

3.3 Determining Place of Installation

3.3.1 Scanner unit

A radar's target detection capacity varies greatly depending on the fitted position of the scanner. An ideal fitting position is a location high above the ship's keel line where there is no obstacle all around the scanner. In an actual ship, such an ideal location is limited by various factors. Therefore, consider the following suggestions when you determine the place to install the scanner:

(a) Install scanner at a position as high as possible.

The higher the installation position, the longer the radio ranging distance. Install the scanner at a position as high as possible after considering the ship's hull structure and radar maintainability.

(b) Install scanner away from smoke-stack and mast

If the scanner is installed at the same height as the smoke-stack or mast, radar waves may be blocked, creating shadow zones or generating false echoes. Therefore, do not install the scanner at such a position.

(c) Install scanner forward away from obstacle.

To avoid creating shadow zones or generating false echoes, install the scanner at a position nearer to the ship's bow away from obstacles. When installing the scanner on a mast, position it in front of the mast. (If obstacles cannot be avoided for the ship's structural reasons, refer to "Shifting away from obstacles" described Page 13.)

(d) Do not install the scanner near hot or heat-generating items.

Do not install the scanner at a position where it may be subjected to smoke or hot air from smokestacks or heat from lamps.

(e) Install the scanner away from antennas of other equipment.

Install the scanner as much away from the antennas of a direction finder, radio transceiver, etc. as possible.



CAUTION

To eliminate the interference, install the scanner away from the antenna of radio transceivers.

(f) Make the cable length as short as possible.

Keep the distance from the scanner to the display unit within the standard cable length of 10 m. If you use longer cable for unavoidable reasons, limit the cable length to a maximum of 30 m for RA40C and 100 m for RA41C/42C.

(g) Install the scanner with the specific separation distance.

Keep the minimum distance of 0.5m from workspace of person. The active radar antenna is radiating strong RF energy. Continuous exposure to RF energy may cause harmful effect to human body. A person who uses a Cardiac Pacemaker should under no circumstances avoid RF radiation. Most countries accept RF power density levels of up to $100\text{W}/\text{m}^2$ that causes no significant effect to human body. This radar model produces the $100\text{W}/\text{m}^2$ level at 0.2 m and the $10\text{W}/\text{m}^2$ ($1\text{mW}/\text{cm}^2$) level at 0.5m.

3.3.2 Display unit

The display unit can be installed on desktop, wall surface, or ceiling. Determine the place to install the display unit that is convenient for navigation and radar operation after considering the following suggestions:

- (a) A place where you can see the ship's bow when you raise your face from the radar screen.**
- (b) A place where there is no direct sun-light to avoid display temperature up.**
- (c) A place where there is good ventilation and minimum vibration.**
- (d) A place where the display unit is apart more than the minimum safe distance from a magnet compass as listed in Tab.3-5 below.**

Tab.3-5 Minimum Safe Distance from Magnetic Compass

	Master compass	Steering compass
Scanner unit	2.0m	1.4m
Display unit	2.0m	1.4m