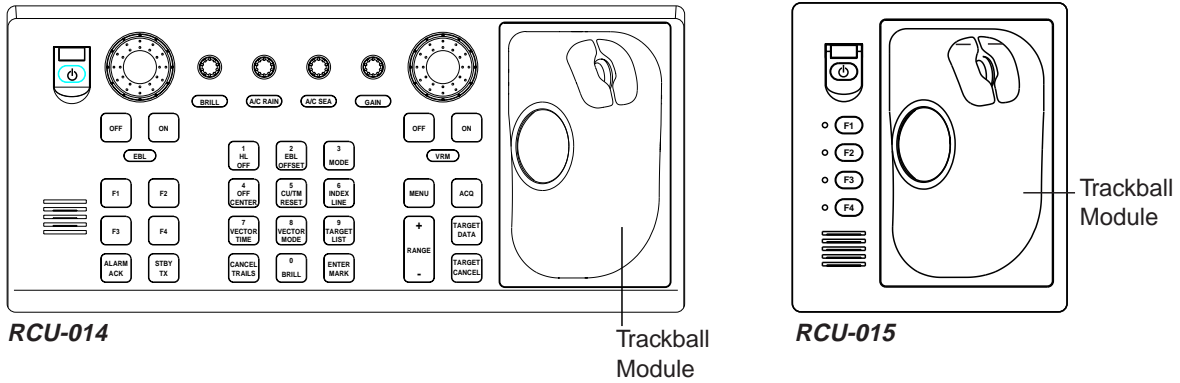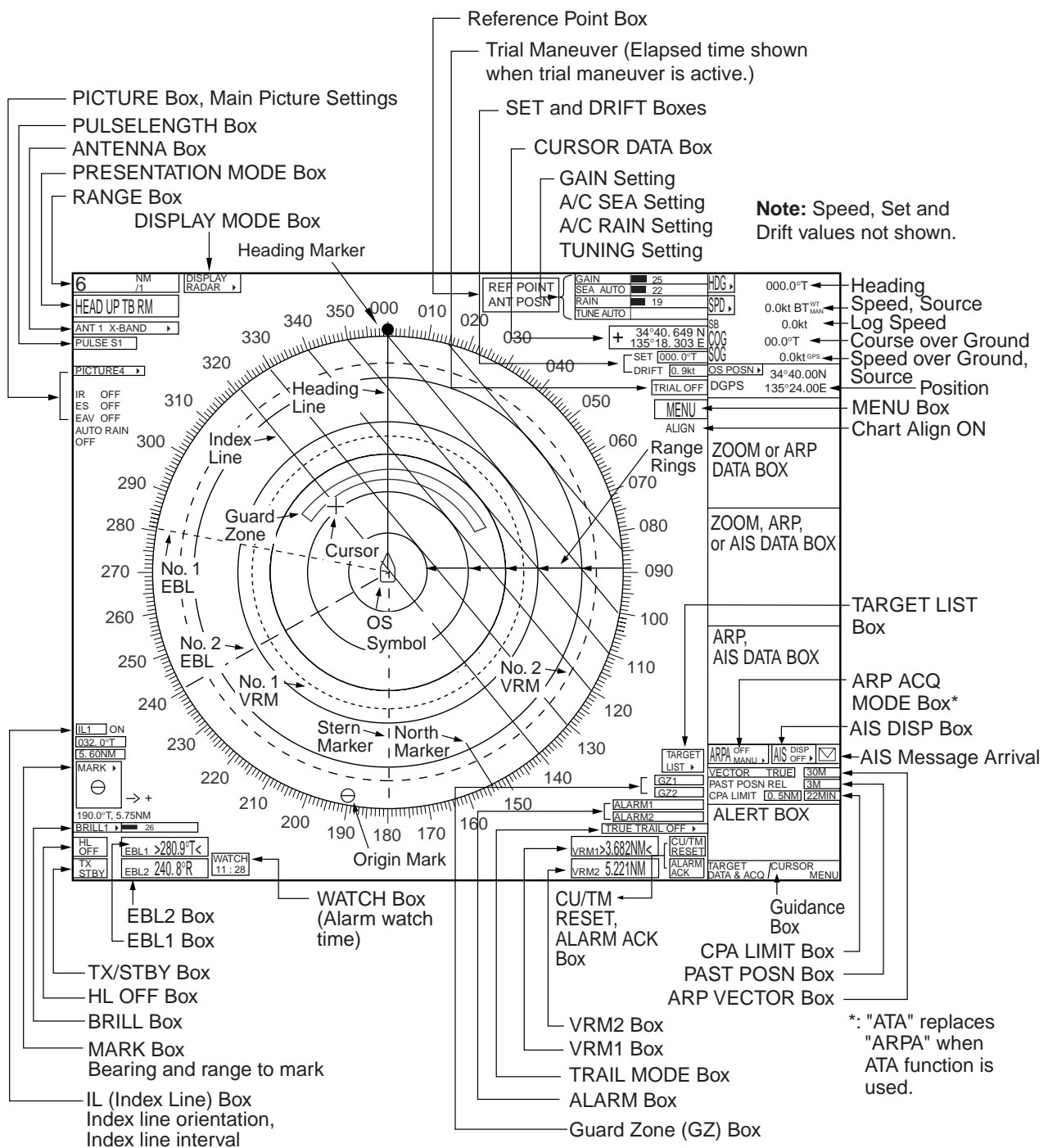# FURUNO®

FAR-2xx7 SERIES MARINE RADAR
Operator's Guide

The purpose of this Operator's Guide is to provide the basic operating procedures for this equipment. For more detailed information, see the Operator's Manual. This manual describes operating procedures using the trackball module, since it is common to both types of control units.

RCU-014

Trackball Module

Trackball Module

RCU-015

Control	Description
POWER	Turns the system on and off.
EBL and VRM controls	Adjust EBL and VRM, respectively.
EBL ON, EBL OFF	Turns the EBLs on and off, respectively.
VRM ON, VRM OFF	Turns the VRMs on and off, respectively
F1-F4	Execute menu short cut assigned.
ALARM ACK	Silences audible alarm.
STBY TX	Toggles between stand-by and transmit.
BRILL	Adjusts screen brilliance of FURUNO-supplied monitor.
A/C RAIN	Suppresses rain clutter.
A/C SEA	Suppresses sea clutter.
GAIN	Adjusts sensitivity of the radar receiver.
HL OFF	Temporarily erases the heading line while pressed.
EBL OFFSET	Enables, disables the EBL offset. Switches coordinate polarity (menu operation).
MODE	Chooses presentation mode.
OFF CENTER	Shifts own ship position.
CU/TM RESET	Moves own ship position in 75% radius in stern direction. Resets the heading line to 0° in course-up and true motion modes.
INDEX LINE	Turns index lines on and off.
VECTOR TIME	Chooses vector time (length).
VECTOR MODE	Chooses vector mode, relative or true.
TARGET LIST	Displays ARP target list.
CANCEL TRAILS	Cancels all target trails. In menu operation it clears line of data.
BRILL/O	Chooses color scheme.
ENTER MARK	Enters marks; terminates keyboard input.
MENU	Opens and closes the MAIN menu; closes other menus.
ACQ	- Acquires a target for ARP. - Changes a sleeping AIS target to an activated one.
RANGE	Chooses radar range.
TARGET DATA	Displays target data for ARP or AIS target chosen with the trackball.
TARGET CANCEL	Cancels tracking on ARP, AIS or reference target chosen with the trackball.

FURUNO ELECTRIC CO., LTD.
NISHINOMIYA, JAPAN

PICTURE Box, Main Picture Settings
PULSELENGTH Box
ANTENNA Box
PRESENTATION MODE Box
RANGE Box
DISPLAY MODE Box

Reference Point Box
Trial Maneuver (Elapsed time shown when trial maneuver is active.)
SET and DRIFT Boxes
CURSOR DATA Box
GAIN Setting
A/C SEA Setting
A/C RAIN Setting
TUNING Setting

Note: Speed, Set and Drift values not shown.

Heading Marker

| 6 | NM /1 | DISPLAY RADAR ▸ |
| HEAD UP TB RM |
| ANT 1 X-BAND ▸ |
| PULSE S1 |

| REF POINT |
| ANT POSN |

GAIN	25
SEA AUTO	22
RAIN	19
TUNE AUTO	

HDG ▸   000.0°T ← Heading
SPD ▸   0.0kt BT WT/MAN ← Speed, Source
SB   0.0kt ← Log Speed
COG   00.0°T ← Course over Ground
SOG   0.0kt GPS ← Speed over Ground, Source

34°40. 649 N
135°18. 303 E

SET 000. 0°T
DRIFT 0. 9kt

OS POSN ▸ 34°40.00N
DGPS   135°24.00E ← Position

TRIAL OFF ▸

MENU ← MENU Box
ALIGN ← Chart Align ON

PICTURE4 ▸
IR   OFF
ES   OFF
EAV OFF
AUTO RAIN
OFF

Heading Line
Index Line
Guard Zone
No. 1 EBL
No. 2 EBL
No. 1 VRM
Cursor
OS Symbol
Stern Marker
North Marker
Origin Mark
Range Rings
No. 2 VRM

ZOOM or ARP DATA BOX
ZOOM, ARP, or AIS DATA BOX
TARGET LIST Box
ARP, AIS DATA BOX
ARP ACQ MODE Box*
AIS DISP Box
AIS Message Arrival

Heading degree markings: 000, 010, 020, 030, 040, 050, 060, 070, 080, 090, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350

| IL1 | ON |
| 032. 0°T |
| 5. 60NM |
| MARK ▸ |
| ⊖ | → +
| 190.0°T, 5.75NM |
| BRILL1 ▸ 26 |
| HL OFF | EBL1 >280.9°T< | WATCH 11 : 28 |
| TX STBY | EBL2 240.8°R |

TARGET LIST ▸

GZ1
GZ2

ALARM1
ALARM2
TRUE TRAIL OFF ▸

VRM1 >3.682NM<
VRM2 5.221NM

CU/TM RESET
ALARM ACK

ARPA OFF MANU ▸   AIS DISP OFF ▸ ▽
VECTOR   TRUE   30M
PAST POSN REL   3M
CPA LIMIT 0. 5NM   22MIN

ALERT BOX

TARGET DATA & ACQ   CURSOR MENU

Guidance Box
CPA LIMIT Box
PAST POSN Box
ARP VECTOR Box

*: "ATA" replaces "ARPA" when ATA function is used.

WATCH Box (Alarm watch time)
EBL2 Box
EBL1 Box
TX/STBY Box
HL OFF Box
BRILL Box
MARK Box — Bearing and range to mark
IL (Index Line) Box — Index line orientation, Index line interval

CU/TM RESET, ALARM ACK Box
VRM2 Box
VRM1 Box
TRAIL MODE Box
ALARM Box
Guard Zone (GZ) Box

<RADAR OPERATION>

Turning the Power On/Off

Open the power switch cover and press the switch to turn on the radar system. To turn off the radar, press the switch again.

Transmitting, Stand-by

Press the **STBY/TX** key alternately to transmit radar pulses or set the radar to stand-by.

Adjusting Screen Brilliance

1. Choose the brilliance level indicator in the brilliance level indication box at the bottom left corner of the screen.
2. Roll the wheel downward to increase brilliance or roll it upward to decrease brilliance.

2

Manual Tuning

1. Choose the RANGE box and then push the left or right button as appropriate to choose the 48-mile range.
2. If using automatic tuning, choose TUNE AUTO at the top of the screen and then push the left button to show TUNE MAN.
3. Place the arrow on the tuning bar area in the TUNE box.
4. Roll the wheel to adjust tuning. The best tuning point is where the bar graph swings maximum.

Choosing a Display Mode

1. Choose the DISPLAY MODE box.
2. Push the left button to choose appropriate mode: radar or radar + plotter.

Choosing a Presentation Mode

1. Choose the PRESENTATION MODE box.
2. Push the left button to choose desired mode.

Choosing a Range

1. Choose the RANGE box.
2. Push the right or left button to change the range.

Adjusting Sensitivity

1. Choose the gain level indicator.
2. Roll the wheel downward to increase the gain or upward to decrease it.

Automatic Adjustment of Sea Clutter

1. If using manual sea clutter, choose SEA MAN and then push the left button to show SEA AUTO.
2. Place the arrow in the A/C SEA level indicator.
3. Roll the wheel downward to increase the A/C SEA or upward to decrease it.

Adjusting A/C RAIN

1. Place the cursor in the A/C RAIN level indicator.
2. Roll the wheel downward to increase the A/C RAIN or upward to decrease it.

Suppressing Interference

1. Choose the PICTURE box.
2. Push the right button to show the PICTURE menu.
3. Choose 1 INT REJECT and then push the wheel.
4. Choose rejection level desired and then push the wheel.
5. Push the right button to close the menu.

Measuring the Range

1. Place the arrow in the VRM1 or VRM2 box.
2. Push the left button to turn on the VRM.
3. Push the left button again.
4. Roll the trackball (coarse adjustment) or wheel (fine adjustment) to align the active variable range marker with the inner edge of the target of interest.

To erase a VRM, choose the appropriate VRM readout box and then push the left button until the VRM disappears from the screen.

Measuring the Bearing

1. Choose the EBL1 or EBL2 box.
2. Push the left button.
3. Push the left button again.
4. Roll the trackball (coarse adjustment) or wheel (fine adjustment) to bisect the target with the EBL.

To erase an EBL, choose the appropriate EBL readout box and then push the left button until the EBL disappears from the screen.

3

<ARP OPERATION>

Activating, Deactivating ARP

1. Choose the ARP ACQ MODE box.
2. Push the left button to show OFF, MAN or AUTO MAN as appropriate.

Automatic Acquisition

1. Choose the ARP ACQ MODE box and then push the right button.
2. Choose 1 ARP SELECT and then push the wheel or the left button.
3. Choose automatic acquisition condition desired and then push the wheel or the left button.
4. Push the right button to close the menu.

Manual Acquisition

1. With the cursor inside the effective display area, roll the wheel to show "ACQ" in the guidance box.
2. Place the cursor on the target you want to acquire.
3. Push the left button to acquire the target.

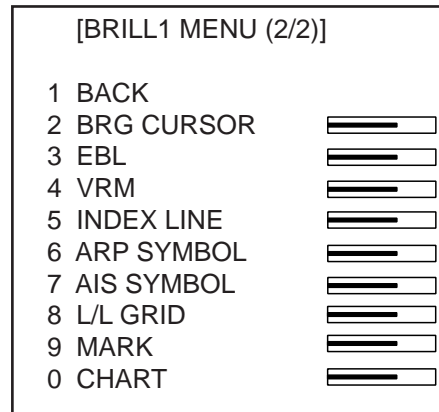## Terminating Tracking of Targets

1. With the cursor inside the effective display area, roll the wheel to show "TARGET CANCEL / EXIT" in the guidance box.
2. Place the cursor on the ARP target or reference target to cancel tracking.
3. Push the left button or the wheel.
4. To finish, push the right button.

Displaying Target Data

1. With cursor inside the effective display area, roll the wheel to show "TARGET DATA & ACQ / CURSOR MENU" in the guidance box.
2. Roll the trackball to place the cursor on a desired ARP target and then push the left button.

Adjusting Symbol Brilliance

1. Choose the BRILL box and then push the right button.
2. Choose 0 NEXT and then push the wheel or the left button.

```
[BRILL1 MENU (2/2)]

1  BACK
2  BRG CURSOR       ▭▭▭▭░
3  EBL              ▭▭▭▭░
4  VRM              ▭▭▭▭░
5  INDEX LINE       ▭▭▭▭░
6  ARP SYMBOL       ▭▭▭▭░
7  AIS SYMBOL       ▭▭▭▭▭
8  L/L GRID         ▭▭▭▭░
9  MARK             ▭▭▭▭░
0  CHART            ▭▭▭░░
```

3. Choose 6 ARP SYMBOL and then push the wheel or the left button.
4. Roll the wheel to adjust brilliance.
5. Push the right button twice to close the menu.

Vector Motion and Length

1. Choose VECTOR TRUE or VECTOR REL (whichever is displayed) at the right side of the screen.
2. Push the left button to display VECTOR TRUE or VECTOR REL as appropriate.
3. Choose the vector time box.
4. Push the left button to display time desired.

CPA and TCPA Alarm Ranges

1. Choose the CPA LIMIT box.
2. Roll the wheel to choose the CPA value desired and then push the wheel.
3. Choose the TCPA limit box.
4. Roll the wheel to choose TCPA value desired and then push the wheel.

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