push [MENU] to enter the Menu screen.
 - ② Rotate [DIAL] until the “Trail” menu becomes highlighted.
 - ③ Push [ENTER], and then rotate [DIAL] until the “Trail Setup” menu becomes highlighted.
 - ④ Push [ENTER], and then rotate [DIAL] until the “Trail Color” menu becomes highlighted.
 - ⑤ Push [ENTER] then rotate [DIAL] to select a desired trail color. Push [ENTER].
 - Blue, Yellow, Green, Red, Orange, White and Multi (mixed color) are selectable. (Default: Blue)
 - ⑥ Push [CLEAR] to exit the menu screen.

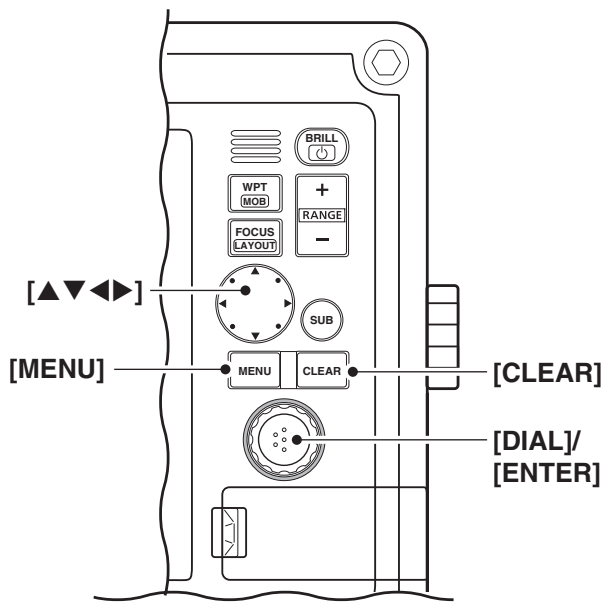
- **Using the Trail function**
(MENU ▸ Trail ▸ Trail)
 - ① Push [MENU] to enter the Menu screen.
 - ② Rotate [DIAL] until the “Trail” menu becomes highlighted.
 - ③ Push [ENTER], and then rotate [DIAL] until the “Trail” menu becomes highlighted.
 - ④ Push [ENTER], and then rotate [DIAL] to select the trail function ON. Push [ENTER].
 - “TRAILS” and trail interval time appears in the upper left of the screen.
 - Trail interval counter starts to count up to the trail time.
 - ⑤ The strongest echo at the plotted time is memorized and displayed with a graduated intensity together with the current echoes.
 - ⑥ To cancel the trail function, repeat steps ① to ④ and select OFF.
 - “Trails” and trail interval time disappears.

■ Center Shift function* (MENU ▷ Center Shift)

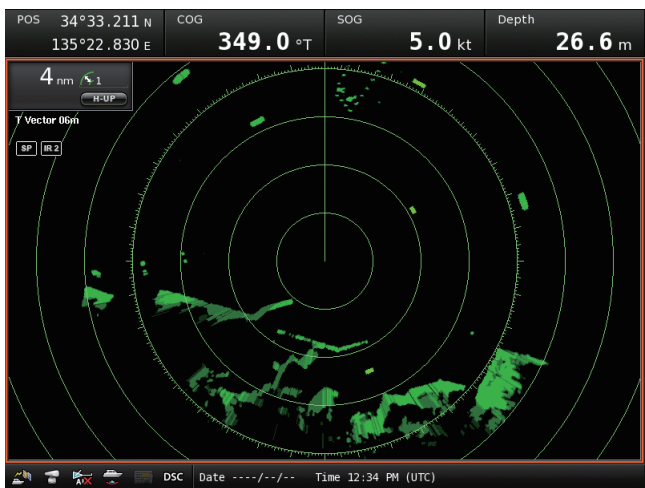
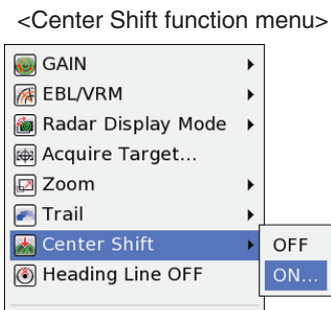
*This function is not available in the TM screen.

The scanning area can be shifted in a desired direction and can be enlarged partially. This is useful when the Head-up is selected and you want to enlarge the bow direction display, or, the center of the screen shifts in the direction of the intersection.

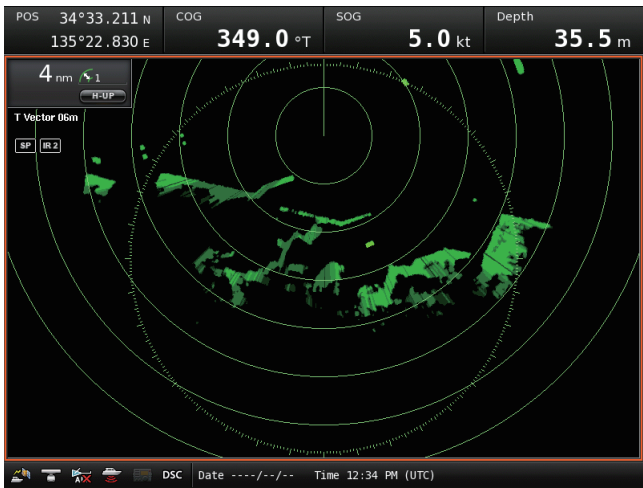
- This function is available for 24 nm or shorter range selection.



- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Center Shift” menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] to select the “ON...” option.
- ④ Push [ENTER] to activate the Center Shift function.
 - The Cursor window appears in the upper right of the screen.
- ⑤ Push [▲▼◀▶] to move the cursor where you want to shift the center of the screen.
 - Maximum offsetting is up to 75% of the screen.
- ⑥ Push [ENTER] to shift the screen.

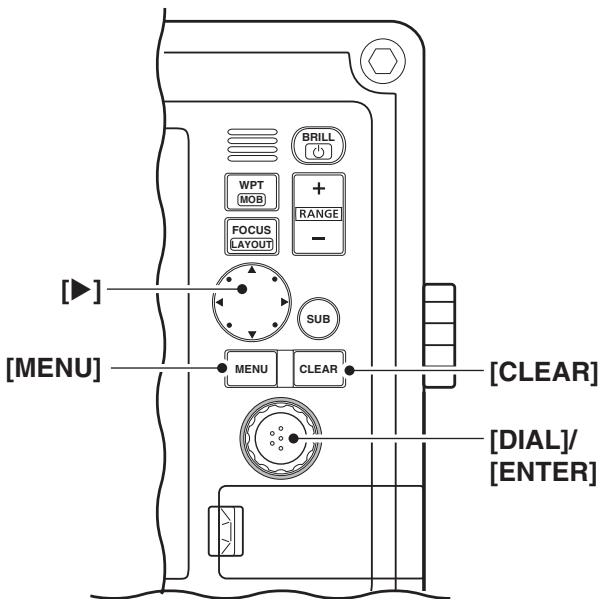


Normal screen



With Center Shift ON

■ Heading Line OFF function (MENU ▸ Heading Line OFF)



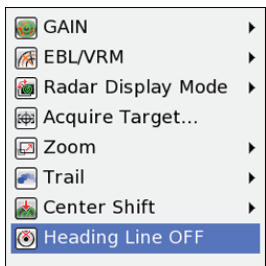
The Heading Line can be temporally hidden when the desired target is located under the Heading Line.

- ① Push [MENU], and then rotate [DIAL] until the “Heading Line OFF” menu becomes highlighted.
- ② Hold down [ENTER] to hide the heading Line.
 - The Heading Line hides while holding down [ENTER].
- ③ Release [ENTER] to return.

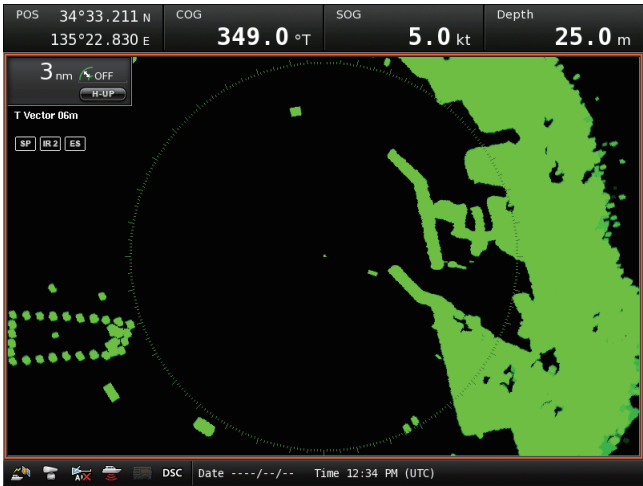
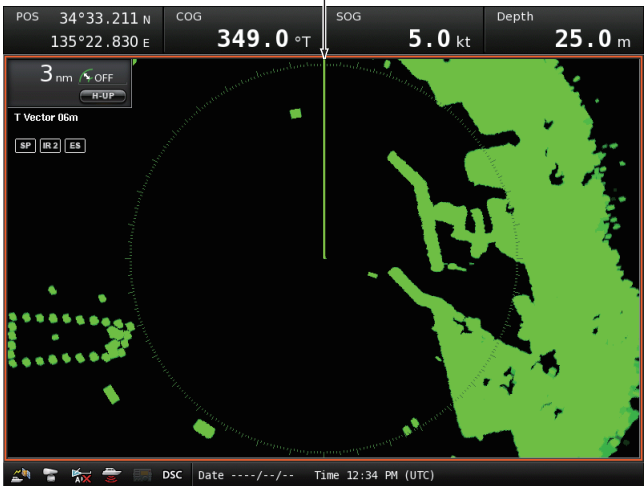
The Heading Line can be also hidden as below.

- ① Push [ENTER] to enter the Quick Menu 2, and then push [DIAL] four times to select the Heading Line menu.
- ② Hold down [ENTER] to hide the Heading Line. Release [ENTER] to return.

<Heading Line OFF function menu>

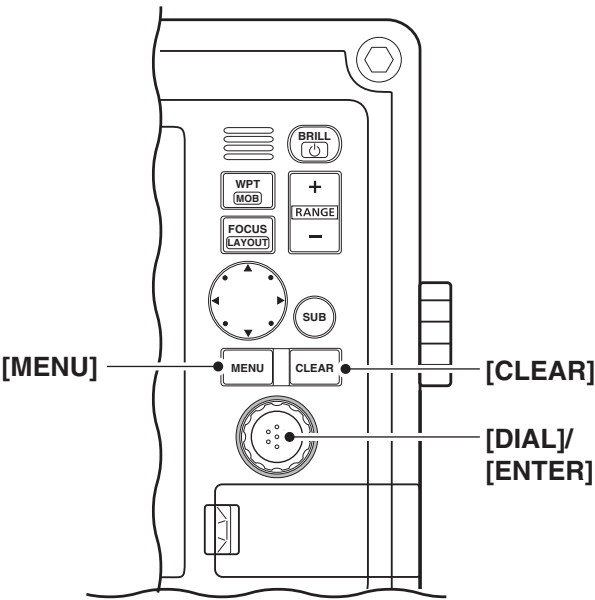


The Heading Line



The Heading Line disappears while holding down [ENTER].

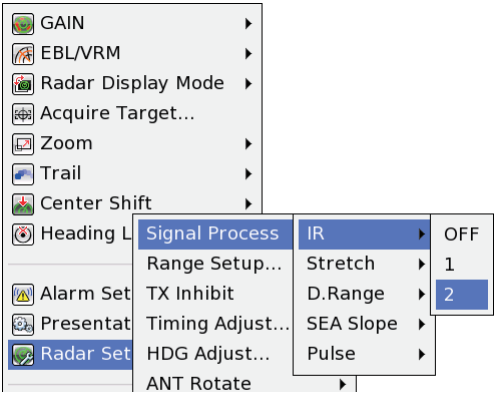
■ IR function (MENU ▸ Radar Setup ▸ Signal Process ▸ IR)



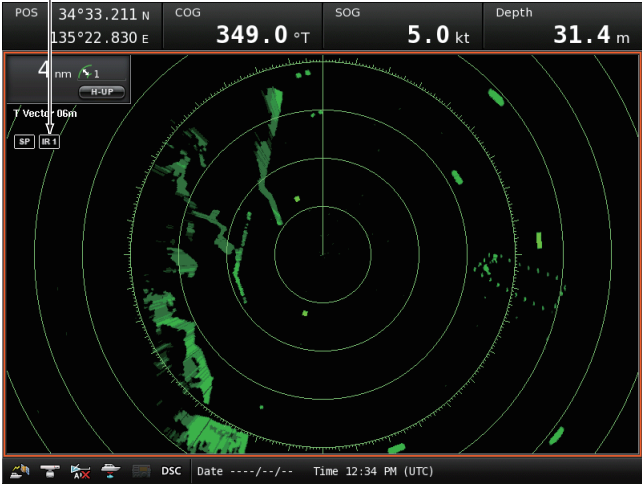
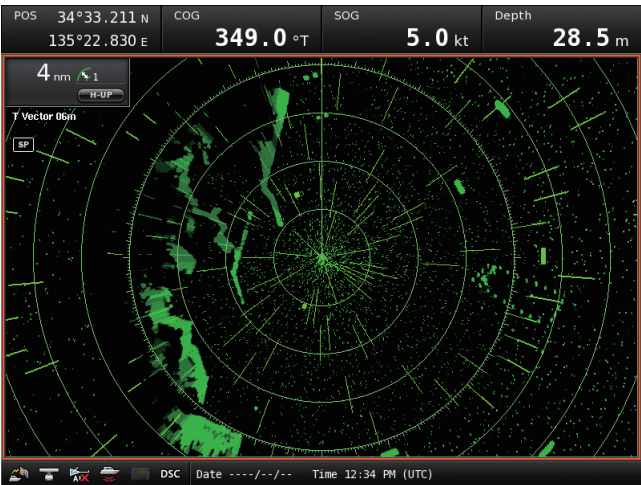
Radar interference may appear when another ship's radar is operating on the same frequency band in close proximity. The IR function can eliminate this type of interference.

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the "Radar Setup" menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the "Signal Process" menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] until the "IR" menu becomes highlighted.
- ⑤ Push [ENTER], and then rotate [DIAL] to select the IR function, 1, 2 or OFF. (Default: 2)
 - "IR1" or "IR2" appears in the upper left of the screen, when the function is activated.
- ⑥ Push [ENTER], and then push [CLEAR] to exit the menu screen.

<IR function menu>

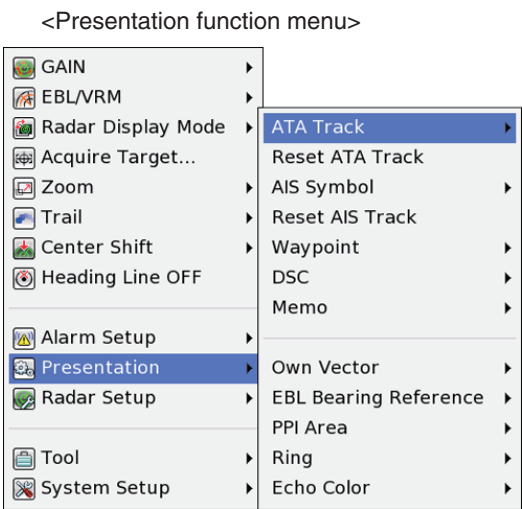


IR indicator appears



With IR function ON ("IR 1")

■ Presentation (MENU ▸ Presentation)



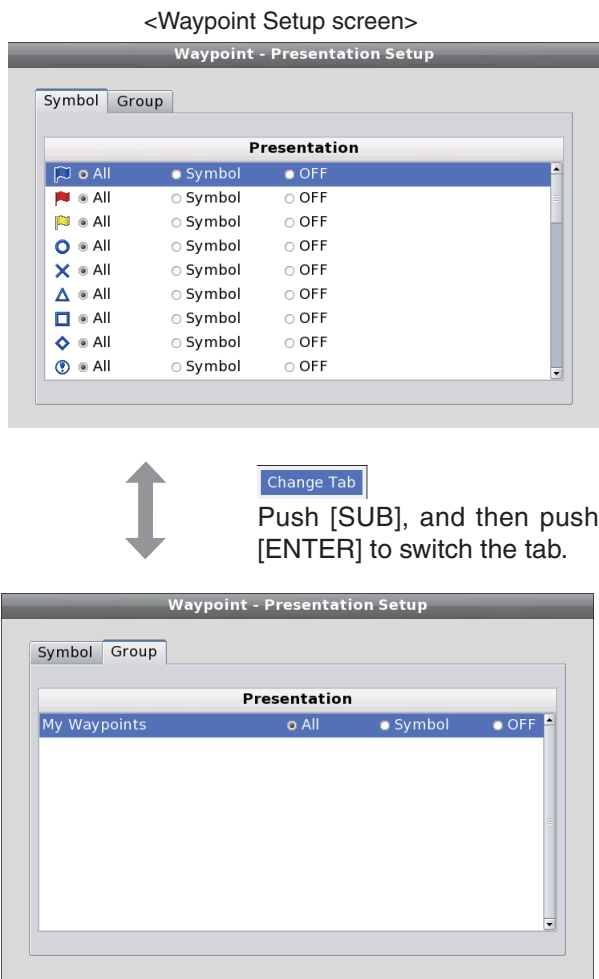
- ◇ **ATA Track**
Plots the past position of targets as the dots.
 - OFF : ATA tracks are not displayed.
 - ON : ATA tracks are displayed.
- ◇ **Reset ATA Track**
The ATA Track data can be reset.
This item can be selected only when “ATA Track” is “ON” as above.
 - ➡ When the “Reset ATA Track” menu becomes highlighted, push [ENTER] to reset, and then exit the “Reset ATA Track” menu.
- ◇ **AIS Symbol**
The AIS symbol indication type can be selected.
 - OFF : AIS symbol and track are not displayed.
 - Symbol : AIS symbol is displayed.
 - Symbol & Track : AIS symbol and track are displayed.

- ◇ **Waypoint**
 - ① Push [MENU], and then rotate [DIAL] until the “Presentation” menu is highlighted, and then push [ENTER].
 - ② Rotate [DIAL] until the “Waypoint” menu is highlighted, and then push [ENTER].
 - ③ Rotate [DIAL] until the desired menu is highlighted, and then push [ENTER].

- **Show**
The Waypoint icon indication can be turned ON or OFF.
 - ON : The Waypoint icon is displayed on the radar display.
 - OFF : The Waypoint icon is not displayed on the radar display.

- **Setup...**
The Waypoint icon can be selected from the list.
This item can be set only when the Waypoint icon is turned ON in the “Show” item as described above.
 - ① Push [◀▶] to select the icon display type.
 - All : The Waypoint icon and its name are displayed on the radar display.
 - Symbol : The Waypoint icon is displayed on the radar display.
 - OFF : The Waypoint icon and its name are not displayed on the radar display.
 - ② Push [CLEAR] to set, and then exit the “Setup...” menu.

NOTE: Select "Symbol" in both of "Symbol Tab" and "Group Tab," to display only Waypoint icon.



Change Tab
Push [SUB], and then push [ENTER] to switch the tab.

3 RADAR OPERATION

■ Presentation (MENU ▷ Presentation) (Continued)

◇ DSC

The DSC position icon ("DSC") indication can be turned ON or OFF.

The MarineCommander™ should receive own position data from the GPS receiver.

- ON : The DSC position icon is displayed on the radar display, when there is a received DSC message which contains the position data in the Received Call Log.
- OFF : The DSC position icon is not displayed on the radar display.

◇ Memo

The Memo icon indication can be turned ON or OFF.

- ON : The Memo icon is displayed on the radar display.
- OFF : The Memo icon is not displayed on the radar display.

◇ Own Vector

- OFF : Not displays the own ship vector.
- ON : Displays your own ship's vector.

◇ EBL Bearing Reference (except HDG and CSE)

- TRUE : True or magnetic direction.
- 360°R : Relative direction.
- PT/SB : Bow direction.

◇ PPI Area

Select "Narrow" to hide the area outside the graduated ring.

◇ Ring

Select the fixed range ring brightness.

- OFF : Turn OFF the fixed range ring display.
- Low : Low brightness.
- Middle : Middle brightness.
- High : High brightness.

◇ Echo Color

Select the combination of the Echo color and background color.

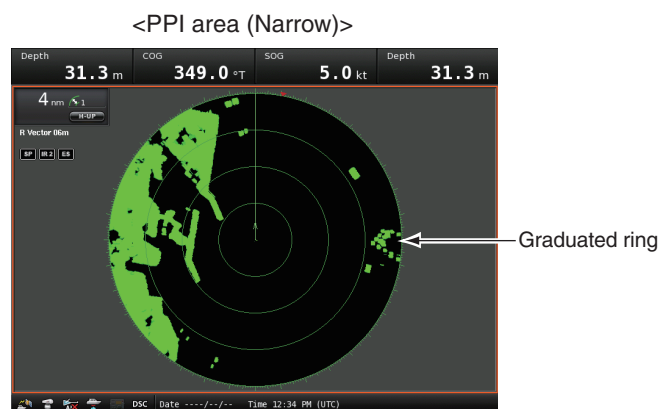
("Echo color" - "Background color")

- Yellow - Black
- Green - Black
- Red - Black
- Multi* - Black
- Yellow - Dark Blue
- Green - Dark Blue
- Multi* - Dark Blue
- Green - White
- Multi* - White

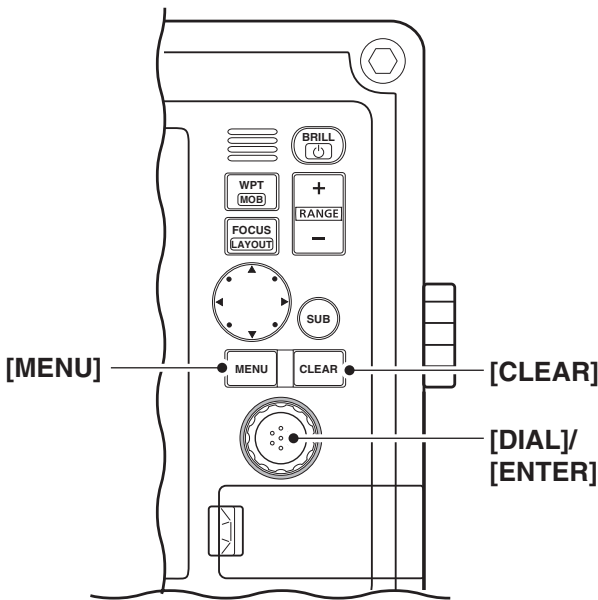
*Multitone. The color changes, depending on the echo strength level.

Weak ⇒ (Echo level) ⇒ Strong

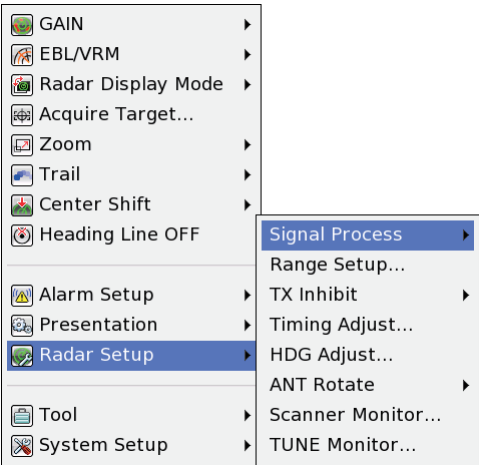
Blue ► Green ► Yellow ► Orange



■ Radar Setup (MENU ▸ Radar Setup)



<Radar Setup function menu>



◇ Signal Process

• IR (Interference Reduction)

- OFF: Turn OFF the Interference Reduction function.
- 1: Interference Reduction level "1."
- 2: Interference Reduction level "2."

• Stretch

- OFF: Turn the echo stretch function OFF.
- ON: Turn the echo stretch function ON.

• D.Range (Dynamic Range)

Select the dynamic range of the PPI (Plan Position Indicator)

- Narrow : Narrow dynamic range. Even weak reflections are displayed as strong reflections.
- Middle : Mid dynamic range.
- Wide : Wide dynamic range. You can distinguish between weak reflections and strong reflections easily.

• SEA Slope

The SEA function has 4 selectable levels. Select the level from 1 to 4 for high resolution, depending the radar antenna position.

• Pulse

Select the pulse width.

- Short : Short pulse.
- Long : Long pulse.

◇ Range Setup...

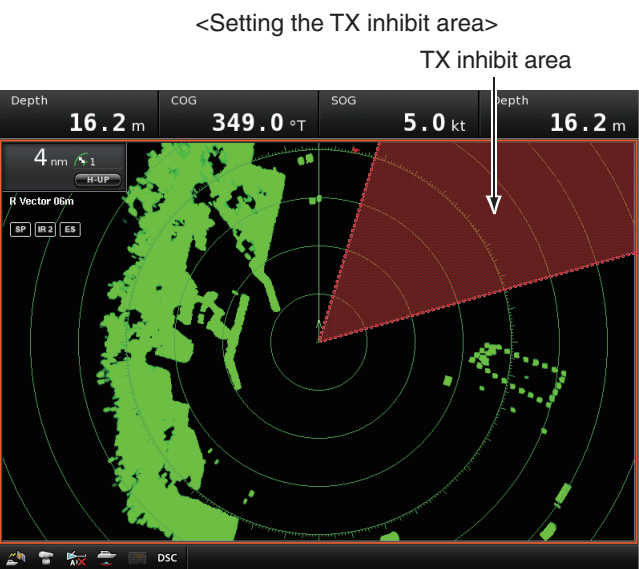
Set the selectable Radar ranges.

Range (nm)	1/8	1/4	1/2	3/4	1	1.5	2	3	4	6	8	12	16	24	32	36	48*
Interval (nm)	1/16	1/8	1/4	1/2	1	1.5	2	3	4	6	8	12	16	24	32	36	48
Number of Fixed Rings	2	2	4	3	4	3	4	3	4	3	4	4	4	4	4	3	4

NOTE: When the screen is shifted, the number of rings may differ.
*Available for the MXR-5000T only.

3 RADAR OPERATION

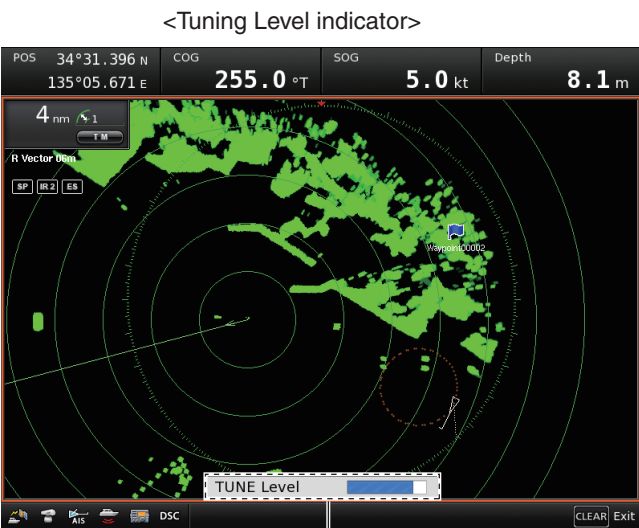
■ Radar Setup (MENU ▷ Radar Setup) (Continued)



<Scanner Monitor screen>

Scanner Setup

TX Inhibit Start:	000°
TX Inhibit End:	000°
Timing Adjust:	0
HDG Adjust:	+0.0°
HV: 337	
Monitor: 48.8	
Heater: 0.55	
MG: 3.0	
TX Time: 000187.3h	



◇ TX Inhibit

Set the TX inhibit area.

- OFF : No TX inhibit area is set.
- ON : Set the TX inhibit area as below;
 - ① Rotate [DIAL] counter clockwise to set the start point of the TX inhibit area, and then push [ENTER].
 - ② Rotate [DIAL] clockwise to set the end point of the TX inhibit area, and then push [ENTER].

◇ Timing Adjust...

Correct the distance from 0 to 30. (Default: 25)

◇ HDG Adjust...

Adjust the SHM position from -180° to $+180^{\circ}$, in 0.2° . (Default: 0)

◇ ANT Rotate

- Select OFF to stop the antenna rotation.

◇ Scanner Monitor...

Displays the Scanner information window.

◇ TUNE Monitor...

Displays the Tuning Level indicator.

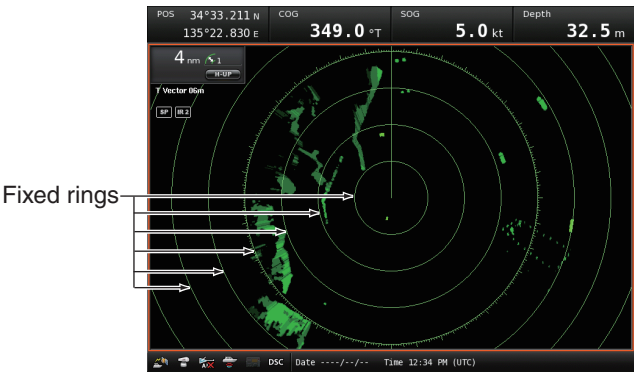
Distance measurement

TYPE	DESCRIPTION
RING	Displays fixed rings. Suitable for rough estimations from your own ship to any target.
VRM1	Displays a variable range marker and activated by the [DIAL] for the range marker selector. Suitable for accurate measurements from your own ship to a target.
VRM2	Functions as same as VRM1.

Two measurement procedures are available. Operating them separately or jointly is possible.

The Distance unit, nautical mile (nm), Statute mile (sm) or kilometer (km) is selected in the “Initial Setting...” in the “General” menu of the “System Setup” menu (p. 5-34).

Using the fixed rings



- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the “Ring” menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] to select the RING function ON, either “Low,” “Mid” or “High.” Push [ENTER] to display the fixed ring.
 - The ring range is fixed depending on the screen range. (See below.)
- ⑤ Push [CLEAR] twice exit the menu screen.
- ⑥ To clear the fixed rings, select “OFF” in step ④ above.

3

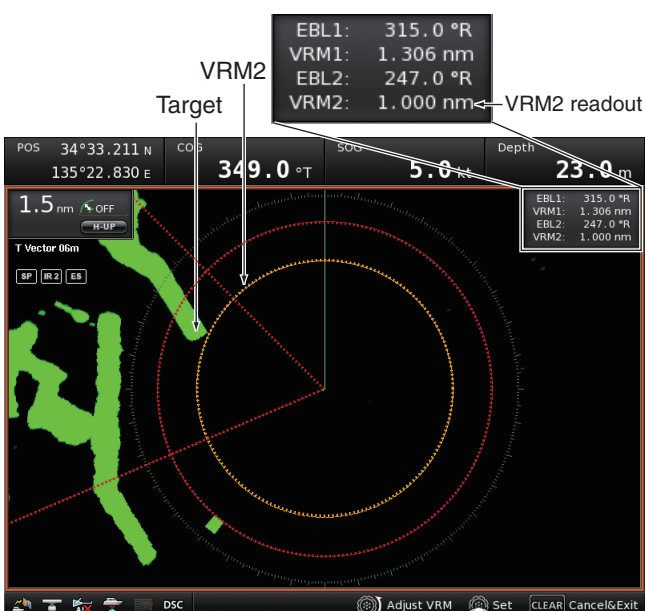
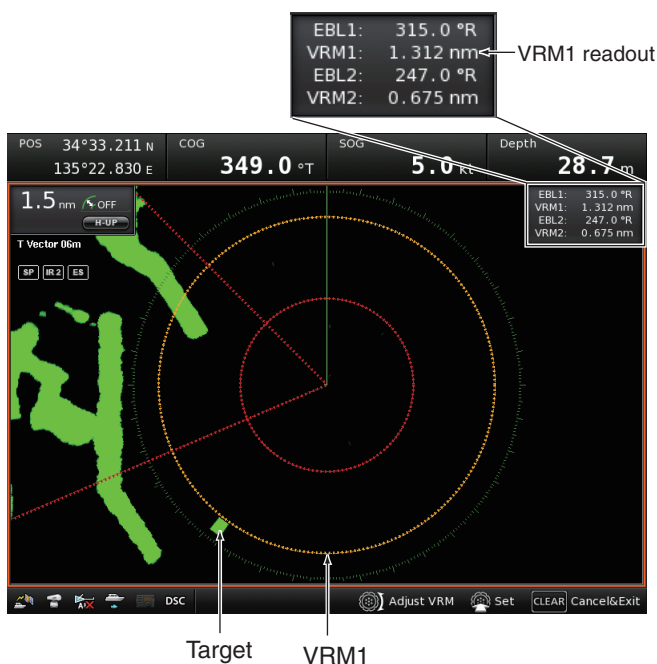
Range (nm)	1/8	1/4	1/2	3/4	1	1.5	2	3	4	6	8	12	16	24	32	36	48*
Interval (nm)	1/16	1/8	1/8	1/4	1/4	1/2	1/2	1	1	2	2	3	4	6	8	12	12
Number of Fixed Rings	2	2	4	3	4	3	4	3	4	3	4	4	4	4	4	3	4

NOTE: When the screen is shifted, the number of rings may differ.
*Available for the MXR-5000T only.

3 RADAR OPERATION

Distance measurement (Continued)

◇ Using the VRM and EBL

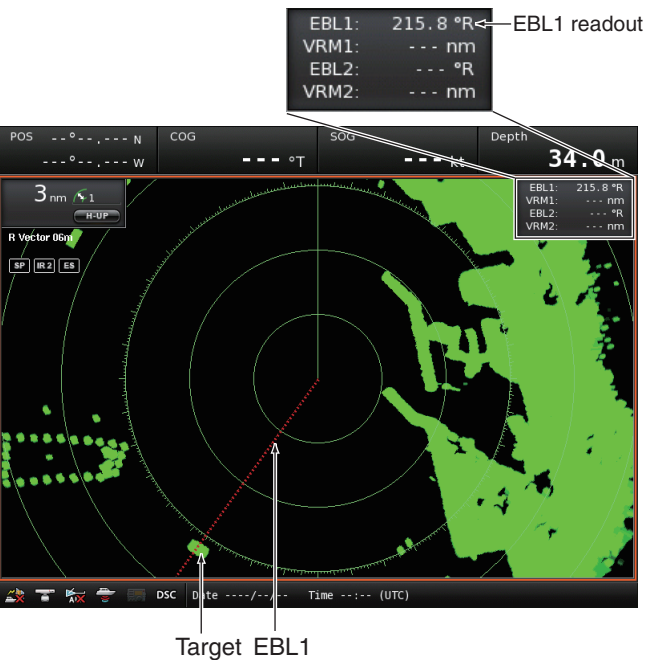


- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “EBL/VRM” menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the “VRM1...” menu (or “EBL1...” menu) becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] to set the marker.
 - The yellow dotted circle appears. (Or yellow dotted line appears.)
 - The range between the center of the circle and the target is displayed in the VRM1 readout. (Or the degree between the ship and target is displayed in the EBL1 readout.)
- ⑤ Push [ENTER].
 - The yellow dotted circle becomes red dotted circle. (Or yellow dotted line becomes red dotted line.)
- ⑥ Rotate [DIAL] until the “VRM2...” menu (or “EBL2...” menu) becomes highlighted.
- ⑦ Push [ENTER] then rotate [DIAL] to set the marker.
 - The yellow dotted circle appears. (Or yellow dotted line appears.)
 - The range between the ship and the target is displayed in the VRM2 readout. (Or the degree between the ship and target is displayed in the EBL2 readout.)
- ⑧ Push [ENTER].
 - The yellow dotted circle becomes red dotted circle.
- ⑨ Push [CLEAR] twice exit the menu screen.

Bearing measurement

This radar has 2 Electronic Bearing Lines (EBL) to indicate the target direction from your ship or another target.

Using the EBL and VRM



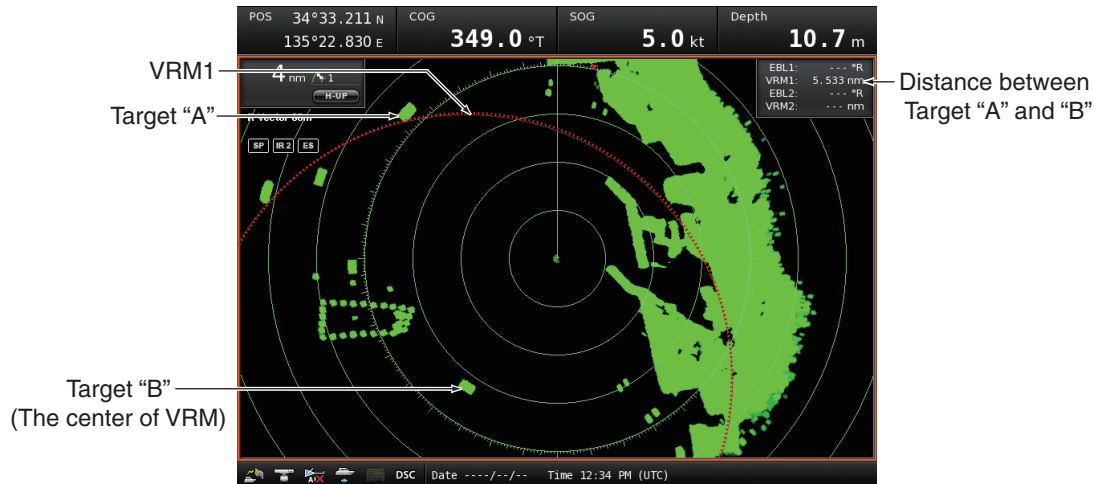
- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “EBL/VRM” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] until the “EBL1...”/“EBL2...” menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] to set the marker.
 - The yellow dotted line appears.
 - The EBL1/EBL2 readout indicates the target bearing;
 - 0 to 360°R : Relative direction, when ‘360°R’ is selected in the “EBL Bearing Reference” menu. (see p. 3-18)
 - P/S 0 to 180° : Bow direction, when ‘PT/SB’ is selected in the “EBL Bearing Reference” menu. (see p. 3-18)
 - 0 to 360°T* : True or magnetic bearing, when selecting ‘TRUE’ in the “EBL Bearing Reference” menu. (see p. 3-18)
- ⑤ Push [ENTER].
 - The yellow dotted line becomes red dotted line.

■ Advanced measurements

Using both Electronic Bearing Lines (EBL) and both Variable Range Markers (VRM), the following advanced measurements can be made:

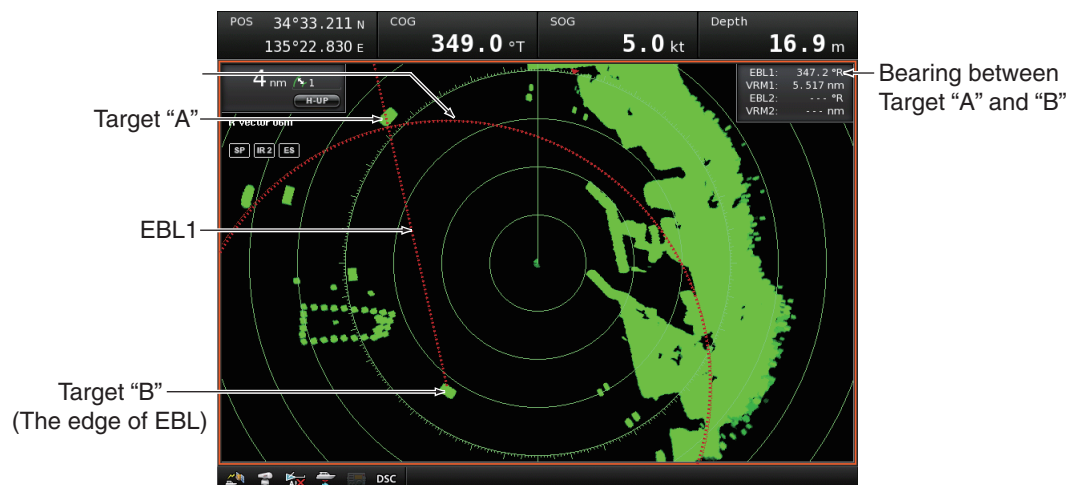
◇ Measuring the distance and direction between 2 targets

• Measure the distance between two targets



- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the "EBL/VRM" menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the "VRM1..." menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] to set the marker.
 - The yellow dotted circle appears.
 - The range between the ship and the target is displayed in the VRM1 readouts.
- ⑤ Push [ENTER].
 - The yellow dotted circle becomes red dotted circle.
- ⑥ Rotate [DIAL] until the "Offset EBL/VRM1" menu becomes highlighted.
- ⑦ Push [ENTER], and then rotate [DIAL] to select "ON."
 - The yellow dotted circle appears.
- ⑧ Push [▲▼◀▶] to set the center of circle to the target, and then push [ENTER].
- ⑨ Rotate [DIAL] until the "VRM1" menu becomes highlighted.
- ⑩ Push [ENTER], and then rotate [DIAL] to set the marker.
 - The distance between two targets is displayed in the VRM1 readout.

• Measure the bearing between two targets



- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the "EBL/VRM" menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] until the "EBL1..." menu becomes highlighted.
- ④ Push [ENTER], and then rotate [DIAL] to set the marker.
 - The yellow dotted line appears.
 - The bearing between two targets is displayed in the EBL1 readouts.
- ⑤ Push [ENTER].
 - The yellow dotted circle becomes red dotted circle.

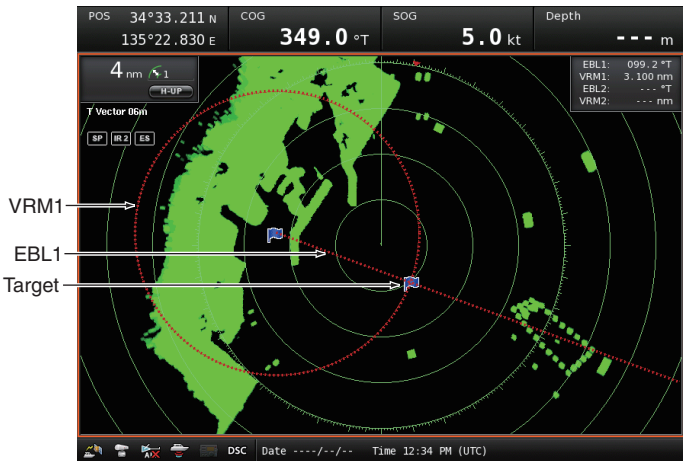
◇ Measuring the relative speed and course of a target



- ① Turn ON the Trail function (p. 3-13), and then wait until the trail time count up reaches to the TRAIL TIME.
- ② Display the EBL1 and VRM1. (See previous page.)
- ③ Set Offset EBL1/VRM1 to the previously plotted position.
- ④ Then set EBL1 and VRM1 to the current plotted position of the same target as described at left.
- ⑤ The VRM1 readout is a measure of target movement which can be converted into relative target speed.
 - For example, when a 6 minutes trail time is selected, multiplying the distance by ten gives the relative average speed of the target.
 - If your ship is stationary during the plotting time, the converted speed and direction become absolute.
 - The converted speed unit is knots or kilometers/hour when the unit selected in the Initial Setup menu is nautical miles (nm), sea miles (sm) or kilometers (km), respectively.
- ⑥ The EBL1 readout shows the course direction of the target.

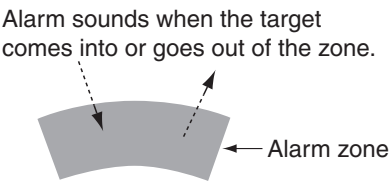
• Measuring the distance and course from a waypoint

- ① Display a waypoint. (see p. 3-17)
- ② Display the EBL1 and VRM1. (See previous page.)
- ③ Set Offset EBL1/VRM1 to a waypoint.
- ④ Then set EBL1 and VRM1 to a target (e.g. the next waypoint).
- ⑤ The EBL1 readout shows the direction to the target from the waypoint.
 - The VRM1 readout shows the distance to the target from the waypoint.
 - The distance unit can be selected as nautical miles (nm), sea miles (sm) or kilometers (km) in the System Setup menu. (p. 5-32)



■ Alarm function

The unit has an alarm function to prevent your ship from collisions. If other ships or islands, and so on. come into the programmed alarm zone, the function alerts you with an alarm. You can set the desired range and bearing for an alarm zone.



■ Alarm zone setting

◇ Setting and using the alarm function

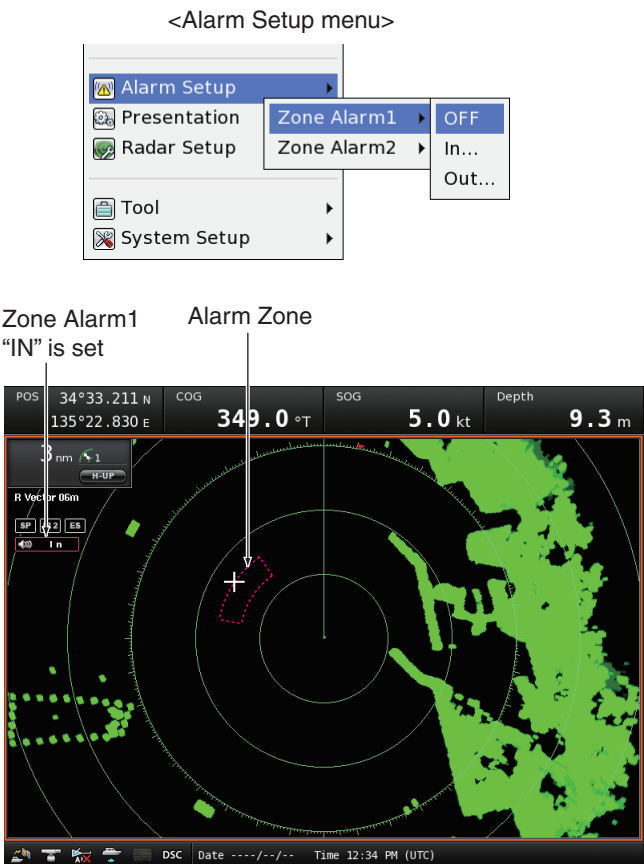


Fig. 1

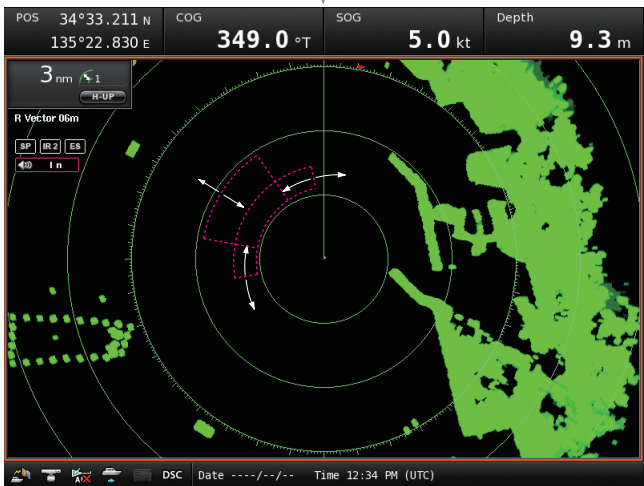


Fig. 2

◇ Setting the Alarm Zone

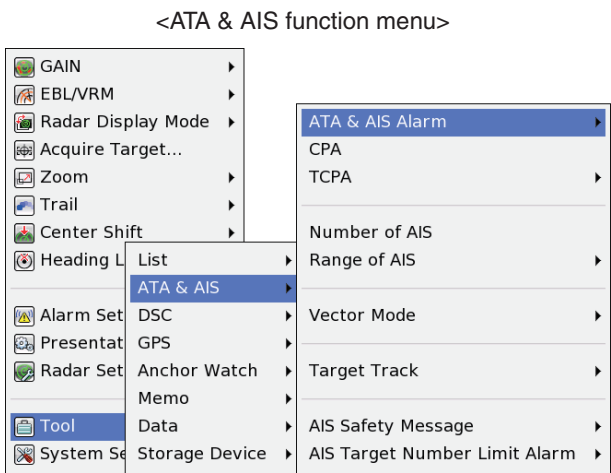
- ① Push [MENU], and then rotate [DIAL] until the "Alarm Setup" menu becomes highlighted.
- ② Push [ENTER], and then rotate [DIAL] to select "Zone Alarm1" or "Zone Alarm2."
 - Two Zones can be set, for different directions and targets.
- ③ Push [ENTER], and then rotate [DIAL] to select "IN" or "OUT."
 - IN... : Alarm sounds when the target comes into the zone.
 - OUT... : Alarm sounds when the target goes out of the zone.
- ④ Push [ENTER], and then push [▲▼◀▶] to move the cursor to where you want to set the alarm zone, and then push [ENTER].
 - The starting zone appears on the screen. (Fig. 1)
 - Push [CLEAR] to cancel and re-set the zone position.
- ⑤ Push [◀▶] to adjust the angle, and push [▲▼] to set the distance of the alarm zone. (Fig. 2)
- ⑥ Push [ENTER] to set the Alarm Zone.
- ⑦ If a target comes into or goes out of the alarm zone, an alarm beep is emitted.
 - Push [CLEAR] to cancel the alarm and function.

■ ATA (Automatic Tracking Aid) and AIS (Automatic Identification System)

By automatically tracking the target, the Closest Point of Approach (CPA) and the Time to Closest Point of Approach (TCPA) limit of an own ship and a target are calculated.
ATA and AIS tells about to alarm sound, when both CPA and TCPA becomes below a setting value (the approach watch area).
The range of the target which can be registered is taken as a target with a highest luminosity level of 0.1–16 nm.

- Max. 10 ATA targets and max. 100 AIS targets can be plotted on the screen.
- Plot positions shall be identified by an approved symbol marks (pp. 3-28, 3-30) and associated plot number.
- The vector origin will move across the screen at a rate and direction defined by the calculated true or relative course and speed.
- The vector will be displayed on the target.
- Display accuracy may increase by the self-ship and course change of target or acceleration, slowdown, etc.

■ ATA & AIS menu setting



Set the ATA & AIS menu items before using the ATA or AIS function.

- ① Push [MENU], and then rotate [DIAL] until the “Tool” menu becomes highlighted.
- ② Push [ENTER], and then rotate [DIAL] until the “ATA & AIS” menu becomes highlighted.
- ③ Push [ENTER], and then rotate [DIAL] to select the item.

◇ **ATA & AIS Alarm**
The ATA and AIS Alarm function can be turned ON or OFF.
• OFF : The ATA and AIS Alarm function is OFF.
• ON : The ATA and AIS alarm is emitted when both CPA and TCPA reaches the limit.

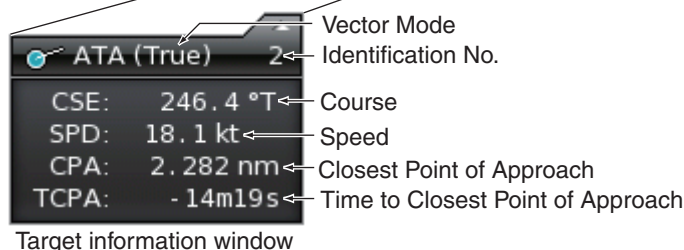
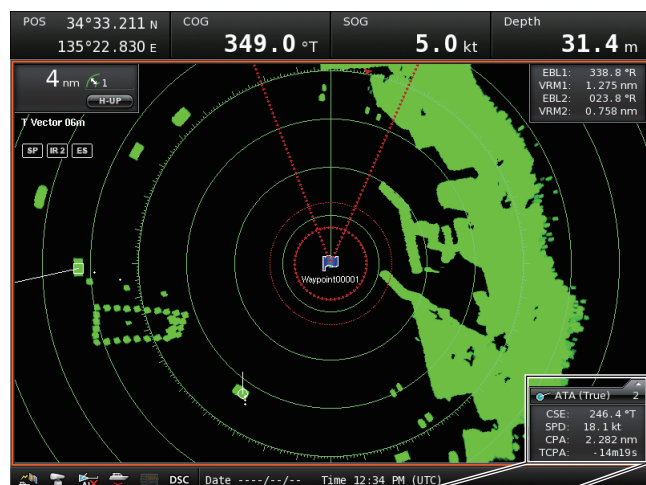
◇ **CPA**
Set the CPA limit distance.
• 0.50–12.0 nm (Default: 0.50 nm)

◇ **TCPA**
Set the TCPA limit time.
• 0.5, 1, 2, 3, 4, 5, 6 or 12 minutes (Default: 0.5 minutes)
*CPA/TCPA: Closest Point of Approach and Time to Closest Point of Approach limit is defined by the observer to a given warning when a target or targets are close to within those limits from your own ship.

◇ **Vector Mode**
Select the mode.
• True (True vector):
The predicted true motion of a target as the result of your own ship's direction and speed input.
• Relative (Relative vector):
The predicted movement of a target relative to your own ship.

◇ **Target Track**
Select the interval to update the past position.
• 0.5, 1, 3, or 6 minutes (Default: 1 minute)

■ ATA operation



◇ Set the tracking target

- ① Push [MENU], and then rotate [DIAL] until the “Acquire Target” menu becomes highlighted.
- ② Push [ENTER], and then push [▲▼◀▶] to move the “□” cursor on the desired target to track.
 - Dotted square symbol appears on the cursor.
 - Target identification number, course (CSE), speed (SPD), CPA and TCPA are displayed on the target information window.
 - The vector appears on the target, after 20 seconds has passed.
 - When the tracking target disappears, the mark changes to a lozenge and is blinked. The mark disappears after one minute passed, and the target is deleted from the ATA list.
 - When a target advances within a setting value, the mark changes to a triangle, blinks and sounds alarm sound.

◇ Target information

- ① Push [▲▼◀▶] to move the “+” cursor on the desired target.
- ② Push [ENTER]
 - The selected target information is displayed on the information window.

◇ Select the target on the information window

- ① Push [▲▼◀▶] to move the “+” cursor on the target information window.
- ② Rotate [DIAL] to change the target to be selected.

◇ Cancel the tracking

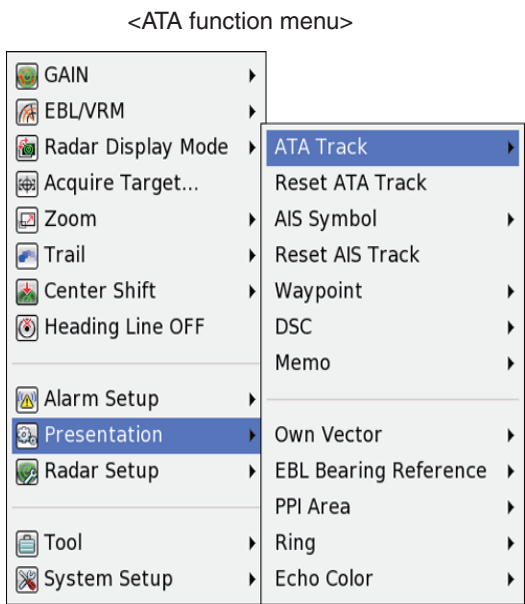
- ① Push [▲▼◀▶] to move the cursor on the target to cancel the tracking, and then push [SUB].
- ② Select [Clear Target], and then push [ENTER].
- ③ Select [OK], and then push [ENTER].

◇ Plotting marks

There are 5 kinds of plotting marks.

- : Selected, uncalculated mark.
- : Normal, calculated mark.
- ◻ : Selected, calculated mark.
- ⚠ : CPA/TCPA alarm mark. The target is close to within a minimum range and time. Alarm emit indicator. Push [CLEAR] to cancel the alarm.
- ⚠ : When the tracking of a target disappears. The icon disappears after 1 minute passed.

■ Course, speed vector and plots



The vector indicates the target's predicted, true or relative course and speed. The plot displays the past position of targets at selected interval as dots.

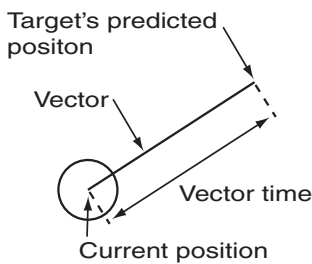
◇ Displaying the ATA target

- ① Push [MENU], and then rotate [DIAL] until the "Presentation" menu becomes highlighted.
- ② Push [ENTER] to select "ATA Track," and then select [ON].
- ③ Push [ENTER].

◇ Setting the update interval

- ① Push [MENU], and then rotate [DIAL] until the "Tool" menu becomes highlighted.
- ② Push [ENTER], and then rotate [DIAL] to select "ATA & AIS."
- ③ Push [ENTER], and then rotate [DIAL] to select "Target Track."
- ④ Push [ENTER], and then rotate [DIAL] to select the target update interval. (Default: 1min.)

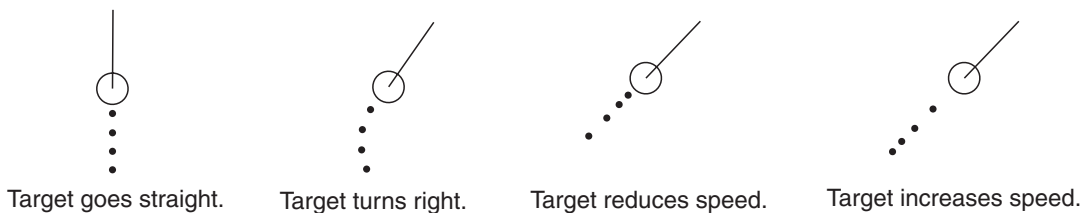
◇ Course and speed vector



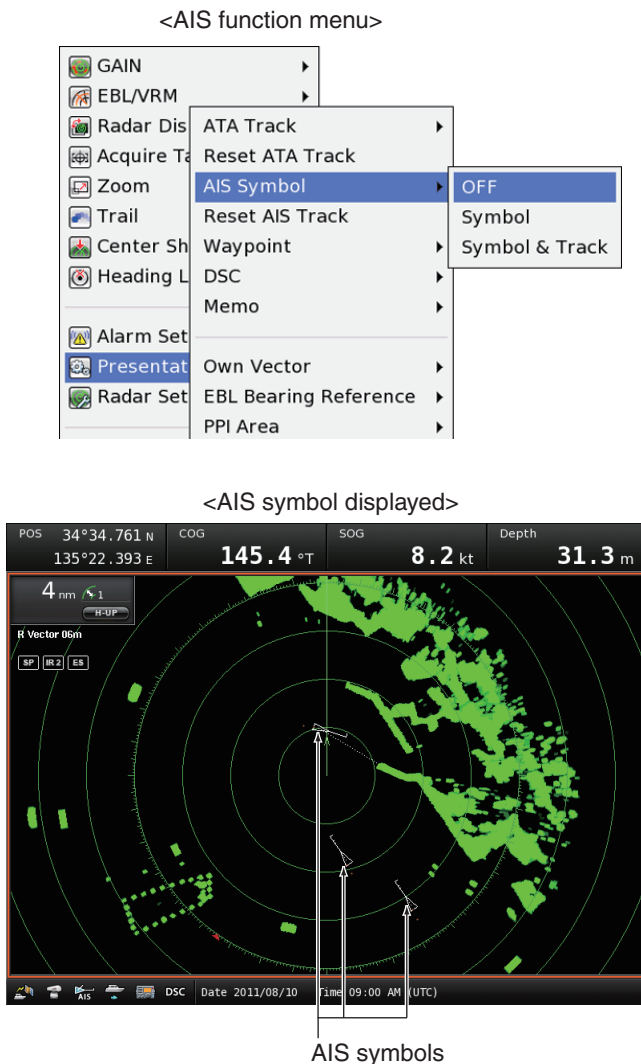
- Vector time may change depending on the Vector Time setting. (see p. 5-31)
- The tip of the vector shows the target's predicted position after a certain time, which has been selected in the "Vector Time".

◇ Plots

The plot displays the past position of targets as dots. (up to 5 dots)



AIS operation



◇ Displaying the AIS target

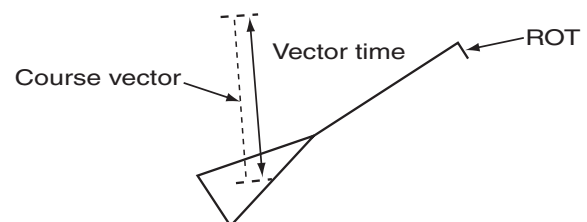
- ① Push [MENU], and then rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ② Push [ENTER], and then rotate [DIAL] until the “AIS Symbol” menu becomes highlighted.
- ③ Rotate [DIAL] to select an option.
 - OFF : AIS target symbol and track are not displayed.
 - Symbol : AIS target symbol is displayed.
 - Symbol & Track : AIS target symbol and track are displayed.

◇ Plotting marks

There are 5 kinds of plotting marks.

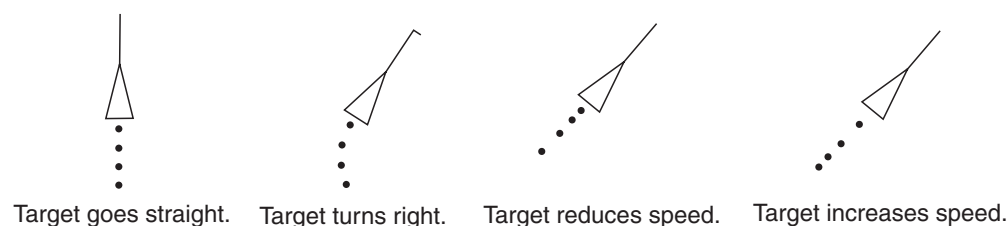
- : Normal mark.
- : Selected mark.
- : CPA/TCPA alarm mark in Red. The target is close to within a minimum range and time. The icon blinks and alarm emits. Push [CLEAR] to cancel the alarm.
- : AIS data error. There is the lack of data in the received AIS signal.
- : When the AIS signal has not been updated (received) for a specific time of period, the AIS icon starts to blink. If the AIS signal has still not been updated (received) for a specific time of period, the target icon disappears.

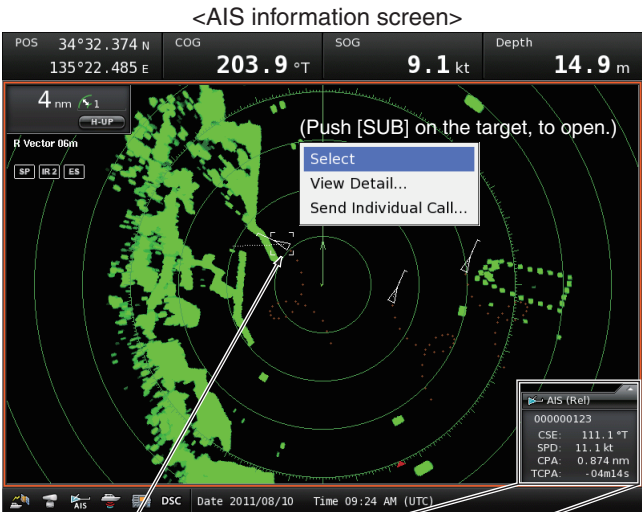
◇ Course and speed vector



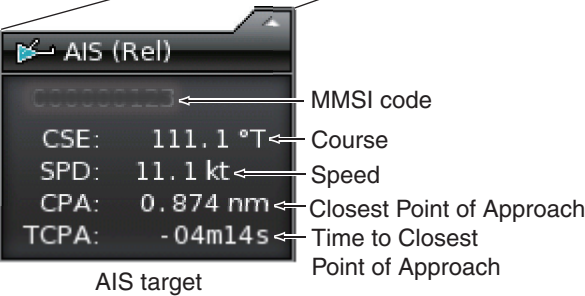
◇ Plots

The plot displays the past position of targets as dots.

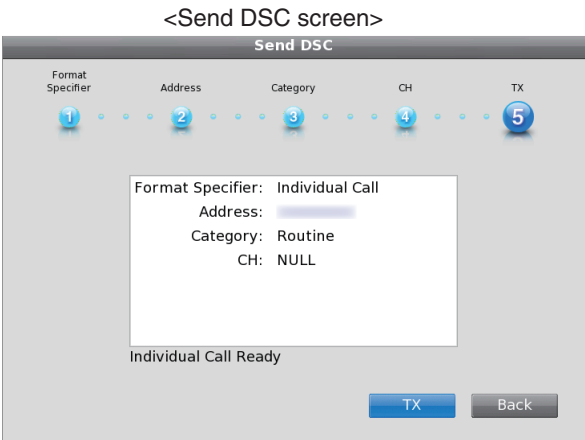
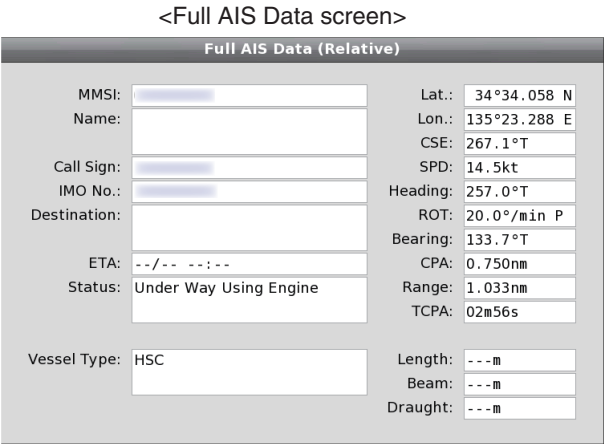




Selected AIS target



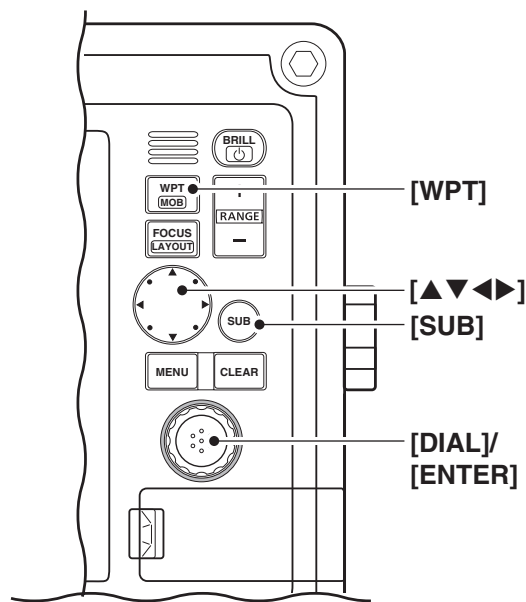
AIS target information window



- ◇ AIS target information and DSC call
- ① Push [▲▼◀▶] to move the “+” cursor on the desired target, and then push [SUB].
 - ② Select an option, and then push [ENTER].
 - Select : The selected target information is displayed on the information window.
 - View Detail... : The selected target's full AIS data is displayed on the information window.
 - Send Visual Call: Open the Send DSC window.
- Note:** A companion Icom transceiver must be connected to the Main unit, to make a DSC call.

- ◇ Select the target on the information window
- ① Push [▲▼◀▶] to move the “+” cursor on the target information window.
 - ② Rotate [DIAL] to change the target to be selected.

Waypoint operation



The position information that you want to memorize can be created as a waypoint.

Waypoint setting

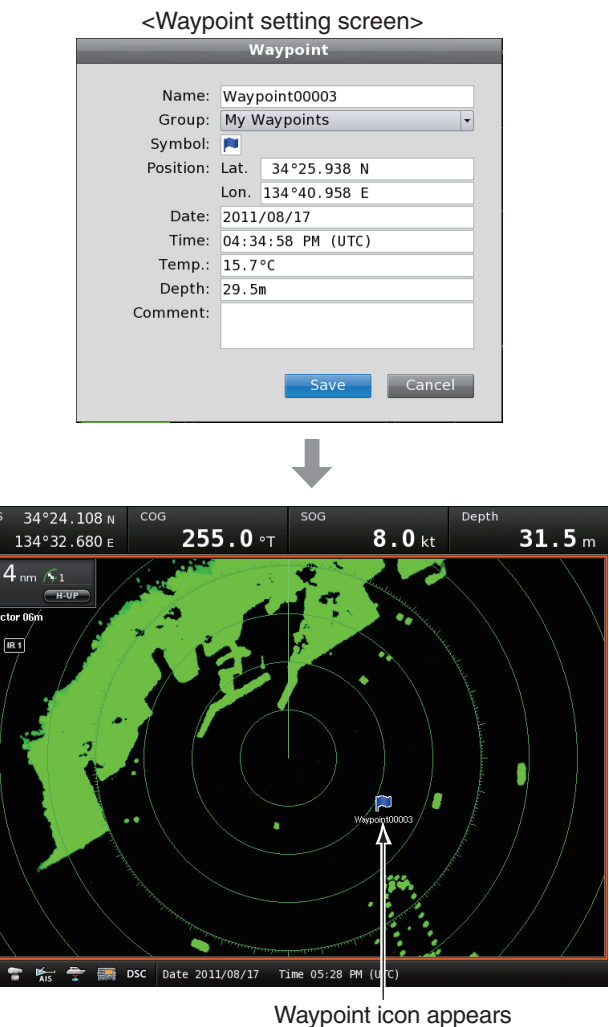
Set the Waypoint menu items before the waypoint operation. See the page 3-17 for detail.

Add new waypoint

- ① Push [WPT] to create the waypoint to the your current position.
 - The Waypoint setting screen appears.
- ② Rotate [DIAL] to select the desired item, and push [ENTER].
 - See the page 2-7 for details.
 - If you don't change the waypoint contents, go to step ③.
- ③ Rotate [DIAL] to select "Save," and then push [ENTER] to save the waypoint and return to the previous screen.
 - If "Cancel" is selected, the setting will be cancelled.

The waypoint can be also added as below.

- ① Push [▲▼◀▶] to move the "+" cursor on the desired position.
- ① Push [SUB], and select [Add Waypoint...], and then push [ENTER].
 - The Waypoint setting screen appears.
- ③ Rotate [DIAL] to select "Save," and then push [ENTER] to save the waypoint and return to the previous screen.



Waypoint icon appears

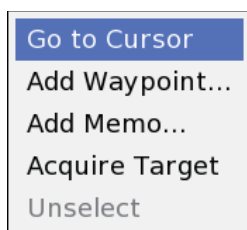
■ Cursor menu operation

◇ On the Radar display

The cursor menu on the radar display includes the Go to Cursor, Add Waypoint, Add Memo, Acquire Target and Unselect.

- ① When the cursor is displayed, push [SUB] to display the Radar display cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, and then push [ENTER].

<Cursor menu – On the Radar display>



• Go to Cursor

(CURSOR MENU ▷ Go to Cursor)

The Cursor navigation means that the vessel is navigated from the current position to the cursor position (within one section only).

- ➡ After pushing [ENTER], the Cursor navigation starts.
 - See page 2-12 to stop the navigation.

• Add Waypoint

(CURSOR MENU ▷ Add Waypoint...)

The cursor position information can be created as a waypoint.

- ① After pushing [ENTER], the Waypoint setting screen appears.
- ② Rotate [DIAL] to select “Save,” and then push [ENTER] to save the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.
 - To change the waypoint contents, see the page 2-7.

• Add Memo...

(CURSOR MENU ▷ Add Memo...)

The Memo function allows you to save a short sentence of up to 400 characters, containing position data and date to the cursor position. A picture can be attached to each memo.

- ① After pushing [ENTER], the Memo edit screen appears.
- ② Rotate [DIAL] to select “Save,” and then push [ENTER] to save the contents and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.
 - To change the memo contents, see the page 5-27.

• Acquire Target

(CURSOR MENU ▷ Acquire Target)

The target can be tracked as below. See the page 3-11 for details.

- ① Push [▲▼◀▶] to move the “+” cursor on the desired target.
- ② Push [SUB], select [Acquire Target], and then push [ENTER].
- ③ Select “OK,” and then push [ENTER] to start tracking the target.

• Unselect

(CURSOR MENU ▷ Unselect)

When ATA or AIS information screen is displayed on the lower-right of the screen, it will be cancelled after selecting “Unselect.”

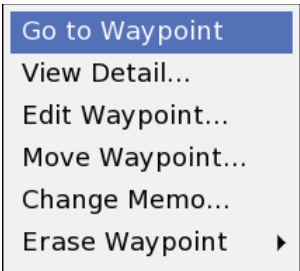
■ Cursor menu operation (Continued)

◇ On the Waypoint icon

The cursor menu on the Waypoint icon includes the Go to Waypoint, View Detail, Edit Waypoint, Move Waypoint, Change Memo and Erase Waypoint.

- ① When the cursor points to the Waypoint icon, push [SUB] to display the Waypoint cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Waypoint icon>



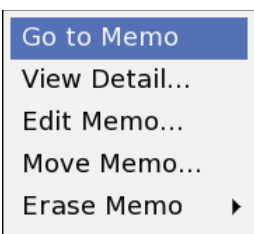
- **Go to Waypoint**
(CURSOR MENU ▷ Go to Waypoint)
The Goto Waypoint navigation means that the vessel is navigated from the current position to the specified waypoint (within one section only).
See page 2-9 for details.
- **View Detail...**
(CURSOR MENU ▷ View Detail...)
The Waypoint detail screen is displayed.
➡ Push [+] or [-] one or more times to adjust the display range.
- **Edit Waypoint...**
(CURSOR MENU ▷ Edit Waypoint...)
The waypoint contents can be edited.
See page 2-7 for details.
- **Move Waypoint...**
(CURSOR MENU ▷ Move Waypoint...)
The registered Waypoint can be moved.
➡ Push [▲▼◀▶] to move the cursor to the desired position, and push [ENTER].
 - The selected Waypoint icon moves to the cursor position.
- **Change Memo...**
(CURSOR MENU ▷ Change Memo...)
The Waypoint can be changed to Memo.
See the page 5-27 for details.
- **Erase Waypoint**
(CURSOR MENU ▷ Erase Waypoint...)
A waypoint can be erased.
See the page 5-5 for details.

◇ On the Memo icon

The cursor menu on the Memo icon includes the Go to Memo, View Detail, Edit Memo, Move Memo and Erase Memo.

- ① When the cursor points to the Memo icon, push [SUB] to display the Memo cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the Memo icon>



- **Go to Memo**
(CURSOR MENU ▷ Go to Memo)
The Go to Memo navigation means that the vessel is navigated from the current position to the specified Memo position (within one section only).
- **View Detail...**
(CURSOR MENU ▷ View Detail...)
The Memo detail screen is displayed.
- **Edit Memo...**
(CURSOR MENU ▷ Edit Memo...)
The Memo contents can be edited.
See the page 5-27 for details.
- **Move Memo...**
(CURSOR MENU ▷ Move Memo...)
The registered Memo can be moved.
➡ Push [▲▼◀▶] to move the cursor to the desired position, and push [ENTER].
 - The selected Memo icon moves to the cursor position.
- **Erase Memo**
(CURSOR MENU ▷ Erase Memo...)
A Memo can be erased.
See the page 5-28 for details.

◆ On the ATA icon

The cursor menu on the ATA icon includes the Select and Clear Target.

- ① When the cursor points to the ATA icon, push [SUB] to display the ATA cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the ATA icon>



• Select

(CURSOR MENU ▸ Select)

The selected ATA target's information appears on the lower right of the display. It shows the CSE, SPD, CPA, TCPA and ATA No. information.

• Clear Target

(CURSOR MENU ▸ Clear Target)

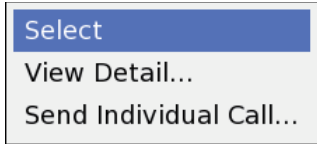
The selected ATA target can be cleared.
See the page 5-8 for details.

◆ On the AIS icon

The cursor menu on the AIS icon includes the Select, View Detail and Send Individual Call.

- ① When the cursor points to the AIS icon, push [SUB] to display the AIS cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the AIS icon>



• Select

(CURSOR MENU ▸ Select)

The selected AIS target's information appears on the lower right of the display. It shows the MMSI code, CSE, SPD, CPA and TCPA information.

• View Detail...

(CURSOR MENU ▸ View Detail...)

The detail screen shows information about the selected AIS target.
See the page 5-9 for details.

• Send Individual Call...

(CURSOR MENU ▸ Send Individual Call...)

When a transceiver is connected, you can transmit an Individual DSC call to the selected AIS target.
See the page 5-10 for details.

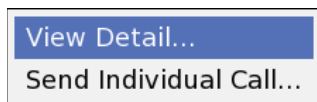
■ Cursor menu operation (Continued)

◇ On the DSC position icon

The cursor menu on the DSC position icon includes the View Detail and Send Individual Call.

- ① When the cursor points to the DSC position icon, push [SUB] to display the DSC cursor menu.
- ② Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

<Cursor menu – On the DSC position icon>



• View Detail...

(CURSOR MENU ▷ View Detail...)

The detail screen shows information about the selected DSC position.

• Send Individual Call...

(CURSOR MENU ▷ Send Individual Call...)

When a transceiver is connected, you can transmit an Individual DSC call to the selected DSC position.

See the page 5-16 for details.

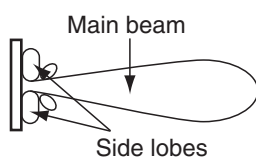
Basic radar theory

Radar uses a form of electromagnetic radiation, which like light, can be reflected. Because of this property, some objects may cause false echoes on the screen where in fact no targets actually exist.

These echoes may appear if a large vessel, bridge, or tank is in proximity. Operators should be familiar with the effects of these phenomena. In some cases, echoes can be reduced.

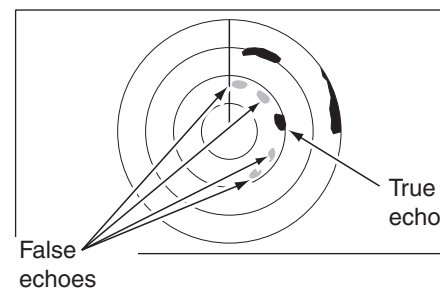
Side-lobe echoes

Radiation can escape on each side of the beam inside the lobes. If a target reflects this radiation, it will be displayed on the screen as an echo.



Side-lobe echoes usually occur at short ranges and as a result of large (strongly reflective) targets. They can be reduced with proper adjustment of the [SEA] control.

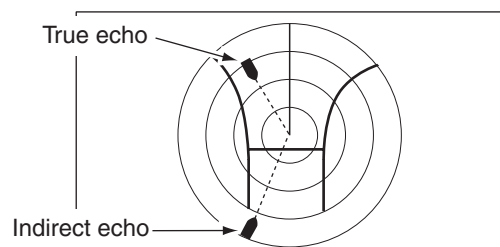
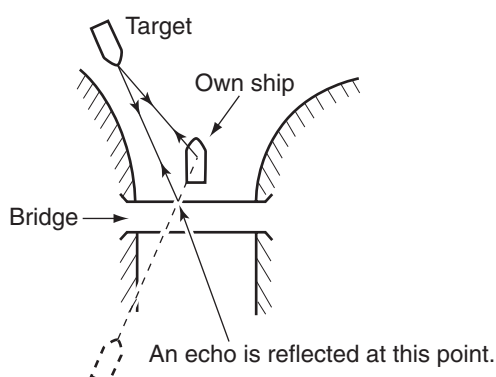
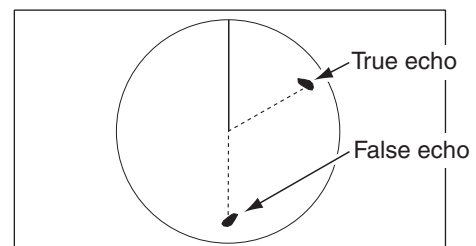
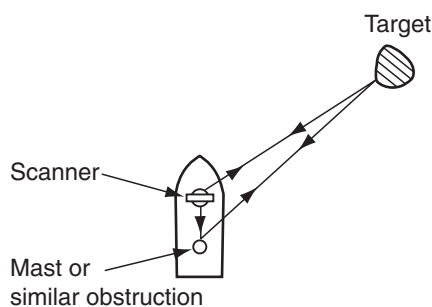
See the page 3-5 for the SEA function.



Indirect echoes

Indirect echoes may be returned from either a passing ship, or returned from a reflecting surface, such as a mast on your own ship.

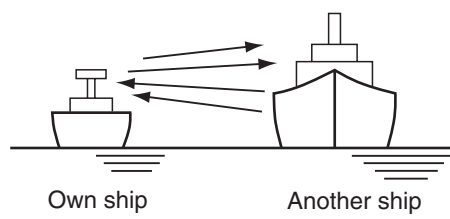
An indirect echo from a reflecting surface will appear on a different bearing from the direct (true) echo, but the distance will be approximately the same for both.



■ Basic radar theory (Continued)

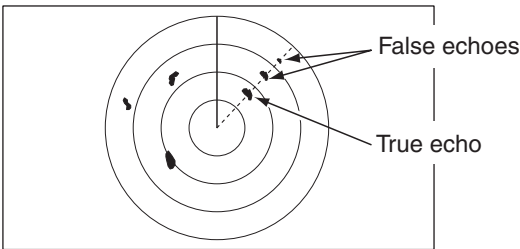
◇ Multiple echoes

Multiple echoes may appear when a short-range and strong echo is received from a ship, bridge, or break-water.



Multiple echoes will appear beyond the target’s true echo point on the same bearing of a large target. They can be reduced with proper adjustment of the SEA level.

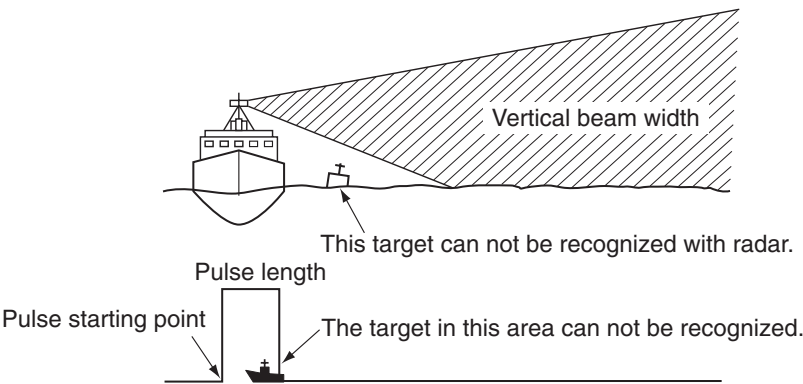
See the page 3-5 for the SEA level adjustment.



◇ Minimum range

Detection at short range is very important. Minimum range is determined primarily by transmitter pulse length, vertical beam width and height of the scanner unit. The shorter the transmission time, the quicker the return echoes can be received and their distance measured.

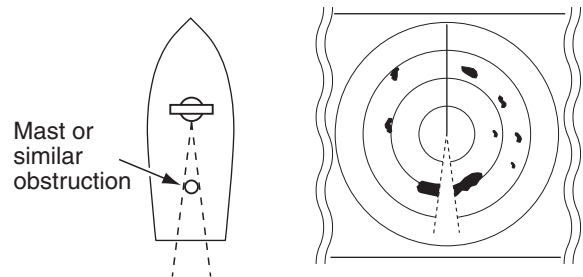
The ability to see targets very close to the ship is decreased if the scanner is mounted too high off the water, because the bottom of the vertical beam of the scanner cuts off nearby targets.



◆ Blind and Shadow sectors

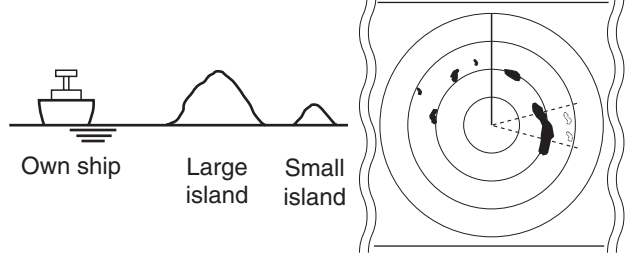
Blind or Shadow sectors may exist because of obstructions such as masts, derricks or stacks. An obstruction may throw either a complete or partial shadow as shown in the diagram below. If a target is in a shadow sector, target echoes may not appear on the screen.

Shadow sector



When tall and massive targets such as a large island are located at close range also shadowed without producing any echoes. This phenomenon is called blind sector. It is very important to know the bearings and widths of all shadow sectors caused by your own ship's obstructions.

Blind sector



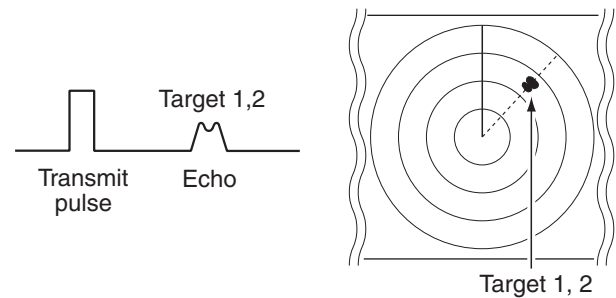
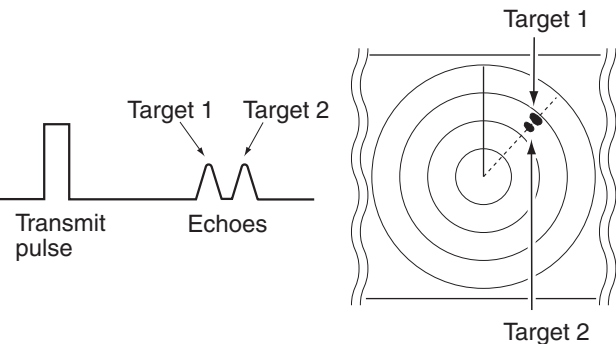
◆ Target resolution

Target resolution is determined by the horizontal beam width and transmit pulse width. Sometimes it is difficult to detect two targets which are separated by short distances or which are in the same direction.

• Distance resolution

When two targets are separated by more than the pulse width, they appear as two echoes.

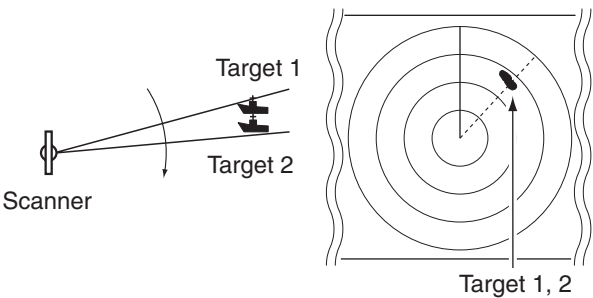
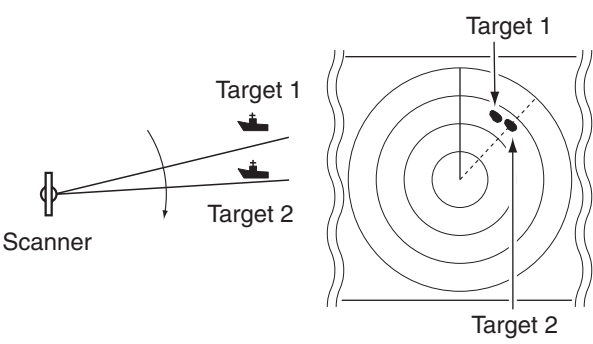
When two targets are not separated by more than the pulse width, they appear as 1 echo.



• Direction resolution

When two targets are separated by more than the horizontal beam width, they appear as two echoes.

When two targets are not separated by more than the horizontal beam width, they appear as one echo.



SOUNDER OPERATION

Section 4

■ Sounder screen.....	4-2
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■ Depth Digit	4-27
■ Display Color setting	4-28
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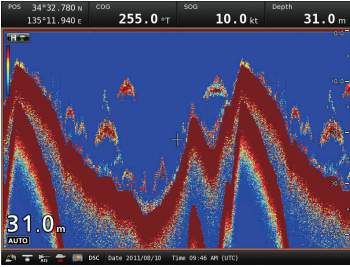
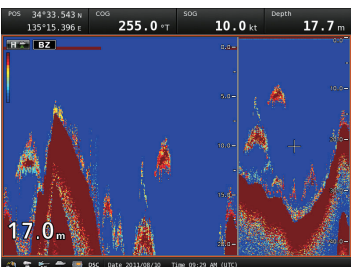
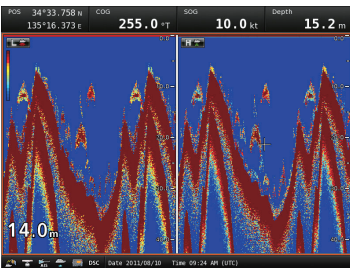
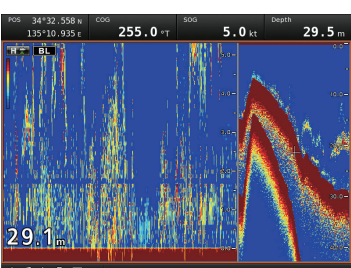
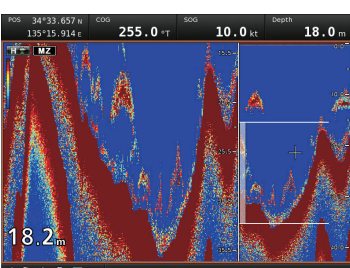
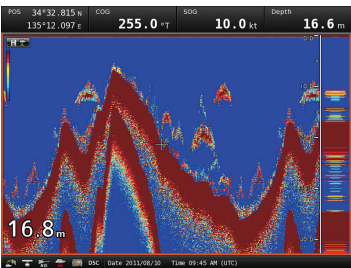
■ Sounder screen

◇ How to access screens

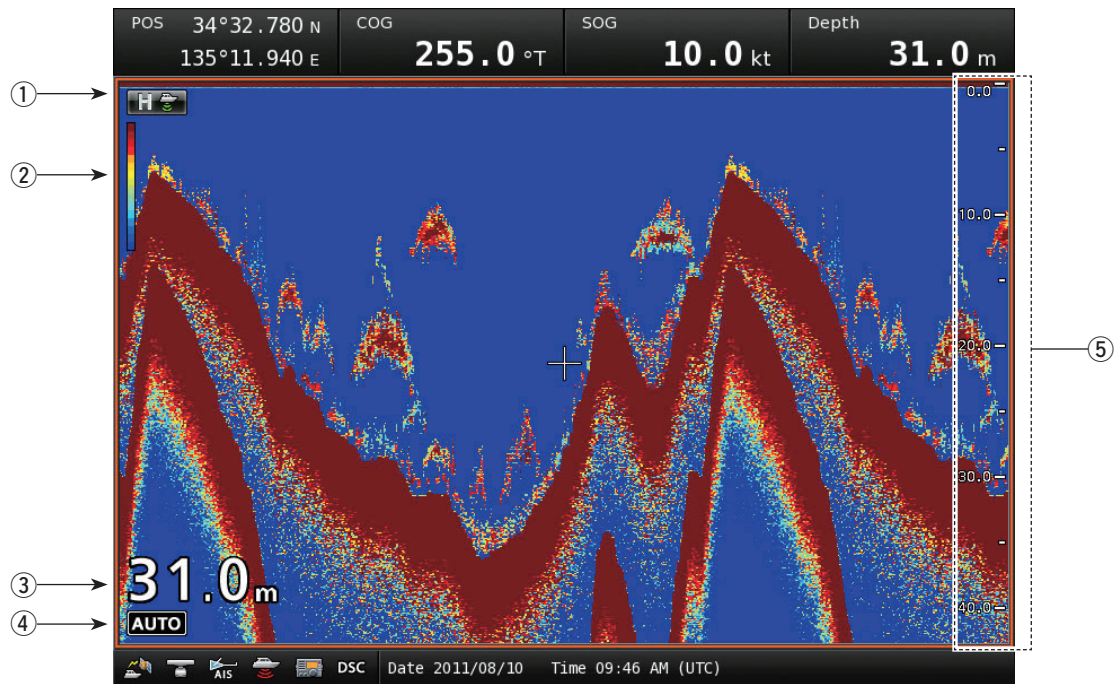
In Sounder mode, the following six screens are available.

- ① If the Plotter screen or the Radar screen appears, hold down [FOCUS] for 3 seconds to enter the Screen selection mode.
- ② Rotate [DIAL] to select the “Sounder” screen, then push [ENTER] to enter the Sounder screen.
- ③ You can select the following six screens, among the Standard screen, Dual screen, Standard + Marker Zoom-in screen, Standard + Bottom Zoom-in screen, Standard + Bottom Lock and Standard + A-Scope screen. And following combination are selectable, Standard + Marker Zoom + A-Scope, Standard + Bottom Zoom + A-Scope, Standard + Bottom Lock + A-Scope, Dual (Standard + A-Scope), Dual (Standard + Marker Zoom), Dual (Standard + Bottom Zoom), Dual (Standard + Bottom Lock), Dual (Standard + Marker Zoom + A-Scope),* Dual (Standard + Bottom Zoom + A-Scope),* Dual (Standard + Bottom Lock + A-Scope).*

*These screens cannot be selected on 1/4 screen.

Screen name	Indication	Screen name	Indication
Standard screen 	This screen shows an image of underwater that is detected at either of a high (H) or low (L) frequency.	Standard + Bottom Zoom-in screen 	This screen consists of the Standard screen and the Bottom zoom screen. The zoomed area is the bottom.
Dual screen 	This screen shows two images of underwater that are detected at both of a high (H) and low (L) frequencies.	Standard + Bottom Lock screen 	This screen consists of the Standard screen and the Bottom lock screen. The zoomed area is the bottom and it is displayed as a straight line.
Standard + Marker Zoom-in screen 	This function provides a zoom-in display around the variable range marker for detailed observation of underwater activity such as fish schools. The zoomed area is adjustable by rotating [DIAL].	Standard + A-Scope screen 	This screen consists of the Standard screen and the A-Scope screen.

◇ Standard screen



① **FREQUENCY**

This field shows the frequency in use (H : high frequency, L : low frequency).
• Low frequency : 50 kHz, High Frequency: 200 kHz

② **COLOR PATTERN**

The color pattern consists of 16 colors arranged in descending order of reflection level. If the clutter function (p. 4-31) is ON, however, colors having a lower reflection level may not be displayed.
The background color can be set to “Blue,” “Black” or “White” (p. 4-28). The image sensitivity should be adjusted so that the portion close to the sea bottom is indicated in red. If this portion has a yellow-green color, the depth or the shape of sea bottom may not be detected due to weak reflection from the sea bottom.

③ **DEPTH**

This field shows the current depth of water. If the level of reflections from the bottom is low, this may not be displayed.

④ **OPERATION MODE**

When the system operates in auto mode (p. 4-10), “AUTO” is displayed in this field.
• The Depth range is automatically adjusted.
• The GAIN can also be adjusted depending on the Auto Mode Setup (p. 4-11).

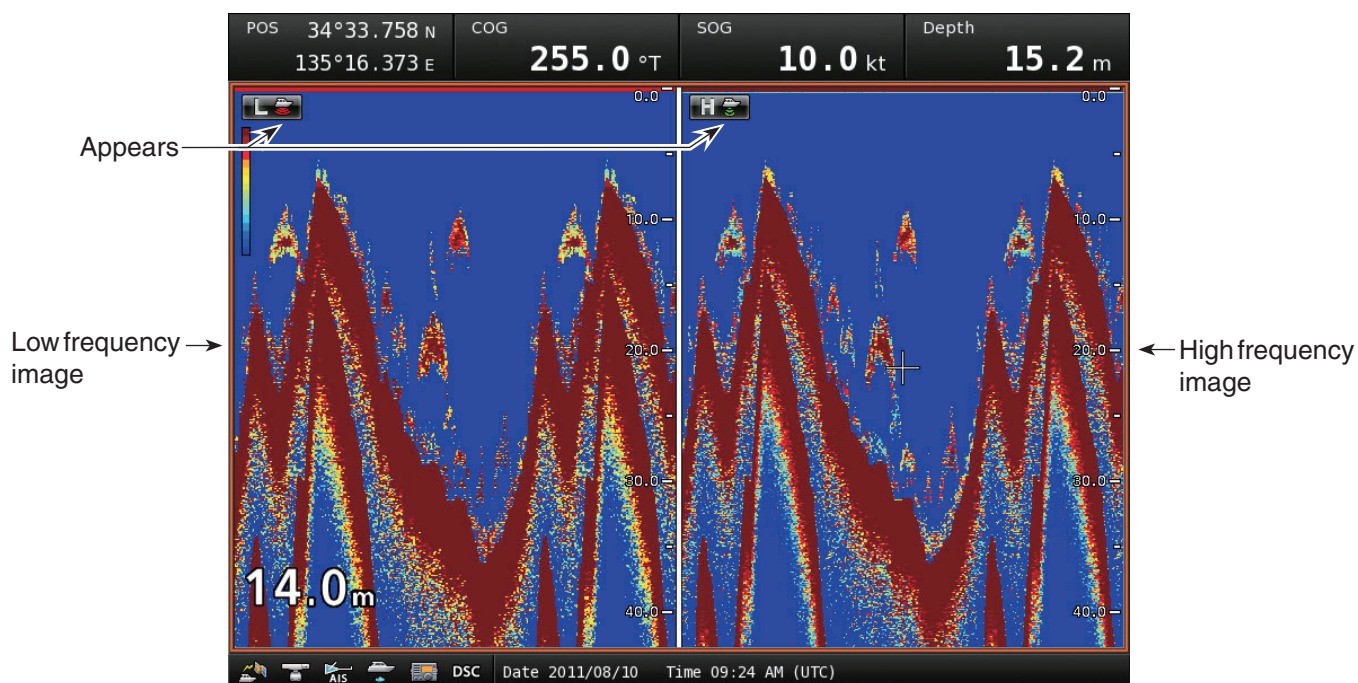
⑤ **DEPTH SCALE**

This screen has meters scales in 10 m increments.

4 SOUNDER OPERATION

◇ Dual screen (MENU ▸ Frequency Mode ► Dual)

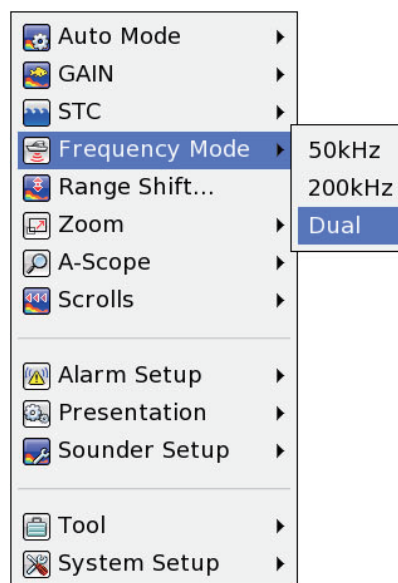
The dual screen consists of high and low frequency images of the same contents as the Standard screen. The frequencies are specified on the left top of the each screen.



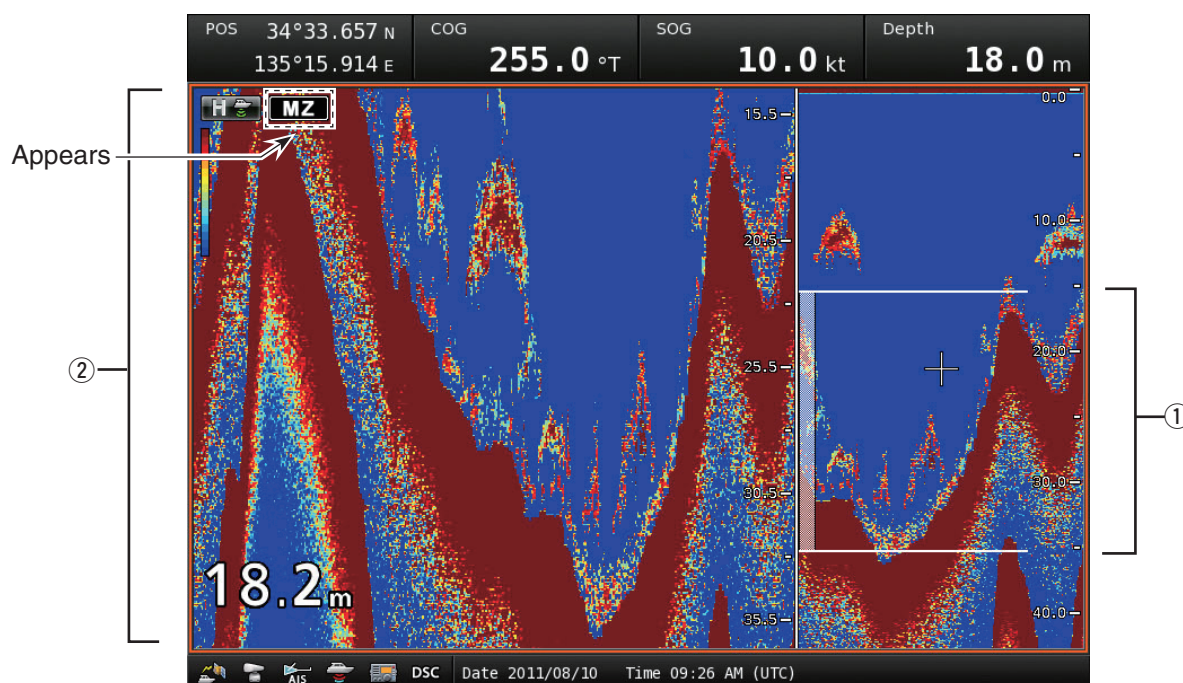
• Turning ON the Dual screen

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Frequency Mode” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Frequency Mode” menu.
- ④ Rotate [DIAL] to select the function.
 - 50kHz, 200kHz and Dual are selectable.
- ⑤ Push [ENTER] to set, then exit the “Frequency Mode” menu.
 - To cancel the setting, push [CLEAR].

<Frequency Mode menu>



◇ **Standard+ Marker zoom-in screen** (MENU ▸ Zoom ▸ Zoom Mode ▸ Marker Zoom)



① **ZOOM AREA MARKER**

Underwater area around this marker is zoomed in.

② **MARKER ZOOM-IN IMAGE**

This image covers the specified underwater area.

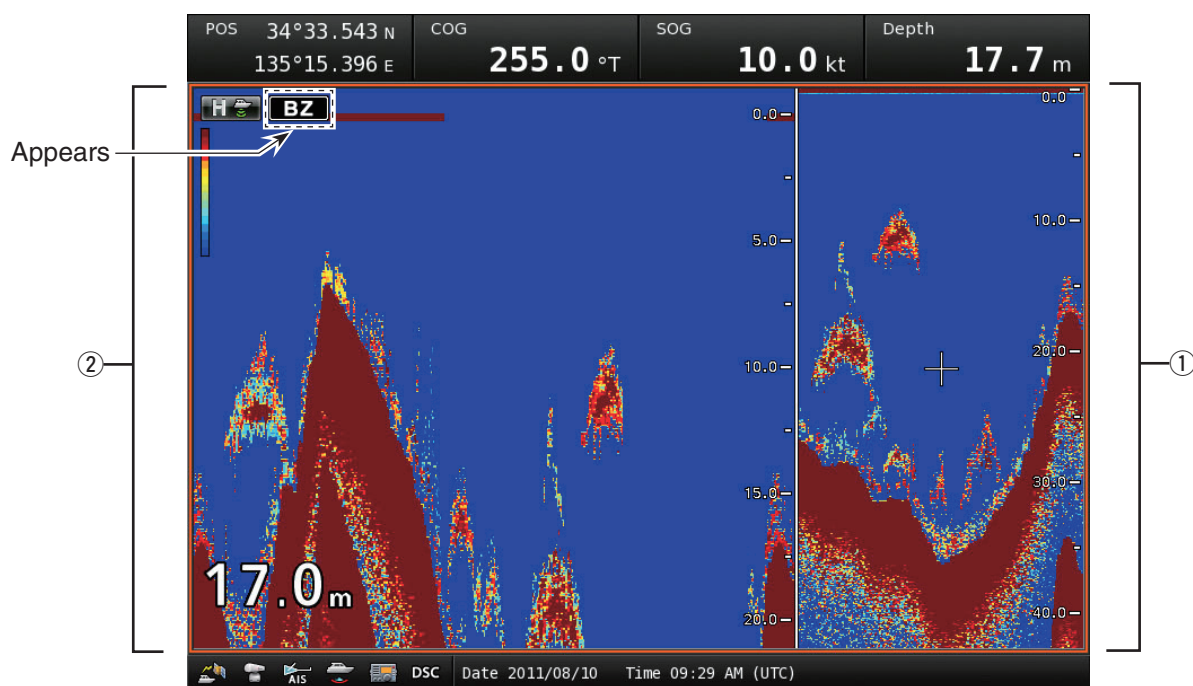
• **Turning ON the Marker Zoom**

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Zoom Mode” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the “Marker Zoom.”
 - Marker Zoom, Bottom Zoom and Bottom Lock are selectable.
- ⑥ Push [ENTER] to set, then exit the “Zoom Mode” menu.
 - To cancel the setting, push [CLEAR].
- ⑦ Rotate [DIAL] to set the Zoom area.

• **Setting the Marker Zoom Range**

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Marker Zoom Range” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the range.
 - 2, 5 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 and 150 m are selectable. (Default: 20 m)
- ⑥ Push [ENTER] to set, then exit the “Marker Zoom Range” menu.
 - To cancel the setting, push [CLEAR].

◇ **Standard+ Bottom zoom-in screen** (MENU ▸ Zoom ▸ Zoom Mode ▸ Bottom Zoom)



① STANDARD IMAGE

This image is the same as that on the Standard screen.

② BOTTOM ZOOM IMAGE

This image covers the bottom area.

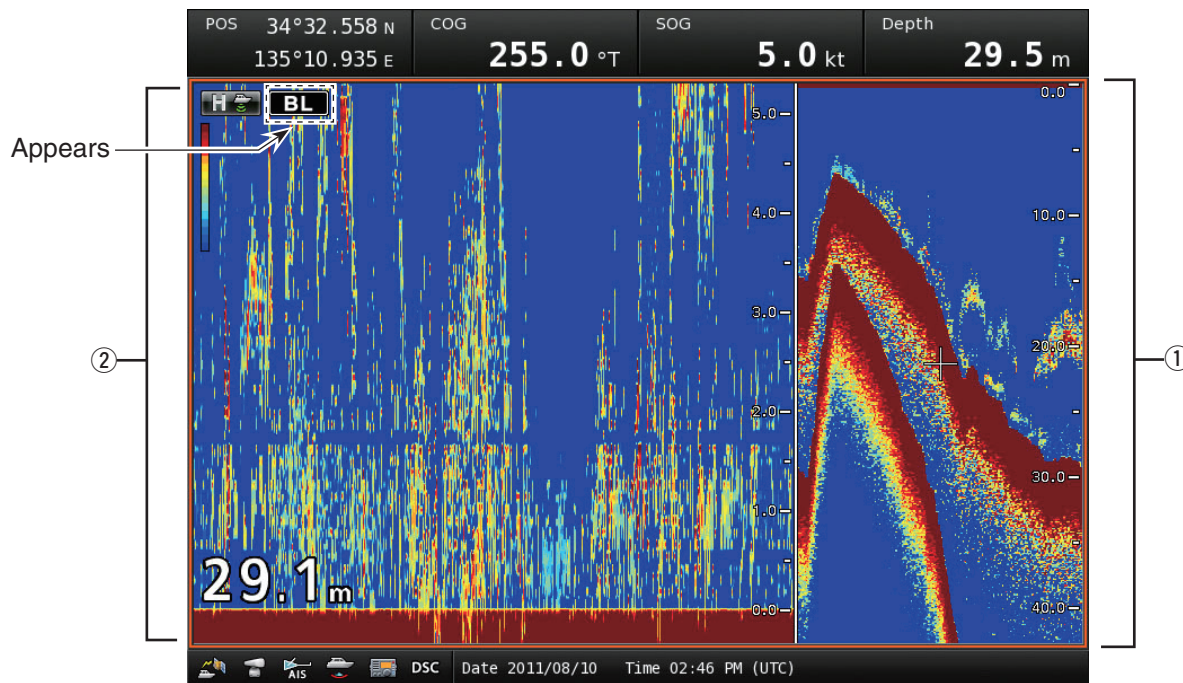
• Turning ON the Bottom Zoom

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Zoom Mode” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the “Bottom Zoom.”
 - Marker Zoom, Bottom Zoom and Bottom Lock are selectable.
- ⑥ Push [ENTER] to set, then exit the “Zoom Mode” menu.
 - To cancel the setting, push [CLEAR].

• Setting the Bottom Zoom Range

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Bottom Zoom Range” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the range.
 - 2, 5 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 and 150 m are selectable. (Default: 20 m)
- ⑥ Push [ENTER] to set, then exit the “Bottom Zoom Range” menu.
 - To cancel the setting, push [CLEAR].

◇ **Standard+ Bottom lock-in screen** (MENU ▸ Zoom ▸ Zoom Mode ▸ Bottom Lock)



① **STANDARD IMAGE**

This image is the same as that on the Standard screen.

② **BOTTOM LOCK IMAGE**

This image covers the bottom area.

• **Turning ON the Bottom Lock**

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Zoom Mode” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the “Bottom Lock.”
 - Marker Zoom, Bottom Zoom and Bottom Lock are selectable.
- ⑥ Push [ENTER] to set, then exit the “Zoom Mode” menu.
 - To cancel the setting, push [CLEAR].

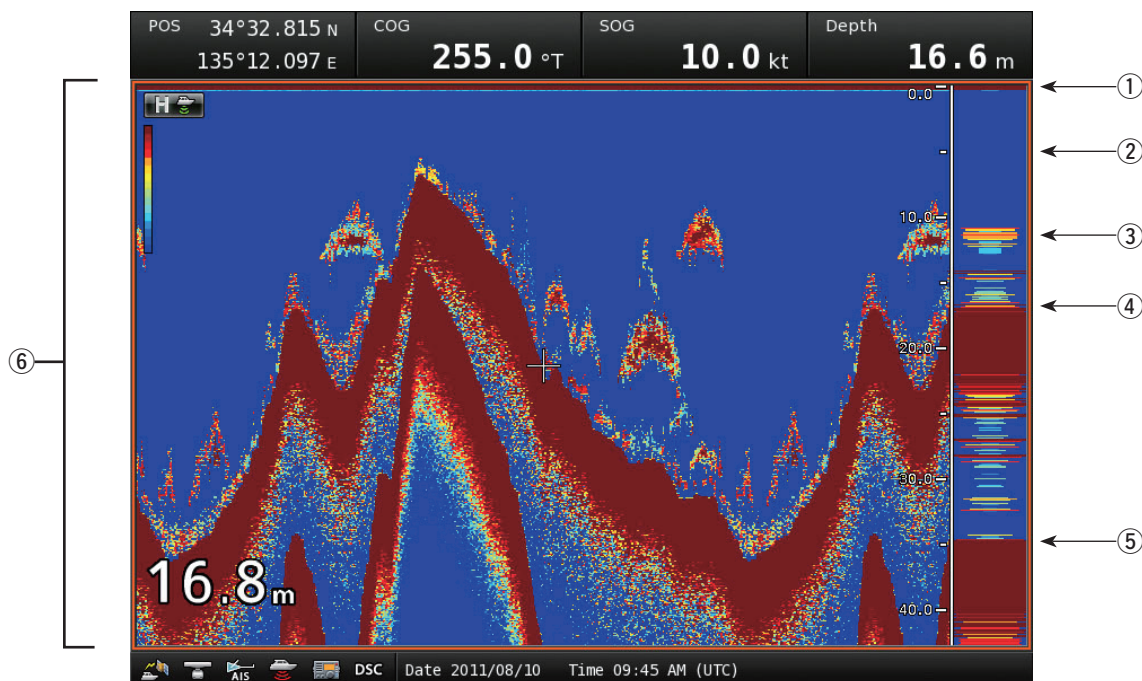
• **Setting the Bottom Zoom Range**

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Zoom” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Zoom” menu.
- ④ Rotate [DIAL] until the “Bottom Lock Range” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] to select the range.
 - 2, 5 and 10 m are selectable. (Default: 5 m)
- ⑥ Push [ENTER] to set, then exit the “Bottom Lock Range” menu.
 - To cancel the setting, push [CLEAR].

4 SOUNDER OPERATION

◇ Standard+ A-Scope screen (MENU ▸ A-Scope ► ON)

The A-scope image represents reflections from the sea bottom or a shoal of fish in amplitude and color.



① STRONG REFLECTION (OSCILLATION LINE)

Indicated in red due to large amplitude.

② NO REFLECTION

No change in color (background color) due to nothing detected.

③ WEAK REFLECTION (FROM FISH)

Small amplitude.

④ STRONG REFLECTION (FROM SEA BOTTOM)

Indicated in red due to large amplitude.

⑤ STRONG REFLECTION (SECONDARY REFLECTION)

Indicated in red due to large amplitude.

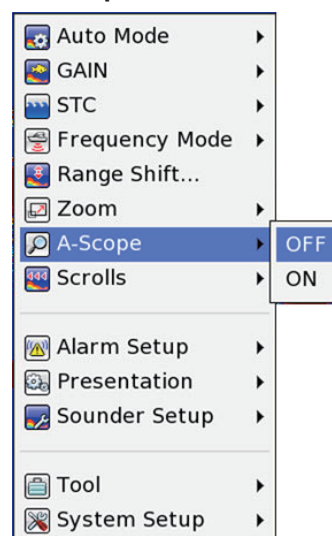
⑥ STANDARD IMAGE

This image is the same as that on the Standard screen.

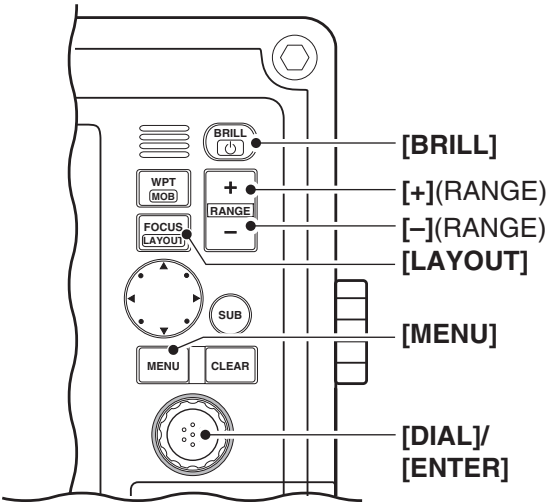
• Turning ON the A-Scope


- ① Push [MENU] to enter the Menu screen.
 - ② Rotate [DIAL] until the “A-Scope” menu becomes highlighted.
 - ③ Push [ENTER] to enter the “A-Scope” menu.
 - ④ Rotate [DIAL] to turn ON the function.
 - ⑤ Push [ENTER] to set, then exit the “A-Scope” menu.
- To cancel the setting, push [CLEAR].

<A-Scope menu>

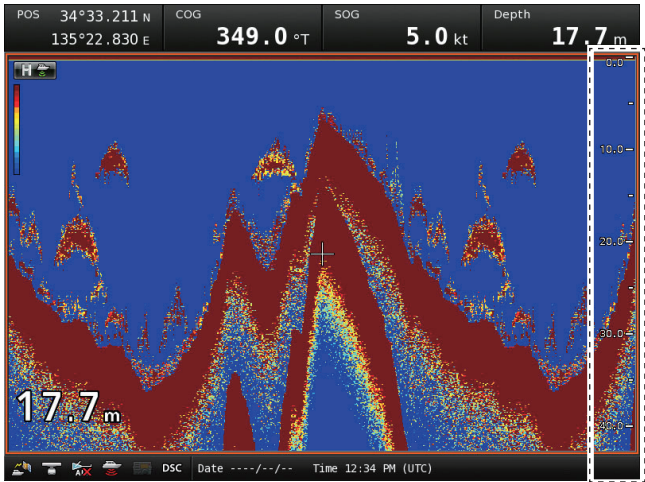


■ Basic operation

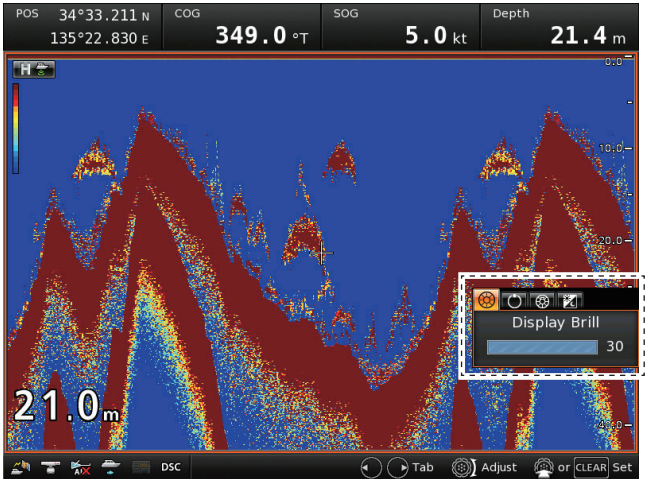


- ① Turn the power ON.
- The Sounder screen appears.
 - If any other than Sounder screen appears, hold down [LAYOUT](FOCUS) for 3 seconds to enter the screen selection mode, then rotate [DIAL] to select Sounder, then push [ENTER].
- ② Push [+] or [-] one or more times to select the depth range.
- The display range readout shows the maximum range of the screen.
- ③ Push [BRILL]() , then adjust the display brilliance, backlighting of the key and color mode (day/night). (p. 1-7)
- ④ Push [ENTER], then adjust the gain (50kHz, 200kHz) or STC (50kHz or 200kHz). (pp. 1-3, 4-12, 4-13)

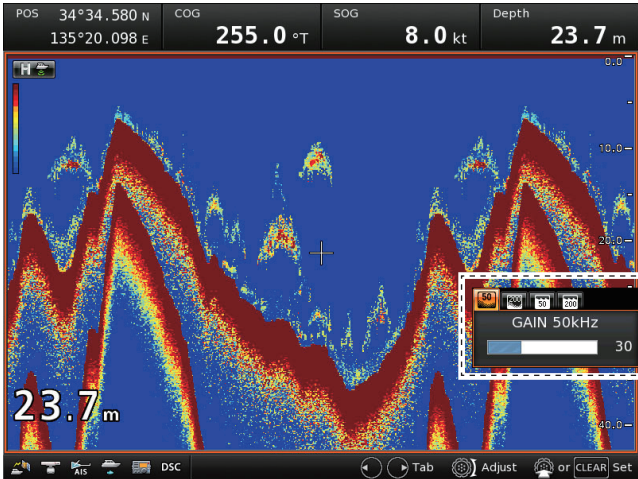
• Depth range readout



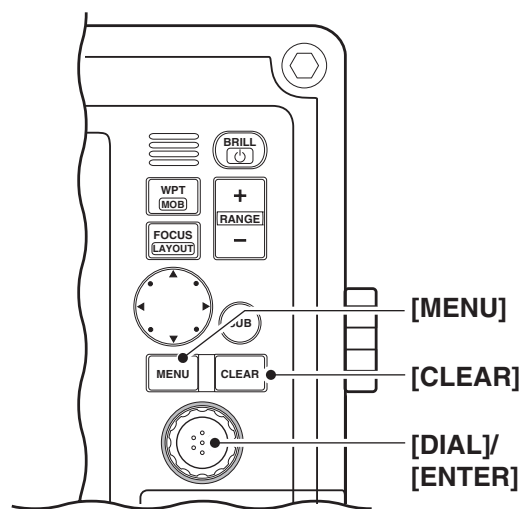
• Display brilliance adjustment screen



• Gain 50kHz adjustment screen



■ Auto Mode operation (MENU ▸ Auto Mode)



Auto Mode operation is suitable for beginners to use the Sounder.

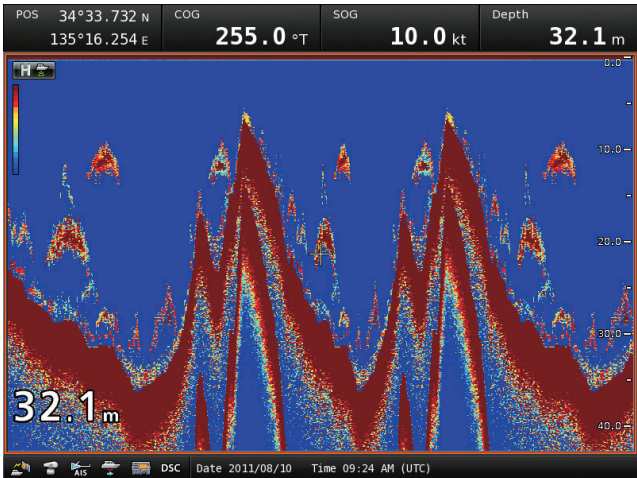
Detection of the sea bottom needs subtle adjustment of the depth range according to the shape of the sea bottom.

The use of the Auto Mode operation function of the system, however, permits the bottom image to be always displayed on the screen.

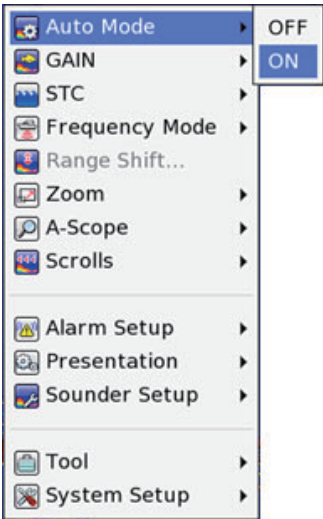
To use Auto Mode operation, proceed as follows.

- ① Push [MENU], and push [ENTER] to enter the “Auto Mode” menu.
- ② Rotate [DIAL] to turn the Auto Mode operation ON or OFF.
- ③ Push [ENTER] to set, then exit the “Auto Mode” menu.
 - Push [CLEAR] to cancel and return to the previous menu.

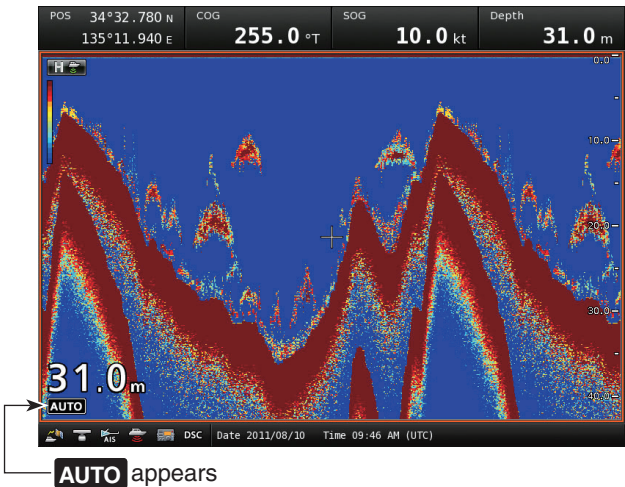
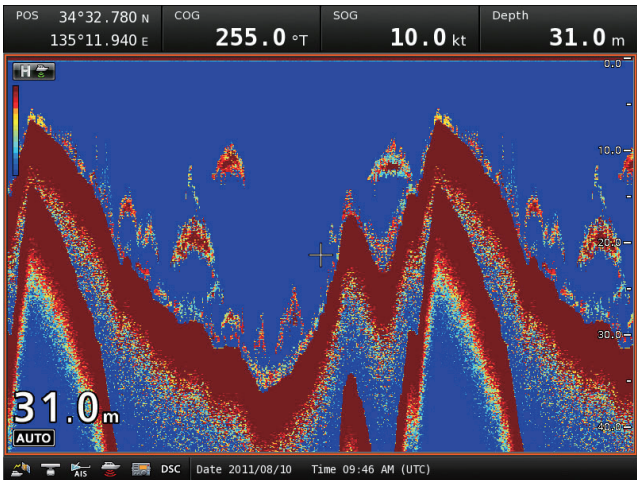
• Auto Mode operation is OFF



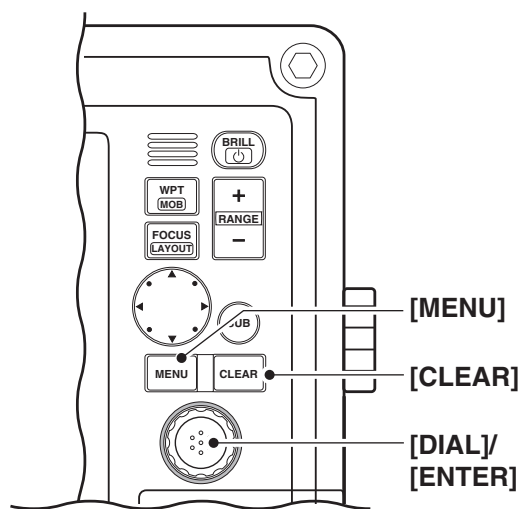
<Auto Mode menu>



• Auto Mode operation is ON



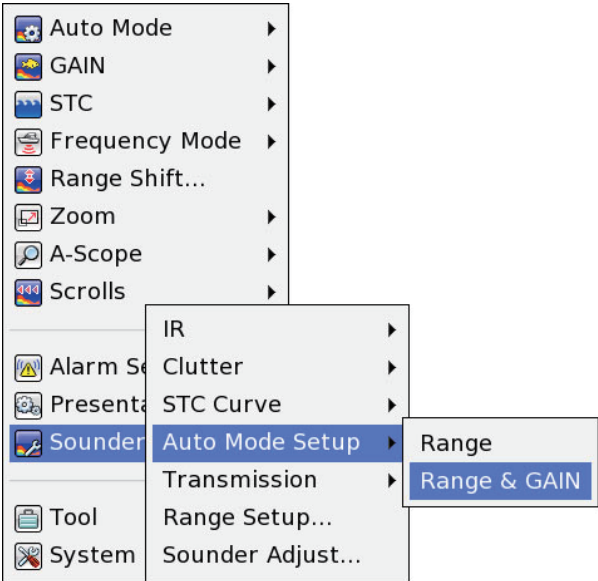
◇ Item selection for the Auto Mode (MENU ▸ Sounder Setup ▸ Auto Mode Setup)



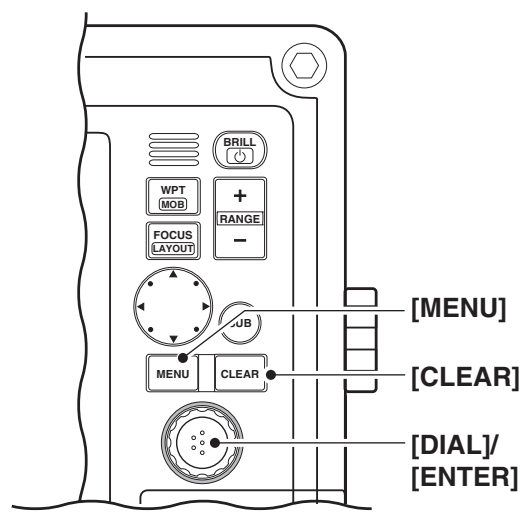
To set the Auto Mode item, proceed as follows.

- ① Push [MENU], and rotate [DIAL] until the “Sounder Setup” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the “Auto Mode Setup” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] until the desired setting, “Range” or “Range & GAIN” become highlighted.
 - Range : Automatically sets the Depth range.
 - Range & Gain : Automatically sets the Depth range and Gain.
- ④ Push [ENTER] to set the setting.
- ⑤ Push [CLEAR] one or more times to exit the Menu screen.

<Auto Mode Setup menu>



Manual Setting of Sensitivity (MENU ▸ GAIN)



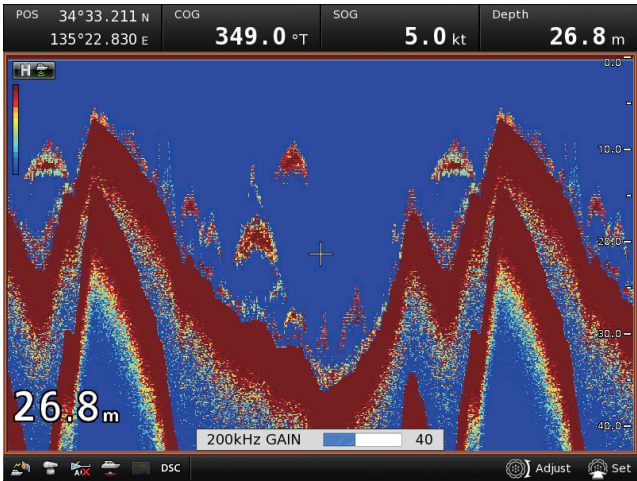
The sensitivity setting is critical to ensure optimal Sounder performance.
Be sure to set the sensitivity properly when using the system in manual mode.

To set the sensitivity to ultrasonic reflected from the sea bottom, proceed as follows.

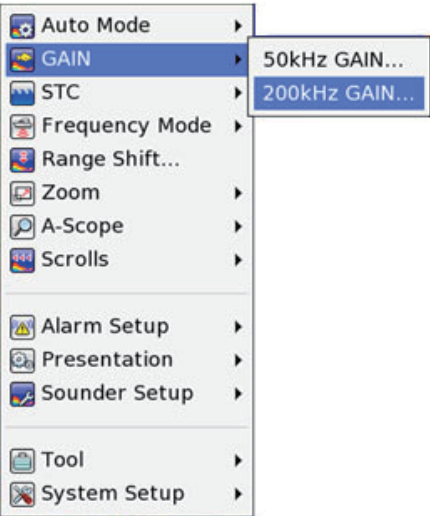
When the Auto mode Setup menu (p. 4-11) is set to “Range & Gain” and Auto mode operation is ON, this setting will not be effective.

- ① Push [MENU], and rotate [DIAL] until the “GAIN” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the desired frequency gain, “50kHz GAIN...” or “200kHz GAIN...” become highlighted.
 - Push [CLEAR] to return to the previous menu.
- ③ Push [ENTER] to enter the Gain adjustment mode, then rotate [DIAL] to adjust the gain.
- ④ Push [ENTER] to exit the “GAIN” menu.

Gain adjustment readout



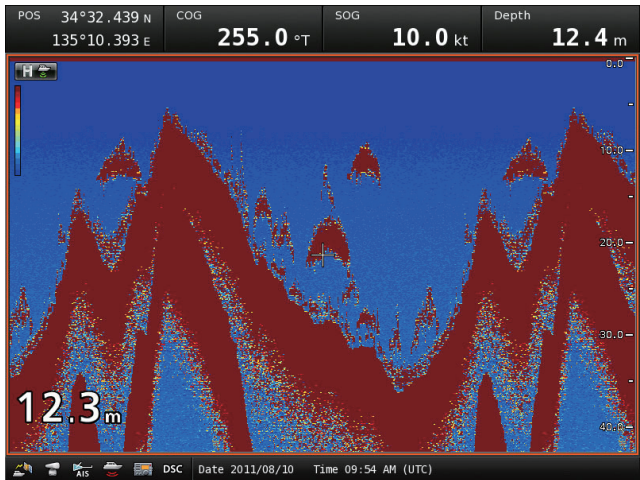
<GAIN menu>



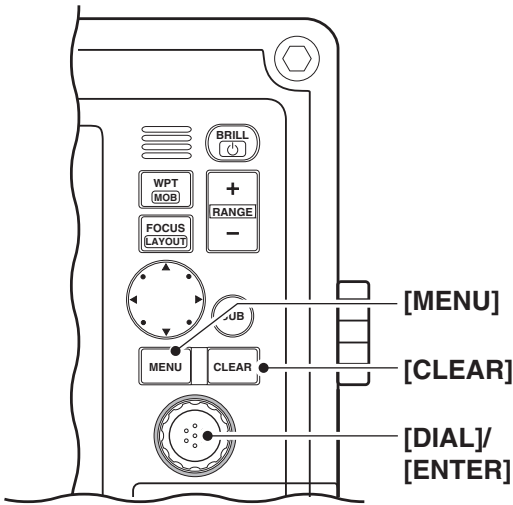
Gain is set too low



Gain is set too high



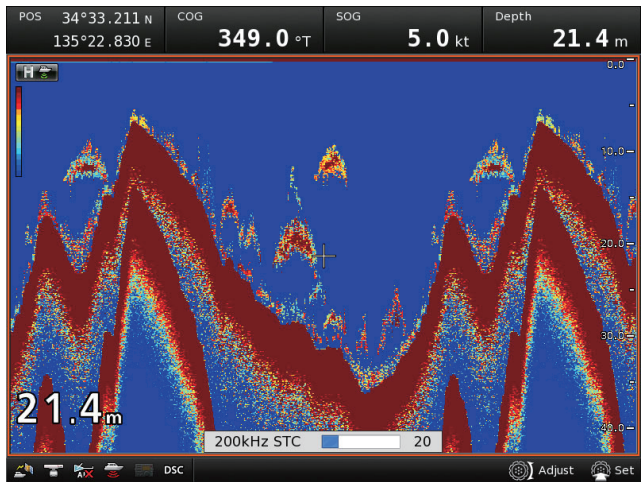
■ STC; Setting of Immunity to Air Bubbles (MENU ▸ STC)



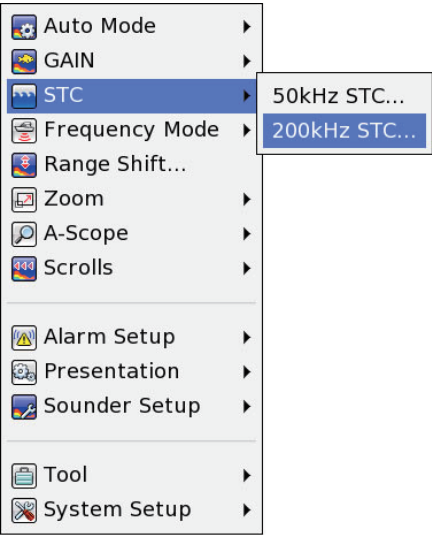
To set the immunity to air bubbles in the sea surfaces so as to improve the image legibility, proceed as follows. (Default: 0)

- ① Push [MENU], and rotate [DIAL] until the “STC” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the desired STC for the frequency, “50kHz STC...” or “200kHz STC...” become highlighted.
 - Push [CLEAR] to return to the previous menu.
- ③ Push [ENTER] to enter the STC adjustment mode, then rotate [DIAL] to adjust to the desired immunity level.
- ④ Push [ENTER] to exit the “STC” menu.

• STC adjustment readout



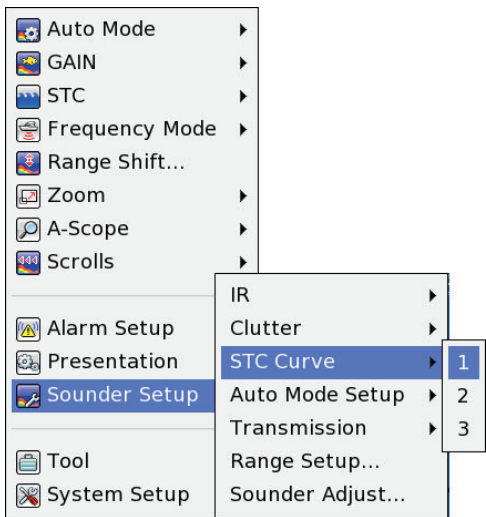
<STC menu>



4

◇ STC Curve (MENU ▸ Sounder Setup ► STC Curve)

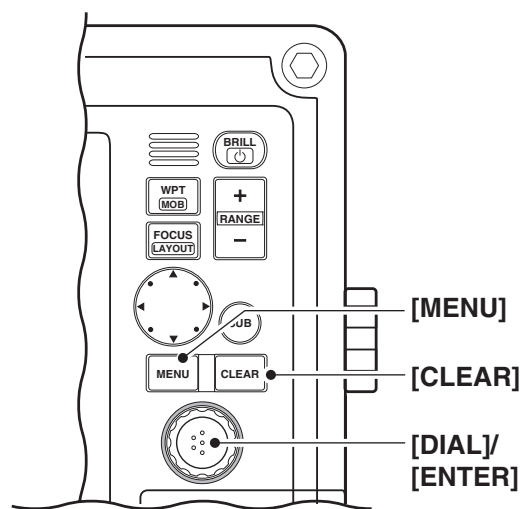
<STC Curve menu>



This setting set the STC effective from 1, 2 or 3.

- 1 : STC setting is effective for shallow depth area.
- 2 : STC setting is effective for both shallow and deep depth area.
- 3 : STC setting is effective for deep depth area.

Frequency Setting (MENU ▸ Frequency Mode)

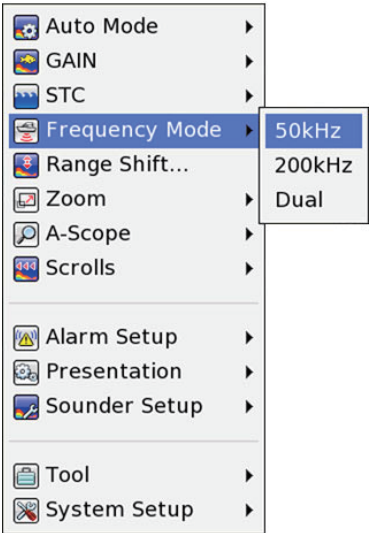


To select the Sounder frequency between “50kHz” and “200kHz,” proceed as follows. (Default: 200kHz).

- ① Push [MENU], and rotate [DIAL] until the “Frequency Mode” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the desired frequency, “50kHz” or “200kHz” become highlighted.
- ③ Push [ENTER] to set the frequency, then exit the “Menu” screen.

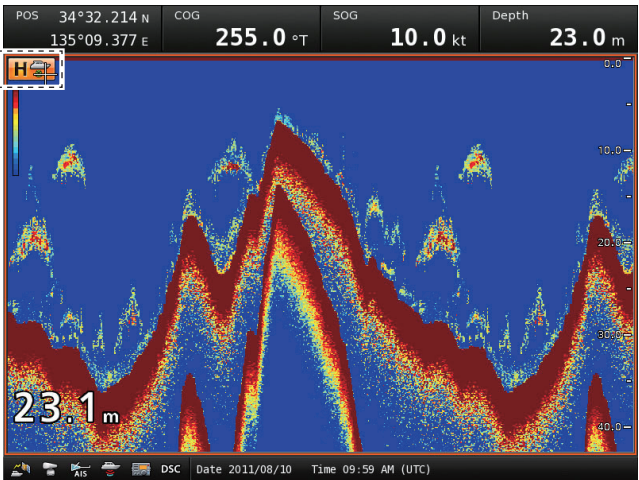
• Push [CLEAR] to cancel and return to the previous menu.

<Frequency Mode menu>



Frequency	Low (L)	High (H)
Directivity (directional angle)	High (large)	Low (small)
Depth coverage	Deep	Shallow
Resolution (detection of fish density)	Low	High
Immunity to bubbles and underwater noises	Low	High
Main application	Search of board area, underwater geological survey	Diagnosis of fish den- sity or fish size

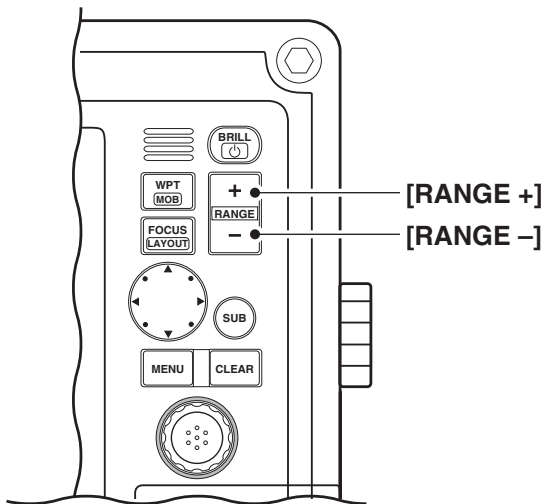
Frequency Change



- ① Push [▲], [▼], [◀] or [▶] to move the cursor on the frequency icon (H).

• The icon’s color change to orange.
- ② Push [SUB] to change the frequency.

Manual Setting of Depth Range

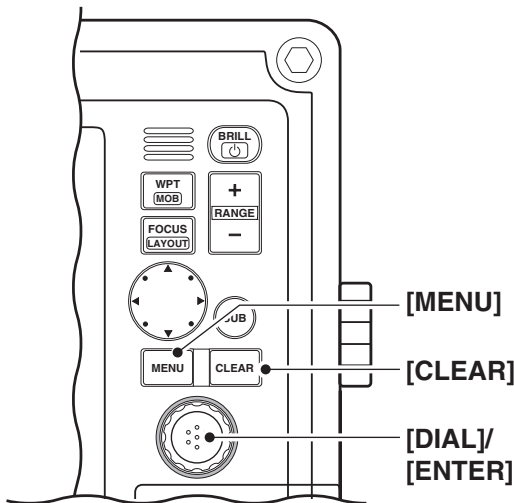


The depth range is an underwater range in depth that contained in the screen image.

Available units of the depth range include m (meters), ft (feet) and fm (fathoms) (p. 5-32).
To set the depth range manually, proceed as follows.

- ➡ Push [RANGE +] or [RANGE -] one or more times to set the depth range.

◇ Setting of Depth Shift (MENU ▸ Range Shift...)

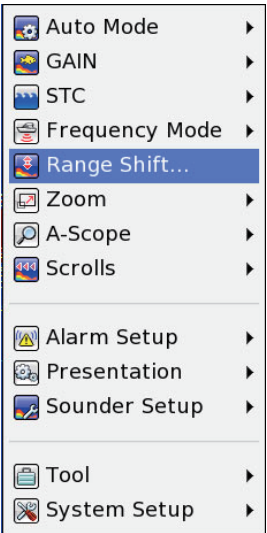


Setting the depth shift allows you to specify a depth at which the upper edge of the screen image stands.

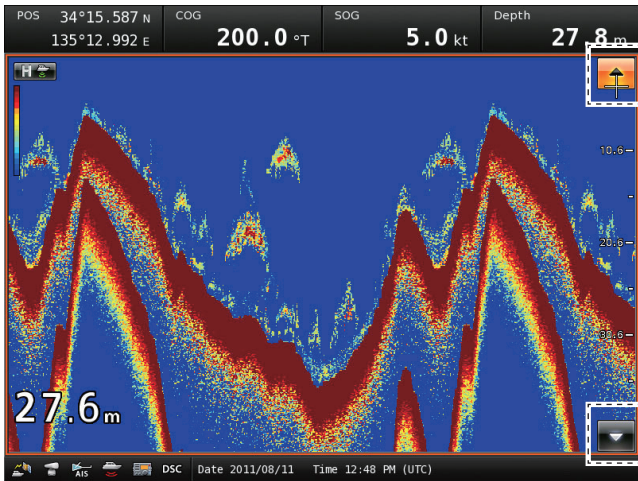
To set the depth shift, proceed as follows.

- ➊ Push [MENU], and rotate [DIAL] until the “Range Shift...” menu becomes highlighted.
- ➋ Push [ENTER] to enter the Range Shift adjustment mode, then rotate [DIAL] to adjust the Range Shift.
 - To return to the previous screen, push [CLEAR].
- ➌ Push [ENTER] to exit the “Range Shift...” menu.

<Range Shift menu>

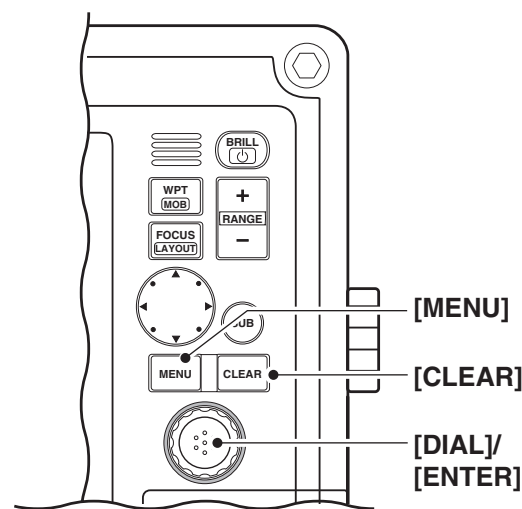


• Range shift



- ➊ Push [▲], [▼], [◀] or [▶] to move the cursor to the right corners.
 - Arrow icons appear and its color change to orange.
- ➋ Push [SUB] to set the Range Shift.

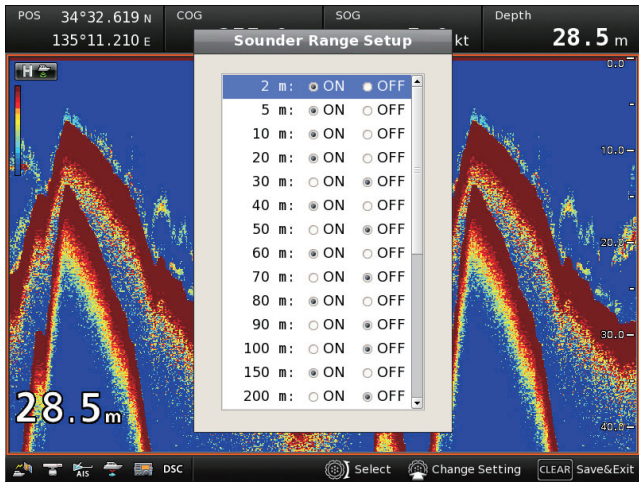
◇ Range Setup (MENU ▸ Sounder Setup ▸ Range Setup...)



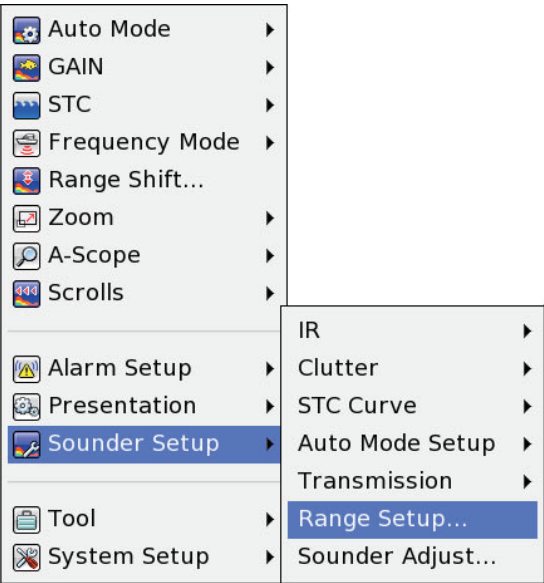
This section describes how to register your most-used depth ranges among 26 depth ranges.

- ① Push [MENU], and rotate [DIAL] until the “Sounder Setup” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the “Range Setup...” menu becomes highlighted.
- ③ Push [ENTER] to enter the Sounder Range Setup mode.
 - The Sounder Range Setup Screen appears.
- ④ Rotate [DIAL] to select the desired Depth Range, then push [◀] or [▶] to turn the depth Range ON or OFF.
- ⑤ Repeat step ④ until all of your desired ranges turn ON.
- ⑥ Push [CLEAR] one or more times to exit the Menu screen.

• Sounder Range Setup readout



<Range Setup menu>

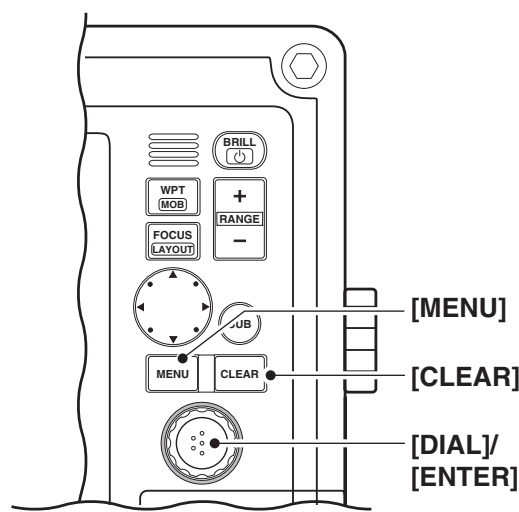


Unit of the Depth range	Standard depth ranges													
m (meters) (default)	2	5	10	20	30	40	50	60	70	80	90	100	150	
	200	250	300	350	400	450	500	600	700	800	900	1000	1200	
ft (feet)	5	10	20	30	40	50	60	80	100	150	200	250	300	
	350	400	450	500	600	800	1000	1500	2000	2500	3000	3500	4000	
fm (fathoms)	1	3	5	10	15	20	25	30	35	40	45	50	60	
	80	100	150	200	250	300	350	400	450	500	550	600	650	

 : Default range

■ Zoom Mode operation (MENU ▸ Zoom ► Zoom Mode)

Zoom operations are selectable from Marker Zoom, Bottom Zoom and Bottom Lock.



The Zoom mode are displayed Standard screen and Zoom. Marker Zoom expands the specified under water area. The Zoom area is specified distance from vessel.

- ① Push [MENU], and rotate [DIAL] until the “Zoom” menu becomes highlighted.

② Push [ENTER] then rotate [DIAL] until the “Zoom Mode” menu becomes highlighted.

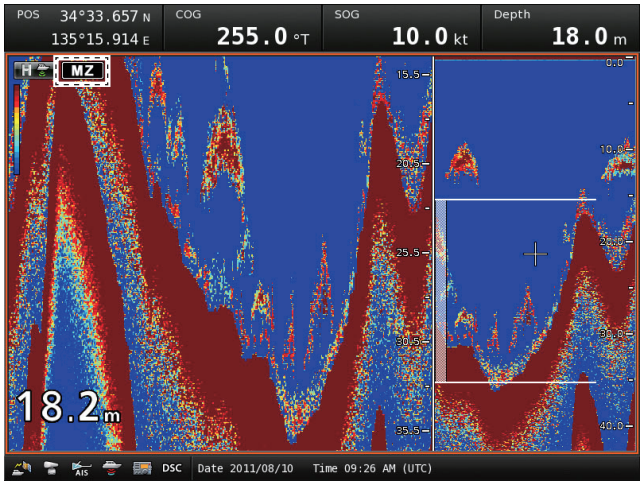
③ Push [ENTER] then rotate [DIAL] to select the desired Zoom operations from “Marker Zoom,” “Bottom Zoom” or “Bottom Lock.”

④ Push [ENTER] to set the Zoom operation and exit the Menu screen.

⑤ Rotate [DIAL] to set the Zoom area.

• Push [CLEAR] to cancel and return to the previous menu.

• Marker Zoom readout



<Zoom Mode menu>

Auto Mode

GAIN

STC

Frequency Mode

Range Shift...

Zoom

A-Scope

Scrolls

Alarm S

Presentation

Sounder Setup

Tool

System Setup

Zoom Mode

Marker Zoom Range

Bottom Zoom Range

Bottom Lock Range

OFF

Marker Zoom

Bottom Zoom

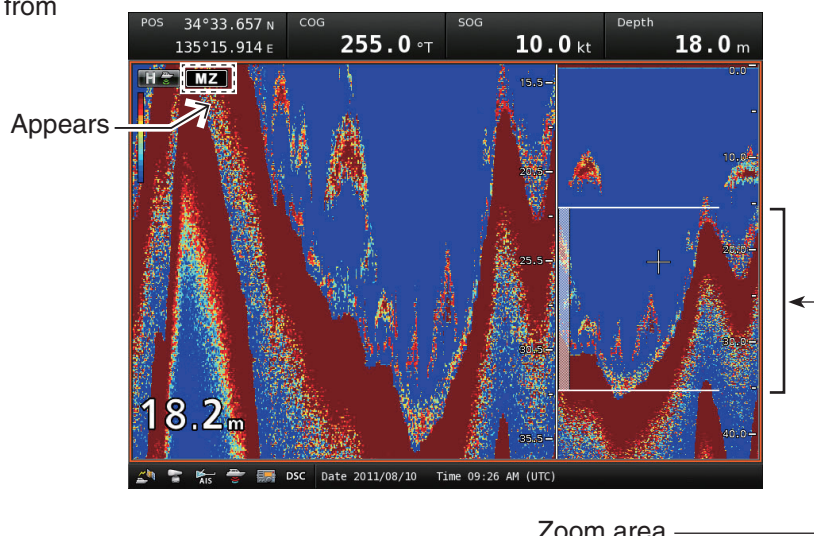
Bottom Lock

4 SOUNDER OPERATION

◇ Marker Zoom operation

Marker Zoom expands the specified under water area. The Marker Zoom Range is specified distance from vessel.

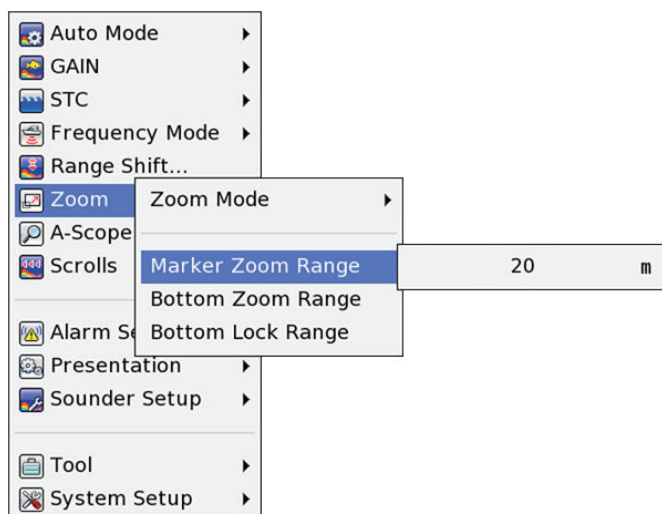
• Marker Zoom readout



The Zoom area can be changed by rotating [DIAL].

◇ Marker Zoom Range setting (MENU ▸ Zoom ► Marker Zoom range)

<Marker Zoom Range menu>

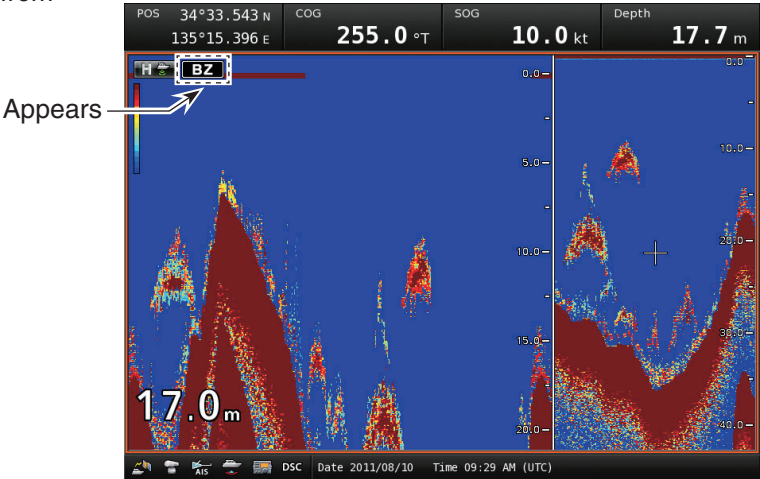


- ① Rotate [DIAL] to adjust the Marker Zoom Range.
 - The adjustable ranges are 2 m, 5 m, 10 m to 100 m (in 10 m steps) and 150 m. (Default: 20 m)
- ② Push [ENTER] to set the Marker Zoom Range.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

◇ Bottom Zoom operation

Bottom Zoom expands the specified under water area.
The Bottom Zoom Range is specified distance from bottom.

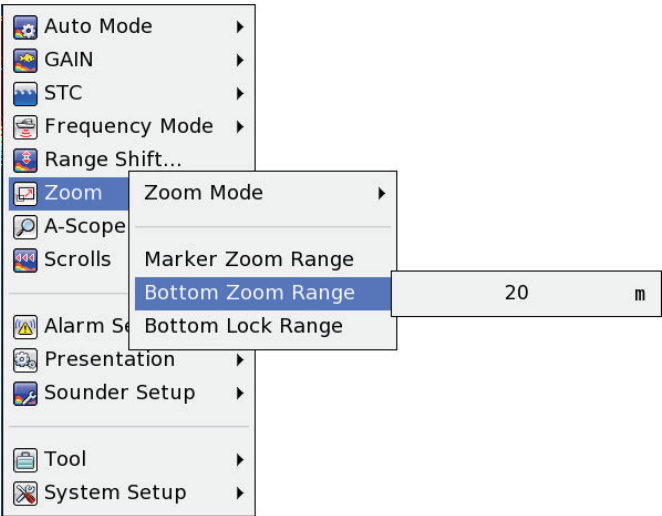
• Bottom Zoom readout



4

◇ Bottom Zoom Range setting (MENU ▸ Zoom ► Bottom Zoom range)

<Bottom Zoom Range menu>

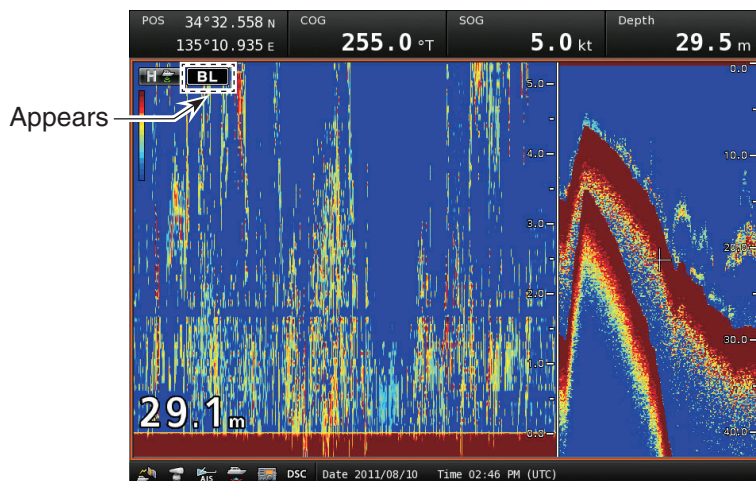


- ① Rotate [DIAL] to adjust the Bottom Zoom Range.
 - The adjustable ranges are 2 m, 5 m, 10 m to 100 m (in 10 m steps) and 150 m. (Default: 20 m)
- ② Push [ENTER] to set the Bottom Zoom Range.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

◇ Bottom Lock operation

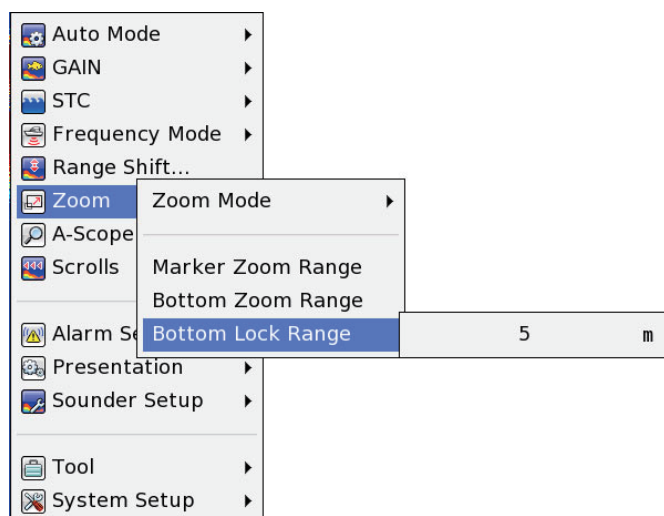
Bottom Lock expands the specified under water area.
The zoom area is around bottom.

• Bottom Lock readout



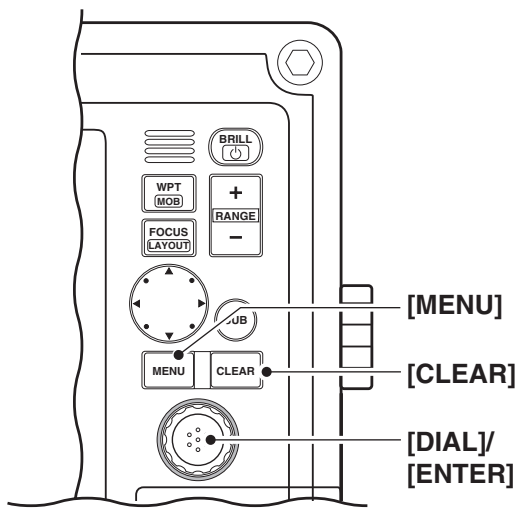
◇ Bottom Lock Range setting (MENU ▸ Zoom ► Bottom Lock range)

<Bottom Lock menu>



- ① Rotate [DIAL] to adjust the Bottom Zoom Range.
 - The zoom area is 2 m, 5 m and 10 m. (Default: 2 m)
- ② Push [ENTER] to set the Bottom Zoom Range.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

■ Setting the Display speed (MENU ▸ Scrolls)



The display speed can be adjusted.
Selecting a high display speed enlarges the image horizontally and will thus be helpful for analyzing the image.

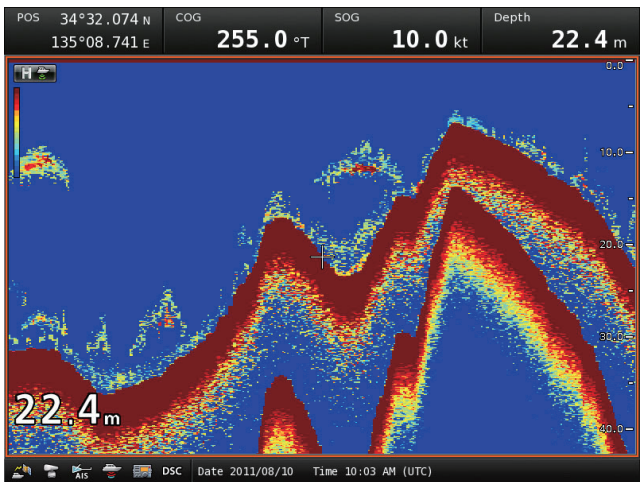
- ① Push [MENU], and rotate [DIAL] until the “Scrolls” menu becomes highlighted.

② Push [ENTER] then rotate [DIAL] to select the desired Scroll speed.
 - The selectable speed are Auto, 2, 1, 1/2, 1/4, 1/8 and Pause. (Default: 1)
 - To return to the previous screen, push [CLEAR].

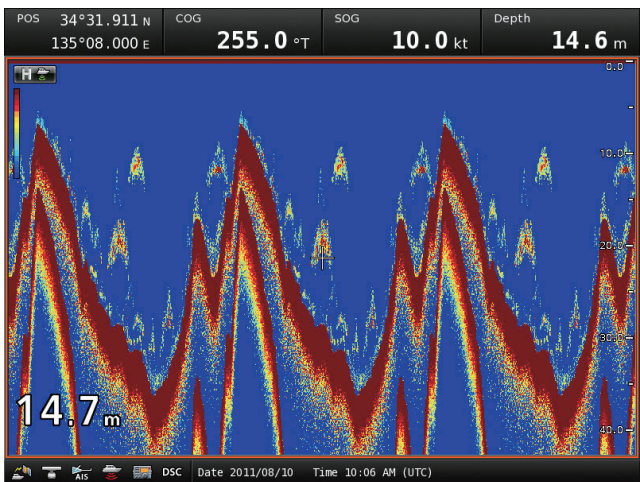
③ Push [ENTER] to set the scroll speed and exit the Menu screen.
 - Push [CLEAR] to cancel and return to the previous menu.

When Auto is selected, scroll speed will change depending on the SOG (Speed Over Ground) or STW (Speed Through the Water).

• Scroll speed is set to 2



• Scroll speed is set to 1/2



<Scrolls menu>

Auto Mode

GAIN

STC

Frequency Mode

Range Shift...

Zoom

A-Scope

Scrolls

Alarm Setup

Presentation

Sounder Setup

Tool

System Setup

Auto

2

1

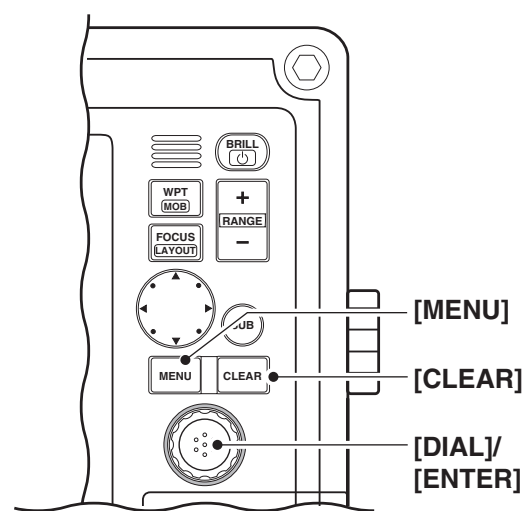
1/2

1/4

1/8

Pause

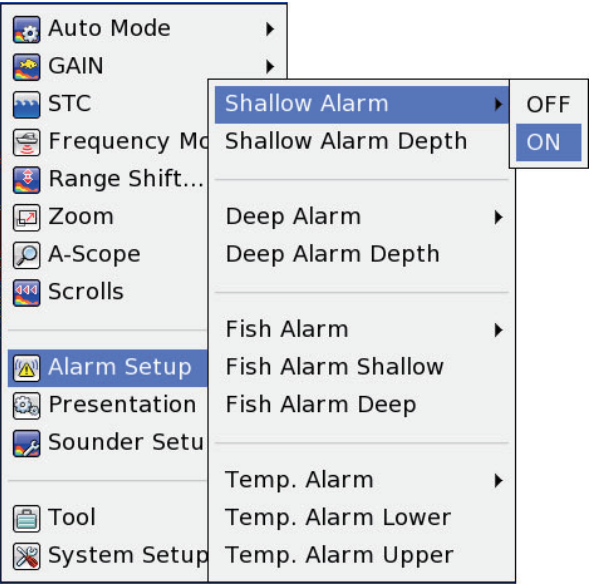
Alarm Setup (MENU ▸ Alarm Setup)



Four type of Sounder alarms are available as shown in the table below.

- ① Push [MENU], and rotate [DIAL] until the “Alarm Setup” menu becomes highlighted.
- ② Push [ENTER], and rotate [DIAL] to select the desired Sounder Alarm.
 - Shallow Alarm, Deep Alarm, Fish Alarm and Temp. Alarm are available.
- ③ Push [ENTER] to enter the desired alarm setting, then rotate [DIAL] to select the alarm ON or OFF.
- ④ Push [ENTER] to turn ON or OFF the Alarm function.
- ⑤ Push [CLEAR] one or more times to exit the Menu screen.

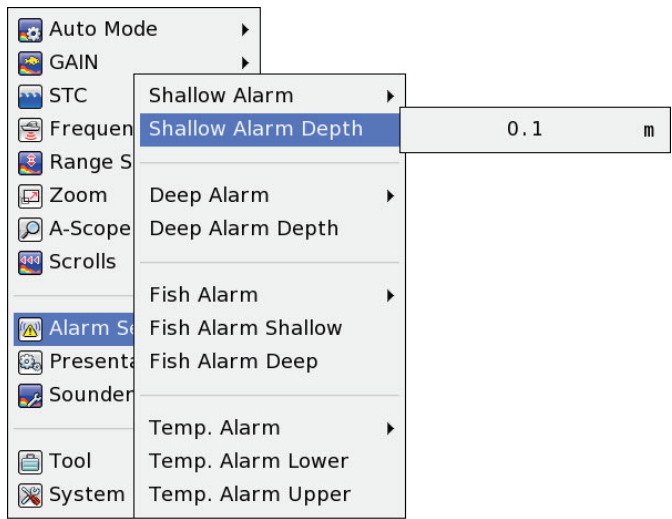
<Alarm Setup menu>



Alarm type	Description
Shallow Alarm	When the ship enters an area where the depth of water is shallower than the specified limit, an alarm sounds and “Shallow Alarm” is displayed on the screen. When the ship leaves the area, an alarm sound stops.
Deep Alarm	When the ship enters an area where the depth of water exceeds the specified limit, an alarm sounds and “Deep Alarm” is displayed on the screen. When the ship leaves the area, an alarm sound stops.
Fish Alarm	When a fish school is detected within the specified bounds, an alarm sounds “Fish Alarm” is displayed on the screen. When a fish school is undetectable within the specified bounds, an alarm sound stops.
Temp. Alarm	When the water temperature becomes specified temperature range, an alarm sounds and “Temp. Alarm” is displayed on the screen. When the water temperature becomes out of the specified temperature range, an alarm sound stops. The temperature range is specified “In Range” or “Out Range.”

◇ Shallow Alarm Depth setting (MENU ▸ Alarm Setup ► Shallow Alarm Depth)

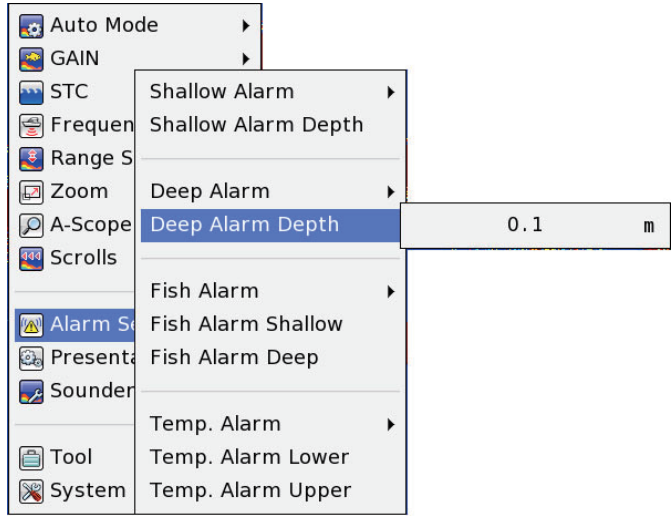
<Shallow Alarm Depth menu>



- ① Rotate [DIAL] to adjust the Shallow Alarm Depth.
 - The adjustable depth are 0.1 to 99.9 m in 0.1 m steps and 100 m to 2400 m in 1 m steps. (Default: 0.1 m)
- ② Push [ENTER] to set the Shallow Alarm Depth.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

◇ Deep Alarm Depth setting (MENU ▸ Alarm Setup ► Deep Alarm Depth)

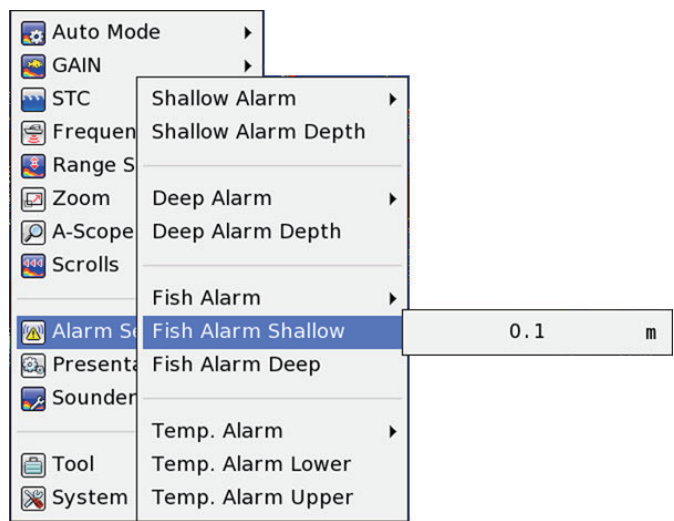
<Deep Alarm Depth menu>



- ① Rotate [DIAL] to adjust the Deep Alarm Depth.
 - The adjustable depth are 0.1 to 99.9 m in 0.1 m steps and 100 m to 2400 m in 1 m steps. (Default: 0.1 m)
- ② Push [ENTER] to set the Deep Alarm Depth.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

- ◇ **Fish Alarm Shallow setting** (MENU ▸ Alarm Setup ► Fish Alarm Shallow)
- ◇ **Fish Alarm Deep setting** (MENU ▸ Alarm Setup ► Fish Alarm Deep)

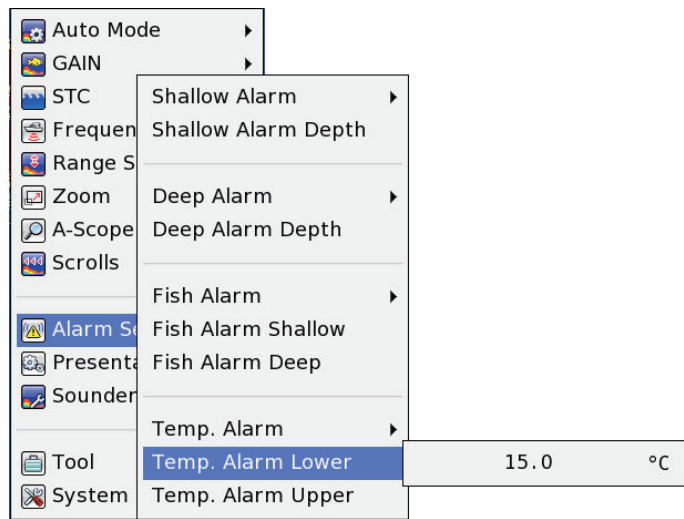
<Fish Alarm Shallow menu>



- ① Rotate [DIAL] to adjust the Fish Alarm Shallow.
 - The adjustable depth are 0.1 to 99.9 m in 0.1 m steps and 100 m to 2400 m in 1 m steps. (Default: Fish Alarm Shallow 0.1 m, Fish Alarm Deep 0.1 m)
- ② Push [ENTER] to set the Fish Alarm Shallow.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

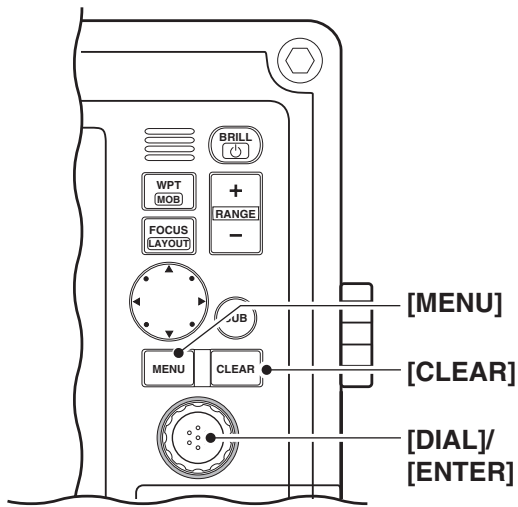
- ◇ **Temp. Alarm Lower setting** (MENU ▸ Alarm Setup ► Temp. Alarm Lower)
- ◇ **Temp. Alarm Upper setting** (MENU ▸ Alarm Setup ► Temp. Alarm Higher)

<Temp. Alarm Lower menu>



- ① Rotate [DIAL] to adjust the Temp. Alarm Lower.
 - The adjustable range are 0.0 to 40.0°C in 0.1°C steps. (Default: Temp. Alarm Lower 15°C, Temp. Alarm Upper 25°C)
- ② Push [ENTER] to set the Temp. Alarm Upper.
- ③ Push [CLEAR] one or more times to exit the Menu screen.

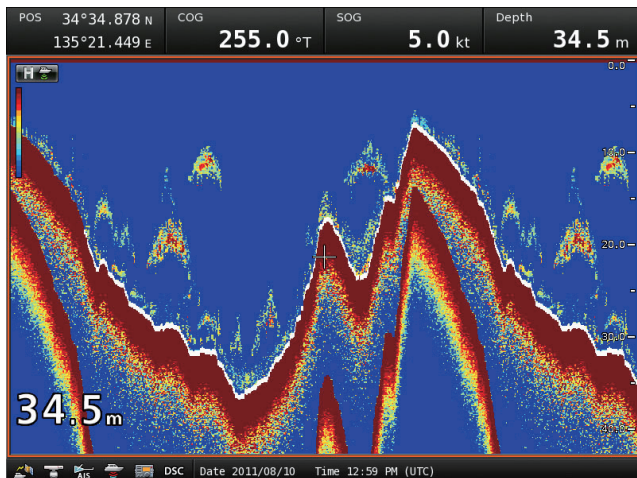
■ Bottom Line (MENU ▷ Presentation ► Bottom Line)



The bottom line can be display as shown below.

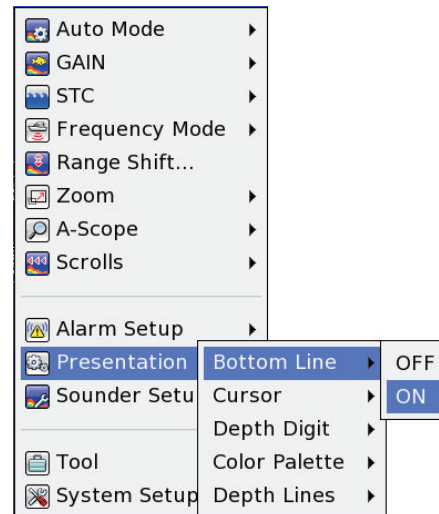
- ① Push [MENU], and rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the “Bottom Line.”
- ③ Push [ENTER] then rotate [DIAL] to turn the Bottom Line ON or OFF.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

- **Bottom Line readout**

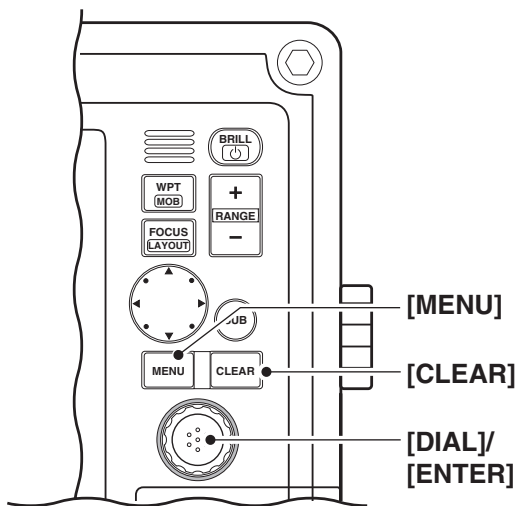


← Bottom line

<Bottom Line menu>



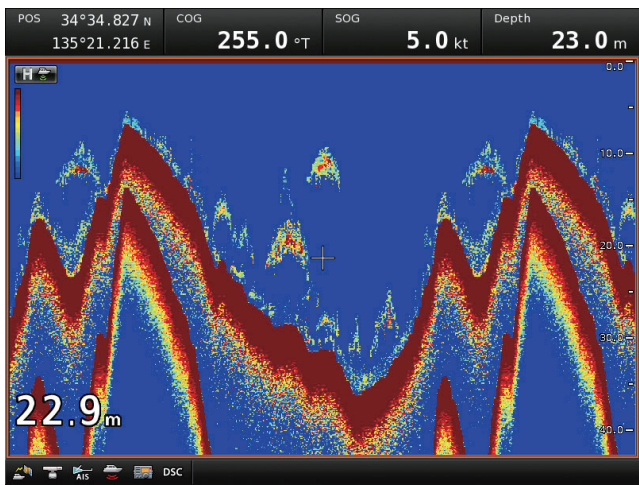
■ Cursor setting (MENU ▶ Presentation ▶ Cursor)



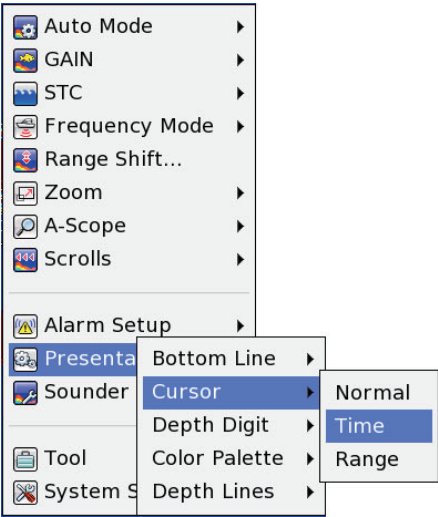
The selectable cursor type are “Normal,” “Time” and “Range.”

- ① Push [MENU], and rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ② Push [ENTER], and rotate [DIAL] until the “Cursor” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] to select the desired cursor type.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

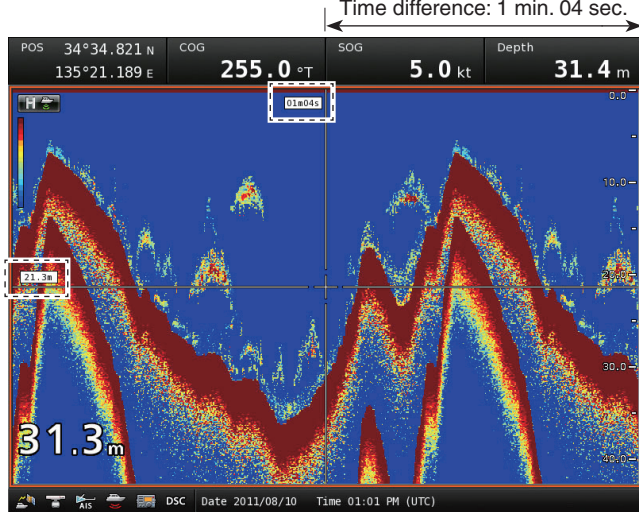
• The cursor is set to “Normal”



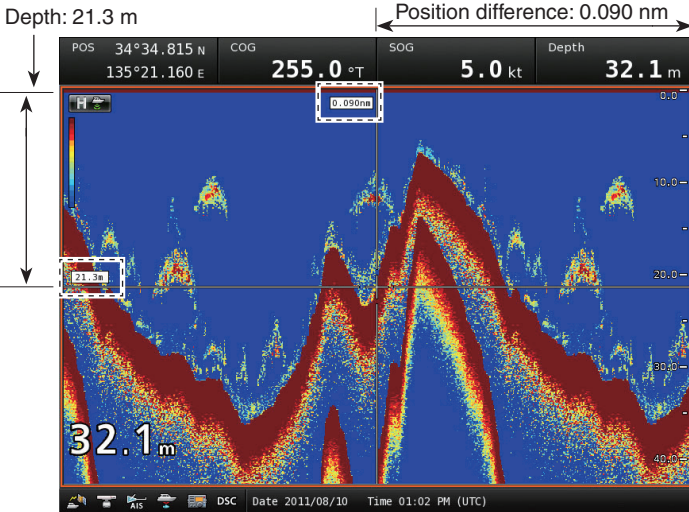
<Cursor menu>



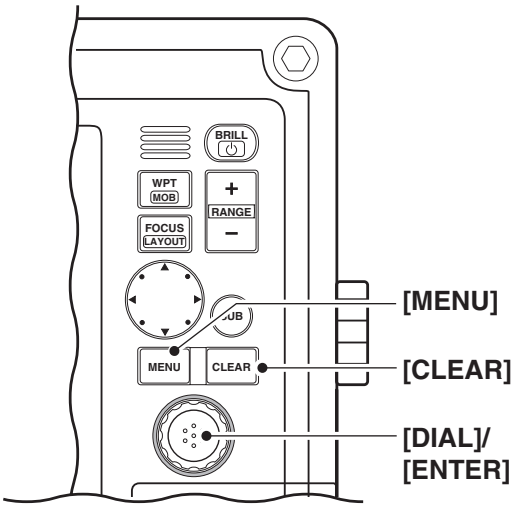
• The cursor is set to “Time”



• The cursor is set to “Range”



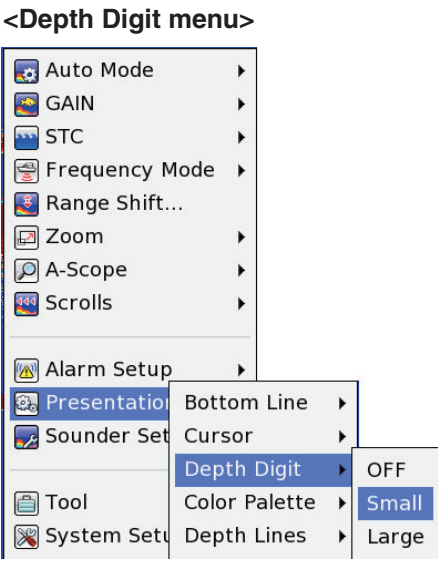
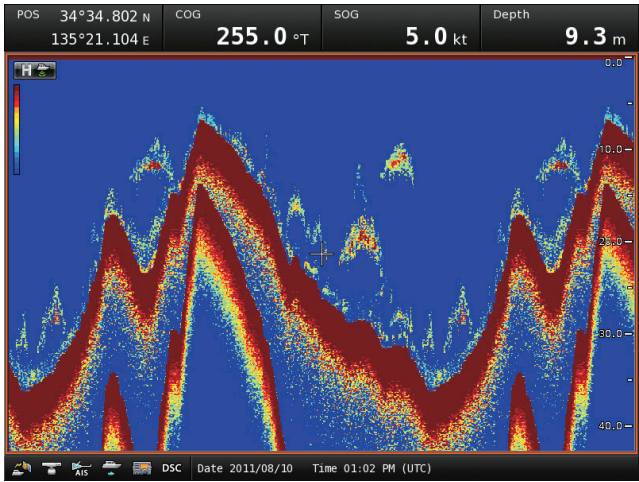
■ Depth Digit (MENU ▸ Presentation ▸ Depth Digit)



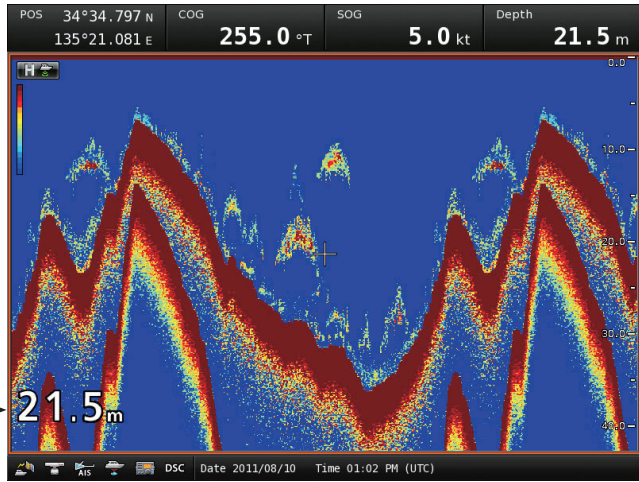
The Depth Digit can be changed.

- ① Push [MENU], and rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the “Depth Digit” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] to set to the desired Depth Digit, “Small,” “Large” and “OFF.”
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

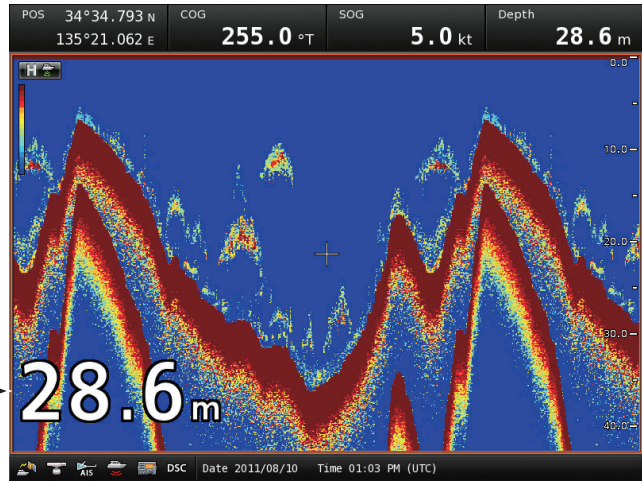
• The Depth Digit is “OFF”



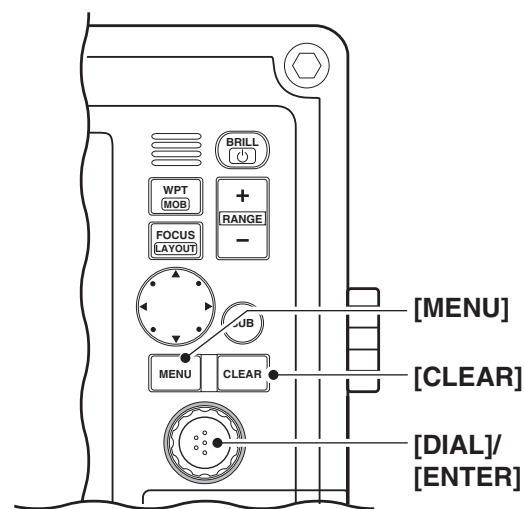
• The Depth Digit is set to “Small”



• The Depth Digit is set to “Large”



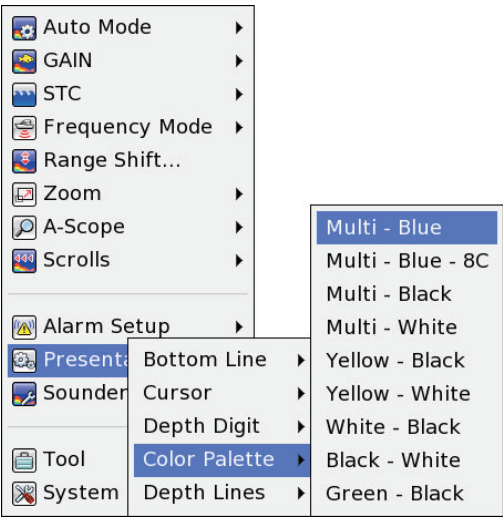
■ Display Color setting (MENU ▸ Presentation ▸ Color Palette)



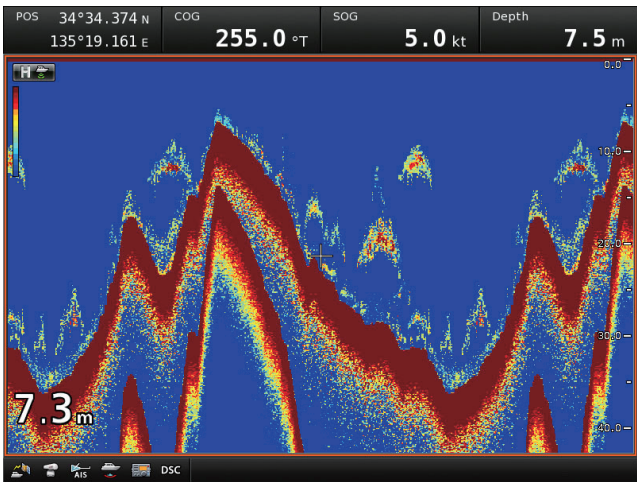
The display color can be set from nine color palettes. (Default: Multi-Blue)

- ① Push [MENU], and rotate [DIAL] until the “Presentation” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the “Color Palette” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] to set to the desired Color Palette.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

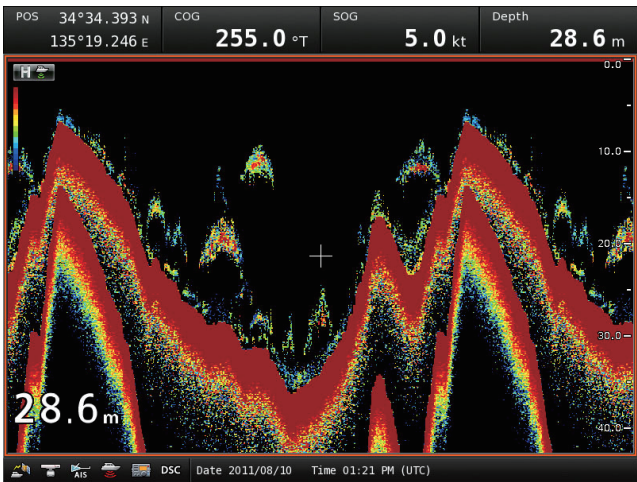
<Color Palette menu>



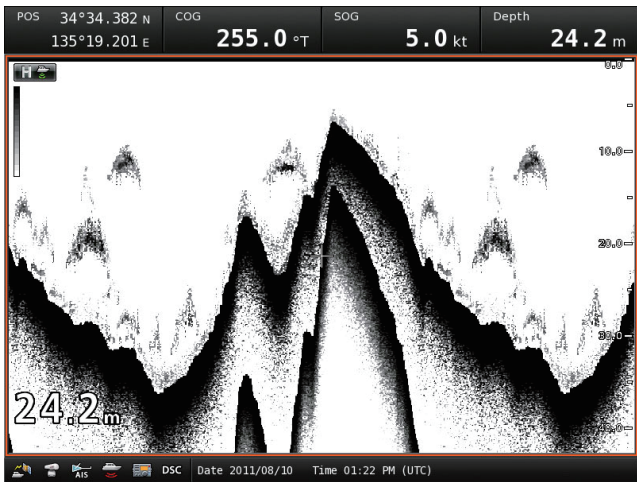
• The Color Palette is “Multi-Blue”



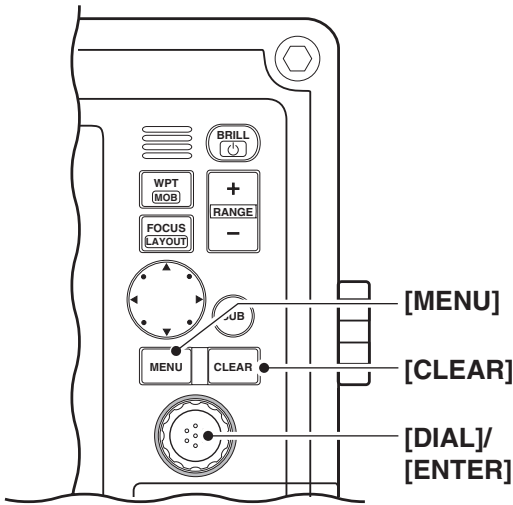
• The Color Palette is “Multi-Black”



• The Color Palette is “Black-White”



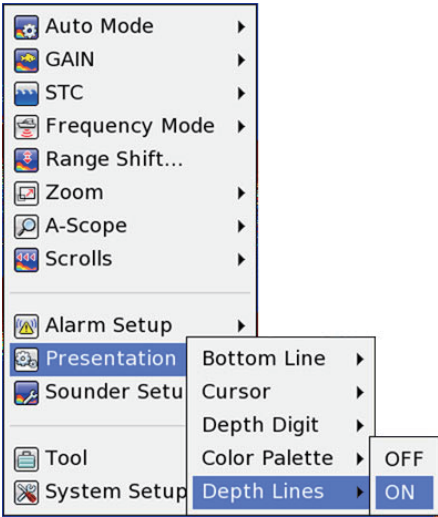
■ Depth Lines setting (MENU ▸ Presentation ▸ Depth Line)



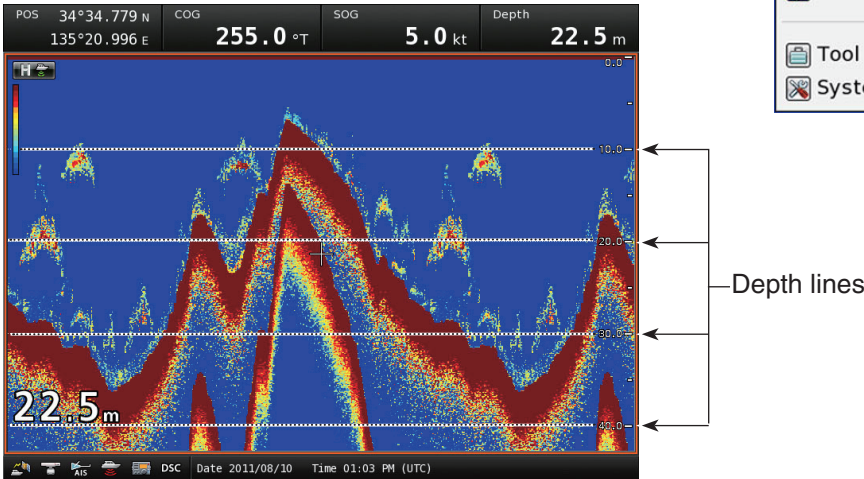
The Depth Line can be set to display or not to display as following procedure.

- ① Push [MENU], and rotate [DIAL] until the “Presenta-tion” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] until the “Depth Line” menu becomes highlighted.
- ③ Push [ENTER] then rotate [DIAL] to turn the Depth Line ON or OFF.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

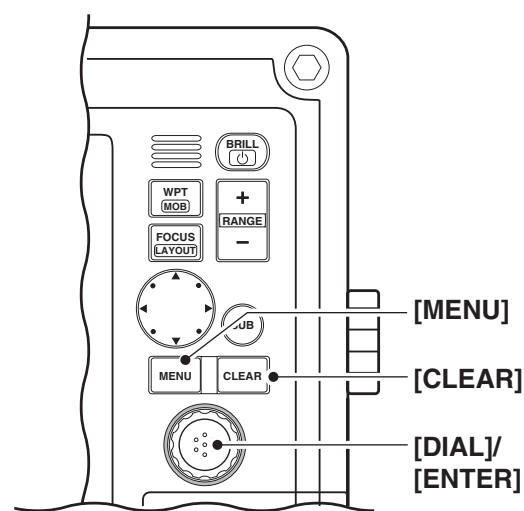
<Depth Lines menu>



• The Depth Line is “ON”



■ Sounder Setup (MENU ▸ Sounder Setup)



- ① Push [MENU], and rotate [DIAL] until the “Sounder Setup” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the desired setting item.
- ③ Push [ENTER] then rotate [DIAL] to set the item to your desired state.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

<Sounder Setup menu>

Auto Mode	▶
GAIN	▶
STC	▶
Frequency Mode	▶
Range Shift...	
Zoom	▶
A-Scope	▶
Scrolls	▶
Alarm Setup	▶
Presentation	▶
Sounder Setup	▶
Tool	▶
System Setup	▶

IR	▶
Clutter	▶
STC Curve	▶
Auto Mode Setup	▶
Transmission	▶
Range Setup...	
Sounder Adjust...	

◇ IR (Interference Rejection) setting (MENU ▸ Sounder Setup ► IR)

<IR menu>

Auto Mode	▶
GAIN	▶
STC	▶
Frequency Mode	▶
Range Shift...	
Zoom	▶
A-Scope	▶
Scrolls	▶
Alarm Setup	▶
Presentation	▶
Sounder Setu	▶
Tool	▶
System Setup	▶

IR	▶
Clutter	▶
STC Curve	▶
Auto Mode Setup	▶
Transmission	▶
Range Setup...	
Sounder Adjust...	

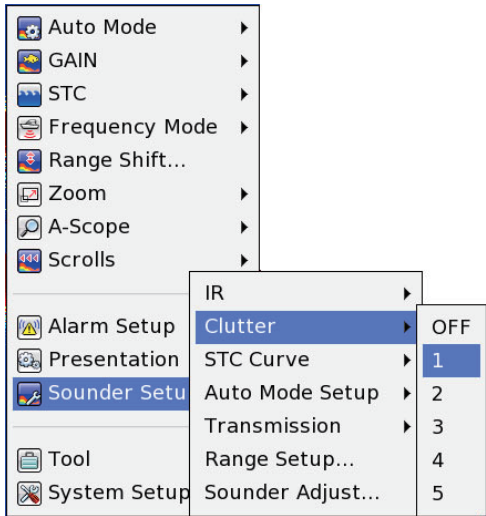
OFF
ON

The system has an interference rejection function that removes inductive interference derived by a generator on the ship or noise disturbance caused by a Sounder of other ships. (Default: ON)

- OFF : Turn OFF the Interference Rejection function.
- ON : Turn ON the Interference Rejection function.

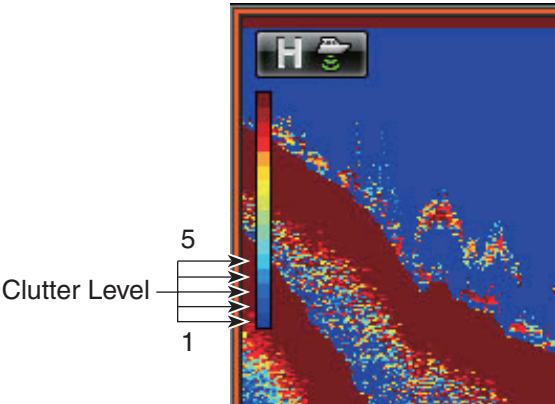
◇ Clutter setting (MENU ▸ Sounder Setup ► Clutter)

<Clutter menu>



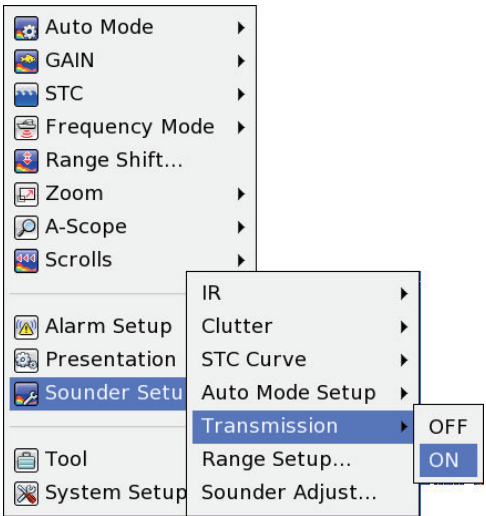
The system has a noise reduction function that suppresses noises caused by contamination of seawater or other sources. These noises may appear as blue or green dots on the Sounder screen. (Default: OFF)

OFF : Turn OFF the Clutter function.
1 to 5 : Turn ON the Clutter function and set the un-
displayed color level, as shown below.



◇ Transmission Pause (MENU ▸ Sounder Setup ► Transmission)

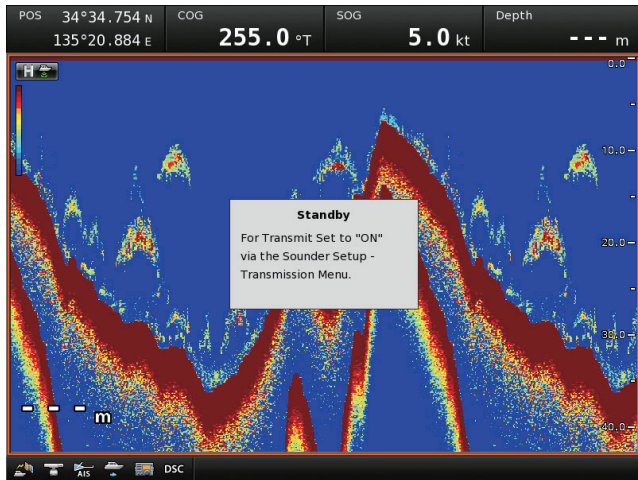
<Transmission menu>



The transmission of the sounder can be paused for maintenance the transducer.

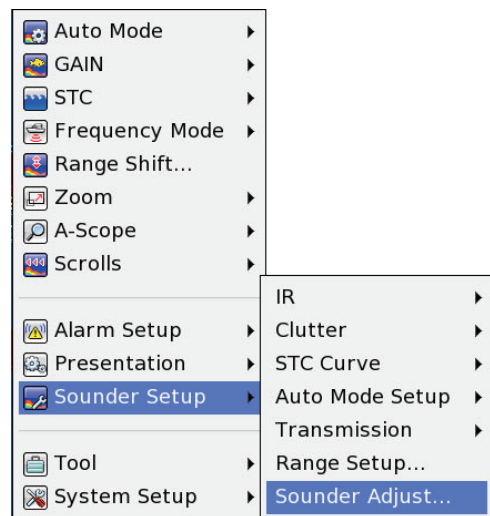
OFF : Pause the transmission.
ON : Restart the transmission.

•The Sounder transmission is “OFF”



◇ Sounder Adjustment (MENU ▸ Sounder Setup ► Sounder Adjustment)

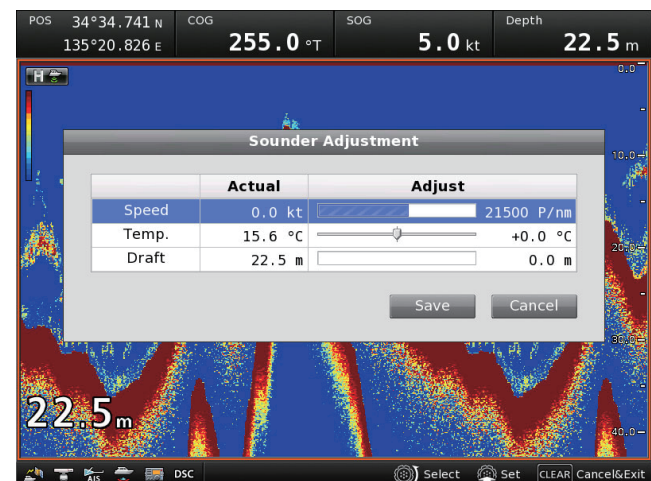
<Sounder Adjustment menu>



The Sounder Adjustment screen correct the Ship speed, temperature or depth differences from actual them as described below.

- ① On the Sounder Adjustment screen, rotate [DIAL] to select the item from “Speed,” “Temp.” or “Draft.”
- ② Push [ENTER] then rotate [DIAL] to adjust the selected item.
- ③ Push [ENTER] to set the correction.

• The Sounder Adjustment screen



• Speed Adjustment

The following describes how to correct the ship speed for difference between the actual speed and the speed sensor reading.

- ① Rotate [DIAL] to select the “Speed” on the Sounder Adjustment screen.
- ② Push [ENTER] to enter the pulse rate setting.
- ③ Rotate [DIAL] to adjust the pulse rate of the speed sensor.
 - * When using an optional sensor, EX-3193 (transom type speed/temperature sensor), set the pulse rate to “18000 P/nm.”
 - When using an optional transducer, EX-3194 (through-the-hull type transducer with speed/water temperature sensor), set the pulse rate to “19000 P/nm” (with fairing) “21500 P/nm” (without fairing).
 - * If the above setting causes an error to occur, adjust the pulse rate while referring to the speed reading displayed on the screen.
- ④ When you finish correcting the ship speed, push [ENTER].
- ⑤ Rotate [DIAL] to select the “Save” button, then push [ENTER].

• Temperature

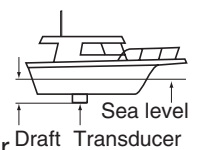
The following describes how to correct the water temperature detected by the temperature sensor.

- ① Select the “Temp” on the Sounder Adjustment screen.
- ② Push [ENTER] to enter the temperature setting.
- ③ Rotate [DIAL] to set temperature error.
- ④ When you finish correcting the water temperature, push [ENTER].
- ⑤ Rotate [DIAL] to select the “Save” button, then push [ENTER].

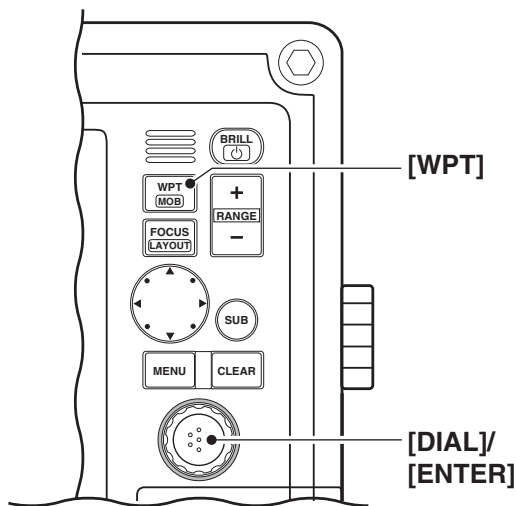
• Draft

The following describes how to correct for draft (difference in height between the sea level and the transducer installation position) to ensure proper images.

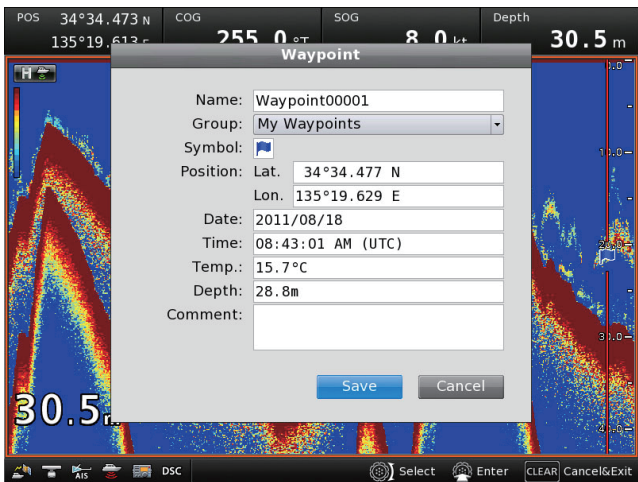
- ① Select the “Draft” on the Sounder Adjustment screen.
- ② Push [ENTER] to enter the setting.
- ③ Rotate [DIAL] to set the Draft value.
- ④ When you finish correcting for draft, push [ENTER].
- ⑤ Rotate [DIAL] to select the “Save” button, then push [ENTER].



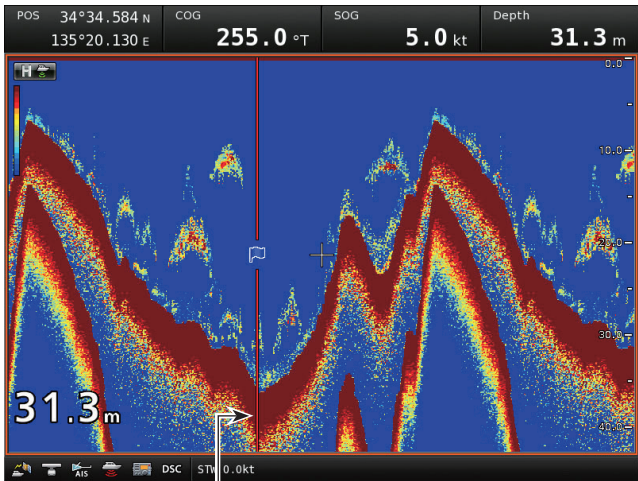
Waypoint operation



Waypoint screen



Sounder Waypoint screen



Waypoint marker appears

- ① Push [WPT] to create the waypoint to the your current position.
 - The Waypoint setting screen appears.
- ② Rotate [DIAL] to select the desired item, and push [ENTER].
 - If you do not change the waypoint contents, go to step ③.
 - Name : See page 2-6
 - Group : See page 2-6
 - Symbol : See page 2-7
 - Position : See page 2-7
 - Date : See page 2-7
 - Time : See page 2-8
 - Temperature : See page 2-8
 - Depth : See page 2-8
 - Comment : See page 2-8
- ③ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

Sounder Cursor Menu

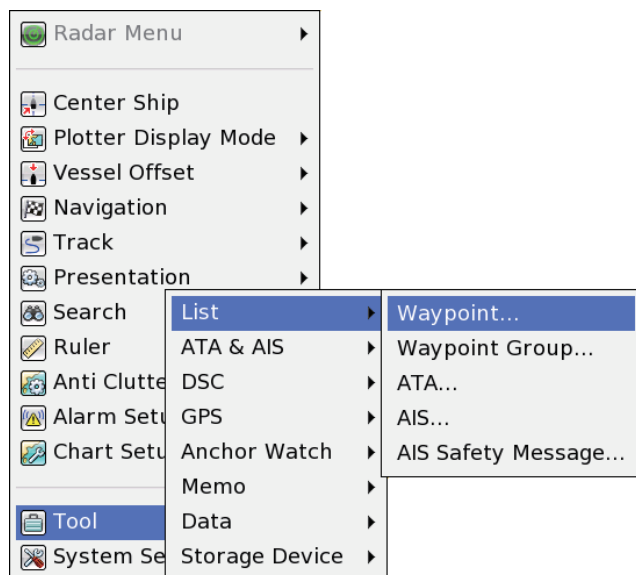
- ① Push [SUB].
 - “Add Waypoint...” appears.

Add Waypoint...
- ② Push [ENTER] to enter the Waypoint screen.
- ③ Rotate [DIAL] to select the desired item, and push [ENTER].
 - If you do not change the waypoint contents, go to step ④.
 - Name : See page 2-6
 - Group : See page 2-6
 - Symbol : See page 2-7
 - Position : See page 2-7
 - Date : See page 2-7
 - Time : See page 2-8
 - Temperature : See page 2-8
 - Depth : See page 2-8
 - Comment : See page 2-8
- ④ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

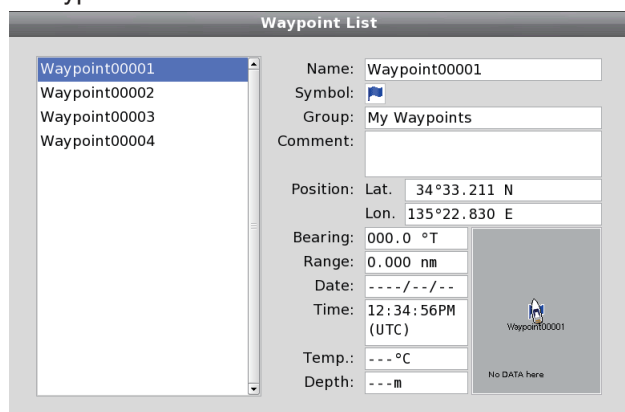
■ Tool	5-2
■ Text programming	5-30
■ System Setup	5-31
■ Rest Item List	5-35
■ Video Screen operation	5-38
■ Navigation Screen operation	5-41
■ GPS Setup Datum Abbreviation	5-43
■ Specification	5-45
■ Error message list	5-46

■ Tool (MENU ▸ Tool)

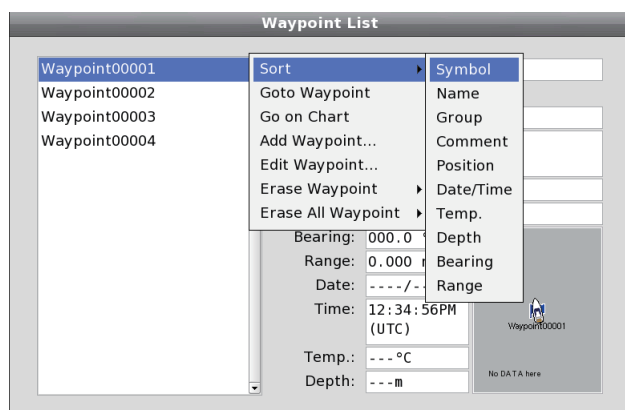
<Waypoint List menu>



<Waypoint List screen>



<Sort menu>



◇ List

• Waypoint List

(MENU ▸ Tool ▸ List ▸ Waypoint...)

The registered Waypoints are listed.

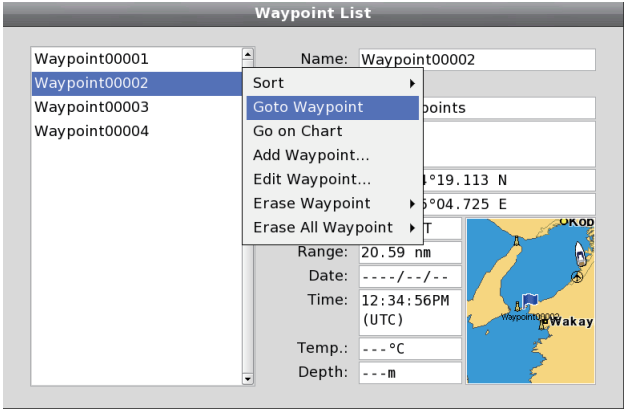
- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Tool” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Tool” menu.
- ④ Rotate [DIAL] until the “List” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] until the “Waypoint...” menu becomes highlighted, and push [ENTER].
 - The Waypoint List is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Sort
 - Goto Waypoint
 - Go on Chart
 - Add Waypoint
 - Edit Waypoint
 - Erase Waypoint
 - Erase All Waypoint)
- ⑥ Rotate [DIAL] to select the desired Waypoint.
 - The selected Waypoint data are displayed.
- ⑦ Push [CLEAR] to exit the “Waypoint...” menu.

• Waypoint List—Sort

The registered Waypoint data can be sorted by its Symbol, Name, Group, Comment, Position, Date/Time, Temperature, Depth, Bearing and Range.

- ① When the Waypoint List is displayed, push [SUB] to display the Waypoint Sub Menu screen.
- ② Push [ENTER] to enter the “Sort” menu.
- ③ Rotate [DIAL] until your desired sort option becomes highlighted, and push [ENTER].
- ④ The registered Waypoint data are sorted by the selected option.

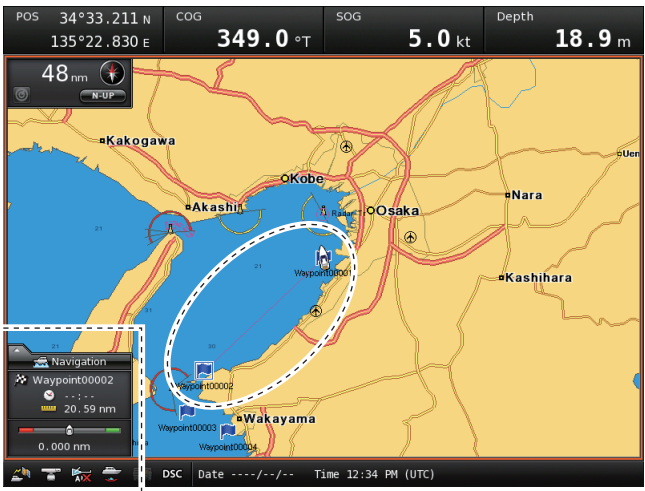
<Goto Waypoint menu>



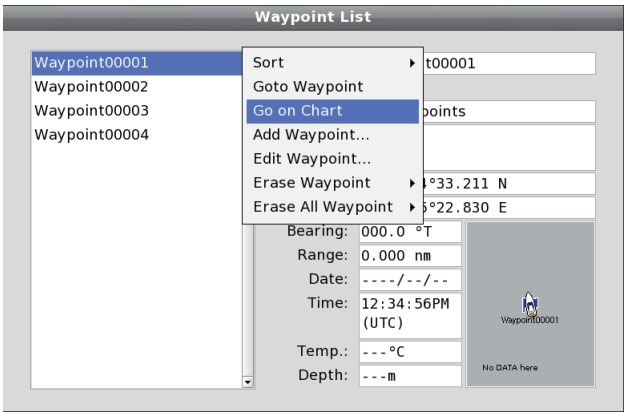
• Waypoint List—Goto Waypoint

The vessel can be navigated from the current position to the specified waypoint (within one section only).

- ① When the Waypoint List is displayed, rotate [DIAL] until the desired waypoint becomes highlighted.
- ② Push [SUB] to display the Waypoint Sub Menu screen.
- ③ Rotate [DIAL] until the “Goto Waypoint” menu becomes highlighted, and push [ENTER].
- ④ The Goto Waypoint navigation starts.
 - The navigation screen appears.



<Go on Chart menu>



• Waypoint List—Go on Chart

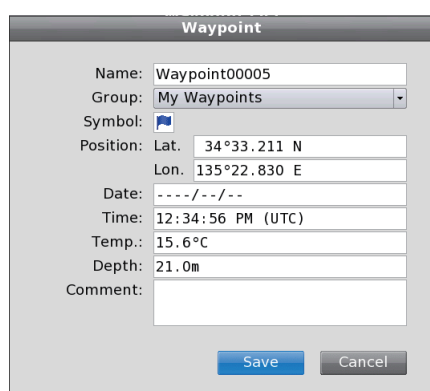
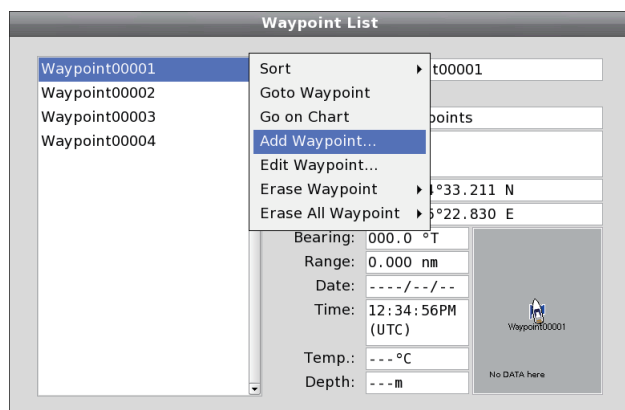
This function enables the cursor to move to the selected Waypoint on the plotter display.

- ① When the Waypoint List is displayed, rotate [DIAL] until the desired waypoint is highlighted, then push [SUB].
 - The Waypoint Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Go on Waypoint” menu is highlighted, then push [ENTER].
 - The Waypoint Sub Menu screen disappears, and the cursor automatically moves to the selected Waypoint.

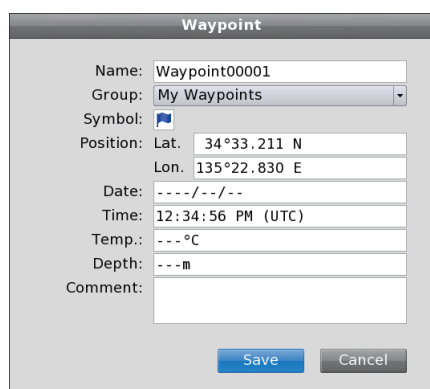
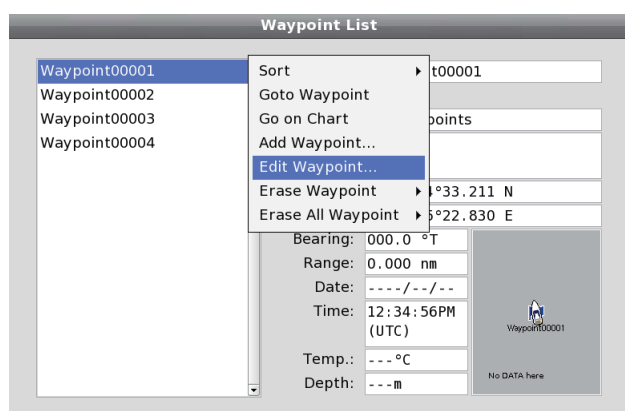
■ Tool (MENU ▸ Tool)

◇ List (Continued)

<Add Waypoint menu>



<Edit Waypoint menu>



• Waypoint List—Add Waypoint

A new waypoint can be created on the Waypoint Sub Menu screen.

NOTE: The maximum number of waypoints is 1000.

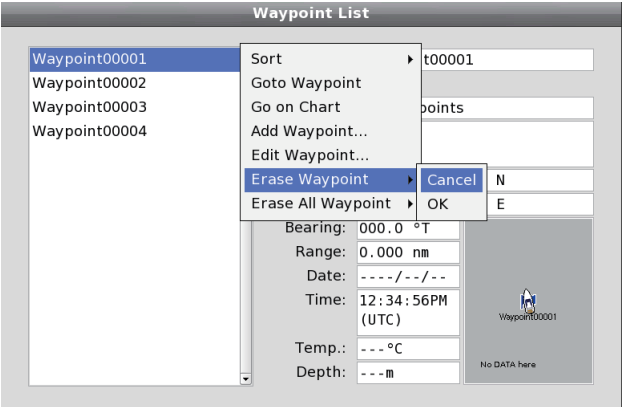
- ① When the Waypoint List is displayed, push [SUB] to display the Waypoint Sub Menu screen.
- ② Rotate [DIAL] until the “Add Waypoint” menu becomes highlighted, and push [ENTER].
 - “Waypoint” screen appears.
- ③ Rotate [DIAL] to select the desired item, and push [ENTER].
 - If you do not change the waypoint contents, go to step ④.
- Name : See page 2-7
- Group : See page 2-7
- Symbol : See page 2-7
- Position : See pages 2-7 and 2-8
- Date : See page 2-8
- Time : See page 2-8
- Temperature : See page 2-8
- Depth : See page 2-9
- Comment : See page 2-9
- ④ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

• Waypoint List—Edit Waypoint

A waypoint contents can be edited on the Waypoint Sub Menu screen.

- ① When the Waypoint List is displayed, rotate [DIAL] until the desired waypoint becomes highlighted.
- ② Push [SUB] to display the Waypoint Sub Menu screen.
- ③ Rotate [DIAL] until the “Edit Waypoint” menu becomes highlighted, and push [ENTER].
 - “Waypoint” screen appears.
- ④ Rotate [DIAL] to select the desired item, and push [ENTER].
 - If you do not change the waypoint contents, go to step ⑤.
- Name : See page 2-7
- Group : See page 2-7
- Symbol : See page 2-7
- Position : See pages 2-7 and 2-8
- Date : See page 2-8
- Time : See page 2-8
- Temperature : See page 2-8
- Depth : See page 2-9
- Comment : See page 2-9
- ⑤ Rotate [DIAL] to select “Save,” then push [ENTER] to save the route and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue, or select “No” if you want to cancel.

<Erase Waypoint menu>



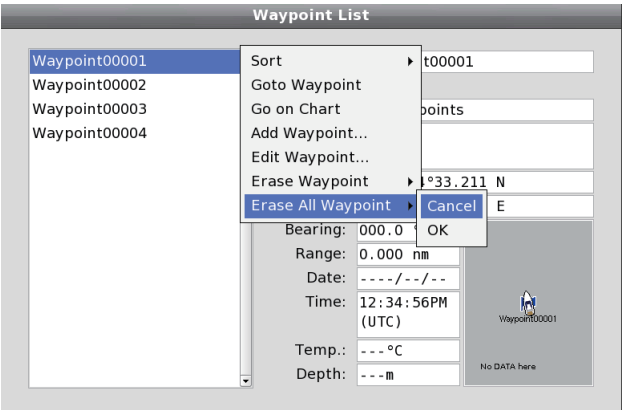
• Waypoint List—Erase Waypoint

A waypoint can be erased on the Waypoint Sub Menu screen.

NOTE: If the waypoint is set as destination or is part of a route, it can not be erased.

- ① When the Waypoint List is displayed, rotate [DIAL] until the desired waypoint becomes highlighted.
- ② Push [SUB] to display the Waypoint Sub Menu screen.
- ③ Rotate [DIAL] until the “Erase Waypoint” menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the waypoint erasing will be cancelled.

<Erase All Waypoint menu>



• Waypoint List—Erase All Waypoint

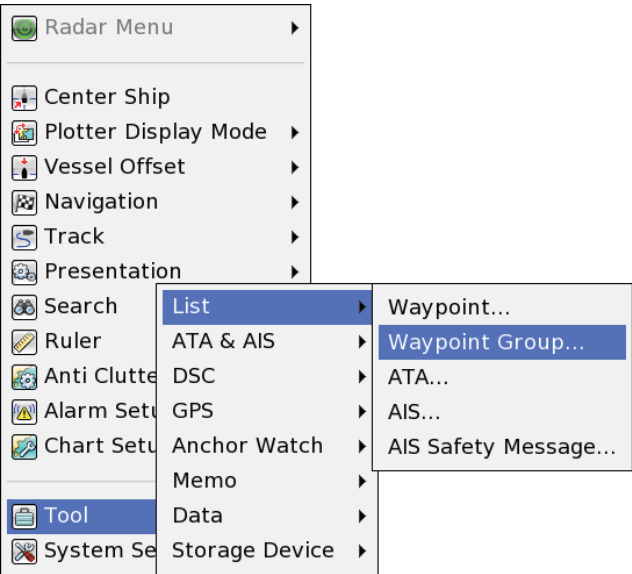
A waypoint can be erased on the Waypoint Sub Menu screen.

NOTE: If the waypoint is set as destination or is part of a route, it can not be erased.

- ① When the Waypoint List is displayed, push [SUB] to display the Waypoint Sub Menu screen.
- ② Rotate [DIAL] until the “Erase All Waypoint” menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the Waypoint and return to the previous screen.
 - If “Cancel” is selected, the waypoint erasing will be cancelled.

- Tool (MENU ▸ Tool)
- ◇ List (Continued)

<Waypoint Group List menu>



• **Waypoint Group List**
(MENU ▸ Tool ▸ List ▸ Waypoint Group...)
The registered Waypoint groups are listed.

- ① Push [MENU], then rotate [DIAL] until the “Tool” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “List” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the “Waypoint Group” menu is highlighted, then push [ENTER].
 - The Waypoint groups are displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Add Group
 - Edit Group
 - Erase Group
 - Erase All Group
- ④ Push [CLEAR] to exit the “Waypoint Group” menu.

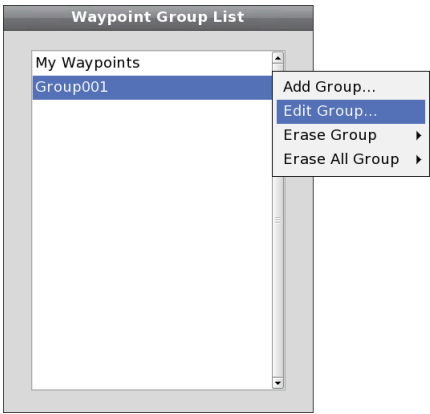
<Add Waypoint Group menu>



• **Waypoint Group List—Add Waypoint Group**
A new Waypoint Group can be created on the Waypoint Sub Menu screen.
NOTE: The maximum number of waypoints in a Waypoint Group is 100.

- ① When the Waypoint Group List is displayed, push [SUB] to display the Waypoint Group Sub Menu screen.
- ② Push [ENTER] to enter the “Add Group...” menu.
- ③ Rotate [DIAL] until the “Group Name” menu becomes highlighted, and push [ENTER].
 - See page 5-30 for details of the name programming.
 - If you do not change the waypoint contents, go to step ④.
- ④ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint Group and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

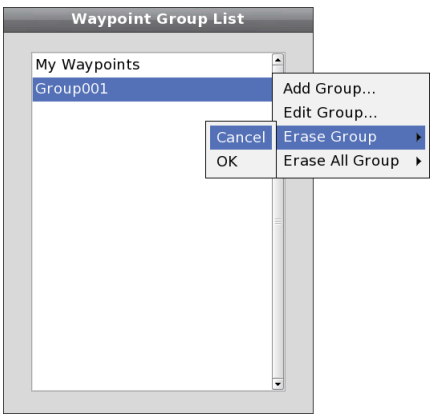
<Edit Waypoint Group menu>



• **Waypoint Group List—Edit Waypoint Group**
A Waypoint Group contents can be edited on the Waypoint Group Sub Menu screen.

- ① When the Waypoint Group List is displayed, rotate [DIAL] until the desired Waypoint Group becomes highlighted.
- ② Push [SUB] to display the Waypoint Group Sub Menu screen.
- ③ Rotate [DIAL] until the “Edit Group...” menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] until the “Group Name” menu becomes highlighted, and push [ENTER].
 - See page 5-30 for details of the name programming.
 - If you do not change the waypoint contents, go to step ⑤.
- ⑤ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Waypoint Group and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue, or select “No” if you want to cancel.

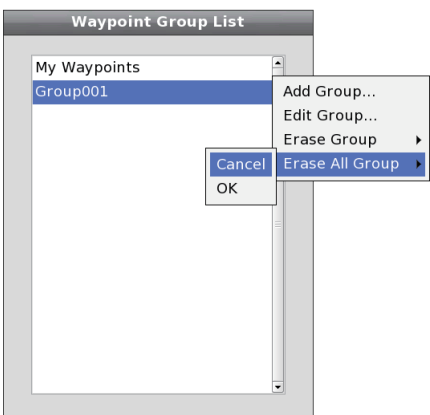
<Erase Waypoint Group menu>



• **Waypoint Group List—Erase Group**
A Waypoint Group can be erased on the Waypoint Group Sub Menu screen.

- ① When the Waypoint Group List is displayed, rotate [DIAL] until the desired waypoint group becomes highlighted.
- ② Push [SUB] to display the Waypoint Group Sub Menu screen.
- ③ Rotate [DIAL] until the “Erase Group” menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the selected Waypoint Group and return to the previous screen.
 - If “Cancel” is selected, the Waypoint Group erasing will be cancelled.

<Erase All Waypoint Group menu>



• **Waypoint Group List—Erase All Group**
A Waypoint Group can be erased on the Waypoint Group Sub Menu screen.

- ① When the Waypoint Group List is displayed, push [SUB] to display the Waypoint Group Sub Menu screen.
- ② Rotate [DIAL] until the “Erase All Group” menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all Waypoint Groups and return to the previous screen.
 - If “Cancel” is selected, the Waypoint Group erasing will be cancelled.

■ Tool (MENU ▸ Tool)

◇ List (Continued)

<ATA List screen>

ATA List (True)						
No.	CSE	SPD	Bearing	Range	CPA	TCPA
1	169.2°T	4.2kt	288.9°T	0.700nm	0.607nm	02m16s
2	168.6°T	1.7kt	284.0°T	0.945nm	0.855nm	03m35s
3	074.6°T	8.5kt	134.8°T	0.801nm	0.383nm	-04m25s

• ATA List

(MENU ▸ Tool ▸ List ▸ ATA...)

The ATA (Automatic Tracking Aid) list shows the targets which are automatically tracked.

Maximum number of the target displayed on the screen is 10.

- ① Push [MENU], then rotate [DIAL] until the “Tool” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “List” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the “ATA...” menu is highlighted, then push [ENTER].
 - The ATA List are displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Clear Target
 - Clear All Target
- ④ Push [CLEAR] to exit the “ATA...” menu.

• ATA List—Clear Target

A target displayed on the ATA list can be cleared on the ATA Sub Menu screen.

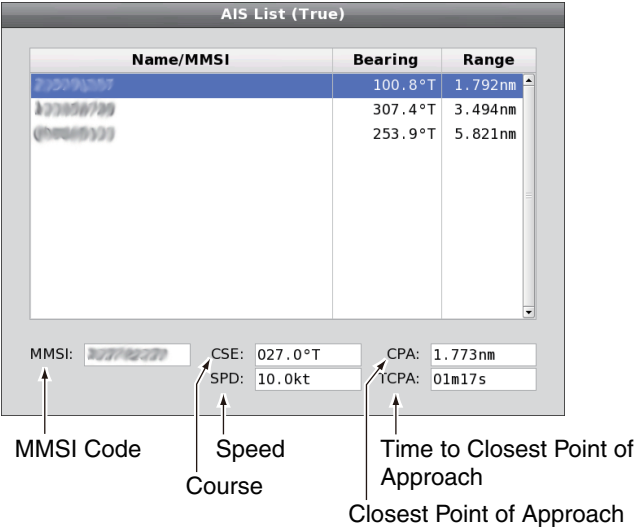
- ① When the ATA List is displayed, rotate [DIAL] until the desired target is highlighted.
- ② Push [SUB] to display the ATA Sub Menu screen.
- ③ Rotate [DIAL] until the “Clear Target” menu is highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select “OK,” then push [ENTER] to clear the ATA and return to the previous screen.
 - If “Cancel” is selected, the ATA erasing will be cancelled.

• ATA List—Clear All Target

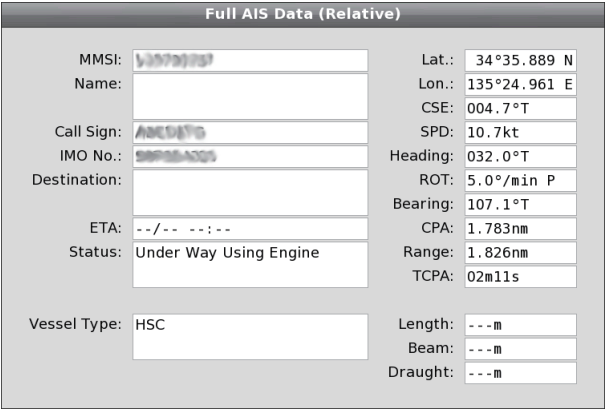
All target displayed on the ATA list can be cleared on the ATA Sub Menu screen.

- ① When the ATA List is displayed, push [SUB] to display the ATA Sub Menu screen.
- ② Rotate [DIAL] until the “Clear All Target” menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to save the ATA and return to the previous screen.
 - If “Cancel” is selected, the ATA erasing will be cancelled.

<AIS List screen>



<View Detail screen>



- MMSI Code
- Ship Name
- Call Sign
- IMO Number
- Destination
- ETA
- Navigation Status
- Vessel Type
- Latitude
- Longitude
- CSE
- Speed
- Heading
- Rate Of Turn
- Bearing
- CPA
- Range
- TCPA
- Length
- Beam
- Draught

• AIS List

(MENU ▸ Tool ▸ List ▸ AIS...)

The AIS List shows the vessels which transmitting AIS information.

- ① Push [MENU], then rotate [DIAL] until the “Chart Setup” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “List” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the “AIS...” menu is highlighted, then push [ENTER].
 - The vessels’ name or MMSIs are displayed.
 - When [SUB] is pushed, the following operations can be made:
 - View Detail...
 - Send Individual...
 - Register ID...
- ④ Push [CLEAR] to exit the “AIS...” menu.

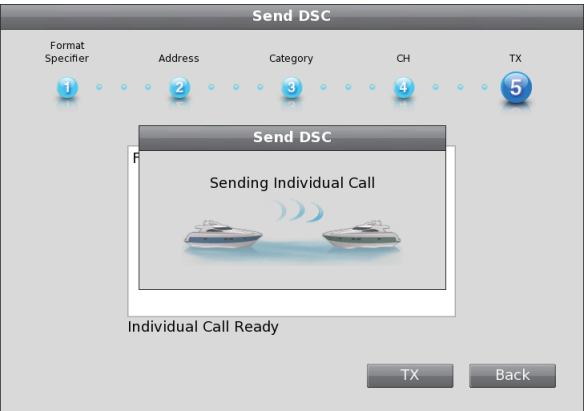
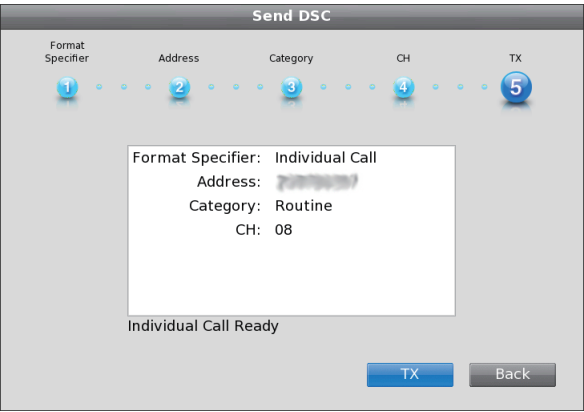
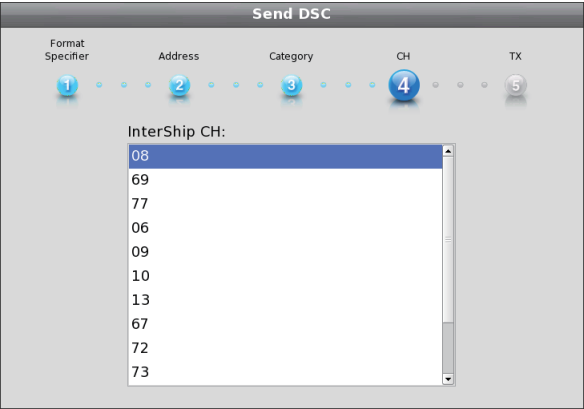
• AIS List—View Detail

The detail screen shows information about the selected AIS target.

- ① When the AIS List is displayed, rotate [DIAL] until the desired target is highlighted.
- ② Push [SUB] to display the AIS Sub Menu screen.
- ③ Rotate [DIAL] until the “View Detail...” menu is highlighted, and push [ENTER].

- Tool (MENU ▸ Tool)
- ◇ List (Continued)

• Send DSC screen

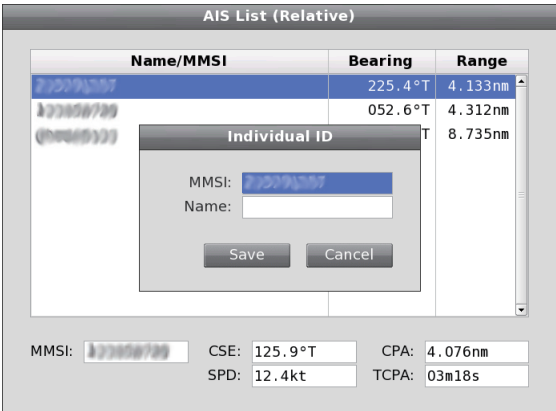


• AIS List—Send Individual

When a transceiver is connected, you can transmit an Individual DSC call to the selected AIS target.

- ① When the AIS List is displayed, rotate [DIAL] until the desired target is highlighted.
- ② Push [SUB] to display the AIS Sub Menu screen.
- ③ Rotate [DIAL] until the “Send Individual” menu is highlighted, and push [ENTER].
 - The Send DSC screen is displayed.
- ④ Rotate [DIAL] to select the desired Intership channel, and push [ENTER].
- ⑤ Rotate [DIAL] to select “TX,” and push [ENTER].
 - “Sending Individual Call” appears.
 - If Channel 70 is busy, the transceiver stands by until the channel becomes clear.
 - If the transceiver cannot make the call, “TX Error” appears. Select “Retry” or “Exit,” and push [ENTER].
- ⑥ After making the Individual DSC call, “Individual Call TX Complete” appears, and returns to the AIS List screen.

• Individual ID input screen



• AIS List—Register ID

The detected AIS target IDs and its name can be registered and named with up to 10 characters.

- ① When the AIS List is displayed, push [SUB] to display the AIS Sub Menu screen.
- ② Rotate [DIAL] until the “Register ID...” menu becomes highlighted, and push [ENTER].

If you want to change its name, rotate [DIAL] to select Name, then push [ENTER]. Text programming screen appears, then program its name.

- ③ Rotate [DIAL] to select “Save,” then push [ENTER] to save the ID and name, and return to the previous screen.
 - If “Cancel” is selected, the AIS target IDs and its name registration will be cancelled.

■ Tool (MENU ▸ Tool)

◇ List (Continued)

<AIS Safety Message screen>

The screenshot shows the 'Safety Message List' screen. On the left, there is a 'Source ID' list with several entries. On the right, the following fields are displayed: Source ID: [redacted], Destination ID: Broadcast, Date: 2011/08/08, Time: 16:07 (UTC), and Message: ABCDEFG.

This screenshot is identical to the one above, showing the 'Safety Message List' screen with the 'Broadcast' destination ID.

When 'Broadcast' is displayed in the "Destination ID," its message is sent to the all AIS equipped vessels.

• AIS Safety Message

(MENU ▸ Tool ▸ List ▸ AIS Safety Message...)

The AIS Safety Message that is sent to the AIS equipped vessel in the area can be displayed on this screen.

NOTE: The maximum number of AIS Safety Message is 20.

- ① Push [MENU], then rotate [DIAL] until the "Tool" menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the "List" menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the "AIS Safety Message..." menu is highlighted, then push [ENTER].
 - The Safety Message List is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Erase Message
 - Erase All Message
- ④ Rotate [DIAL] to select the desired Source ID to show the message details.
- ⑤ Push [CLEAR] to exit the "AIS Safety Message..." menu.

• AIS Safety Message—Erase Message

An AIS Safety Message can be erased on the Safety Message List Sub Menu screen.

- ① When the Safety Message List is displayed, rotate [DIAL] until the desired Source ID becomes highlighted.
- ② Push [SUB] to display the Safety Message List Sub Menu screen.
- ③ Rotate [DIAL] until the "Erase Message" menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select "OK," then push [ENTER] to erase the selected Message and return to the previous screen.
 - If "Cancel" is selected, the Safety Message erasing will be cancelled.

• AIS Safety Message List—Erase All Message

An AIS Safety Message can be erased on the Safety Message List Sub Menu screen.

- ① When the Safety Message List is displayed, push [SUB] to display the Safety Message List Sub Menu screen.
- ② Rotate [DIAL] until the "Erase All Message" menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select "OK," then push [ENTER] to erase all Message and return to the previous screen.
 - If "Cancel" is selected, the Safety Message erasing will be cancelled.

◇ ATA & AIS

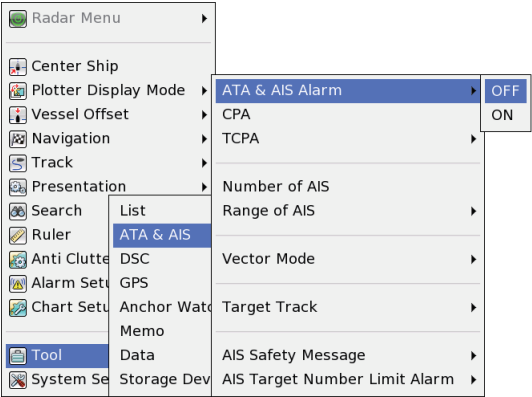
- ① Push [MENU], then rotate [DIAL] until the “Tool” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “ATA & AIS” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

• ATA & AIS Alarm

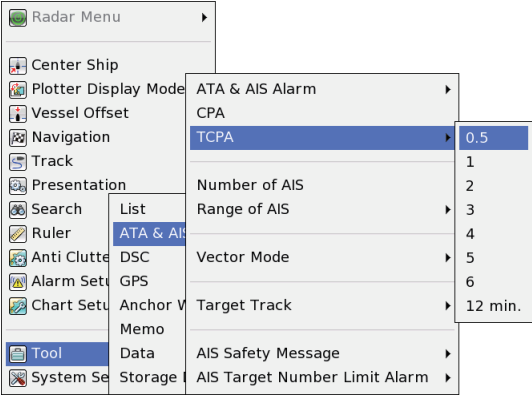
(MENU ▸ Tool ▸ ATA & AIS ▸ ATA & AIS Alarm)
The ATA and AIS Alarm function can be turned ON or OFF.

- OFF : The ATA and AIS Alarm function is OFF.
- ON : The ATA and AIS alarm is emitted when both CPA and TCPA reaches the limit.

<ATA & AIS Alarm menu>



<CPA menu>

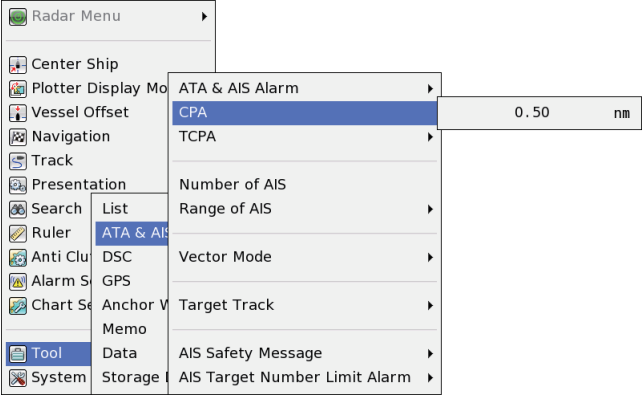


• CPA

(MENU ▸ Tool ▸ ATA & AIS ▸ CPA)
This setting helps you find a dangerous target to avoid a collision with alarm when both CPA (Closest Point of Approach) and TCPA (Time to CPA) becomes below this setting value (the approach watch area).

- ➡ Rotate [DIAL] to set the CPA value to between 0.50 nm and 12.0 nm in 0.01 nm step. (Default: 0.50 nm)

<TCPA menu>



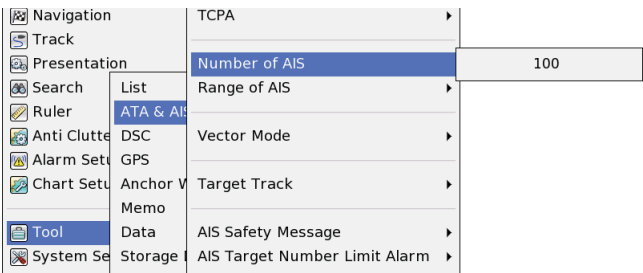
• TCPA

(MENU ▸ Tool ▸ ATA & AIS ▸ TCPA)
This setting helps you find a dangerous target to avoid a collision with alarm when both CPA (Closest Point of Approach) and TCPA (Time to CPA) becomes below this setting value (the approach watch area).

- ➡ Rotate [DIAL] to select the TCPA value to between 0.5, 1, 2, 3, 4, 5, 6 and 12 minutes. (Default: 0.5 min.)

■ Tool (MENU ▸ Tool)
◇ ATA & AIS (Continued)

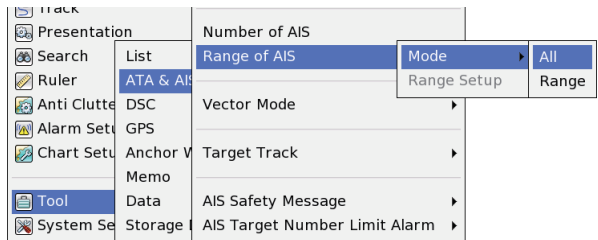
<Number of AIS menu>



• Number of AIS
(MENU ▸ Tool ▸ ATA & AIS ▸ Number of AIS)

➡ Rotate [DIAL] to set the number of AIS target which is displayed on the AIS list to between 10 and 100 in 1 digit step. (Default: 100)

<Range of AIS – Mode menu>

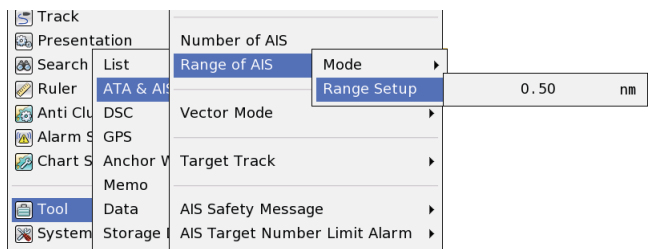


• Range of AIS – Mode
(MENU ▸ Tool ▸ ATA & AIS ▸ Range of AIS ▸ Mode)

Set the AIS information display range on the AIS list.

- All : The received AIS information are displayed up to the number of AIS setting.
- Range : The AIS information which is transmitted in the Range setup setting area are displayed.

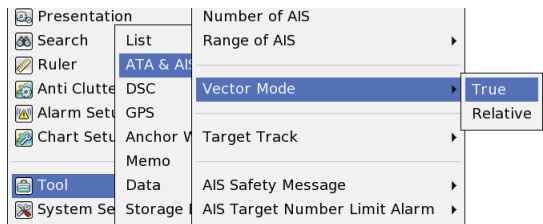
<Range of AIS – Range Setup menu>



• Range of AIS – Range Setup
(MENU ▸ Tool ▸ ATA & AIS ▸ Range of AIS ▸ Range Setup)

➡ Rotate [DIAL] to set the AIS information display range to between 0.25 nm and 24.00 nm in 1 nm step. (Default: 0.50 nm)

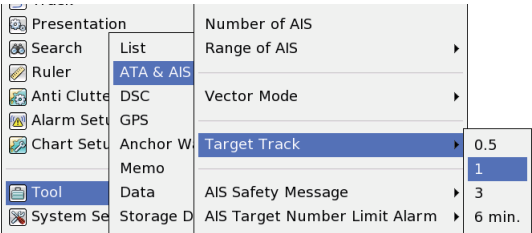
<Vector Mode menu>



• Vector Mode
(MENU ▸ Tool ▸ ATA & AIS ▸ Vector Mode)

- True (True vector) : The predicted true motion of a target as the result of your own ship's direction and speed input.
- Relative (Relative vector) : The predicted movement of a target relative to your own ship.

<Target Track menu>

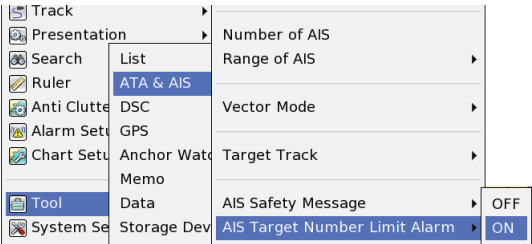


- **Target Track**
(MENU ▸ Tool ▸ ATA & AIS ▸ Target Track)

The track data is updated at this specified tracking intervals.

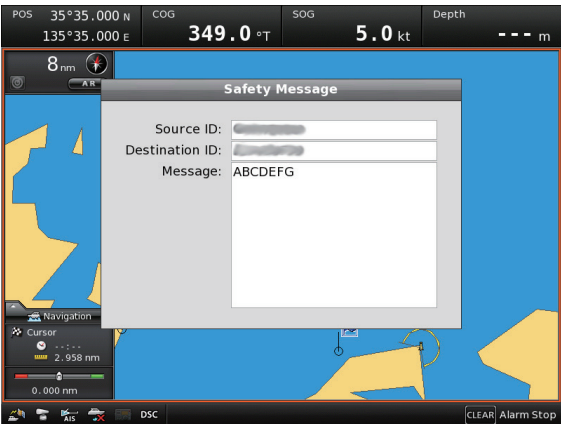
- ➡ Rotate [DIAL] to select the track interval time between 0.5, 1, 3 and 6 minutes. (Default: 1 min.)

<AIS Target Number Limit Alarm menu>



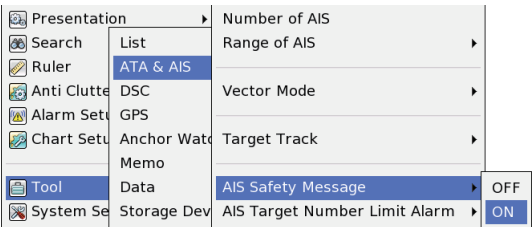
- **AIS Safety Message**
(MENU ▸ Tool ▸ ATA & AIS ▸ AIS Safety Message)
The AIS Safety message can be displayed on the pop-up screen, and sound beeps when it is received.

- **OFF** : The AIS Safety message is not displayed on the pop-up screen, and no beep sound even if it is received.
- **ON** : The AIS Safety message is displayed on the pop-up screen, and the beep sounds when it is received.
 - When 'Broadcast' is displayed in the "Destination ID," the message is sent to all AIS equipped vessels.



When the AIS Safety Message pop-up screen is displayed.

<AIS Safety Message menu>



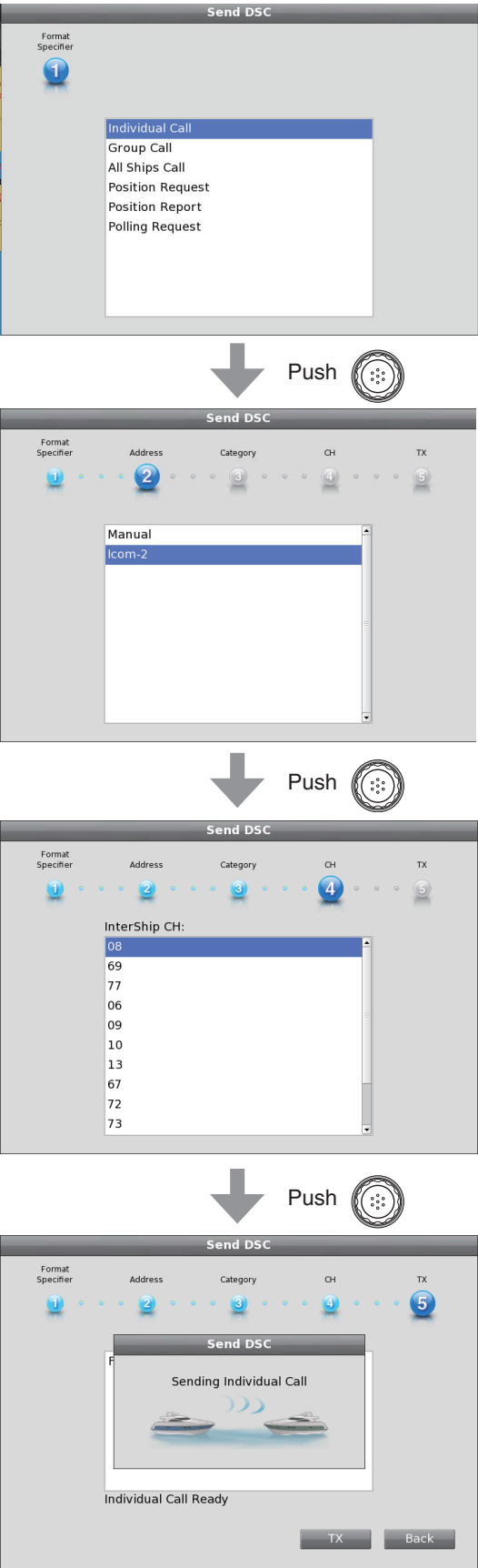
- **AIS Target Number Limit Alarm**
(MENU ▸ Tool ▸ ATA & AIS ▸ AIS Target Number Limit Alarm)

When the number of detected AIS targets expands the setting value of "Number of AIS," this function sounds alarm.

- **OFF** : The alarm does not sound even if the number of detected AIS targets expands the "Number of AIS" setting value.
- **ON** : The alarm sounds when the number of detected AIS targets expands the "Number of AIS" setting value.

■ Tool (MENU ▸ Tool) (Continued)

• Send DSC screen



◇ DSC

- ① Push [MENU], then rotate [DIAL] until the “Tool” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “DSC” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

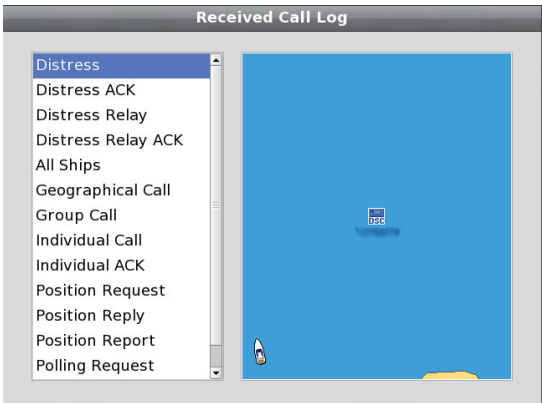
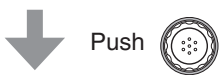
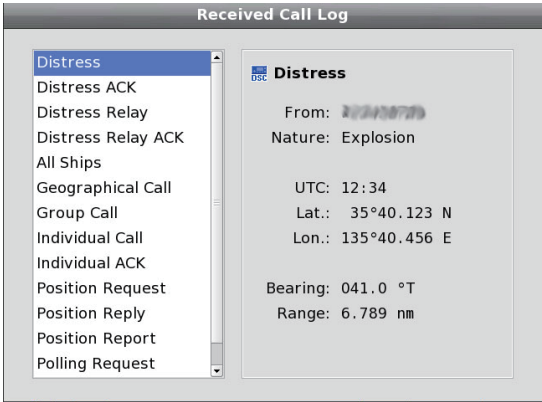
• Send DSC...
(MENU ▸ Tool ▸ DSC ▸ Send DSC...)

The connected transceiver can be transmitted DSC call by operating MarineCommander™.

Ex.) Transmitting Individual Call

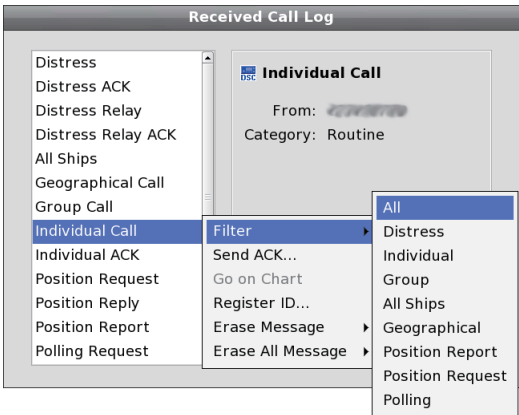
- ① Rotate [DIAL] to select the desired Call, then push [ENTER].
 - Individual Call, Group Call, All Ships Call, Position Request, Position Report or Polling Request can be selected.
- ② Rotate [DIAL] to select the Address, then push [ENTER].
 - When the Individual ID is preset, the preset MMSI or Name can be selected.
 - When Manual input is selected, Input DSC Address screen appears.
- ③ Rotate [DIAL] to select a Category, then push [ENTER].
 - Depending on the connected transceiver or selected Call, this step will be automatically skipped.
- ④ Rotate [DIAL] to select an InterShip Channel, then push [ENTER].
- ⑤ Select the “TX” button and push [ENTER] to transmit an Individual Call.

• Received Call Log screen



(When the selected call included its position data, push [ENTER] to put the transmitted station's position on the map when the Call has been transmitted.)

<Received Call Log—Filter menu>



• Received Call Log...

(MENU ▸ Tool ▸ DSC ▸ Received Call Log...)
This screen shows the received Call Log for the connected transceiver.

NOTE: The maximum number of received DSC message is 100.

- ① Rotate [DIAL] to select a received Call.
- ② Push [ENTER] to put the transmitted station's position on the map when the Call has been transmitted.
 - When [SUB] is pushed, the following operations can be made:
 - Filter
 - Send ACK...
 - Go on Chart
 - Register ID...
 - Erase Message
 - Erase All Message
- ③ Push [CLEAR] to exit the screen and return to the Focus bar.

NOTE: When there is an unread message including the position information in "Received Call Log," the message is displayed with bold text.

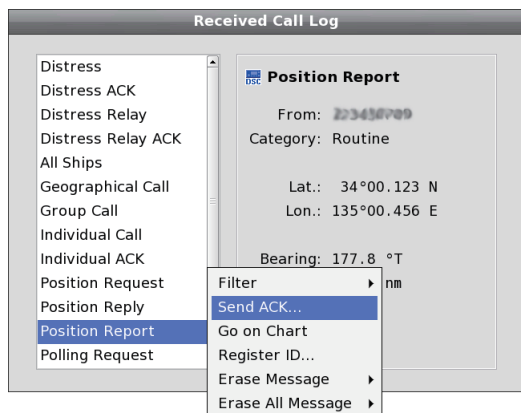
• Received Call Log—Filter

The call log type which appears on the screen can be selected on the Received Call Log Sub Menu screen.

- ① When the Received Call Log screen is displayed, rotate [DIAL] until the desired call log is highlighted, then push [SUB].
 - The Received Call Log Sub Menu screen is displayed.
- ② Push [ENTER] to enter the "Filter" menu.
- ③ Rotate [DIAL] to select the desired call type to be displayed on the screen.
- ④ Push [ENTER] to set, and return to the previous screen.

■ Tool (MENU ▸ Tool) (Continued)

<Received Call Log—Send ACK menu>

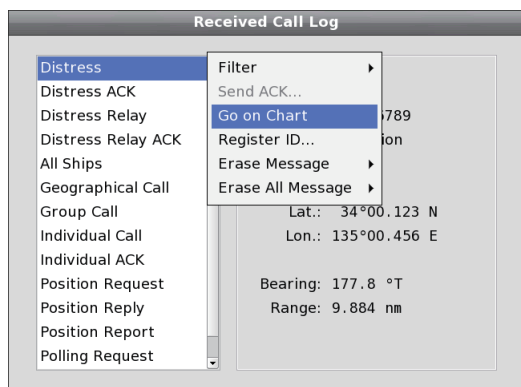


• Received Call Log—Send ACK

When an Individual, Position Request, Position Report and Polling Request is received, an acknowledgement Call can be sent, respectively.

- ① When the Received Call Log screen is displayed, rotate [DIAL] until the "Individual Call," "Position Request," "Position Report" or "Polling Request" is highlighted, then push [SUB].
 - The Received Call Log Sub Menu screen is displayed.
- ② Rotate [DIAL] until the "Send ACK..." menu is highlighted, then push [ENTER].
 - The Send DSC screen is displayed.
- ③ When "Individual Call" is selected in step ①, rotate [DIAL] to select "Able to Comply," "Propose New Channel" or "Unable to Comply" is highlighted, then push [ENTER].
- ④ Rotate [DIAL] to select "TX," then push [ENTER] to transmit the acknowledgement Call.

<Received Call Log—Go on Chart menu>

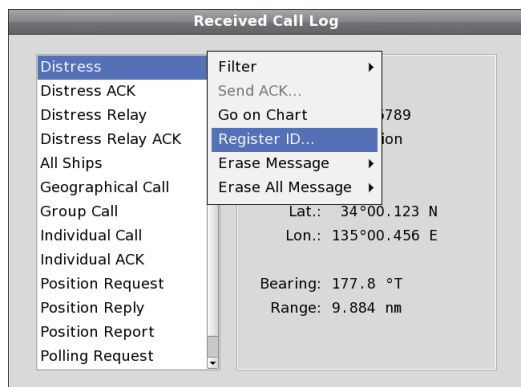


• Received Call Log—Go on Chart

This function enables the cursor to move to the icon of the selected message log on the plotter display.

- ① When the Received Call Log screen is displayed, rotate [DIAL] until the desired call log is highlighted, then push [SUB].
 - The Received Call Log Sub Menu screen is displayed.
- ② Rotate [DIAL] until the "Go on Chart" menu is highlighted, then push [ENTER].
 - The Received Call Log Sub Menu screen disappears, and the cursor automatically moves to the icon of the selected message log.

<Received Call Log—Register ID menu>



• Received Call Log—Register ID

The DSC target IDs and its name can be registered and named with up to 10 characters.

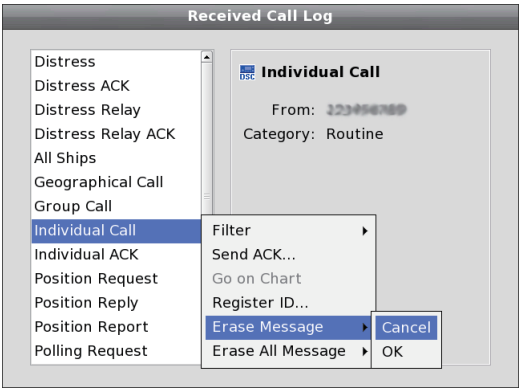
- ① Rotate [DIAL] until the desired call log is highlighted, then push [SUB].
 - The Received Call Log Sub Menu screen is displayed.
- ② Rotate [DIAL] until the "Register ID..." menu is highlighted, then push [ENTER].

If you want to change its name, rotate [DIAL] to select Name, then push [ENTER].

Text programming screen appears, then program its name.

- ③ Rotate [DIAL] to select "Save," then push [ENTER] to save the ID and name, and return to the previous screen.
 - If "Cancel" is selected, the AIS target IDs and its name registration will be cancelled.

<Received Call Log—Erase Message menu>

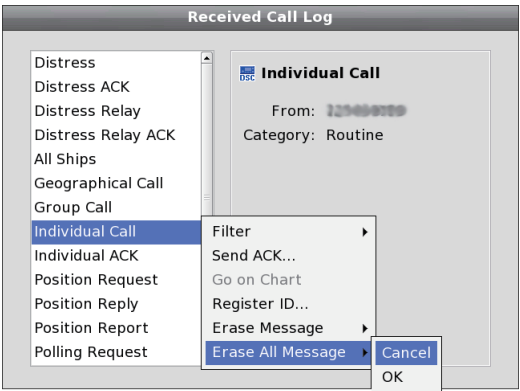


• Received Call Log—Erase Message

A message can be erased on the Received Call Log Sub Menu screen.

- ① When the Received Call Log screen is displayed, rotate [DIAL] until the desired call log is highlighted, then push [SUB].
 - The Received Call Log Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase Message” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the message and return to the previous screen.
 - If “Cancel” is selected, the message erasing will be cancelled.

<Received Call Log—Erase All Message menu>

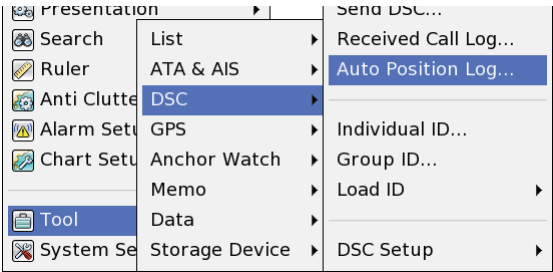


• Received Call Log—Erase All Message

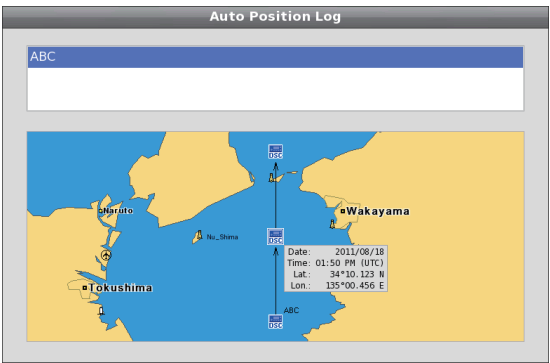
All messages can be erased on the Received Call Log Sub Menu screen.

- ① When the Route List screen is displayed, rotate [DIAL] until the desired route is highlighted, then push [SUB].
 - The Route List Sub Menu screen is displayed.
- ② Rotate [DIAL] until the “Erase All Message” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all message and return to the previous screen.
 - If “Cancel” is selected, the all message erasing will be cancelled.

<Auto Position Log menu>



• Auto Position Log screen



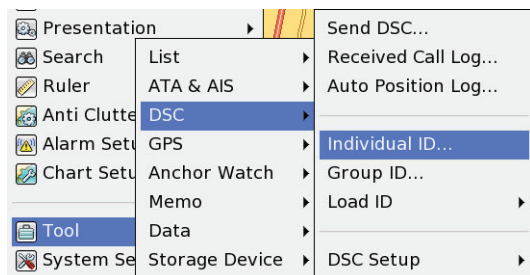
• Auto Position Log

(MENU ▶ Tool ▶ DSC ▶ Auto Position Log...)
This screen shows log for the specified vessel's position. The Vessel is specified in the DSC Setup Menu in this DSC menu.
Make sure that the registered Individual ID has already been selected in DSC Setup menu. (p. 5-24)

- ① Push [ENTER] to select a vessel.
- ② Rotate [DIAL] to select Position log.
- ③ Push [ENTER] to put the transmitted station's position on the map when the Call has been transmitted.
- ④ Push [CLEAR] to exit the screen and return to the Focus bar.

■ Tool (MENU ▸ Tool) (Continued)

<Individual ID... menu>



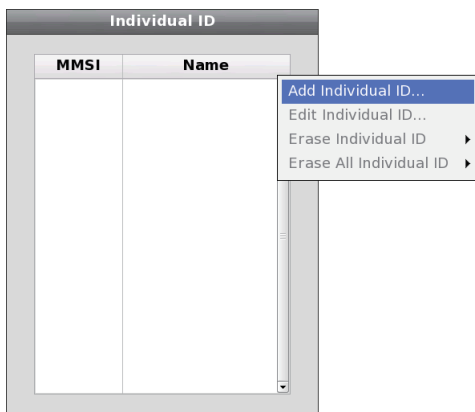
• Individual ID...

(MENU ▸ Tool ▸ DSC ▸ Individual ID...)

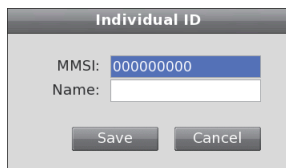
The registered Individual IDs are listed.

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Tool” menu becomes high-lighted.
- ③ Push [ENTER] to enter the “Tool” menu.
- ④ Rotate [DIAL] until the “DSC” menu becomes high-lighted, and push [ENTER].
- ⑤ Rotate [DIAL] until the “Individual ID...” menu becomes highlighted, and push [ENTER].
 - The Individual ID List is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Add Individual ID...
 - Edit Individual ID...
 - Erase Individual ID
 - Erase Individual ID
- ⑥ Push [CLEAR] to exit the “Individual ID...” menu.

<Individual ID—Add Individual ID menu>



• Individual ID screen



• Individual ID—Add Individual ID

A new Individual ID can be created on the Individual ID Sub Menu screen.

NOTE: The maximum number of Individual ID is 200.

- ① When the Individual ID List is displayed, push [SUB] to display the Individual ID Sub Menu screen.
- ② Push [ENTER] to enter the “Add Individual ID” menu.
 - “Individual ID” screen appears.
- ③ Rotate [DIAL] to select the desired item, and push [ENTER].
 - See below for details.
- ④ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Individual ID and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

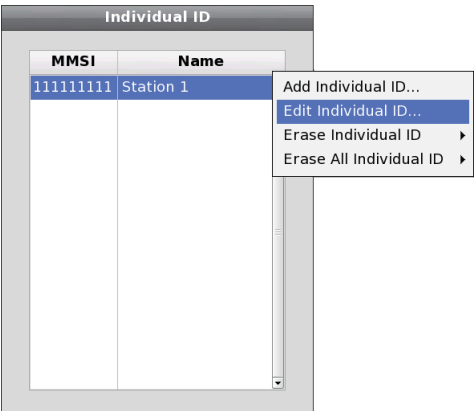
MMSI code programming:

- ① Rotate [DIAL] to select “MMSI,” and push [ENTER].
- ② Rotate [DIAL] to set the code, then after inputting the 9 digit code, push [ENTER] to set.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.
 - The first digit is specified as ‘0’ for a Group ID.
 - The first two digits are ‘0’ for any Coast station ID.

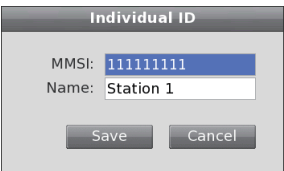
Name programming:

- ① Rotate [DIAL] to select “Name,” and push [ENTER].
- ② Input a Individual ID name of up to 10 characters.
 - See page 5-30 for programming details.
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

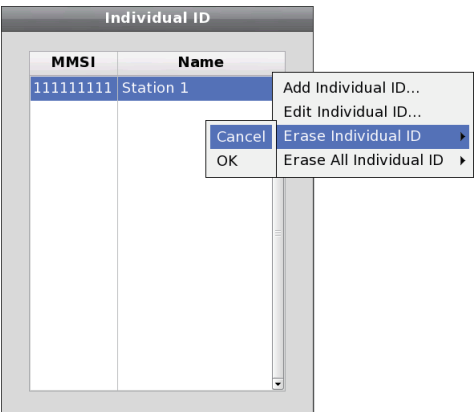
<Individual ID—Edit Individual ID menu>



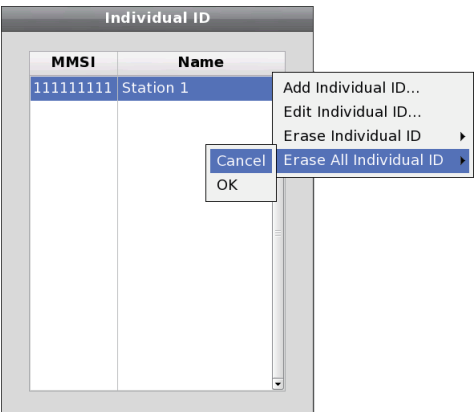
• Individual ID screen



<Individual ID—Erase Individual ID menu>



<Individual ID—Erase All Individual ID menu>



• Individual ID—Edit Individual ID

An Individual ID contents can be edited on the Individual ID Sub Menu screen.

- ① When the Individual ID List is displayed, rotate [DIAL] until the desired Individual ID becomes highlighted.
- ② Push [SUB] to display the Individual ID Sub Menu screen.
- ③ Rotate [DIAL] until the “Edit Individual ID” menu becomes highlighted, and push [ENTER].
 - “Individual ID” screen appears.
- ③ Rotate [DIAL] to select the desired item, and push [ENTER].
 - See the previous page for details.
- ⑤ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Individual ID and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue, or select “No” if you want to cancel.

• Individual ID—Erase Individual ID

An Individual ID can be erased on the Individual ID Sub Menu screen.

- ① When the Individual ID List is displayed, rotate [DIAL] until the desired Individual ID becomes highlighted.
- ② Push [SUB] to display the Individual ID Sub Menu screen.
- ② Rotate [DIAL] until the “Erase Individual ID” menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the Individual ID and return to the previous screen.
 - If “Cancel” is selected, the Individual ID erasing will be cancelled.

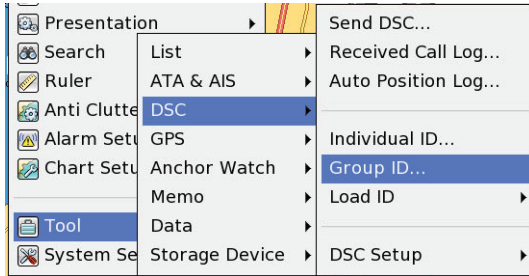
• Individual ID—Erase All Individual ID

All Individual ID can be erased on the Individual ID Sub Menu screen.

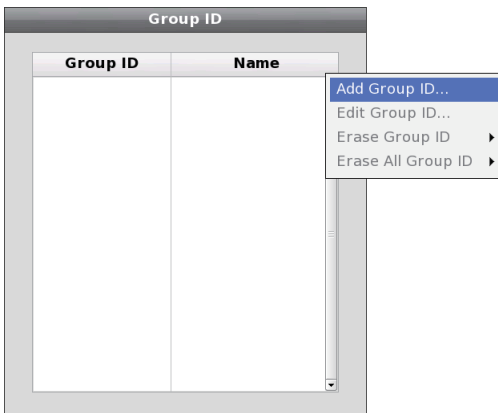
- ① When the Individual ID List is displayed, push [SUB] to display the Individual ID Sub Menu screen.
- ② Rotate [DIAL] until the “Erase All Individual ID” menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all Individual ID and return to the previous screen.
 - If “Cancel” is selected, the Individual ID erasing will be cancelled.

■ Tool (MENU ▸ Tool) (Continued)

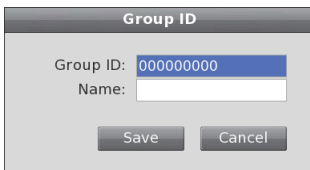
<Group ID... menu>



<Group ID—Add Group ID menu>



- **Group ID screen**



- Group ID...

(MENU ▷ Tool ► DSC ► Group ID...)

The registered Group IDs are listed.

- ① Push [MENU] to enter the Menu screen.
- ② Rotate [DIAL] until the “Tool” menu becomes highlighted.
- ③ Push [ENTER] to enter the “Tool” menu.
- ④ Rotate [DIAL] until the “DSC” menu becomes highlighted, and push [ENTER].
- ⑤ Rotate [DIAL] until the “Group ID...” menu becomes highlighted, and push [ENTER].
 - The Group ID List is displayed.
 - When [SUB] is pushed, the following operations can be made:
 - Add Group ID...
 - Edit Group ID...
 - Erase Group ID
 - Erase Group ID
- ⑥ Push [CLEAR] to exit the “Group ID...” menu.

- **Group ID—Add Group ID**

A new Group ID can be created on the Group ID Sub Menu screen.

NOTE: The maximum number of Group ID is 100.

- ① When the Group ID List is displayed, push [SUB] to display the Group ID Sub Menu screen.
- ② Push [ENTER] to enter the “Add Group ID” menu.
 - “Group ID” screen appears.
- ③ Rotate [DIAL] to select the desired item, and push [ENTER].
 - See below for details.
- ④ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Group ID and return to the previous screen.
 - If “Cancel” is selected, the setting will be cancelled.

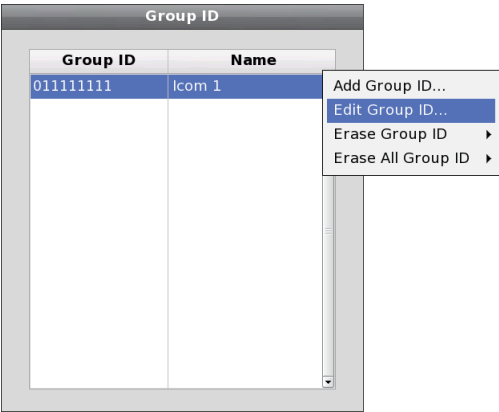
MMSI code programming:

- ➊ Rotate [DIAL] to select “MMSI,” and push [ENTER].
- ➋ Rotate [DIAL] to set the code, then after inputting the 9 digit code, push [ENTER] to set.
 - Push [▶] to move the cursor forward.
 - Push [◀] to move the cursor backward.
 - The first digit is specified as ‘0’ for a Group ID.
 - The first two digits are ‘0’ for any Coast station ID.

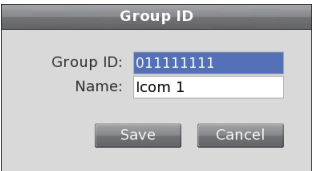
Name programming:

- ➊ Rotate [DIAL] to select “Name,” and push [ENTER].
- ➋ Input a Group ID name of up to 10 characters.
 - See page 5-30 for programming details.
- ➌ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

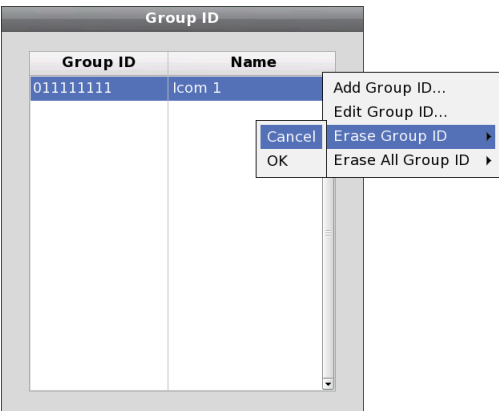
<Group ID—Edit Group ID menu>



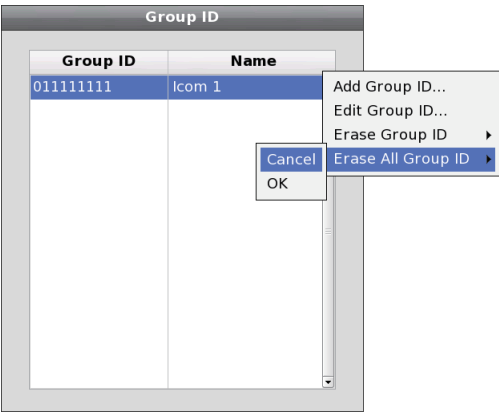
• Group ID screen



<Group ID—Erase Group ID menu>



<Group ID—Erase All Group ID menu>



• Group ID—Edit Group ID

An Group ID contents can be edited on the Group ID Sub Menu screen.

- ① When the Group ID List is displayed, rotate [DIAL] until the desired Group ID becomes highlighted.
- ② Push [SUB] to display the Group ID Sub Menu screen.
- ③ Rotate [DIAL] until the “Edit Group ID” menu becomes highlighted, and push [ENTER].
 - “Group ID” screen appears.
- ④ Rotate [DIAL] to select the desired item, and push [ENTER].
 - See the previous page for details.
- ⑤ Rotate [DIAL] to select “Save,” then push [ENTER] to save the Group ID and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue, or select “No” if you want to cancel.

• Group ID—Erase Group ID

An Group ID can be erased on the Group ID Sub Menu screen.

- ① When the Group ID List is displayed, rotate [DIAL] until the desired Group ID becomes highlighted.
- ② Push [SUB] to display the Group ID Sub Menu screen.
- ③ Rotate [DIAL] until the “Erase Group ID” menu becomes highlighted, and push [ENTER].
- ④ Rotate [DIAL] to select “OK,” then push [ENTER] to erase the Group ID and return to the previous screen.
 - If “Cancel” is selected, the Group ID erasing will be cancelled.

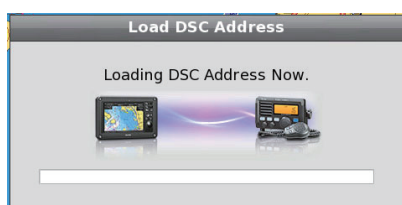
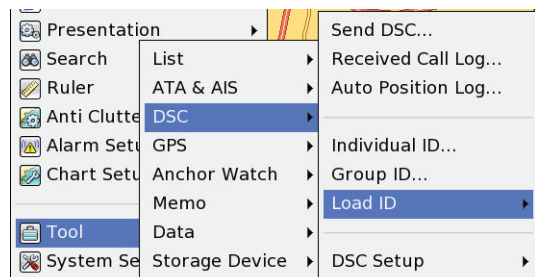
• Group ID—Erase All Group ID

All Group ID can be erased on the Group ID Sub Menu screen.

- ① When the Group ID List is displayed, push [SUB] to display the Group ID Sub Menu screen.
- ② Rotate [DIAL] until the “Erase All Group ID” menu becomes highlighted, and push [ENTER].
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to erase all Group ID and return to the previous screen.
 - If “Cancel” is selected, the Group ID erasing will be cancelled.

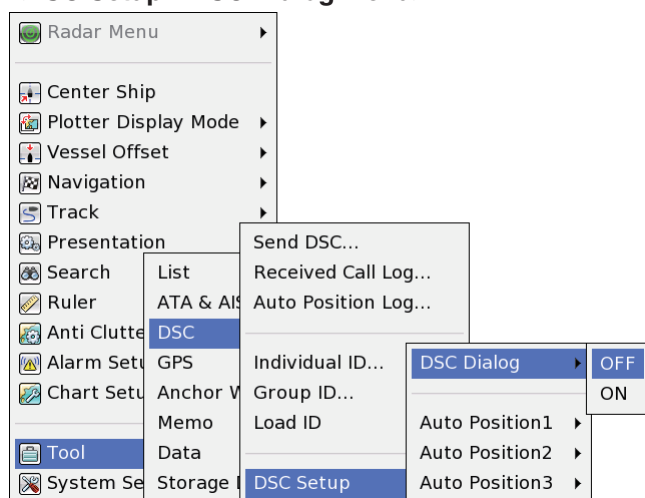
■ Tool (MENU ▸ Tool) (Continued)

<Load ID... menu>

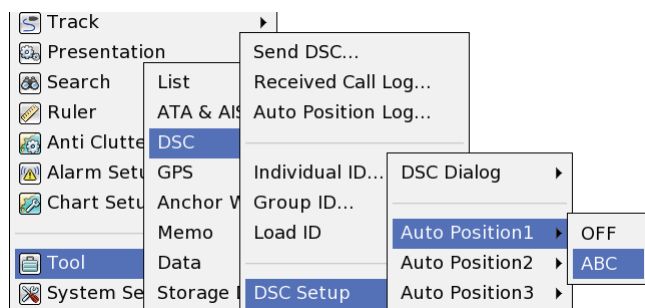


While loading.

<DSC Setup—DSC Dialog menu>



<DSC Setup—Auto Position 1/2/3 menu>



• Load ID

(MENU ▸ Tool ▸ DSC ▸ Load ID)

The Individual ID or Group ID can be load from the connected transceiver.

➡ Rotate [DIAL] to select “OK,” then push [ENTER] to load the transceiver’s data.

• DSC Setup—DSC Dialog

(MENU ▸ Tool ▸ DSC ▸ DSC Setup ▸ DSC Dialog)

The DSC Dialog function enables to plot the specified station’s position log.

➡ Rotate [DIAL] to turn the DSC Dialog function ON or OFF.

- OFF : The DSC Dialog function is OFF.
- ON : The DSC Dialog function is ON.

When the DSC call including the position information is received from the specified station, its position log is automatically plotted on the Auto Position Log screen.

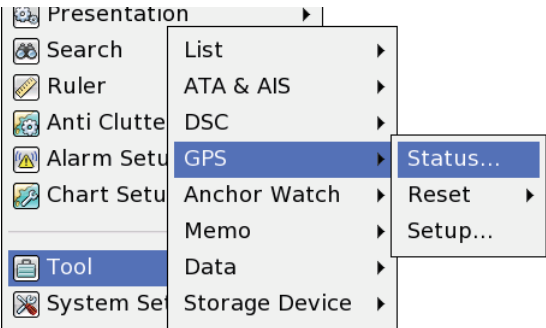
• DSC Setup—Auto Position 1/2/3

(MENU ▸ Tool ▸ DSC ▸ DSC Setup ▸ Auto Position 1/2/3)

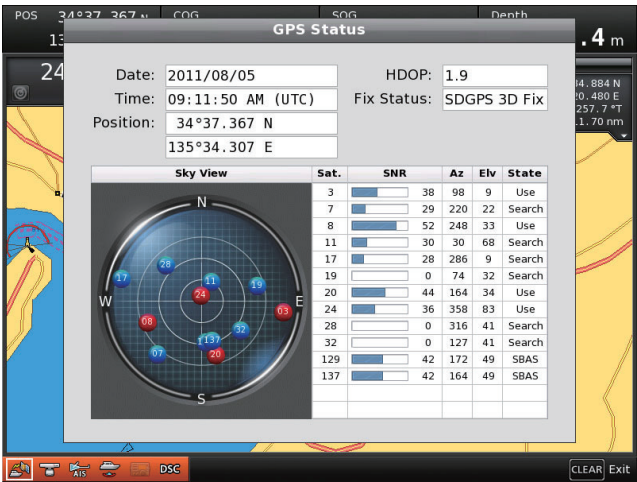
You can select the desired station whose position data is plotted when the transmitted DSC call includes the position information.

Make sure that the Individual ID has already been registered. (p. 5-20)

<GPS Status menu>



• GPS Status screen



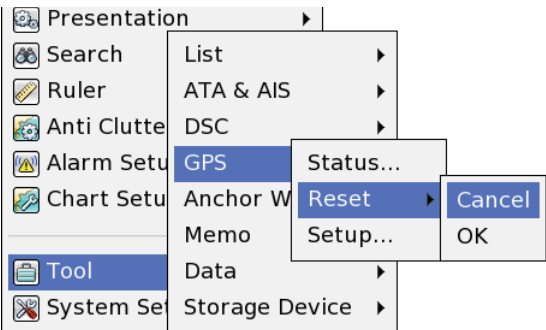
◇ GPS Status

GPS Status screen displays the status of the received GPS.

- ① Push [MENU], then rotate [DIAL] until the “Tool” menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] until the “GPS” menu is highlighted, then push [ENTER].
- ③ Rotate [DIAL] until the desired menu is highlighted, then push [ENTER].

• Status...
(MENU ▸ Tool ▸ GPS ▸ Status...)
GPS Status screen is displayed.

<GPS Reset menu>

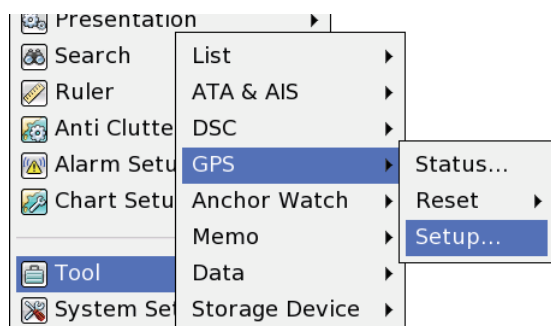


• Reset
(MENU ▸ Tool ▸ GPS ▸ Reset)
Select “OK” to reset the GPS. In this case, the GPS receiver starts as a “cold” start.

■ Tool (MENU ▸ Tool)

◇ GPS Status (Continued)

<GPS Setup menu>



• GPS Setup screen

• Setup...

(MENU ▸ Tool ▸ GPS ▸ Setup)

NOTE: This setting takes effect for only an MXG-5000 connected to the port1.

- ① When the GPS Setup screen is displayed, rotate [DIAL] until the desired menu is highlighted, then push [ENTER].
- ② Rotate [DIAL] to set the desired option, then push [ENTER].
- ③ Rotate [DIAL] to select "Save," then push [ENTER] to set and return to the previous screen.
 - If "Cancel" is selected, the setting will be cancelled.

• GPS Setup—Datum

The GPS geodetic reference can be changed from the list.

• GPS Setup—Position Smoothing

Set the position smoothing interval time to between 0 and 9 in 1 digit steps. (Unit: second)

- 0 : The position data is displayed in real time.
- 1 to 9 : Set the smoothing level. The higher setting smooths the raw data more. If the setting is too high, the response time will be too long.

• GPS Setup—SPD/CSE Smoothing

Set the SPD and CSE smoothing interval time to between 0 and 9 in 1 digit steps. (Unit: second)

- 0 : The SOG and COG data are displayed in real time.
- 1 to 9 : Set the smoothing level. The higher setting smooths the raw data more. If the setting is too high, the response to speed and course will be too long.

• GPS Setup—Latitude Offset

Set the latitude offset value.

The latitude data shifts this set value from the current position.

• GPS Setup—Longitude Offset

Set the longitude offset value.

The longitude data shifts this set value from the current position.

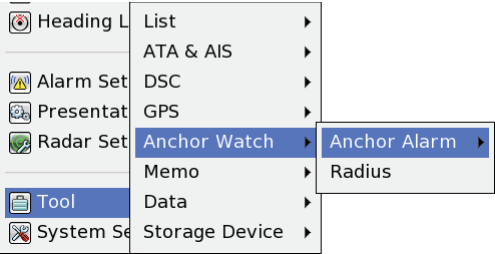
• GPS Setup—SBAS Mode

The SBAS (Satellite Based Augmentation System) transmits signals to correct errors and improve accuracy and reliability in data received from regular GPS satellites. When this function is ON, the corrected data can be used.

- OFF : The SBAS function is OFF.
- ON : The SBAS function is ON.

NOTE: When the SBAS satellite signal is received, "SDGPS 3D Fix" or "SDGPS 2D Fix" will activate.

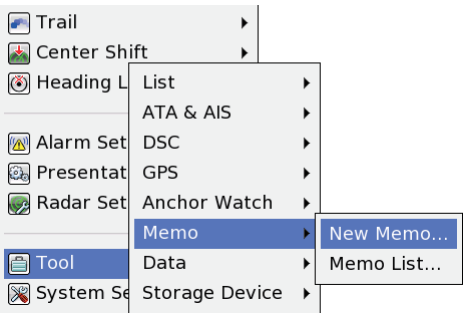
<Anchor Watch menu>



◇ Anchor Watch

- Anchor Alarm: Select ON to set the Anchor Alarm.
- Radius: Input the allowable drift range.

<Memo menu>



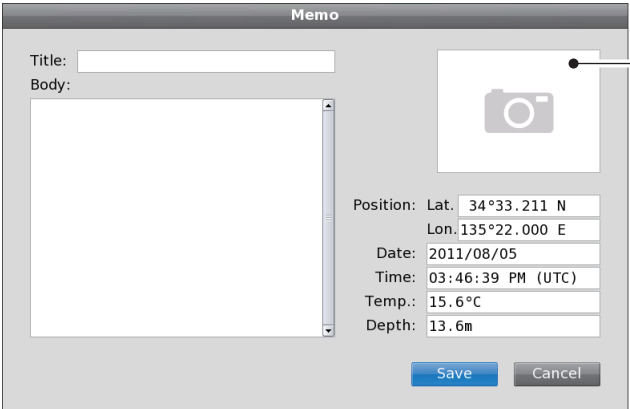
◇ Memo

The Memo function allows you to save a short sentence of up to 400 characters, containing position data, date, temperature and depth. A picture can be attached to each memo.

- New Memo... : Create a new memo.
- Memo List... : Display the list of memos. The memos can be re-edited and deleted from the list.

NOTE: The picture is not stored in the MarineCommander™, but in the USB memory stick. The picture is displayed only when the USB memory stick is inserted.

<Memo edit screen>



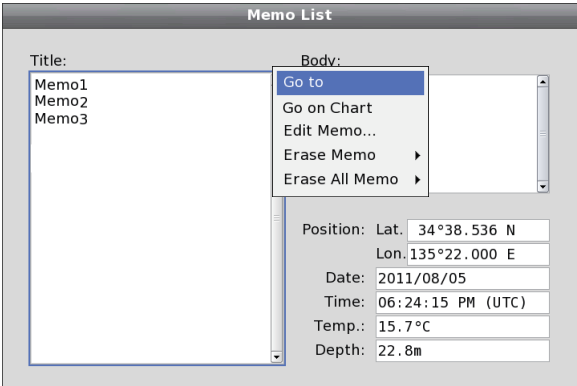
Attaching a picture:

- 1) Rotate [DIAL] to select the camera icon, and then push [ENTER] to open the picture select window.
- 2) Select the desired picture, and then push [ENTER].
 - When the memo is recalled, the picture is reloaded from the USB memory stick.

Note:

- The picture must be stored in the "MarineCommander\Picture" folder in the USB memory.
- The picture format must be JPG, BMP or PNG.
- The picture name, not including the extension, must be 8 characters or less.

<Memo list screen>



• Memo List—Go to

The vessel can be navigated from the current position to the specified Memo (within only one section).

- ① When the Memo List is displayed, rotate [DIAL] until the desired memo becomes highlighted.
- ② Push [SUB] to display the Memo Sub Menu screen.
- ③ Rotate [DIAL] until the "Go to" menu becomes highlighted, and push [ENTER].
- ④ The navigation to the Memo starts.
 - The navigation screen appears.

■ Tool (MENU ▸ Tool) (Continued)

<Memo list screen—Go on Chart>

The screenshot shows the 'Memo List' screen. On the left, under 'Title:', there is a list: Memo1, Memo2, Memo3. On the right, under 'Body:', there is a menu with options: Go to, Go on Chart (highlighted), Edit Memo..., Erase Memo, and Erase All Memo. Below the menu, there are fields for Position (Lat: 34°38.536 N, Lon: 135°22.000 E), Date (2011/08/05), Time (06:24:15 PM (UTC)), Temp.: 15.7°C, and Depth: 22.8m.

<Memo list screen—Edit Memo...>

The screenshot shows the 'Memo List' screen. On the left, under 'Title:', there is a list: Memo1, Memo2, Memo3. On the right, under 'Body:', there is a menu with options: Go to, Go on Chart, Edit Memo... (highlighted), Erase Memo, and Erase All Memo. Below the menu, there are fields for Position (Lat: 34°38.536 N, Lon: 135°22.000 E), Date (2011/08/05), Time (06:24:15 PM (UTC)), Temp.: 15.7°C, and Depth: 22.8m.

<Memo list screen—Erase Memo...>

The screenshot shows the 'Memo List' screen. On the left, under 'Title:', there is a list: Memo1, Memo2, Memo3. On the right, under 'Body:', there is a menu with options: Go to, Go on Chart, Edit Memo..., Erase Memo (highlighted), and Erase All Memo. Below the menu, there are fields for Position (Lat: 34°38.536 N, Lon: 135°22.000 E), Date (2011/08/05), Time (06:24:15 PM (UTC)), Temp.: 15.7°C, and Depth: 22.8m.

<Memo list screen—Erase All Memo...>

The screenshot shows the 'Memo List' screen. On the left, under 'Title:', there is a list: Memo1, Memo2, Memo3. On the right, under 'Body:', there is a menu with options: Go to, Go on Chart, Edit Memo..., Erase Memo, and Erase All Memo (highlighted). Below the menu, there are fields for Position (Lat: 34°38.536 N, Lon: 135°22.000 E), Date (2011/08/05), Time (06:24:15 PM (UTC)), Temp.: 15.7°C, and Depth: 22.8m.

• Memo List—Go on Chart (For plotter operation)

This function enables the cursor to move to the selected Memo on the plotter display.

- ① When the Memo List is displayed, rotate [DIAL] until the desired memo is highlighted, and then push [SUB] to display the Memo Sub Menu screen.
- ② Rotate [DIAL] until the “Go on Chart” menu is highlighted, and then push [ENTER].
 - The Memo Sub Menu screen disappears, and the cursor automatically moves to the selected Memo.

• Memo List—Edit Memo...

The memo can be edit on the Memo List.

- ① When the Memo List is displayed, rotate [DIAL] until the desired memo is highlighted, and then push [SUB] to display the Memo Sub Menu screen.
- ② Rotate [DIAL] until the “Edit Memo...” menu is highlighted, and then push [ENTER].
 - The Memo edit window appears. (p. 5-27)

• Memo List—Erase Memo

The memo can be removed from the list.

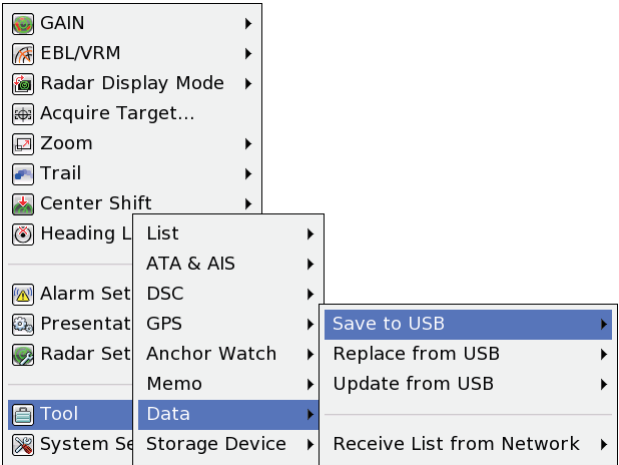
- ① When the Memo List is displayed, rotate [DIAL] until the desired memo is highlighted, and then push [SUB] to display the Memo Sub Menu screen.
- ② Rotate [DIAL] until the “Erase Memo” menu is highlighted, and then select "OK" and push [ENTER].
 - The selected memo is cleared.

• Memo List—Erase All Memo

The listed memos can be collectively removed from the list.

- ① When the Memo List is displayed, rotate [DIAL] until the desired memo is highlighted, and then push [SUB] to display the Memo Sub Menu screen.
- ② Rotate [DIAL] until the “Erase All Memo” menu is highlighted, and then select "OK" and push [ENTER].
 - The listed memos are all cleared.

<Tool -Data menu->



◆ Data

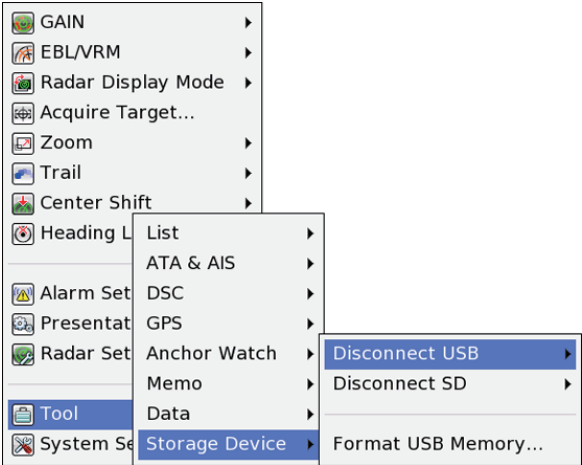
There are 5 data files (File1 to File5), and each can independently store data.
The data includes, Waypoints, Memos, Tracks and Routes.

- **Save to USB**
Save the data to a USB memory stick.
- **Replace from USB**
Overwrite the current data with the data in the USB memory stick.
- **Update from USB**
Copy newer data from the USB memory stick to the desired data file.

NOTE: When the data exceeds the limit, the alert window appears and the copying is aborted.

- **Receive List from Network**
Import the Receive List from another MXP-5000. The list includes, Waypoints, Routes, Tracks, Memos and DSC Addresses.

<Tool -Storage Device menu->

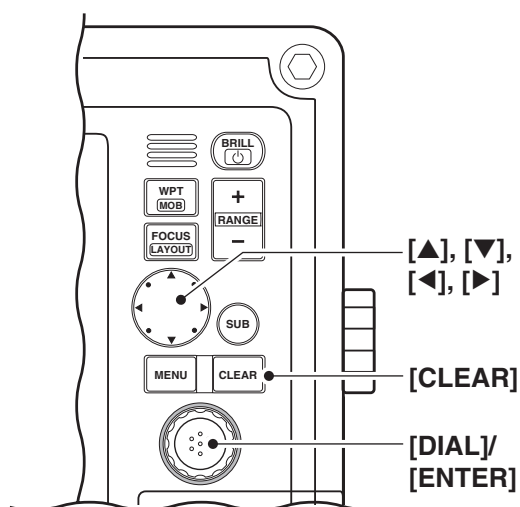


◆ Storage Device

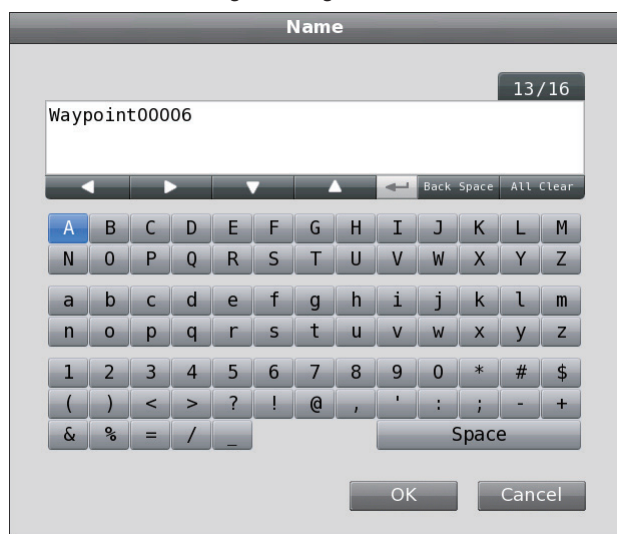
Caution: If the USB memory stick or SD card is removed without the unmount operation below, the MarineCommander™ automatically turns OFF.

- **Disconnect USB:** Select "OK" to unmount the USB memory stick.
- **Disconnect SD:** Select "OK" to unmount the SD card.
- **Format USB Memory...:** Initialize the USB memory stick.

■ Text programming



<Text Programming screen>

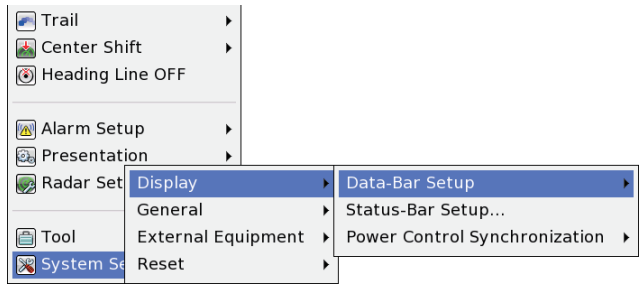


- ① Select the text programming screen. (e.g. name, Comment)
- ② Rotate [DIAL]* to select the desired character in the table, then push [ENTER] to input it.
 - Select “▲,” then push [ENTER] to move the cursor upward.
 - Select “▼,” then push [ENTER] to move the cursor downward.
 - Select “◀,” then push [ENTER] to move the cursor forward.
 - Select “▶,” then push [ENTER] to move the cursor backward.
 - Select “SPACE,” then push [ENTER] to input a space.
 - Select “Back Space,” then push [ENTER] to delete a character.
 - Select “All Clear,” then push [ENTER] to clear all characters.
 - Push [CLEAR] to cancel
- ③ Rotate [DIAL] to select “OK,” then push [ENTER] to set and return to the previous screen.
 - If “Cancel” is selected, the “Setting Change” screen will appear. Select “Yes” if you want to continue to program, or select “No” if you want to cancel the program.

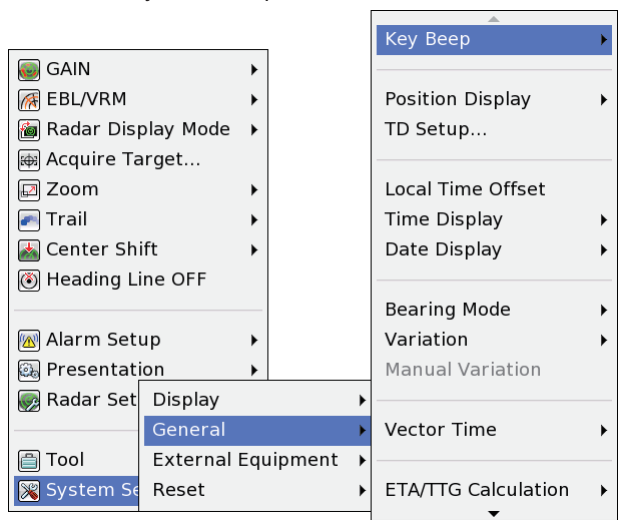
* [▲], [▼], [◀], [▶] can also be used.

■ System Setup (MENU ▸ System Setup)

<System Setup -Display menu->



<System Setup -General menu->



◇ Display

- **Data-Bar Setup**
Select the data to display on Palette1 to Palette4.
- **Status-Bar Setup...**
Select the items to display on the status bar.
- **Power Control Synchronization**
Select OFF to keep the display's power independent of other displays, when turning power OFF.

◇ General

- **Key Beep**
Select ON to sound a beep when pushing a key.
- **Position Display**
Select the type of position data to display.
Lat./Lon.: Latitude/Longitude
TD: Loran-C Time Difference
- **TD Setup**
Select the Loran station, TD and correction time.
- **Local Time Offset**
Set the UTC time offset. (–13:30 to +13:30)
- **Time Display**
Select the 12 hour or 24 hour time format.
- **Date Display**
Select the date format.
YYYY/MM/DD: (example 2011/08/12)
MM/DD/YYYY: (example 08/12/2011)
DD/MM/YYYY: (example 12/08/2011)
- **Bearing Mode**
Select the bearing mode.
True: True north bearing.
Magnetic: Magnetic north bearing.
- **Variation**
Select the Variation Data Source.
Auto: Use the variation data from the GPS.
Manual: Use the manually input data.
- **Manual Variation**
Input the variation in °W or °E.
- **Vector Time**
Select the vector length (time).
- **ETA/TTG Calculation**
SOG: The calculation is based on SOG.
Manual: The calculation is based on manually input speed.

5 COMMON SETTING

■ Tool (MENU ▸ System Setup) (Continued)

<Initial Setting screen>

The Initial Setting screen is divided into two sections: Standard Settings and Advanced Settings. Standard Settings includes dropdown menus for Language (English), Distance (nm), Speed (kt), Depth (m), Temperature (°C), and Pressure (bar). Advanced Settings includes radio buttons for OFF and ON, a numeric field for Address (1), a text field for Transceiver, and a numeric field for Connection ID (83). Arrows point to the Language dropdown, the units dropdowns, the Address field, and the Connection ID field with explanatory text.

Standard Settings

Language: English
Distance: nm
Speed: kt
Depth: m
Temperature: °C
Pressure: bar

Advanced Settings

OFF ON
Address: 1
Transceiver
Connection ID: 83

Save Cancel

- **ETA/TTG Manual SOG**
Input the ship speed to calculate the ETA/TTG.
- **Initial Setting...**
Set the seldom-changed settings.
- **Version...**
Displays the version information.
- **DHCP Service**
(For future use.)

<System Version Information screen>

The System Version Information screen displays the version numbers for the MXP-5000, Display1, Display2, Radar, and Sounder, all showing Ver 1.000.

System Version

MXP-5000: Ver 1.000
Display1: Ver 1.001
Display2: Ver 1.001
Radar: Ver 1.001
Sounder: Ver 1.001

<System Setup -External Equipment menu->

The System Setup -External Equipment menu shows a list of options: Presentation, Radar Setup, Tool, and System Setup. System Setup is selected, and its sub-menu is displayed, showing Display, General, External Equipment, and Reset.

Presentation
Radar Setup
Tool
System Setup

Display
General
External Equipment
Reset

<System Setup -Port5 Output Setup->

The System Setup -Port5 Output Setup screen shows the Output NMEA0183 Sentence options. The APB option is selected (ON). Other options include BWC, BWR, DBT, DPT, GGA, GNS, GLL, HDG, HDT, MTW, MWV, RMA, and RMB, all with ON and OFF radio buttons.

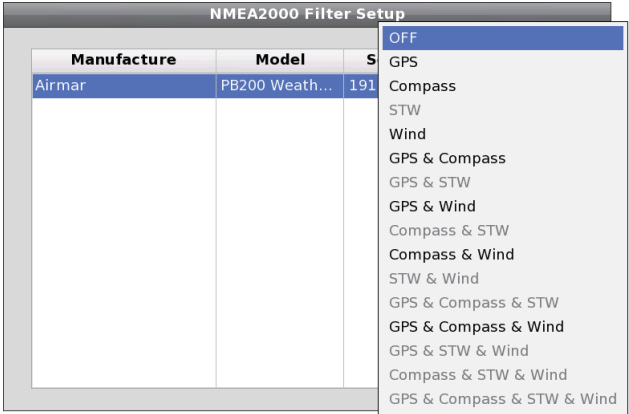
Output NMEA0183 Sentence

APB: ON OFF
BWC: ON OFF
BWR: ON OFF
DBT: ON OFF
DPT: ON OFF
GGA: ON OFF
GNS: ON OFF
GLL: ON OFF
HDG: ON OFF
HDT: ON OFF
MTW: ON OFF
MWV: ON OFF
RMA: ON OFF
RMB: ON OFF

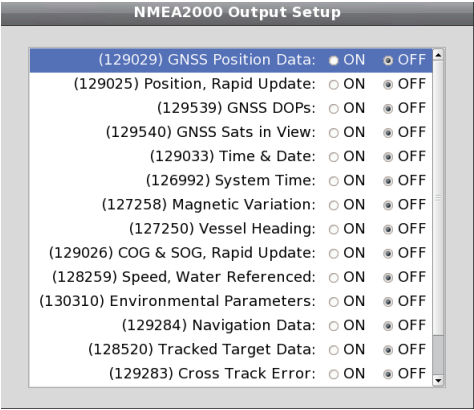
◇ External Equipment

- **Port1 Data Monitor...**
Displays the NMEA raw data input from the port1 (MXG-5000).
- **Port2/3/4/5 Baud Rate**
Select the baud rate from 4800, 9600, 19200 and 38400* bps.
* For only Port3.
- **Port2/3/4/5 Data Monitor...**
Displays the NMEA raw data input from the port 2/3/4/5.
- **Port5 Output Setup...**
Select the NMEA sentence to output.

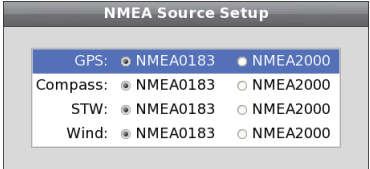
<System Setup -NMEA2000 Setup->



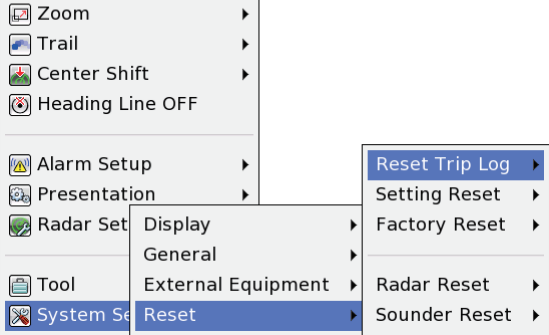
<System Setup -NMEA2000 Output Setup->



<System Setup -NMEA Source Setup->



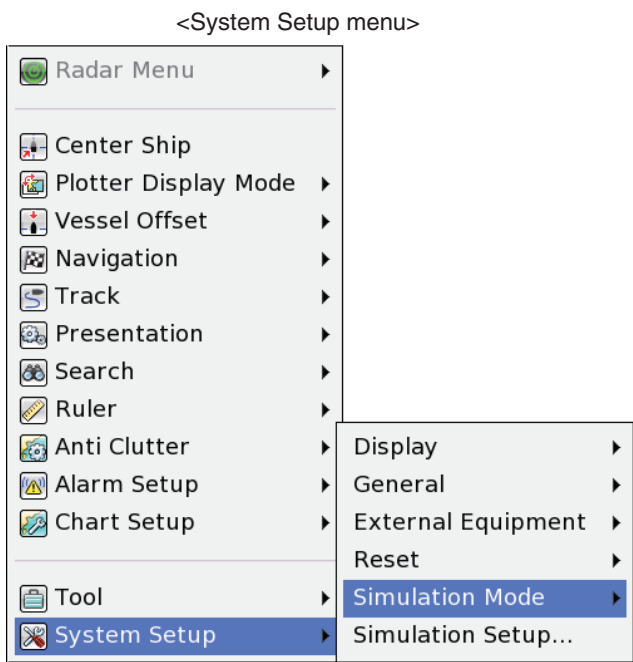
<System Setup -Reset menu->



- **NMEA2000 Setup...**
Displays the list of equipment connected to the NMEA2000 port.
Push [SUB] to open the sub menu, and select the combination of equipment to use.
(Example: If GPS and compass are connected, select “GPS & Compass.”)
- **NMEA2000 Output Setup...**
Select the NMEA2000 sentence to output.
- **Heading Data Input**
Select the Heading data source.
NMEA : Use the data source from the heading sensor of NMEA0183 or NMEA2000.
AUX : Use the data source from the external equipment which outputs the AUX format heading data.
GPS : Use the COG from the GPS as the Heading data.
- **STW Input**
Select the ship speed data source.
Sounder : Use the data source from the sounder's speed sensor in the transducer.
NMEA : Use the data source from the speed sensor connected with NMEA.
- **NMEA Source Setup...**
Select the data format for each equipment from NMEA0183 or NMEA2000.
Note: This setting is necessary when using external equipment. Select the properly data format.
- **Data Master Setup...**
When using two MarineCommanders™, Master-Slave relation is selectable.
Note: When one side is set to “Master,” another side is automatically set to “Slave.”
Master : Use the NMEA data from the equipment which is directly connected.
Slave : Use the NMEA data from the Master.

- ◇ **Reset**
Reset the operating parameters to their default values.
- **Reset Trip Log**
Reset all the trip logs.
- **Setting Reset**
- **Factory Reset**
- **Radar Reset**
- **Sounder Reset**
See the list on the page 5-35 to 5-37 for the items that can be selected to be reset.
(○: The item to be reset.)

■ System Setup (MENU ▸ System Setup) (Continued)



◇ Simulation Mode

The Simulation mode is operated only with the combination of the MXP-5000 (Main unit) and the MXD-5000 (Display unit), and simulates operations that are used instead of the following external equipment.

- MXR-5000R/T (Radar unit) • MXF-5000 (Fish Finder unit) • GPS unit • Compass • AIS unit • Transceiver • Anemometer (Sensor) • Speed meter (Sensor) • Tacho meter (Sensor) • Fuel meter (Sensor)

• Simulation mode ON or OFF

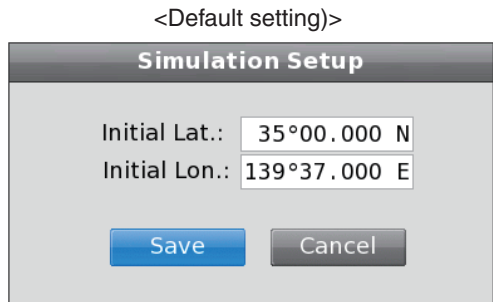
The simulation mode can be turned ON or OFF in the “Simulation Mode” item of the “System Setup” menu.

NOTE:

- Before turning ON the Simulation mode, BE SURE to disconnect other external equipment, such as another MXP-5000, MXR-5000R/T, MXF-5000, and so on.
- The settings are commonly used in the Simulation mode and normal operating mode. If any settings have been changed in the Simulation mode, the settings remain in the normal operating mode.
- After the MXS-5000 has been installed in a vessel, use the Simulation mode only during anchorage.
- While in the Simulation mode, “Simulation Mode” blinks on the display.

• Initial setting for the Simulation mode

The starting point of the simulation can be changed in the “Simulation Setup” item of the “System Setup” menu.



The radar image that is displayed in the simulation mode, is based on ASTER GDEM.
The original data of the ASTER GDEM belongs to METI of Japan, and NASA.

METI: The Ministry of Economy, Trade and Industry
NASA: National Aeronautics and Space Administration

■ RESET ITEM LIST

• Plotter items

Menu	Item		Reset Type			
			Setting Reset	Factory Reset	Radar Setting Reset	Radar Factory Reset
Radar Menu	GAIN	GAIN...	—	—	○	○
		SEA...	—	—	○	○
		Auto SEA	—	—	○	○
		RAIN...	—	—	○	○
		TUNE	—	—	○	○
Acquire Target			—	—	—	—
Plotter Display Mode			○	○		
Vessel Offset			○	○		
Navigation	Goto Waypoint...		—	—		
	Follow Route...		—	—		
	Stop Navigation		—	—		
	Next Waypoint		—	—		
	Back Waypoint		—	—		
	Reset XTE		—	—		
	Create Route...		—	—		
	Route List...		—	○		
Calculation Setup			○	○		
Track	Start Track		—	—		
	Stop Track		—	—		
	Track List		—	○		
	Track Setup	Track Method	○	○		
		Track Interval Time	○	○		
		Track Interval Distance	○	○		
Presentation	Waypoint	Show	○	○		
		Setup...	○	○		
	Route	Show	○	○		
		Setup...	○	○		
	Track	Show	○	○		
		Setup...	○	○		
	DSC		○	○		
	DSC Auto Position		○	○		
	Memo		○	○		
	ATA Symbol		○	○		
	Reset ATA Track		—	—		
	AIS Symbol		○	○		
	Reset AIS Track		—	—		
	Vessel Symbol		○	○		
	Course Vector		○	○		
	Smart Information		○	○		
	Aerial Photo Overlay		○	○		
	Radar Overlay		○	○		
	Search	Port by Name...		—	—	
		Nearest...		—	—	
Ruler			○	○		
Anti Clutter			○	○		
Alarm Setup	Arrival Alarm		○	○		
	Arrival Alarm Range		○	○		
	XTE Alarm		○	○		
	XTE Alarm Range		○	○		
	Guardian Alarm		○	○		
	Guardian Alarm Pop-up		○	○		
	Guardian Alarm Zone		○	○		
	Guardian Alarm Range		○	○		
	Guardian Alarm Depth		○	○		
	Safety Check		○	○		
	Safety Check Range		○	○		
	Safety Check Depth		○	○		

Menu	Item		Reset Type			
			Setting Reset	Factory Reset	Radar Setting Reset	Radar Factory Reset
Chart Setup	Perspective View	Mode	○	○		
		Angle	○	○		
	Mixing Levels		○	○		
	Chart Offset		○	○		
	Set Offset at Cursor...		○	○		
	Set Offset N-S		○	○		
	Set Offset E-W		○	○		
	Chart Grid		○	○		
	Chart Border Lines		○	○		
	Marks Symbols		○	○		
	Chart Display Mode		○	○		
	Manual-Display Mode	Safety Con-tour	○	○		
		Sounding	○	○		
		NAV-AIDS	○	○		
		Wrecks & Obstructions	○	○		
		Natural Features	○	○		
		River & Lakes	○	○		
		Cultural Features	○	○		
		Roads	○	○		
		Railways	○	○		
		Port & Services	○	○		
		Landmarks	○	○		
		Seabed Type	○	○		
		Tides & Currents	○	○		
		Tracks & Routes	○	○		
		Attention Areas	○	○		
	Chart Language		○	○		

○: The item to be reset.

5 COMMON SETTING

• Radar items

Menu	Item	Reset Type			
		Setting Reset	Factory Reset	Radar Setting Reset	Radar Factory Reset
GAIN	GAIN...	—	—	○	○
	SEA...	—	—	○	○
	Auto SEA	—	—	○	○
	RAIN...	—	—	○	○
	TUNE	—	—	○	○
EBL/VRM	EBL1...	○	○	—	—
	VRM1...	○	○	—	—
	EBL2...	○	○	—	—
	VRM2...	○	○	—	—
	Offset EBL/VRM1	○	○	—	—
	Offset EBL/VRM2	○	○	—	—
Radar Display Mode		○	○	—	—
Zoom		○	○	—	—
Trail	Trail	○	○	—	—
	Trail Reset	○	○	—	—
	Trail Setup	Trail Time	○	○	—
		Trail Color	○	○	—
Center Shift		○	○	—	—
Alarm Setup	Zone Alarm1	○	○	—	—
	Zone Alarm2	○	○	—	—
Presentation	ATA Track	○	○	—	—
	AIS Symbol	○	○	—	—
	Waypoint	Show	○	○	—
		Setup...	○	○	—
	DSC	○	○	—	—
	Memo	○	○	—	—
	Own Vector	○	○	—	—
	EBL Bearing Reference	○	○	—	—
	PPI Area	○	○	—	—
	Ring	○	○	—	—
	Echo Color	○	○	—	—
Radar Setup	Signal Process	IR	—	—	○
		Stretch	—	—	○
		D.Range	—	—	○
		SEA Slope	—	—	○
		Pulse	—	—	○
	Range Setup...		—	—	○
	TX Inhibit		—	—	○
	Timing Adjust...		—	—	○
	HDG Adjust...		—	—	○
	ANT Rotate		—	—	○
	Scanner Monitor...		—	—	—
	TUNE Monitor...		—	—	—

○: The item to be reset.

• Sounder items

Menu	Item	Reset Type			
		Setting Reset	Factory Reset	Sounder Setting Reset	Sounder Factory Reset
Auto Mode		—	—	○	○
GAIN		—	—	○	○
STC		—	—	○	○
Frequency Mode		—	—	○	○
Range Shift		—	—	○	○
Zoom	Zoom Mode	—	—	○	○
	Marker Zoom Range	—	—	○	○
	Bottom Zoom Range	—	—	○	○
	Bottom Lock Range	—	—	○	○
A-Scope		○	○	—	—
Scrolls		○	○	—	—
Alarm Setup	Shallow Alarm	—	—	○	○
	Shallow Alarm Depth	—	—	○	○
	Deep Alarm	—	—	○	○
	Deep Alarm Depth	—	—	○	○
	Fish Alarm	—	—	○	○
	Fish Alarm Shallow	—	—	○	○
	Fish Alarm Deep	—	—	○	○
	Temp. Alarm	○	○	—	—
	Temp. Alarm Lower	○	○	—	—
	Temp. Alarm Upper	○	○	—	—
Presentation	Bottom Line	—	—	○	○
	Cursor	○	○	—	—
	Depth Digit	○	○	—	—
	Color Palette	○	○	—	—
	Depth Lines	○	○	—	—
Sounder Setup	IR	—	—	○	○
	Clutter	○	○	—	—
	STC Curve	—	—	○	○
	Auto Mode Setup	—	—	○	○
	Transmission	—	—	○	○
	Range Setup...	—	—	—	○
	Sounder Adjust...	—	—	—	○

○: The item to be reset.

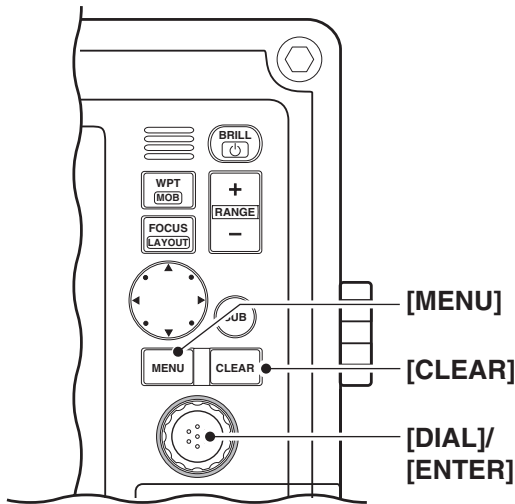
• Common items

Menu	Item		Setting Reset	Factory Reset
Tool	List	Waypoint...	—	○
		Waypoint Group...	—	○
		ATA...	—	—
		AIS...	—	—
		AIS Safety Message...	—	○
	ATA & AIS	ATA & AIS Alarm	○	○
		CPA	○	○
		TCPA	○	○
		Number of AIS	○	○
		Range of AIS	Mode	○
			Range Setup	○
		Vector Mode	○	○
		Target Track	○	○
		AIS Safety Message	○	○
		AIS Target Number Limit Alarm	○	○
	DSC	Send DSC...	—	—
		Received Call Log...	—	○
		Auto Position Log...	—	○
		Individual ID...	—	○
		Group ID...	—	○
		Load ID...	—	—
		DSC Setup	DSC Dialog	○
			Auto Position 1	○
			Auto Position 2	○
			Auto Position 3	○
	GPS	Status...	—	—
		Setup...	○	○
	Anchor Watch	Anchor Alarm	○	○
		Radius	○	○
	Memo	New Memo...	—	—
		Memo List...	—	○
System Setup	Display	Data-Bar Setup	○	○
		Status-Bar Setup	○	○
		Power Control Synchronization	○	○
	General	Key Beep	○	○
		Position Display	○	○
		TD Setup...	○	○
		Local Time Offset	○	○
		Time Display	○	○
		Data Display	○	○
		Bearing Mode	○	○
		Variation	○	○
		Manual Variation	○	○
		Vector Time	○	○
		ETA/TTG Calculation	○	○
		ETA/TTG Manual SOG	○	○
		Initial Setting...	—	○
		DHCP Service	○	○
	External Equipment	Port2 Baud Rate	○	○
		Port3 Baud Rate	○	○
		Port4 Baud Rate	○	○
		Port5 Baud Rate	○	○
		Port5 Output Setup...	○	○
		NMEA2000 Output Setup...	○	○
		Heading Data Input	○	○
		STW Input	○	○
		NMEA Source Setup	○	○
		Data Master Setup	○	○

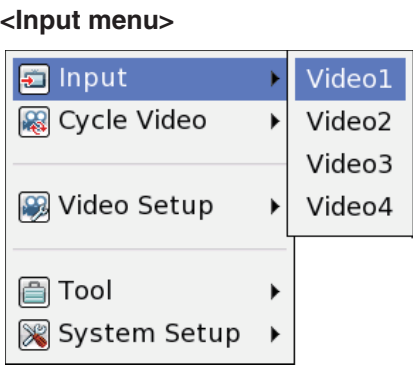
○: The item to be reset.

Video Screen operation

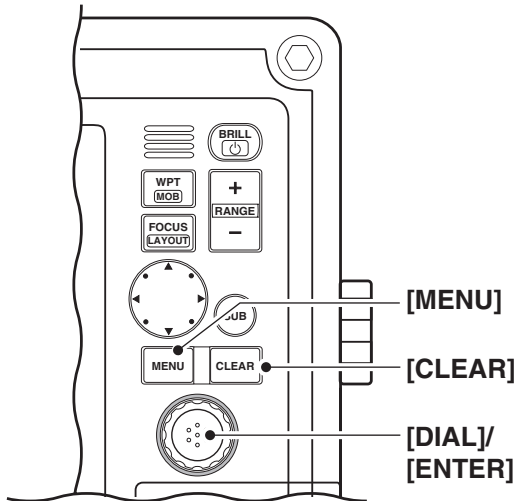
◇ Input (MENU ▸ Input)



- ① Push [MENU], then push [ENTER] to enter the video input selection.
- ② Rotate [DIAL] to select the desired Video input.
 - The selectable inputs are Video1, Video2, Video3 and Video4.
- ③ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

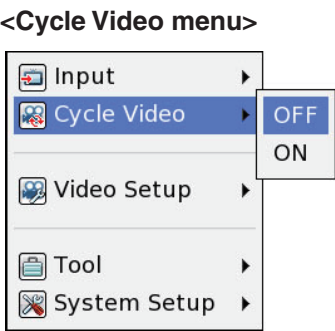


◇ Cycle Video setting (MENU ▸ Cycle Video)

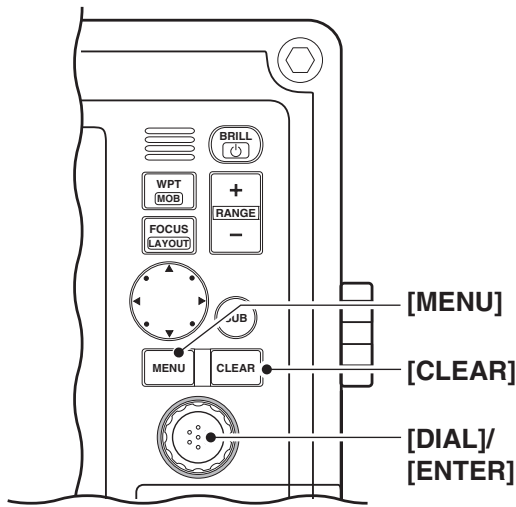


When this setting is set to ON, specified Video Inputs will be displayed in order.

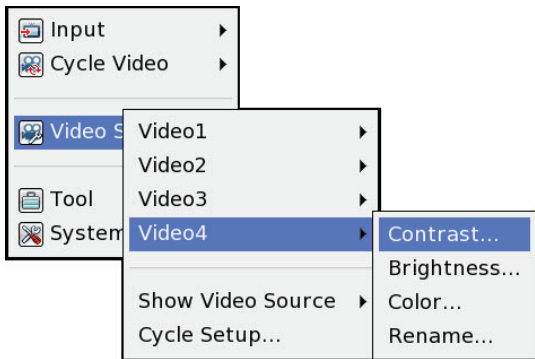
- ① Push [MENU], and rotate [DIAL] until the “Cycle Video” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the Cycle Video ON or OFF.
- ③ Push [ENTER] to set the Cycle Video and exit the Menu screen.
 - Input Source and interval setting is selectable. See the page 5-40 for details.



◇ Video Setup (MENU ▸ Video Setup)



<Video Setup menu>



This setting sets the Contrast, Brightness, Color or name setting.

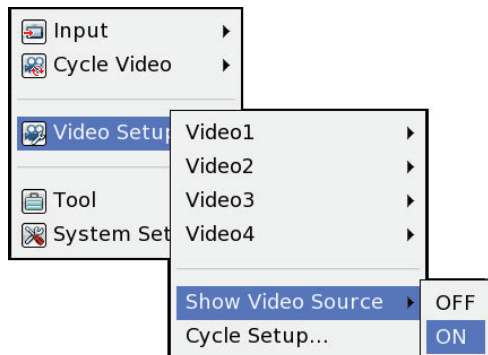
- ① Push [MENU], and rotate [DIAL] until the “Video Setup” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the desired Video input.
 - The selectable inputs are Video1, Video2, Video3 and Video4.
- ③ Push [ENTER] then rotate [DIAL] to select the desired setting.
 - The selectable settings are Contrast, Brightness, Color and Rename.
- ④ Push [ENTER] to enter the adjustment mode.

- **Contrast...**
Adjustable range are 0 to 100 in 1 steps.
(Default: 50)
- **Brightness...**
Adjustable range are 0 to 100 in 1 steps.
(Default: 50)
- **Color...**
Adjustable range are 0 to 100 in 1 steps.
(Default: 50)
- **Rename...**
Up to 10 characters are input. See page 5-30 for Text programming details.

■ Video screen operation (Continued)

◇ Show Video Source ON or OFF (MENU ▷ Video Setup)

<Show Video Source menu>

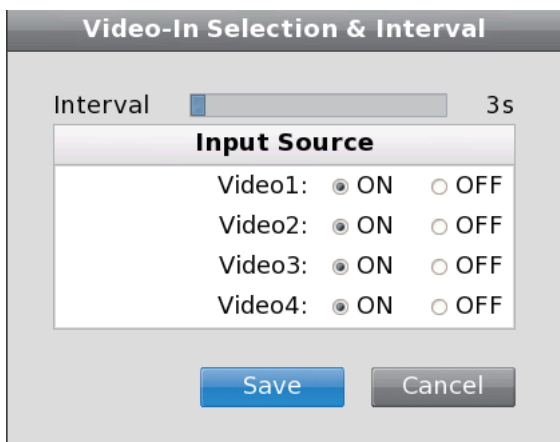


When this setting is set to ON, video number or name is displayed upper right corner.

- ① Push [MENU], and rotate [DIAL] until the "Video Setup" menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select "Show Video Source."
- ③ Push [ENTER] then rotate [DIAL] to turn the "Show Video Source" ON or OFF.
- ④ Push [ENTER] to set, then push [CLEAR] one or more times to exit the Menu screen.

◇ Cycle Setup (MENU ▷ Video Setup)

<Cycle Setup screen>



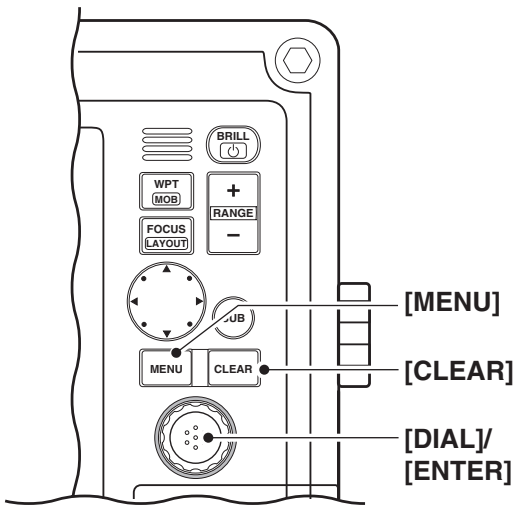
This setting selects Input Source and interval setting for the Cycle Video operation.

- ① Push [MENU], and rotate [DIAL] until the "Video Setup" menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select "Cycle Setup."
- ③ Push [ENTER] then rotate [DIAL] to enter the "Video-In Selection & Interval" screen.
- ④ Push [ENTER] and rotate [DIAL] to set the Interval time from 1 to 60 seconds in 1 second steps, then push [ENTER].
- ⑤ Rotate [DIAL] to select the desired input source, then push [ENTER].
- ⑥ Repeat step ⑤ until all Video inputs will be set.
- ⑦ Rotate [DIAL] to select the "Save" button, then push [ENTER] to set and exit the screen.

Navigation Screen operation

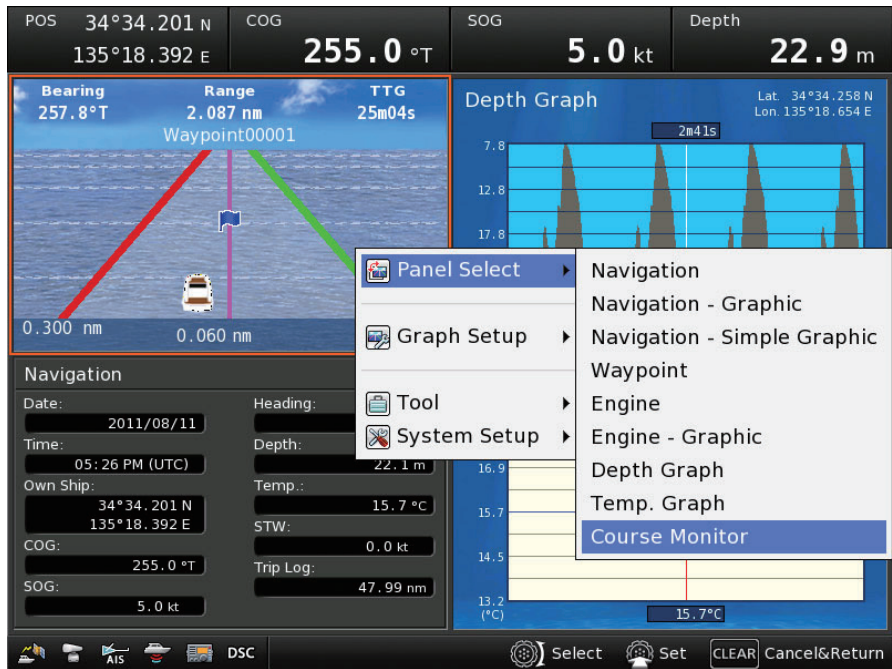
If you make New Layout screen that included a Navigation screen, you can make the following operation.

◇ Panel Select (MENU ▸ Panel Select)



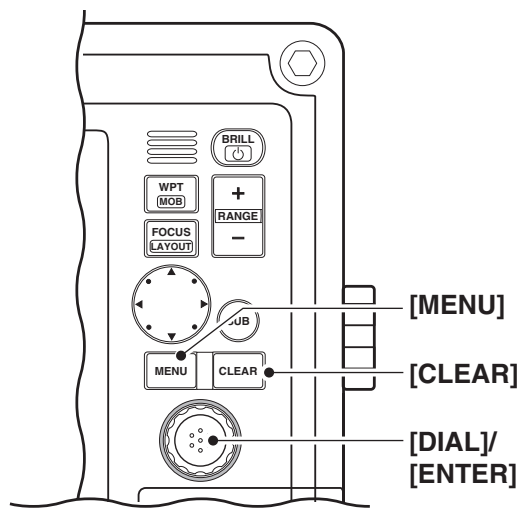
- ① Push [MENU], and rotate [DIAL] until the “Panel Select” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the desired screen.
 - The selectable screens are Navigation, Navigation-Graphic, Navigation-Simple Graphic, Waypoint, Engine, Engine-Graphic, Depth Graph, Temp Graph and Course Monitor.
- ③ Push [ENTER] to set the selected screen and exit the Menu screen.

<Panel Select menu>

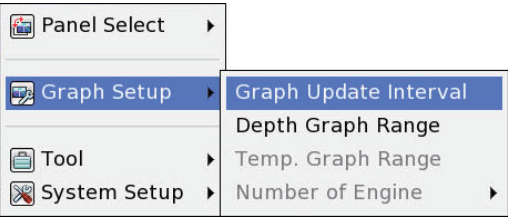


Navigation Screen operation (Continued)

◇ Graph Setup (MENU ▸ Graph Setup)



<Panel Select menu>



If you select the Depth Graph, Temperature Graph, Engine or Engine-Graphic, you can change the following settings.

- ① Push [MENU], and rotate [DIAL] until the “Graph Setup” menu becomes highlighted.
- ② Push [ENTER] then rotate [DIAL] to select the desired setting.
- ③ Push [ENTER] to enter the setting screen.
- ④ Rotate [DIAL] to select the setting.
- ⑤ Push [ENTER] to set and exit the setting.

- **Graph Update Interval**
Adjustable range are 1 to 60 seconds in 1 second steps.
 - This setting is used for only the Depth Graph or Temperature Graph.
- **Depth Graph Range**
Adjustable range are ±5, ±10, ±20, ±30 and ±40.
 - This setting is used for only the Depth Graph.
- **Temp. Graph Range**
Adjustable range are ±1, ±2.5, ±5, ±30 and ±40.
 - This setting is used for only the Temperature Graph.
- **Number of Engine**
Selectable number is 1 or 2.
 - This setting is used for only the Engine or Engine-Graphic.

■ GPS Setup Datum Abbreviation

Abbreviation	Standard nomenclature
WGS84	Global WGS84 coordinate system
ADI-M	Mean Solution (Ethiopian and Sudan)
ADI-E	Burkina Faso
ADI-F	Cameroon
ADI-A	Ethiopia
ADI-C	Mali
ADI-D	Senegal
ADI-B	Sudan
AFG	Somalia
ARF-A	Botswana
ARF-H	Burundi
ARF-B	Lesotho
ARF-C	Malawi
ARF-D	Swaziland
ARF-E	Zaire
ARF-F	Zambia
ARF-G	Zimbabwe
ARS-M	Mean Solution (Kenya and Tanzania)
ARS-A	Kenya
ARS-B	Tanzania
PHA	Djibouti
BID	Guinea-Bissau
CAP	South Africa
CGE	Tunisia
DAL	Guinea
EUR-F	Egypt
EUR-T	Tunisia
LEH	Ghana
LIB	Liberia
MAS	Eritrea
MER	Morocco
MIN-A	Cameroon
MIN-B	Nigeria
MPO	Gabon
NSD	Algeria
OEG	Old Egypt
PTB	Mean Solution (Burkina Faso and Niger)
PTN	Congo
SCK	Namibia
SRL	Sierra Leone
VOR	Algeria
AIN-A	Bahrain Island
AIN-B	Saudi Arabia
BAT	Sumatra (Indonesia)
EUR-H	Iran
HKD	Hong Kong
HTN	Taiwan
IND-B	Bangladesh
IND-I	India and Nepal
INF-A	Thailand
ING-A	Vietnam (near 16deg N)
ING-B	Con Son Island (Vietnam)
INH-A1	Thailand (1997)
IDN	Indonesia
KAN	Sri Lanka
KEA	West Malaysia and Singapore
KGS	Korean Geodetic System
NAH-A	Masirah Island (Oman)
NAH-B	United Arab Emirates
NAH-C	Saudi Arabia
FAH	Oman
QAT	Qatar
SOA	Singapore
TIL	Brunei and East Malaysia (Sarawak and Sabah)
TOY-M	Mean Solution (Japan, Okinawa and South Korea)
TOY-A	Japan
TOY-C	Okinawa
TOY-B	South Korea

Abbreviation	Standard nomenclature
AUA	Australia and Tasmania (Australian geodetic 1966)
AUG	Australia and Tasmania (Australian geodetic 1984)
EST	Estonia
EUR-M	Mean Solution (Europe 1950)
EUR-A	Western Europe (1950)
EUR-E	Cyprus
EUR-G	England, Channel Islands, Scotland and Shetland Islands
EUR-K	England, Ireland, Scotland and Shetland Islands
EUR-B	Greece
EUR-I	Italy (Sardinia)
EUR-J	Italy (Sicily)
EUR-L	Malta
EUR-C	Finland and Norway
EUR-D	Portugal and Spain
EUS	Mean Solution (European 1979)
HJO	Iceland
IRL	Ireland
OGB-M	Mean Solution (England, Isle of Man, Scotland, Shetland Islands and Wales)
OGB-A	England
OGB-B	England, Isle of Man and Wales
OGB-C	Scotland and Shetland Islands
OGB-D	Wales
MOD	Sardinia
SPK-A	Hungary
SPK-B	Poland
SPK-C	Czechoslovakia
SPK-D	Latvia
SPK-E	Kazakhstan
SPK-F	Albania
SPK-G	Romania
CCD	Czechoslovakia
CAC	Mean Solution (Florida and Bahamas)
NAS-C	Mean Solution (CONUS)
NAS-B	Western USA
NAS-A	Eastern USA
NAS-D	Alaska (excluding Aleutian Islands)
NAS-V	Aleutian Islands (East of 180deg W)
NAS-W	Aleutian Islands (West of 180deg W)
NAS-Q	Bahamas (excluding San Salvador Island)
NAS-R	San Salvador Island
NAS-E	Canada Mean Solution (including Newfoundland)
NAS-F	Alberta and British Columbia
NAS-G	Eastern Canada
NAS-H	Manitoba and Ontario
NAS-I	NW Territories and Saskatchewan
NAS-J	Yukon
NAS-O	Canal Zone
NAS-P	Caribbean
NAS-N	Central America
NAS-T	Cuba
NAS-U	Greenland (Hayes Peninsula)
NAS-L	Mexico
NAR-A	Alaska (excluding Aleutian Islands)
NAR-E	Aleutian Islands
NAR-B	Canada
NAR-C	CONUS
NAR-H	Hawaii
NAR-D	Mexico and Central America
BOO	Colombia
CAI	Argentina
CHU	Paraguay
COA	Brazil
PRP-M	Mean Solution (Bolivia, Chile, Colombia, Ecuador, Guyana, Peru and Venezuela)
PRP-A	Bolivia
PRP-B	Northern Chile (near 19deg S)

■ GPS Setup Datum Abbreviation

Abbreviation	Standard nomenclature
PRP-C	Southern Chile (near 43deg S)
PRP-D	Colombia
PRP-E	Ecuador
PRP-F	Guyana
PRP-G	Peru
PRP-H	Venezuela
HIT	Southern Chile (near 53deg S)
SAN-M	Mean Solution
SAN-A	Argentina
SAN-B	Bolivia
SAN-C	Brazil
SAN-D	Chile
SAN-E	Colombia
SAN-F	Ecuador (excluding Galapagos Islands)
SAN-J	Baltra, Galapagos Islands
SAN-G	Guyana
SAN-H	Paraguay
SAN-I	Peru
SAN-K	Trinidad and Tobago
SAN-L	Venezuela
ZAN	Suriname
AIA	Antigua, Leeward Islands
ASC	Ascension Island
SHB	St. Helena Island
BER	Bermuda Islands
DID	Deception Island, Antarctica
FOT	Nevis, St. Kitts, Leeward Islands
GRA	Faial, Graciosa, Pico, Sao Jorge and Terceira Islands (Azores)
ISG	South Georgia Island
LCF	Cayman Brac Island
ASM	Montserrat, Leeward Islands
NAP	Trinidad and Tobago
FLO	Corvo and Flores Islands (Azores)
PLN	Canary Islands
POS	Porto Santo and Madeira Islands
PUR	Puerto Rico and Virgin Islands
QUO	South Greenland
SAO	Sao Miguel, Santa Maria Islands (Azores)
SAP	East Falkland Island
SGM	Salvage Islands
TDC	Tristan da Cunha
ANO	Cocos Islands
GAA	Republic of Maldives
IST	Diego Garcia
KEG	Kerguelen Island
MIK	Mahe Island
REU	Mascarene Islands
AMA	American Samoa Islands
ATF	Iwo Jima
TRN	Tern Island
ASQ	Marcus Island
IBE	Efate and Erromango Islands
CAO	Phoenix Islands
CHI	Chatham Island (New Zealand)
GIZ	Gizo Island (New Georgia Islands)
EAS	Easter Island
GEO	New Zealand
GUA	Guam
DOB	Guadalcanal Island
JOH	Johnston Island
KUS	Caroline Islands, Fed. States of Micronesia
LUZ-A	Philippines (excluding Mindanao Island)
LUZ-B	Mindanao Island
MID	Midway Islands
OHA-M	Mean Solution (old Hawaiian)
OHA-A	Hawaii
OHA-B	Kauai
OHA-C	Maui

Abbreviation	Standard nomenclature
OHA-D	Oahu
PIT	Pitcairn Island
SAE	Espirito Santo Island
MVS	Viti Levu Island (Fiji Islands)
ENW	Marshall Islands
WAK	Wake Atoll
BUR	Bangka and Belitung Islands (Indonesia)
CAZ	Camp McMurdo Area, Antarctica
EUR-S	Iraq, Israel, Jordan, Lebanon, S. Arabia and Syria
GSE	Kalimantan (Indonesia)
HEN	Afghanistan
HER	former Yugoslavia
IND-P	Pakistan
PUK	Russia
TAN	Madagascar
YAC	Uruguay

■ Specification

General	Selectable screen type			Plotter, Radar, Sounder, Video, Course Monitor, Depth Graph, Temp. Graph, Navigation, Navigation-Graphic, Navigation-Simple Graphic, Waypoint, Engine, Engine-Graphic
	Memory number	Waypoints		1000 points
		Waypoint Group		100 groups
		Route		150 routes (Maximum 50 Waypoints per a route, Maximum routes on the screen: 20)
		Track		10 (Maximum 1000 points per a track, Only one track can be displayed on the screen)
		Memo		50
		DSC	Individual ID	200 IDs
			Group ID	100 IDs
			Received Call Log	100 call
	Auto Position Log		3 logs (Maximum 50 points per a log)	
	AIS Safety Message		20	
Alarm			MOB, Anchor Watch	
Language			English, French, Spanish	
Plotter	Cartography			C-MAP MAX chart
	Range			1/32nm to 4000nm (Depending on Map cartridge)
	Plotter Display Mode			N-UP, C-UP, AC-UP, TM, AR
	Track Interval	Time		1 s to 99 min 59 s
		Distance		0.01 to 100.00 nm
	Latitude Limits			Between 80°N and 80°S
	Alarm			Arrival Alarm, XTE Alarm, Guardian Alarm, Safety Check
	Unit	Distance		nm,sm,km
Speed			kt,mph,km/h	
Radar	Range			1/8nm to 48nm (depending on antenna)
	Radar Display Mode			H-UP, N-UP, C-UP, TM
	ATA number			Maximum 10
	Echo Trail			Interval: 6s, 15s, 30s, 1 min, 3 min, 6 min, 15 min, 30 min or Continuous
	Alarm			ATA CPA/TCPA Alarm, Zone Alarm
	Unit	Distance		nm, sm, km
Sounder	Range			2m to 1200m
	Sounder Display Mode			Single (50 or 200 kHz), Dual (50 and 200 kHz), Zoom, A-Scope
	Zoom Mode			Marker Zoom, Bottom Zoom, Bottom Lock
	Alarm			Shallow Alarm, Deep Alarm, Fish Alarm, Temp. Alarm
	Unit	Depth		m, ft, fa
AIS	Number			Maximum 100 (nearer from the vessel)
	Message type			Message1, 2, 3 : Class A Position report, Message5: Class A Static and voyage related data, Message12: Addressed safety related message, Message14: Safety related broadcast message, Message18: Class B Standard position report, Message19: Class B Extended position report, Message24: Class B Static data report
	Alarm			AIS CPA/TCPA Alarm
				ZDA, RMC
Interface	NMEA 0183 Input	Date		ZDA, RMC
		Time		ZDA, RMC, GGA, GNS, GLL
		Position		RMC, GGA, GNS, GLL
		COG/SOG		RMC, VTG
		Heading	True	HDG, THS, HDT
			Magnetic	HDG. HDM
		Magnetic Deviation		HDG, RMA, RMC, VTG, VHW
		STW		VHW
		Wind		MWV
		GPS Status		GSA, GSV
		DSC		DSC, DSE
		AIS		VDM, ALR
	NMEA 0183 Output			APB, BWC, BWR, DBT, DPT, GGA, GNS, GLL, HDG, HDT, MTW, MWV, RMA, RMB, RMC, TTM, VHW, VTG, WPL, XTE, ZDA
	NMEA 2000 Input	Date		126992, 129029, 129033
		Time		126992, 129029, 129033
		Position		129029, 129025
		COG/SOG		129026
		Heading		127250
		Magnetic Deviation		127258
		STW		128259
		Wind		130306
		GPS Status		129539, 129540
		Engine		127488, 127489
		Fuel		127505
		other		059392, 059904, 060160, 060416, 060928, 126208, 126464, 126996
	NMEA 2000 Output			129029, 129025, 129539, 129540, 129033, 126992, 127258, 127250, 129026, 128259, 130306, 130310, 129284, 128520, 129283, 128267, 059392, 059904, 060160, 060416, 060928, 126208, 126464, 126996

■ Error message list

• Error Message at Power ON

Error Message	Condition	Solution
Duplicate Address Detection. Push Enter key to change the address.	• The MXP-5000's Address is duplicated with another one.	• Push the [ENTER] key to automatically change the address.
Internal Initialization Failed. Sub-Unit Initialization Failed. Front Display Initialization Failed. Radar Initialization Failed. Sounder Initialization Failed.	• An initialization error has occurred.	• The MarineCommander™ appears to have malfunctioned. Please contact your Icom dealer or Icom distributor. • Perform a Factory Reset, Radar Reset or Sounder Reset. - Settings and memory contents will be lost.
MXP-5000 Version Error. Can't Use MXP-5000. MXP-5000 / Sub-Unit Version Mismatch. Can't Use MXP-5000. MXP-5000 / Front Display Version Mismatch. Can't Use MXP-5000. MXP-5000 / Radar Version Mismatch. Can't Use Radar. MXP-5000/Sounder Version Mismatch. Can't Use Sounder.	• The MXP-5000's software version does not match the version in the connected equipment. The versions must correspond for the units to operate together.	• Please contact your Icom dealer or Icom distributor.

• About System Error Message

Error Message	Condition	Solution
Sub-Unit Communication Error. Front Display Communication Error. Radar Communication Error. Sounder Communication Error.	• A communication error has occurred.	• Perform a Factory Reset. - Settings and memory contents will be lost. • Perform a Factory Reset or Radar Reset. - Settings and memory contents will be lost. • Perform a Factory Reset or Sounder Reset. - Settings and memory contents will be lost.

• About Plotter Error Message

Error Message	Condition	Solution
Chart Data Read Error.	• Reading data from the map cartridge has failed.	• Correctly reinsert the map cartridge.

• About Radar Error Message

Error Message	Condition	Solution
Radar Response Error.	• There is no response from the Radar unit.	• Turn OFF the MarineCommander™, then check the connection between the MXP-5000 and the MXR-5000R/T.
Radar is not Available.	• The Radar has become unstable.	
Radar Video Signal Missing!	• While transmitting, the radar image has been interrupted for three seconds or more.	
Scanner Signal Missing!	• There is no response from the radar antenna.	
Trig Signal Missing!	• The input of the trigger signal has disappeared.	
SHM Signal Missing!	• The input of the SHM signal has disappeared.	• The MarineCommander™ appears to have malfunctioned. Please contact your Icom dealer or Icom distributor.
Check Data in "Radar Monitor"!	• The radar antenna is not functioning correctly.	

• About Sounder Error Message

Error Message	Condition	Solution
Sounder Response Error.	• There is no response from the Sounder unit.	• Turn OFF the MarineCommander™, then check the connection between the MXP-5000 and the MXF-5000.
Sounder is not Available.	• The Sounder has become unstable.	
Sounder Video Signal Missing!	• While transmitting, the sounder image has been interrupted for three seconds or more.	

• About external equipment (NMEA0183, NMEA2000) Error Message

Error Message	Condition	Solution
AIS Data is not Available.	• The AIS has become unstable. - This message also appears when no AIS equipped vessel exists around your vessel.	• Check the connection between the MXP-5000 and the AIS equipment. • Confirm the AIS equipment is turned ON.
Transceiver is not Available.	• The transceiver has become unstable.	• Check the connection between the MXP-5000 and the transceiver. • Confirm the transceiver is turned ON.
GPS Not Fixed.	• Location information cannot be measured.	• Check the installation of the GPS antenna. - Be sure the location will not be shaded by an antenna or mast.
SBAS Data is not Available.	• SBAS data has become unstable, and the correction of the position data will be invalid.	• Check the installation of the GPS antenna. - Be sure the location will not be shaded by an antenna or mast. • Check the GPS settings.
No GPS Signal.	• The signals from the GPS receiver have disappeared.	• Check the connection between the MXP-5000 and the GPS receiver.
Day/Time Data is not Available. COG Data is not Available. SOG Data is not Available. Heading Data is not Available. Engine Data is not Available. Tank Data is not Available. Wind Data is not Available. STW Data is not Available.	• The information is not being received.	• Check the connection between the MXP-5000 and its sensor unit.

Count on us!

