



Professional Marine Antennas Made In Italy



NAV-6 GPS Marine Antenna

Operator's manual

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## Overview

NAV-6 is an active GPS and GLONASS antenna especially designed for the marine environment. It combines the high performance GPS patch antenna and a 27 dB low noise amplifier (at 5V DC) into a compact waterproof antenna with exclusive design.

NAV-6 enables the required GPS function for AIS systems, chartplotters, and other navigational devices, and helps boost the reception signal to the GPS unit, especially when the GPS receiver doesn't have a good view of the sky. NAV-6 minimizes temporary loss of signal during navigation and maintains the best possible accuracy by having a lock on the greatest number of satellites.

NAV-6 is supplied with deck mount, mounting set and a 15 m RG58 cable with TNC male connectors. Standard 1" x 14 threads for pole mounting.

## Electrical specifications

Frequencies	GPS/GLONASS (1572 - 1610 MHz)
Impedance	50 Ohm
Polarization	RHCP
LNA Gain	26dB at 3V, 27 dB at 5V
VSWR	<1.2:1
Voltage supply	2,7V - 5,5V
Current	15 mA to 25 mA
Power (max.)	138mW
Operating temperature	-40°C to +85°C



## Mechanical specifications and Dimensions

Max. dimensions: 116mm x 110mm x 74mm (H x L x W)

Material: ABS

Weight: 270 g

Colour: White

## Connection specifications

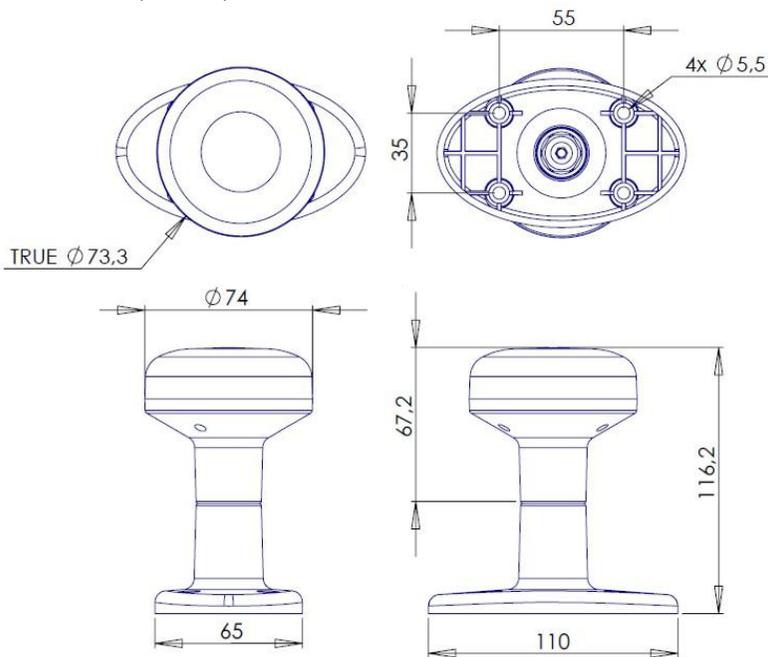
Connector type: TNC male

Cable: RG58

Cable length: 10 m

## Mounting type

Any surface



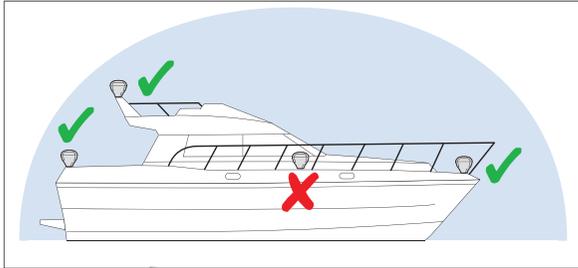
## About GLONASS

GLONASS, acronym for Global Navigation Satellite System, is a radio-based satellite navigation system operated by the Russian Aerospace Defence Forces. It both complements and provides an alternative to the United States' Global Positioning System (GPS) and is the only alternative navigational system in operation with global coverage and of comparable precision. **NAV-6** is capable of receiving and processing GLONASS signals.

## Antenna installation

Follow the guidelines below to choose a suitable mounting location for the **NAV-6**.

- The **NAV-6** is waterproof, and appropriate for above decksmounting.
- Choose a location that provides the most unobstructed view of the sky in all directions:



- GPS antennas should NOT be mounted high up a mast, due to the effects of the boat 'heeling' on signal reception.
- The **NAV-6** should be mounted at least 1 m (3 ft) away from devices that may cause interference, such as motors, generators, VHF radio units and other transmitters/receivers.
- Select a location out of the radar beam. The radar beam will obstruct or prevent reception of the GPS signal.
- The location should be well away from an Inmarsat antenna. Inmarsat transmission will obstruct or prevent reception of the GPS signal.
- Mount the **NAV-6** as high as possible to keep it free of interfering objects and water spray, which can obstruct reception of the GPS signal if the water freezes.
- Pole mounting requires a pole with a 1 inch 14 TPI thread.

## Basic concept of GPS

A GPS receiver calculates its position by precisely timing the signals sent by GPS satellites high above the Earth. Each satellite continually transmits messages that include

- the time the message was transmitted.
- satellite position at time of message transmission.

The receiver uses the messages it receives to determine the transit time of each message and computes the distance to each satellite using the speed of light. Each of these distances and satellites' locations define a sphere. The receiver is on the surface of each of these spheres when the distances and the satellites' locations are correct. These distances and satellites' locations are used to compute the location of the receiver using the navigation equations. This location is then displayed, perhaps with a moving map display or latitude and longitude; elevation or altitude information may be included. Many GPS units show derived information such as direction and speed, calculated from position changes.

**A good external GPS Antenna is the foundation of a good GPS Navigation system.** The reasons to need an external GPS antenna:

- For use in a vehicle where the GPS receiver cannot or will not be placed near a window.
- For use in any place that the receiver doesn't have a good view of the sky.
- To minimize temporary loss of signal when in a vehicle in motion.
- To maintain the best possible accuracy by having a lock on the greatest number of satellites.

A GPS antenna is a device that helps boost the reception signal to a GPS unit, whether it is a standalone unit or an embedded unit. Often a GPS antenna is used in a situation where the GPS unit itself is somehow removed from a line of sight to the sky, as in a car or a yacht, to help the GPS "see" the sky without having to be moved. Most GPS Devices will come with an internal Antenna with limited sensitivity. Also some the internal Antenna & the GPS Receiver Module will interfere each other and lower the Position Accuracy.

[www.scoutantenne.com](http://www.scoutantenne.com)



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