

Mounting Location of Antenna

Inmarsat C

1. Mounting location should be atop a mast, where no obstacle appears in fore and aft directions down to -5° and down to -15° in port and starboard directions.

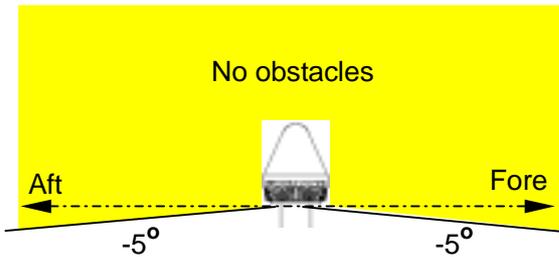


Figure 1 Fore-Aft direction

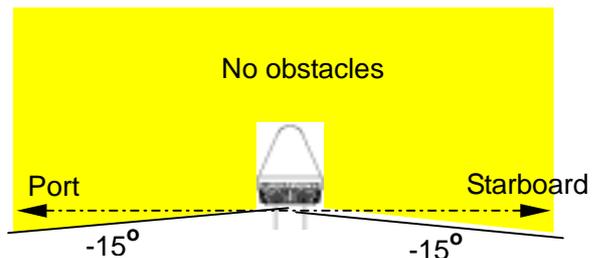


Figure 2 Port-Starboard direction

The blind sector caused by any obstruction in the above area should be within 2 degrees. The sector size depends on the size of the obstruction and the distance to it. Figure 3 shows the size and the distance of the obstruction which causes 2 degrees blind sector.

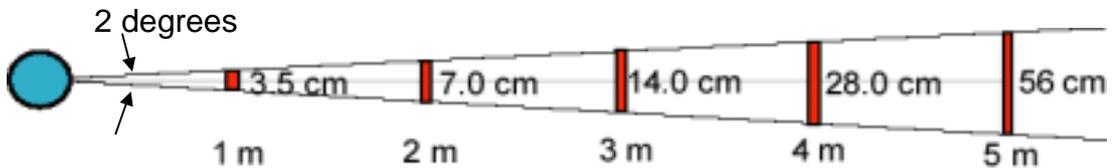


Figure 3

Separate the antenna unit from a S-band radar, Inmarsat A/B, and GPS antennas as follows.

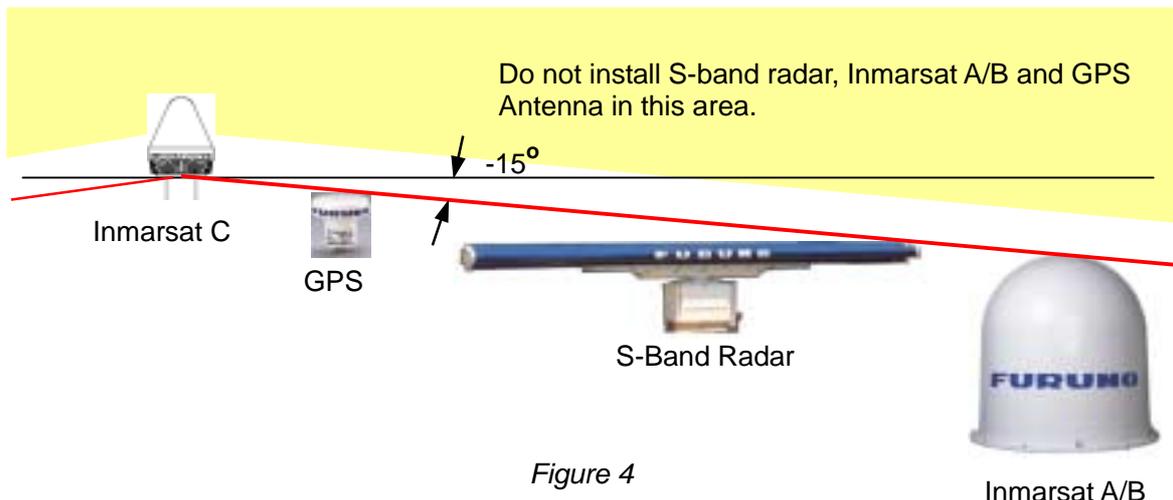


Figure 4

When S-band radar is installed, never install Inmarsat C antenna in the hatched area in figure 5.

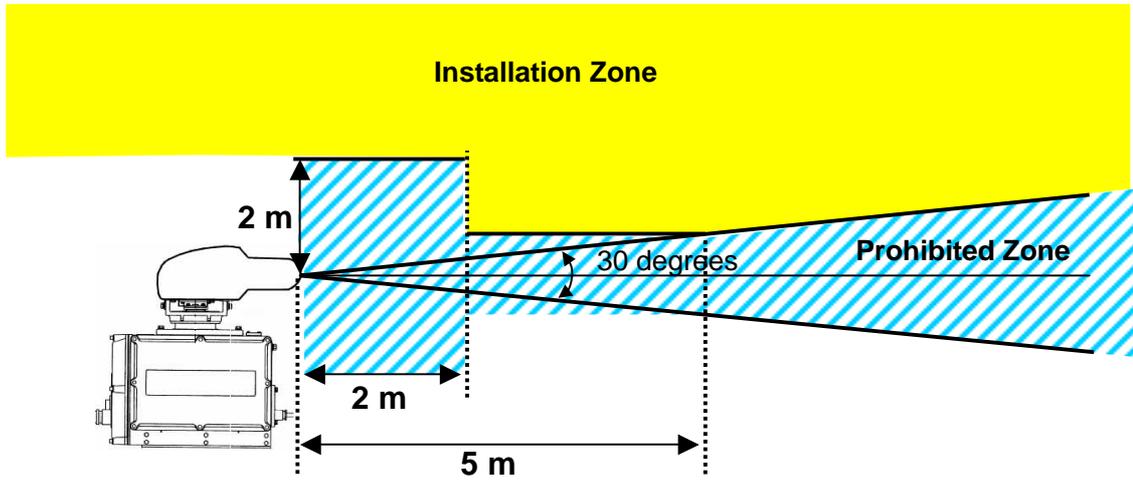


Figure 5

When two Inmarsat C antennas are installed, both antenna should be separated as follows.

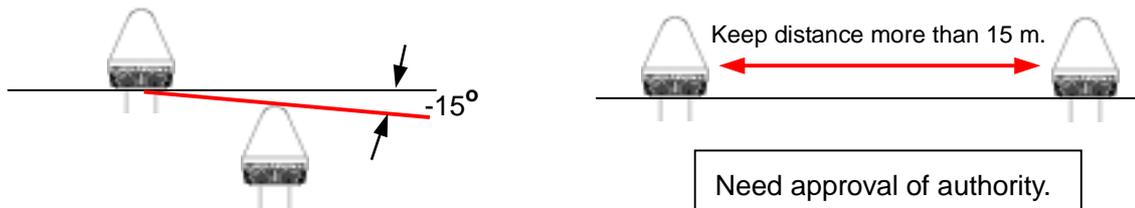


Figure 6

Inmarsat B

Radio waves can be harmful to human body. Since safe distances vary by country and ship construction, there is no uniform formula for calculating safe distance. However, below are general guidelines.

- Unprotected persons should not approach an area in which the radiation level is higher than $100\text{W}/\text{m}^2$. For an Inmarsat A/B antenna is less than $100\text{W}/\text{m}^2$ at 1 meter distance from the radiation surface*
- Unprotected persons should not approach within 6 meters of a transmitting Inmarsat antenna*

The ideal mounting location secures an unobstructed path between the antenna unit and the satellites, from horizontal to zenith. In other words, whatever the direction the antenna unit is pointing there are no interfering objects within the main beam (12 degrees).

While this might be feasible on some vessels, on others it is impossible due to space considerations. The antenna unit should be located at least 3 meters away from masts less than 15 centimeters in diameter.

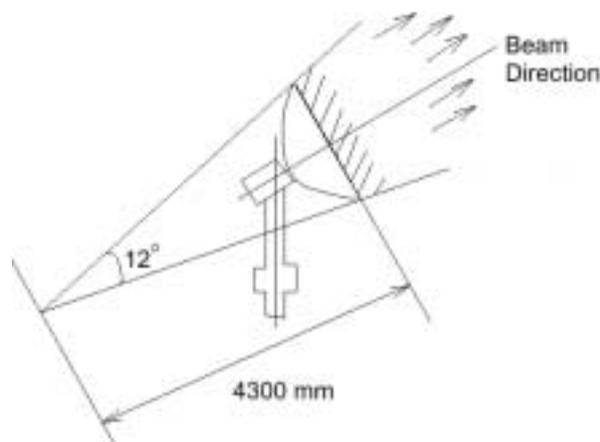


Figure 7

Minimum distance from other antenna

1. HF antenna, communication/navigation antennas
 - HF antenna should be at least **5 meters** away from the Inmarsat A/B antenna.
 - VHF, GPS and other communication antennas should be at least **4 meters** away.
2. The radar antenna should be at least 5 meters away. And the Inmarsat antenna should not be within the radar beam as shown in Figure 8.

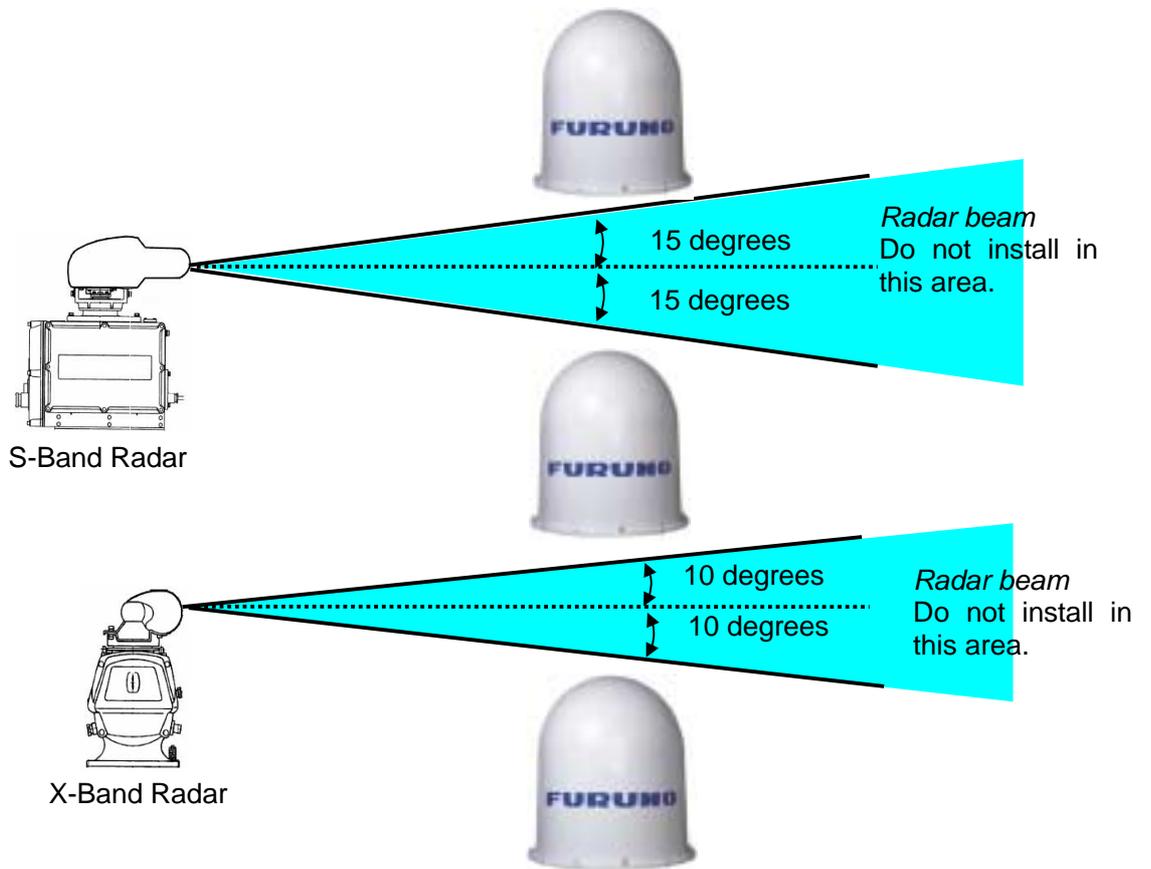


Figure 8

Radar

1. Install radar antennas so that the beams never overlap each other.

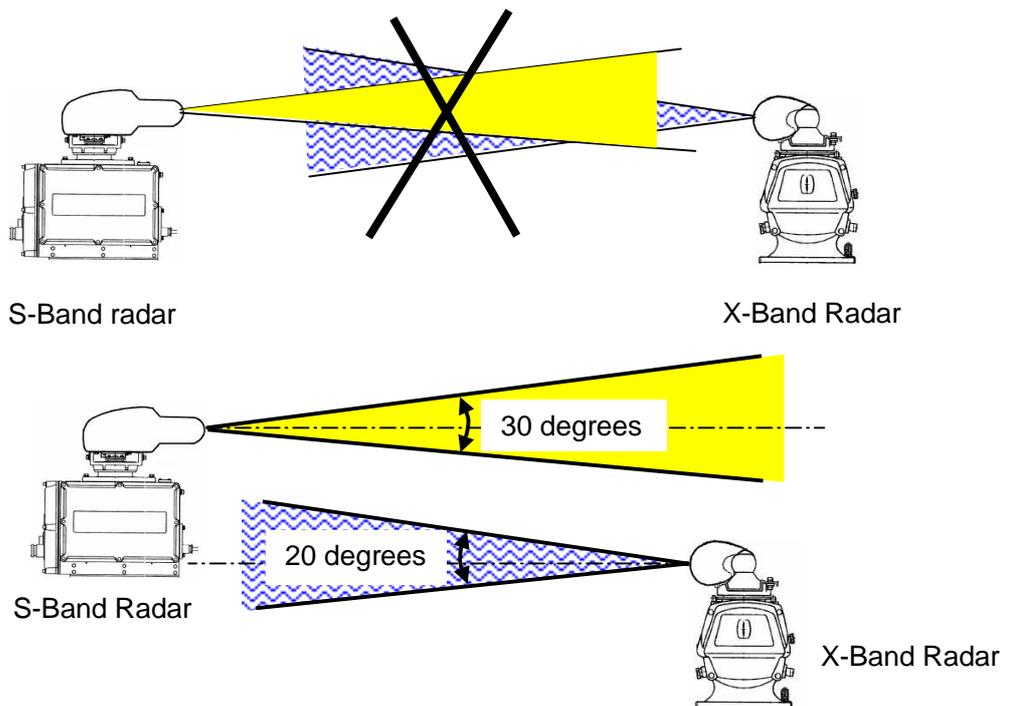


Figure 9

2. Do not locate the GPS and Inmarsat A/B/C antennas in the S-band radar beam.

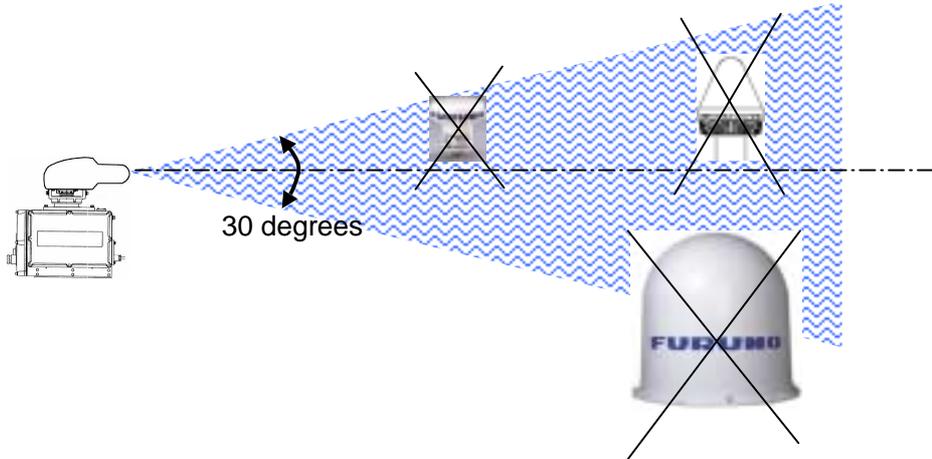


Figure 10

Antenna of Radio

MF/HF Antenna

1. Keep the distance between the TX and RX antennas as long as possible.

Note:

- If TX and RX antennas are installed without having enough distance between them, it may cause the interference problem. Specially, when FS-5000 with duplex mode is installed, transmission signal interfere the reception.
- Locating the RX antennas of other equipment without having enough distance from the MF/HF TX antenna interferes the reception.

For example, when TX antenna is located at far starboard of compass deck, install RX antennas at far port side of compass deck as shown in Figure 11.

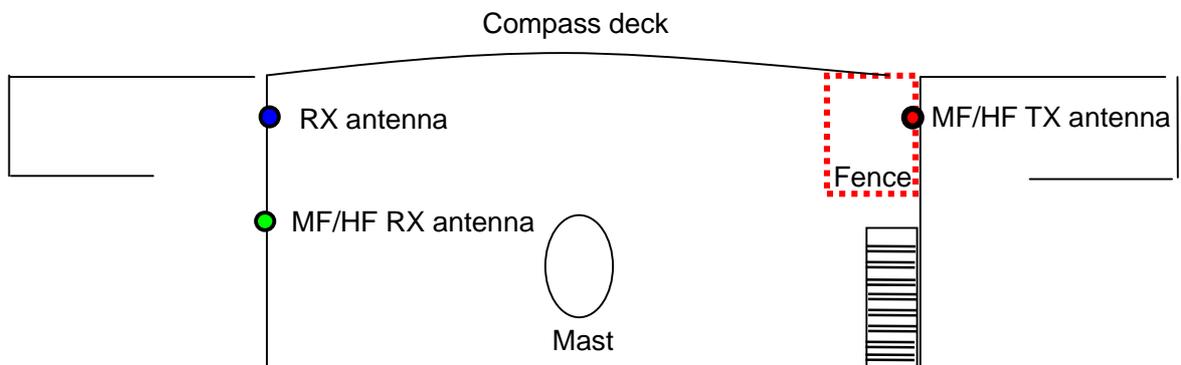


Figure 11

The TX antenna and antenna feeder should be fenced in order to separate a human being from them.

VHF TX/RX Antenna

- Keep the distance between the TX and RX antennas as far as possible.
- When TX/RX antennas are installed in different height, the TX antenna is located at the upper position such as at the top of mast.

When TX and RX antennas are separate horizontally, the more the horizontal distance, the more the vertical distance.

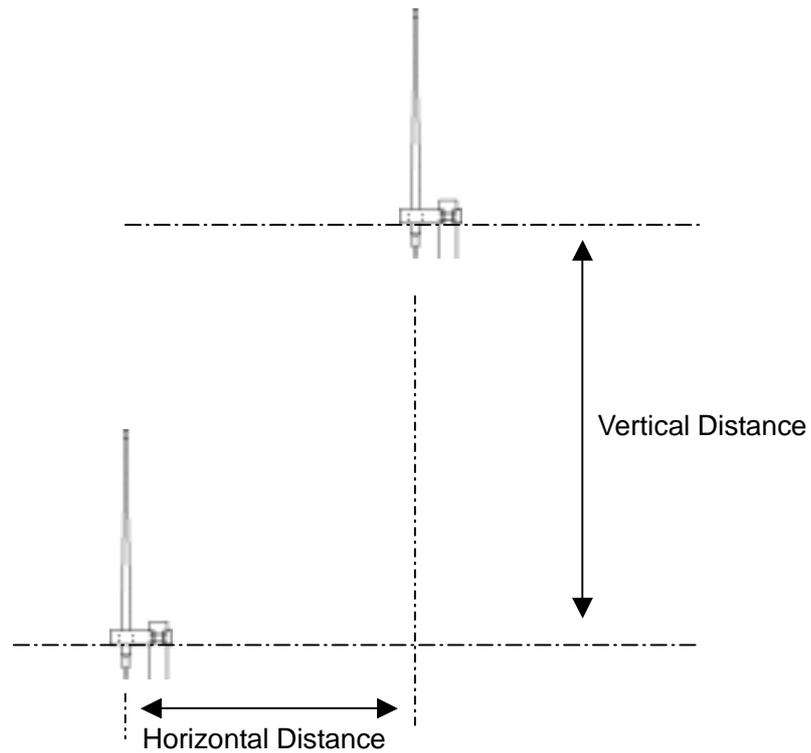


Figure 12

- Do not install the antennas beneath or at the side of steel plate.