



## Electronics Ltd

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## OPTIMISING NAVTEX RECEPTION – ICS NAV4/5.

When sailing within a published NAVTEX service area, reception coverage can extend to as much as 200 - 300 nautical miles. If the NAVTEX signal has to cross land to any significant extent, attenuation may occur and this can reduce the reception range to as little as 50 miles. Range can increase significantly at night, it can sometimes extend to as much as 1000 miles. Some NAVTEX stations reduce transmitter power at night to avoid overlap of signals into other sea areas.

Background electrical noise in a marina, the presence of high cliffs and the masts of surrounding vessels can all contribute to poorer NAVTEX reception when in harbour, rather than at sea.

To ensure you get the best reception possible, always mount the NAVTEX antenna in a location that is free of other electrical equipment. Take care to avoid locations that are close to wind generators, battery charges, shore power transformers and any associated electrical power wiring. If you have any doubt regarding the suitability of a proposed sensor location, first make a temporary 'test' installation to confirm that the reception performance meets your requirement before committing time and effect to a full sensor installation that you may later have to change.

### System Grounding

Normally it is not necessary to install a grounding connection, however if you want to increase the sensitivity of your system and hence the range of reception, you can try connecting the antenna screen cable at the rear-connecting block direct to a good electrical ground. This can either be a specially installed ground plate, or the keel bolts on a non-encapsulated keel or bonded hull skin fitting. Use a minimum cable size of at least 1.5mm<sup>2</sup>. If electrical isolation is to be maintained then this should be done via a 0.1uF 50V capacitor. If in doubt consult your dealer.

Note that connection to an inappropriate or electrically noisy ground point can sometimes give unpredictable results and may even reduce overall reception performance.

**Tip : Don't just make a new ground connection and assume that it will make things better, check that reception is better before putting your tools away.**

### Isolating sources of on board interference

Wait until the next scheduled transmission time of a distant station (100 miles or more away).

- Check for flashing of the SBY LED (reception underway)
- Read the error rate of the printed message (if any reception)
- Turn off all sources of A.C. power usage, battery chargers, inverters, generators and shore power
- Note any improvement to the average reception error rate
- Turn on all sources of A.C. power usage, one at a time noting any increase in reception errors
- Reception errors may also be caused by close proximity of D.C. powered equipment. In this case repeat the above test but include all D.C. powered instruments on board as well.

Should any item be proven to have a significant negative effect to reception consult a qualified marine electrician for advice.