NAV6 Series User Guide

NAV6
NAV6*plus*
NAV6*repeater*

MAN 3030.00

Issue 3.0, March 2012.

ICS Electronics Limited.
Unit V, Rudford Industrial Estate
Ford, Arundel, West Sussex
BN18 0BF
United Kingdom

Tel: +44 (0)1903 731101
Fax: +44 (0)1903 731105

E-Mail: sales@icselectronics.co.uk
                   support@icselectronics.co.uk
Website: www.icselectronics.co.uk

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Important Information

This equipment is not approved for use by SOLAS convention vessels within the Global Maritime Distress and Safety System (GMDSS)

It is intended for use by leisure craft and other non-SOLAS vessels wishing to participate within GMDSS

Safety Warnings

This instrument is for use as an aid to sailors and should not lead to a reduction in the level of good seamanship required at all times

Reception of messages cannot always be guaranteed as this depends on local radio propagation

The correct magnetic variation must be input at the navigation instruments (e.g. GPS, electronic compass) for the accurate display of COG, set, waypoint bearing and heading.

Contents

NAV6 Complete System Showing Head Unit, NAVTEX Receiver Box and Passive Antenna

Congratulations on purchasing this high quality **ICS Electronics Ltd** product. It is not only an excellent NAVTEX receiver, but a first class instrument repeater (*Plus* & *Repeater* models only). It may be the only display you will ever need at your navigation position. We hope that it gives you many years of reliable and trustworthy service. Please take the time to read this manual carefully as it contains some essential information regarding the operation and maintenance of the product and a useful background to the NAVTEX system.

We recommend that you regularly visit the ICS website www.icselectronics.co.uk for information on updates, the availability of software enhancements, further options and support. The support pages contain frequently asked questions about the NAV6 that you may find useful. There is also a NAVTEX database providing a list of operational NAVTEX stations and their details.

The IMO and various national coastguards also operate informative websites that you may wish to visit; see www.icselectronics.co.uk/links.

Please note that the NAV6 standard model does not include the instrument repeater functions as described in this manual. It may be upgraded at anytime in the future (charges apply).

Quick Start

You will find this product extremely easy to operate. Please don't be intimidated by the comprehensive nature of this manual. In reality, receiving your first NAVTEX messages just could not be simpler.

- Follow the installation guidelines
- Re-check the cable connections
- Apply power
- If you have not connected a GPS navigation receiver, make sure that you set the date and time on the screen which will appear at start up
- Wait for your first NAVTEX message. If you are within range of a NAVTEX transmitter, you should not need to wait for more than four hours.
- Refer to "Appendix IV : NAV6 Menu Navigation" for an overview of the available operating modes & how to switch between them.
- Read the "Basic Operation" section to find out how to use some of the commonly used features of this product
- If you then want to get the best from the system, read the rest of the manual!

Introduction

What Is NAVTEX?

NAVTEX is a worldwide system for the broadcast and automatic reception of maritime safety information (MSI) in English by means of a narrow-band direct-printing telegraphy. NAVTEX provides shipping with navigational and meteorological warnings and urgent information.

NAVTEX is a component of the IMO/IHO worldwide Navigational Warning Service (WWNWS) as defined by IMO Assembly resolution A.706(17). It is included within the Global Maritime Distress and Safety System (GMDSS). Since 1 August 1993, NAVTEX receiving capability has become mandatory equipment for certain vessels under the provisions of the International Convention for the Safety of Life at Sea (SOLAS).

NAVTEX broadcast information is available to all seafarers, free of charge.

How Does NAVTEX Work?

NAVTEX transmissions are sent from stations situated worldwide. The power of each transmission is regulated so as to avoid the possibility of interference between transmitters. Each station is allocated a 10-minute time slot every 4 hours so that many stations can share the same frequency. Stations typically have a transmission range of 250 – 300 Nm.

NAV6 s Features

The NAV6 adds a new dimension in NAVTEX functionality. Unlike other NAVTEX receivers that discard unselected messages, the large flash memory in the NAV6 means it has the capacity to store **all** of the messages from transmitting stations within its range. This allows you to recall, display and review any message at any time even if it was not selected at the time of the transmission.

The NAV6*plus* offers simultaneous reception on both the 518kHz international channel and the 490kHz local information channel and when connected to an NMEA data source, it offers a range of standard and custom instrument repeater functions. The NAV6*plus* includes a database of all NAVTEX stations around the world and when connected to a GPS can be set to automatically display messages from all stations within range or just the closest station helping to provide a much clearer picture of the conditions in your area.

A unique message processing (*iNEC*) feature benefits you by decreasing errors in received messages in noisy or weak signal areas.

Choose from the NAV6 or NAV6*plus* according to your requirements and budget.

Outputs are also included for connection to a serial printer or computer.

The NAV6*plus* and NAV6*repeater* include additional instrument repeater functions. All the information you really need at your navigation position on one large, easy to use display. With navigation space becoming more and more restricted in modern boats, the NAV6*plus* concentrates all the data you need, where you need it. It takes critical NMEA data from your GPS or instrument systems and displays it in a highly innovative manner. An electronic log book is updated at regular intervals and can be sent to a serial printer. These powerful Instrument and GPS repeater functions are included as standard in the NAV6*plus*.

The NAV6*repeater* can also be purchased separately without a NAVTEX receiver for use as a stand-alone NMEA repeater. When added to an existing system, NMEA data and NAVTEX data can also be repeated at another position such as the helm or fly bridge.

Display Unit

- The Display Unit uses a high resolution backlit LCD to display NAVTEX messages in a choice of text sizes.

- The display unit contains a large non-volatile memory to store NAVTEX messages, NAVTEX station database, all of the user settings, filter options, LCD contrast and backlight levels. All messages and settings are retained during power down.

- Several messages can be displayed at once (depending upon the length of the message) and messages can be scrolled with a single keypress.

- Messages can be filtered and sorted using a number of user selectable criteria.

- The NAV6*plus* and NAV6*repeater* can act as an NMEA instrument repeater and is capable of displaying data in a choice of formats.

- The NAV6*plus* and NAV6*repeater* can be connected to a printer or computer to print NAVTEX messages and Navigation logs.

- Audible and visible alarms can be set up to indicate reception of SAR and/or New Messages.

- A sleep mode allows long standby periods with minimum power consumption, such as when the vessel is left in a marina with main batteries being trickle charged from the shore.

Receiver Unit

(NAV6 and NAV6*plus systems only)

- The Receiver Unit contains dual receivers that can receive on both 490kHz and 518kHz simultaneously.

Basic Operation

The NAV6 is a flexible & powerful tool for receiving, storing & viewing NAVTEX messages. In order to assist you in getting the best from your NAV6, read this section which contains short cuts to the most common NAVTEX operations. Please read the rest of the manual for a comprehensive guide to the NAV6 Series of NAVTEX products.

First, find your way around the keypad and the display:

The Keypad

softkeys

FUNCTION PAGE   VIEW   MODE
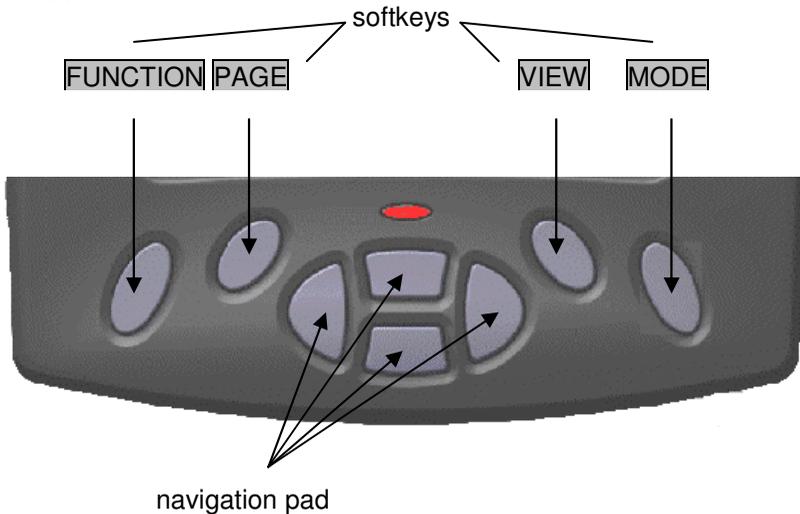
navigation pad

- Centre keys are a 'navigation pad' (UP DOWN LEFT RIGHT).
- Softkeys are situated on either side of the navigation pad. The current function is shown on the soft-key menu area at the bottom of the LCD.
- The mode softkey switches between the three operating 'modes' (NAVTEX, Navigate & Setup).
- The view softkey switches between 'views' in each operating 'mode'. If a 'view' has several 'pages' associated with it then these are selected with the page softkey.
- Operate the keys in this order to get to the mode that you want:

MODE → VIEW → PAGE → FUNCTION

Hint : softkeys are context sensitive and cyclical in operation, several button presses will return you to the start of the cycle.

The Display

At the bottom of the display is the softkey menu area:

Current option ⎯⎯

| Mark Read | Next New | Message View | Navtex Mode |

Current softkey function ⎯⎯
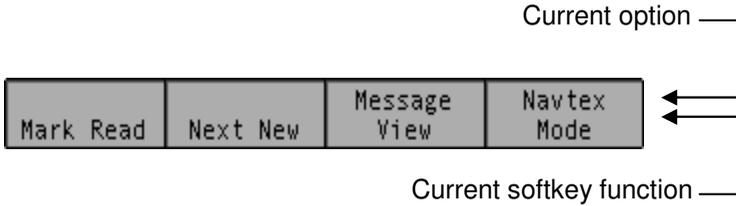
The softkey menu area shows what each softkey does in the current operating mode.

- The top line of each softkey menu box indicates the option that is _currently_ selected.
- The bottom line of each softkey menu box indicates the current function of that softkey.

The example above shows the NAV6 in NAVTEX Mode; the right hand softkey selects the 'mode' & the current mode is 'NAVTEX'.

At the top of the display is a status bar:

IA39   🔔 GPS 490 SIG 518 RX   NEW 14:50

The status information is displayed as a series of icons. The meaning of the icons is as follows:

IA39	Message ID for the upper most message
🔔	An alarm is active
GPS	NMEA / GPS position data available
490	490 kHz reception available
518	518 kHz reception available
RX	Receiving message now
SIG	Signal Carrier, but no message
ERR	Receiver Communication fault
SAR	SAR message received
NEW	NEW message received
14:50	UTC Time

Viewing & Scrolling Through NAVTEX Messages

To view NAVTEX messages you must first select the NAVTEX Mode. Use the right hand softkey to change modes until 'NAVTEX Mode' is visible in the right hand softkey menu box. You can now use the UP, DOWN, LEFT & RIGHT keys to scroll through the displayed messages. UP & DOWN scroll line by line, whereas LEFT & RIGHT scroll message by message.

The messages currently displayed are a sub-set of all the messages stored in memory. Whether you can see a particular message or not depends upon the current station selection, message filter and age limit settings (see following sections for details).

Message Storage

All received NAVTEX messages are stored in memory regardless of whether you have them selected for viewing or not. The NAV6 has lots of memory so you will easily have enough storage for all messages received in any 72 hour period. The messages displayed are selected from the NAV6' memory by applying the current message filter preset & age limit settings. This enables you to change your mind later about your message display options. This means you will still be able to view messages that were received previously, but were not selected for display at the time, by changing the current message filter or age setting.

After using the NAV6 for a while you may notice that if you receive a particular message more than once there will only ever be one copy in view. If a message has been received more than once the NAV6 will store only the *best* version. It even attempts to repair corrupted messages by comparing repeated transmissions of the same message!

Filter Presets

The messages currently available for viewing on screen are selected from the messages stored in memory by applying 'filter presets'.

To see the current selected filter presets go to [NAVTEX Mode⇒Filter View]. You will notice that the left hand softkey is labelled 'Preset' and a number from 1 to 5 is visible. This is the currently selected filter preset number for the this 'filter page'. Each of the 4 filter pages (518 Types, 518 Stns, 490 Types & 490 Stns) has its own 5 presets.

In any one of the filter pages press PRESET to change the preset

number. You will notice that the settings on the screen change with filter preset number.

Select the preset that you require for the filter page that you are viewing and then look at the presets for the other filter pages. Note that the preset that is displayed is the one that is currently applied to the message display.

Multiple presets can be used for switching quickly between different sets of messages on the screen. For instance, if you want to show just 'navigational warnings from all stations in range', you can use a preset to do this.

Although the presets are pre-programmed, you can set them to any filter setting you require.

Tip : Use preset 1 for normal operation and only use the other presets if you want to switch between different sets of messages on the display.

Station Selection

If you leave your NAV6 receiving for 72 hours you will have received many messages (subject to your current location) and unless you filter out those stations that are no**t** required for display, you will be swamped with data. This can either be done automatically using a GPS or by using manual filter settings. In either case go to [NAVTEX Mode⇒Filter View⇒490 or 518 Stns Page]. You will notice that each station can be set to one of three filter settings:

Setting	Operation
On	Messages from station always in view (see note 1)
Off	Messages from station never in view
Auto	Messages from station only viewed when nearest or in range depending upon setting (see note 1)

note 1 : messages are only displayed if they also fall within the ageing limit, error limit and message category filter settings.

An asterisk to the right of the station name indicates that the station is selected with the current filter setting.

Automatic Station Selection Using GPS (NAV6*plus* only)

Many users will just want to display NAVTEX from the nearest NAVTEX station to their cruising location. This is most easily achieved by

connecting a GPS and selecting 'Nearest' station option in the set up page.

With a GPS connected and 'Nearest' selected you should only see one (or sometimes two) asterisks. Ensure that the set of stations that you want to automatically select from are all set to Auto. Stations that you definitely <u>do not</u> want should be set to Off. You may wish to set your 'home' station to On so that you display messages from it even if it is currently not the nearest station to your cruising position.

Manual Station Selection

Alternatively, you can manually select a station (or stations) setting stations to On or Off by using the UP, DOWN, LEFT & RIGHT keys. If you are using a GPS but still want to select stations manually then do not leave any stations set to Auto.

Message Filtering

You can further reduce the amount of unwanted messages that are displayed by applying a filter to the message categories. Go to [NAVTEX Mode, Filter View, 490 or 518 Types Page]. Each message category can be turned On or Off or can be set to New using the UP, DOWN, LEFT & RIGHT keys.

Reading 'New' Messages

Sometimes it is useful to know which messages have been received since you last looked at the NAV6 display. You may have noticed that each message header carries a 'NEW' icon and that there is an additional 'NEW' icon in the status bar at the top of the display. Select [NAVTEX Mode⇒Message View] and you will see that what was the PAGE softkey is now indicated as NEXT NEW. If the message at the top of the display has the 'NEW' icon showing then the left hand softkey will now be indicated as MARK READ. Once you have read the message & want to de-emphasise it then press MARK READ. The 'NEW' icon will disappear from the message header. Press NEXT NEW to jump to the next new message. Proceed through all of the messages in this way. Once all of the messages have been marked as read then the 'NEW' icon at the top of the display will also disappear. When you return to the NAV6*plus* later on it is now very easy to tell if there are any new messages to read (the 'NEW' icon in the status bar at the top of the

display will be illuminated).

Note that messages that have been 'marked as read' will still be displayed, but with the 'NEW' icon removed from the header in each one. However, it _is_ possible to hide messages once they have been read. Go to [NAVTEX Mode⇒Filter View⇒490 or 518 Types Page] and set the message categories that you want to hide after they have been marked as read to 'New' instead of 'On'. You may wish to leave SAR messages as 'On' so that they are _not_ hidden once read.

Displaying The Newest Message

All messages are date and time stamped by the NAV6 even if there is no GPS connected and therefore no correct source of time data.

If there is not a GPS connected then you can manually enter the time and date or just ignore it. The NAV6 will still order the messages in the correct chronological order (remember that the indicated time of reception will be wrong though).

To display the newest message, go to [NAVTEX Mode⇒Sort View⇒Descending Order⇒Date Criteria]. The newest message is now at the top of the display.

Message Aging

NAVTEX messages become less relevant over time & eventually just clutter the display. In order to reduce the number of obsolete NAVTEX messages that are being displayed, the NAV6 uses the concept of a message 'Age Limit'.

It is possible to hide messages that are older than a certain pre-settable age limit. These messages are still stored in the NAV6_plus_ memory for a considerable time after they have been removed from the display and can still be displayed if necessary by increasing the message age limit setting.

To change the age limit go to [Setup Mode⇒NAVTEX View⇒Options Page] and select the age limit that you require. Use the UP & DOWN key to select 'age limit' and LEFT & RIGHT keys to select a value. 3 days is a sensible choice as NAVTEX messages have a nominal life of 72 hours. Set a longer age limit if you wish to display NAVTEX messages going back over the previous weeks.

Advanced Operation

This section provides a detailed description of the operation of your **NAV6**. The three operating modes are described in detail. Remember to use the right-hand MODE softkey to switch between the operating modes.

Navtex Mode

NAVTEX Mode is only available if a receiver is (or has been) connected to the display and the NAVTEX frequency setting on the NAVTEX options page is set to 518 kHz, 490 kHz or Both.

In NAVTEX Mode, the display consists of a large area dedicated to displaying NAVTEX messages, with a status bar at the top, and descriptions of the softkey functions at the bottom.

It is possible to scroll up and down the messages line by line, using the UP and DOWN keys. Additionally, you can step through the display, message by message using the LEFT and RIGHT keys.

```
PA80            GPS 490 RX  518 RX     SAR NEW 09:18
PA80 NEW Ijmuiden              518 10/07 11:10     0%
NETHERLANDS COASTGUARD
NAVIGATIONALWARNING NR80 071850UTC JUL
TSS NORTH HINDER JUNCTION / MAAS WEST OUTER
HYDROGRAPHIC SURVEY BY 'BUYSKES'
C/S PAHB IN AN AREA BOUNDED BY
A. 52-00N 002-59E
B. 52-06N 003-06E
C. 52-04N 003-08E
D. 51-59N 003-10E
CONTACT ON VHF 13,16 AND 70
WIDE BERTH REQUESTED

SA38 NEW Niton                 518 10/07 11:03     0%

WZ 1274
DOVER STRAIT. RUYTINGEN SOUTHWEST BUOY 51-05N
001-47E FOG SIGNAL
INOPERATIVE. CANCEL WZ 959
(SA32)(SA17)(MA67).

MA56 NEW Oostende (Thames) 518 10/07 10:05     0%
021659 UTC JUL =
WZ 1410
ENGLAND, EAST COAST. SOUTHWOLD LIGHT 52-20N
001-41E SECTORS CHANGED
TO RED 204 TO 215 DEGREES, WHITE 215 TO 001
DEGREES, RED 001 TO 032.
DEGREES.

EJ58 NEW Corsen                490 10/07 08:50     0%
071644 UTC JUL 01
SATELLITE SYSTEME GPS
PRN 24 INUTILISABLE DU 100430Z AU 101630Z
JUL.
ANNULER CE MESSAGE LE 101630Z JUL
                            Message      Navtex
Mark Read    Next New       View         Mode
```

Four different 'views' can be selected by pressing the VIEW softkey:

Message View
Print View (when enabled in setup)
Sort View
Filter View

NAVTEX Mode, Message View

This view can be used for keeping track of new messages as they are received and displayed. Each new message can be accessed by a single key press & then marked as read, if required.

The NEXT NEW softkey should be used to move the next new message to the top of the NAVTEX display, where it can be marked as read by pressing MARK READ. Note that the message that will be 'marked as read' is indicated in the top left of the status bar. This is particularly useful when the message's header has scrolled off the top of the display area.

NAVTEX Mode, Print View

This view allows individual messages to be printed. The 'Print View' is only displayed if the manual print setting is enabled on the [Setup Mode⇒NAVTEX View⇒Options Page]. Printing is only possible if an external printer or PC is installed as part of the system.

The NEXT NEW softkey can be used to move the next new message to the top of the NAVTEX display where pressing PRINT will print it.

NAVTEX Mode, Sort View

From within this view different sort criteria can be applied to order the messages on the display. The NAVTEX Mode display can be sorted in one of three ways by pressing the CRITERIA softkey:

Sort by Station

Sort by Type

Sort by Date

The sort can be further organised in ascending or descending order by pressing the ORDER softkey.

Sort by Station orders the messages by NAVTEX frequency and the alphabetical order of their station letters.

Sort by Type orders the messages in the alphabetical order of their message identifier letter.

Sort by Date orders the messages by the date and time that they were first received. For sort by date to work properly, the correct time and date should be set using either time data from the NMEA input or if this is not available, time should be entered manually at start-up.

NAVTEX Mode, Filter View

This view allows specific stations to be selected for display and the various message categories to be turned on or off. Use the filter view to select which message types from which stations you wish to see displayed on the NAVTEX display.

(Tip: even if you have de-selected messages from a particular station and/or message type, the system will still receive and store those messages. You will be able to view those messages by re-selecting them in Filter View.).

5 different sets of filter settings can be programmed into the unit. Using the filter presets allows quick selection of 5 different filter settings. Once a preset is selected, the filter settings for that preset may be changed as required. The filter settings for the current selected preset will be applied when NAVTEX messages are next viewed. Press the PRESET softkey to select a preset.

(Tip: Set up the 5 filter presets for the stations and message types that you use most. For example:
Preset 1 - all message types from nearest station;
Preset 2 - meteorological warnings from nearest station,
Preset 3 - navigational warnings from nearest station;
Preset 4 - new messages of all message types from nearest station;
Preset 5 – new messages of all message types from stations in range)

There is a 'stations' and 'types' filter page for each selected receive frequency. Use the PAGE softkey to select one of the four possible filter pages: 518 Stations, 518 Types, 490 Stations, or 490 Types.

Message Categories

The picture shows the 518 Types filter page; the 490 Types filter page is similar.

Each of the message types can be selected as either On, Off or New

Use the UP and DOWN keys to select the message type setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

Set each message type filter to one of the following:

```
                          GPS  490 RX  518 RX       SAR NEW 12:11

         Preset 1
         518 kHz Message Type Filter Page


         A) Nav Warnings          On
         B) Met Warnings          On
         C) Ice Reports           On
         D) SAR                   On
         E) Met Forecasts         On
         F) Pilot Service         On
         G) DECCA                 On
         H) LORAN                 On
         I) Unassigned 1          On
         J) SATNAV                On
         K) Other Navaid          On
         L) Nav Warnings          On
         M) Unassigned 2          On
         N) Unassigned 3          On
         O) Unassigned 4          On
         P) Unassigned 5          On
         Q) Unassigned 6          On
         R) Unassigned 7          On
         S) Unassigned 8          On
         T) Unassigned 9          On
         U) Unassigned 10         On
         V) Special 1             On
         W) Special 2             On
         X) Special 3             On
         Y) Special 4             On
         Z) No Messages           On


         1 of 5    518 Types   Filter    Navtex
         Preset      Page       View      Mode
```

Setting	Notes
On	Message type always displayed
Off	Message type never displayed
New	Message type only displayed when new. Messages marked as read will not appear.

Stations

The picture shows the 518 Stations filter page; the 490 Stations filter page is similar. Use the UP and DOWN keys to select the station filter setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

```
        GPS  490 RX  518 RX       SAR NEW 12:13

    Preset 5
    518 kHz Station Filter Page

    Auto Station Filter      Nearest

    A) Corsen                 Auto
    B)                        Off
    C)                        Off
    D) Coruna                 Auto
    E)                        Auto
    F)                        Auto
    G) Tarifa                 Auto
    H)                        Auto
    I)                        Auto
    J)                        Auto
    K) Niton (N.France)       Auto
    L)                        Auto
    M) Casablanca             Auto
    N)                        Auto
    O) Malta                  Auto
    P) Ijmuiden               Auto
    Q) Split                  Auto
    R) Roma                   Auto
    S) Niton                  On    *
    T) Cagliari               Auto
    U) Trieste                Auto
    V) Augusta                Auto
    W) La Garde               Auto
    X) Valencia               Auto  *



    5 of 5    518 Stns    Filter    Navtex
    Preset    Page        View      Mode
```

The 'Auto Station Filter' setting can be either Nearest or In Range. This setting is active only when you have a GPS receiver connected to the NMEA input and it applies only to stations set to Auto. To display messages from the nearest station to your current position, set the auto station filter to Nearest.

To display messages from all stations in range of your current position, set the auto station filter to In Range.

For all settings, an asterisk appears next to all stations for which messages will be displayed.

Set the filter for each station to one of the following:
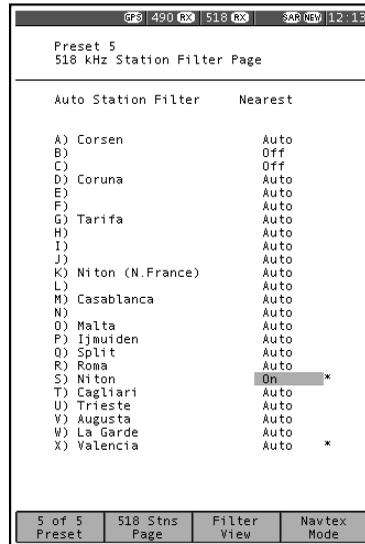
Setting	Notes
On	Messages from station always displayed
Off	Messages from station never displayed
Auto	Messages from station displayed only when nearest or in range depending upon 'Auto Station Filter' setting.

Important (NAV6*plus* Only): You may wish to leave your NAV6*plus* running whilst your GPS or instrument system is disconnected or switched off. If you do this then please be aware that the Navigate data items derived from NMEA (including position) will time out after a short while. If you have also opted to display only the 'nearest' NAVTEX station or stations 'in range' then the NAV6*plus* will no longer have the required position data. It will revert to displaying all stations that are set to 'Auto'. As soon as the NMEA data becomes available again only the 'Nearest' or 'In Range' stations will be displayed dependent upon your current settings.

Navigate Mode – NAV6plus or NAV6repeater only

Navigate Mode is only available if there is a GPS or other source of NMEA 0183 data connected to the NAV6 Receiver Unit NMEA input.

The GPS icon in the status bar at the top of the display will be illuminated *only* if there is position data available on the NMEA input.

There are five fixed-format Navigate data display views and four user configurable views. These can be selected from within the Navigate Mode using the VIEW softkey. The five fixed views are:

<div align="center">

Position View

Combined View

Waypoint View

Conning View

Log View

</div>

The user configurable views are User Views 1,2,3 and 4.

(Tip: Disable views that are not required, in [Setup Mode⇒Navigate ⇒Options Page and Setup Mode⇒Navigate⇒User View Page]. Display units can be changed in the Navigate Options page).

Note: Data fields that are not available on the NMEA input are indicated by a series of dashes (e.g. ---.--).

<div align="center">

Important

</div>

- The correct magnetic variation must be input at the navigation instruments (e.g. GPS, electronic compass) for the accurate display of COG, set, waypoint bearing and heading.

- For the purposes of testing your installation, you may wish to use your GPS's simulator mode to generate data for the NAV6*plus*. Please check your GPS User Manual to find out whether it transmits valid NMEA data whilst it is in its simulator mode – many GPS's do not set the 'data valid' flag in the NMEA sentences during simulation. As a safety feature, the NAV6*plus* will ignore any NMEA sentences where the 'data valid' flag is not set.

- The NAV6*plus* has a built in NMEA simulator mode – please ensure that it is switched OFF in normal operation.

Position View

The Position View shows GPS information (Position, COG and SOG), Depth reading and Distance log using a large font.

The UP, DOWN, LEFT and RIGHT keys have no function.

```
                    GPS  490    518       SAR NEW 12:14
Position
             12:14:39 26/07/01
         39°36.846N
           2°39.639E
SOG
                         18.5 km/h
COG(°T)
                         035°
Depth
                        608.9 m
Distance
                      1881.3 km
Trip
                      1855.4 km
                         Position    Navigate
                           View        Mode
```

Combined View

The Combined View shows all NMEA input data on one screen using a small font.

The UP, DOWN, LEFT and RIGHT keys have no function.

```
                    GPS  490    518       SAR NEW 12:16
Position
 39°37.106N    2°39.769E
 12:16:23 26/07/01
SOG                  Water Speed
     18.5 km/h            15.9 km/h
COG(°T)              Heading(°T)
   035°                012°
Turn Rate            Depth
         -1 °/min     608.9 m
Wind Speed(R)        Wind Direction(°R)
     10.1 m/s        P 043 °
Distance             Trip
 1881.3 km            1855.4 km
Waypoint
                     Eddystone
TTG                           54°23.457N
     03:10:46                  5°57.286W
Range            BRG(°T)
     22.96 km            125°
Closing          XTE
Speed   7.2 km/h     P 0.31 km
                         Combined    Navigate
                           View        Mode
```

Waypoint View

The Waypoint View shows waypoint navigation information and a graphical "rolling road" display of the boat position and course relative to the course line. The rolling road display can be used to steer the boat along the course line whilst keeping the cross track error within chosen limits (the XTE limit may be changed on the [Setup mode⇒Navigate View⇒Options Page]). The Waypoint View shows the waypoint name, waypoint position, time to go (TTG in hours, minutes and seconds), range and bearing to waypoint, closing speed to way point, cross track error and COG and SOG.

The UP, DOWN, LEFT and RIGHT keys have no function.
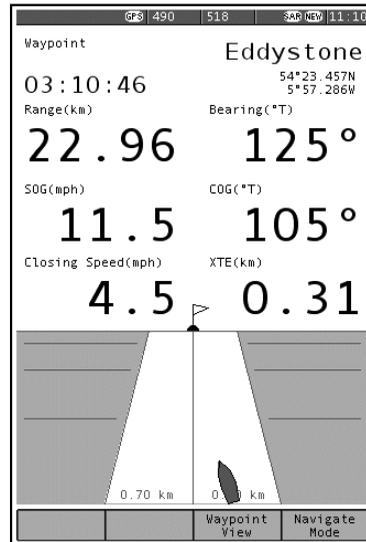
Conning View

The Conning Display is a unique analogue display which shows overlapping vectors for Heading (course through the water), Course Over the Ground (COG), Set (a combination of leeway and tide) and wind. All of these vectors are displayed relative to the current heading, which is displayed in digital form at the top of the screen.

Heading is shown as a single headed arrow; Course Over the Ground (COG) is shown as a double headed arrow, and Set is shown as a triple headed arrow - in the familiar manner. The wind vector displays variable tail patterns according to the strength of
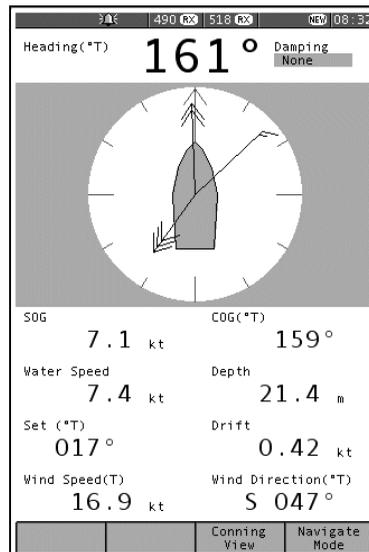
the wind. It follows the usual meteorological wind symbol rules: 5 kts per half feather, 10 kts per full feather, 50 kts per triangle. Computed Set and Drift and other related parameters are shown in digital form at the bottom of the screen.

To take into account various sea states, variable damping levels may be selected by pressing the LEFT and RIGHT arrow keys. The currently selected level is shown in the top right hand corner of the display. The damping level can be None, Low, Medium or High. The damping level affects COG, SOG, Heading and Water Speed and Set and Drift readings. The UP and DOWN keys have no function.

Log View

The UP and DOWN keys allow the log to be scrolled forwards and backwards in time. The LEFT and RIGHT keys scroll other LOG data into view.

(*Tip: consider the Log View to be a large piece of paper. The LCD allowing a smaller view which can be moved up, down, left and right displaying a portion of the paper at any one time*)

The Log View columns are Position, COG, SOG, Heading, Water Speed, Wind Direction, Wind Speed, Depth and Distance.

		GPS	490	518		SAR NEW	12:20

Time	Position	COG °T	SOG km/h
11/07			
08:30	67°19.546N 016°30.989E	105.4	18.5
08:29	67°19.371N 016°30.901E	105.4	18.5
08:28	67°19.221N 016°30.826E	105.4	18.5
08:27	67°19.146N 016°30.789E	105.4	18.5
08:26	67°18.924N 016°30.677E	105.4	18.5
08:25	67°18.849N 016°30.640E	105.4	18.5
08:21	67°18.179N 016°30.305E	105.4	18.5
08:20	67°18.029N 016°30.230E	105.4	18.5
08:19	67°17.879N 016°30.155E	105.4	18.5
08:18	67°17.729N 016°30.080E	105.4	18.5
08:17	67°17.579N 016°30.005E	105.4	18.5
08:16	67°17.429N 016°29.930E	105.4	18.5
08:15	67°17.279N 016°29.855E	105.4	18.5
08:14	67°17.129N 016°29.780E	105.4	18.5
08:13	67°16.979N 016°29.705E	105.4	18.5
08:12	67°16.829N 016°29.630E	105.4	18.5
08:11	67°16.679N 016°29.555E	105.4	18.5
08:10	67°16.529N 016°29.480E	105.4	18.5
08:09	67°16.379N 016°29.405E	105.4	18.5
08:08	67°16.229N 016°29.330E	105.4	18.5
08:07	67°16.079N 016°29.255E	105.4	18.5
08:06	67°15.929N 016°29.180E	105.4	18.5
08:05	67°15.779N 016°29.105E	105.4	18.5
08:04	67°15.629N 016°29.030E	105.4	18.5
08:03	67°15.479N 016°28.955E	105.4	18.5
08:02	67°15.329N 016°28.880E	105.4	18.5
08:01	67°15.179N 016°28.805E	105.4	18.5
08:00	67°15.029N 016°28.730E	105.4	18.5
07:59	67°14.879N 016°28.655E	105.4	18.5
07:58	67°14.729N 016°28.580E	105.4	18.5
07:57	67°14.579N 016°28.505E	105.4	18.5
07:56	67°14.429N 016°28.430E	105.4	18.5

Print		Log View	Navigate Mode

User Views

The four user views can be configured to show either 2, 3 or 4 panels (picture shows a 3 panel view). Each panel can be configured to show different navigation information from a range of options. See the [Setup Mode⇒Navigate View⇒User View Page] for more details of the available options.

The UP, DOWN, LEFT and RIGHT keys have no function.

Setup Mode

This mode enables the user to modify the operation of the NAV6.

NAVTEX message display presentation, Navigate data presentation, LCD operation & printing operation can all be controlled from Setup Mode.

Setup Mode consists of 3 'Views' that can be selected with the VIEW softkey. Each View has a number of 'Pages' that can be selected with the PAGE softkey.

General View	NAVTEX View	Navigate View
LCD Page	Options Page	Options Page
Options Page	490 Names Page	User View Page
	518 Names Page	Monitor Page
	Monitor Page	

Setup Mode, General View, LCD Page

The General View LCD Page shows a checker board pattern that can be used to set up the LCD.

LCD contrast is adjusted with the LEFT and RIGHT keys.

LCD brightness is adjusted with the UP and DOWN keys.

There is a readout of the LCD backlight temperature towards the bottom of the display. This is internal case temperature, and gives only an approximation to ambient temperature.
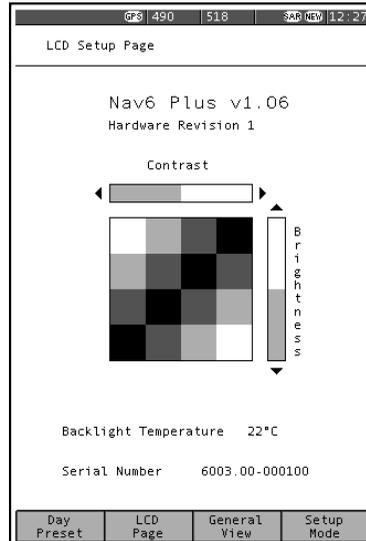
(Tip: If the LCD is unreadable due to incorrect contrast setting, hold down the MODE softkey for more than 2 seconds, in any operating mode, to display the LCD page and reset the LCD contrast and backlight to 50%. The LCD should now be readable. Adjust the contrast as required).

Setup Mode, General View, Options Page

Option	*Setting*	*Notes*
Year	YYYY	Year, e.g. 2001
Month	MM	Month, e.g. 03
Day	DD	Day, e.g. 15
Hour	HH	24 hour clock
Minute	mm	Minutes
Keyclick	OFF	No beep on key press
	ON	Beep on key press
New Message Alert	OFF	New message alert off
	ON	Audible alarm for new messages
Antenna Alarm	OFF	Antenna alarm off
	Timed	Antenna alarms repeated 5 times, unless cancelled
	Repeated	Antenna alarms repeated until cancelled
SAR Alarm	OFF	SAR alarm off
	Timed	SAR alarms repeated 5 times, unless cancelled
	Repeat	SAR alarms repeated until cancelled
Language	**English**	English language menus
	Francais	French language menus
	Portugues	Portuguese language menus
	Deutsch	German language menus
LED Function	OFF	LED always off
	ON	LED as power indicator
	RX	LED as receive indicator
	SAR	LED as SAR indicator
	NEW	LED as New Message indicator

Defaults shown in BOLD

General View Options Page

This view shows general settings for the display such as Date, Time, Sound and Miscellaneous settings. Use the UP and DOWN keys to select the setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.
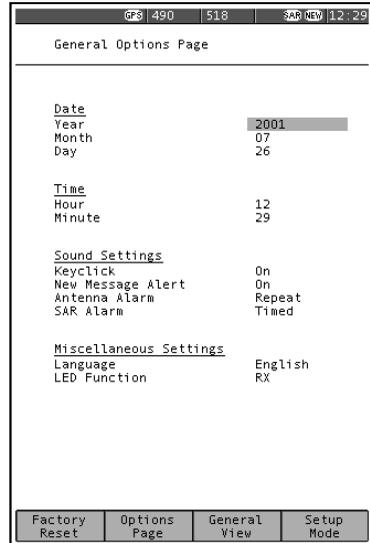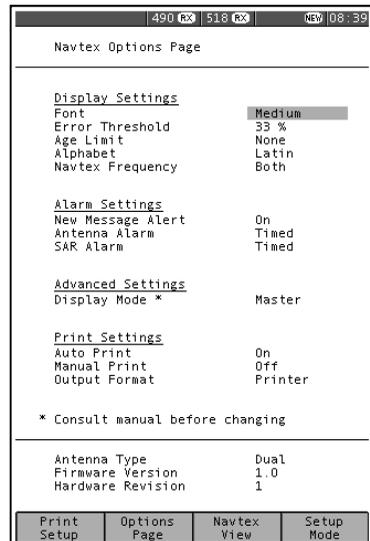
Notes:

- Date and time will be taken from NMEA input data if available.

- There is no battery backup so date and time will be incorrect when power is switched on unless NMEA data is available or the date and time are manually set. The date and time is used to mark all incoming NAVTEX messages so that they can be sorted by date and time.

```
                    GPS 490   518      SAR NEW 12:29

            General Options Page


            Date
            Year                            2001
            Month                           07
            Day                             26


            Time
            Hour                            12
            Minute                          29


            Sound Settings
            Keyclick                        On
            New Message Alert               On
            Antenna Alarm                   Repeat
            SAR Alarm                       Timed


            Miscellaneous Settings
            Language                        English
            LED Function                    RX




            Factory    Options    General    Setup
            Reset       Page        View      Mode
```

Setup Mode, NAVTEX View, Options Page

The [Setup Mode⇒NAVTEX View⇒Options Page] shows general settings for NAVTEX operation such as Antenna, Display, Sound and Print settings. Use the UP and DOWN keys to select the setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

```
                  490 RX  518 RX      NEW 08:39

            Navtex Options Page


            Display Settings
            Font                            Medium
            Error Threshold                 33 %
            Age Limit                       None
            Alphabet                        Latin
            Navtex Frequency                Both


            Alarm Settings
            New Message Alert               On
            Antenna Alarm                   Timed
            SAR Alarm                       Timed


            Advanced Settings
            Display Mode *                  Master


            Print Settings
            Auto Print                      On
            Manual Print                    Off
            Output Format                   Printer


          * Consult manual before changing


            Antenna Type                    Dual
            Firmware Version                1.0
            Hardware Revision               1

            Print      Options    Navtex     Setup
            Setup       Page        View      Mode
```

Option	Setting	Notes
Font	**Small**	Display NAVTEX messages using small font
	Medium	Display NAVTEX messages using medium font
	Large	Display NAVTEX messages using large font
Error Threshold	XX %	Percentage character error rate above which messages are not displayed. Note that this setting does not stop messages with an error rate above the threshold from being stored in memory
Alphabet	**Latin**	Latin alphabet used for NAVTEX messages.
	Cyrillic	Latin alphabet with third shift Cyrillic used for NAVTEX messages
Age Limit	**None**, 1, 2, 3, 5 Days, 1, 2, 3, 4, 8, 12 Weeks	Maximum age of NAVTEX messages to be displayed. NAVTEX messages older than the age limit are not displayed
NAVTEX Frequency	None	No receiver selected. Tip: useful when using the display only as a NMEA instrument repeater
	490 kHz	490 kHz only operation
	518 kHz	518 kHz only operation
	Both	490 and 518 kHz operation – only available if antenna Type is 'Dual'
New Message Alert	Off	New message alert off
	On	Audible alarm for new messages
Antenna Alarm	Off	Antenna alarm off
	Timed	Antenna alarms repeated 5 times, unless cancelled
	Repeat	Antenna alarms repeated until cancelled
SAR Alarm	Off	SAR alarm off
	Timed	SAR alarms repeated 5 times, unless cancelled
	Repeat	SAR alarms repeated until cancelled
Display Mode	**Master**	Set to master if this is the main display. This display will control the receiver over the receiver data link. Only one display may be set to master.
	Slave	Set to slave if this is a repeater unit. Slave units do not control the receiver and can

Option	Setting	Notes
		only monitor the receiver data link. There can be multiple slave displays in a system
Auto Print	**Off** On	Auto printing off Auto printing on. New messages will be printed when received. The print filter settings can be used to filter which messages are printed based upon message type and station
Manual Print	**Off** On	Manual printing off. The NAVTEX Mode, Print View is hidden Manual printing on. The NAVTEX Mode, Print View is enabled
Output Format	Data **Printer**	Formatted for PC. Messages printed in raw format as received. Formatted for printing. Messages printed with print header.
Antenna Type	Switchable Dual	Reported by receiver, cannot be changed
Firmware Version	X.X	Reported by receiver, cannot be changed
Hardware Revision	X	Reported by receiver, cannot be changed

Defaults shown in BOLD

Setup Mode, NAVTEX View, Options Page, Print Setup – NAV6plus & NAV6repeater only

Press the PRINT SETUP softkey from within the [Setup Mode⇒NAVTEX View⇒Options Page] to display the print filter setup pages. Press the EXIT softkey to leave the print filter setup.

Note: The print filter setup pages are available only when Auto Print is enabled.

Use the print filter setup pages to select which message types from which stations you wish to have automatically printed when received. The print filtering is independent of the filtering used for the display. It does not affect the storage of messages for display on the NAVTEX screens.
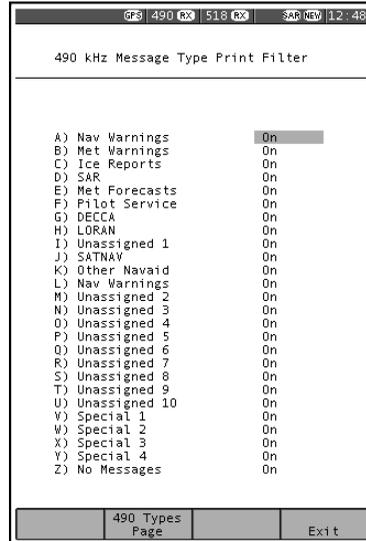
There is a stations and types filter page for each selected receive frequency. Use the PAGE softkey to select one of the four possible filter

pages: 518 Stations, 518 Types, 490 Stations, or 490 Types.

The picture shows the 490 Types filter page; the 518 Types filter page is similar.
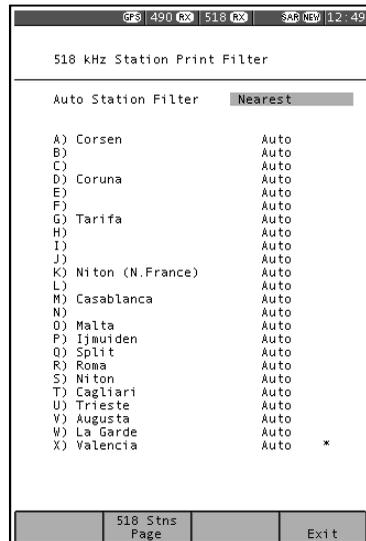
Each of the message types can be selected as either ON or OFF.

Use the UP and DOWN keys to select the message type setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

```
GPS  490 RX  518 RX        SAR NEW 12:48

       490 kHz Message Type Print Filter



A) Nav Warnings              On
B) Met Warnings              On
C) Ice Reports               On
D) SAR                       On
E) Met Forecasts             On
F) Pilot Service             On
G) DECCA                     On
H) LORAN                     On
I) Unassigned 1              On
J) SATNAV                    On
K) Other Navaid              On
L) Nav Warnings              On
M) Unassigned 2              On
N) Unassigned 3              On
O) Unassigned 4              On
P) Unassigned 5              On
Q) Unassigned 6              On
R) Unassigned 7              On
S) Unassigned 8              On
T) Unassigned 9              On
U) Unassigned 10             On
V) Special 1                 On
W) Special 2                 On
X) Special 3                 On
Y) Special 4                 On
Z) No Messages               On


         490 Types
           Page                    Exit
```

The picture shows the 518 Stations filter page; the 490 Stations filter page is similar. Use the UP and DOWN keys to select the station filter setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

The 'Auto Station Filter' setting can be either Nearest or In Range. The setting is active only when you have a GPS receiver connected to the NMEA input and it applies only to stations set to Auto. To print messages from the nearest station to your current position, set the auto station filter to Nearest. To print messages from all stations in range of your current

```
GPS  490 RX  518 RX        SAR NEW 12:49

       518 kHz Station Print Filter

Auto Station Filter       Nearest


A) Corsen                 Auto
B)                        Auto
C)                        Auto
D) Coruna                 Auto
E)                        Auto
F)                        Auto
G) Tarifa                 Auto
H)                        Auto
I)                        Auto
J)                        Auto
K) Niton (N.France)       Auto
L)                        Auto
M) Casablanca             Auto
N)                        Auto
O) Malta                  Auto
P) Ijmuiden               Auto
Q) Split                  Auto
R) Roma                   Auto
S) Niton                  Auto
T) Cagliari               Auto
U) Trieste                Auto
V) Augusta                Auto
W) La Garde               Auto
X) Valencia               Auto      *


         518 Stns
           Page                    Exit
```

position, set the auto station filter to In Range. An asterisk appears next to all stations for which messages will be printed.

Set the filter for each station to one of the following:

Setting	Notes
On	Messages from station always printed
Off	Messages from station never printed
Auto	Messages from station printed only when nearest or in range depending upon setting.

Setup Mode, NAVTEX View, 518 and 490 Names Pages

The station names setup pages determine the names of stations displayed on station filter pages and in NAVTEX message headers.

The picture shows the '518 Names' page; the '490 Names' page is similar.

```
                    GPS | 490 RX | 518 RX |    SAR NEW 13:21

      Station Setup Page 518 kHz


      Station Name Selection      GPS

      A)     II     Corsen
      B)
      C)
      D)     II     Coruna
      E)
      F)
      G)     II     Tarifa
      H)
      I)
      J)
      K)     I      Niton (N.France)
      L)
      M)     II     Casablanca
      N)
      O)     III    Malta
      P)     I      Ijmuiden
      Q)     III    Split
      R)     III    Roma
      S)     I      Niton
      T)     III    Cagliari
      U)     III    Trieste
      V)     III    Augusta
      W)     III    La Garde
      X)     III    Valencia


      Station   | 518 Names |  Navtex  |  Setup
      Database  |   Page    |   View   |   Mode
```

Use the UP and DOWN keys to select the setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

The Station Name Selection setting allows the user to select between 'GPS' and 'Manual' station selection. If 'GPS' is selected and there is valid position data on the NMEA input, the NAV6 will select the NAVTEX transmitting station name nearest to the boat's current location for each station letter.

If 'Manual' is selected, then the user can manually select the transmitting station name to be displayed for each station letter.

(Tip : You may be sailing in Nav Area II and therefore will pick station names from Nav Area II. However it is important to realise that the corresponding station letter in the adjacent Nav Areas may be closer. For example, the 'S' station that you are receiving is the 'S' station in an adjacent Nav Area).
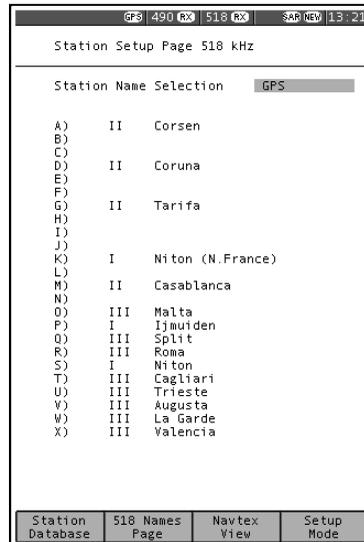
Setup Mode, NAVTEX View, 518 and 490 Names, Station Database Setup

Press the STATION DATABASE softkey from within the [Setup Mode⇒NAVTEX View⇒518 or 490 Names Page] to display the station database setup page for 518 or 490 kHz.

Press the EXIT softkey to leave the station database setup.

The station database page is divided into two halves. The top half shows a scrolling list of all stations in the database. The bottom half shows details of the current station selected in the station list.
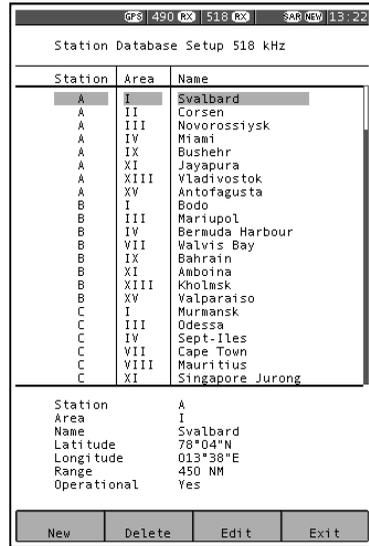
To edit an existing station entry:

Use the UP and DOWN keys to select the station you wish to edit. Use the LEFT and RIGHT keys to jump to the next or previous station letter in the database.

Press the EDIT softkey to edit the station details at the bottom of the display.

The database entry for a typical station (i.e. 'Niton') is shown right.

Data items are selected using UP and DOWN keys. Data items are changed using LEFT and RIGHT keys.
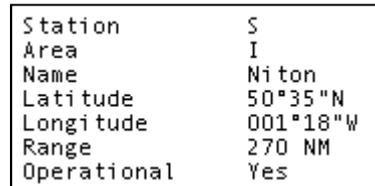
When editing the station name, use the LEFT and RIGHT keys to change the letters. Use the NEXT softkey to accept the current letter and move the cursor to the right. Use the BACKSPACE softkey to delete the current letter and move the cursor to the left.
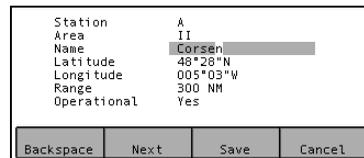
When editing the latitude and longitude fields, use the NEXT softkey to select the Degrees, Minutes or Cardinal part of the position. Use the LEFT and RIGHT keys to change the selected item.

When you have finished entering the data, press the SAVE softkey to save and update the database or CANCEL softkey to abort the change.

Field	Notes
Station	The station letter: A to X
Area	The Nav-Area: I to XVI
Name	The station name as displayed on NAVTEX messages. Up to 17 characters.
Latitude Longitude	The transmitter position. Used to determine the nearest and in-range stations
Range	The stated coverage range of the station in NM. Used to determine in range stations.
Operational	Set to YES when the station becomes operational. Set to NO when the station is declared but not yet operational. When set to NO, the station will be excluded when determining the nearest and in range stations.

To enter a new station:

Press the NEW softkey to create a new database entry. The rules for entering a new station are identical to those described above for editing an existing station. When you have finished entering the data, press the SAVE or CANCEL softkey as required.

To delete a station :

Use the UP, DOWN, LEFT and RIGHT keys to select the station in the station list that you wish to delete. Press the DELETE softkey.

Confirm or cancel the deletion by pressing the CONFIRM or CANCEL softkeys.

Setup Mode, NAVTEX View, Monitor Page

The monitor page shows a split screen view of live 490 and 518 kHz transmissions as they are received.

None of the filtering selected in the various setup pages is applied.

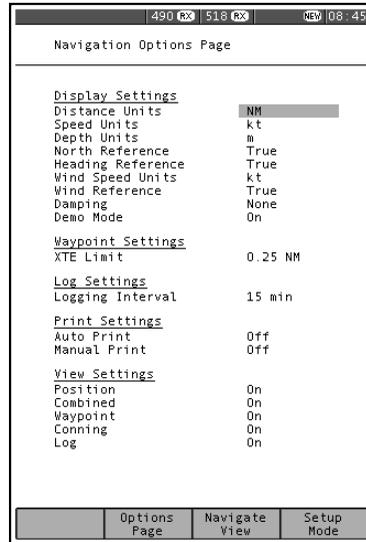The monitor page displays ALL incoming data regardless of error rate.

The monitor page also shows the low level phasing characters contained within transmissions (shown as ∅ characters) and transmission errors (shown as ✳ characters).
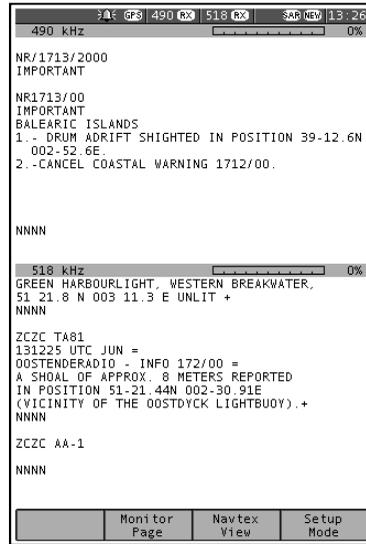
Setup Mode, Navigate View, Options Page

The [Setup mode⇒Navigate View⇒ Options Page] shows general settings for the navigation screens such as Display, Waypoint, Log, Print and View settings.

Use the UP and DOWN keys to select the setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

Option	*Setting*	*Notes*
Distance Units	**NM** km mi	Nautical Miles kilometres Miles
Speed Units	**Kt** Km/h m/s mph	Knots Kilometres per hour Metres per second Miles per hour
Depth Units	**ft** m	Feet metres
North Reference	**True** Magnetic	COG and waypoint bearings displayed relative to true North COG and waypoint bearings displayed relative to magnetic North
Heading Reference	True **Magnetic**	Heading and set displayed relative to true North Heading and set displayed relative to magnetic North
Wind Speed Units	**Kt** Km/h m/s mph	Knots Kilometres per hour Metres per second Miles per hour
Wind Reference	**True** Relative	True wind speed and direction displayed Relative wind speed and direction displayed
Damping	**None**, Low, Medium, High	Sets the damping level applied to COG, SOG, Heading, Water Speed, Set and Drift readings.
Demo Mode	**Off** On	Real navigation data from the NMEA input is displayed. Simulated navigation data is displayed. Note: the GPS icon does not appear on the status bar.
XTE Limit	0.02 to 1 NM	Set the cross track error limit used on the Waypoint View. Increments in 0.01 NM units.
Log Interval	OFF **15**, 20, 30 mins 1, 2, 3, 4, 6, 12 hours	Logging interval as selected.
Auto Print	**Off** On	Auto printing off Auto printing on. Log data will be

Option	Setting	Notes
		printed at the log interval.
Manual Print	**Off**	Manual printing off. The Print softkey on the Navigate Mode, Log View is hidden
	On	Manual printing on. The Print softkey on the Navigate Mode, Log View is enabled
Position	Off	Position view disabled
	On	Position view enabled
Combined	Off	Combined view disabled
	On	Combined view enabled
Waypoint	Off	Waypoint view disabled
	On	Waypoint view enabled
Conning	Off	Conning view disabled
	On	Conning view enabled
Log	Off	Log view disabled
	On	Log view enabled

Defaults shown in BOLD

Setup Mode, Navigate View, User View Page

The [Setup Mode⇒Navigate View ⇒User View Page] provides settings for the user view pages.

Set the format for each user view page to either Off, 2, 3 or 4 panels.

Set the contents of each panel. Panel 1 is displayed at the top and panel 4 is at the bottom of the page.

Use the UP and DOWN keys to select the setting that you wish to edit. Use the LEFT and RIGHT keys to change the setting.

Option	Setting	Notes
Format	**Off**	Disable the user view page
	2 Panels	Display the user view page with two large panels.
	3 Panels	Display the user view page with one large panel at the top and two small panels at the bottom.
	4 Panels	Display the user view page with four small panels.
Panel n	See right	Choose the data to be displayed in large panels from the following: Time, Date, Position, COG, SOG, Heading, Water Speed, Wind Direction, Wind Speed, Set, Drift, Distance, Trip, Depth, Turn Rate, Waypoint, Wpt Position, Range, Bearing, TTG, Closing Spd, XTE.
		Choose the data to be displayed in small panels from the following: Time/Date, Latitude, Longitude, Ground, Water, Wind, Current, Odometer, Depth, Turn Rate, Waypoint, Wpt Latitude, Wpt Longitude, Range/Bearing, TTG, Closing Spd, XTE.

Defaults shown in BOLD

Setup Mode, Navigate View, Monitor Page

The monitor page shows a view of live NMEA 0183 data received at the NMEA input.

The monitor page displays ALL incoming sentences and can be paused by pressing the PAUSE softkey.

```
                    GPS      518 ERR   SAR NEW 15:54
$XXVHW,11.5,T,12.1,M,8.6,N,10.3,K
$XXVLW,55011.5,N,1001.8,N
$XXMWV,315.676,R,10.1,M,A
$XXDBT,20.5,f,608.9,M,4.2,F
$XXROT,-0.8,A
$XXRMB,A,0.17,L,Breakwater,Eddystone,5423.457
,N,00557.286,W,12.4,124.7,3.9,F
$GPRMC,155416,A,4009.741,N,00256.086,E,10.0,3
5.4,260701,02.2,W*57
$GPSNU,A
$GPVTG,105.4,T,107.6,M,300.0,280.0,K
$GPGGA,155416,4009.741,N,00256.086,W,1,5,01.1
,002,M,051,M,000,0000
$GPGLL,4009.741,N,00256.086,W
$XXVHW,11.5,T,12.1,M,8.6,N,10.3,K
$XXVLW,55011.5,N,1001.8,N
$XXMWV,315.676,R,10.1,M,A
$XXDBT,20.5,f,608.9,M,4.2,F
$XXROT,-0.8,A
$XXRMB,A,0.17,L,Breakwater,Eddystone,5423.457
,N,00557.286,W,12.4,124.7,3.9,F
$GPRMC,155417,A,4009.744,N,00256.087,E,10.0,3
5.4,260701,02.2,W*52
$GPSNU,A
$GPVTG,105.4,T,107.6,M,300.0,280.0,K
$GPGGA,155417,4009.744,N,00256.087,W,1,5,01.1
,002,M,051,M,000,0000
$GPGLL,4009.744,N,00256.087,W
$XXVHW,11.5,T,12.1,M,8.6,N,10.3,K
$XXVLW,55011.5,N,1001.8,N
$XXMWV,315.676,R,10.1,M,A
$XXDBT,20.5,f,608.9,M,4.2,F
$XXROT,-0.8,A
$XXRMB,A,0.17,L,Breakwater,Eddystone,5423.457
,N,00557.286,W,12.4,124.7,3.9,F
$GPRMC,1
   Off      Monitor    Navigate    Setup
  Pause      Page        View       Mode
```

Alarm Operation

The NAV6 display contains a buzzer that can generate audible alarms for the following conditions:

Option	*Notes*
New Message Alert	Short beep beep. Not repeated. Indicates reception of a new NAVTEX message.
SAR Alarm	Morse code: Dot dot dot, dash dash dash, dot dot dot.. Repeated every ten seconds. Indicates reception of a message type D, Search And Rescue NAVTEX message.
Antenna Alarm	Short dah dee, dah dee. Repeated every eight seconds. Indicates that there is a fault in the NAVTEX antenna or the cabling; see the Fault Finding section for more details.

The alarms can be enabled or disabled via the [SETUP MODE, GENERAL VIEW, OPTIONS PAGE]. When enabled, the SAR Alarm and Antenna Alarm can be set to repeat 5 times or to repeat continuously.

(Tip: When an alarm is active, pressing any of the softkeys will cancel the alarm. The normal softkey action will not occur).

(Tip: When an alarm is active, an alarm bell icon will flash on the status bar).

The red LED found above the softkeys, can be setup (on the Setup Mode⇒General View⇒Options Page) to flash when there are unread new messages or SAR messages. This can be useful in a noisy environment where audible alarms cannot be easily heard.

Printing NAVTEX And Navigation Log

The NAV6*plus* can be configured to function like a GMDSS paper NAVTEX printer when connected to a suitable serial printer. A NAV6 serial printer can be purchased from ICS (ICS order number 918.01). The NAVTEX auto print facility acts like a GMDSS paper NAVTEX printer:

• Poor quality messages (error rates over 33%) are not printed.

• All new messages are printed when first received.

• Only messages not excluded by the print filtering are printed.

• Message repeats are printed each time they are received until they have been received with good quality (error rate of less than 4%).

• Once a good quality message has been received, repeats are not printed during the next 72 hours. After 72 hours the message is treated as a new message and printed again.

The Navigation Log auto-print facility prints navigation log entries as they are added to the Navigate Mode, Log View. Each log printout contains time, date, position, COG, SOG, heading, water speed, wind direction and speed, depth and distance. Only fields containing valid data are printed.

Setting up a printer

Follow these steps to setup NAVTEX printing.

• Connect the serial printer as described in the "Installation Of Display Unit" section.

• Test the printer installation by enabling manual print (see Setup Mode⇒NAVTEX View⇒Options Page) and printing a NAVTEX message by pressing the `PRINT` softkey on the NAVTEX Mode⇒Print View.

• Enable NAVTEX auto print and set the output format to "Printer"; see Setup Mode⇒NAVTEX View⇒Options Page.

• Enable NAVTEX manual print if you want to be able to the current print NAVTEX message by pressing the `PRINT` softkey on the NAVTEX Mode⇒Print View.

• Setup the NAVTEX print filtering to select which message types from which stations should be printed; see Setup Mode⇒NAVTEX

View⇒Options Page⇒Print Setup.

- Enable Navigate auto print and set the logging interval; see Setup Mode⇒Navigate View⇒Options Page.

- Enable Navigate manual print if you want to be able to print the current page of log entries from the navigation log using the PRINT softkey on the Navigate Mode⇒Log View.

Auto printing of NAVTEX messages should now occur when new NAVTEX message transmissions are received from the selected stations. Auto printing of Navigation logs should now at Navigate logging intervals.

Output To A PC or Plotter

The NAV6*plus* can be setup to output NAVTEX messages to a PC or compatible chart plotter. Setup the NAV6 as per "Setting up a printer" but with the following exceptions:

- Instead of connecting a serial printer , connect the PC or chart plotter.

- To test the PC connection, run a terminal application with the serial port set to 4800 baud, 8 data bits, 1 stop bit, no parity and print a NAVTEX message at the NAV6.

- Set the NAVTEX output format to "Data"; see Setup Mode⇒NAVTEX View⇒Options Page. This formats the NAVTEX messages for processing by chart plotter applications.

Installation Of Display Unit

- Choose a location that is flat, free from excessive heat and vibration, and which is convenient for routing the Display Cable. The display is best viewed when the screen is mounted square on.
- The Display Unit has been designed for above or below decks mounting. It can be panel mounted onto a bulkhead, mounted via a U-bracket (ICS Part Number 6020.00)
- **Avoid direct sunlight**. If this cannot be avoided then protect the unit when not in use.
- The Display Unit should be located at least 0.5metres away from any transmitting equipment including mobile phones, GPS antennas, VHF radios, Radar etc.

Surface Mounting the Display Unit

You will need a 104mm (4") hole saw, a 3mm drill for fixing screws and a Phillips head screwdriver.

Follow the instructions:

- Choose a flat surface on which to mount the Display Unit.
- Use the drilling template supplied to mark out the centres for the 104mm hole and the two 3mm holes.
- Drill the holes.
- Remove the two screw covers from the Display Unit.
- Apply a releasing agent (grease or petroleum jelly) to the rubber seal around the back of the NAV6. This will prevent the seal from sticking to the bulkhead surface over time.
- Position the NAV6 over the holes and insert the screws.
- Do not over-tighten the screws.
- Clip the screw covers in place.
- Route the display cable to the location where the Receiver Unit will be installed.

U-bracket Mounting

Please follow the fitting instructions contained within the optional U-bracket mounting kit.

Installation Of Receiver Unit

- The Receiver Unit is not waterproof and care should be taken to install it where there is no possibility of water ingress.
- The Receiver Unit should be located at least 0.5metres away from any other electronic equipment including GPS antennas, Radar etc.
- Ideally the receiver unit should be mounted at least 0.5metres from the display unit.

Mounting the Receiver Unit

- First, remove the lid from the receiver enclosure.
- Place the receiver in the desired location at least 0.5metre away from any other electronic equipment. The receiver should be mounted on a vertical surface with the connector at the base of the unit.
- Mark out the two mounting holes.
- Move the receiver and drill the two mounting holes to suit the No.8 screws provided (the holes size will depend upon what material you are drilling into).

Connecting the Display Unit to the Receiver Unit

The display cable consists of six twisted pairs:

Twisted Pair	*Core Colour*	*Signal description*
RED twisted with BLACK	RED BLACK	12V input GND input
BLUE twisted with BLACK	BLUE BLACK	NMEA A input NMEA B input
BROWN twisted with BLACK	BROWN BLACK	RS232 TX output RS232 RX input
WHITE twisted with BLACK	WHITE BLACK	receiver DATA A receiver DATA B
YELLOW twisted with BLACK	YELLOW BLACK	receiver POWER o/p receiver GND o/p
GREEN twisted with BLACK	GREEN BLACK	programming signal not used
Screen	Silver	Nominally 0V

There are four connections required between the display and receiver units. These consist of two of the twisted pairs in the display cable - one for the receiver power and one for serial data communications.

These pairs should be connected to the receiver unit as shown below:

Twisted Pair	Core Colour	Signal description	Connect to Receiver Pin
YELLOW twisted with	YELLOW	POWER from display	6
BLACK	BLACK	GND from display	5
WHITE twisted with	WHITE	DATA A from display	8
BLACK	BLACK	DATA B from display	7

If the display and receiver are within 1 metre of each other then the connections can be made directly into the receiver unit connector.

If the display and receiver are more than 1metre apart then the terminal strip should be used to connect the supplied extension cable between the display cable and the receiver unit.

The following diagram shows the wiring for a typical NAV6 system:

WHITE		WHITE
BLACK		BLACK
YELLOW		YELLOW
BLACK		BLACK
SCREEN DRAIN		SCREEN DRAIN
		GREEN BLACK *
+12v		RED
GND		BLACK
A		BLUE
B		BLACK
TX		BROWN
RX		BLACK

BATTERY

GPS SENSOR

NAV-6 PRINTER

NAV6 Printer

NAV-6 DISPLAY

* Not connected
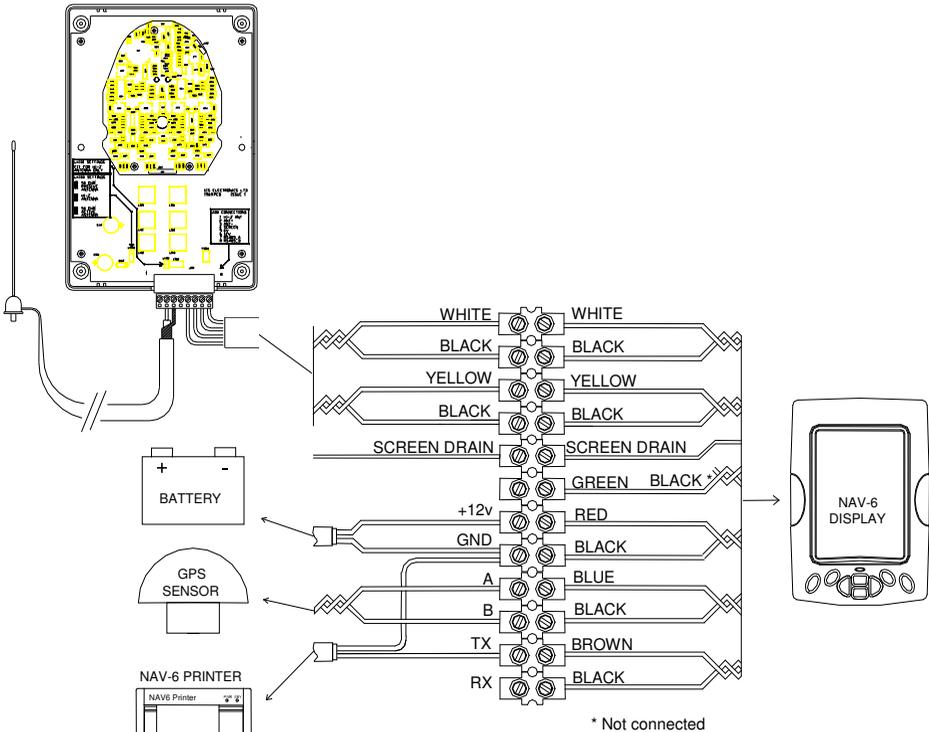
Note that this drawing shows an extension cable being used to connect the receiver unit to the display via the terminal strip. This may not be necessary if the distance between the receiver unit and the display unit is less than 1metre.

Connecting an antenna to the Receiver Unit

The NAV6 Series (except NAV6*repeater*) complete systems are supplied with a NAVTEX receiver unit and passive antenna as standard, although ICS offer the following antenna options :

Active 50 ohm (Whip)   *1metre tall* *ICS order code 905.04*

Active 50 ohm (White Tube) *1metre tall* *ICS order code 905.05*

Alternatively you may wish to use a backstay as an antenna or you may wish to run a wire around your headlining in the cabin. All of these options are catered for in the NAV6, the suitability of each option will greatly depend upon your own circumstances. For instance, running a wire around the cabin in a steel boat may not be very successful.

Passive 50 ohm Antenna (supplied)
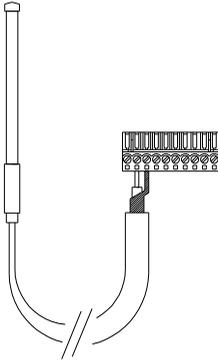
ICS supply a passive 50 ohm antenna that has been specified for NAVTEX use. An equivalent antenna specified for operation at 490kHz *and* 518kHz would also be acceptable.

Receiver PCB link settings: LK100 – not fitted

LK101 – should be fitted

The antenna should be connected to ANT+ (antenna coax centre) and ANT- (antenna coax screen) on the receiver unit connector.

CONNECTOR PIN	CONNECTION
1	-
2	Antenna coax centre connection
3	Antenna coax screen
4	Connection to Display SCREEN
5	Connection to Display 0V (BLACK)
6	Connection to Display 12V (YELLOW)
7	Connection to Display RS485_A (BLACK)
8	Connection to Display RS485_B (WHITE)

Optional - Active 50 ohm Antenna with External PSU Interface Box

ICS recommend using an active 50 ohm antenna that has been specified for NAVTEX use.

A suitable antenna is the ICS 905.04 or 905.05 although an equivalent antenna specified for operation at 490kHz *and* 518kHz would be acceptable.

If the active antenna is supplied with an external PSU interface box then this should be used.
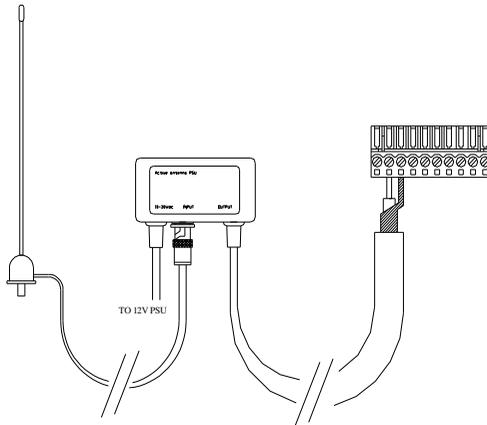
Receiver PCB link settings: LK100 – not fitted
LK101 – not fitted

The antenna should be connected to ANT+ (antenna coax centre) and ANT- (antenna coax screen) on the receiver unit connector.

CONNECTOR PIN	CONNECTION
1	-
2	Antenna coax centre connection
3	Antenna coax screen
4	Connection to Display SCREEN
5	Connection to Display 0V (BLACK)
6	Connection to Display 12V (YELLOW)
7	Connection to Display RS485_A (BLACK)
8	Connection to Display RS485_B (WHITE)

Optional - Active 50 ohm Antenna without External PSU Interface Box

ICS recommend using an active 50 ohm antenna that has been specified for NAVTEX use.

A suitable antenna is the ICS 905.04 or 905.05 although an equivalent antenna specified for operation at 490kHz *and* 518kHz would be acceptable.
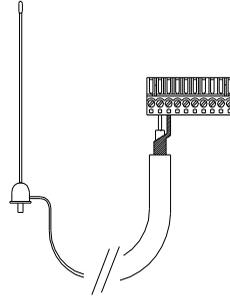
If the active antenna is not supplied with an external PSU interface box then the antenna should be installed as follows.

Receiver PCB link settings:

LK100 should be fitted in the '50ohm active antenna' position

LK101 should be fitted

The antenna should be connected to ANT+ (antenna coax centre) and ANT- (antenna coax screen) on the receiver unit connector.

CONNECTOR PIN	CONNECTION
1	-
2	Antenna coax centre connection
3	Antenna coax screen
4	Connection to Display SCREEN
5	Connection to Display 0V (BLACK)
6	Connection to Display 12V (YELLOW)
7	Connection to Display RS485_A (BLACK)
8	Connection to Display RS485_B (WHITE)

Alternative - Using a Back Stay as an Antenna

A back stay may be used as an antenna if a suitable 50 ohm matching balun is fitted. ICS Technical Support may be able to offer advice on this point.

Receiver PCB link settings: LK100 – not fitted

LK101 – should be fitted

The balun 50 ohm output should be connected to ANT+ (balun coax centre) and ANT- (balun coax screen).

On no account should the back stay be connected into the Hi-Z input on the NAV6*plus* connector.

CONNECTOR PIN	*CONNECTION*
1	-
2	Antenna coax centre connection
3	Antenna coax screen
4	Connection to Display SCREEN
5	Connection to Display 0V (BLACK)
6	Connection to Display 12V (YELLOW)
7	Connection to Display RS485_A (BLACK)
8	Connection to Display RS485_B (WHITE)

Alternative - Using a Wire in the Cabin as an Antenna

A long wire routed safely out of harm's way (for instance under the headlining in your cabin) may be used as an antenna in <u>some</u> circumstances. ICS Technical Support may be able to offer advice on this point. (Note that this method of connection is not highly recommended, an antenna mounted above decks is the preferred approach).

Receiver PCB link settings: LK100 – not fitted

LK101 – should be fitted

The wire should be connected to the HI-Z input on the receiver unit connector.

CONNECTOR PIN	CONNECTION
1	-
2	Antenna coax centre connection
3	Antenna coax screen
4	Connection to Display SCREEN
5	Connection to Display 0V (BLACK)
6	Connection to Display 12V (YELLOW)
7	Connection to Display RS485_A (BLACK)
8	Connection to Display RS485_B (WHITE)

Grounding

For *some* installations where local interference is thought to be limiting receiver performance, it may be necessary to ground the screen of the antenna coaxial cable.

This technique is only applicable where a 50 ohm antenna is employed (connected to ANT+ & ANT-).

Connect the outer screen of the antenna coaxial cable (ANT- on the receiver unit connector) to a good electrical ground. This can either be a specially installed ground plate, or the keel bolts on a non-encapsulated keel. If electrical isolation is to be maintained then this should be done via a 0.1uF 400V (min) capacitor.

If in doubt consult your dealer.

Connecting Power

The NAV6 should be powered from a nominal 12Vdc switched supply, capable of providing a continuous 350mA.

• To allow the unit to be isolated for service, a 1.5A circuit breaker or a 1.5A fuse and switch should switch the power supply.

• Use the RED and BLACK twisted pair for connection to the boat's power supply.

• Connect the RED wire to boat's positive (12V) supply.

• Connect the BLACK wire to negative (0V) supply.

• Note that vessels that require isolation may need to install a DC to DC converter(ICS part number 500.09) – if in doubt ask your dealer.

• 24V vessels should install a 24V / 12V DC to DC converter (ICS part number 500.10). – if in doubt ask your dealer.

Connecting an NMEA Source

• Use the BLUE and BLACK twisted pair for connection to the NMEA data source.

• Connect the BLUE wire to the NMEA A signal.

• Connect the BLACK wire to the NMEA B signal.

(Trouble shooting: Note that NMEA signal terminology can vary between manufacturers – try swapping the BLUE and BLACK wires if the NMEA input does not work initially – no damage will be done)

The NAV6 is compatible with most sources of NMEA 0183 data such as a GPS receiver or adapter boxes supplied for use with networked instrument systems. Please note that you may need to program the source of NMEA data to send the correct sentences in the correct format. You may also need to purchase an NMEA adapter box for your instrument system. Should you be uncertain of your abilities in this area, you are strongly advised to seek the services of a qualified marine electronics installer.

Note: We do not guarantee compatibility with all GPS receivers or all instrument systems. However, this can normally be achieved for most systems by a skilled installer. For notes on achieving compatibility with various systems, see the NAV6 FAQ section on our web site: www.icselectronics.co.uk

The NAV6*plus* uses NMEA data for the following:

- To synchronise its internal clock with UTC time.
- To display a wide variety of NMEA data in a selection of formats (see Appendix IV for the NMEA sentences supported).
- To automatically filter the message display to show either messages from only the nearest NAVTEX transmitting station, or all stations that are currently within range.

Connecting the Programming Signal

The programming signal (GREEN and BLACK twisted pair) is not required for normal operation and should be left unconnected.

Connecting a PC, Printer or Plotter

The following equipment with RS232 serial data connection may be connected to the NAV6:

- A PC (via ICS Cable option 6020.09).
- Or a printer or chart plotter (via ICS Cable option 6020.10).

The PC and printer serial port should be set to 4800 baud, 8 data bits, no parity, 1 stop bit, and no flow control. A terminal emulator program, such as HyperTerminal, can be used to monitor the data output.

If you wish to make up your own PC interface cable please follow the diagram below
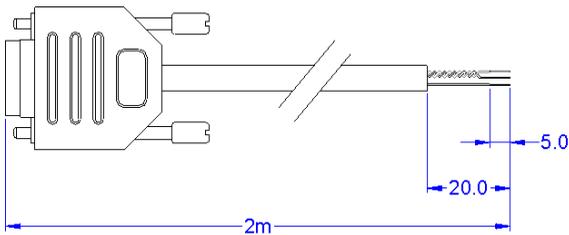
ALL DIMENSIONS IN mm UNLESS INDICATED OTHERWISE

9 way "D" type female pin number	Signal	PC Interface Cable Core Colour*	NAV6 Display Cable Colour (connection via terminal block)
1	No connection	-	-
2	PC Rx	Brown	Brown
3	PC Tx	White (paired with brown)	Black (Paired with brown)
4	No connection	-	-
5	GND	Black	Black (Paired with red)
6	No connection	-	-
7	No connection	-	-
8	No connection	-	-
9	No connection	-	-

Note that the PC Interface Cable core colours shown above may differ if you make your own cable.

Connecting Multiple Display Units

The NAV6 system may be configured to allow connection of multiple Display Units.   Please contact ICS Electronics for further information.

Replacing an existing NAV6 installation

Replacing the antenna system

If you are replacing an old NAV6 antenna installation that uses the NAV6 antenna sensor unit of the type shown right, you can use the old sensor cable to aid the installation of the new system :

- First, mount the new receiver unit as described in the section *"Installation Of Receiver Unit".*

- After ensuring the power to the NAV6 system is turned off, cut the old sensor cable at the location of the new receiver unit. The cut end of the cable still connected to the display unit can then be prepared and connected to the new receiver unit.

- If your old sensor unit has a *white* sleeved cable, refer to the connection details as described in the section *"Connecting The Display Unit To The Receiver Unit"*.

- If your existing sensor unit has a *black* sleeved cable, this uses a 'core pair number to colour' scheme with a yellow sleeve to indicate the power pair. The pair number is printed in black, repeating every 7cm along the white cores.   Refer to the table overleaf for wiring details:

BLACK sensor cable			
Twisted Pair	**Core marking**	**Signal description**	**Display connection**
WHITE of pair ONE twisted with BLACK	'ONE' WHITE with YELLOW sleeve	POWER from display	YELLOW of YELLOW pair
	BLACK	POWER GND from display	BLACK of YELLOW pair
WHITE of pair TWO twisted with BLACK	'TWO' WHITE	DATA A from display	WHITE of WHITE pair
	BLACK	DATA B from display	BLACK of WHITE pair
Screen	Silver	Screen (nominally 0V)	Silver

- The old sensor can then be cut off and the rest of the old cable used as a pull-through for the coax cable of the new antenna before being disposed of.

Replacing the display unit

If you are replacing the display unit of an existing NAV6 antenna installation that uses the NAV6 antenna sensor unit of the type shown above right:

- First, check the condition of the sensor unit to ensure there are no signs of water ingress or other damage.   If there are, consult your dealer before installing the new display unit.

- Remove the old display unit and fit the new one ensuring the cable connections match the previous installation. If your old sensor unit has a *white* sleeved cable, refer to the connection details as described in the section *"Connecting The Display Unit To The Receiver Unit"*.

  If your existing sensor unit has a *black* sleeved cable, refer to the connections detailed in the table at the top of this page.

Testing The NAV6 After Installation

- Carefully check all connections before applying power.

- Switch on the power supply by closing the 1.5A circuit breaker or power panel switch.

- Check that the red LED illuminates for approximately 8 seconds and then goes out and the start-up page appears on the NAV6 display. The start-up progress bar at the bottom of the page will disappear when the system is ready to use. Press any key to show the next screen.

- Check that the receiver is working. Check that both the '490' and the '518' icon appear on the status line at the top of the NAVTEX display.
  If the correct icons do not appear, then switch off the power supply and check the receiver data and power connections; check that you have not swapped the receiver DATA A and DATA B wires.

- Check that the NMEA input is working. When the display is receiving GPS data the 'GPS' icon will appear on the status line at the top of the NAVTEX display. If the icon does not appear, ensure that the NMEA source is operating and check the NMEA data connections; you may have to swap the NMEA DATA A and DATA B wires.

NAV6 Series Start-up Screen

Maintenance and TroubleShooting

Cleaning

The NAV6 NAVTEX System may be cleaned when necessary by wiping with a cloth dampened with fresh water. Do not use solvents.

Fault Finding

Fault	Possible cause
LCD blank, RED LED On	Green wire connected to 12V *Disconnect green wire – it should not be connected other than for programming*
LCD blank, RED LED off	No power *Check that 12V is connected to RED wire and 0V to its BLACK pair*
RED LED flashing with a period of 2 seconds. Display not operating.	Low voltage *There is insufficient voltage supplying the display*
RED LED flashing with a period of 15 seconds. Display not operating.	Sleep Mode *Press any key to activate the display*
No NAVTEX messages received	*Check for SIG or ERR on status line; see below. Check siting of antenna*
SIG on status line (signal fault)	• If this symbol appears for short periods – don't worry – it's caused by one or more NAVTEX stations transmitting carrier but no modulation, or by local interference. • If this symbol persists then you may have a receiver error or interference from nearby equipment. *Check for possible causes. Identify the local source of interference by turning off items of equipment (e.g. battery charger) until the SIG indicator is cleared*
ERR on status line (communications error)	• No power to Receiver • No communications to Receiver *Check connections to receiver. Check for 12V between YELLOW wire and its BLACK pair* • Display Mode set to "Slave" Always set the 'Display Mode' to "Master" in single display systems. • Two or more master displays connected to a receiver *Set the 'Display Mode' on one display to*

	master and set all other displays to slave
No GPS indicator on status line	No NMEA data on NMEA input. *Check the NMEA data connections. Check that the GPS unit is switched on. Check that the GPS unit is set to output compatible NMEA sentences (see* Appendix III: NMEA Sentences Supported).

Antenna Fault Finding

ANTENNA - general

Check the cable between the NAVTEX antenna and the NAV6, ensure that it is not damaged. NAVTEX antenna must be mounted in an elevated position clear of obstructions

ACTIVE ANTENNA

Check that power is correctly applied to the centre of the coax cable. Power is supplied either from the NAV6 or from an external interface box (eg. The CA Active Whip).

Software Upgrade

The NAV6 has FLASH memory based software. This allows the NAV6 to be upgraded when new software releases are developed. Please check our website www.icselectronics.co.uk for information on new releases.

Input Fuse

The NAV6 has a built-in resettable fuse on its 12V input. This fuse will trip if the unit due to a fault condition draws excessive currents. Power must be disconnected from the unit for 10 seconds in order for the fuse to reset.

Receiver Output Fuse

The NAV6 has a built-in resettable fuse on its receiver output power connector. This fuse will trip if a fault condition on the receiver unit draws excessive currents. The receiver unit power must be disconnected for 10 seconds in order for the fuse to reset.

Warranty

ICS Electronics Ltd warrants to the original end-user that this product will be free from defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with the same or a similar model, which may be a refurbished model) at ICS Electronics' option, without charge for either parts or labour. For warranty repair, the unit must be returned, carriage pre-paid, to the ICS Electronics Ltd. dealer from whom it was first purchased. This limited warranty shall not apply if the product is modified, tampered with, misused, subjected to abnormal working conditions (including, but not limited to lightning and immersion in water) and use with power supplies and other options not specifically recommended by ICS Electronics Ltd.

Please contact us for further details of our warranty repair procedure.

Glossary

COG	Course Over Ground
GMDSS	Global Maritime Distress and Safety System
IMO	International Maritime Organisation
NMEA	National Marine Electronics Association
RS485	Serial data communication interface
RS232	Serial data communication interface
SAR	Search and Rescue
SOG	Speed Over Ground
SOLAS	Safety of Life at Sea
TTG	Time To Go
XTE	Cross Track Error

OPTIONAL EXTRAS

The following NAV6 ancillary parts can be purchased:

Description	Part Number
NAV6 Antenna Mount – Pushpit Rail (Nylon)	903.03
NAV6 Antenna (Wideband Active Whip – No PSU)	905.04
NAV6 Antenna (NAVTEX Active – No PSU)	905.05
NAV6 5 Outlet PSU for Active Antennas	905.06
NAV6 Single Outlet PSU for Active Antennas	905.07
NAV6 Thermal Printer	918.01
NAV6 'U' Mount Bracket	6020.00
NAV6 Extension Antenna Cable (Coax - 10m)	6020.27
NAV6 Extension Antenna Cable (Coax - 30m)	6020.28
NAV6 PC Lead (2m)	6020.09
NAV6 Printer Lead (2m)	6020.10

For further details, or to order, please contact your dealer.

Specification

Approval Standards

Meets the EMC requirements of IEC 60945

Power

Voltage range	10.8V to 15.6V
Consumption (Typical)	
Backlight full	310 mA (3.8 W at 12V)
Backlight off	165 mA (2.0 W at 12V)
Sleep mode	115 mA (1.4 W at 12V)

Display Unit

Operating Temperature Range	0 to +50degC
Storage Temperature Range	-20 to +55degC
Humidity	0 to 95%
Mounting	Above or below decks
Weight (without cable)	445 g (approx.)
Power	10.8V to 15.6V
Splash-proof	

Message Storage

Sufficient non-volatile storage for 3 days transmissions under normal operating conditions. Normally much longer than 3 days worth of storage will be achieved

NMEA Input Interface Specification (NAV6*plus* & NAV6*repeater* only)

The unit meets the electrical requirements of NMEA 0183

Display Unit Features

1/2vga (480x320 pixels) monochrome LCD with 4 grey levels

32 step CCFL backlighting of LCD

128 step contrast adjustment of LCD

LED backlighting for keyboard

RS485 serial I/O port to receiver

NMEA input

RS232 printer output

Piezo buzzer for audible alarms

Internal temperature sensor

Non volatile memory

Receiver Module
Power Requirements

70mA at 12V (supplied by NAV6 display).

Antenna input

1. 50ohm, range 490 - 518 kHz
12Vdc to feed to power an active antenna is selectable
at installation.
2. Hi impedance wide range
Supports connection of longer than 2m of insulated
wire or unmatched whip antenna.

Weight

300g

Physical Dimensions

Height 180mm, Width 122mm, Depth 36mm

Mounting

Bulkhead mounting via two self-tapping screws (supplied)

Connection

All connections made by 2 part screw terminal

Environmental

Not for outside use
Unit must be mounted below decks in a suitable dry location

Receive Frequency

490kHz and 518kHz

Antenna- Passive

Length

0.5m (1.5ft)

Weight

1kg

Bottom Diameter

28mm

Fittings

1"-14 threads female

Structure

Epoxy Fibreglass

Ferrule

Chrome Plated Brass

Base Torsion Force

5 N at max Wind Speed

Frequency

490-518kHz

Impedance

50 ohm

Gain

-3db half wave dipole

Polarization

Vertical

Lighting Protection

DC Ground

Appendix I: Navtex Station Database

For information purposes only. ICS do not accept any liability for this information, always check with the local NAVTEX provider for the latest NAVTEX information.

518kHz NAVTEX Stations

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
1	Svalbard (Norway)	Svalbard	Yes	78° 3' N	13° 37' E	A	450
1	Norway	Bodo	Yes	67° 16' N	14° 23' E	B	450
1	Russia (Barents Sea Coast)	Murmansk	Yes	68° 46' N	32° 58' E	C	300
1	Foroyar (Denmark)	Torshavn	Yes	62° 1' N	6° 48' W	D	250
1	United Kingdom	Niton	Yes	50° 35' N	1° 18' W	E	270
1	Russia (White Sea Coast)	Arkangel'sk (English and Russian)	Yes	64° 51' N	40° 17' E	F	300
1	United Kingdom	Cullercoats	Yes	55° 5' N	1° 28' W	G	270
1	Sweden	Bjuroklubb	Yes	64° 28' N	21° 36' E	H	300
1	Sweden	Grimeton	Yes	57° 6' N	12° 23' E	I	300
1	Sweden	Gislovshammer	Yes	55° 29' N	14° 19' E	J	300
1	United Kingdom	Niton (French)	Yes	50° 35' N	1° 18' W	K	270
1	Norway	Tjome(Jeloya)	Yes	59° 26' N	10° 34' E	L	450
1	Norway	Rogaland	Yes	58° 39' N	5° 36' E	M	450
1	Norway	Orlandet	Yes	63° 41' N	9° 35' E	N	450
1	United Kingdom	Portpatrick	Yes	54° 51' N	5° 8' W	O	270
1	Netherlands	Netherlands Coastguard Radio	Yes	52° 6' N	4° 15' E	P	110
1	Republic of Ireland	Malin Head	Yes	55° 22' N	7° 21' W	Q	400
1	Iceland	Saudanes	Yes	66° 11' N	18° 57' W	R	550
1	Germany	Pinneberg	Yes	53° 40' N	9° 48' E	S	400

1	Belgium	Oostende	Yes	51° 11' N	2° 48' E	T	55
1	Estonia	Tallinn	Yes	59° 30' N	24° 30' E	U	250
1	Belgium	Oostende (Thames)	Yes	51° 11' N	2° 48' E	V	150
1	Norway	Vardo	Yes	70° 22' N	31° 6' E	V	450
1	Republic of Ireland	Valentia	Yes	51° 56' N	10° 21' W	W	400
1	Iceland	Grindavik	Yes	63° 47' N	22° 31' W	X	550

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
2	France (Atlantic Coast)	Corsen	Yes	48° 28' N	5° 3' W	A	300
2	Senegal	Dakar	Yes	14° 46' N	17° 21' E	C	200
2	Spain (North Coast)	Coruna	Yes	43° 22' N	8° 27' W	D	400
2	Acores	Horta	Yes	38° 32' N	28° 38' W	F	640
2	Spain (North Coast)	Tarifa	Yes	36° 1' N	5° 35' W	G	400
2	Islas Canarias	Las Palmas	Yes	28° 25' N	16° 23' W	I	400
2	Portugal	Monsanto	Yes	38° 44' N	9° 11' W	R	530
2	Cape Verde	Ribeira de Vinha	Yes	16° 51' N	25° 0' W	U	250

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
3	Russia (Black Sea Coast)	Novorossiysk	Yes	44° 43' N	37° 47' E	A	300
3	Algeria	Bordj-El-Kiffan	Yes	36° 44' N	3° 10' E	B	500
3	Ukraine	Odessa	Yes	46° 29' N	30° 44' E	C	280
3	Turkey (Marmara Denizi)	Istanbul	Yes	41° 4' N	28° 57' E	D	300
3	Turkey (Black Sea Coast)	Samsun	Yes	41° 17' N	36° 20' E	E	300
3	Turkey (Mediterranean Coast)	Antalya	Yes	36° 53' N	30° 42' E	F	300
3	Ukraine	Kerch	Yes	45° 22' N	36° 29' E	G	120
3	Iran (Caspian Sea)	Fereydoon Kenar	Yes	36° 42' N	52° 33' E	G	250

3	Greece	Iraklion Kritis	Yes	35° 20' N	25° 7' E	H	280
3	Turkey (Aegean Sea)	Izmir	Yes	38° 21' N	26° 35' E	I	300
3	Bulgaria	Varna	Yes	43° 4' N	27° 46' E	J	350
3	Greece	Kerkyra	Yes	39° 45' N	19° 52' E	K	280
3	Greece	Limnos	Yes	39° 52' N	25° 4' E	L	280
3	Cyprus	Cyprus	Yes	35° 2' N	33° 17' E	M	200
3	Egypt (Mediterranean Coast)	El Iskandariyah (Alexandria)	Yes	31° 12' N	29° 54' E	N	350
3	Malta	Malta	Yes	35° 49' N	14° 32' E	O	400
3	Israel (Mediterranean Coast)	Hefa (Haifa)	Yes	32° 49' N	35° 0' E	P	200
3	Croatia	Split	Yes	43° 11' N	16° 26' E	Q	85
3	Italy	Roma	Yes	41° 48' N	12° 31' E	R	320
3	Italy	Cagliari (Sardegna)	Yes	39° 14' N	9° 14' E	T	320
3	Italy	Trieste	Yes	45° 41' N	13° 46' E	U	320
3	Italy	Augusta (Sicilia)	Yes	37° 14' N	15° 14' E	V	320
3	France (Mediterranean Coast)	La Garde	Yes	43° 6' N	5° 59' E	W	250
3	Spain (Mediterranean Coast)	Valencia	Yes	38° 43' N	0° 9' E	X	300

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
4	United States (Atlantic Coast)	Miami	Yes	25° 30' N	80° 23' W	A	240
4	Bermuda (UK)	Bermuda Radio	Yes	32° 21' N	64° 39' W	B	300
4	Canada (S. Lawrence River)	Riviere-au-Renard	Yes	50° 15' N	66° 10' W	C	300
4	United States (Atlantic Coast)	Savannah	Yes	32° 8' N	81° 42' W	E	200
4	United States (Atlantic Coast)	Boston	Yes	41° 43' N	70° 31' W	F	200
4	United States	New Orleans	Yes	29° 53' N	89° 57' W	G	200

	(Gulf Coast)						
4	Canada (Great Lakes)	Prescott	Yes	44° 42' N	75° 31' W	H	300
4	Nederlandse Antillen (Netherlands)	Curacao	Yes	12° 6' N	68° 55' W	H	400
4	United States (Atlantic Coast)	Portsmouth	Yes	36° 44' N	76° 1' W	N	280
4	Canada (Atlantic Coast)	St Johns	Yes	47° 30' N	52° 40' W	O	300
4	Canada (Great Lakes)	Thunder Bay	Yes	48° 25' N	89° 20' W	P	300
4	Canada (Atlantic Coast)	Sydney	Yes	46° 10' N	60° 0' W	Q	300
4	Puerto Rico	San Juan	Yes	18° 27' N	66° 6' W	R	200
4	Canada (Atlantic Coast)	Iqaluit	Yes	63° 44' N	68° 33' W	T	300
4	Canada (Atlantic Coast)	Fundy	Yes	45° 14' N	65° 59' W	U	300
4	Greenland (Denmark)	Kook Islands	Yes	64° 4' N	52° 1' W	W	400
4	Canada (Atlantic Coast)	Labrador	Yes	53° 42' N	57° 2' W	X	300

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
6	Uruguay	La Paloma	Yes	34° 40' S	54° 9' W	F	280
6	Argentina	Ushuaia Prefectura Naval Radio	Yes	54° 48' S	68° 18' W	M	280
6	Argentina	Rio Gallegos Prefectura Naval Radio	Yes	51° 31' S	69° 3' W	N	280
6	Argentina	Comodoro Rivadavia Prefectura Naval Radi	Yes	45° 51' S	67° 25' W	O	280
6	Argentina	Bahia Blanca Prefectura Naval Radio	Yes	38° 43' S	62° 6' W	P	280
6	Argentina	Mar del Plata Prefectura Naval Radio	Yes	38° 3' S	57° 32' W	Q	280

| 6 | Argentina | Buenos Aires Prefectura Naval Radio | Yes | 34° 36' S | 58° 22' W | R | 560 |

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
7	Namibia	Walvis Bay	Yes	23° 3' S	14° 37' E	B	380
7	South Africa	Cape Town	Yes	34° 2' S	18° 43' E	C	250
7	South Africa	Port Elizabeth	Yes	34° 2' S	25° 33' E	I	250
7	South Africa	Durban	Yes	29° 48' S	30° 49' E	O	250

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
8	Mauritius	Mauritius	Yes	20° 18' S	57° 28' E	C	400
8	India	Mumbai (Bombay)	Yes	19° 5' N	72° 50' E	G	250
8	India	Chennai (Madras)	Yes	13° 5' N	80° 17' E	P	250

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
9	Iran	Bushehr	Yes	28° 59' N	50° 50' E	A	300
9	Bahrain	Bahrain	Yes	26° 13' N	50° 39' E	B	300
9	Iran	Bandar 'Abbas	Yes	27° 7' N	56° 4' E	F	300
9	Saudi Arabia (Persian Gulf)	Damman	Yes	26° 26' N	50° 6' E	G	390
9	Saudi Arabia (Red Sea Coast)	Jeddah	Yes	21° 23' N	39° 11' E	H	390
9	Oman	Masqat (Muscat) (Wattayah Radio Station)	Yes	23° 37' N	58° 31' E	M	160
9	Pakistan	Karachi	Yes	24° 52' N	67° 9' E	P	200
9	Egypt (Red Sea Coast)	Al Qusayr (Kossier)	Yes	26° 6' N	34° 17' E	V	200
9	Egypt (Red Sea Coast)	Ismailia (Serapeum)	Yes	30° 35' N	32° 17' E	X	400

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
11	Indonesia (Papua)	Jayapura	Yes	2° 31' S	140° 43' E	A	300
11	Indonesia	Amboina	Yes	3° 42' S	128° 12' E	B	300

	(Seram)	(Ambon)					
11	Singapore	Singapore Port Operations Control	Yes	1° 21' N	103° 59' E	C	400
11	Indonesia (Sulawesi)	Ujungpandang (Makassar)	Yes	5° 6' S	119° 26' E	D	300
11	North Korea	Pyongyang	Yes	38° 55' N	125° 43' E	D	200
11	Indonesia (Jawa)	Jakarta	Yes	6° 6' S	106° 54' E	E	300
11	North Korea	Hamhung	Yes	39° 50' N	127° 41' E	E	200
11	Thailand	Bangkok Radio (Nonthaburi)	Yes	13° 34' N	100° 39' E	F	200
11	Japan	Naha	Yes	26° 5' N	127° 40' E	G	400
11	Japan	Moji	Yes	34° 1' N	130° 56' E	H	400
11	Japan	Yokohama	Yes	35° 14' N	139° 55' E	I	400
11	Japan	Otaru	Yes	43° 19' N	140° 27' E	J	400
11	Japan	Kushiro	Yes	42° 57' N	144° 36' E	K	400
11	Vietnam	Da Nang	Yes	16° 5' N	108° 13' E	K	400
11	Hong Kong	Hong Kong Radio	Yes	22° 13' N	114° 15' E	L	400
11	China	Sanya	Yes	18° 14' N	109° 30' E	M	250
11	China	Guangzhou (Kwangchow)	Yes	23° 9' N	113° 30' E	N	250
11	China	Fuzhou (Foochow)	Yes	25° 59' N	119° 18' E	O	250
11	Taiwan	Chi-lung (Keelung)	Yes	25° 8' N	121° 45' E	P	540
11	Taiwan	Linyuan	Yes	22° 29' N	120° 25' E	P	540
11	China	Shanghai	Yes	31° 8' N	121° 33' E	Q	250
11	China	Dalian	Yes	38° 52' N	121° 31' E	R	250
11	Sabah (Malaysia)	Sandakan	Yes	5° 54' N	118° 0' E	S	350
11	Sarawak (Malaysia)	Miri	Yes	4° 27' N	114° 0' E	T	350
11	Malaysia, Peninsular (West Coast)	Penang	Yes	5° 26' N	101° 24' E	U	350
11	Guam (North Mariana Islands) (USA)	Guam	Yes	13° 29' N	144° 50' E	V	100
11	South Korea	Chukpyon (Jukbyeon)	Yes	37° 3' N	129° 26' E	V	200

| 11 | South Korea | Pyonsan (Byeonsan) | Yes | 35° 36' N | 126° 29' E | W | 200 |
| 11 | Vietnam | Ho Chi Minh-Ville | Yes | 10° 47' N | 106° 40' E | X | 400 |

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
12	United States (Pacific Coast)	CAMSPAC (Point Reyes) (San Francisco)	Yes	37° 55' N	122° 44' W	C	350
12	Canada (Pacific Coast)	Prince Rupert	Yes	54° 17' N	130° 25' W	D	300
12	Canada (Pacific Coast)	Tofino	Yes	48° 55' N	125° 32' W	H	300
12	Alaska	Kodiak (Area East of Kodiak)	Yes	57° 46' N	152° 34' W	J	200
12	Ecuador	Ayora	Yes	0° 45' S	90° 19' W	L	400
12	Hawaii	Honolulu	Yes	21° 22' N	158° 9' W	O	350
12	United States (Pacific Coast)	Long Beach (Cambria)	Yes	35° 44' N	118° 24' W	Q	350
12	United States (Pacific Coast)	Astoria	Yes	46° 10' N	123° 49' W	W	216
12	Alaska	Kodiak (Area West of Kodiak)	Yes	57° 46' N	152° 34' W	X	200

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
13	Russia (Pacific Coast)	Vladivostok	Yes	43° 23' N	131° 54' E	A	230
13	Russia (Pacific Coast)	Kholmsk	Yes	47° 2' N	142° 3' E	B	300
13	Russia (Pacific Coast)	Petropavlovsk	Yes	53° 0' N	158° 40' E	C	300
13	Russia (Pacific Coast)	Magadan	Yes	59° 41' N	150° 9' E	D	120
13	Russia (Pacific Coast)	Okhotsk	Yes	59° 22' N	143° 12' E	G	300
13	Russia (Caspian Sea Coast)	Astrakhan	Yes	45° 47' N	47° 33' E	W	250

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
15	Chile	Antofagasta	Yes	23° 40' S	70° 25' W	A	300
15	Chile	Valparaiso Playa Ancha	Yes	32° 48' S	71° 29' W	B	300

15	Chile	Talcahuano	Yes	36° 42' S	73° 6' W	C	300
15	Chile	Puerto Montt	Yes	41° 29' S	72° 57' W	D	300
15	Chile	Magallanes	Yes	52° 56' S	70° 54' W	E	300
15	Chile	Isla de Pascua (Easter Island)	Yes	27° 9' S	109° 23' W	F	300
15	Chile	Isla de Pascua (Easter Island) (Spanish)	Yes	27° 9' S	109° 23' W	G	300
15	Chile	Antofagasta (Spanish)	Yes	23° 40' S	70° 25' W	H	300
15	Chile	Valparaiso Playa Ancha (Spanish)	Yes	32° 48' S	71° 29' W	I	300
15	Chile	Talcahuano (Spanish)	Yes	36° 42' S	73° 6' W	J	300
15	Chile	Puerto Montt (Spanish)	Yes	41° 29' S	72° 57' W	K	300
15	Chile	Magallanes (Spanish)	Yes	52° 56' S	70° 54' W	L	300

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
16	Peru	Paita (English and Spanish)	Yes	5° 5' S	81° 7' W	S	200
16	Peru	Callao (English and Spanish)	Yes	12° 3' S	77° 9' W	U	200
16	Peru	Mollendo (English and Spanish)	Yes	17° 1' S	72° 1' W	W	200

490kHz NAVTEX Stations

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
1	Belgium	Oostende	Yes	51° 11' N	2° 48' E	B	55
1	United Kingdom	Portpatrick	Yes	54° 51' N	5° 8' W	C	270
1	Iceland	Saudanes	Yes	66° 11' N	18° 57' W	E	550
1	United Kingdom	Niton	Yes	50° 35' N	1° 18' W	I	270
1	Iceland	Grindavik	Yes	63° 47' N	22° 31' W	K	550
1	Germany	Pinneberg (German)	Yes	53° 40' N	9° 48' E	L	400
1	United Kingdom	Niton (French)	Yes	50° 35' N	1° 18' W	T	270

1	United Kingdom	Cullercoats	Yes	55° 4' N	1° 28' W	U	270

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
2	Islas Canarias	Las Palmas (Spanish)	Yes	28° 25' N	16° 23' W	A	400
2	France (Atlantic Coast)	Corsen (French)	Yes	48° 28' N	5° 3' W	E	300
2	Portugal	Monsanto (Portuguese)	Yes	38° 44' N	9° 11' W	G	530
2	Acores	Horta (Portuguese)	Yes	38° 32' N	28° 38' W	J	640
2	Spain	Valencia (Spanish)	Yes	38° 43' N	0° 9' E	M	300
2	Senegal	Dakar	Yes	14° 46' N	17° 21' E	M	200
2	Cape Verde	Ribeira de Vinha (Portuguese)	Yes	16° 51' N	25° 0' W	P	250
2	Spain	Tarifa (Spanish)	Yes	36° 1' N	5° 35' W	T	400
2	Spain	Coruna (Spanish)	Yes	43° 21' N	8° 27' W	W	400

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
3	Turkey (Black Sea Coast)	Samsun (Turkish)	Yes	41° 17' N	36° 20' E	A	300
3	Turkey (Marmara Denizi)	Istanbul (Turkish)	Yes	41° 4' N	28° 57' E	B	300
3	Turkey (Aegean Sea)	Izmir (Turkish)	Yes	38° 21' N	26° 35' E	C	300
3	Turkey (Mediterranean Coast)	Antalya (Turkish)	Yes	36° 53' N	30° 42' E	D	300
3	Iran (Caspian Sea)	Fereydoon Kenar	Yes	36° 42' N	52° 33' E	J	250
3	Romania	Constanta (Romanian)	Yes	44° 6' N	28° 38' E	L	400
3	France (Mediterranean Coast)	La Garde (French)	Yes	43° 6' N	5° 59' E	S	250
3	Ukraine	Kerch	Yes	45° 22' N	36° 29' E	U	120
3	Algeria	Bordj-El-Kiffan (French)	Yes	36° 44' N	3° 10' E	V	500
3	Ukraine	Odesa	Yes	46° 29' N	30° 44' E	X	280

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
4	Canada	Riviere-au-Renard (French)	Yes	50° 15' N	66° 10' W	D	300
4	Canada (Atlantic Coast)	Sydney (French)	Yes	46° 10' N	60° 0' W	J	300
4	Canada (Atlantic Coast)	Iqaluit (French)	Yes	63° 44' N	68° 33' W	S	300
4	Canada (Atlantic Coast)	Fundy (French)	Yes	45° 14' N	65° 59' W	V	300

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
6	Uruguay	La Paloma (Spanish)	Yes	34° 40' S	54° 9' W	A	280
6	Argentina	Ushuaia Prefectura (Spanish)	Yes	54° 48' S	68° 18' W	A	280
6	Argentina	Rio Gallegos Prefectura (Spanish)	Yes	51° 37' S	69° 3' W	B	280
6	Argentina	Comodoro Rivadavia Prefectura (Spanish)	Yes	45° 51' S	67° 25' W	C	280
6	Argentina	Bahia Blanca Prefectura (Spanish)	Yes	38° 43' S	62° 6' W	D	280
6	Argentina	Mar del Plata Prefectura (Spanish)	Yes	38° 3' S	57° 32' W	E	280
6	Argentina	Buenos Aires Prefectura (Spanish)	Yes	34° 36' S	58° 22' W	F	560
Area	Country	Station	Operational	Latitude	Longitude	ID	Range

9	Iran	Bushehr	Yes	28° 59' N	50° 50' E	D	300
9	Iran	Bandar 'Abbas	Yes	27° 7' N	56° 4' E	I	300

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
11	North Korea	Pyongyang	Yes	38° 55' N	125° 43' E	A	200
11	North Korea	Hamhung	Yes	39° 50' N	127° 41' E	B	200

11	South Korea	Chukpyon (Jukbyeon) (Korean)	Yes	37°3' N	129°26' E	J	200
11	South Korea	Pyonsan (Byeonsan) (Korean)	Yes	35°36' N	126°29' E	K	200

Area	Country	Station	Operational	Latitude	Longitude	ID	Range
12	Ecuador	Ayora (Spanish)	Yes	0°45' S	90°19' W	A	400

Note: to the best of our knowledge, all NAVTEX station database information was correct on the date of publication.

Appendix II: Message Type Indicators

NAVTEX broadcasts use following message type letter:

A	Navigational warnings
B	Meteorological warnings
C	Ice reports
D	Search and rescue information, and pirate warnings
E	Meteorological forecasts
F	Pilot service messages
G	DECCA messages
H	LORAN messages
I	OMEGA messages (Note: OMEGA has been discontinued)
J	SATNAV messages (i.e. GPS or GLONASS)
L	Navigational warnings - additional to letter A
V	Notice to Fishermen (U.S. only)
W	Environmental (U.S. only)
X	Special services - allocation by IMO NAVTEX Panel
Y	Special services - allocation by IMO NAVTEX Panel
Z	No message on hand

Appendix III: NMEA Sentences Supported

Data Item	Taken from NMEA Sentences
Time	RMC GGA GLL ZDA
Date	RMC ZDA
Lat/Long	RMC GGA GLL
Heading (True)	*HDT *HDG VHW
Heading (Magnetic)	*HDG VHW
Water Speed	*VBW VHW
Course (True)	RMC VTG
Course (Magnetic)	RMC VTG
Ground Speed	RMC *VBW VTG
Wind Speed	*MWV #VWR #VWT
Wind Angle	*MWV #VWR #VWT
Distance	VLW
Trip	VLW
Depth	*DPT DBT
Rate Of Turn	*ROT
Waypoint	RMB BWC BWR APB
Name	RMB BWC BWR
Lat/Long	ETA RMB ZTG
Range	RMB BWC BWR
Closing Speed	RMB WCV
Bearing (True)	RMB BWC BWR APB
Bearing (Magnetic)	BWC BWR APB
Cross Track Error	RMB XTE APB

*   SOLAS required sentence   #   Obsolete

Note that the if a data item is present in more than one sentence, then it is taken from the leftmost sentence in the table entry above.

I.e. if Range is available in BWC and BWR, it will be taken from BWC.

Appendix IV: NAV6 Menu Navigation

FUNCTION	PAGE	VIEW	MODE
Mark Read	Next New	Message View	
Print	Next New	Print View	
Date Criteria	Ascending Order	Sort View	
Station Criteria	Descending Order		NAVTEX Mode
Type Criteria			
Preset 1	490 Types Page	Filter View	
Preset 2	490 Stns Page		
Preset 3	518 Types Page		
Preset 4	518 Stns Page		
Preset 5			
		Position View	
		Combined View	
		Waypoint View	Navigate Mode
		Conning View	
		User 1,2,3,4 View	
		Log View	
	Options Page	General View	
	LCD Page		
	Options Page	NAVTEX View	
	490 Names Page		
	518 Names Page		Setup Mode
	Monitor Page		
	Options Page	Navigate View	
	User View Page		
	Monitor Page		

Appendix V: NAV6 Menu Structure

NAVTEX - Mode[1]

Message - View
- Next New
- Mark read

Print - View[2]
- Next new
- Print

Sort - View
- Order
  - Ascending
  - Descending
- Criteria
  - Date
  - Station
  - Type

Filter - View
- Pre-set 1,2,3,4,5
  - 490 Types - Page[1]
  - 490 Stns – Page[1]
  - 518 Types – Page[1]
  - 518 Stns - Page[1]

Navigate – Mode[1]

Position – View[6]
Combined - View[6]
Waypoint - View[6]
Conning - View[6]
User 1,2,3,4 - View[6]
Log - View[6]
- Print[3]

Set-up - Mode

General - View
- Options - Page
  - Factory reset
    - Confirm
    - Cancel
- LCD - Page
  - Pre-set
    - Day
    - Night
    - Sleep

NAVTEX - View
- Options - Page
  - Print Set-up[5]
    - 490 Types[1]
    - 490 Stns[1]
    - 518 Types[1]
    - 518 Stns[1]
- 490, 518 Names - Pages[1]
  - Station database
    - New
      - Save
      - Cancel
      - Purge[4]
        - Confirm
        - Cancel
    - Edit
      - Save
      - Cancel
      - Purge[4]
        - Confirm
        - Cancel
    - Delete
      - Confirm
      - Cancel
   - Exit
- Monitor - Page

Notes:

1. Receiver type selection, controls whether this option is displayed.

2. Only displayed if manual NAVTEX printing ON

3. Only displayed if manual navigate log printing ON

4. Only displayed if the station database memory is full

5. Only displayed if auto NAVTEX printing ON

6. Only displayed if enabled on navigate options page

Navigate - View
Options - Page
User View - Page
Monitor - Page
Pause
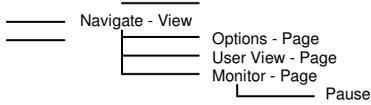
APPENDIX VI: RECEIVER UNIT ASSEMBLY

ICS
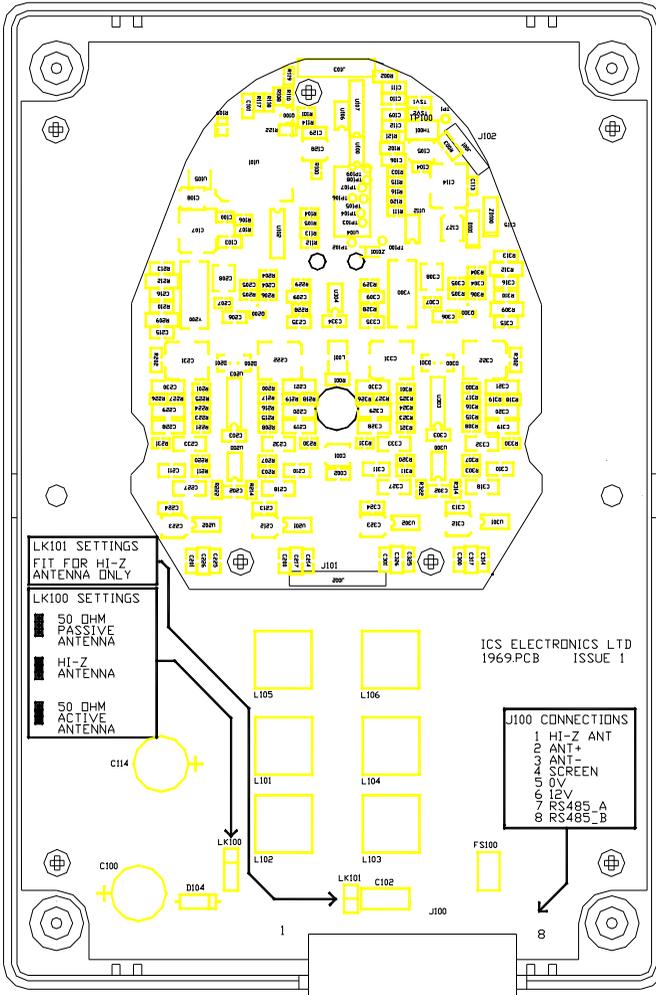
DECLARATION OF CONFORMITY

ICS Electronics Limited declares herewith that the following equipment

NAV6/NAV6plus NAVTEX Receiver System

is in conformity with

89/336/EC Directive

Standards to which conformity is declared:

EN301843-1 : 1996   Electromagnetic compatibility and Radio spectrum Matters (ERM);
Electromagnetic Compatibility (EMC) standard for Marine radio equipment and services;
Part 1 : common technical requirements

EN301843-2 : 1996   Electromagnetic compatibility and Radio spectrum Matters (ERM);
Part 2 : Specific conditions for maritime radiotelephone transmitters and receivers

EN301843-4 : 1996   Electromagnetic compatibility and Radio spectrum Matters (ERM);
Part 4 : Specific conditions for Narrow-Band Direct-Printing (NBDP) NAVTEX receivers

Date: 25/6/01   Signature:

Marc Palmano
Technical Director

Doc ref: 1098

Member of the
British Marine
INDUSTRIES
FEDERATION

Registered No. 1615525   VAT No. G.B.376 7223 30

ICS Electronics Ltd

Unit V, Rudford Industrial Estate, Ford, Arundel, West Sussex BN18 0BD England
Telephone: +44 (0) 1903 731101   **Facsimile:** +44 (0) 1903 731105
Email: sales@icselectronics.co.uk   **Web Site:** www.icselectronics.co.uk