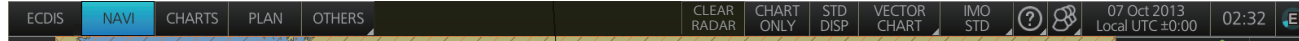


# Model FMD-3100

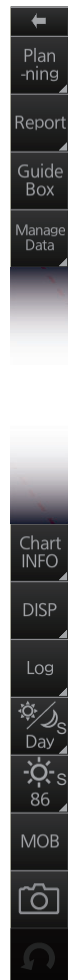
This guide provides the basic operating procedures for this equipment. For detailed information, see the Operator's Manual. The brand and product names mentioned in this guide are trademarks, registered trademarks or service marks of their respective holders.

## Display Layout

Status bar (See page 2.)



InstantAccess bar (See page 3.)



Upper section

Lower section

Chart scale/presentation mode box

Cursor position box



Electronic chart area

Overlay/NAV Tools box

EBL1 box, EBL2 box

Permanent warnings box

VRM1 box, VRM2 box

Sensor information box

HDG	<b>356.4°</b>	GYRO1
SPD	<b>25.1kn</b>	FILT BT
	0.0kn	
COG	<b>356.4°</b>	FILT
SOG	<b>25.1kn</b>	
POSN	<b>60°39.191' N</b>	
FILT	<b>024°56.591' E</b>	
Offset		
WGS84	Non-ENC data	

Own ship functions box

Offset
WGS84
TM/CU Reset

Route information box

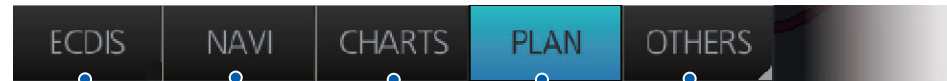
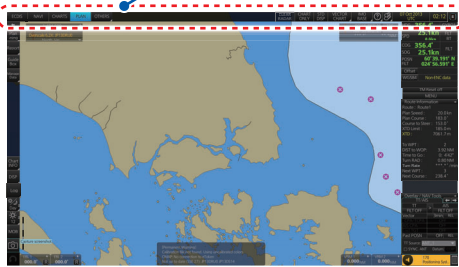
Route Information
Route : Route1
Plan Speed : 20.0 kn
Plan Course : 183.0°
Course to Steer : 153.0°
XTD Limit : 185.0 m
XTD : 7061.7 m
To WPT : 2
DIST to WOP: 3.92 NM
Time to Go : 0: 4'42"
Turn RAD : 0.80 NM
Turn Rate *** */min
Next WPT : 3
Next Course : 238.4°

Alert box



## Status Bar

Status bar



**OTHERS:** Sets system in standby; plays back data.

**PLAN:** Selects the Voyage planning mode.

**CHARTS:** Selects the Chart maintenance mode.

**NAVI:** Selects the Voyage navigation mode.

**Display mode:** No use. (Fixed at "ECDIS".)

### How to open a drop-down list

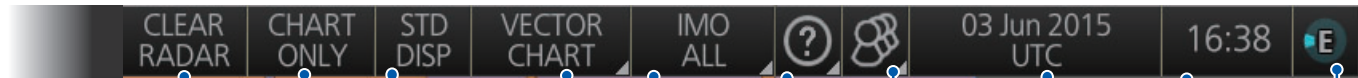
Indicates a drop-down list.



Click button



Drop-down list



**CLEAR RADAR:**  
Hide TT, AIS and radar displays, when the radar overlay is active. Greyed out otherwise.

**Chart priority:**  
Selects which chart type to display, vector or raster, when both are available.

**User profiles, Settings menu:**  
Manages user profiles; opens the Setting menu.

**Working indicator:**  
Rotates clockwise if the system is working properly.

**Time:**  
Time (local or UTC).

**STD DISP:**  
Restores IMO standard display.

**Chart database:**  
Displays the operator's manual, ECDIS program no. and system information.

**Date:**  
Displays the date; selects the time to use, local or UTC.

**CHART ONLY:**  
Shows only the chart, when left button is pressed and held down.

**Chart database:**  
Selects the chart database (IMO base, IMO Primary, IMO Standard, IMO All or PERSONAL).

# Instant Access Bar

## Upper section (by operating mode)

### Voyage navigation mode

**MSG**  
Opens the Message dialog box to manage AIS Safety and NAVTEX messages.

**Manual Update:**  
Opens the manual update dialog box to insert chart update symbols manually.

**Mini Conning:**  
Shows, hides the mini conning display.

**Weather Overlay:**  
Activates or deactivates the weather overlay.

**Route:**  
- Select/Unselect monitored route.  
- Switch monitored route to Voyage planning mode for editing.

**Instant Track:**  
Provides a temporary track to return to or deviate from the monitored route.

**User Chart:**  
Select/unselect monitored user chart.

**Monitor INFO:**  
Show Monitor [Information] dialog box.

**Stop Monitor:**  
Stop monitoring route, user chart.

### Chart maintenance mode

**Gate-1\*:**  
Automatically installs Gate-1 provided charts and licenses.

**AUTO Import:**  
Starts automatic installation of the chart data (CD or DVD ROM).

**Manage Charts:**  
Manages chart cells (grouping, deleting, etc.).

**Cell Status:**  
Shows the chart catalog to get info about charts installed in the system.

**License:** Manages chart licenses.  
**Public Key:** Manages public keys.

**Sync Config:** Selects units to synchronize.  
**Sync Status:** Checks synchronization status.  
**Gate-1 Config\*:** Gate-1 chart management.  
**Reconvert:** Reconverts SENC data.  
**Clear Charts:** Clears charts.

\*Shown only with Gate-1 connection.

## Lower section

**SET:**  
Shows, hides chart features; sets chart alerts.

**TWO DISP:**  
Splits the screen in two, horizontally or vertically.

**NtoM:**  
Displays Notice to Mariners info.

**Chart Legend:**  
Finds data about current chart.

**Viewing Dates:**  
Sets "display date" and "approved until" dates.

**Chart 1:**  
Provides overview of ECDIS chart symbols.

**DISP:**  
Shows, hides software keyboard.

**Log:**  
Records user/position events to the event log; accesses various logs.

**Day:**  
Selects a color palette.

**MOB:**  
Marks man overboard position.

**Camera:**  
Takes a screenshot.

**Undo:**  
Undoes past action (route, user chart).

**Brightness:**  
Adjusts brilliance of monitor.

### Voyage planning mode

**Report:**  
See reports on waypoints and voyage planning related routes and user charts.

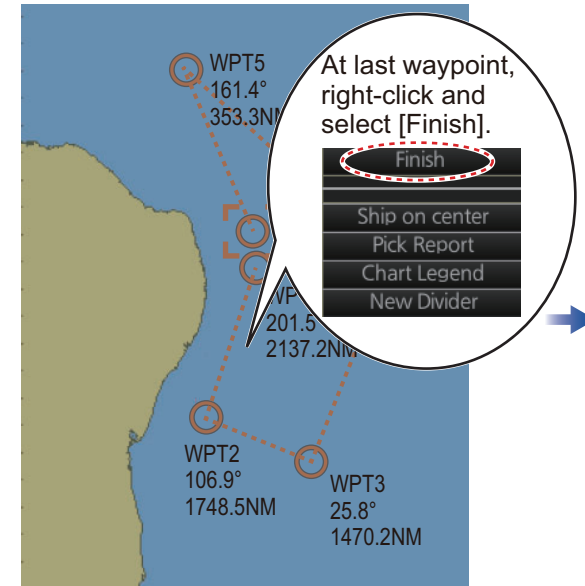
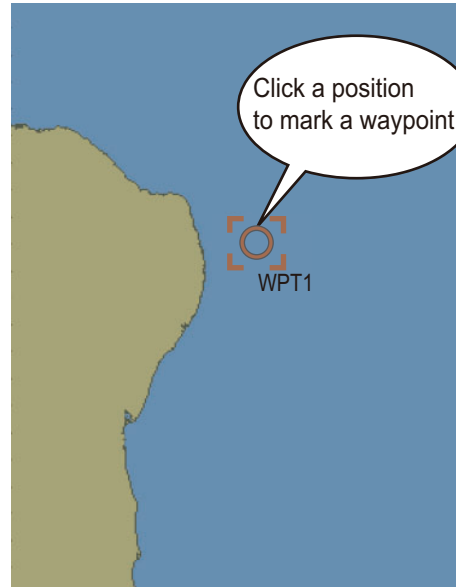
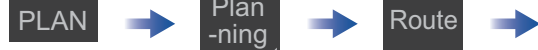
**Plan-ning:**  
**Route:** Creates a route (see page 4).  
**User Chart:** Creates a user chart (see page 6).

**Guide Box:**  
Provides range and bearing information between the last waypoint and the cursor position when creating a route.

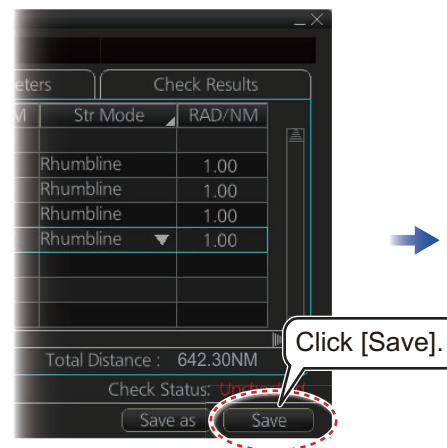
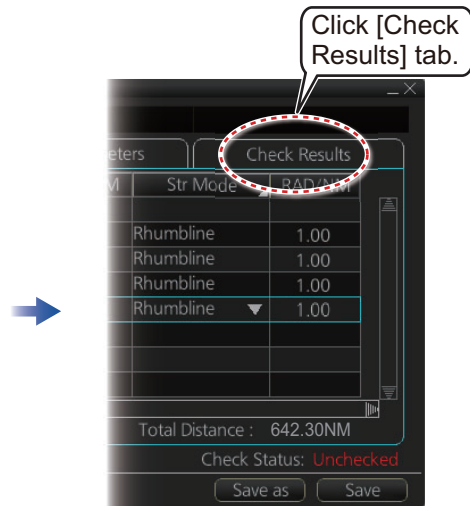
**Manage Data:**  
Deletes, imports routes and user charts.

# Routes

## How to create and check a route



Continue entering waypoints.



## Routes (con't.)

### How to select a route to monitor

Route Information  
Route : cc\_import\_03  
Plan Speed : 20.0 kn  
Plan Course : 337.5°  
Course to Steer : 332.9°  
XTD Limit: 185.0 m  
XTD: 0.9 m

To WPT  
DIST to  
Time  
Turn  
ROT  
Next WPT  
Next Course : 341.2°

In Voyage navigation mode, right click anywhere.

- Select Route
- Unselect Route
- Move to Plan
- Monitor User Chart
- Monitor INFO
- Stop Monitor
- XTD

Click [Select Route].

Select Route

Filter  Planned Route  Instant Track

ID	Name	Date
14	Untitled1	25 Apr 2016
15	Untitled1	05 Apr 2016
17	Untitled1a	21 Mar 2016
16	Untitled2	02 Feb 2016
13	route1	21 June 2016
7	route11	07 May 2016

Total WPTs : 4  
Start WPT : 36° 53.396' N 133° 59.390' E

Cancel Open

Select a route.

Select Route

Filter  Planned Route  Instant Track

ID	Name	Date
14	Untitled1	25 Apr 2016
15	Untitled1	05 Apr 2016
17	Untitled1a	21 Mar 2016
16	Untitled2	02 Feb 2016
13	route1	21 June 2016
7	route11	07 May 2016

Total WPTs : 4  
Start WPT : 36° 53.396' N 133° 59.390' E

Total DIST : 177.5NM  
Total WPTs : 4  
Start WPT : 36° 53.396' N 133° 59.390' E

Cancel Open

Route selected.

Click [Open].

To stop monitoring a route:



### How to view route waypoint information

Route Information  
Route : cc\_import\_03  
Plan Speed : 20.0 kn  
Plan Course : 337.5°  
Course to Steer : 332.9°  
XTD Limit: 185.0 m  
XTD: 0.9 m

To WPT  
DIST to  
Time  
Turn  
ROT  
Next WPT  
Next Course : 341.2°

In Voyage navigation mode, right click anywhere.

- Select Route
- Unselect Route
- Move to Plan
- Monitor User Chart
- Monitor INFO
- Stop Monitor
- XTD

Click [Monitor INFO].

Monitor Information  
Route : Untitled3

Waypoints  Linked User Chart  Monitoring User Chart  Check Results

To WPT : 1.11NM Departure : 02:08 29 Jun 2016  
Actual Average SPD : 48.6kn

WPT	Name	Latitude	Longitude	ETA	Plan SPD
1		39° 59' 39.7" E			
2		39° 50.308' E			20.0
3		39° 50.326' E		04:57 29 Jun 2016	20.0

Total WPTs : 3 Total Distance : 1.82NM

Close

Click [Waypoints] tab.

### How to delete a route

PLAN

Manage Data

Route

Route Data Management

Filter  Planned Route  Instant Track

Name	Date
Pinano Test	25 Apr 2016

Total WPTs : 5  
Start WPT : 33° 20.000' N 135° 45.000' E  
Total DIST : 1919.4NM  
Final WPT : 03° 09.614' N

FEA-2x07 Import Delete Close

Check route(s) to delete.

Click [Delete].

# User Charts

## How to create a user chart



Click object to draw.

<b>Tidal:</b> - Current - Predicted		<b>Area</b>
<b>Line:</b> - Coast - Route - Nav - Depth		<b>Circle</b>
<b>Clearing line:</b> - NMT - NLT		<b>Label:</b> - Label - Point



**How to create a line**

(1) Click  
(2) Click  
(3) Click  
(4) Right-click; select [Finish].

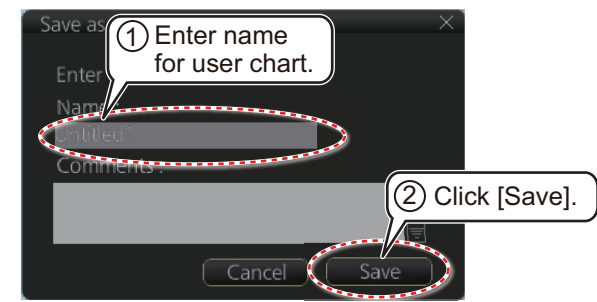
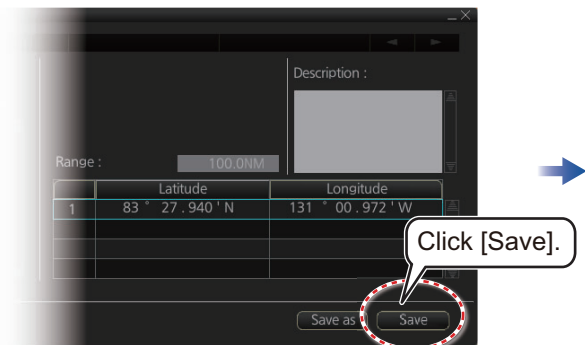
**How to create a circle**

(1) Click  
(2) Drag cursor; click to set.  
(3) Click  
(4) Right-click; select [Finish].

**How to create an area**

(1) Click  
(2) Click  
(3) Click  
(4) Right-click; select [Finish].

Example objects



# User Charts (con't)

## How to select objects to display in user chart

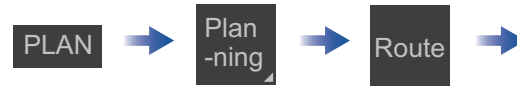


1 Click [Mariner] tab.

2 Check item(s).

3 Click [Save].

## How to link a user chart to a route



Click [Select].

Route selected.

Click [Open].

1 Click [User Chart] tab.

2 Select user chart to link. (Multiple selections possible.)

3 Click.

4 Click [Save].

## How to delete objects from a user chart

### Circle or area

Right-click

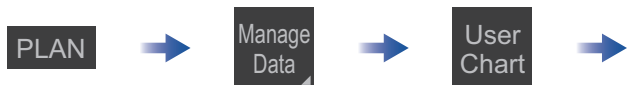
Select [Delete].

### Point on a line

Right-click the point to delete.

Select [DeletePoint].

## How to delete user charts



1 Check chart(s) to delete.

Click [Delete].

Name	Date
UserChart1	15 Jun 2016
UserChart2	05 May 2016
usechar1	01 May 2016

# Chart Operations

## How to control visibility of chart objects

DISP

SET

Basic Setting

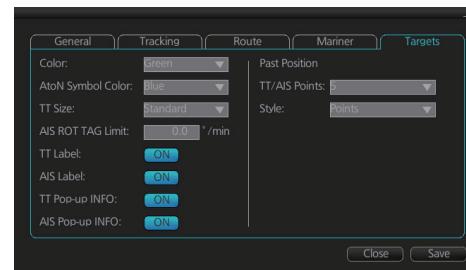
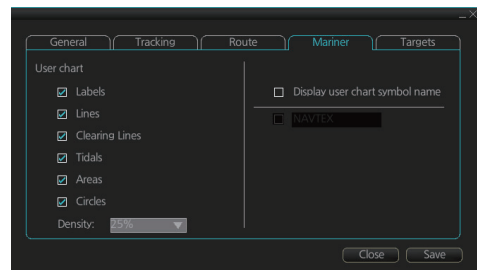
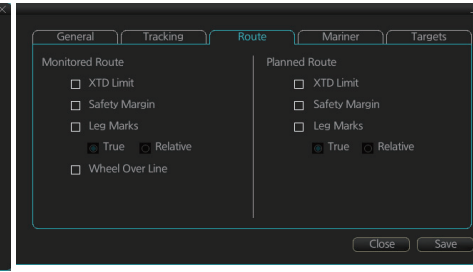
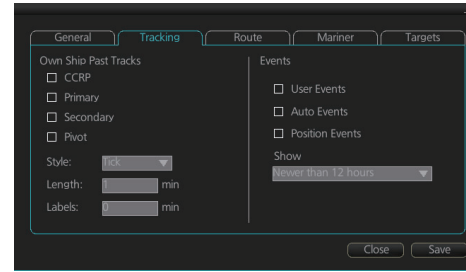
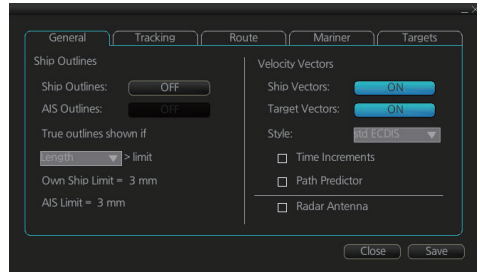
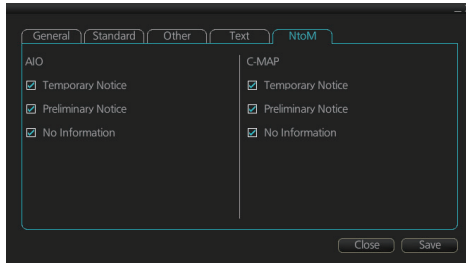
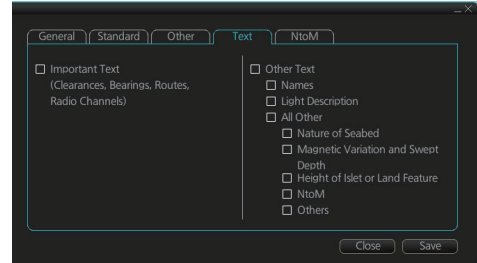
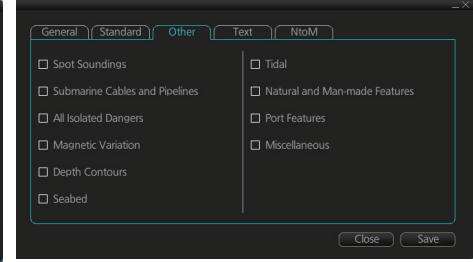
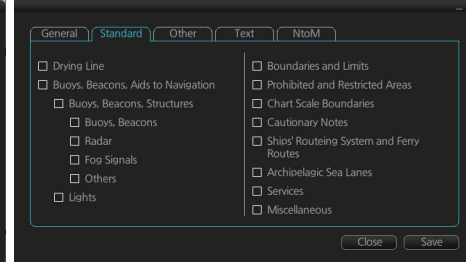
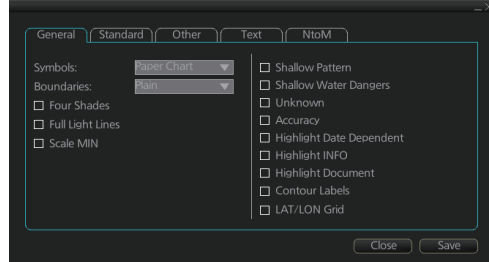
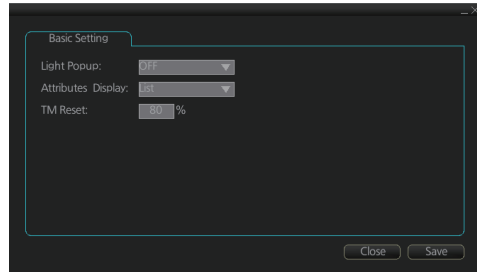
Control basic chart settings

Chart DISP

Control chart objects

Symbol DISP

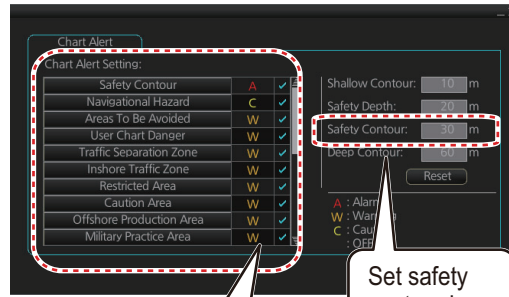
Control navigational features





# Chart Operations

## How to set safety contours and chart alerts



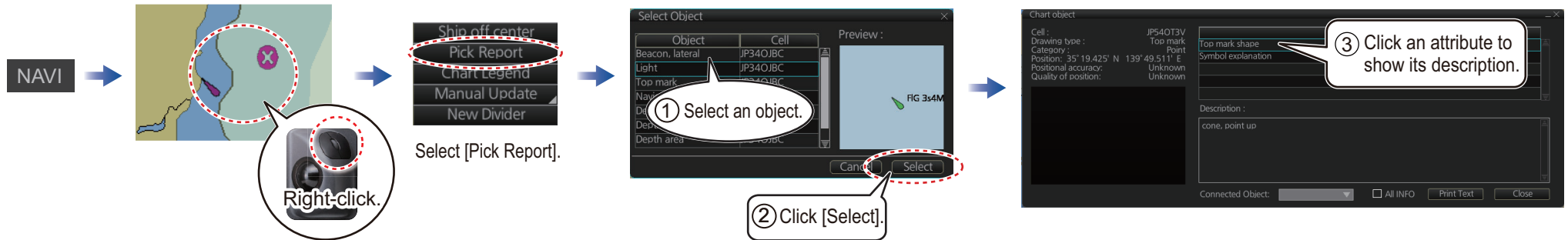
Click to select chart alert type:

- A** (Alarm): Audio+visual indications
- W** (Warning): Visual indication
- C** (Caution): No indication

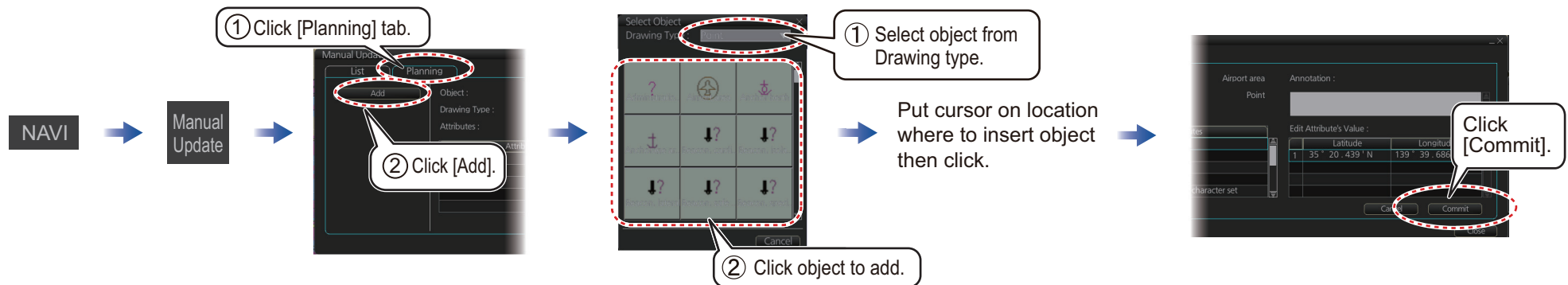
Click icon to switch between **C** and **W** vice versa.

To turn off display of a chart object in route monitoring, remove check mark from alert (alarm, warning, caution).

## How to find chart object information (ENC chart)



## How to manually insert a "new" chart object



# TT/AIS Operations

## How to find target info

Click a target to show its information.

**TT Info (1/2)**

TT No. TT 06

Bearing BRG 102.9° T

Range RNG 7.800 NM

Course over ground COG 270.0° T

Speed over ground SOG 10.0 kn

CPA CPA 0.100 NM

TCPA TCPA 00:06

Bow crossing range BCR \*\*\* NM

Bow crossing time BCT \*\*\*

**TT symbols (main)**

Symbol (Color)	Name
<span style="color: green;">●</span> (Green)	Past position point
<span style="color: green;">○</span> (Green)	Target under acquisition
<span style="color: green;">○</span> (Green)	Acquired target

**AIS Info (1/2)**

MMSI MMSI 000001003

Vessel name VESSEL B

Bearing BRG 141.5° T

Range RNG 74.57 NM

Course over ground COG 90.0° T

Speed over ground SOG 14.0 kn

CPA CPA 28.58 NM

TCPA TCPA -79:29

Bow crossing range BCR 104.0 NM

Bow crossing time BCT >99:59

Position 34° 17.923' N  
140° 39.636' E

**AIS symbols (main)**

Symbol (Color)	Name
<span style="color: green;">●</span> (Green)	Past position point
<span style="color: green;">△</span> (Green)	Sleeping AIS target
<span style="color: green;">△<sup>ABC</sup></span> (Green, thick line)	Activated AIS target

## How to set up TT and AIS on the TT/AIS page in Overlay/NAV Tools box

Shows or hides TT symbols.

Shows or hides AIS symbols.

Shows or hides AIS symbols.

Sets vector time (shared AIS/TT). 6min

Sets vector mode (shared AIS/TT). REL

**Vector**  
  
(ex. TT)

Sets past position point interval (time). 1min True-G

Setting cannot be changed from this equipment.

(ex. AIS)

No use.

Source of TT data (radar antenna or TTM sentence). TT Source: ANT\_1

Datum selection (ANT or CCRP) is available for configurations where the radar does not meet the latest regulations. For all other configurations, this button is not selectable. Datum: CCRP

Checked when the antenna that displays radar echoes automatically feeds TT data. SYNC. ANT

## TT/AIS Operations (con't)

Open the chart menu, select TT/AIS Setting and then Setting. The below menus can also be displayed by clicking the radio button on the pop-up menu that appears when an item other than TT/AIS is selected on the Overlay/NAV Tools box.

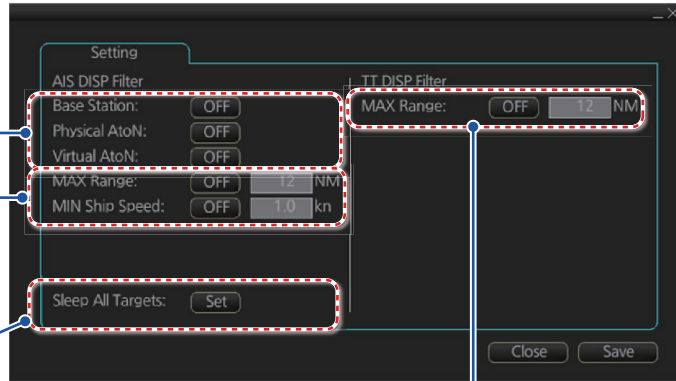


### How to filter TT and AIS displays, sleep all targets

Limit AIS display by AIS category.

Filters AIS targets by range, speed.

Sleeps all activated AIS targets.



Hide vessels beyond the range set (from own ship).

## Radar Overlay

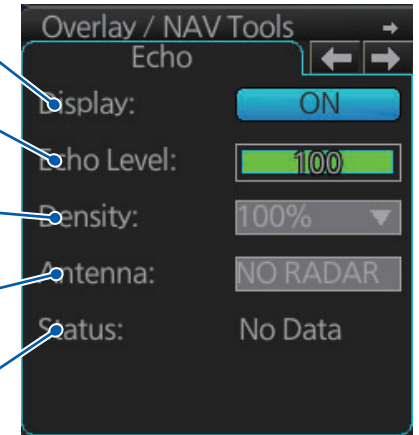
Activates, deactivates the radar overlay.

Adjusts the strength of radar echo. Put the cursor on the bar then roll the scrollwheel.

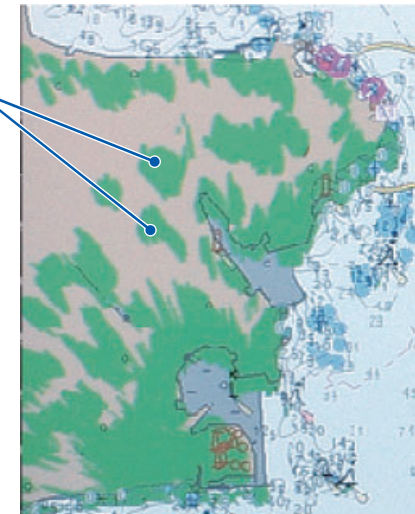
Sets the degree of transparency for the overlay.

Selects the antenna to feed the radar echo data.















Status of the radar echo data, "OK" or "No Data".



Radar echo



## Alert Icons and Their Meanings

No.	Icon	Alert state	Description
<b>Emergency, Alarm alert</b>			
1		Active - unacknowledged alarm	Flashing red triangle. Loudspeaker symbol at center. Presented together with alert text.
2		Active - silenced alarm	Flashing red triangle. Loudspeaker symbol at center with diagonal line through symbol. Presented together with alert text.
3		Active - acknowledged alarm	Red triangle. Exclamation mark at center. Presented together with alert text.
4		Active - responsibility transferred alarm	Red triangle. Right arrow at center. Presented together with alert text.
5		Rectified - unacknowledged alarm	Red triangle. Tick mark at center. Presented together with alert text.
<b>Warning alert</b>			
6		Active - unacknowledged warning	Flashing yellow-orange circle. Loudspeaker symbol at center. Presented together with alert text.
7		Active - silenced warning	Flashing yellow-orange circle. Loudspeaker symbol at center with diagonal line through symbol. Presented together with alert text.
8		Active - acknowledged warning	Yellow-orange circle. Exclamation mark at center. Presented together with alert text.
9		Active - responsibility transferred warning	Yellow-orange circle. Right arrow at center. Presented together with alert text.
10		Rectified - unacknowledged warning	Yellow-orange circle. Tick mark at center. Presented together with alert text.
<b>Caution alert</b>			
11		Caution	Yellow square. Exclamation mark at center. Presented together with alert text.
<b>Other icons</b>			
12		Aggregation	Plus sign. Presented together with the icon numbers 1 - 11.
13		Acknowledge not allowed for alarm	Red triangle. Cross in center of triangle. Presented together with icon numbers 1, 2 and 5.
14		Acknowledge not allowed for warning	Yellow-orange circle. Cross in center of circle. Presented together with icon numbers 6, 7 and 10.

