

## 8-1-1 MAIN BANG SUPPRESSION

(Usually, doesn't need set up. adjust if necessary)

This adjustment is decrease the transmitted signal which appears as a circular echo around the center.

Adjustment is done so as to main bang is observe slightly seen.

Excess adjusting is danger for nearest small target observation.

If the main bang is not so big, use as factory setting.

### WARNING



Do not change Suppression Level/DIST unless absolutely necessary.  
Incorrect adjustment will result in deletion of nearby target images and thus collisions may occur resulting in accidents.

## 8-1-2 TARGET EXPANSION

Level setting.

The level which can be set up is level 1, the level 2, the level 3, and the level 4.

Expansion and the magnifying the observation target size..

Tap the "Level1, Level2, Level3, Level4" icon.



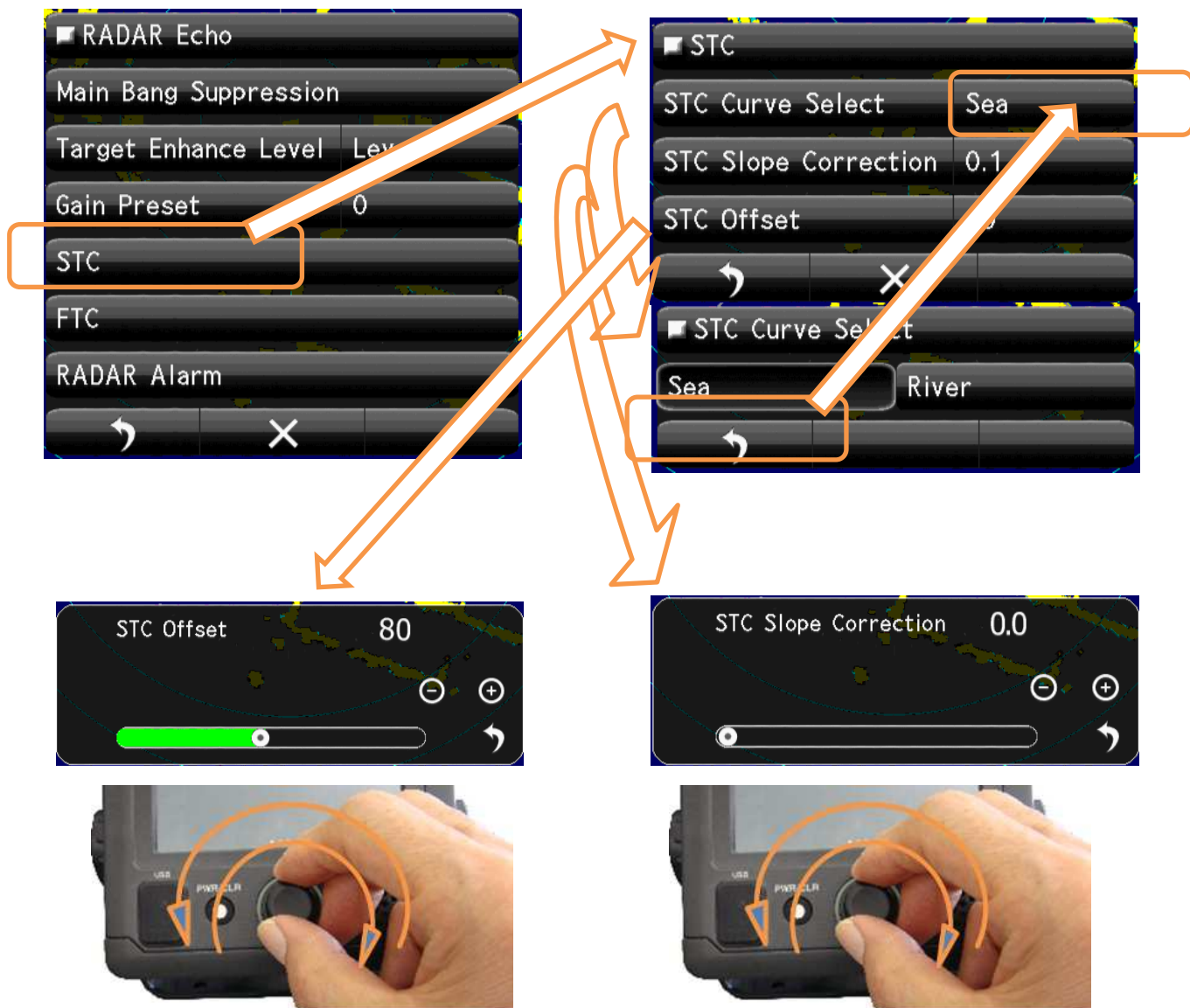
## 8-1-3 GAIN LEVEL

(Important adjustment. Since adjusted in factory, adjustment is not necessary in the field.)



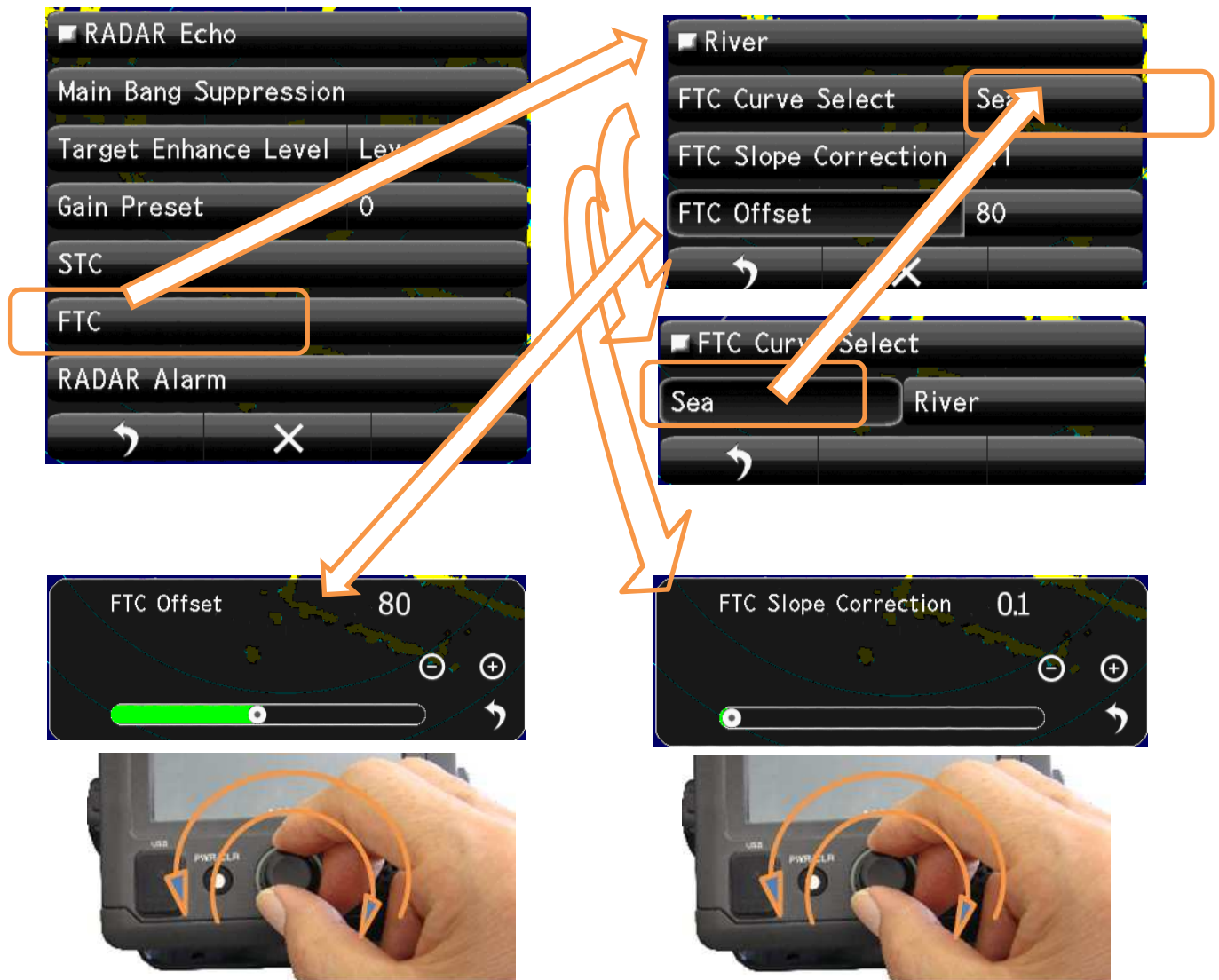
### 8-1-4 SEA CLUTTER LEVEL

(Important adjustment. Since adjusted in factory, adjustment is not necessary in the field.)



### 8-1-5 RAIN AND SNOW CLUTTER LEVEL

(Important adjustment. Since adjusted in factory, adjustment is not necessary in the field.)



### 8-1-6 RADAR Alarm LEVEL



Set up Alarm 1 Level

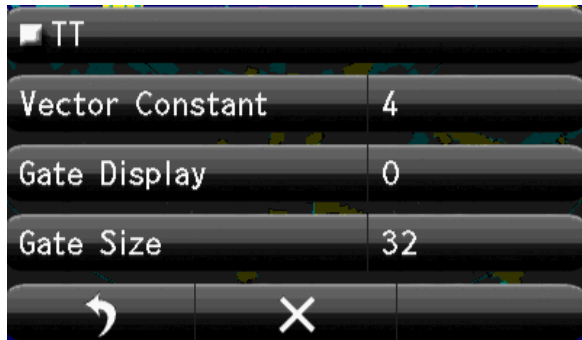


Set up Alarm 2 Level



## 8-2 TT(TARGET TRACKING) FUNCTION

(Important adjustment. Since adjusted in factory, adjustment is not necessary in the field.)



Vector shows the movement of the target.

Vector Constant large. Vector is stable, but the response is slow.

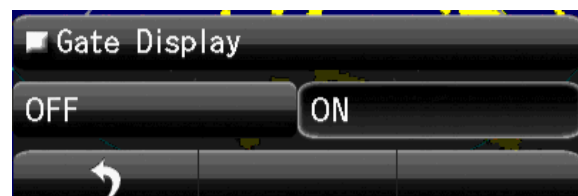
Vector Constant small. Vector is unstable, but the response is quick..



Tap Vector Constant, setting Bar appears lower part of screen.

Set up by flick or tap + -.

Rotary knob adjusting is possible. Click and set.

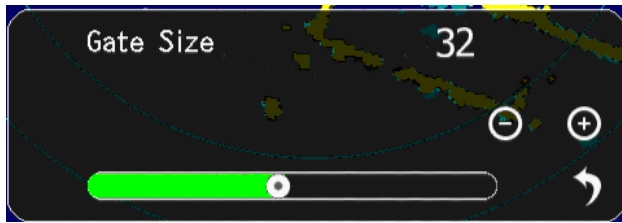


Gate Display: The region automatically search target moving area.

ON: Confirmation is possible under green searching area.

OFF: Doesn't display automatically searching area.

Gate Size: Set up the region size which can search the moving target automatically.



- Wide region: Possible to track fast moving target, but many clutters are include.  
Sometime do miss tracking because of much noise.
- Narrow region Possible to track stable, but fast moving target are tend to lost.  
Because of first target soon goes outside of the region.

## 8-3 SCANNER FUNCTION

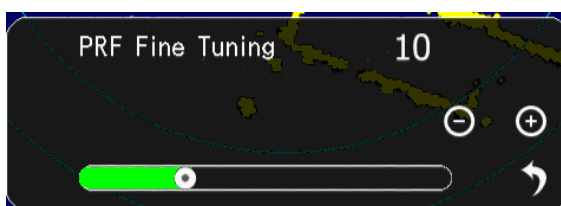


### 8-3-1 PULSE REPETITION FREQUENCY FINE TUNING (PRF ADJUST)

When existing the same frequency radar, in the same area, they interfere each other. If p.r.f.(pulse reputation frequency)is the same, Interference can't reject on the screen. In that case shift the p.r.f. a little may decrease the radar interference.

#### PRF Fine Tuning:

If radar interference cannot reject completely, it is effective way to shift the PRF.



Watching the screen echo, rotate the Rotary knob and stop when radar interference are fade out from screen.



## 8-3-2 STAGGER TRIGGER

When existing the same frequency radar, in the same area, they interfere each other.  
If p.r.f.(pulse reputation frequency)is the same, Interference can't reject on the screen.  
Another way to decease interference is shift the transmitting time randomly.  
Not synchronize signal which transmit randomly is eliminate.  
So decrease the other radar interference echo on screen.

**ON Stagger:** Stagger trigger is generated

**OFF Stagger:** Stagger trigger stop. (Normal trigger timing)

Select and Tap



Watching the screen echo, select off or on when heavy radar interference on screen.



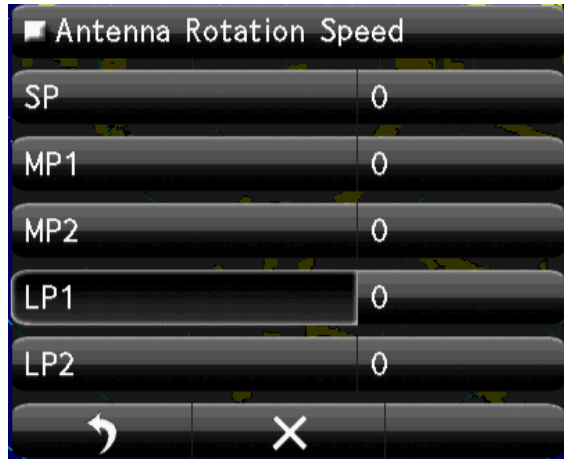
return to the menu

### 8-3-3 SCANNER ROTATIONAL SPEED

The rotational speed of inside microwave radiator is possible to change.

The sensitivity of radar are low speed is more higher.

So scanner rotation speed is possible to change according observing range.



Every pulse length can select the Antenna rotation speed.

Short range uses short pulse (SP).

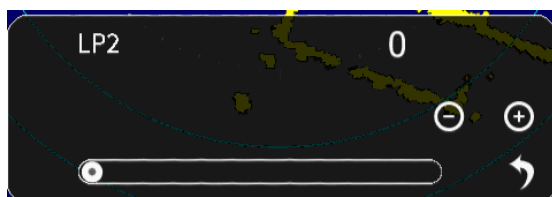
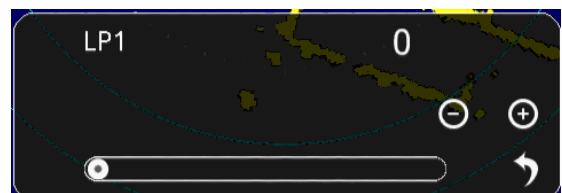
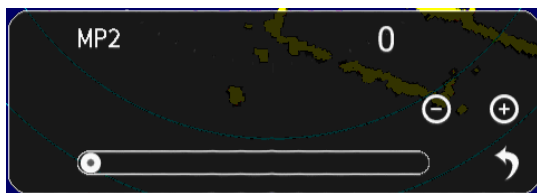
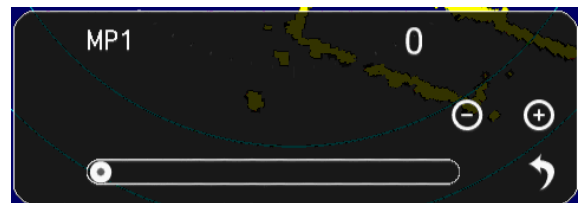
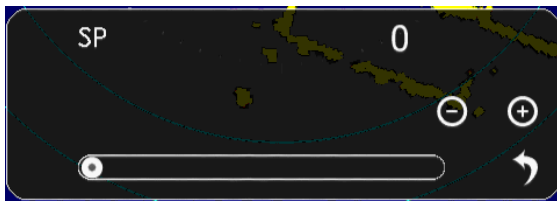
Medium range uses medium pulse (MP)

Long range uses Long pulse (LP)

Shorter range requires the High speed refresh screen.

Longer range requires the Low speed for High sensitivity.

User can select rotational speed according to his request.



### 8-3-4 ECONOMY MAGNETRON SETUP (PRF , PULSE LENGTH)

The life of magnetron proportion to the total transmitting pulse power.

Low power transmission makes magnetron life more longer.

#### Selection

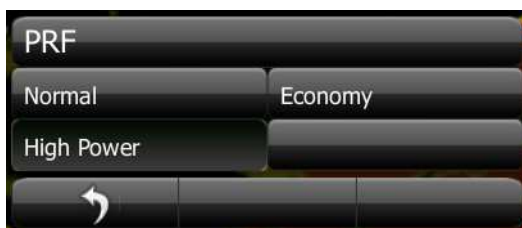
**Normal:** It is the usual factory setup. Usually, this is chosen.

**Economy:** Selected the shorter pulse, repeat frequency is also selected lowest 650 Hz.

The life of a magnetron keeps more longer time.

Sensitivity is decrease somewhat from Normal.

**High Power:** High sensitivity high performance.



Select and Tap

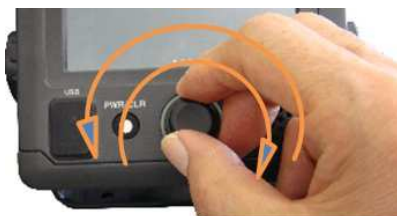
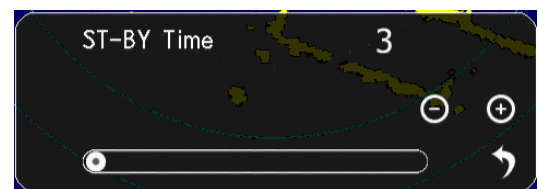
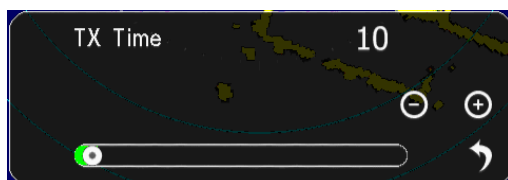
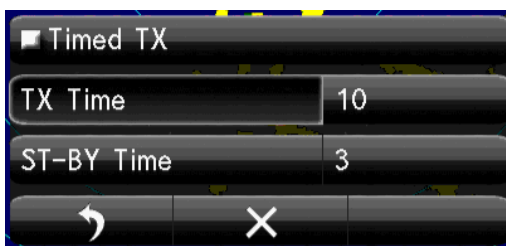


return to the menu

### 8-3-5 TIMED TX

The life of magnetron proportion to the total transmitting pulse power.

Timed TX can save magnetron life longer.



### 8-3-6 TUNE PEAK LEVEL

Normally, adjustment is not necessary.

(In case of adjustment the tuning peak point is shifted from maximum echo point.)

This adjustment must be done with (8-3-7 Tuning indicator) alternately.

Set RANGE at 24NM

Display tuning level indicator menu.

Tune maximum echo point.

At this point adjust tuning level, so as to seen within the green bar.

Adjusting data is 0 to 127



### 8-3-7 TUNE INDICATOR LEVEL

Normally, adjustment is not necessary.

(Adjust ,in case of tuning level is too low.)

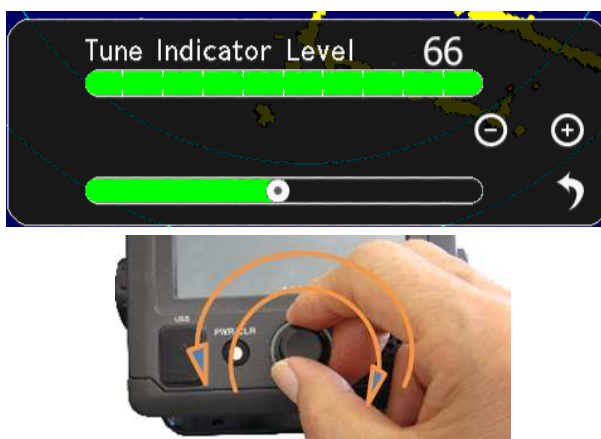
Set RANGE at 24NM

Display the Tune Indicator menu.

Tuning region is 0 to 127

**NOTE!** If tuning level is too excess setting, can't work automatic tuning function.

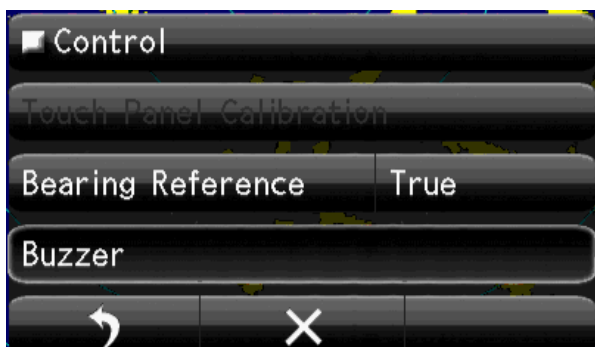
Adjust the tuning level bar moves within 80 to 90%.



## 8-4 CONTROL



### 8-4-1 BEARING REFERENCE

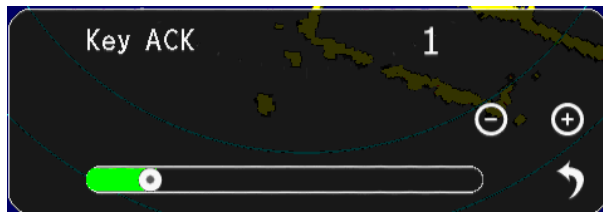


Select Bearing Mode  
True or Relative

### 8-4-2 BUZZER

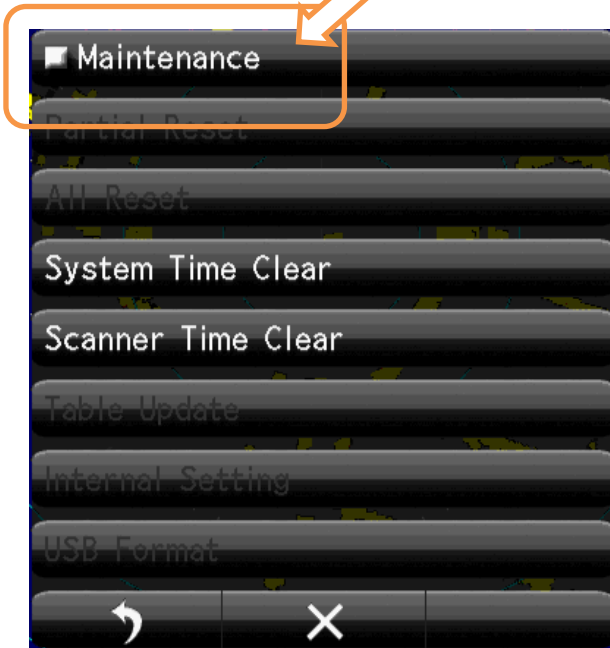


Set up the Buzzer sound Level.



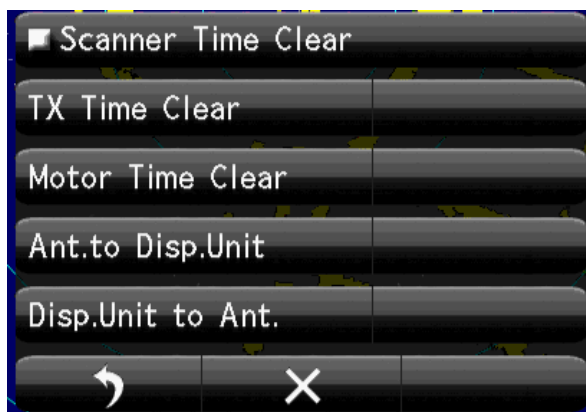
Set up the Every sound Level.

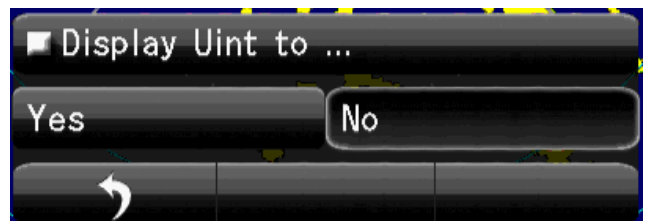
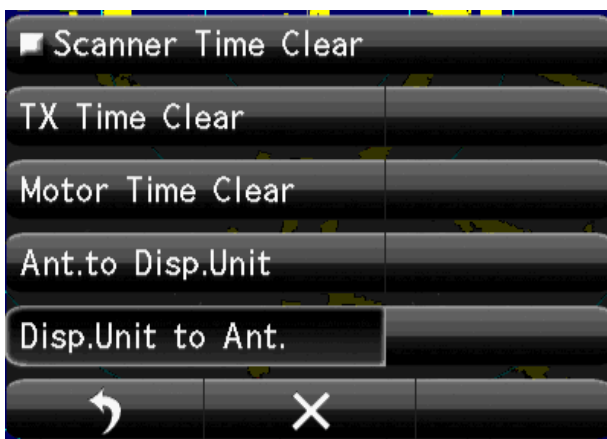
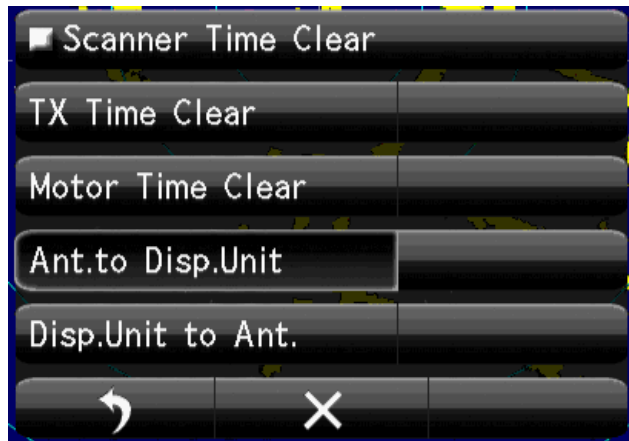
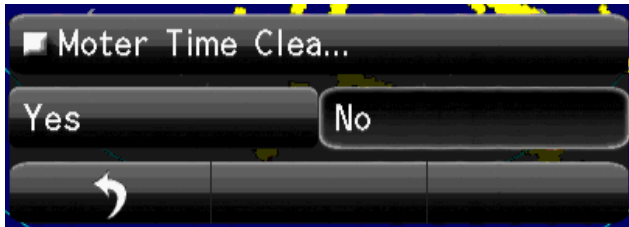
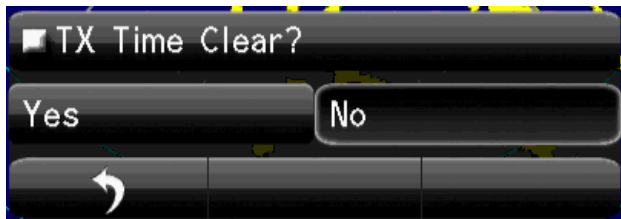
### 8-5 MAINTENANCE SETTING



Clear System time

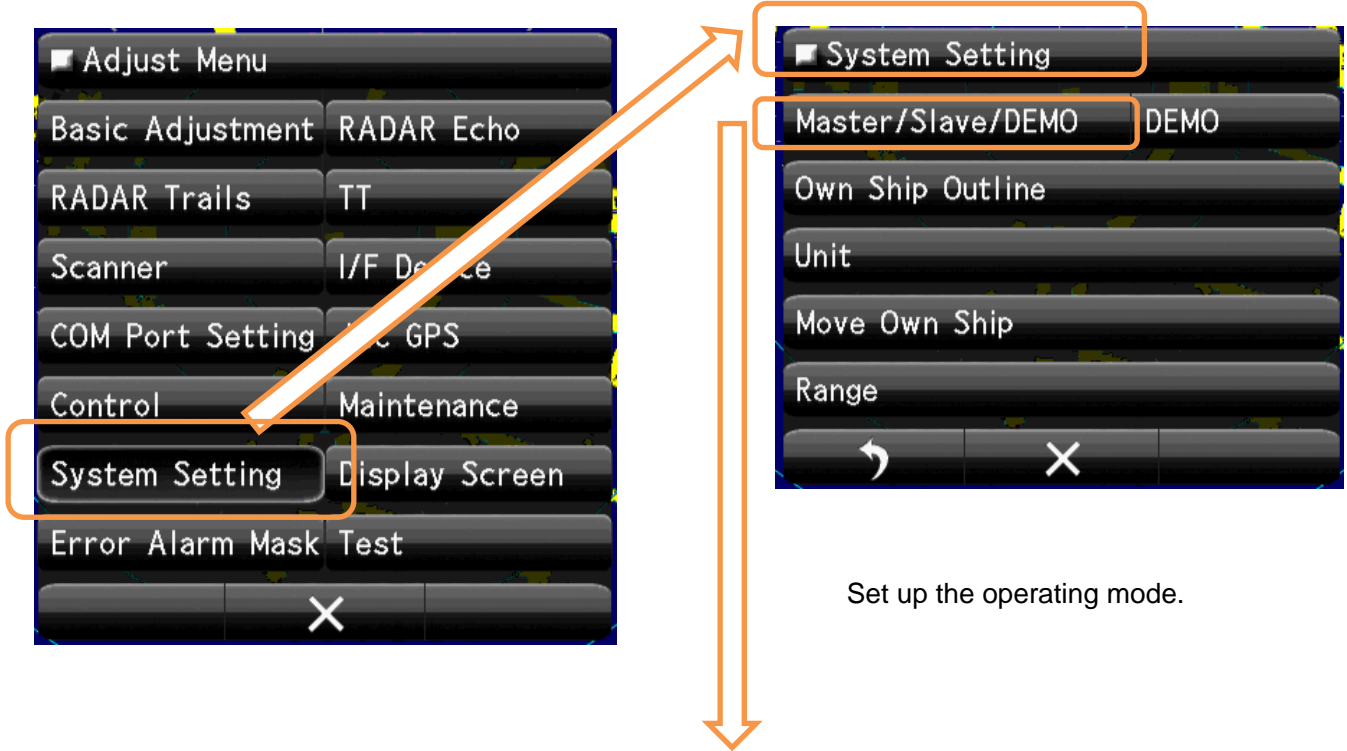
Clear Scanner time.







### 8-6 SYSTEM SETTING



#### 8-6-1 MASTER/SLAVE/DEMO



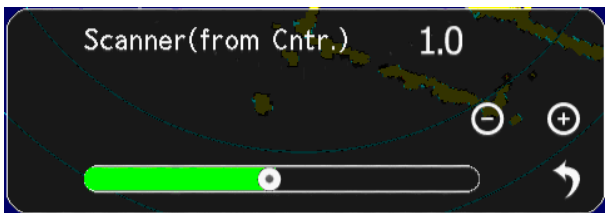
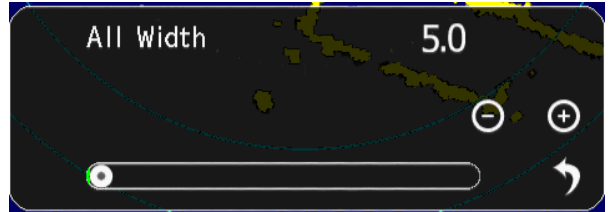
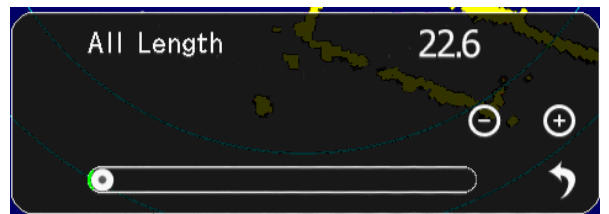
**Mode selection of display.**  
**Master:** control scanner.(Stand alone).  
**Slave:** Receive another radar signal and display. can't control scanner.  
**Demo:** When use as carrying out the demonstration

Select Master

#### 8-6-2 Own Ship Outline

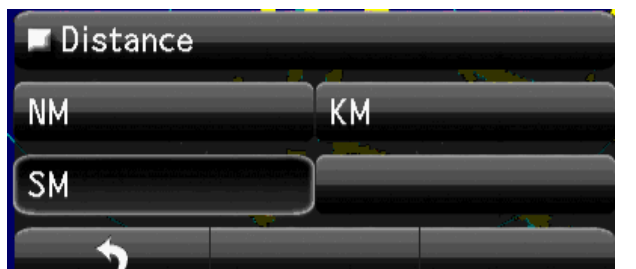
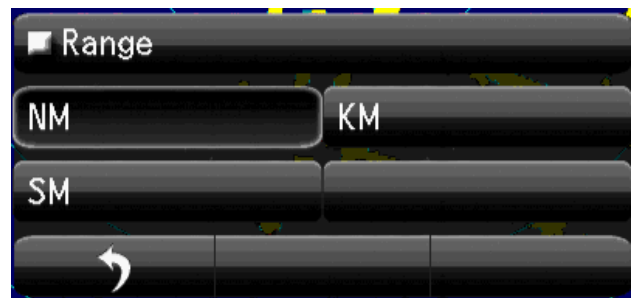
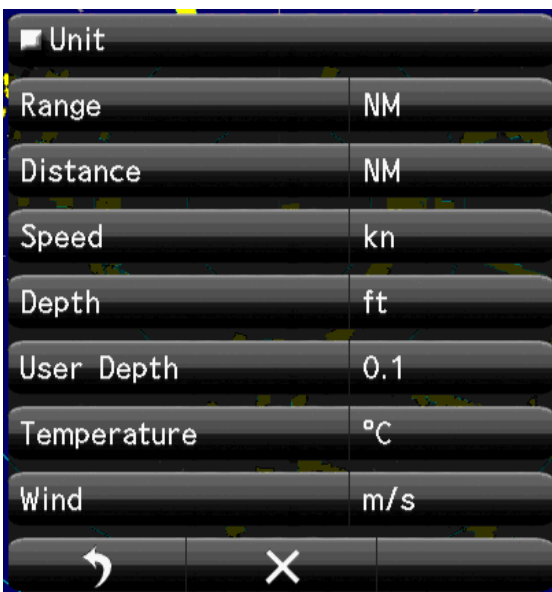


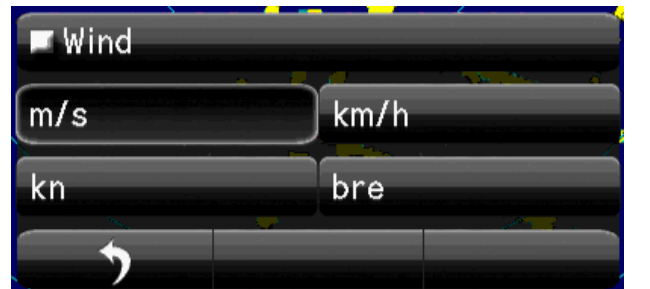
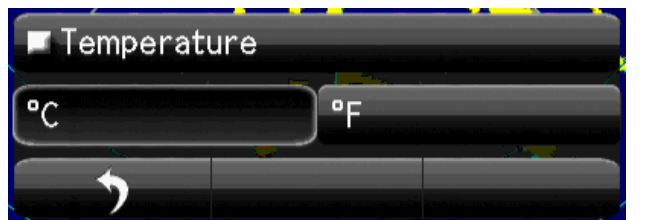
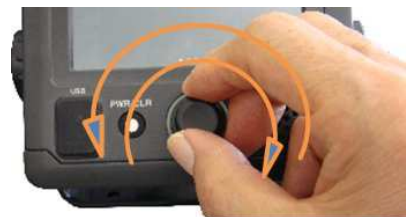
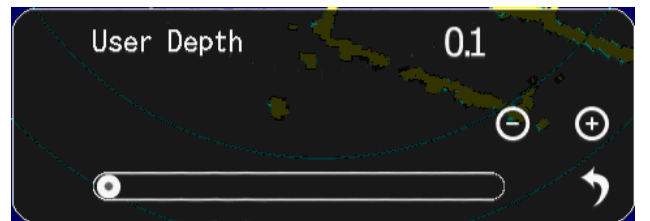
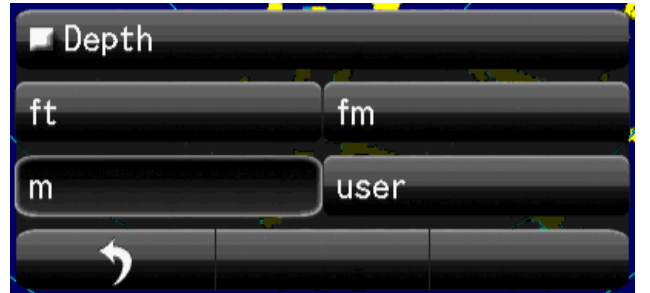
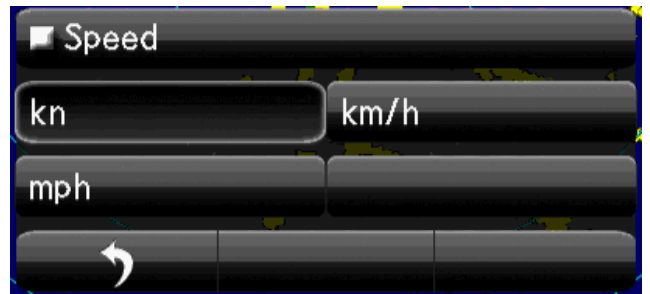
Set up the Own ship's Outline, length and scanner position.



### 8-6-3 UNIT

Display units, such as distance, speed, depth of water, water temperature, and wind velocity. "NM", "km", "ktn", etc. are possible to set up.



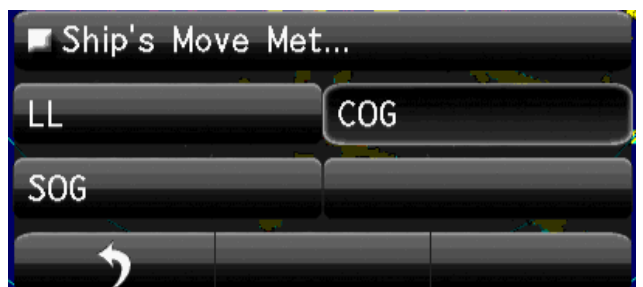
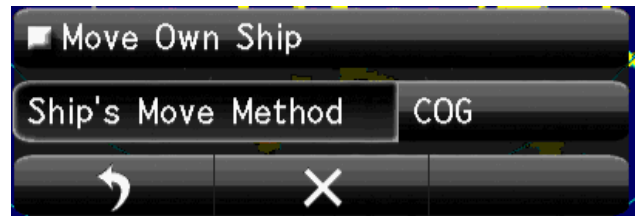


## 8-6-4 MOVE OWN SHIP

Means of Moving own ship.

Select

GPS, LOG, Dead Reckoning (dead-reckoning navigation), etc.



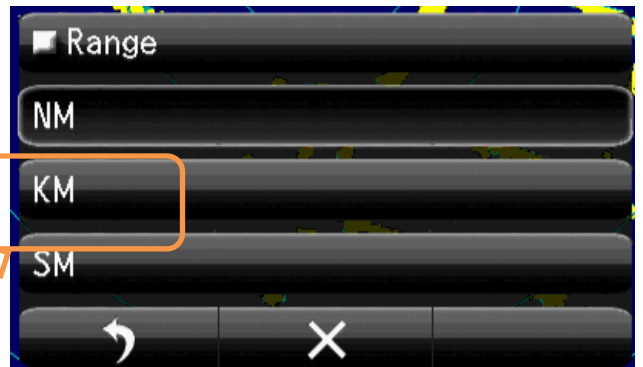
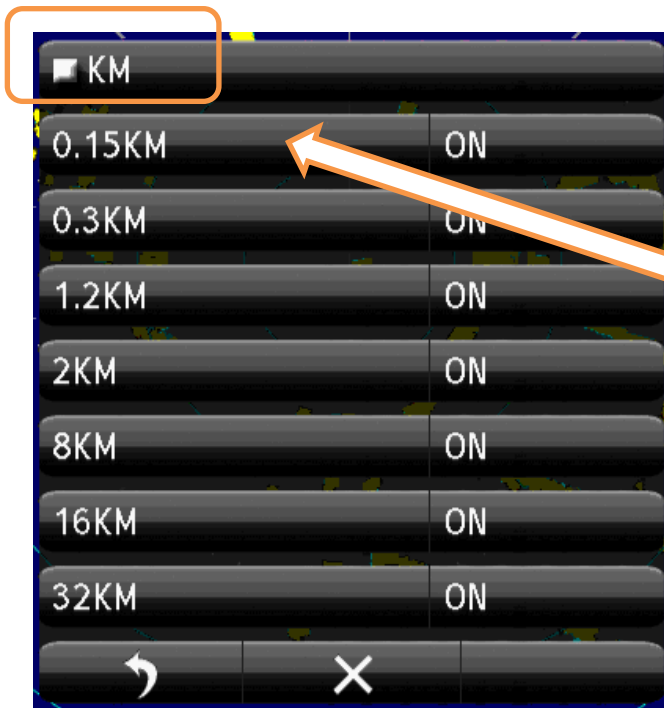
### 8-6-5 USE RANGE SELECT



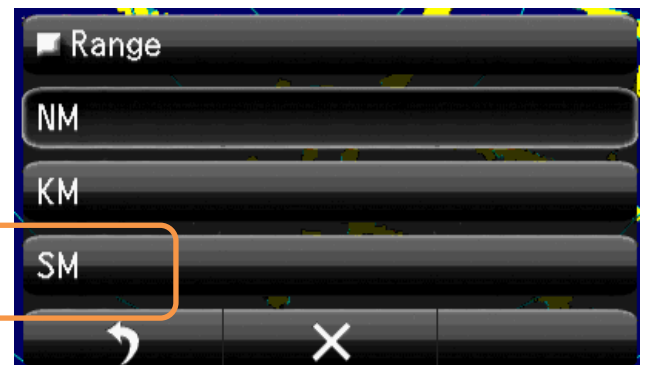
Select the using unit. "NM", "KM", "SM".



Select the using NM range "ON".  
Not using range, set up "OFF".



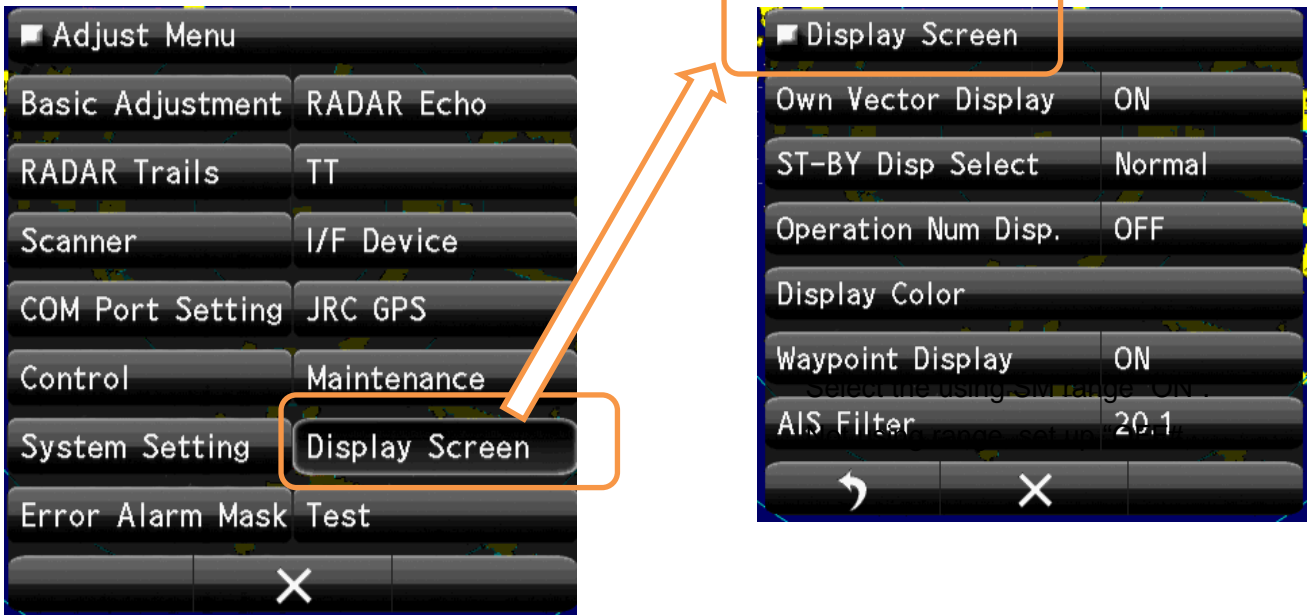
Select the using KM range "ON".  
Not using range, set up "OFF".



Select the using SM range "ON".  
Not using range, set up "OFF".

## 8-7 DISPLAY SCREEN

Various display setting..



### 8-7-1 OWN VECTOR DISPLAY



Select the Own Vector display ON or OFF.

### 8-7-2 ST-BY DISP SELECT

Selections whether at stand by state, display the numeric data on screen or not.



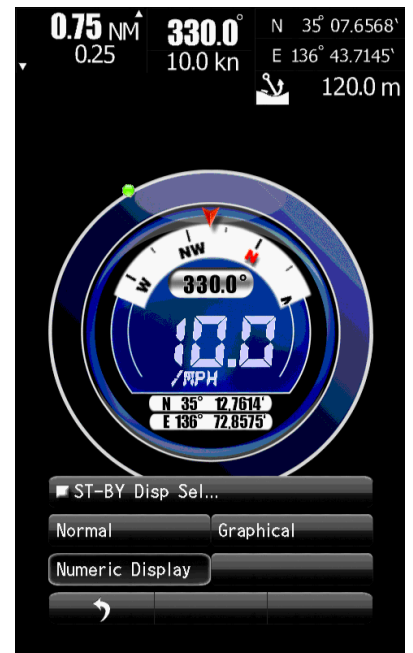
Select the ST-BY Display. "Normal" "Graphical" "Numeric".



“Normal”

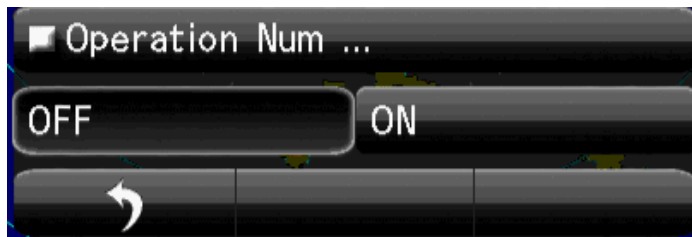


“Graphical”



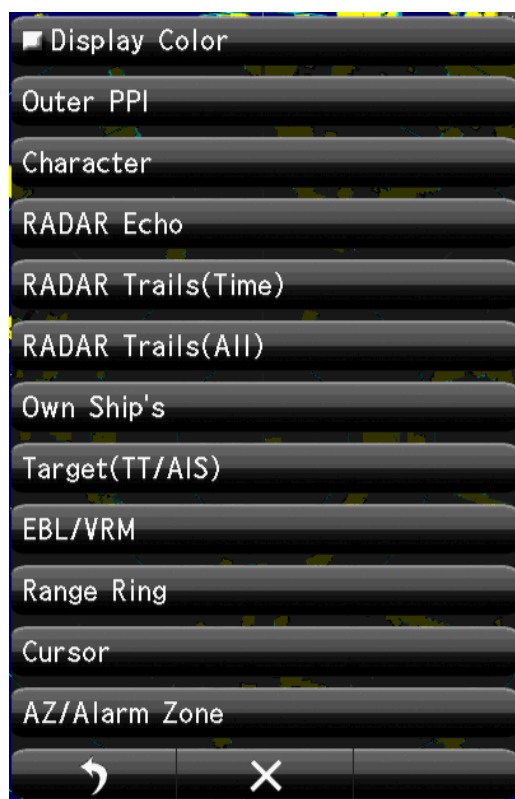
“Numeric”.

### 8-7-3 OPERATION NUMERICAL DISPLAY



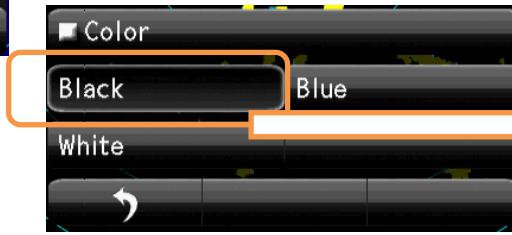
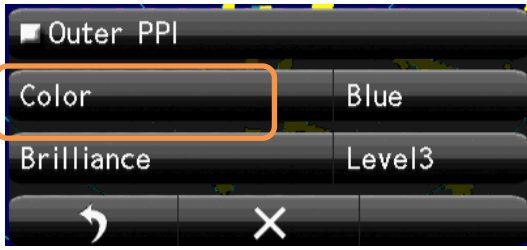
Select the Display. OFF or ON

### 8-7-4 DISPLAY COLOR

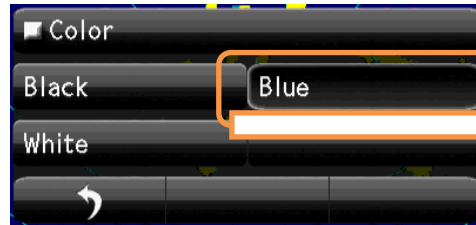
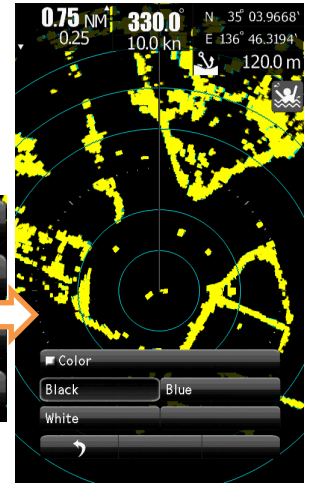


Setting of screen color.

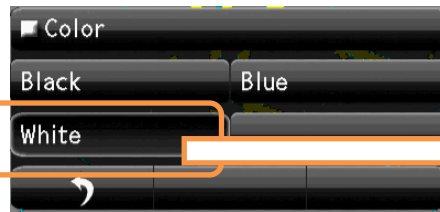




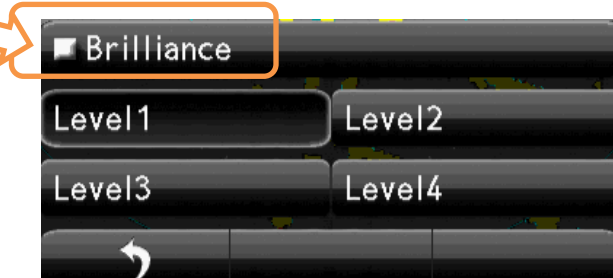
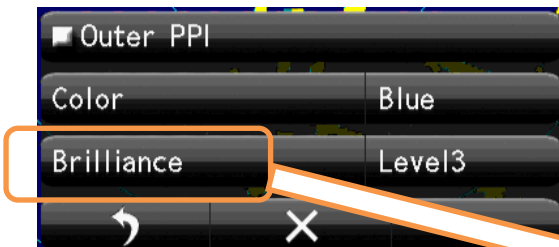
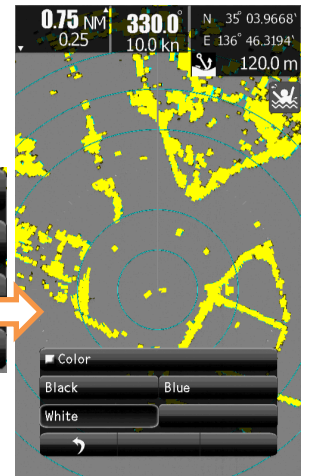
Black screen color.



Blue screen color.



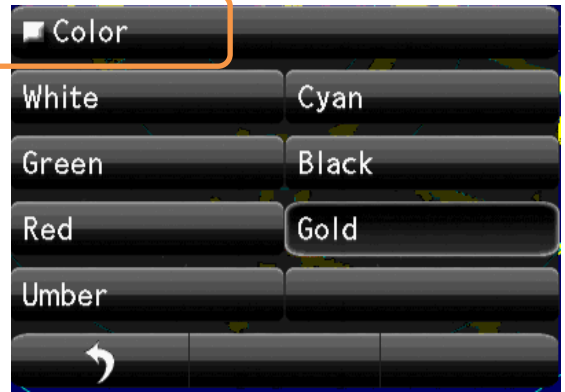
White screen color.



Select Brilliance Level



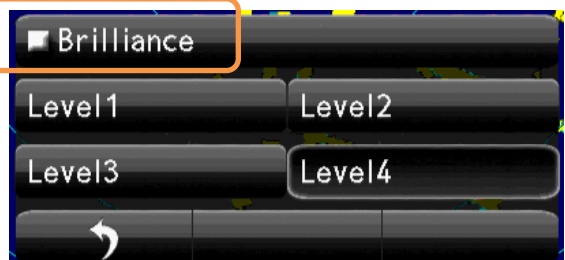
Select Character Color



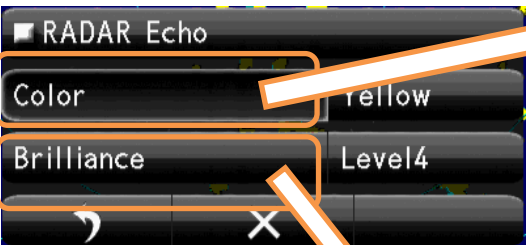
Select Color



Select Brilliance.



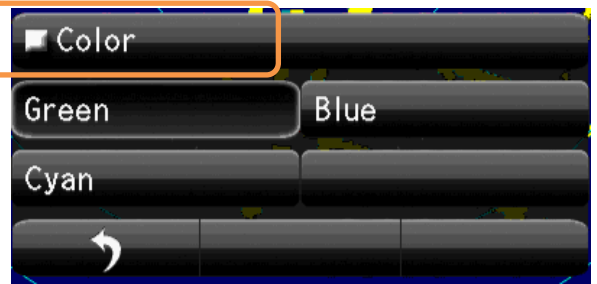
Select Brilliance. Level.



Select Echo Color



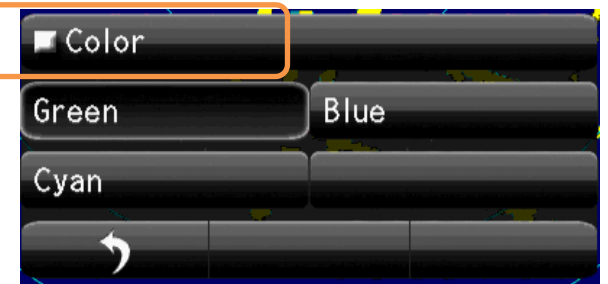
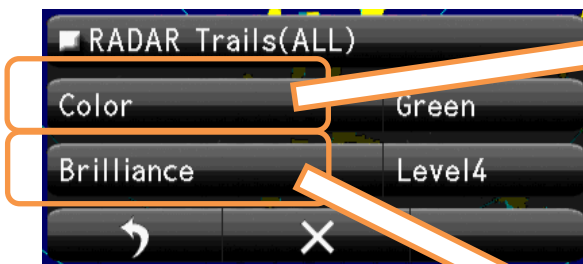
Select Brilliance. Level.



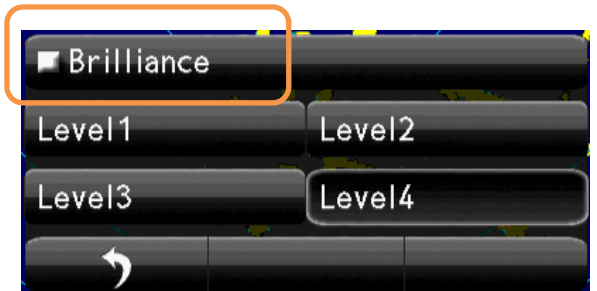
Select Trails(Time) Color



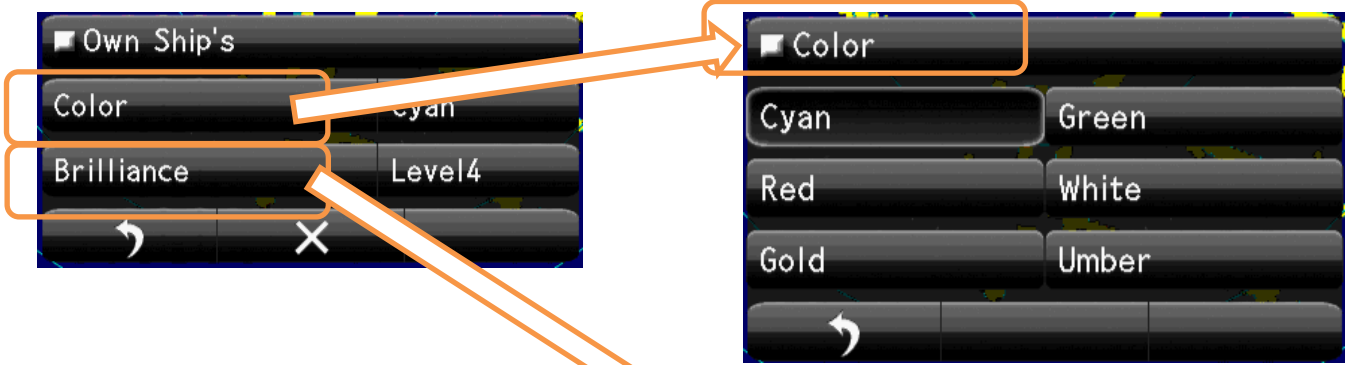
Select Brilliance. Level.



Select Trails(All) Color



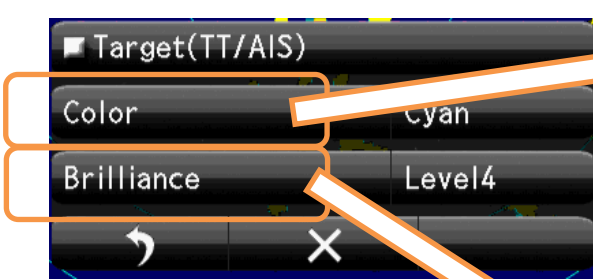
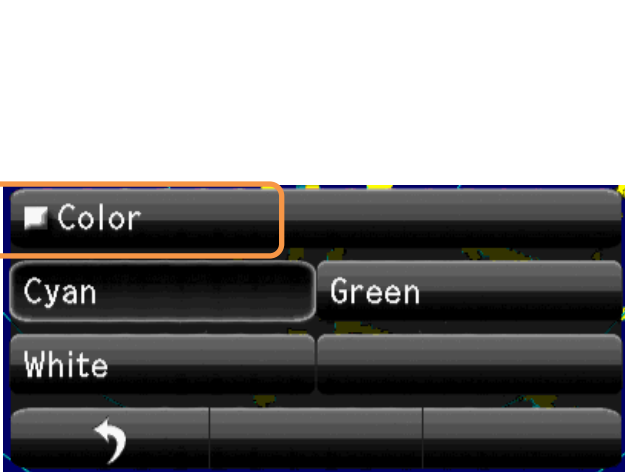
Select Brilliance. Level.



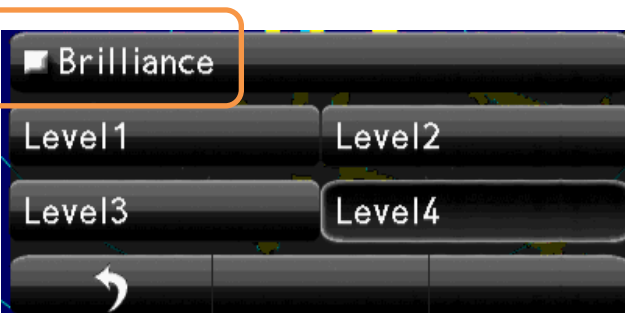
Select Own Ships Color



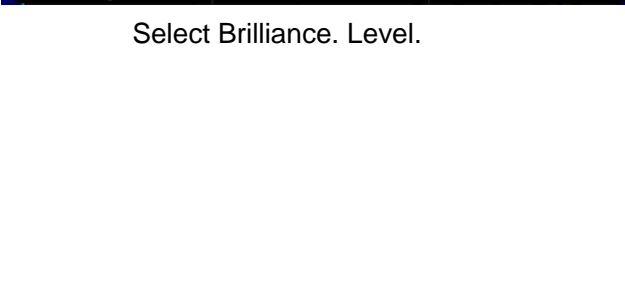
Select Brilliance. Level.

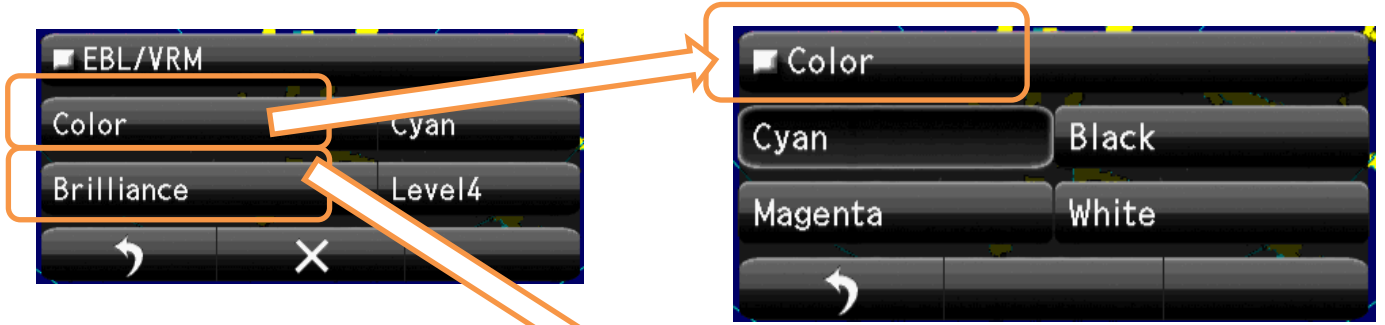


Select Target (TT/AIS) Color



Select Brilliance. Level.

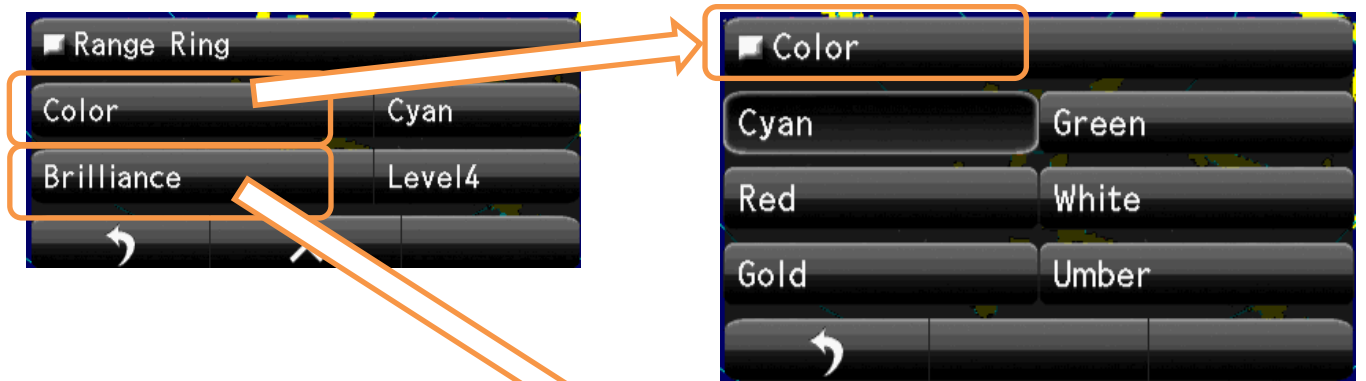




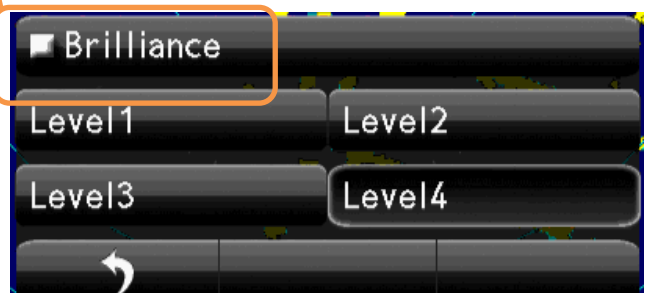
Select EBL/VRM Color



Select Brilliance. Level.



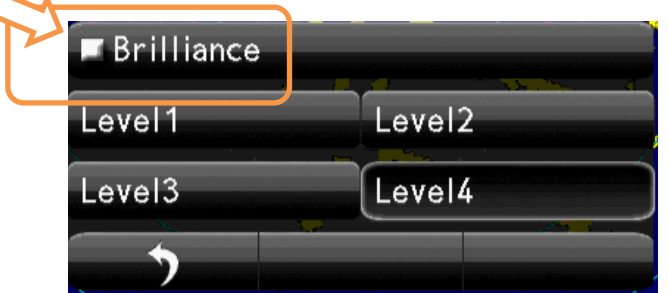
Select Range Ring Color



Select Brilliance. Level.



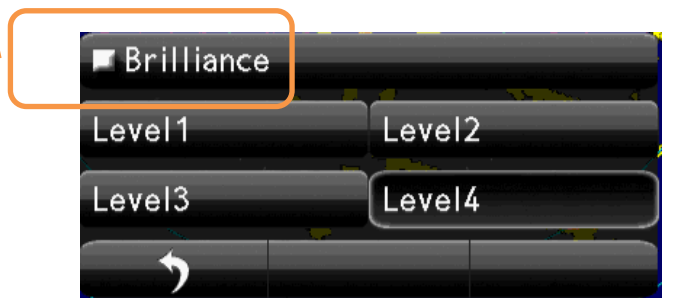
Select Cursor Color



Select Brilliance. Level.

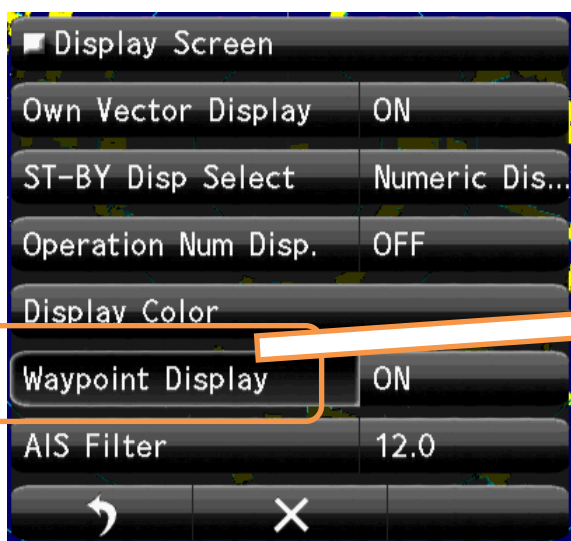


Select AZ/Alarm Color



Select Brilliance. Level.

### 8-7-5WAYPOINT DISPLAY

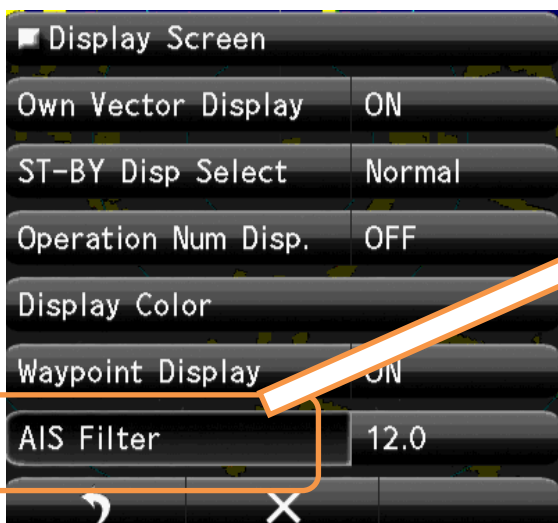


Select Waypoint Display.



Select Waypoint Display "ON" or "OFF".

### 8-7-6AIS FILTER



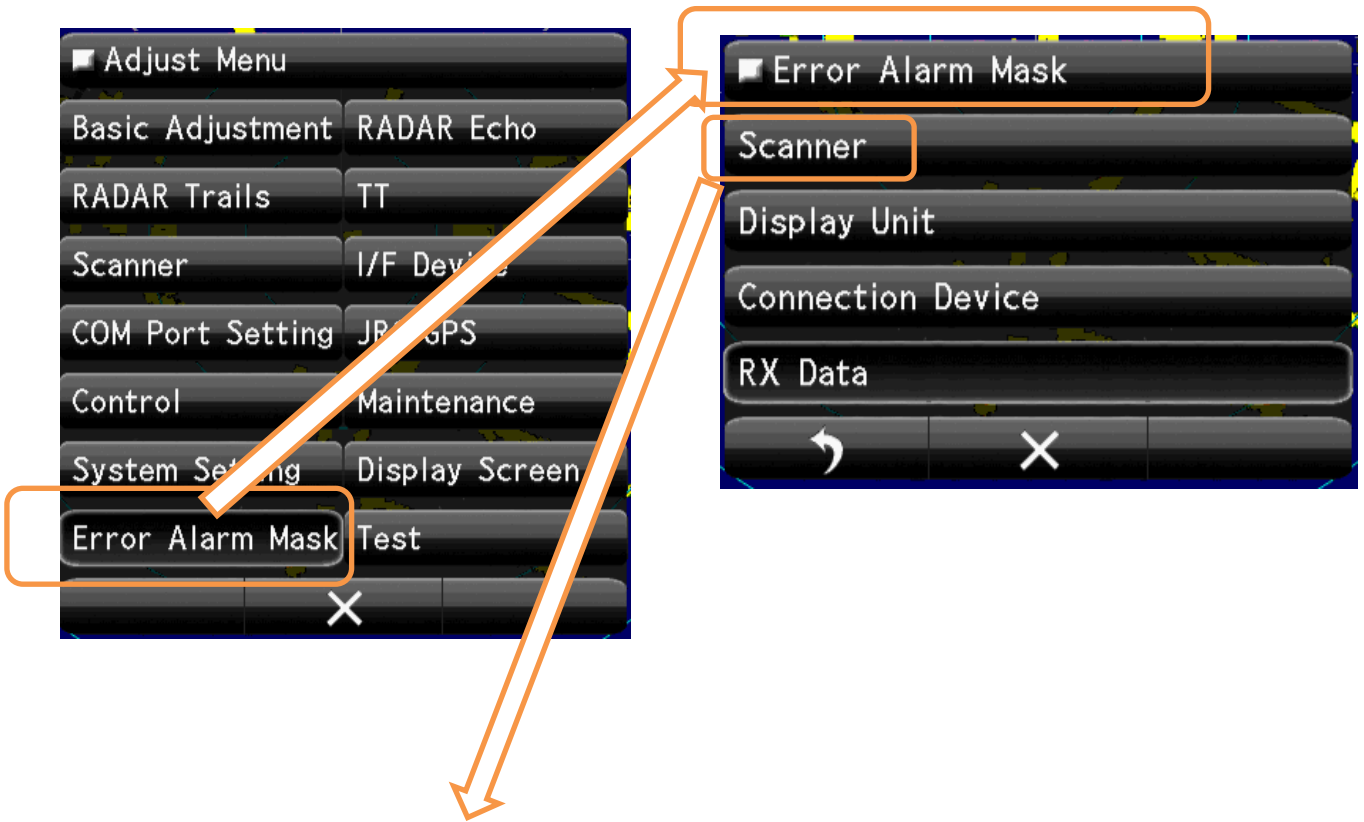
Select AIS Filter



Set up AIS Filter Range.

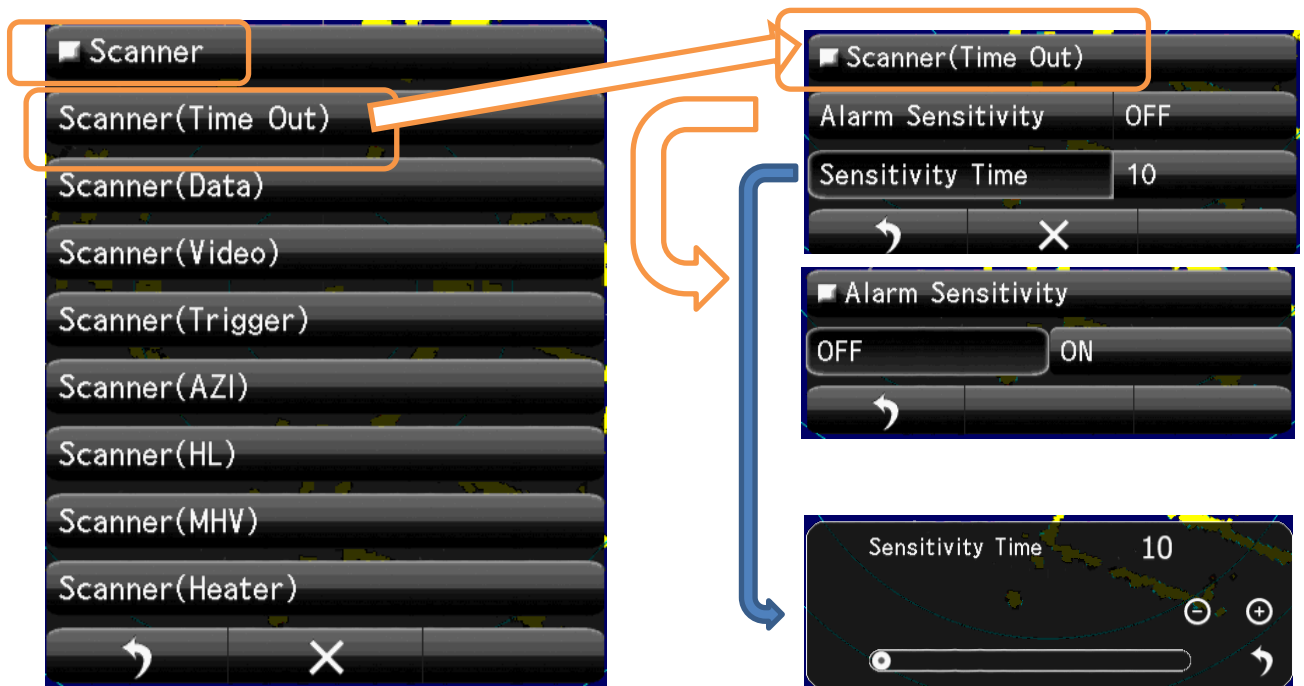
## 8-8 ERROR ALARM MASK

Ignore the unnecessary error signal's alarm.

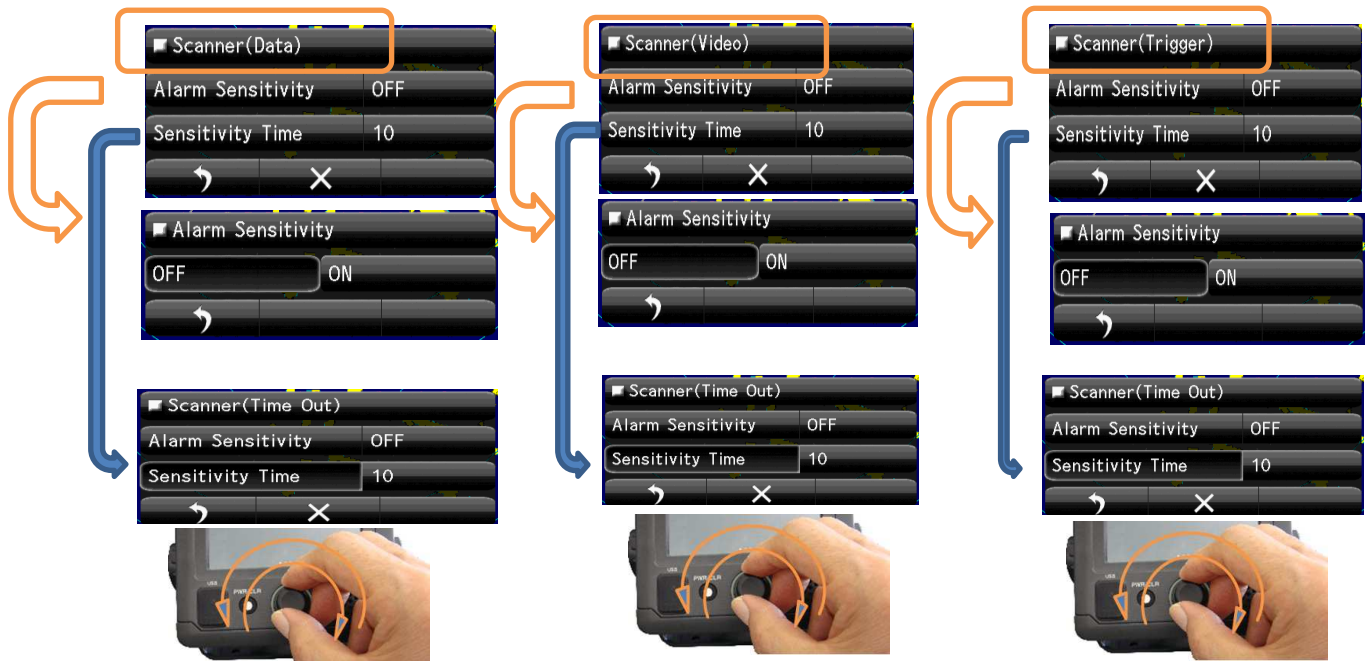


### 8-8-1 SCANNER

The error signal generated in the scanner.



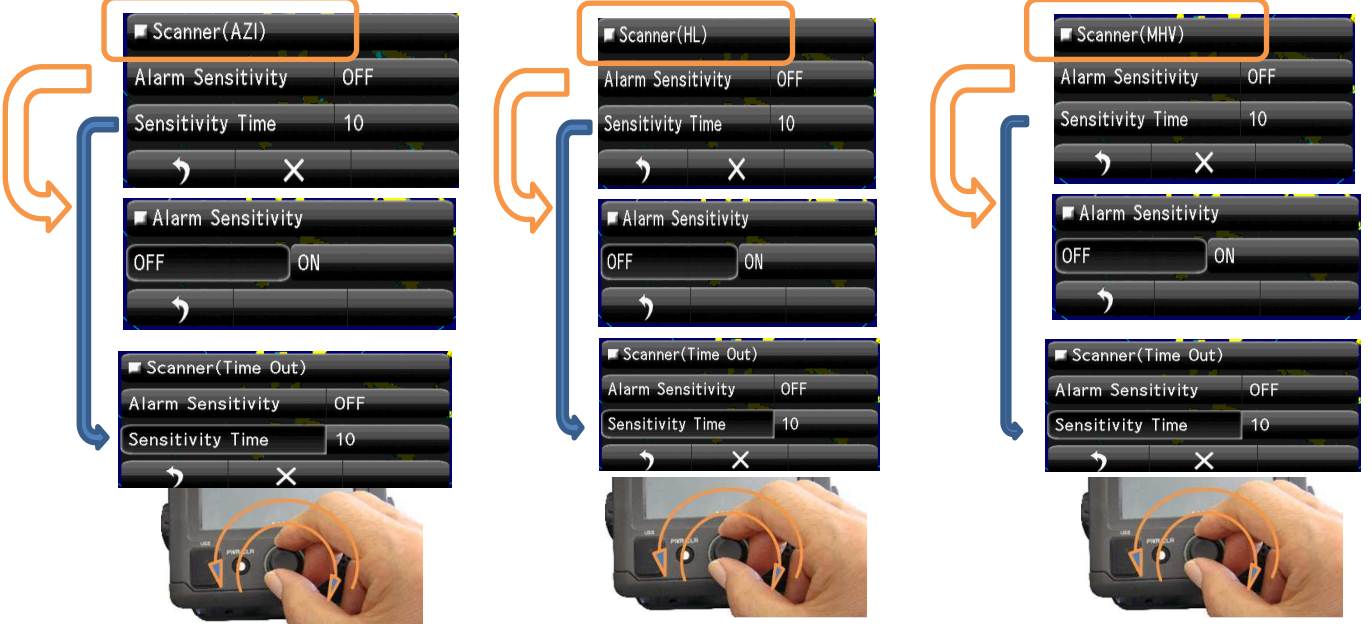




Scanner(Data)

Scanner(Video)

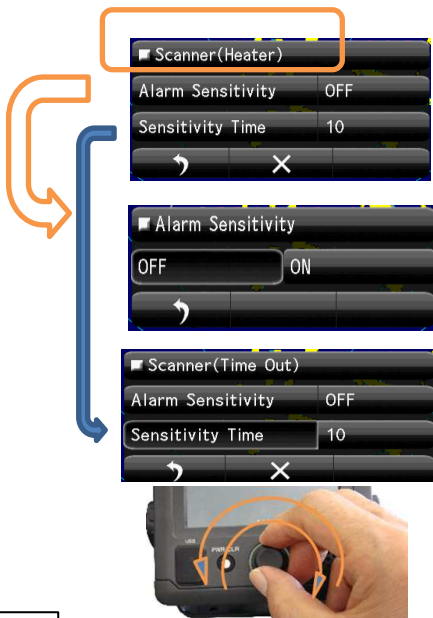
Scanner(Trigger)



Scanner(Azi)

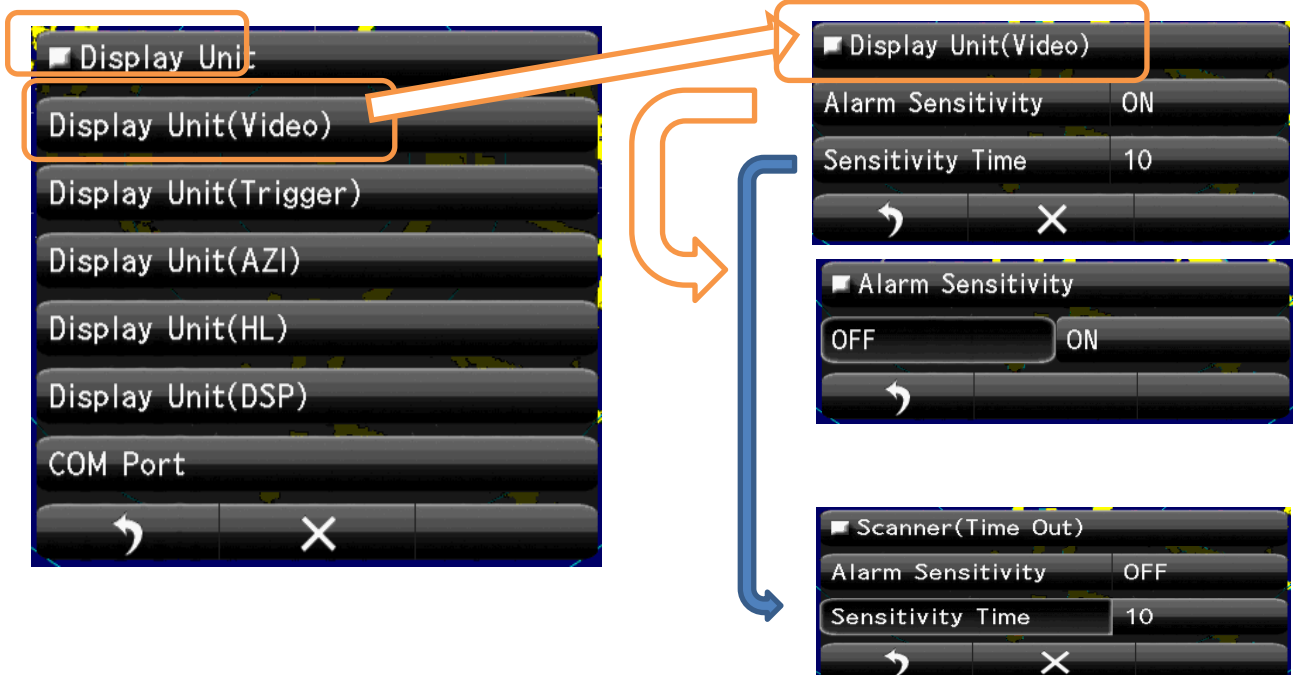
Scanner(HL)

Scanner(MHV)

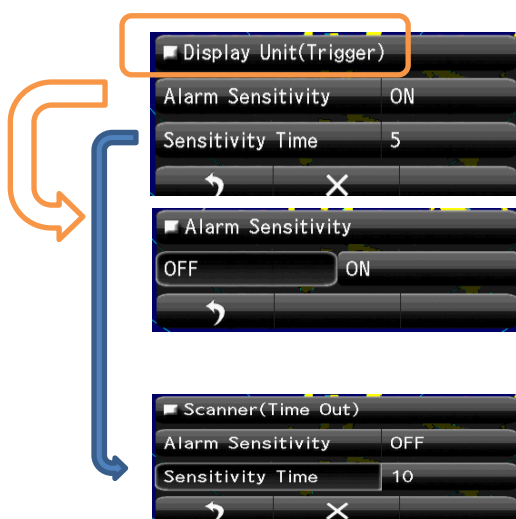


### 8-8-2 DISPLAY UNIT

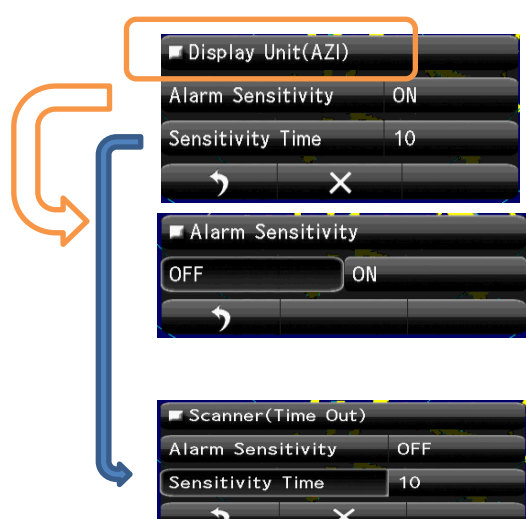
The error signal generated in the display unit.



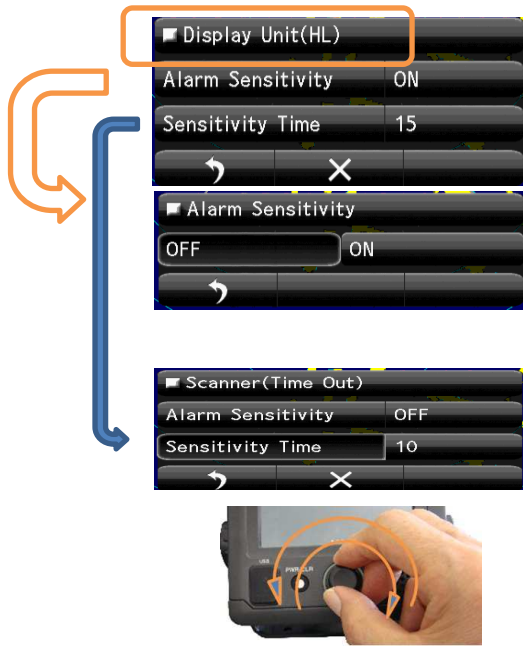
Display Unit(Video)



Display Unit(Trigger)



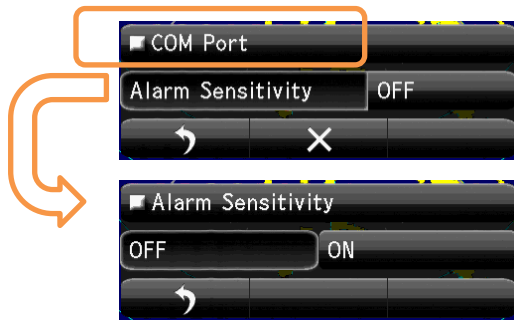
Display Unit(AZI)



Display Unit(HL)



Display Unit(DSP)

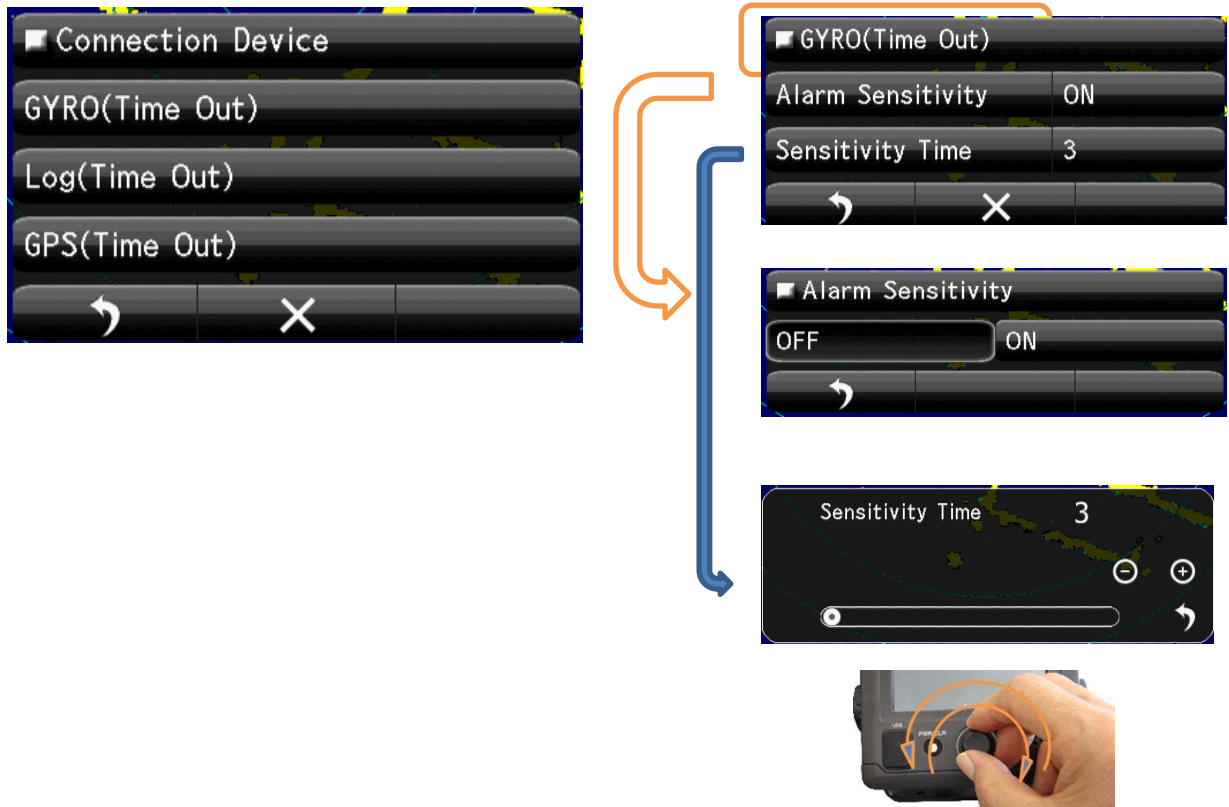


COM Port

]

### 8-8-3 CONNECTION DEVICE

The error signal generated about the connected device.



Gyro(Time Out)



Log (Time Out) GPS (Time Out) are the same method.

### 8-8-4 RX DATA

The error signal about receiving data from another equipment.

The main RX Data menu is shown with the following options:

- GYRO
- Compass
- Log
- 2Axis Log
- Course/Speed
- Depth
- Temperature
- Wind
- Rate of Turn
- Rudder
- WPT
- LAT/LON
- Datum
- Status
- HDOP
- AIS

The GYRO settings flowchart includes:

- GYRO** (selected)
- Alarm Sensitivity: ON
- Sensitivity Time: 3
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 3 (with a slider control)

Small images show a hand adjusting the physical knobs on the device.

Compass data Alarm settings flowchart:

- Compass
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

Compass data Alarm

Log data Alarm settings flowchart:

- Log
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

Log data Alarm

2Axis Log data Alarm settings flowchart:

- 2Axis Log
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

2Axis Log data Alarm

Course/Speed data Alarm settings flowchart:

- Course/Speed
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

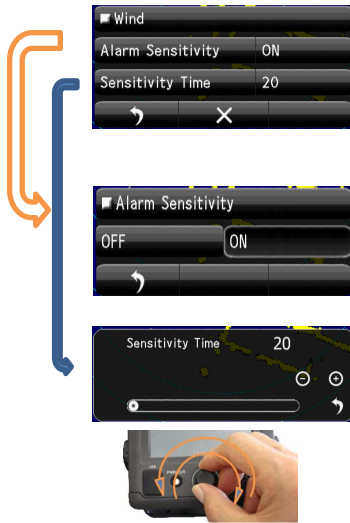
Depth data Alarm settings flowchart:

- Depth
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

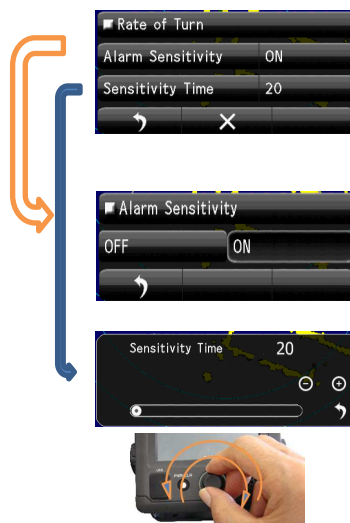
Temperature data Alarm settings flowchart:

- Temperature
- Alarm Sensitivity: ON
- Sensitivity Time: 20
- Alarm Sensitivity: OFF (selected) / ON
- Sensitivity Time: 20 (with a slider control)

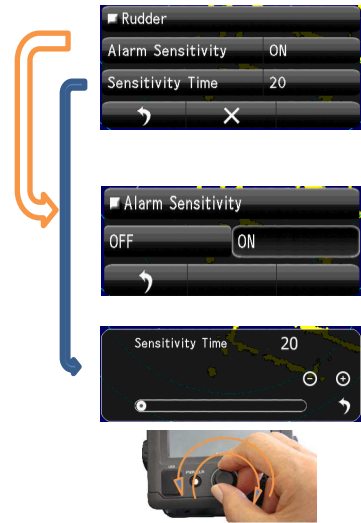
Course / Speed data Alarm



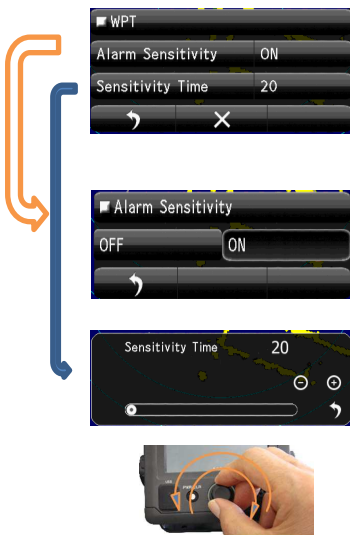
Depth data Alarm



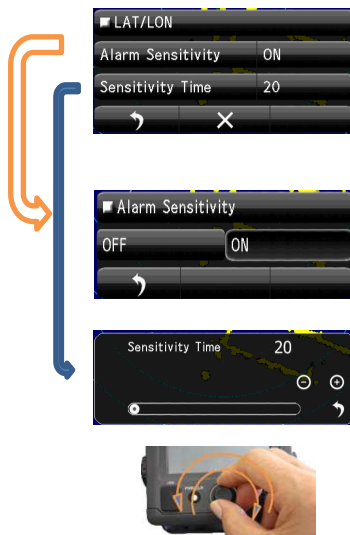
Temperature data Alarm



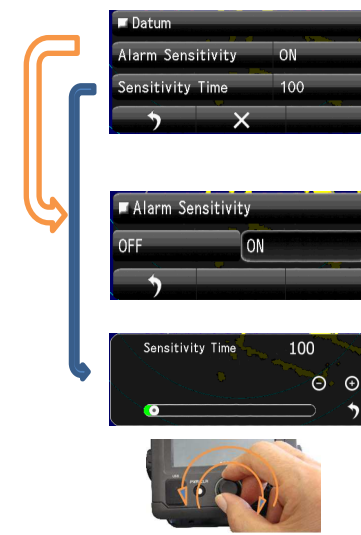
Wind data Alarm



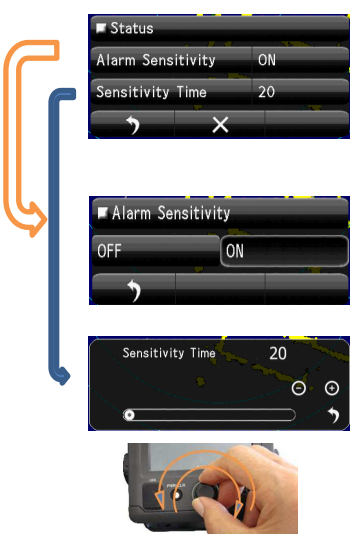
Rate of Turn data Alarm



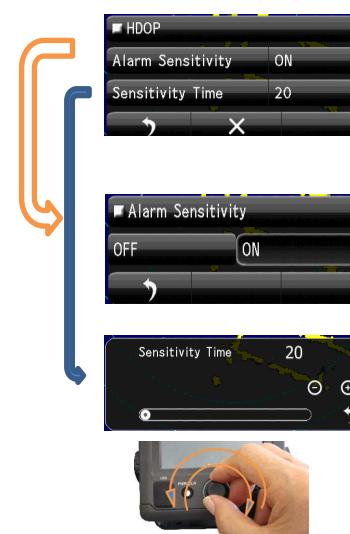
2Rudder data Alarm



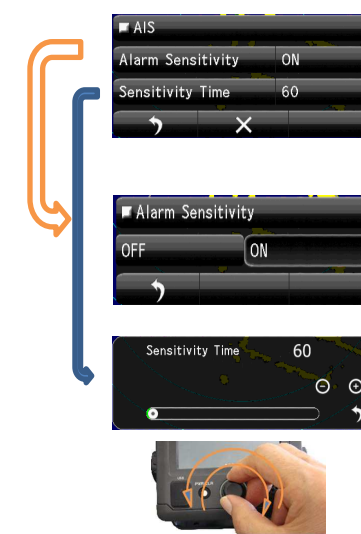
WPT data Alarm



LAT/LON data Alarm



Datum data Alarm



Status data Alarm

HDOP data Alarm

AIS data Alarm