Chapter 2 START THE BASIC OPERATION

When * basic adjustment is made by the serviceman etc. beforehand, please perform as it is.

(In case of no adjustment is done by the serviceman etc. beforehand, please through eyes to Chapter 5 for the time being, and after getting to know the outline of operation of this radar, perform Initial setting of Chapter 7.)

The screen is a touch screen and can be operated by tracing a screen by a finger flip or touching.

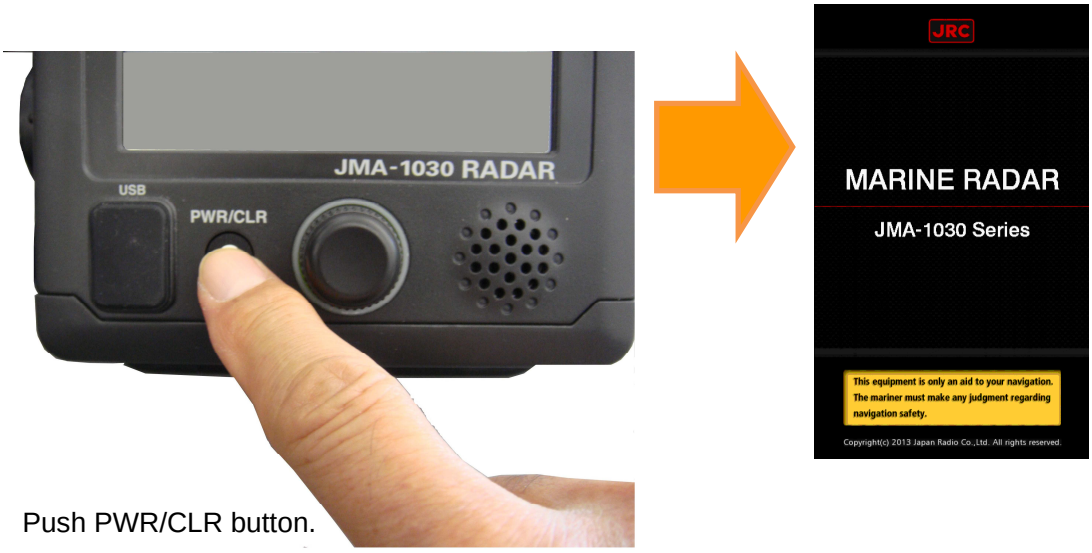
The term of operation: TAP: Push a screen display position once by a fingertip.
Flick: Rub a screen display position by a fingertip.
(A state recognized according to the rubbed direction)
Swipe: Rub a screen display position keeping on touch by a fingertip.
Long tap: Pushing a screen display position, continued more than
3 seconds or more by a fingertip.

The operation of a Rotary knob: Click: Push in a Rotary knob once.
Rotating and choosing the state of a screen, then click and fix.

General using : The touch panel function is select absolute positions on panel,
on the other hands, Rotary knob select sequential data up and down.
and, at selection data appeared then click and fix.

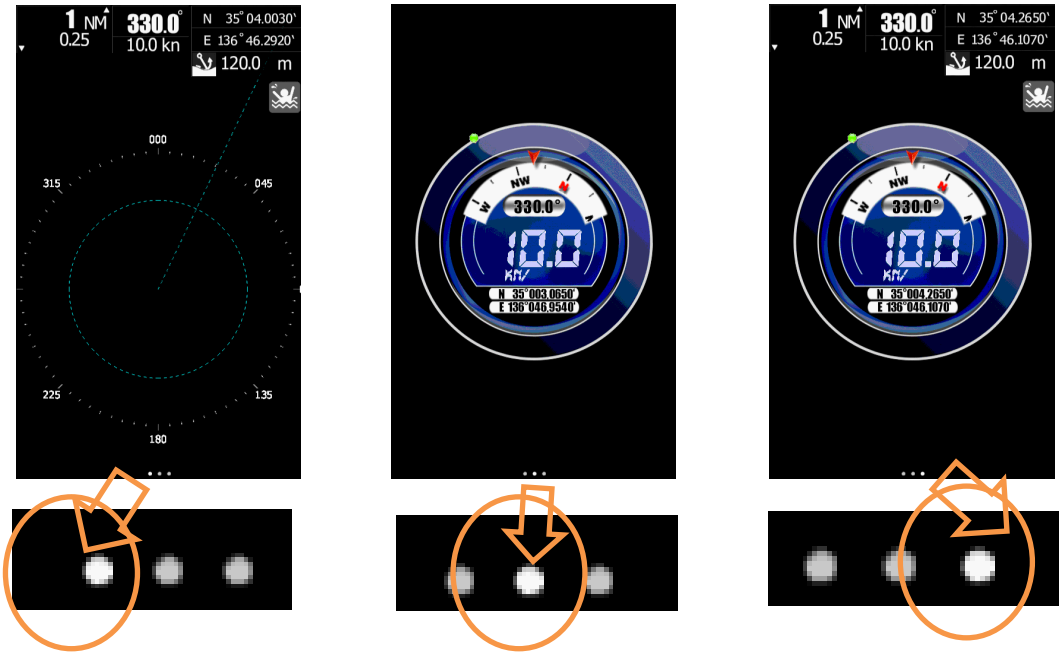
Only Cross cursor is individual moving, no relation to another.

Power on startup screen.



Push PWR/CLR button.

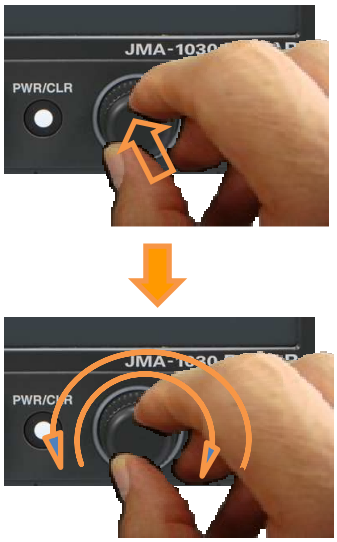
Startup screen. (3 Startup screen possible to select.)



Swipe on the screen for select the startup screen.

Rotary knob.

Push Rotary knob and rotate to select the starting item..

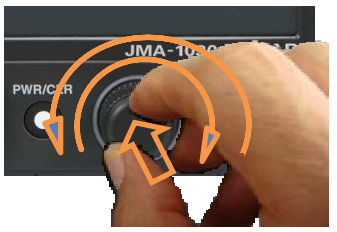


Select the icon you needed by turning the knob

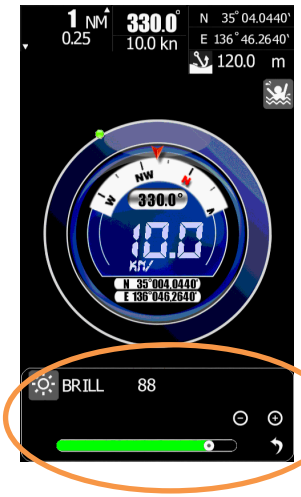
Tap  icon at bottm side, then full icons can be seen.

Full icons will be appeared.

Keep press and rotate the rotary knob, then screen brillance menu will be open.



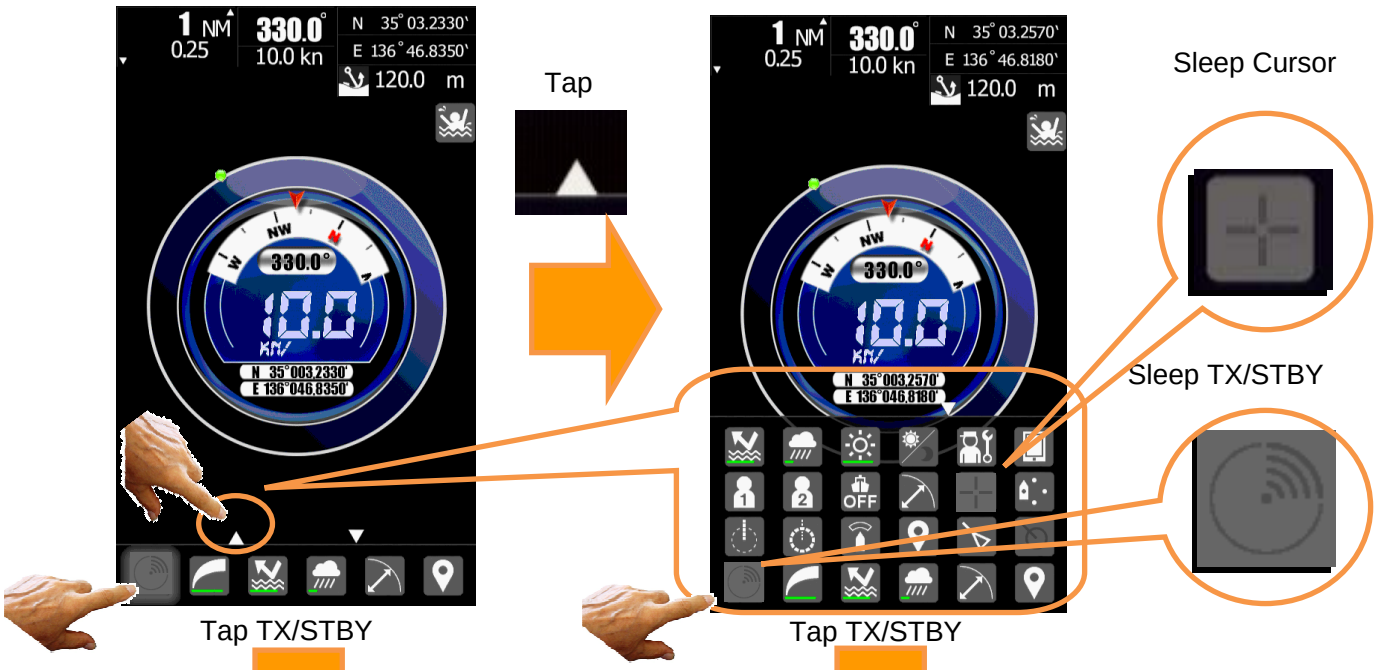
The turn while pressing

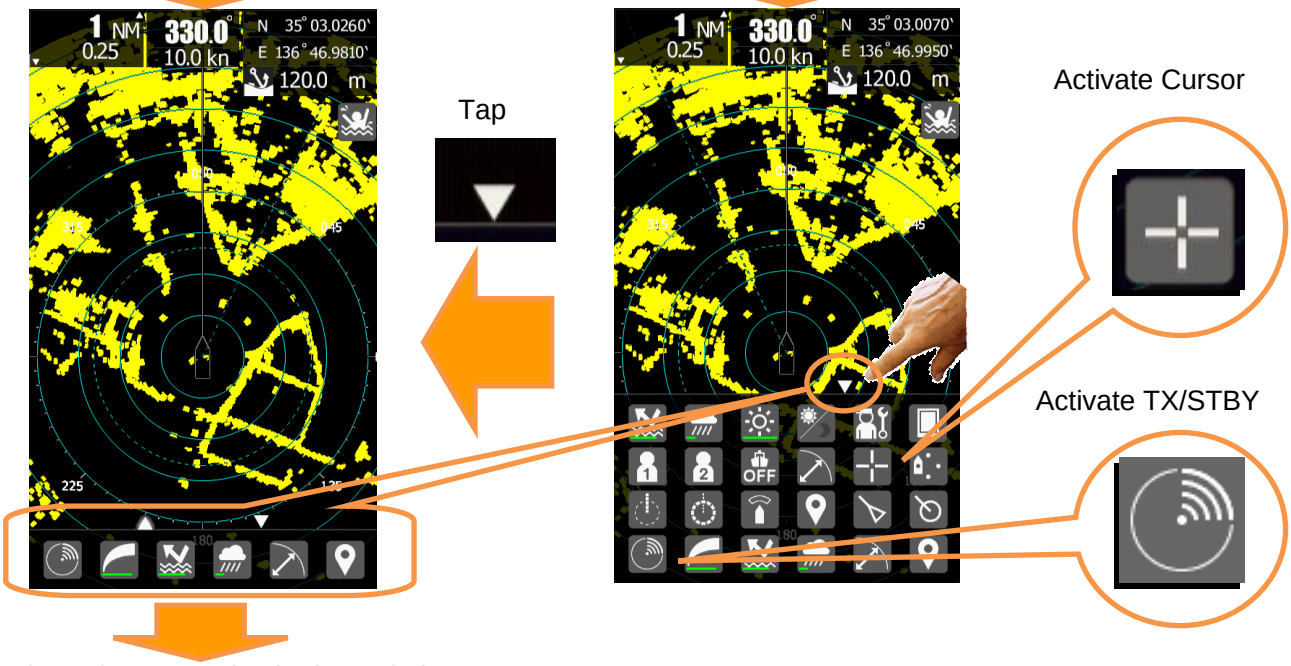


Brillance menu will be appeared.

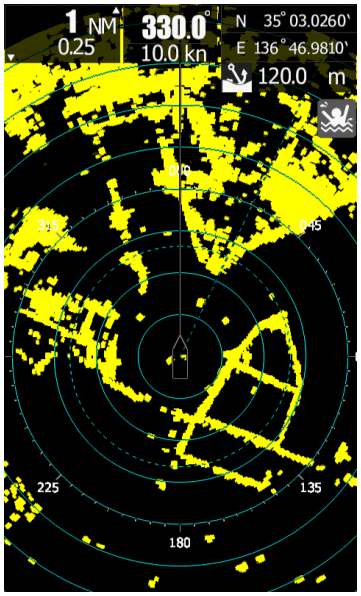
Rotate Rotary knob at suitanble brilliande level.

Release Rotary knob, then the brillance level is fixed





After a few seconds, the icons fade out.



Push or click the Rotary knob.

Crick the Rotary knob will appear the icons

2-1 GUIDE FOR OPERATION

Front view

Multi-Touch screen.

☆ Operate using “tap” “flick” long tap” “swipe” by fingertip.

Rotary knob.

☆ Rotation: select the sequential menu.

☆ Push or click fix menu data.

POWER ON OFF, CLEAR PUSH BUTTON.

☆ POWER ON/OFF

☆ CLEAR OF MENU

2-2 POWER ON (STAND BY FOR TRANSMIT)

PRESS PWR **/ BUTTON**

Start to display screen.

Startup screen

2-3 DISPLAY SCREEN

2-3-1 SCREEN LAYOUT

POWER ON OFF,CLEAR PUSH BUTTON.

☆ POWER ON/OFF

☆ CLEAR OF MENU

Push Rotary knob, then appears some menu.

Rotation of Rotary knob can select menu of activated icon.

Function call icon will be displayed.

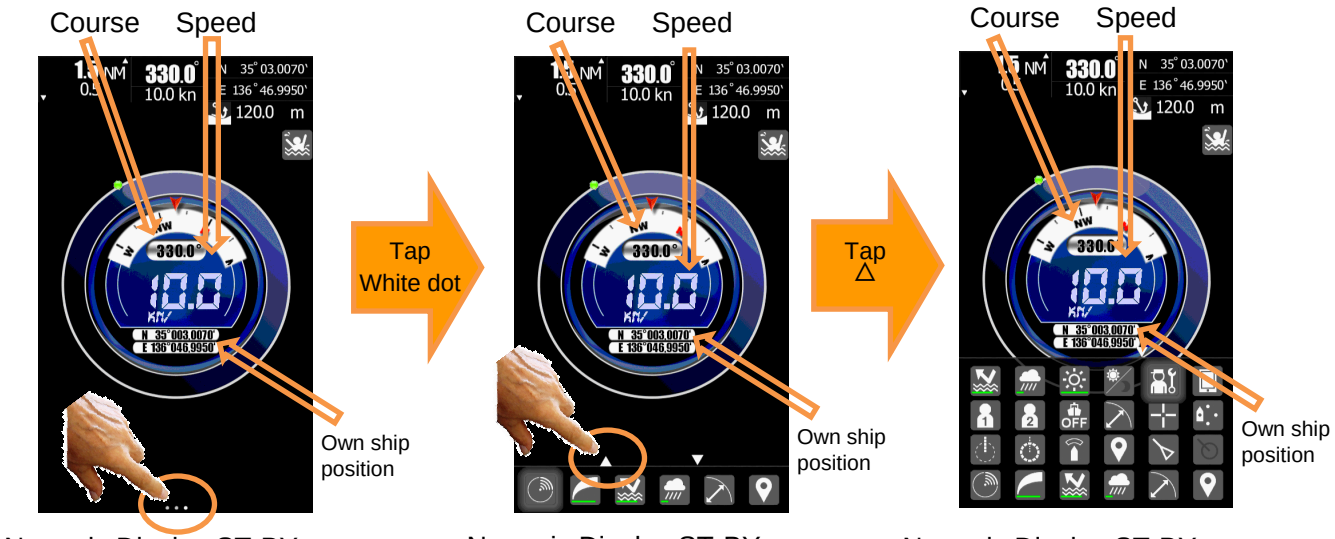
Various ST-BY screen.

Normal ST-BY screen, Normal ST-BY screen, Normal ST-BY screen,

* ST-BY Disp, Select.: “Normal”

Graphical ST-BY screen Graphical ST-BY screen Graphical ST-BY screen

* ST-BY Disp, Select.: ”Graphical”

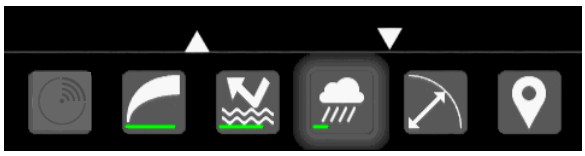


Numeric Display ST-BY screen. Numeric Display ST-BY screen. Numeric Display ST-BY screen.

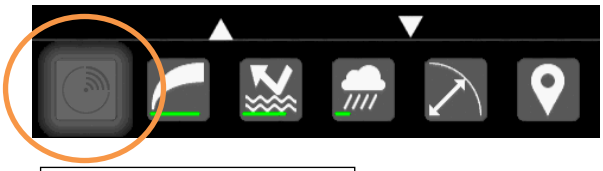
* ST-BY Disp, Select.: “Numeric Display”

TX screen.

Push Rotary knob, select TX icon by rotating Rotary knob and push Rotary knob.



Push Rotary knob & select TX icon by rotating.

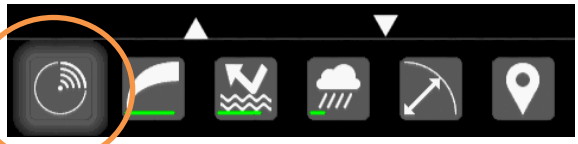


Set focus to TX icon.

Push Rotary knob

Or

Tap TX icon



Start TX

Push Rotary knob

Tap UP icon

Tap △

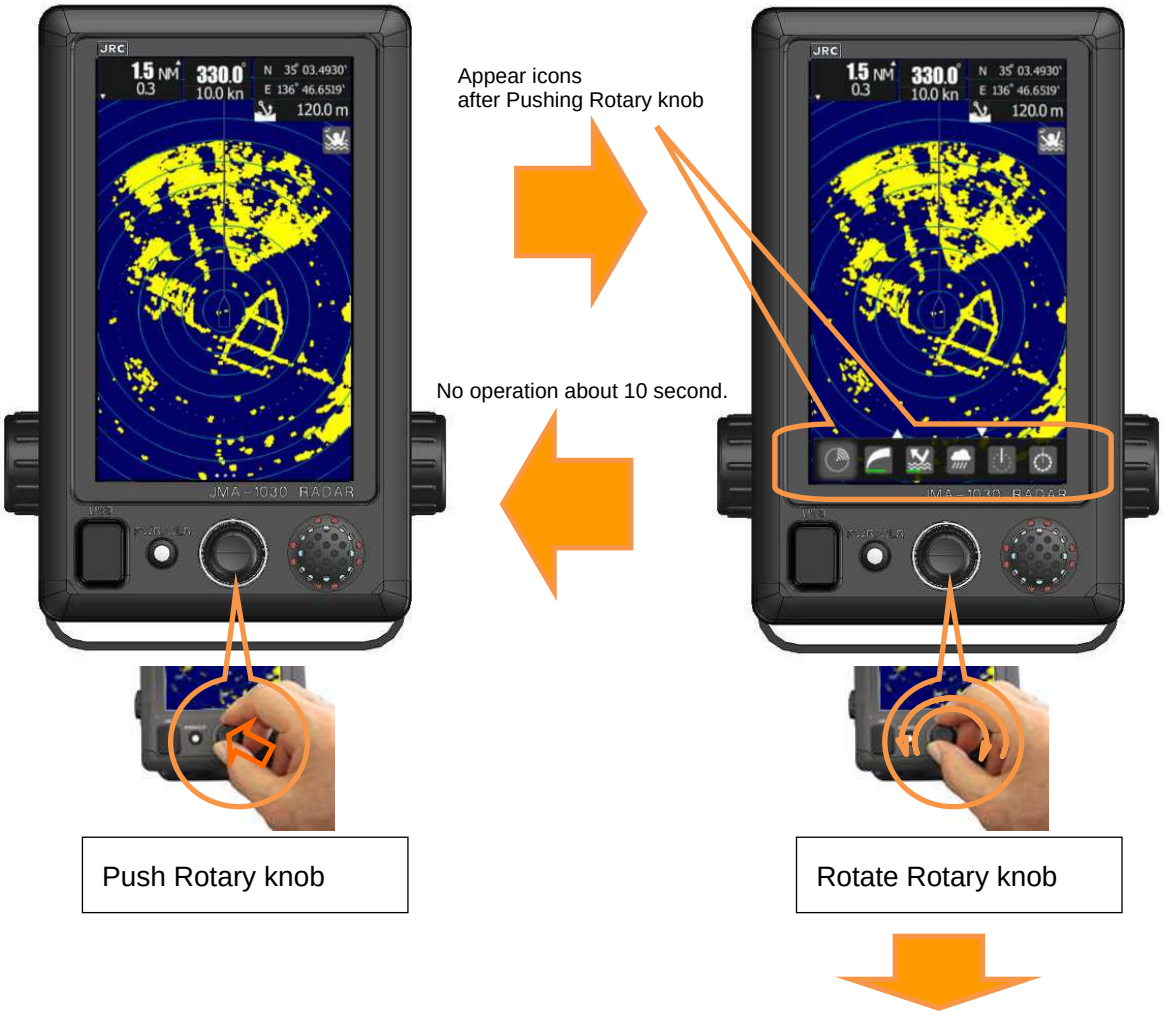
Tap ▽

Tap DOWN icon

2-3-2 ICON'S TABLE

The icons which will appear by screen operation.

Display the function icons.



Rotate for icon selection.

Selected icon is focused.

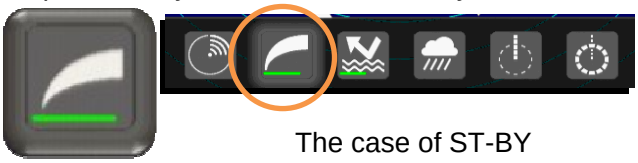
Push Rotary knob, then appear the setting menu.

Set level by Rotary knob or flick bar graph..

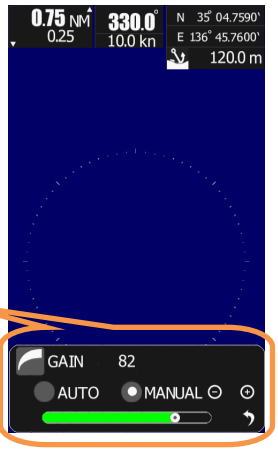
Then push Rotary knob, data is fixed.

Tap TX/STBY icon, or Push rotary knob when TX/STBY icon is focused.

Tap GAIN Adjust icon, or Push rotary knob when GAIN Adjust icon is focused.

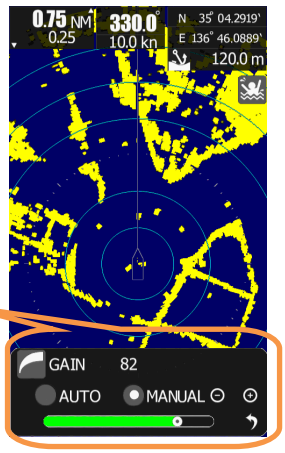


The case of ST-BY



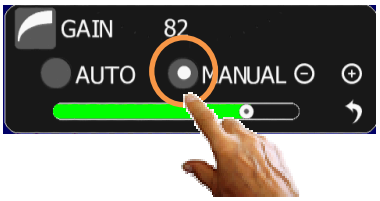
Adjustment Gain Bar is appeared

The case of TX

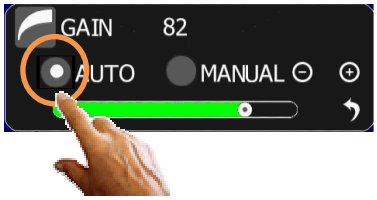


Adjustment Gain Bar is appeared

Tap “Auto” of Gain setting mode



Tap “Auto” of Gain setting mode

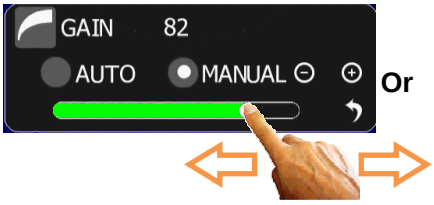


Gain is set automatically.

Rotate the rotary knob with monitoring green bar.

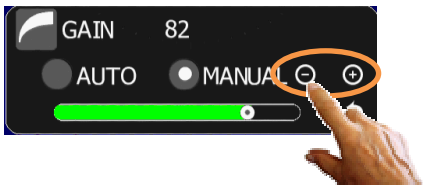
Or

Flick the green bar



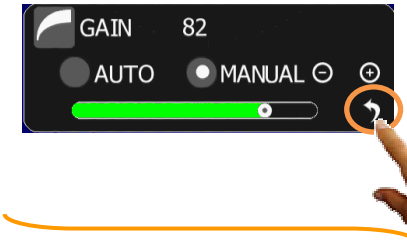
Or

Tap “+” or “-“



※In TX mode, can be adjusted while monitoring the display echo.

Tap return icon

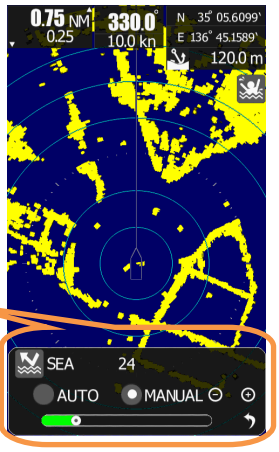


Or

Push Rotary knob

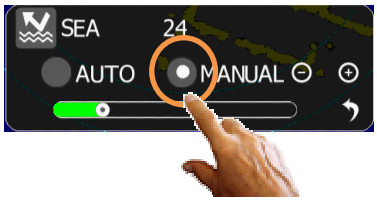
The data is fixed, and then return

Tap SEA Adjust icon, or Push rotary knob when SEA Adjust icon is focused.

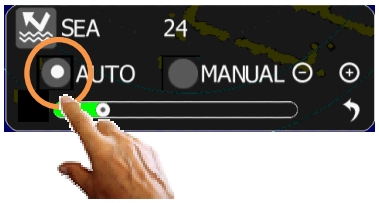


Adjustment Bar is appeared

Tap “Auto” of SEA setting mode



Tap “Auto” of SEA setting mode



SEA is set automatically.

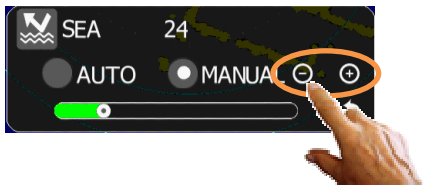
Rotate the rotary knob with monitoring green bar.

Or

Flick the green bar

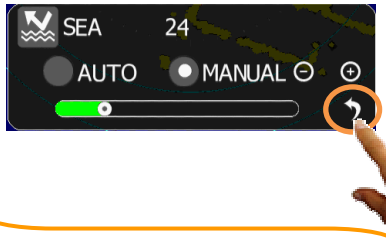
Or

Tap “+” or “-“



※Can be adjusted while monitoring the display echo.

Tap return icon

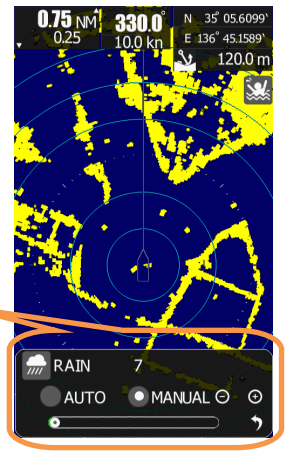


Or

Push Rotary knob

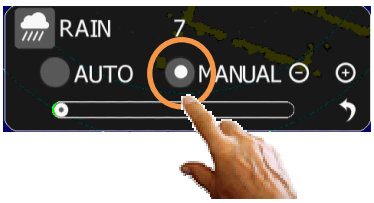
The data is fixed, and then return

Tap RAIN Adjust icon, or Push rotary knob when RAIN Adjust icon is focused.

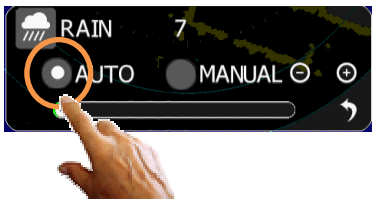


Adjustment Bar is appeared

Tap “Auto” of RAIN setting mode



Tap “Auto” of RAIN setting mode



RAIN is set automatically.

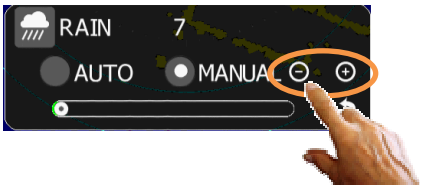
Rotate the rotary knob with monitoring green bar.

Or

Flick the green bar

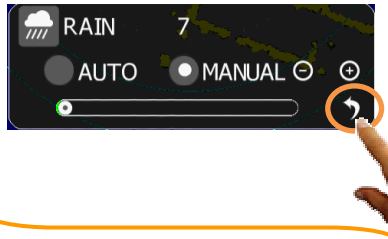
Or

Tap “+” or “-“



※Can be adjusted while monitoring the display echo.

Tap return icon



Or

Push Rotary knob

The data is fixed, and then return

2-3-3 BRIEF EXPLANATION OF ICON'S FUNCTION

Brief explanation of each icon.

GAIN (gain control) adjustment:
Set up the sensitivity of Radar echo..

SEA (sea-clutter rejection) adjustment:
Control the sea clutter level near the ship.
Long distant echo gain is remaining as it is, and gain is lowered as to short distance.
Adjust the target ship is clearly observe and reject the sea clutter on screen as much as possible.

RAIN (rain-and-snow-clutter rejection) adjustment:
This type radar uses (X) band microwave (wavelength: 3cm).
This microwave can detectable more far range in fine weather, but in rain or snow weather, the detectable range decrease remarkably.
The control is adjusted for separate the target and rain or snow as long as possible.

BRILL (brightness) adjustment: Set up the brightness of a screen.
It sets up brightly daytime and sets up not dazzle at night

MOB (Man Over the Boat): When the crew fall into over the boat by accident.
Carry out a tap MOB icon immediately.
The radar memorizes the place latitude and longitude information, and continues displaying the (MOB)place on a screen.
When going to rescue, navigator can take course to the(MOB)point on screen.
(Important: GPS signal must be connected in this function.)

TT DATA (target tracking)
Data which is tracking automatically is displayed.
Data is display the direction, the distance, the speed.
This function must be required the heading signal and log signal.
Measures reading of a direction can select from north(N-UP) and measure from self-ship (H-UP).
The speed display can select the relative speed mode or absolute speed mode.

AIS DATA (when received the AIS signal, the data of MMSI of the vessel which has transmitted, latitude, longitude, a direction of movement, speed, rate of turn, etc. is displayed.)
(AIS receiver signal is necessary.)

EBL (electronic bearing line)
Measure the target direction by using cursor line.

VRM (variable range marker)
Measure the target distance by using circle line.

Off-center (Normally own position is the center of screen, but it is possible to move own position from fixed center of screen).
Tap the icon will shift the own position. Shifting point are fixed 5 positions only.

TX (transmission), ST-BY (standby)
Whenever it carries out a tap, transmission and ST-BY are changed.

RANGE (range scale)
The range scale to observe is changed. The maximum range is limited by the scanner type which is connected.

NKE-1066 scanner

0.0625NM 0.125NM 0.25NM 0.5NM .075NM 1.5NM 3NM 6NM 12NM 24NM.
(Also 1NM, 2NM, 4NM, 8NM, 16NM are possible by system menu setting.)

NKE-2044 scanner

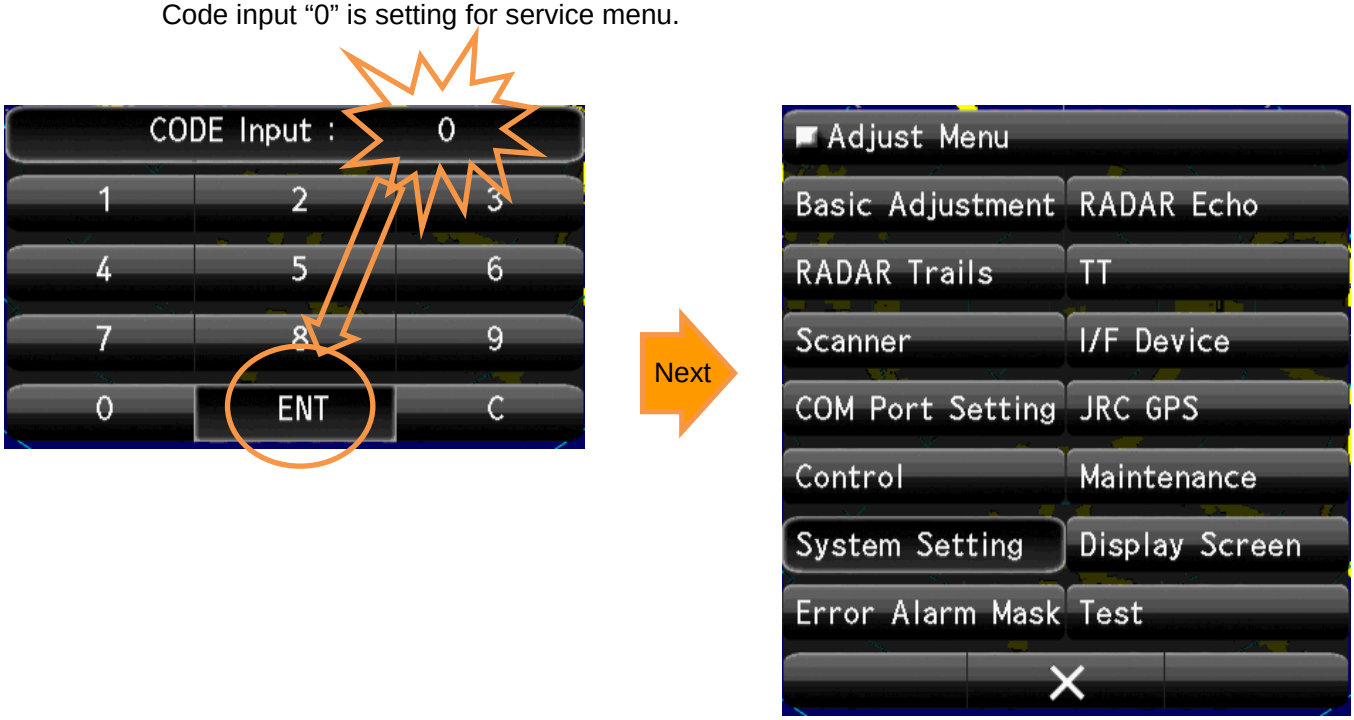
0.0625NM 0.125NM 0.25NM 0.5NM .075NM 1.5NM 3NM 6NM 12NM 24NM 48NM.
(Also 1NM, 2NM, 4NM, 8NM, 16NM, 32NM are possible by system menu setting.)

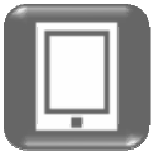
Various system setups.

Tap the icon, the adjustment menu will be displayed.

Choose the item to set up individually.

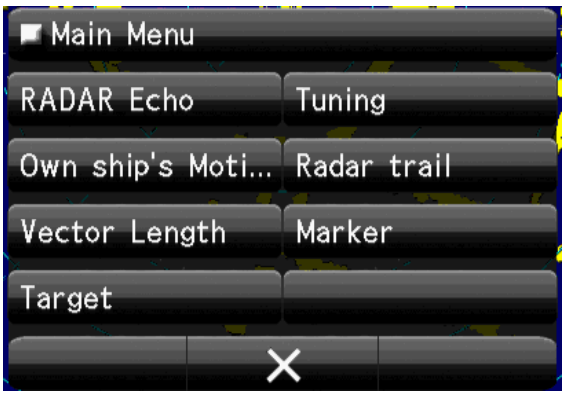
Code input “0” is setting for service menu.





User menu

Special setting menu for user.



GUARD ZONE setup

Set up the watching area around own-ship.

If a target goes into the set-up area, generate the alarm sound or signal..

On the other hand, if a target goes out the set-up area, generate the alarm sound or signal, too.

One of both is possible to select.

Cursor: A tap is carried out, start, drag and tap off on the target.

The position of this cursor is indicated.

Various kinds of pointing actions uses this cursor..

Tracking of target, AIS data display, setting of guard zone, etc.

MARK: Use when plot a mark on the screen.

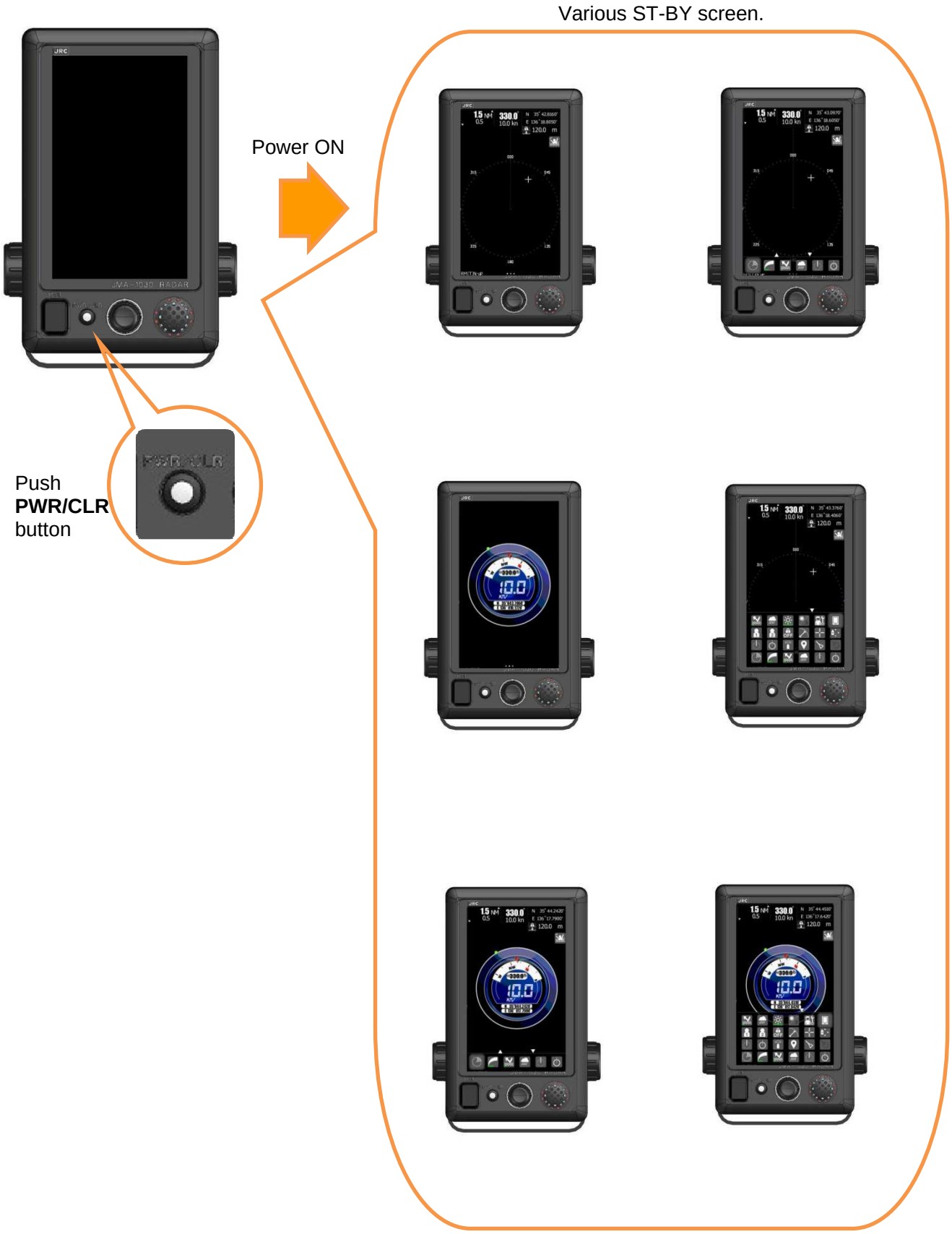
Moreover, also when deleting an unnecessary mark, it uses.

2-4 TRANSMIT

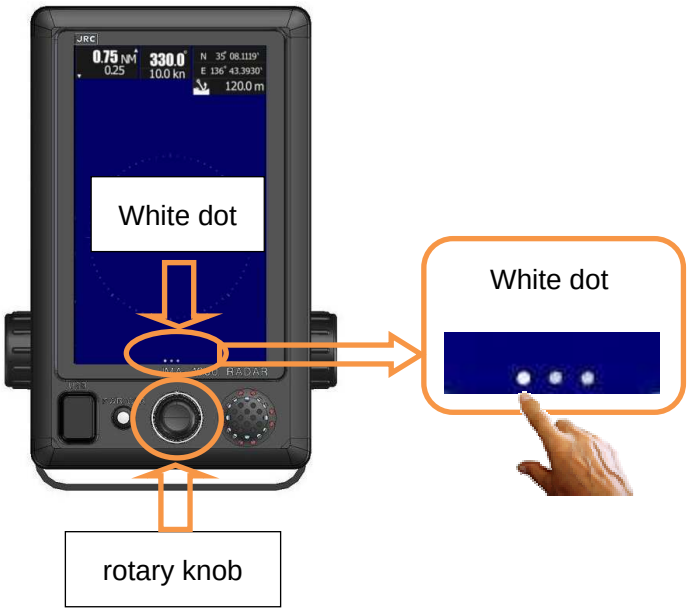
(90 seconds pre-heat time is required for cold start, because of the Magnetron heater.)

After 90 seconds, anytime transmitting is possible.

.



Start by “the tapping white dot” or “the pushing rotary knob”



“Tap TX/ST-BY icon” or “Select TX/ST-BY icon and push rotary knob”, and then transmitting.

No operation of 10 second,
small menu will be fade out.

Transmitting screen.

2-5 LEAVE THE USEFUL ICON ON SCREEN

How to copy icon.

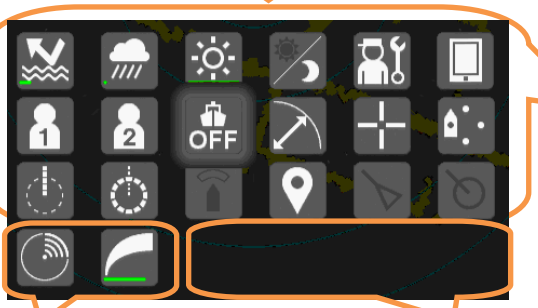
Basic icon display.

Fixed icon (TX/ST-BY, Gain)

User free area of menu icon.

Tap UP icon

Full icon display

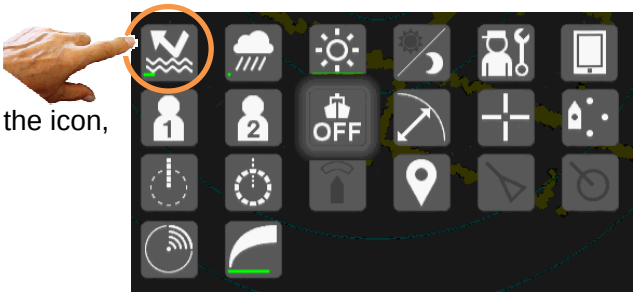


icons that can be copied to user free area.

Fixed icon (TX/ST-BY, Gain)

User free area of menu icon.

Tap and hold the icon,



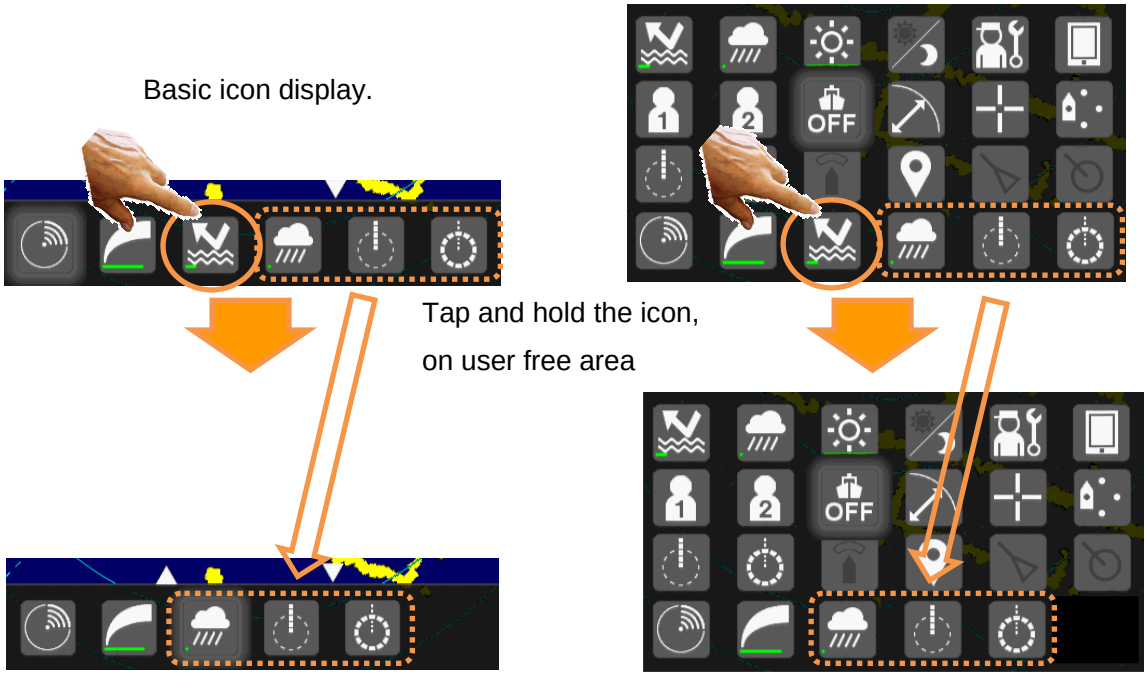
Tapped icon is copied to free menu area

Up to 4 icons can copy the user free area.

How to remove icon.

Full icon display

Basic icon display.



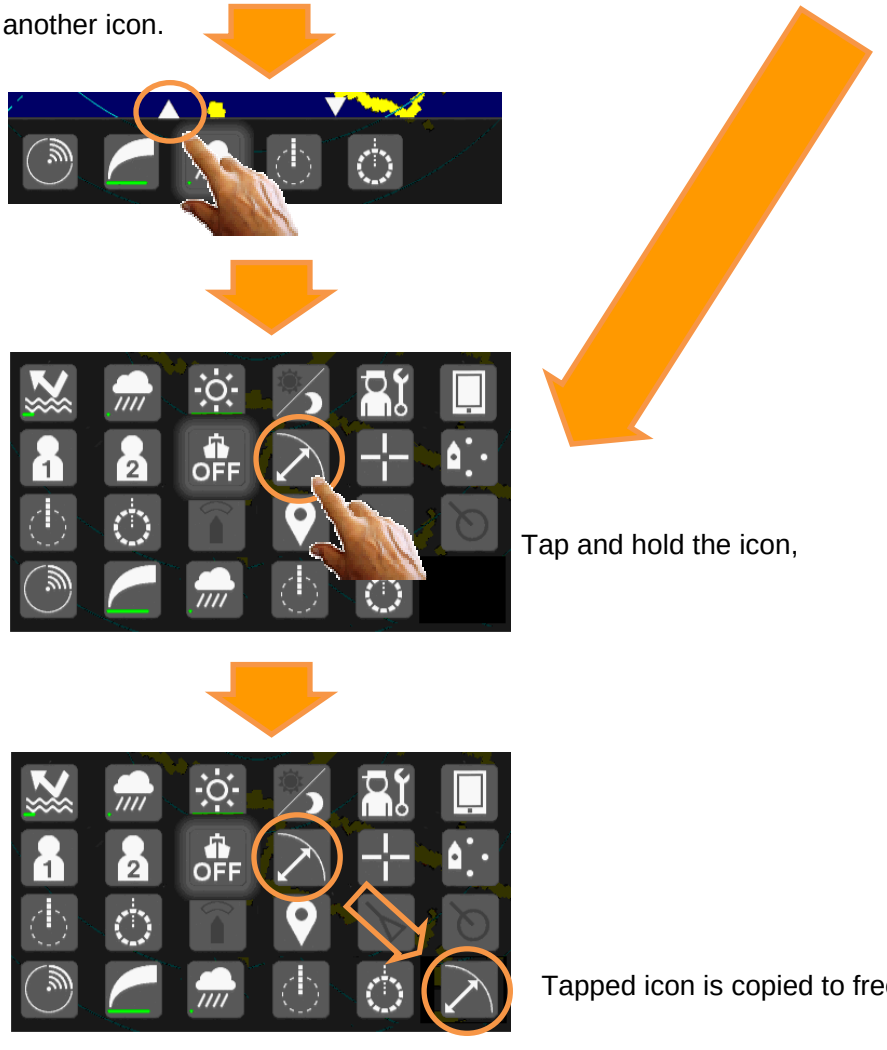
Tap and hold the icon,

on user free area

Tapped icon is removed from free menu area

Then the remaining icons are shifted to the left.

How to add another icon.



Tap and hold the icon,

Tapped icon is copied to free menu area

2-6 FUNCTION CALL BY SCREEN TAP

Various types of icon.

(1) Start function immediately.

(2) Move into function setting.

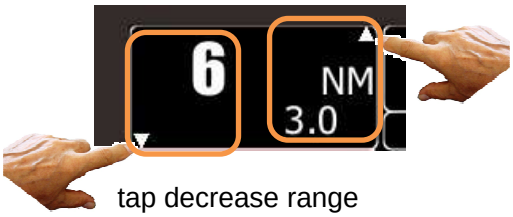
(3) Double tap start from resist setting state and open menu.

TX, ST-BY

Every tap changes TX, ST-BY alternately

Change Range

tap increase range



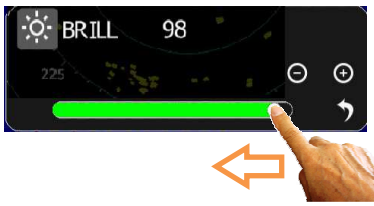
tap decrease range

Or

While range icon focused

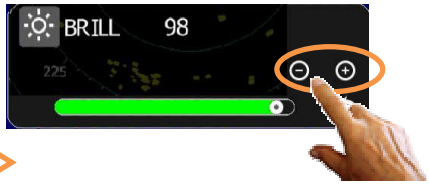
Rotate the rotary knob with monitoring range.

Or



Change brightness by Flick the green belt.

Or

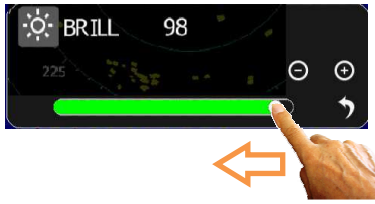


Tap “+” or “-“

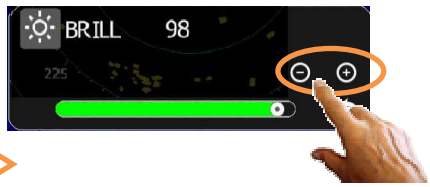
Screen brightness adjustment

Tap the icon, then display Adjust menu.

Or



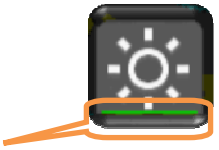
Or



Rotate the rotary knob with monitoring green bar.

Change brightness by Flick the green belt.

Tap “+” or “-“



Setting level is displayed down side of each icon.

Green bar length is proportion to setting level.

Also using Rotary knob is possible to adjust.

Keep press on the Rotary knob and turn. Anytime it’s possible to change

Keep press on the Rotary knob.

***”POWER ON–OFF” is operate from “PWR/CLR BUTTON!” only.**

Can’t control from screen menu.

Chapter 3 ADJUST THE RADAR ECHO

3-1 CHANGE RANGE

△ tap increase range ▽ tap decrease range

This picture is selected 1.5 nm range.

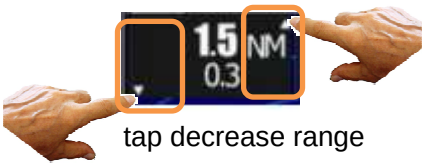
Outer dashed line shows the maximum observation range.

RANGE

RANGE RING INTAVAL

Gain is easily changed by the tap of increase / decrease icon as shown in the figure below

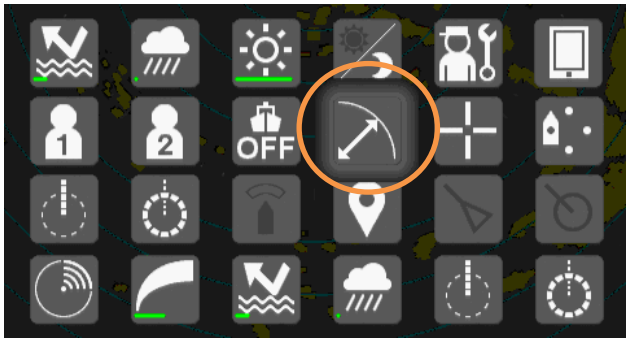
tap increase range



tap decrease range

Or

Adjust while range icon focused by tapping or selection of rotary knob

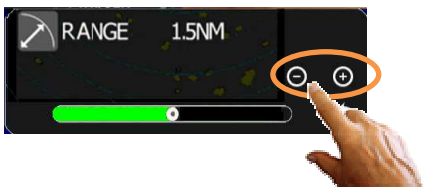


Rotate the rotary knob with monitoring green bar.

Or

Change brightness by Flick the green belt.

Or



Tap “+” or “-“

Range scale,

NKE-1066 scanner

It changes to 0.0625NM 0.125NM 0.25NM 0.5NM .075NM 1NM 1.5NM 2NM 3NM 4NM 6NM 8NM 12NM 16NM 24NM and order.

NKE-2044 scanner

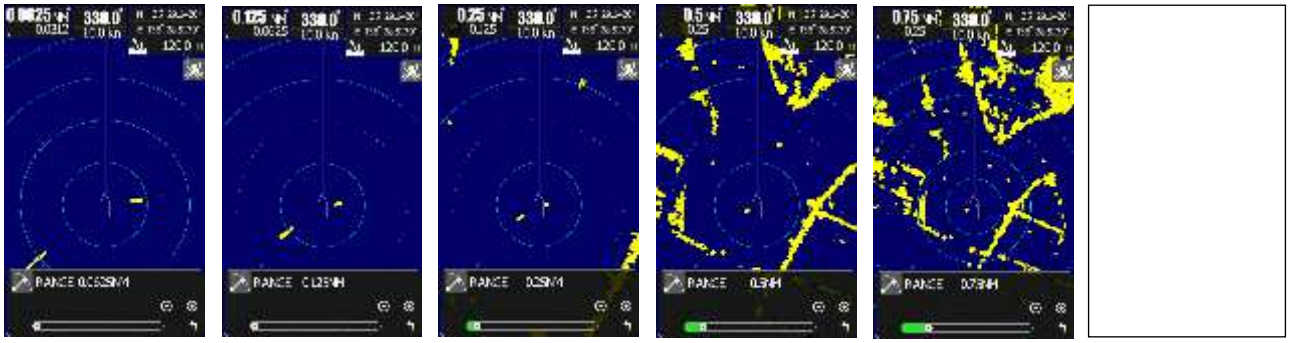
It changes to 0.0625NM 0.125NM 0.25NM 0.5NM .075NM 1NM 1.5NM 2NM 3NM 4NM 6NM 8NM 12NM 16NM 24NM 32NM 48NM and order.

A picture will change on a scale as shown in the following figure, as range changes.

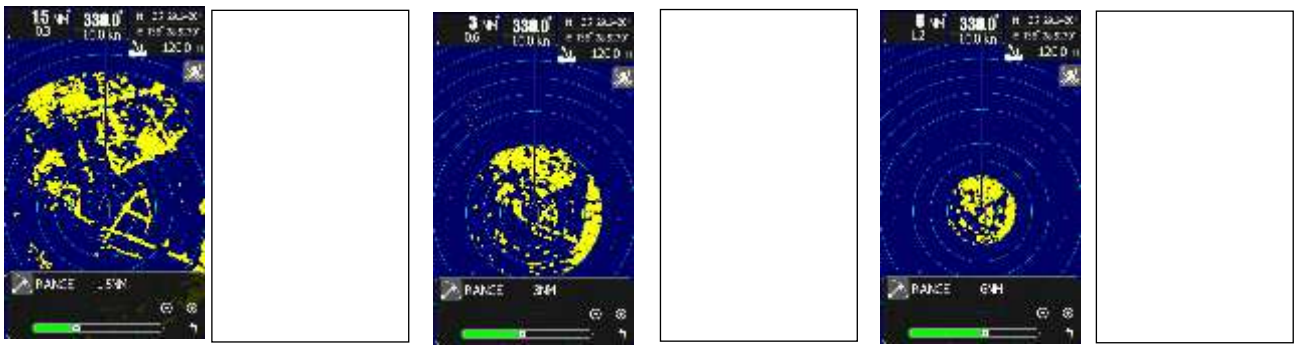
The radius of the circle shows the range.

Example: Video change

0.0625NM 0.125NM 0.25NM 0.5NM 0.75NM 1NM



1.5NM 2NM 3NM 4NM 6NM 8NM



12NM 16NM 24NM

32NM 48NM

is NKE-2044scanner only

3-2 ADJUSTS GAIN (RADAR SENSITIVITY)

icon's green belt show the adjusted level of GAIN

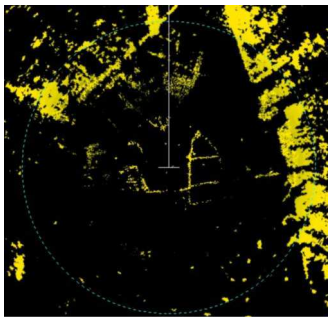
Radar must be set suitable gain, or can't use as a radar

Adjust while Gain icon focused by tapping or selection of rotary knob

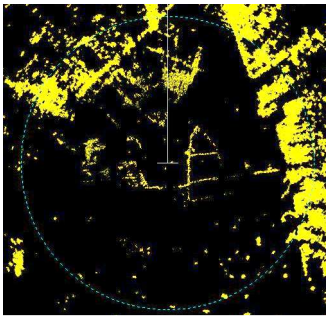
How to change the Gain: See the method of Gain adjustment of Chapter2

Example of echo sensitivity as following

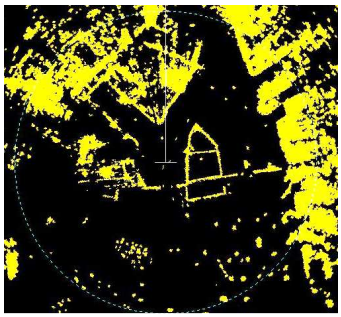
echo sensitivity Low echo sensitivity Middle echo sensitivity High



6NM



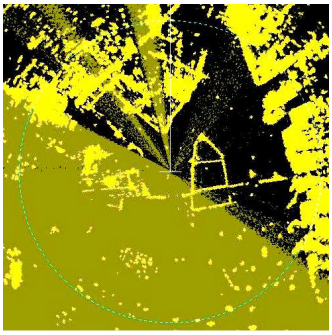
6NM



6NM

If GAIN control is the maximum, noise will appear on whole screen.

GAIN set Exceed



6NM

On clear weather normally set almost maximum GAIN.

When rough weather or rough sea or heavy rain and, snow, adjust mix up SEA,RAIN GAIN.

And select suitable level each.

3-3 ADJUST SEA (CLUTTER CONTROL)

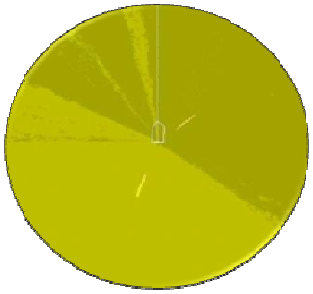
Radar must be set suitable sea control, or can't use as a radar

Adjust while SEA icon focused by tapping or selection of rotary knob

icon's green belt show the set level of SEA

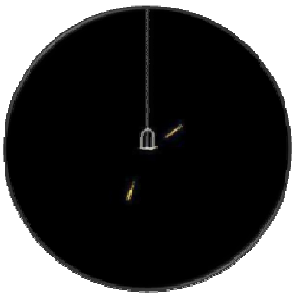
How to change the SEA: See the method of SEA adjustment of Chapter2

SEA Level Low



0.5NM

SUITABLE Level



0.5NM

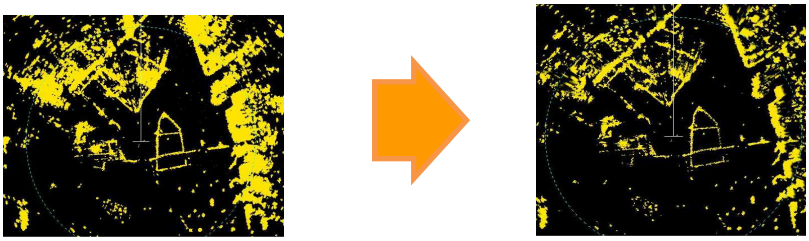
3-4 ADJUST RAIN AND SNOW CLUTTER CONTROL

Radar must be set suitable rain and snow control, or can't display the suitable picture.
Adjust while RAIN icon focused by tapping or selection of rotary knob

icon's green belt show the set level of RAIN

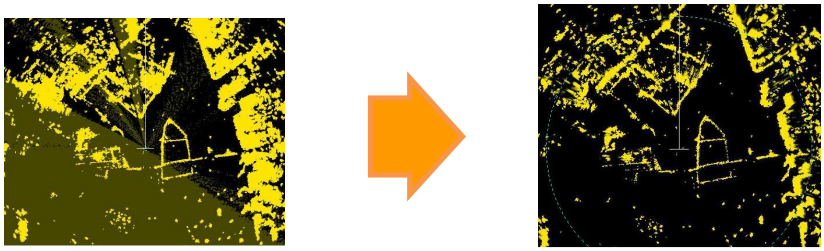
How to change the RAIN: See the method of RAIN adjustment of Chapter2

RAIN Small (usually) RAIN Excessive (the target of the radius direction becomes small.)



6NM clear weather (RAIN 0) (RAIN *).

Rain control is effective, if the weather light rain or snow.
Too much suppression will disappear the small target, so set a little.



6NM not clear weather (RAIN 0). (RAIN *)

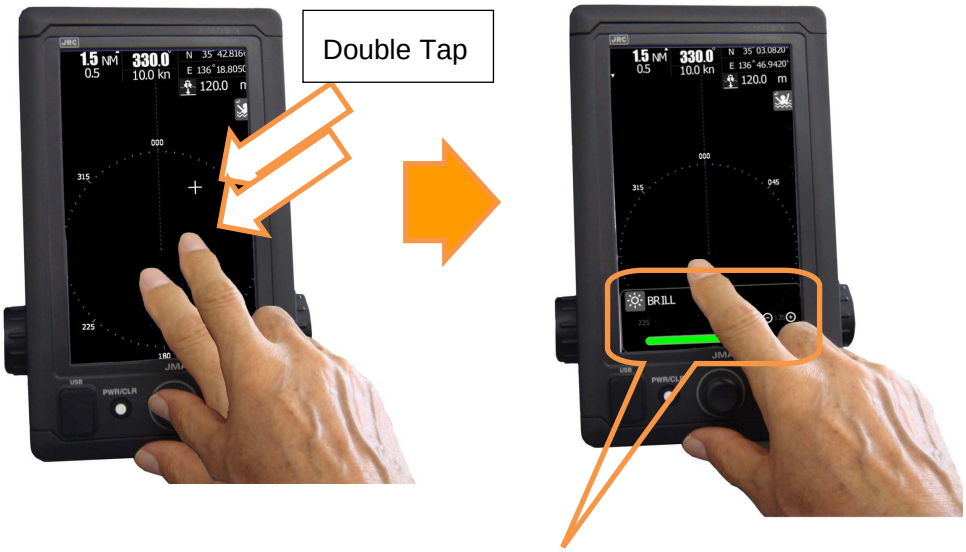
3-5 ADJUST BRILLIANCE OF SCREEN

Double TAP of screen can change BRILLANCE of screen.

Normal TAP, Flick operations also possible to change screen brilliance.

range.

icon's green belt show the set level of BRILLIANCE



How to change the BRILLIANCE: See the method of BRILLIANCE adjustment of Chapter2

*** * * * FOR REFERENCE * * * ***

Observing the Radar screen, GANI and SEA control adjustment is essential adjustment.

RAIN: Normally set “0”, when light rain or snow, turn proportion to reject rain noise on screen.

GAIN: Set the GAIN adjustment for long range (more than 6nm) target can observe clear.
Under this conditions, short range near own ship, cannot observe small target because of high clutter and high gain.
To avoid this failure, use **SEA** control, and suppress near range clutter noise.
If suitable adjustment is done, costumer can observe clear target from short range to long range.

ACTUAL OPERATION

Set **RAIN** Minimum position

① Set **6nm RANGE**, and observe more farther special target.
Set **GAIN** control so as to the special target is observe clearly.
Change to **0.5nm RANGE**
Set SEA control so as to the near target can observe clearly.

② Basically, **RAIN** control is minimum state, but according to the weather conditions, to reject rain or snow clutter, little bit turn to effective point.