## 5.4 Soft Key Functions

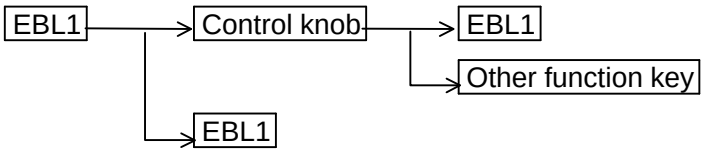
[xxx] = Keys to press

Various functions are assigned to keys numbered "1" through "7". There can be a total of 4 sets of functions assigned to them. Switching among the sets is done by pressing the "NEXT" soft key. Soft keys can be assigned any function you like by accessing the "KEY ASSIGNMENT" function in the "CUSTOM" menu of the "SETUP".

### 5.4.1 Bearing measurement (EBL1)

When the "EBL1" key is pressed, a dotted electronic bearing line (EBL1) appears from the center to the top of the screen. Initially it overlays the boat's heading line. By rotating the control knob, you can change the bearing of this line. The angle from the boat's heading will appear in a highlighted display at the lower left of the screen. Press the "EBL1" key again to make the line disappear.

Note: [1] xxx.x ° indicates EBL1.




EBL1 is displayed and the process is finished.

EBL1 is displayed and the function is shifted.

EBL1 is turned off.

### 5.4.2 Bearing measurement (EBL2)

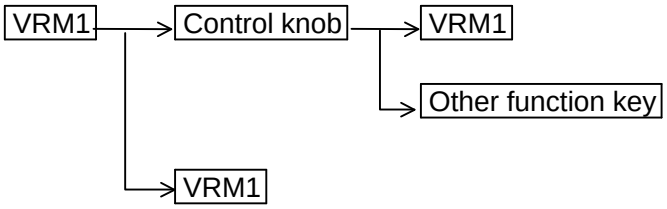
Your radar is equipped with two electronic bearing lines. Press the "EBL2" soft key to display the second one. The EBL2 angle will appear in a highlighted display at the lower right of the screen.

### 5.4.3 Distance measurement (VRM1)

When the "VRM1" key is pressed, a variable range marker (VRM1) appears as a dotted-line circle.

You can adjust the distance of this line from your boat's position by rotating the control knob. This distance is displayed in reverse characters at the lower left of the screen.

Note: [1] xxx.x NM indicates VRM1.




The VRM1 distance is displayed and the VRM operation is ineffective.

VRM1 is displayed and the effective function shifts to other function.

VRM1 is turned off.

### 5.4.4 Distance measurement (VRM2)

A second variable range marker is also available when you press the "VRM2" soft key. The VRM2 distance will appear in a reverse display at the lower right of the screen.

### 5.4.5 Measuring the angle between two points (FL EBL2)

The angle relative to your boat's heading between two points anywhere on the screen can be measured using the floating electronic bearing line or "FL EBL2" soft key. When you press the key,

“SET START POINT” is displayed at the bottom of the screen and a small cross mark appears. Use the cursor pad to position the cross mark on one of the echoes, and then press "ENT". Press "EBL2", then rotate the control knob until the electronic bearing line is centered on the second echo. The angle of a line between the two objects relative to your boat's heading will be displayed

in the lower right corner of the screen. If you want to keep the floating electronic bearing line you have just created, presses "ENT", otherwise, press "EBL2" and it will disappear.

### 5.4.6 Measuring the distance between two points (FL VRM2)

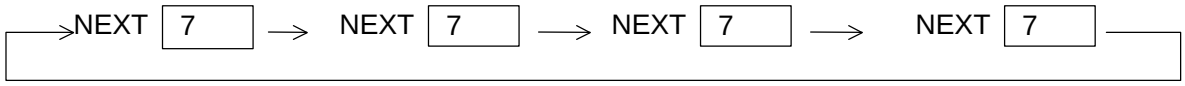
You can measure the distance between any two points on the screen by using the floating variable range marker or "FL VRM2" soft key. When you press the key, “SET START POINT” is displayed at the bottom of the screen and a small cross mark appears. Use the cursor pad to position the cross mark on one of the echoes, and then press "ENT". Press "VRM2", then rotate the control knob until the electronic bearing line is centered on the second echo. The distance between the two objects will be displayed in the lower right corner of the screen. If you want to keep the floating variable range marker you have just created, presses "ENT", otherwise, press "VRM2" and it will disappear.

### 5.4.7 Changing the Soft Key function grouping (NEXT)

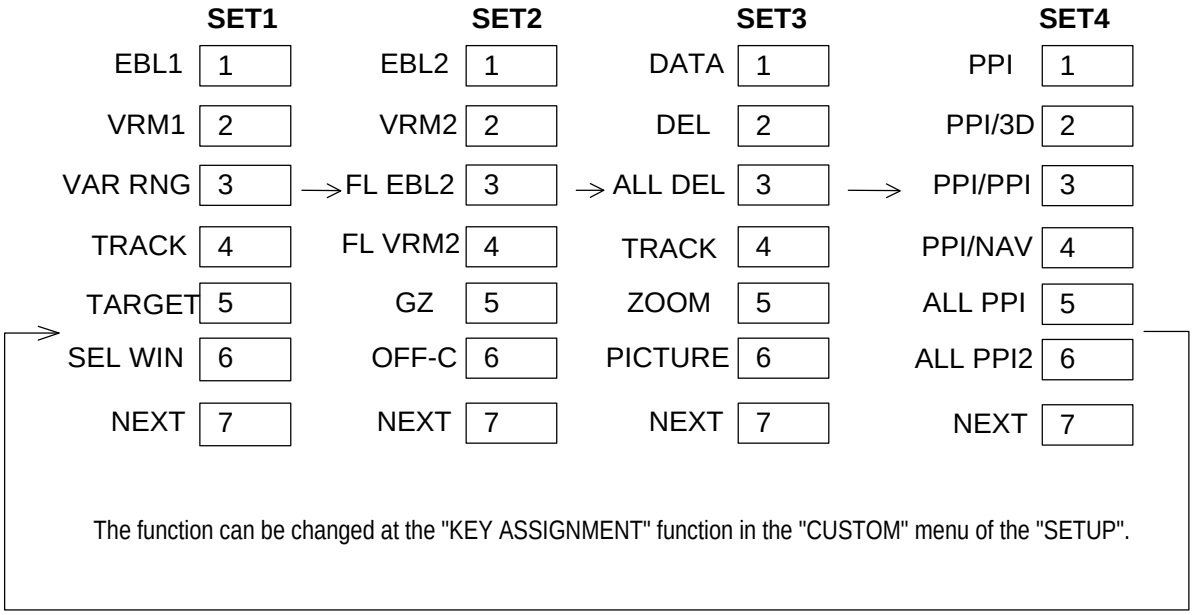
The soft key functions are pre-assigned to default values in four groups, as indicated below. These groups can be accessed by pressing the “NEXT” soft key. The “NEXT” key is assigned to the bottom, or #7, soft key.

The soft keys may be re-assigned functions as per the requirements of the operator, thus allowing quick access to functions not provided in the default setup. This is accomplished through the “SETUP” menu, by selecting “CUSTOM” and then “KEY ASSIGN”.

**Operation**




**_Soft Key Setting Example**



### 5.4.8 Temporarily erasing heading marker (HDG OFF)
The heading marker is temporarily removed from the screen by holding down the “HDG OFF” key.

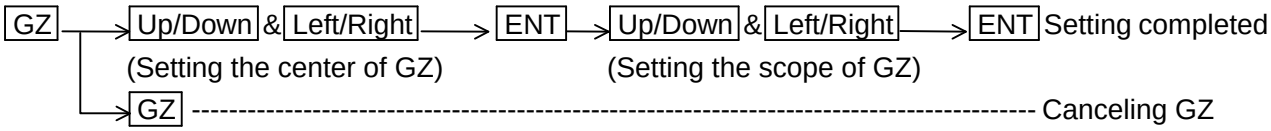
### 5.4.9 Using parallel cursors (///CSR)
Press the “///CSR” key and parallel cursors will appear on the screen. As you move the EBL, the parallel cursors also move. To cancel the function, press "///CSR" key once more.

### 5.4.10 Establishment of the indication of the RANGE RINGS (RINGS)
Press the “RINGS” key to make range rings appear on the screen. Press again to remove them.

### 5.4.11 Variable range function (VAR RNG)
The "RANGE UP" and "RANGE DOWN" keys change the range of the radar in steps, but this can be done in a continuously variable mode by using "VAR RNG". When you press the key, VAR will be displayed at the upper left of the screen (beside MODE). Pressing the up and down cursor arrows changes the display. To exit this function, press "VAR RNG" again.

### 5.4.12 Changing display modes (MODE)
Pressing the "MODE" key will step you through the various screen display modes: heads up (HU), heading set (HS), North up (NU), course up (CU), and true motion (TM). Heading data from a compass is needed for NU, CU and TM to function. TM is only displayed on a PPI screen. The mode will automatically change to NU on other screens.

### 5.4.13 Guard Zone (GZ)
A guard zone can be created around your boat at any distance and any angle range. Whenever another vessel enters the zone, an alarm sounds. This is called the IN MODE. You can also set an OUT MODE that monitors when a target leaves the guard zone. The guard zone is set using the "GZ" soft key. IN MODE or OUT MODE must be selected via the "MENU" key under the "NAV" heading.
To set a guard zone, press the "GZ" soft key. Set a center point for the zone by moving the cross with the cursor pad, then press "ENT". Next set the area with the cursor pad and press "ENT" again. The guard zone will remain in effect until you press the "GZ" key twice. While a guard zone is on, the text "GZ IN" will appear at the left of the screen.
When the alarm sounds, press either the "MENU" or "ENT" key to turn it off. Select between the IN MODE and OUT MODE by pressing "MENU", then selecting SETUP>CUSTOM>PRESET2. The volume level of the alarm can also be set in the same place.




### 5.4.14 Off Center (OFF-C)
You can set the screen display so that it just shows what's directly in front of your boat while underway, or it only displays a portion of the entire scanner sweep in any direction. Press the "OFF-C" soft key and use the cursor pad to set an off-center point on the screen for the boat's location. Press "ENT" and your boat's location will now be moved to the new cursor position. The text "OFF-C" will be displayed at the upper right of the screen. To cancel the off-center function, press "OFF-C" again.

Note: *VRM2 and EBL2 start point do not follow the OFF-C function during a floating state. VRM2 and EBL2 functions will work in the OFF-C mode.

**To set off-centering point, press relevant keys as follows:**

OFF-C → Up/Down & Left/Right → ENT  Fixes the off-centering point and exit the off-centering state.

**To cancel the OFF-C function, press the OFF-C key again.**

OFF-C  The "OFF-C" display at the upper right disappears and function returns to the ordinary state from the Off Center state.

## 5.4.15 Setting the SLEEP mode (SLEEP)

The SLEEP mode allows you to initiate a 30-second transmission at predetermined intervals, then allow the radar to go into standby mode and the display will go dark to conserve power. Press the "SLEEP" soft key once for a 5-minute interval, twice for a 10-minute interval, or three times for a 15-minute interval. Pressing the key a fourth time will exit the sleep mode. Two minutes before a specified transmission time, the screen backlighting turns on and the warm-up timer starts. The transmitter will then run for 30 seconds and shut down. The sequence repeats continually until you override it by pressing any key on the keypad.

**Setting procedure**

SLEEP → (Select 5min.) → ENT → POWER → 30-second-transmission every 5 min.
Transmission ON

SLEEP → (Select 10min.) → ENT → POWER → 30-second-transmission every 10 min.
Transmission ON

SLEEP → (Select 15min.) → ENT → POWER → 30-second-transmission every 15 min.
Transmission ON

SLEEP → (Select OFF) ---------- SLEEP function is turned OFF

Setting completed

## 5.4.16 Tuning adjustment (TUNE)

(1) When the "TUNE" soft key is pressed, the TUNE display on the upper right side of the screen will be highlighted.
(2) Turn the control knob to adjust the tuning to the desired level. The display will move in a range of 0 and 99.
(3) When you are through, press the "ENT" key to exit. Pressing any other key will also exit and move you to that function.

TUNE → Control knob → TUNE or ENT --------The adjustment state is ended.
(Tuning adjustment) → Other function key -----Shift to other functions

**Note: Use the "MENU" to return auto-tuning state.**

## 5.4.17 Echo expansion (ST)

When the "ST" key is pressed, "ST1" is displayed in the middle left side of the screen and the echo expansion function is turned on. This changes the target image by showing echoes expanding in the direction away from the boat, thereby making smaller ones easier to see. Two levels of echo expansion are available. Press the "ST" key repeatedly to alternate between them and to turn off the function.

**Note: Refer to "5.5.3.5 Echo expansion (ST)".**

→ ST1 → ST2 → OFF →
(Expansion rate ST1 < ST2 )

### 5.4.18 Displaying track of targets (TRACK)

When the "TRACK" key is pressed, "TK 15SEC" is displayed on the left side of the screen and track mode is entered. Use this function to determine the direction another boat or ship is moving relative to your boat's course. The display characters indicate the length of the track, in this case, where the other boat has been during the past 15 seconds.

**Note: Refer to "5.5.3.6 Displaying track of targets (TRACK)".**

Every time this key is pressed, the course length increases as follows:

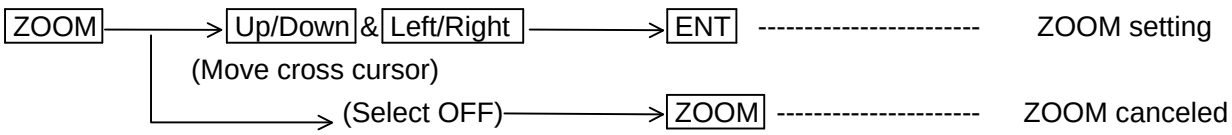
→ 15 sec → 30 sec → 1 min → 3 min → 6 min → CONT → OFF →

**Note: The "OFF" state will not be displayed on the screen and the "TK xx " display will disappear.**

### 5.4.19 Enlarging a selected area (ZOOM)

This function lets you double the video image centering around an adjustable point on the screen. Press the "ZOOM" key. A small cross cursor for setting appears the center of the screen and "SET ZOOM POINT" is displayed at the bottom. Use the cursor pad to move the cross cursor to the point to be magnified, and press the "ENT" key. The area around the cross cursor is displayed in 2x magnification, and a blinking "ZM" is displayed at the upper right of the screen. To cancel the ZOOM function, press the "ZOOM" key again or change the range scale.

**Note: Refer to "5.5.3.7 Enlarging a selected area (ZOOM)".**




**Note 1: *VRM2 and EBL2 start point do not follow the OFF-C function during a floating state. VRM2 and EBL2 functions will work in the OFF-C mode.**

**2: Normal screen returns when you change the range scale.**

**3: ZOOM function is unusable in 3D/PPI screen.**

**4: ZOOM function is unusable in OFF-C.**

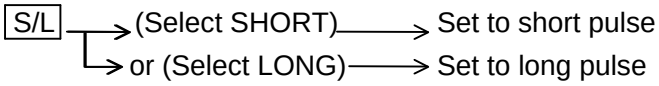
**5: Center of ZOOM can be set to any desired position within the set range.**

### 5.4.20 Increasing transmitter average power (S/L)

The pulse width is automatically changed as you change the range. However, if you want to increase sensitivity, you can choose sensitivity from two pulse lengths. The short pulse (SHORT) gives you sharp images with high distance resolution. The long pulse (LONG) provides higher average transmit power and shows targets in large size for easy identification, although distance resolution is reduced.

Press the "S/L" key to select the Pulse length (LONG or SHORT). The pulse length changes L (Long) and S (Short) alternately.

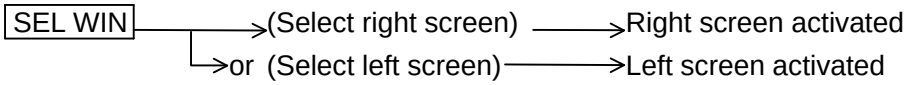
**Note: Refer to "5.5.3.8 Increasing transmitter average power(S/L)".**




### 5.4.21 Switching the screen (SEL WIN)

When in the PPI+PPI 2-screen mode, press the "SEL WIN" key to switch between screens. The range numbers at the upper edge of the active screen will be highlighted. Any function keys you press will affect that screen only. If you turn on the VRM1, VRM2, EBL1 or EBL2 function on one screen, it will stay on in the other screen when you press "SEL WIN".

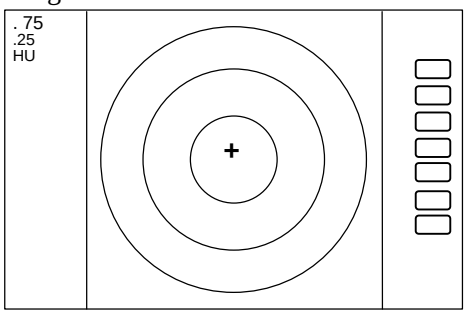
**Note: Refer to "5.5.4.2 Switching screens on PPI/PPI screen ( SEL WIN )".**



### 5.4.22 Reversing the screen (PICTURE)

The LCD display readability is affected by ambient light conditions. In some cases, specifically at night, you may find the display is easier to view when the entire screen is reversed. Press the "PICTURE " key to change it. The color of the screen will be changed on color model.

**Note: Refer to "5.5.4.3 Reversing the screen (PICTURE)".**



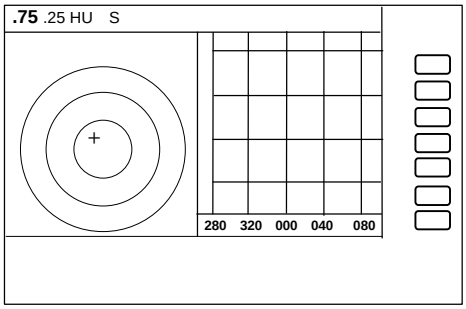

PPI screen

### 5.4.23 Change to PPI screen ( PPI )

Press the "PPI" soft key, and the screen will change to a single PPI screen. All of the radar's functions will work normally in this mode.

### 5.4.24 Change to SEMI3D/PPI screen ( SEMI3D )

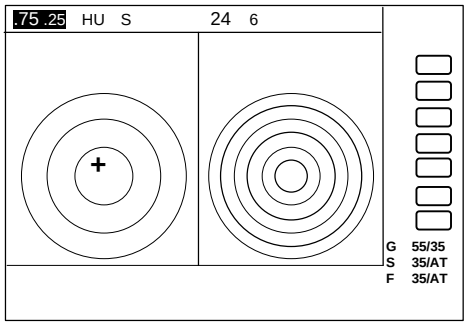
Press the "SEMI3D" soft key. The screen will split between the SEMI3D view and a PPI screen. All controls, such as EBLs, VRMs, affect both screens. The ZOOM, OFF-C, FL EBL2, and FL VRM2 cannot be used in this mode. The SEMI3D screen always displays the boat's heading at its center.



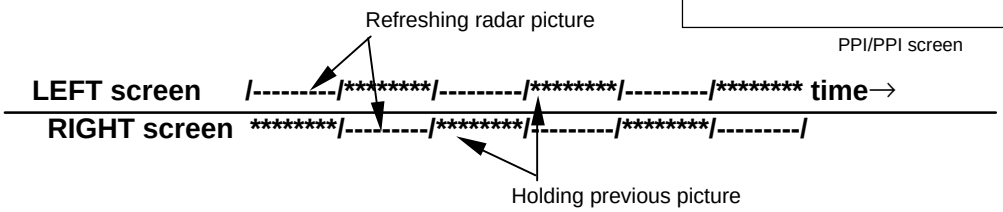

**SEMI3D/PPI screen**

### 5.4.25 Change to PPI/PPI screen ( PPI/PPI )

Press the "PPI/PPI" soft key and the screen will split between two identical PPI screens. You can use this mode to view targets at two different range settings. The range numbers of the currently selected window will be highlighted. Each radar image is refreshed sequentially over time, alternating between the two.



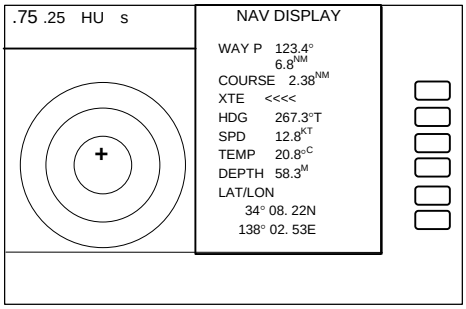

PPI/PPI screen




The ZOOM, OFF-C, FL EBL2, and FL VRM2 functions cannot be used in the PPI/PPI mode. The range, GAIN, STC, FTC and GZ controls, however, can be set independently for each selected window. Press "SEL WIN" to move between them. Any functions using the cross cursor can only be controlled on the selected window.

### 5.4.26 Change to PPI/NAV screen ( PPI/NAV )

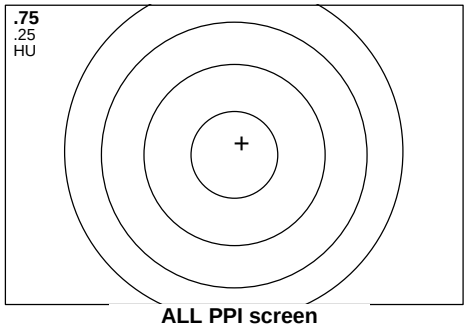
Press the "PPI/NAV" key and the screen will split between a PPI window and a navigation data window. The ZOOM, OFF-C, FL EBL2, and FL VRM2 functions cannot be used in this mode.




PPI/NAV screen

### 5.4.27 Change to ALL PPI screen ( ALL PPI )

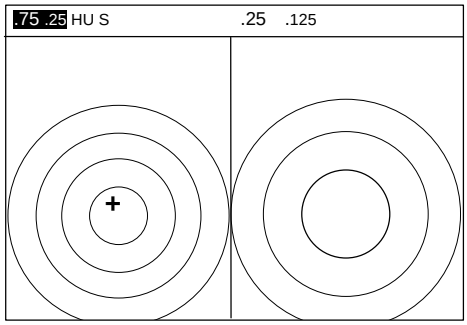
Press the "ALL PPI" key and all data elements and soft keys will disappear from the screen, displaying a full-frame radar image. The range, ring interval and display mode are shown in the upper left corner. The only controls that have any effect in this mode are the "RANGE UP", "RANGE DOWN", "MENU" and POWER buttons, along with the cursor pad. Pressing any other keys will exit ALL PPI and return the display to the normal PPI screen mode.




**ALL PPI screen**

### 5.4.28 Change to ALL PPI/PPI screen ( ALL PPI2 )

When you press the "ALL PPI2" key, all data elements and soft keys will disappear from the screen, and two identical PPI windows will appear side-by-side. The range, rings interval, display mode are displayed on the upper left of each window. The only controls that have any effect in this mode are the "RANGE UP", "RANGE DOWN", "MENU" and POWER buttons, along with the cursor pad. Pressing any other keys will exit ALL PPI2 and return the display to the normal PPI/PPI screen mode. The radar pictures are refreshed with separate, alternating scanning intervals for each screen. The right screen picture is frozen during the refresh period for the left screen, and vice versa. We recommend when cruising at higher speeds to use a single PPI screen for continuous image refreshing.




ALL PPI/PPI screen