

ALR Alert ID	Alert title	Alert description	Priority & Category
791	XTD LIM EXCEED-ED*4	"CHECK COURSE AND ADJUST AS NECESSARY"	Warning Cat: B
	Meaning: Cross-track error, ship is off-course. Remedy: Press the <b>ALARM ACK</b> key. Check course and adjust as necessary.		
792	CHART MEMORY ERR*5	"CHECK PROCESSOR UNIT"	Warning Cat: B
	Meaning: An error has occurred while loading chart data. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.		

- \*1. This alert appears only for FAR-2228-NXT(-BB) and FAR-2328-NXT.
- \*2. This alert appears only for For FAR-2x58/2x68DS.
- \*3. This alert appears only for FAR-2228-NXT(-BB) and FAR-2328-NXT. Keep in mind the following points:
- This alert can occur when this equipment receives interference simultaneously from multiple radars.
  - This alert may not occur under the bad weather conditions such as at rain.
- \*4. This alert is output only on B/W-type radars.
- \*5. This alert is output only on A/B/W-types with radar plotter functionality.

### ALR format indications

The following indications are shown by this equipment when ALR format is in use. The indications have no category, and are not output as ALR sentences.

**Note:** Indications also appear in the ALERT BOX on the screen and on the ALERT LIST.

ID	Title	Message
075	RPU:HIGH TEMP	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Temperature in the RPU is above the recommended limit. Remedy: Press the <b>ALARM ACK</b> key. Lower the temperature.	
770-1	MD TYPE MISMATCH	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Unable to detect the MD board bandwidth. Remedy: Press the <b>ALARM ACK</b> key. Check connections to the antenna.	
772-1	PM TYPE MISMATCH	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Unable to detect the MD board bandwidth. Remedy: Press the <b>ALARM ACK</b> key. Check connections to the antenna.	
771-1	MTR-DRV:HIGH TEMP	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board temperature is above the recommended limit. Remedy: Press the <b>ALARM ACK</b> key. Lower the temperature.	

ID	Title	Message
771-2	MTR-DRV:OVER CURRENT	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board power input from the motor is outside recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the motor.	
771-3	MTR-DRV:MTR PWR ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board motor's voltage is outside recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the motor.	
771-4	MTR-DRV:P12V ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Voltage in the +12V line of the MTR-DRV motor is outside recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the power supply.	
771-5	MTR-DRV:HALL SENSOR ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Error in the hall sensor signal detected by the MTR-DRV board. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the hall sensor.	
771-6	MTR-DRV:ANT LOCK	"CHECK THE SCANNER FOR OBSTRUCTIONS. IF THERE ARE NONE, SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Antenna lock detected by the MTR-DRV board. Remedy: Press the <b>ALARM ACK</b> key. Unlock the antenna.	
771-7	MTR-DRV:PWR SUPPLY ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board detected a drop in power. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the power supply.	
771-8	MTR-DRV:BRAKE-R ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board detected an error in the brake resistance. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the antenna brake.	
771-9	MTR-DRV:OVER LOAD	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: MTR-DRV board detected an overload. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the motor.	
772-2	PM:P12V ERROR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Voltage in the +12V line of the PM board is outside recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the power supply.	

ID	Title	Message
772-3	PM:PLL UNLOCK	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: PM board's PLL is unlocked. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the PM board.	
773-1	RFC:P6V ERROR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Voltage in the +6V line of the RF-Converter is outside rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the power.	
773-2	RFC:P48V ERROR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Voltage in the +48V line of the RF-Converter is outside rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the power.	
773-3	RFC:IF PLL UNLOCK	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: PLL lock on the IF side of the RF-Converter is unlocked. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the RF-Converter.	
773-4	RFC:PLL UNLOCK	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: PLL lock on the RF side of the RF-Converter is unlocked. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the RF-Converter.	
773-5	RFC:OUTPUT SIGLVL ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Signal output from the RF-Converter is outside the recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the RF-Converter.	
773-6	RFC:INPUT SIG LVL ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Signal input from the RF-Converter is outside the recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the RF-Converter.	
775-1	HPA:OUTPUT SIGLVL ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Signal output from the HPA board is outside the recommended rating. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the HPA board.	
775-2	HPA:OUTPUT PKCRR ERR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Peak current detected in the signal output from the HPA board. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the HPA board.	

ID	Title	Message
775-3	HPA:HIGH TEMP	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Excessively high temperature detected on the HPA board. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the HPA board.	
775-4	VSWR ERROR	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Abnormal VSWR detected by the RF Converter. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the antenna.	
083	RPU:FAN1 NO ROTATE	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: The FAN1 in the processor unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
084	RPU:FAN2 NO ROTATE	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: The FAN2 in the processor unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
085	RPU:FAN3 NO ROTATE	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: The FAN3 in the processor unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
082	RPU:FAN(RP) NO ROTATE* <sup>1</sup>	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: The RPU fan on the RP board in the processor unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
087	RPU:RP HW ERROR* <sup>1, *3</sup>	"IN SAFE WATERS, REBOOT THE SYSTEM. IF THE ERROR OCCURS FREQUENTLY, SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: The RP board has stopped working. Charts and marks cannot be displayed. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
088	RSB FAN1 NO ROTATE* <sup>4</sup>	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Fan1 in the antenna unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	
089	RSB FAN2 NO ROTATE* <sup>5</sup>	"CONDUCT A DIAGNOSTIC TEST WHILE THE ERROR IS PRESENT. SUPPLY THE TEST RESULTS TO YOUR LOCAL DEALER."
	Meaning: Fan2 in the antenna unit is stopped or disconnected. Remedy: Press the <b>ALARM ACK</b> key. Have a qualified technician check the processor unit.	

ID	Title	Message
798	LOST WAVE UNIT*1	<p data-bbox="655 192 1385 253">"CHECK CONNECTION WITH WAVE ANALYSIS PC, OR DISABLE WAVE MODE."</p> <p data-bbox="336 264 1430 358">Meaning: Wave data not received from wave analysis PC, when WAVE mode is enabled. Remedy: Press the <b>ALARM ACK</b> key. Check connection with wave analysis PC, or disable WAVE mode.</p>
472	POSN SOURCE CHG	<p data-bbox="655 371 1382 432">"POSITION SOURCE USING IN SYSTEM CHANGES TO OTHER SOURCE."</p> <p data-bbox="336 443 1430 537">Meaning: Positioning sensor input lost, automatically changed sensors. Remedy: Press the <b>ALARM ACK</b> key. The indication is automatically removed when the signal is restored or a different sensor is selected.</p>
474	SPD SOURCE CHG	<p data-bbox="655 551 1422 611">"SPEED SOURCE USING IN SYSTEM CHANGES TO OTHER SOURCE."</p> <p data-bbox="336 622 1430 716">Meaning: Speed sensor input lost, automatically changed sensors. Remedy: Press the <b>ALARM ACK</b> key. The indication is automatically removed when the signal is restored or a different sensor is selected.</p>
473	HDG SOURCE CHG	<p data-bbox="655 730 1374 790">"HEADING SOURCE USING IN SYSTEM CHANGES TO OTHER SOURCE."</p> <p data-bbox="336 801 1430 896">Meaning: Heading sensor input lost, automatically changed sensors. Remedy: Press the <b>ALARM ACK</b> key. The indication is automatically removed when the signal is restored or a different sensor is selected.</p>
741	ISW: NO SIGNAL	<p data-bbox="655 909 1358 969">"SELECTED RADAR HAS PROBLEM. USE RADAR AS STANDALONE."</p> <p data-bbox="336 981 1430 1075">Meaning: Selected radar has an error. (Only displayed when Interswitch is active.) Remedy: Press the <b>ALARM ACK</b> key. Use radar as standalone or restore the external radar to normal operating condition.</p>
742	ISW: NO RADAR	<p data-bbox="655 1088 1422 1149">"COMMUNICATION WITH SELECTED RADAR HAS INTERRUPTED/LOST. USE RADAR AS STANDALONE."</p> <p data-bbox="336 1160 1430 1276">Meaning: Communication with selected radar interrupted or lost. (Only displayed when Interswitch is active.) Remedy: Press the <b>ALARM ACK</b> key. Use radar as standalone or check connection and power to the external radar.</p>
743	ISW: STBY*2	<p data-bbox="655 1290 1422 1350">"SELECTED RADAR ENTERED STANDBY MODE. SET SELECTED RADAR TO TX MODE."</p> <p data-bbox="336 1361 1430 1422">Meaning: Selected radar entered standby mode. Remedy: Press the <b>ALARM ACK</b> key. Check transmission status of the selected radar.</p>
744	ISW: NO SENSOR*2	<p data-bbox="655 1435 1358 1496">"SELECTED RADAR HAS PROBLEM. USE RADAR AS STANDALONE."</p> <p data-bbox="336 1507 1430 1624">Meaning: No heading data was received from the selected radar for more than five seconds. Remedy: Press the <b>ALARM ACK</b> key. Check heading data input status for the selected radar.</p>
793-1	LOST WV UTC SIG	<p data-bbox="655 1648 1430 1709">"CHECK THAT DATA INPUT TO WAVE ANALYZER IS CORRECT, OR DISABLE WAVE MODE."</p> <p data-bbox="336 1720 1430 1836">Meaning: With the wave radar active ([4 WAVE DATA] set to [ON]), the wave analysis PC has an error in time/date input. Remedy: Press the <b>ALARM ACK</b> key. Check that data input to Wave Analyzer is correct, or disable WAVE mode.</p>
793-2	LOST WV COG/SOG	<p data-bbox="655 1850 1430 1910">"CHECK THAT DATA INPUT TO WAVE ANALYZER IS CORRECT, OR DISABLE WAVE MODE."</p> <p data-bbox="336 1921 1430 2038">Meaning: With the wave radar active ([4 WAVE DATA] set to [ON]), the wave analysis PC has an error in speed data input. Remedy: Press the <b>ALARM ACK</b> key. Check that data input to Wave Analyzer is correct, or disable WAVE mode.</p>

ID	Title	Message
793-3	LOST WV WIND SIG	"CHECK THAT DATA INPUT TO WAVE ANALYZER IS CORRECT, OR DISABLE WAVE MODE."
	Meaning: With the wave radar active ([4 WAVE DATA] set to [ON]), the wave analysis PC has an error in speed data input. Remedy: Press the <b>ALARM ACK</b> key. Check that data input to Wave Analyzer is correct, or disable WAVE mode.	
793-4	LOST WV RADAR ANT	"CHECK THE CONNECTION WITH SELECTED RADAR IS CORRECT, OR DISABLE WAVE MODE."
	Meaning: With the wave radar active ([4 WAVE DATA] set to [ON]), the wave analysis PC has an error in speed data input. Remedy: Press the <b>ALARM ACK</b> key. Check that data input to Wave Analyzer is correct, or disable WAVE mode.	
793-5	LOST WV GYRO SIG	"CHECK THAT DATA INPUT TO WAVE ANALYZER IS CORRECT, OR DISABLE WAVE MODE."
	Meaning: With the wave radar active ([4 WAVE DATA] set to [ON]), the wave analysis PC has an error in speed data input. Remedy: Press the <b>ALARM ACK</b> key. Check that data input to Wave Analyzer is correct, or disable WAVE mode.	

- \*1. This indication is output only on A/B/W-types with radar plotter functionality.
- \*2. This indication appears only on A/B-type radars when Dual Radar mode is active and enabled.
- \*3. When this indication is rectified, the [Chart] button appears in yellow color. Click the [Chart] button to restore the system to normal operation.
- \*4. This indication appears only for FAR-2xx8, FAR-2xx8W and FAR-2xx8-NXT.
- \*5. This indication appears only for FAR-2xx8, FAR-2xx8W, FAR-2xx8S, FAR-2xx8SW and FAR-2xx8-NXT.

# APPX. 4 DATA COLOR AND MEANING

Validity and integrity of input data (mode indicator)

Data color	HDG	L/L	SPD	COG/SOG
Normal color (normal data)	THS-A, E  HDT	GNS-A, D * <sup>1</sup> , F, P, R and (NAV status: S, V) GGA-1, 2 * <sup>1</sup> , 3, 4, 5 GLL-A, D and (status: A) RMC-A, D, F, P, R and (status: A) and (NAV status: S, V)	VBW-A VHW	VTG-A, D, P RMC-A, D, F, P, R and (status: A) and (NAV status: S, V).
Yellow-or- ange color (invalid data)		GNS-E, M, S GGA-6, 7, 8 GLL-E, M, S and (status: A) RMC-E, M, S and (Status: A)		VTG-E, M, S RMC-E, M, S, and (sta- tus: A)
Yellow color (low integrity)		GNS-A, D* <sup>1</sup> , F, P, R, and (NAV status: C, U) RMC-A, D, F, P, R and (status: A) and (NAV status: C, U)		RMC-A, D, F, P, R and (status: A) and (NAV status: C, U)
***.*	THS-M, V, S	GNS-N GGA-0 RMC-N, (status: V), (NAV status: N) GLL-N, (status: V)	VBW-V	VTG-N RMC-N (sta- tus: V)

\*1: "Age of differential GPS data" in GGA and GNS sentences is ten seconds or higher. In this case, ship's latitude and longitude are displayed in yellow.

# APPX. 5 ABBREVIATIONS

A:

Abbreviation	Word	Abbreviation	Word
ACE	Automatic Clutter Elimination	ACK	Acknowledge
ACQ	Acquire	Act	Activate
AID	Aid	AIS	Automatic Identification System
ALF	ALF sentence	ALR	Alarm
AMB	Amber	AMS	Alert Management System
ANT	Antenna	AP	Autopilot
APR	April	ARC	Arc
ATON	Aids to Navigation	AUG	August
AUTO	Automatic	A/C RAIN	Anti Clutter Rain
A/C SEA	Anti Clutter Sea		

B:

Abbreviation	Word	Abbreviation	Word
BCR	Bow Crossing Range	BCT	Bow Crossing Time
BLU	Blue	BRG	Bearing
BRILL	Brilliance	BT	Bottom Tracking

C:

Abbreviation	Word	Abbreviation	Word
CALC	Calculated	CALIB	Calibrate
CCRP	Consistent Common Reference Point	CHG	Change
CH	Channel	COG	Course Over Ground
CONT	Continue	CORR	Corrected/Correction
CPA	Closest Point of Approach	CPU	Central Processing Unit
CRS	Course	CTW	Course Through the Water
CU	Course Up	CYA	Cyan

D:

Abbreviation	Word	Abbreviation	Word
DEC	December	deg	degree(s)
DEST	Destination	DGPS	Differential GPS
DISP	Display	DIST	Distance
DR	Dead Reckoning	DTM	Datum



E:

Abbreviation	Word	Abbreviation	Word
E	East	EAV	Echo Averaging
EBL	Electronic Bearing Line	EBRL	Electronic Bearing Range Line
ECDIS	Electronic Chart Display and Information System	EP	Estimated Position
EQUIP	Equipment	ERR	Error
ES	Echo Stretch	ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure	EXT	External

F:

Abbreviation	Word	Abbreviation	Word
FEB	February	FILT	Filter/Filtered
FUNC	Function		

G:

Abbreviation	Word	Abbreviation	Word
GAP	Gap	GC	Great Circle
GND	Ground	GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System	GRAD	Gradation
GRN	Green	GRY	Gray
GT	Gross Tonnage		

H:

Abbreviation	Word	Abbreviation	Word
HD	Heading	HDG	Heading
HL	Heading Line	HSC	High Speed Craft

I:

Abbreviation	Word	Abbreviation	Word
IBS	Integrated Bridge System	ID	Identification
IMO	International Maritime Organization	INT	Interval
INS	Integrated Navigation System	INFO	Information
IR	Interference Rejection	IP ADDRESS	Internet Protocol Address

J:

Abbreviation	Word	Abbreviation	Word
JAN	January	JUN	June
JUL	July		

APPX. 5 ABBREVIATIONS

L:

Abbreviation	Word	Abbreviation	Word
L	Long pulse	LAT	Latitude
LAN	Local Area Network	LCD	Liquid Crystal Display
LIM	Limit	L/L	Latitude/Longitude
LOG	Log	LON	Longitude
LOP	Line Of Position		

M:

Abbreviation	Word	Abbreviation	Word
MAG	Magnetic	MAG	Magenta
MAN	Manual	MAR	March
MAX	Maximum	MAY	May
MBS	Main Bang Suppression	M-CYA	Multi Cyan
MD	Modulator	MENU	Menu
MFDF	Medium Frequency Direction Finder	MIC	Monolithic Integrated Circuit
M-GRN	Multi Green	M1	Medium pulse 1
MID	Middle	M3	Medium pulse 3
M2	Medium pulse 2	MON	Monday
MOB	Man Over Board	MSC	Maritime Safety Committee
Msgs	Messages	MTR-DRV	Motor Drive

N:

Abbreviation	Word	Abbreviation	Word
N	North	NAV	Navigation
NLT	Not Less Than	NMT	Not More Than
NOV	November	NR	Noise Rejector

O:

Abbreviation	Word	Abbreviation	Word
OS	Own Ship	OCT	October

P:

Abbreviation	Word	Abbreviation	Word
PAST POSN	Past Positions	PC	Personal Computer
PI	Parallel Index Line	PLT	Palette
PLL	Phase Locked loop	PM	Performance Monitor
PNK	Pink	POSN	Position
PPI	Plan Position Indicator		

R:

Abbreviation	Word	Abbreviation	Word
RACON	Radar beacon	RAD	Radius
RAM	Random Access Memory	RAIN	Anti Clutter Rain
RD	Read	RED	Red
REF	Reference/Echo Reference	R, REL	Relative
REJ	Rejection	RENC	Regional ENC Co-ordinating Centre
RFC board	RF Control board	RL	Rhumb Line
RM	Relative Motion	RNG	Range
ROM	Read Only Memory	ROT	Rate Of Turn
RTE	Route	RTGT	Reference Target
RX	Receive		

APPX. 5 ABBREVIATIONS

S:

Abbreviation	Word	Abbreviation	Word
S	South	S1	Short pulse1
S2	Short pulse2	S57	IHO Special Publication 57
SAR	Search and Rescue	SART	Search and Rescue Transponder
SD	Secure Digital	SEA	Anti Clutter Sea
SEL	Select	SENC	System ENC
SEP	September	SIG WAVE	Significant Wave
SIO	Serial Input Output	SOG	Speed Over Ground
SOLAS	Safety of Life at Sea	SPD	Speed
SPU	Signal Processing Unit board	STAB	Stabilized
STBD	Starboard	STBY	Standby
STC	Sensitivity time control	Std	Standard
STW	Speed Through Water	SW	Switch
SYM	Symbol	Symb	Symbol(s)

T:

Abbreviation	Word	Abbreviation	Word
T	True	TAG	Tag
TCPA	Time to CPA	TGT	Target
TM	True Motion	TPL	Transferred Line Of Position
True-G	True ground stabilized	True-S	True sea stabilized
TT	Target Tracking/Tracked Target	TTG	Time To Go
TX	Transmit		

U:

Abbreviation	Word	Abbreviation	Word
UNCAL	Uncalibrated	UTC	Coordinated Universal Time

V:

Abbreviation	Word	Abbreviation	Word
VECT	Vector	VRM	Variable Range Marker

W:

Abbreviation	Word	Abbreviation	Word
W	West	WAT	Water
WGS	World Geodetic System	WHT	White
W/O	Without	WOP	Wheel Over Point
WP	Waypoint	WPT	Waypoint
WR	Write	WT	Water Tracking
WTC	Water Tracking Current		

X:

Abbreviation	Word
XTE	Cross Track Error

Y:

Abbreviation	Word
YEL	Yellow





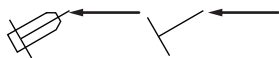
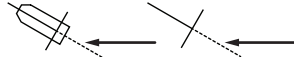







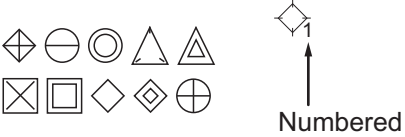



Units of measurement

Unit abbreviation	Meaning	Unit abbreviation	Meaning
deg	Degree(s)	ft	Foot/feet
H	Hour(s)	km	Kilometer(s)
KM	Kilometer(s)	kn	Knot(s)
KYD	Kiloyard(s)	min	Minute(s)
m	Meter(s)	MHz	Megahertz
NM	Nautical miles	sec	Second(s)
SM	Statute mile(s)	°	Degree(s)

# APPX. 6 SYMBOLS

























The pages following list the symbols which can be displayed on your radar.

## General radar symbols

















<u>Symbol/Icon</u>	<u>Name/Meaning</u>
 (on power switch)	Power Symbol
	Own Ship Marker. Appears at the CCRP location as either a scaled symbol (left figure) or minimized symbol (right figure).
	Own Ship Marker. (Shown for B/W-types with Radar Plotter functionality only).
	Antenna mark. Indicates the location of your antenna and appears only when ship symbol is scaled.
	Heading line. Appears at the CCRP location and indicates your current heading.
	Stern line. Appears at the CCRP location and indicates your current stern direction.
	Fixed Range Rings. Appear with the CCRP location as the center and allow you to estimate range.
	Variable Range Markers. Appear with the CCRP as the center* <sup>1</sup> and allow for range measurement. The dashed line length for each VRM is different.
	Electronic Bearing Lines. Indicate bearing. Shown as a dashed line with different line length from the heading line and each other. The small line that intersects the EBL is the EBRL, used for measuring range.
	North mark. Indicates the NORTH direction. Appears a thin dotted line at the edge of the operational display area.
	Cursor. Indicates the cursor location.
	Barge Icon. Indicates the barge location.
	Drop Mark. Appears at the location a drop mark is entered. Range and bearing from OS to the drop mark appear on-screen.
	<u>Origin Marks</u> Used to mark any prominent target or a point of particular interest. When entered, the distance and bearing from the cursor position to the mark appear at the bottom of the screen.
	MOB (Man Over Board) Mark
	<u>Waypoint Mark</u> Used to indicate a start point, turn point or destination point.
	<u>Chart status (A/B/W-types with Radar Plotter functionality only)</u> Left: Chart scale displayed correctly; Center: Chart scale displayed incorrectly; Right: There is no chart file.

Radar map symbols (B/W radar types)

For B/W-types, the color of some symbols can be changed (see section 5.4.2).











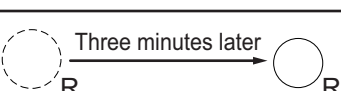
<u>Symbol</u>	<u>Name</u>
	Mark
	Danger Highlight
	Buoy
	Buoy
	Buoy
	Buoy
	Buoy
	Danger Highlight
	Mark
	Mark
	Mark
	Mark
	Mark
	Mark
	Mark
	Nav Line (map)
	Coastline
	Contour
	Prohibited Area
 (cable)	Danger Highlight
 (w/line)	Buoy
 (w/line)	Mark
 (w/line)	Mark
 (w/line)	Mark

Radar map symbols (IMO/A/R radar types)

<u>Symbol</u>	<u>Name</u>	<u>Symbol</u>	<u>Name</u>
 Red	Buoy	 Orange	Mark
 Green	Buoy	 Orange	Mark
 Red	Buoy	 Orange	Mark
 Green	Buoy	 Magenta	Navline (map)
 Red	Buoy	 White	Coastline
 Green	Buoy	 Gray	Contour Line
 Red	Buoy	 Magenta	Danger Highlight
 Green	Buoy	 Magenta (cable)	Danger Highlight
 Magenta	Danger Highlight	 Orange	Mark
 Magenta	Danger Highlight	 Orange	Mark


















TT symbols




























TT symbols	
Symbol	Name
	Manually acquired target. Appears as a dashed circle at initial acquisition, changes to solid circle when tracking is stable.
	Automatically acquired target. Appears as a dashed red circle at initial acquisition, changes to solid circle when tracking is stable.
	Vector on acquired target (approx. 1 minute after acquisition)
	Stable tracking on acquired target (approx. 3 minute after acquisition)
	Dangerous target. Symbol flashes in red color to indicate that this target may be on a collision course with your vessel.
	Associated TT target. Appears when the target is associated and TT is given priority.
	Associated dangerous TT target. Appears in red color when the target is associated, TT is given priority and the target may be on a collision course with your vessel.
	Lost TT target. Indicates that this target is lost and is no longer being tracked. Appears as a flashing symbol with a red colored "X".
	Acquisition zone target. Appears when a target is acquired by the acquisition zone. Target symbol flashes in red color.
	Selected target. Indicates that the target is selected for data display (range, bearing, speed, etc.).
	Reference target. Indicates that this target is selected as a reference point for speed calculations.
T	Trial maneuver indication (IMO-types only)
S	TT simulation mode indication

**Note:** For B/W-types, In addition to the "standard" circle TT symbol, you may select from the symbols shown below. You can also change the symbol's attributes (name, color, etc). See section 3.9.3.



AIS symbols

AIS symbols	
Symbol	Name
	Activated AIS target. Appears a thick-lined symbol. Color is selectable from the menu.
	Activated AIS target with vector. Indicates the target's ROT (Rate Of Turn). Vector appears when the target's ROT is higher than the menu setting.
	Dangerous AIS target. Flashing red symbol indicates that the target matches then CPA/TCPA criteria. Symbol stops flashing after the alert is acknowledged.
	Lost AIS target. Indicates that this target is lost and is no longer being tracked. Appears as a flashing symbol with a red colored "X" until the alert is acknowledged.
	Sleeping AIS target. Color is selectable from the menu.
	AIS target with no heading/COG data. Symbol faces the top of the screen. Furthermore, if CPA/TCPA cannot be calculated, symbol appears as a dashed line.
	AIS target selected for data display. Location of data display in the information box is indicated below the target as "A", "B" or "C".
	Associated AIS target. Appears when the target is associated and AIS is given priority.
	Dangerous associated AIS target. Appears in red color when the target is associated, AIS is given priority and the target may be on a collision course with your vessel.
	Active AIS target with scaled ship symbol. Indicates the target vessel's dimensions (length, width, antenna location) and changes on-screen size according to display range.
	AIS SART (TEST)
	AIS SART (ACTIVE)
	AIS Base station
	AIS Aircraft. Note: AIS aircraft are not regarded as a collision hazard. CPA and TCPA for AIS aircraft appears as "****".
	AIS Search and Rescue (SAR) Vessel

AIS Physical AtoN Symbol	AIS Virtual AtoN Symbol	Meaning
		Basic shape
	No virtual symbol	RACON
		Emergency wreck mark
		North cardinal mark
		East cardinal mark
		South cardinal mark
		West cardinal mark
		Port hand mark
		Starboard hand mark
		Isolated danger
		Safe water
		Special mark
<b>Off Posn</b> 	No virtual symbol	Off position (Displayed with yellow line and yellow text)
<b>Unlit</b> 	No virtual symbol	Light fail or at reduced range (Displayed with yellow text)
<b>Racon err</b> 	No virtual symbol	RACON error (Displayed with yellow text)
No physical symbol	<b>Missing</b> 	Missing (Displayed with yellow dashed line and yellow text)

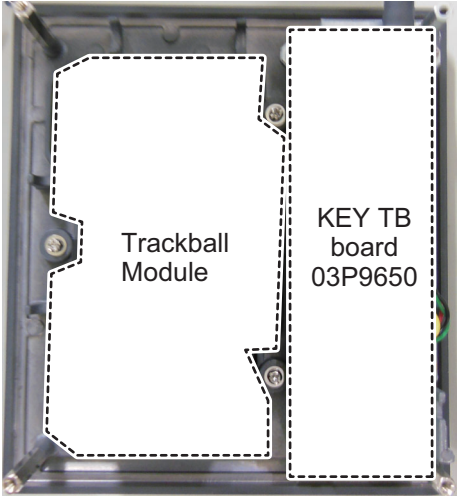
# APPX. 7 PARTS LOCATION

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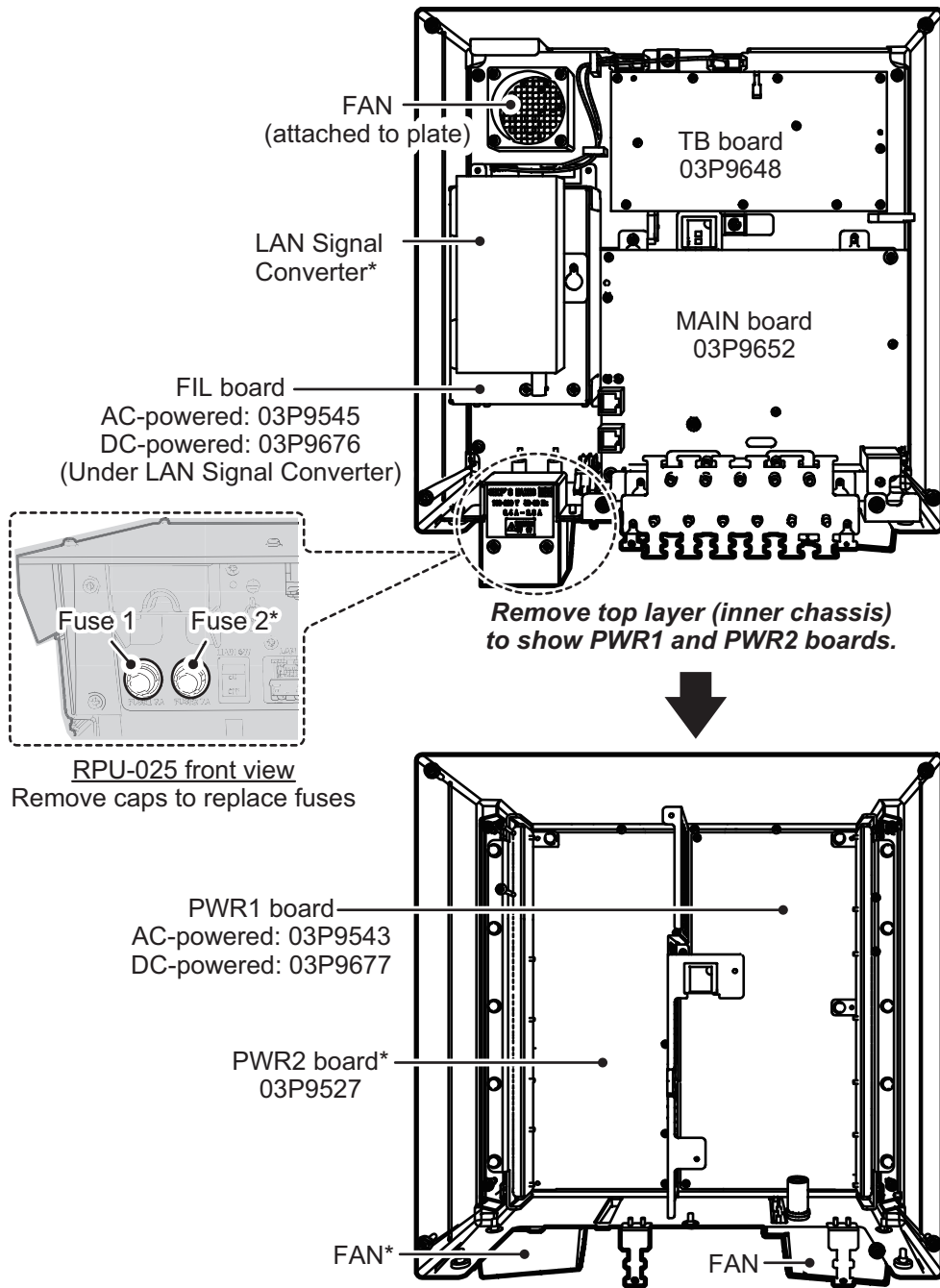
## Control Unit RCU-014



## Control unit RCU-015/RCU-016

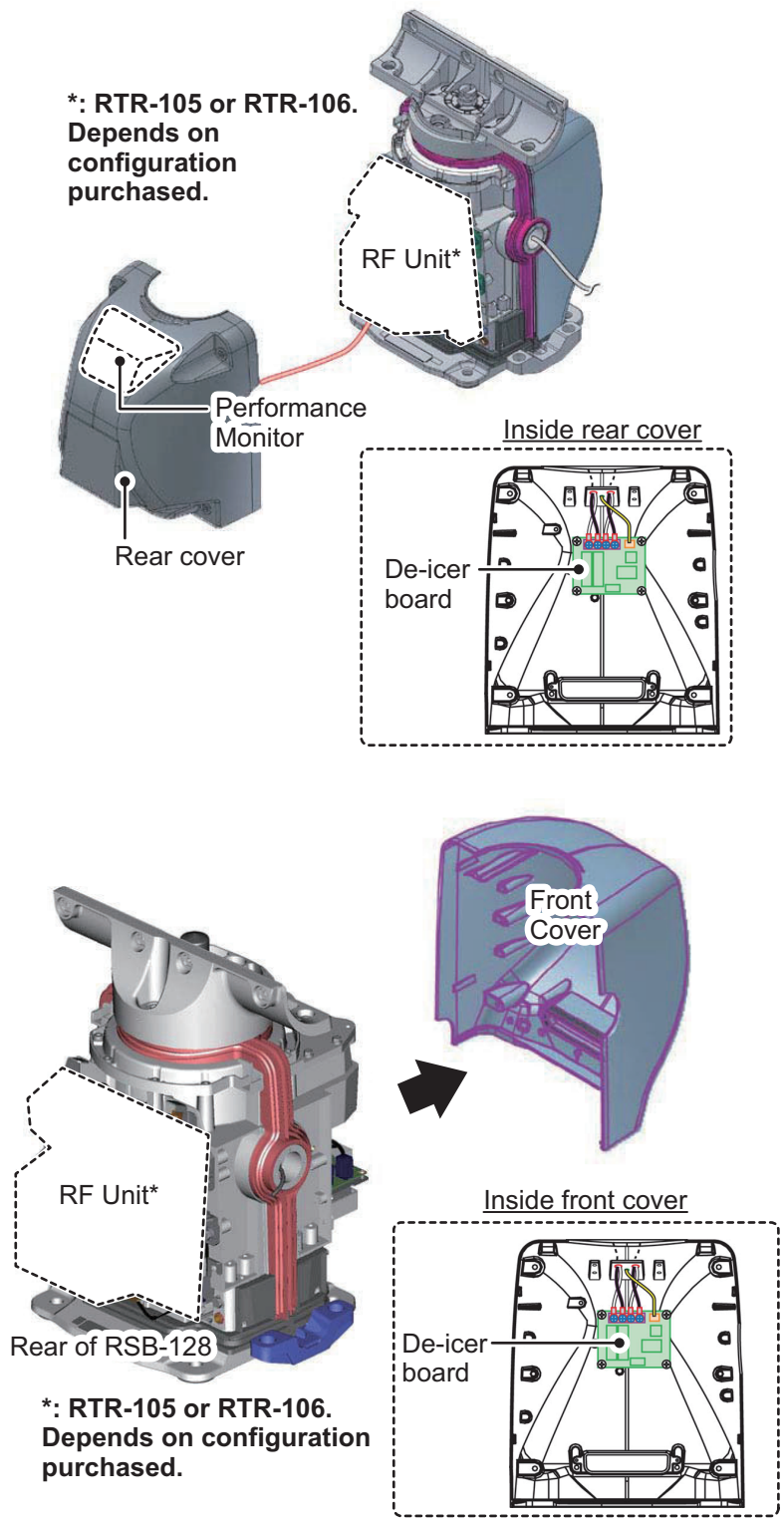


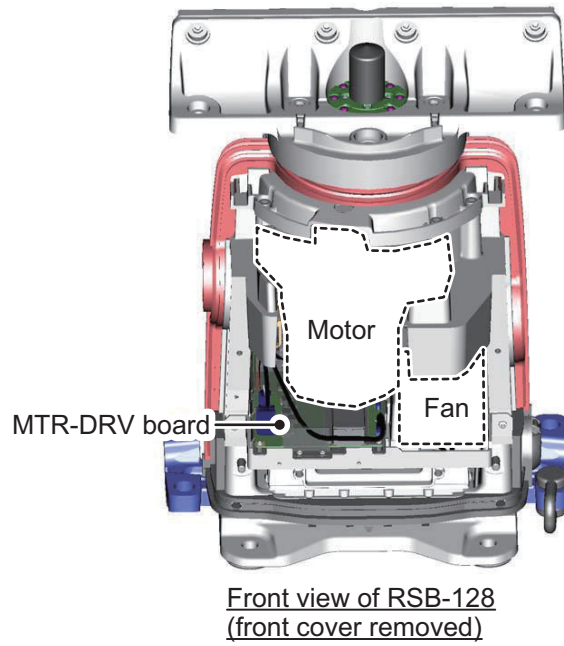
Processor Unit RPU-025



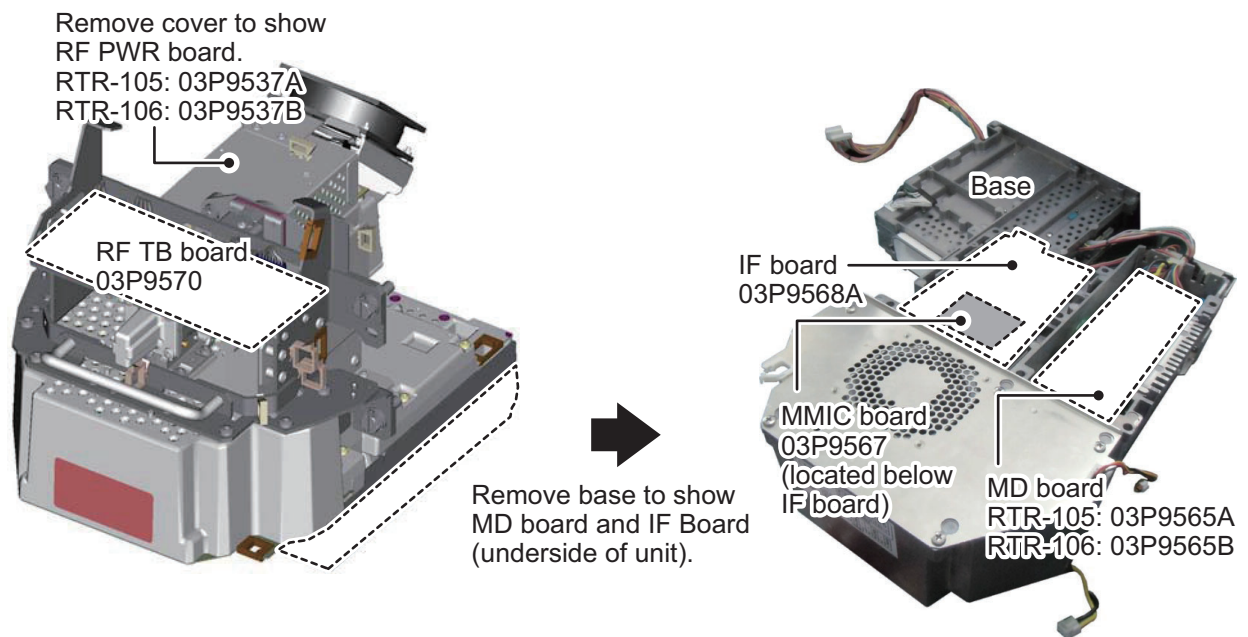
\*: The presence of this component depends on configuration purchased.

Scanner Unit RSB-128 (FAR-2218(-BB), FAR-2318, FAR-2228(-BB), FAR-2328)



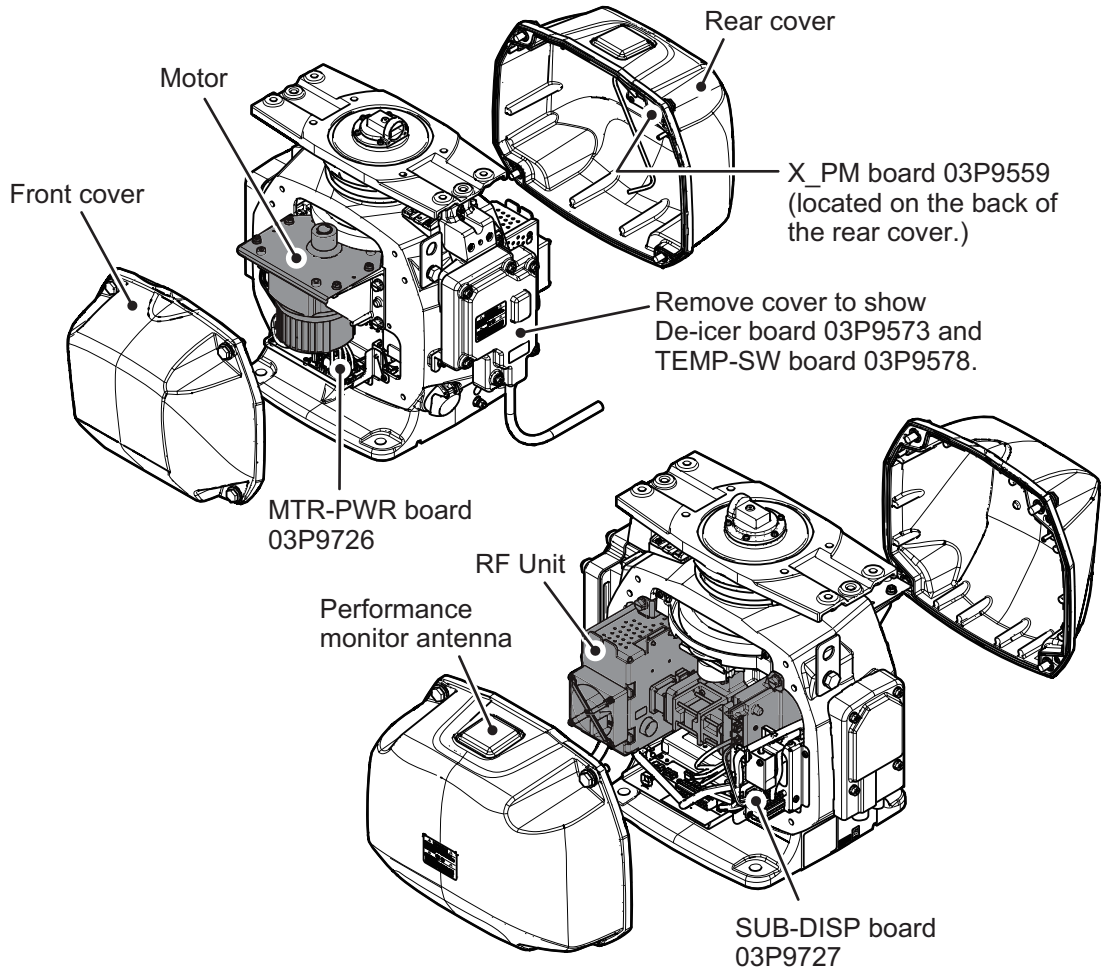


RF Unit RTR-105/106 (FAR-2218(-BB), FAR-2318, FAR-2228(-BB), FAR-2328)





Scanner Unit RSB-146 (FAR-2018-MARK-2, FAR-2028-MARK-2)



RF Unit RTR-131/132 (FAR-2018-MARK-2, FAR-2028-MARK-2)

