

RADAR

Marine RADAR System

MNS-100R Series



*Integrated Marine
Solutions Provider*

www.mrckorea.com

SINCE 1961

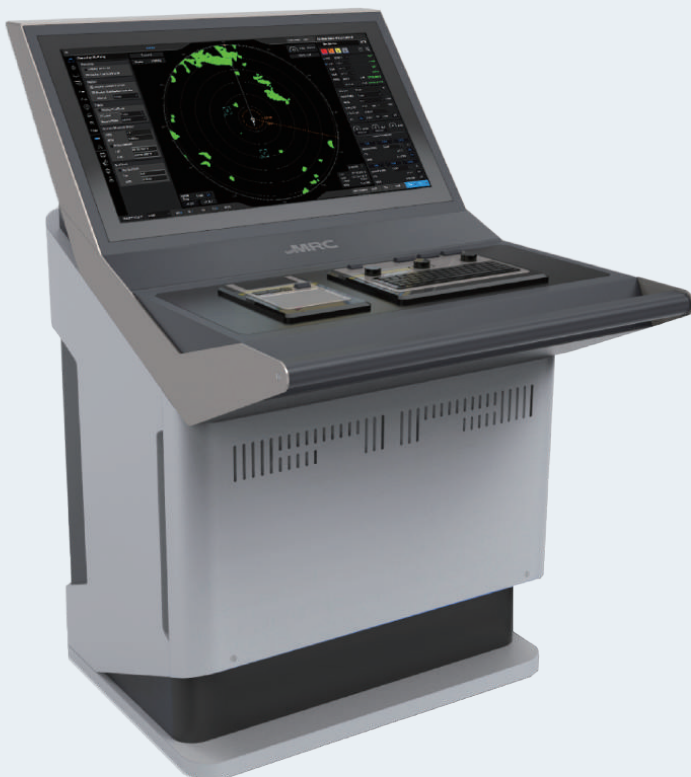
About Marine RADAR System

MNS-100R SERIES

- Enhances situational awareness for safe navigation at sea
- Detects, tracks, and displays objects around the vessel on the screen
- Reads information about specified areas and triggers alerts when the ship enters hazardous areas where the risk of collision or grounding is higher

MNS-100R Series at a Glance

The MNS-100R series offers powerful object detection and tracking capabilities



Accuracy

Provides accurate and reliable object detection, helping to ensure safe navigation even in low visibility conditions

Improved Situational Awareness

Real-time data on ship position, speed, and course, along with other navigational information, provides a comprehensive view of the ship's surroundings

Safety

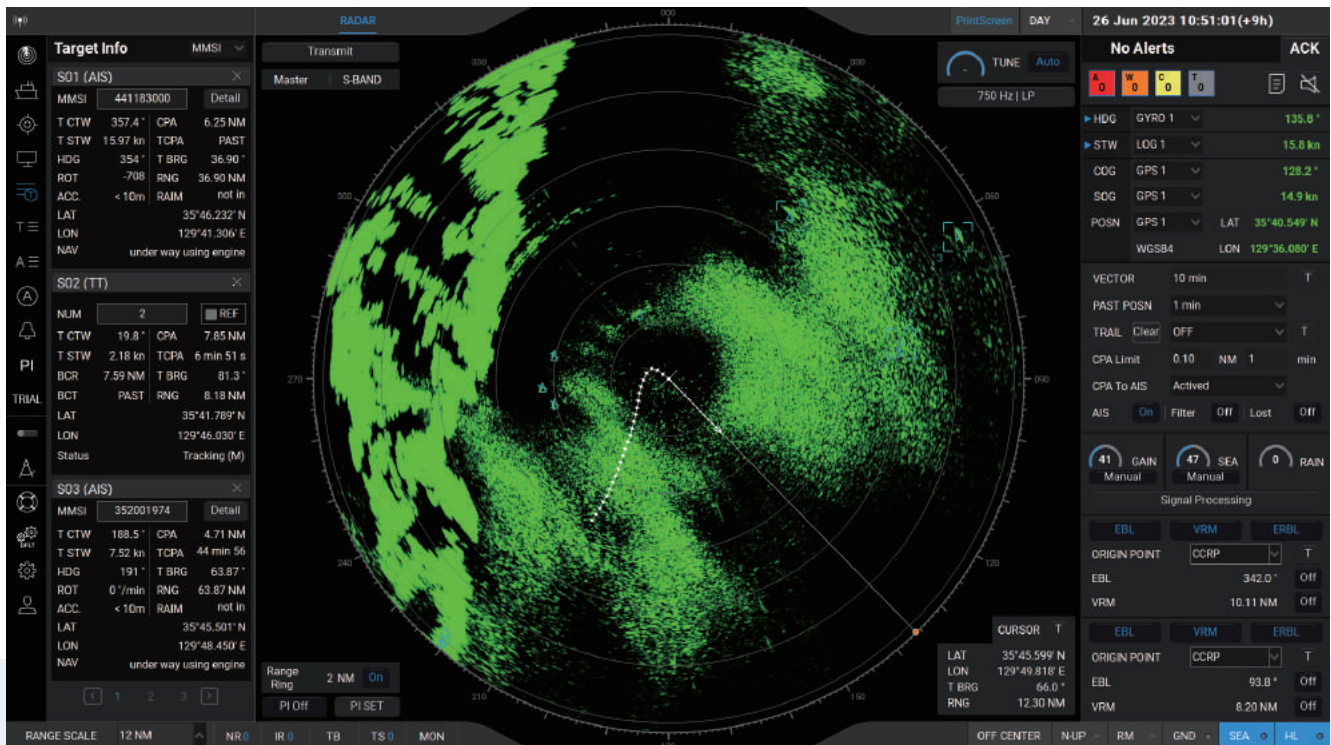
Provides alerts and warnings if the ship is in danger of grounding or colliding with another vessel, helping to ensure safe navigation

Compliance

Fully compliant with MED regulations, certified by DNV

Integration

Integrates with other shipboard systems, such as the Automatic Identification System (AIS) and the ECDIS system, to provide a comprehensive view of the status of the ship, route, and the sea

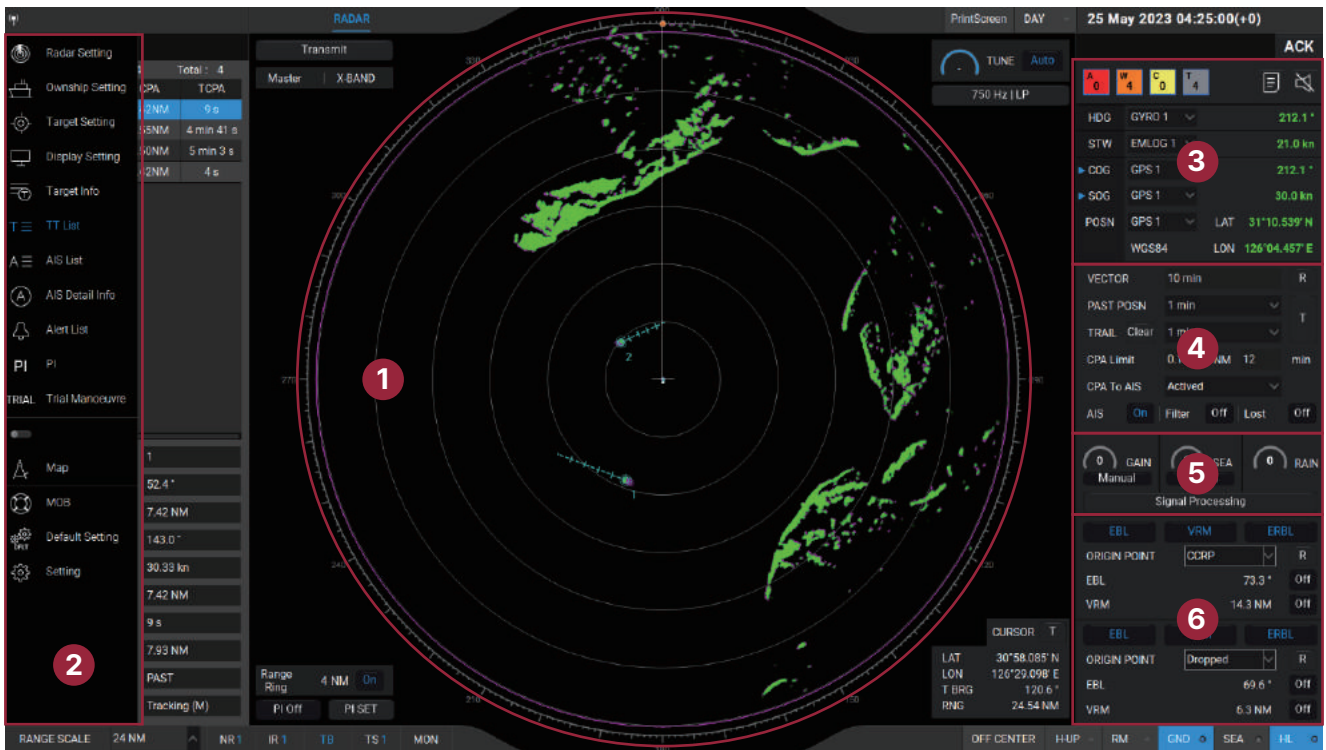


RADAR SYSTEM FEATURES

- The MNS-100R Series provides an intuitive GUI that lets navigators easily utilize the system
- This user interface ensures important data will be displayed in a fixed position on the screen
- Always displays the menu bar on the left and the critical vessel data on the right
- Adjustable range scales: 0.125 – 96 NM
- Manual and automatic tuning and clutter reduction supported
- 2 Electronic Bearing Lines (EBL), 2 Variable Range Markers (VRM)
- Target Tracking: Up to 100 targets, Tracking Range 24 NM; 500 AIS targets
- Manual and automatic target acquisition
- 27 inch display providing visibility with wide viewing angles

DETAILED SPECIFICATIONS

	X-Band	S-Band
① Antenna length	6ft, 9ft	12ft
② Frequency	9.4GHz	3.0GHz
③ Transmission Output	25kW	30kW
④ Rotational speed	20 rpm	
⑤ Pulse length(ns)	60, 250, 800	
⑥ PRF	PRF 3000 (3040, 2900, 3100) / 1500(1520, 1450, 1550) / 750(760, 725, 775)	

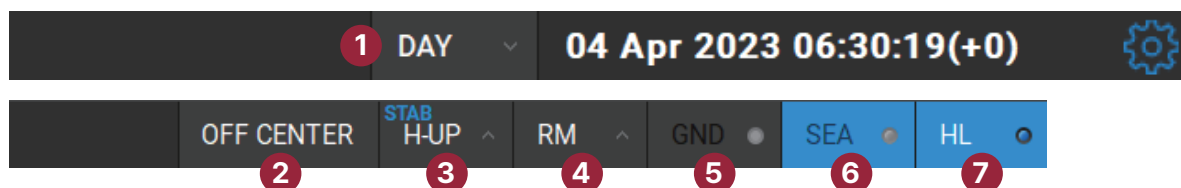


MAIN SCREEN • MAIN INFORMATION WINDOW

No.	Description
① PPI	Displays radar image on the screen
② Function List	Various functions can be executed from the function menu
③ Main Info Window	Provides the operator with real-time information about the ship and other sensors
④ Target Function	Simple target display setting menu such as vector, past position, etc.
⑤ Radar Signal Processing	Simple radar sensor operation mode settings menus such as clutter adjustment and interference rejection
⑥ EBL/VRM	Simple EBL/VRM setup menu

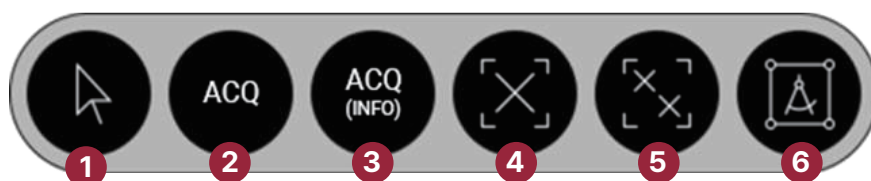
No.	Description	
Time	04 Apr 2023 06:30:19(+0)	Current Time in Universal Time Coordinated (UTC)
Alerts		Alert Information : [A]larm, [W]arning, [C]aution, [T]otal Alert Count, Alert List, Alert Silence
HDG	HDG GYRO 1 221.0°	Heading
STW	STW LOG 1 17.9 kn	Speed Through Water
COG	COG GPS 1 234.0°	Course Over Ground
SOG	SOG GPS 1 5.0 kn	Speed Over Ground
POSN	POSN GPS 1 LAT 35°03.322' N WGS84 LON 129°07.609' E	Position (Latitude and Longitude)

TOOLBAR



No & Name	Description
① Brightness	Screen brightness mode: Day / Dusk / Night
② Range Scale	Sets PPI range scale: Configurable from min. 0.125 to max. 96 NM
③ OFF Centre	Set the ship's position to a location other than the centre
④ Orientation	PPI Display orientation: North Up / Course Up / Head Up
⑤ Motion	Sets motion mode: True Motion / Relative Motion
⑥ Stabilisation	Sets stabilisation mode: GND(Ground), SEA(Sea)
⑦ Heading Line	Heading line of ownship drawn from PPI to displayable point

CURSOR MENU



No & Name	Description
① General	Cursor for general object selection
② Manual Acquisition	Start Radar target manual acquisition
③ Target Info	Display information on AIS target and Radar target
④ Acquisition Cancel	Individually cancels manually acquired Radar targets
⑤ Acquisition All Cancel	Cancel all manually acquired Radar targets
⑥ Map	Use the navigation Map functions

SYSTEM SPECIFICATION

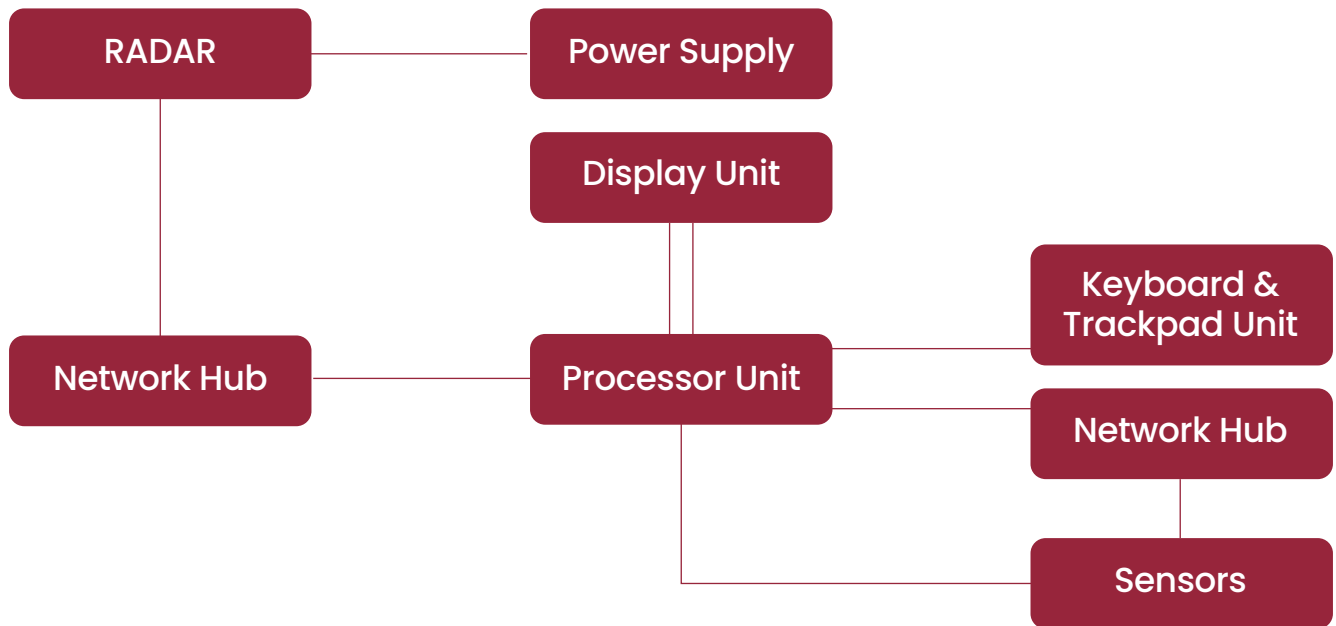
Component	Specification	
MCU MPU-500	CPU	Intel® Corei7-8700
	RAM	DDR4 16 GB installed, 32 GB Max
	SSD	1 TB SSD installed
	Ethernet	4 × 10/100/1000Mbps, RJ45
	GPU	NVIDIA GTX 1650
	OS	Microsoft® Windows® 10 Pro, 64bit
	Power Supply	100 - 240V AC, 50/60 Hz
	Power Consumption	70 - 115W (Operating), 240W max
	Weight	6.3 - 9.0 kg
DISPLAY MDU-270	Size	27 inch
	Pixel Number	1920 × 1080
	Pixel Pitch (RGB)	0.31125 (H) x 0.31125 (V) mm
	Response Time	12 ms (typical), on/off
	Contrast Ratio	3000:1 (typical)
	Light Intensity	300 cd/m2 (typical)
	Viewable Angle	+/- 89 deg. (typical) (Up/Down/Left/Right)
	Active Display Area	597.6 (H) x 336.15 (V) mm
	Max Color	16.7 millions
	Power Supply	100-240V AC - 50/60 Hz + 24V DC
	Power Consumption	40W Max
	Dimension (mm)	650 (W) x 437 (H) x 69.5 (D)
	Weight	11.0kg

INTERCONNECTED EQUIPMENT INTERFACE SPECIFICATION

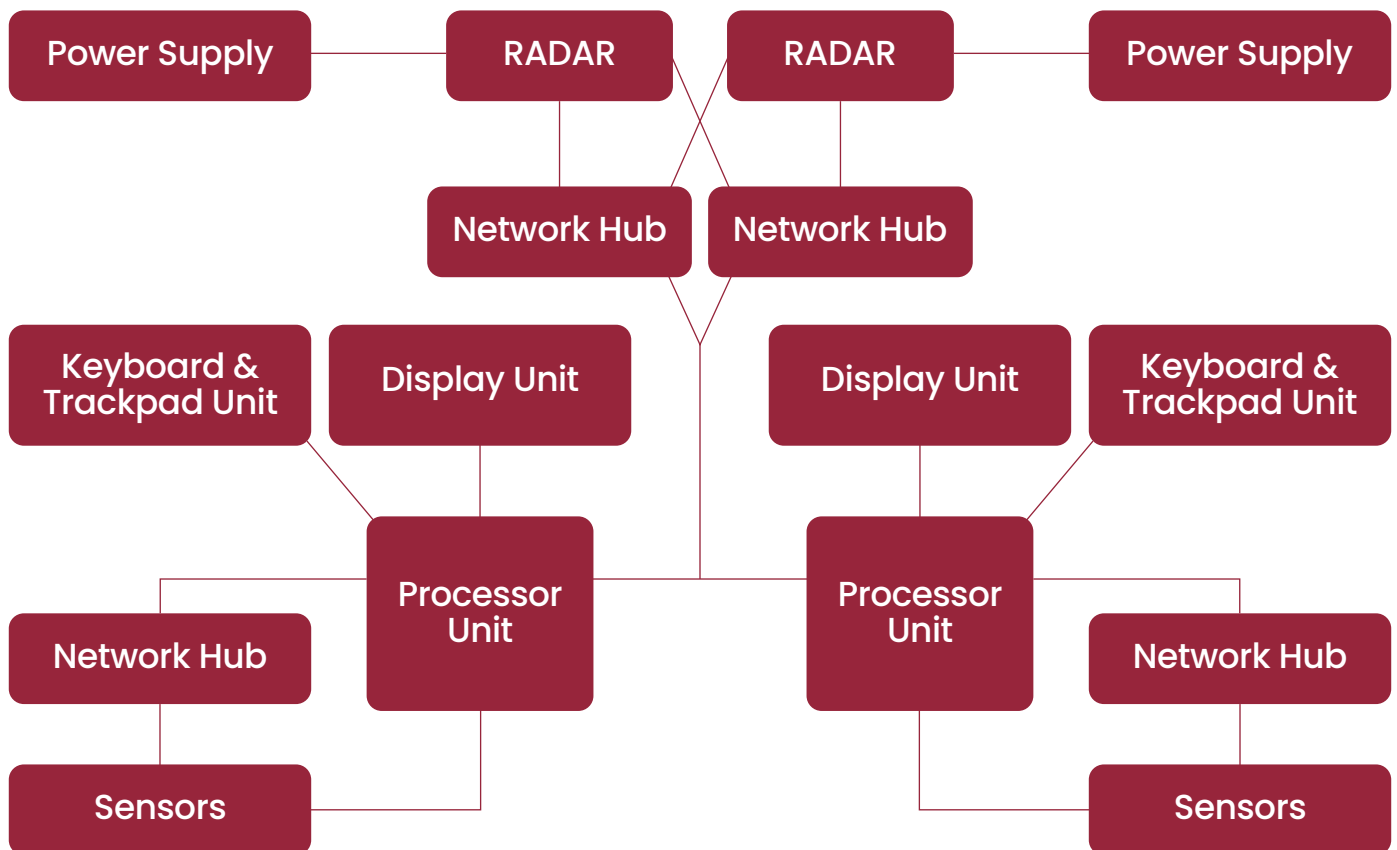
Equipment Category	Equipment Name	Interface	Data Type	Input	Output
Positioning Sensors	DGPS	IEC 61162-1	Position, Time, Speed	GLL, GGA, RMC GNS, VTG, ZDA	-
	Gyro Compass	IEC 61162-1	Heading Angle, Rate of Turn	HDT, THS	-
Sea Surveying Sensors	EM-Log	IEC 61162-1	Water Speed	VBW, VHW	-
Target Tracking Sensors	RADAR	IEC 61162-1	Tracked Target Objects	-	TTD, TLB, OSD, RSD
	AIS	IEC 61162-1	AIS Target Objects	VBW, VHW	-
BAM Interface	BAM	IEC 61162-2	Alert Information	ACN, HBT	ALC, ALF ARC, HBT
BNWAS Interface	BNWAS	IEC 61162-1	General Event Message	EVE	-
VDR Interface	VDR	IEC 61162-450	Display Radar Image	-	-
INS Interface	NSR	IEC 61924-2	Navigational Status Report	-	NSR



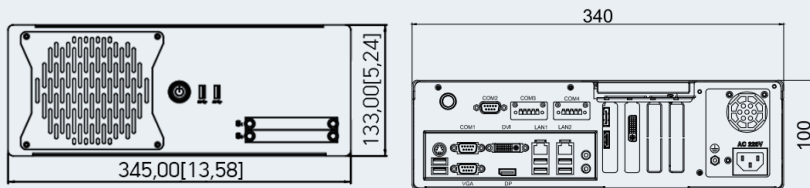
SYSTEM BLOCK DIAGRAM(STAND ALONE)



SYSTEM BLOCK DIAGRAM(MULTIPLE)



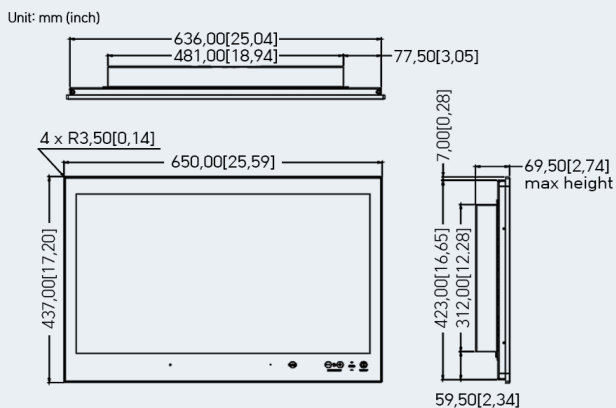
• MAIN CONTROL UNIT



Dimension

Width	345 mm
Height	133 mm
Case Depth	392.3 mm
Max Depth	433.6 mm

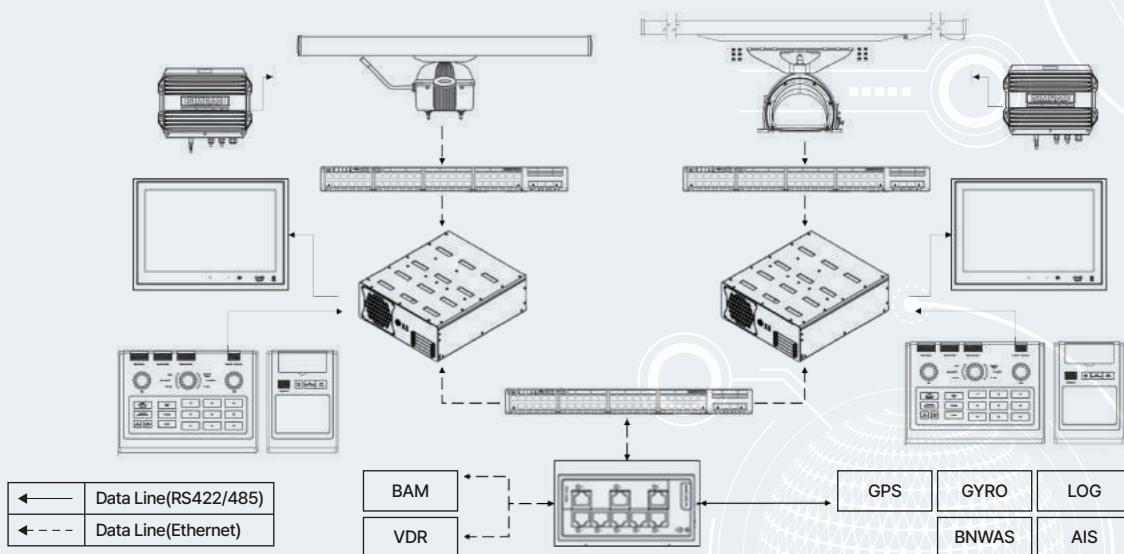
• DISPLAY UNIT



Dimension

Width	650 mm
Height	437 mm
Case Depth	10 mm
Max Depth	69.5 mm

• CONNECTION DIAGRAM



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