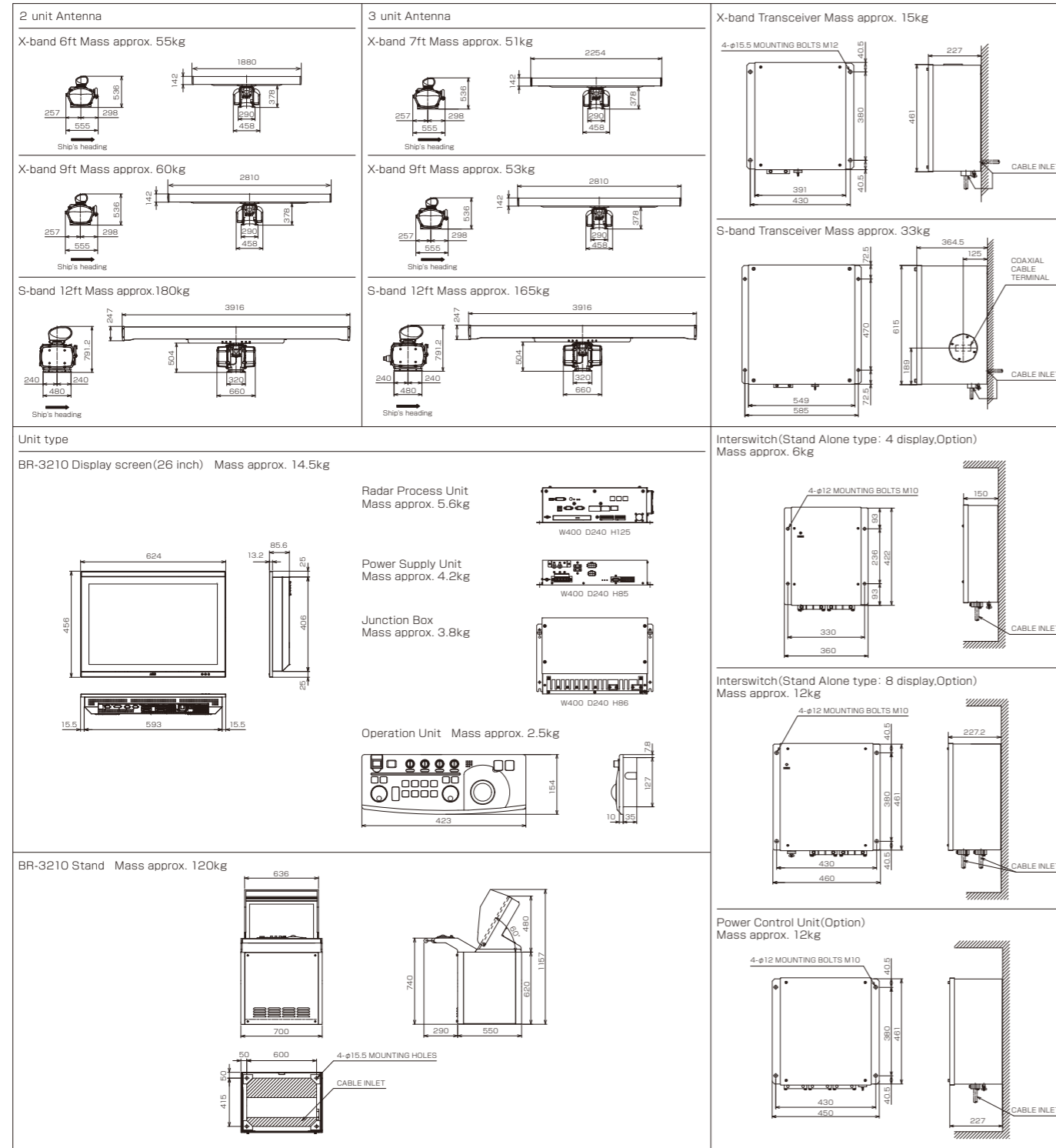


Dimensions

(Unit:mm)



TOKYO KEIKI INC.

Marine Systems Company

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Design and specifications are subject to change without prior notice, and without any obligation on the part of the manufacturer.

CAUTION Before operating this equipment, you should first thoroughly read the operator's manual.

www.tokyokeiki.jp/e/products/marine/



MARINE RADAR

BR-3210



TOKYO KEIKI INC.

Technology giving a bird's-eye view of the open seas

In today's world of ever increasing vessel size, speed, and traffic, a high performance Marine Radar to act as the “Ship's Eyes” is instrumental in helping to avoid collisions and groundings, and support the protection and safety of life at sea.

A new wide screen display allows simultaneous checks of important voyage data.

A simplified menu and easy operational design enable safe, smooth operation.

Tokyo Keiki, a one maker and supplier of major navigation instruments like Autopilot, Gyrocompass, ECDIS, and Marine RADAR, assures the highest of quality.



BR-3210



BR-3210 Stand type

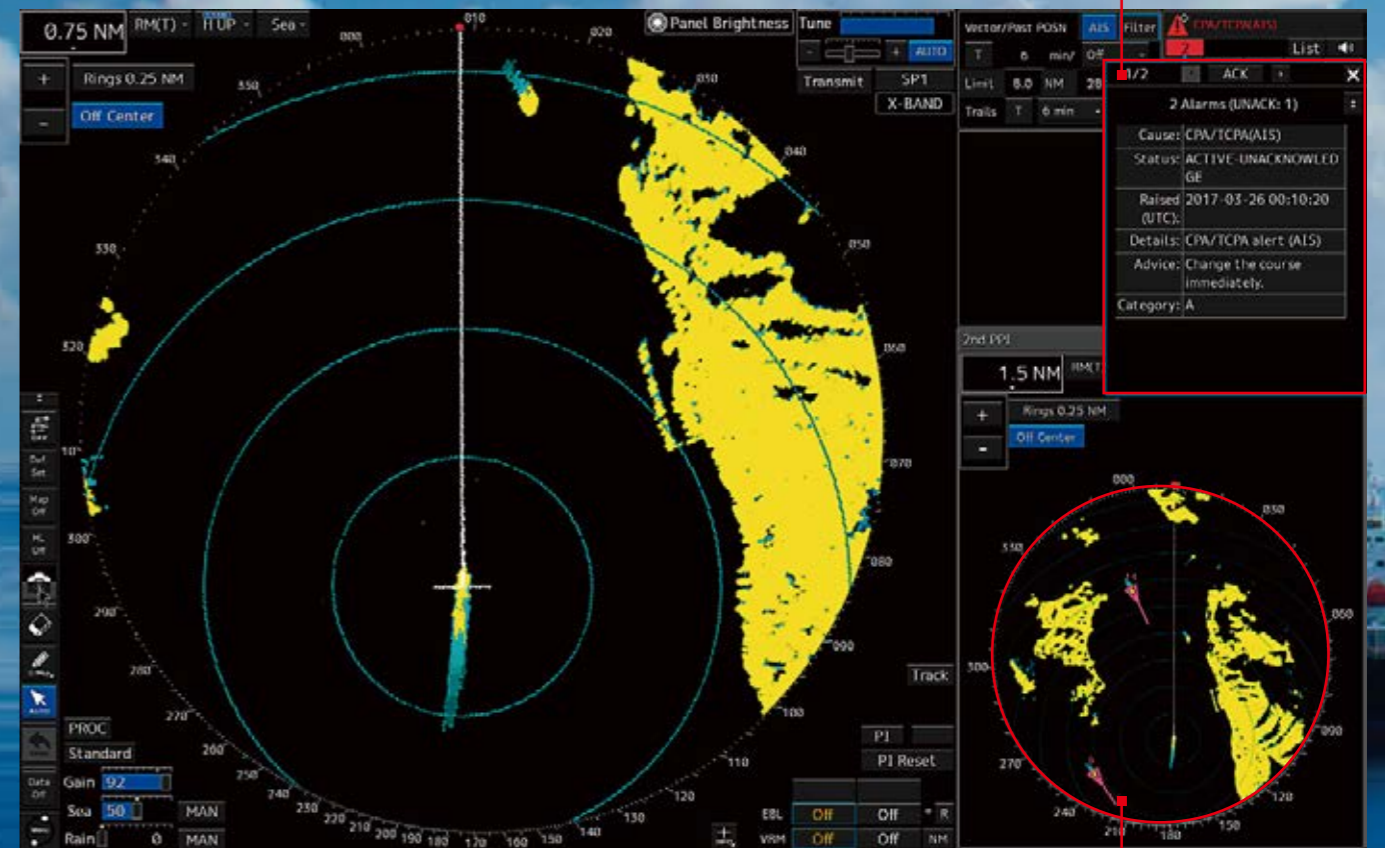
The BR-3210 MARINE RADAR conforms with the latest International rules and regulations. In addition to superb user interface via the Operation Unit trackball and buttons, target detection performance and related functions have been improved. Also, a new high resolution easy-to-see 26 inch wide LCD display has been introduced which enhances safe efficient navigation.

Features

- Improved target detection performance
With the latest high-performance signal processing technology, small target detection during heavy weather has been improved.
- Enhanced target functions
TT is processed in the background and the corresponding vectors are displayed immediately after its acquisition.
(Maximum 100 targets) AIS (Active) maximum 500 targets.
- Outstanding operation
Basic operation is very simple using only the 2 inch trackball and button. Software keys for frequently used functions are arranged around the PPI.
- 26 inch wide LCD display (WUXGA 1920x1200)
With the 2nd PPI window, short range and long range images can be displayed simultaneously.
Voyage Data (Wind direction/Wind speed, Tides etc.) can be shown by switching to a wide information window.
When an alert is activated, the probable cause and checkpoints are shown on the display.
- Complete RADAR lineup
2 unit / 3 unit, stand alone type Interswitch (Optional: 4 Display Unit/8 Display Unit)
Display can be arranged as STAND type or UNIT type. UNIT type can be adjusted for the installation location.

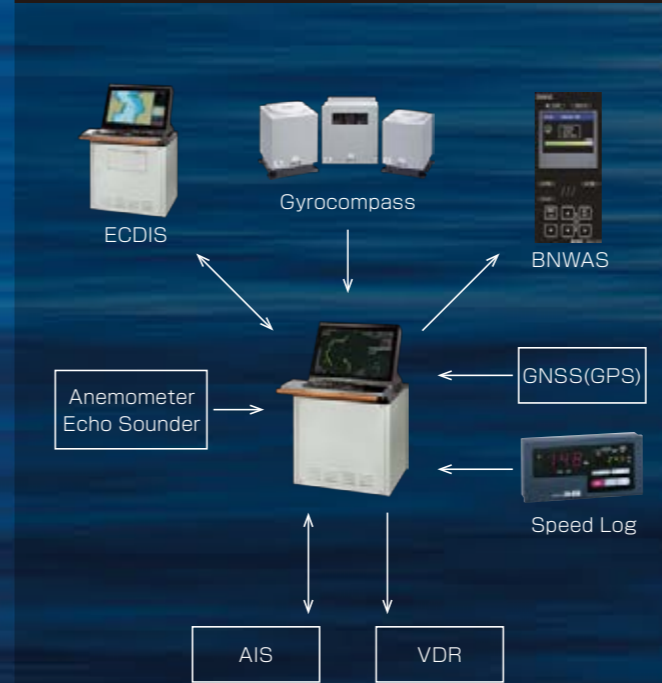
Display Example

① When an alert is activated, the probable cause and checkpoints are shown on the display.

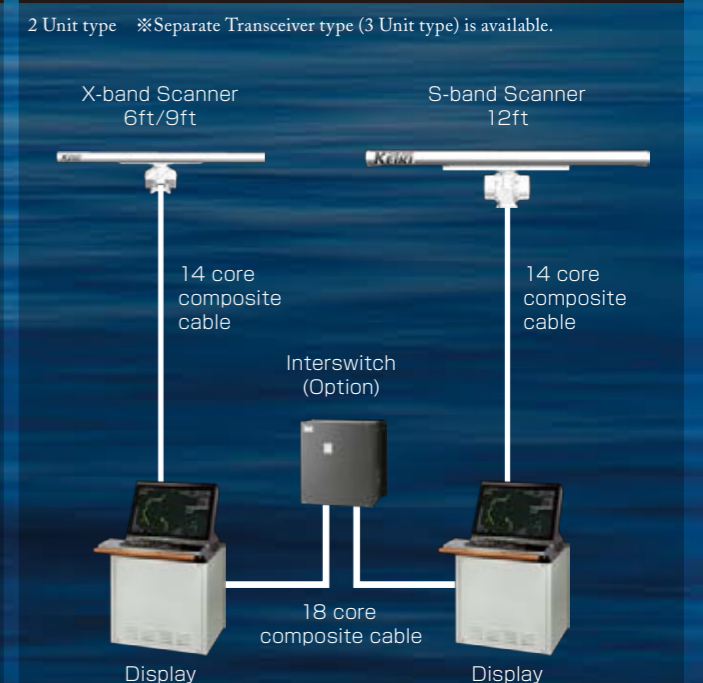


② With the 2nd PPI window, short and long distance images can be displayed simultaneously.

System Configuration

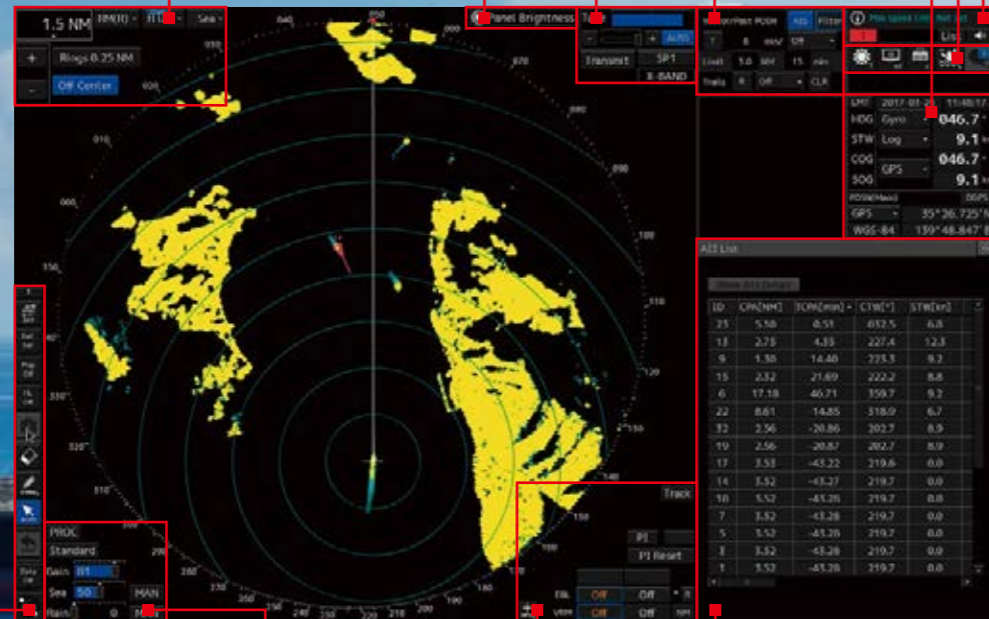


RADAR Configuration



Display Screen

- Tune/Transmission ON/OFF/Transmitted pulse/Transmitted band
- Multi-Key assignment
- Observation range/Motion mode/Bearing mode/Stabilization mode/Fixed range marker/OFF center
- Panel Brightness
- Vector/Past track/AIS/CPA•TCPA limit/Eco-Trail
- Alert information
- Display brilliance
- Own ship's information



- MENU/DATA OFF
Display capture/Ship's heading line
- Signal processing setting/Observation scene selection/Gain/Sea clutter suppression/Rain/Snow clutter suppression
- Common information window (Target INFO/TT List/AIS List/AIS Detail INFO/2nd PPI/Wind etc.)
- EBL/VRM/Parallel Cursor

Operation Unit



- TARGET Manual acquisition key & Track Target cancellation key
- AIS display key, Track Target/AIS Target quantity display key
- Track ball/Entry key/Cancel key
- Multi/Rain & snow clutter suppression/Sea clutter suppression/Gain&Pulse width adjustment knobs

Model

BR-□□□□-□□□□

3210:Effective dia. of more than 320mm

X:X-band
S:S-band

Output peak
2:25kW(X-band)
3:30kW(S-band)

Scanner
6:6 ft(X-band)
7:7 ft(X-band)
9:9 ft(X-band)
12:12 ft(S-band)

M:2 Unit
B:3 Unit

Specification

Function	Model	X-band				S-band	
		BR-3210-X26M 2 Unit	BR-3210-X29M	BR-3210-X27B 3 Unit	BR-3210-X29B	BR-3210-S312M 2 Unit	BR-3210-S312B 3 Unit
System	Display type	26 inch wide color LCD, Raster scan PPI					
	Display screen	Effective dia. of more than 320mm					
	Orientation mode	Head up / North up / Course up					
	Motion mode	True motion - true trails / Relative motion - relative trails / Relative motion - true trails					
	Range scale	0.125/0.25/0.5/0.75/1.5/3/6/12/24/48/96 Nautical mile (11 Ranges)					
System	Range discrimination	Less than 30m					
	Minimum range	Less than 40m					
	Sea/Rain clutter suppression	Automatic / Manual					
	Power supply	AC100-115V, 50/60Hz, single-phase or AC220V, 50/60Hz, single-phase/DC24V					
	Power consumption(Standard)	300VA					
	Antenna length	6 ft	9 ft	7 ft	9 ft	12 ft	
	Rotating speed	24rpm					
	Beam width(Horizontal)	1.2°		0.8°		1.9°	
	Beam width(Vertical)	20°		25°			
	Transceiver	Frequency	9410±30MHz				
Output peak		25kW					
Pulse width		0.07, 0.2, 0.3, 0.4, 0.8, 1.0, 1.2µs					
Tuning method		Automatic / Manual					
Target tracking	Tracking targets	100					
	Acquisition mode	Manual and Automatic with two fan-shaped acquisition zones					
	Acquisition and tracking area	0.1~32 Nautical mile					
AIS function	Trial maneuvering	When own ship's course and speed changes, own ship and other ship's vector are displayed					
	AIS targets	500 (Sleeping + activated)					
	Sleeping AIS filter	Display filtering by distance and zone settings from own ship					
	Target association	Association is given with regards to distance from own ship/course and speed differences between the AIS and Track Targets					
	Trial maneuvering	When own ship's course and speed changes, own ship and other ship's vector are displayed					
Input I/F	Gyro signal (*)Option	IEC-61162-2 (38400bps) THS + HDT sentence (Transmission cycle more than 40Hz) (*) Synchro signal 24~115VAC, 50/60/400Hz 36×90×180×/360× (*) Stepper signal 22~70VDC					
	Log signal (*)Option	IEC-61162-1 (4800bps) VBW sentence (*) Dry Contact input 100/200/400/800 pulse/NM					
	GPS data	IEC-61162-1 (4800bps) LAT/LON: GGA > RMC > RMA > GNS > GLL, COG/SOG: RMC > RMA > VTG, TIME: ZDA sentence					
	AIS data	IEC-61162-2 (38400bps) VDM, VDO sentence					
Output I/F	Target data (Tracked Target)	IEC-61162-1 (4800bps) TTM, TLL, TTD, TLB, RSD/OSD sentence					
	Radar image (Slave display)	Video (VD), Trigger (TRG), Heading marker (BZ), Antenna pulse (BP) *1ch only					
	VDR	Analog RGB (Resolution: WUXGA) LAN (IEC-61162-450 compliance)					
	Alert	ACK, ALR					
	Alarm reset	Dry Contact output					
Options	Interswitch unit (Stand Alone unit type): 4/8 Display Units					Gyro log interface board, Analog option board	
	Sensor LAN switch (Switching Hub)					UPS	
	VDR I/F Kit (For Analog RGB)					18 core composite cable: 5m/10m/15m/20m (for Interswitch)	
	Flexible waveguide: 20m/30m/35m (for X-band)					Coaxial cable: 20m/30m/35m (for S-band)	
	4 core cable: 5m/10m/15m/20m (Display Unit - ECDIS)					14 core composite cable: 20m/30m/35m/50m/65m/100m/200m/300m (Scanner - Display Unit)	
	Scanner unit with Heater: X-band, S-band AC100V						

Type Approval No.

Type Approval of MIC

Name of Equipment	Type Approval No.
MARINE RADAR BR-3210-X26M	R16005
MARINE RADAR BR-3210-X29M	R16006
MARINE RADAR BR-3210-X27B	R16003
MARINE RADAR BR-3210-X29B	R16002
MARINE RADAR BR-3210-S312M	R16004
MARINE RADAR BR-3210-S312B	R16001

Type Approval of MLIT

Name of Equipment	Model of Equipment	Type Approval No.
MARINE RADAR	BR-3210-X26M	5477
MARINE RADAR	BR-3210-X29M	5478
MARINE RADAR	BR-3210-X27B	5479
MARINE RADAR	BR-3210-X29B	5480
MARINE RADAR	BR-3210-S312M	5475
MARINE RADAR	BR-3210-S312B	5476
Automatic Radar Plotting Aid (ARPA)	AR-505	5481