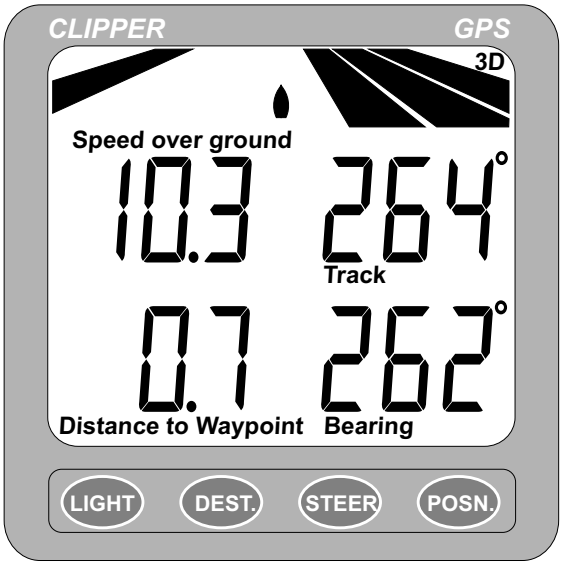
DESIGNED AND MANUFACTURED IN ENGLAND



CLIPPER

GPS REPEATER

RoHS ✔
2002/95/EC

CE

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INTRODUCTION

The Clipper GPS Repeater is supplied with 10 metres of cable, a 3 way terminal block, and a 12 Volt power cable. The unit will repeat the data sent by any GPS repeater set up to send NMEA 0183 output sentances RMB and RMC at 4800 baud.

INSTALLING THE DISPLAY

Select a convenient position for the display on a panel or bulk-head. The site must be flat and the cavity behind the panel must remain dry at all times. (The cable entry is deliberately not sealed to ensure adequate ventilation. This prevents misting of the display).

Cut a hole in the panel 67mm high and 87mm wide. Bring the wiring through the hole in the panel and pass the 10 metre cable through the hole.

Unscrew and remove the two wing nuts from the rear of the instrument and remove the stainless steel clamping bracket. Fit the “O” ring seal into the groove in the panel mounting face of the instrument. Ensure that it is correctly lying in its groove before fitting the instrument to the panel, which provides the watertight seal for the display.

Fit the instrument into the panel, fit the stainless clamp over the studs, fit and tighten the two wing nuts finger tight only.
It is important that the O-ring rubber seal makes good contact with the panel to prevent water getting behind the unit and entering the cavity behind the panel.

It is good practice to run the cables vertically downwards from the unit, even if they later have to rise to connect to the vessel's supplies. Doing so prevents any water that might get onto the cables from running back along the cables and into the unit.

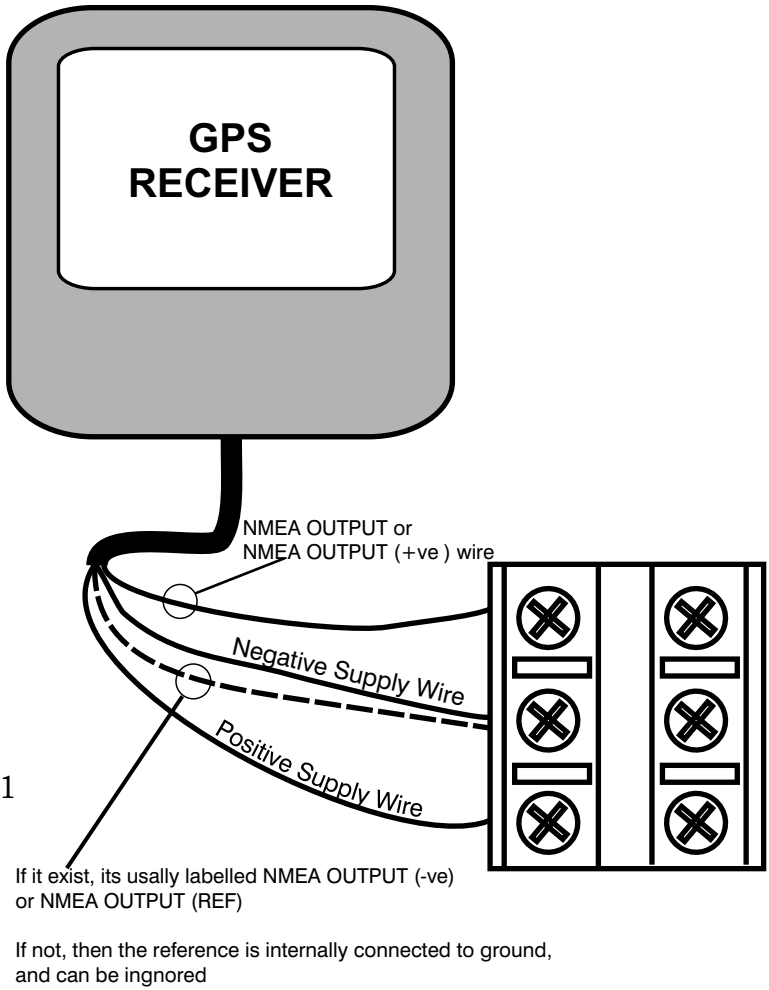


Figure 1

Uncoil the cable and install it on a convenient run to the GPS receiver position.
Refer to Figures 1 and 2. to connect the GPS receiver to the GPS and vessels supply.

GETTING OPERATIONAL

Switch on the GPS receiver. Refer to the manufacturer's handbook, and set up the unit to send NMEA version 2.0 (or later version) at 4800 Baud. When the GPS Repeater is powered on, the words Clipper GPS appear momentarily on the screen. Note that the words are shown in a mixture of Upper case (capitals) and lower case characters. This is because the numerical display is also used to display text.

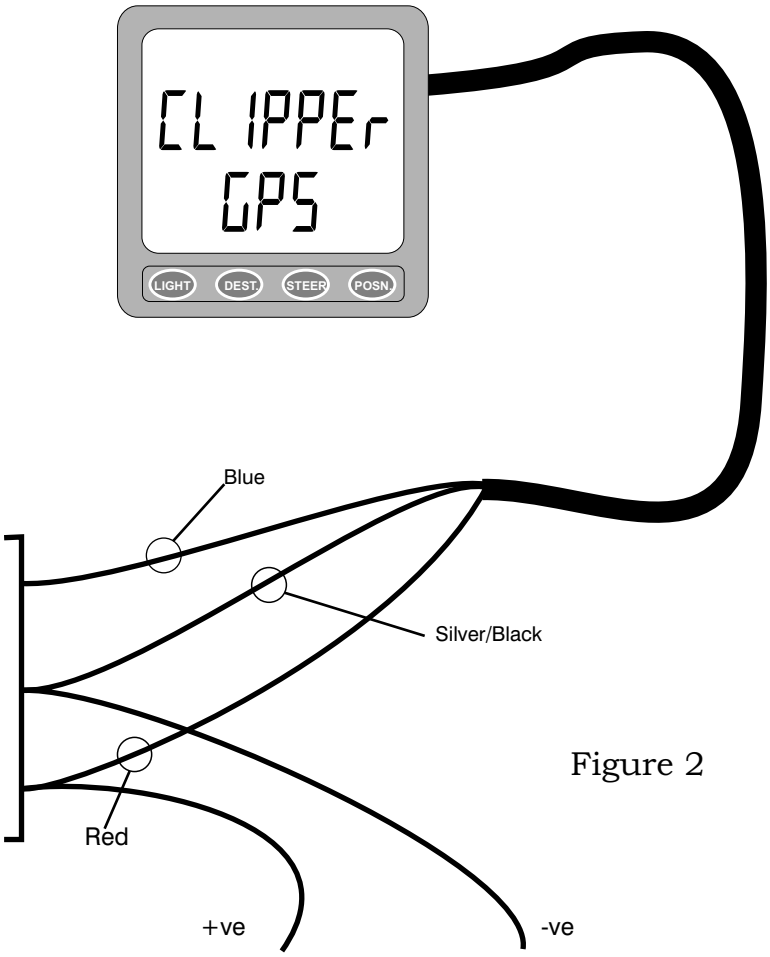


Figure 2

The International Seven-bar Substitution Character Set (ISBSCS, usually shortened to ISCS) is used to represent the Upper-case alpha-numeric characters used by most GPS receivers, as shown below.

A B C D E F G H I J K L M N O P Q R

S T U V W X Y Z 0 1 2 3 4 5 6 7 8 9 -

On some GPS receivers, no NMEA output is sent until lock onto the satellites is achieved. If so, the Repeater displays the message “No GPS Signal” as a warning. When the GPS Receiver has acquired lock, the current position (Latitude and Longitude) will be displayed on the Repeater.

Regardless of the settings on the GPS Receiver, the repeater always displays distances in Nautical miles, speeds in knots, and all bearings in magnetic. Latitude and Longitude is shown in degrees, minutes and tenths, hundredths and thousnds of a minute.

USING THE REPEATER

Press POSN. at any time, and the repeater will display the current position (Lat and Long) after a brief pause while it collects the fresh NMEA data from the receiver. Unless a waypoint is selected on the receiver, this is usually all the data available to the repeater.

Select a waypoint (a destination) on the GPS receiver and press STEER. The repeater will show the Speed over the ground (SOG) screen. This screen shows the road, the speed over the ground (the course made good), track, and distance and bearing to the waypoint.

A second press of STEER shows the cross-track error (CTE) screen. This replaces the speed over ground with the Cross-track error, and leaves the other values as before. Pressing STEER alternates between the CTE and SOG screens.

Press DEST. to display the name of the next waypoint (which has been entered into the GPS receiver) and the direction to steer to reach it. If the destination is within 30º of astern, “Astern” is displayed, with the roadway showing the best turn direction to regain the desired waypoint.

Press LIGHT to switch the backlight on at low level, and again to switch the backlight to full brightness. Another press switches the backlight off again.

USING THE ROADWAY DISPLAY

The roadway display is available on the DEST and STEER screens (CTE and COG).

Steering guidance is represented on the roadway display. The display indicates the direction to steer to reach the destination waypoint from the present position. It does not indicate cross-track error from the track between the departure and destination waypoints stored in the GPS receiver.

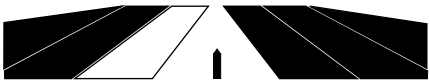
If the cross-track (CTE) is being displayed, the cross-track error includes a Left (L) or Right (r) indication, which indicates the direction to steer to rejoin the desired track between departure and destination waypoints.

The roadway display always shows the best direction to turn, even if the vessel is moving away from the destination waypoint (and see above). If the vessel is going away from the destination, this is shown by the large difference
between the bearing to waypoint (destination) and the Track.

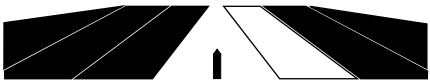
The roadway displays are shown overleaf, for all track and bearing differences.

“Ahead”
Track within 3º of bearing to destination

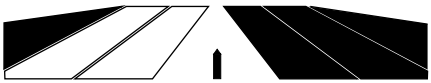
Steer left (Track > 3º off bearing to destination)



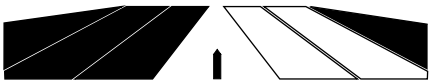
Steer right



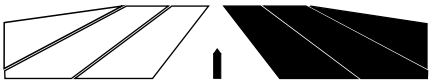
Steer left (Track > 6º off bearing to destination)



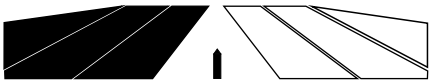
Steer right



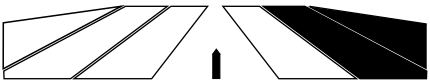
Steer left (Track > 9º off bearing to destination)



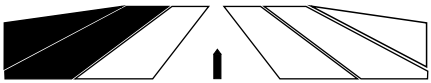
Steer right



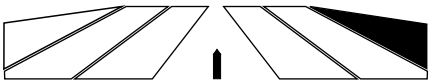
Steer left (Track > 12º off bearing to destination)



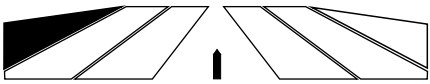
Steer right



Steer left (Track > 15º off bearing to destination)



Steer right



TECHNICAL INFORMATION

The GPS Repeater offers full functionality only when the GPS receiver is set up to send NMEA 2.0 (or later) messages at 4800 baud. NMEA Message types RMB, RMC, and GSA are required to fulfil all the repeater's functions.

The repeater always shows the status of the signals it is getting from the GPS receiver. If no NMEA data are being received, a No GPS Signal message is displayed.

Some GPS receivers send NMEA data before full satellite acquisition is achieved, but others wait until full acquisition is achieved before sending any data over the NMEA connection. If position (POSN.) is requested, and none is available from the GPS, No GPS POSN. is displayed. If no Cross-track Error or Speed over Ground information is available, appropriate messages are shown.

The Repeater always displays magnetic bearings, using the magnetic offset sent by the GPS receiver. If true bearings are wanted on the Repeater, it is necessary to set the GPS Receiver to Magnetic, and set the magnetic deviation manually to zero.

The cable to the Repeater has two wires, Red and Blue, and an outer screen. The screen is negative, and the red wire is connected to +12 Volts. The Blue wire carries the NMEA data from the GPS Receiver. The cable can be shortened or extended up to 20 metres if desired.

Supply voltage:	8-16Volts D.C.
Current	3 mA (backlight Off)

TROUBLE SHOOTING

PROBLEM	LIKELY CAUSE	REMEDY
Repeater is totally dead	No power to Repeater	Check 12V supply, fuse, and connections between 10m cable and GPS. Check cable for damage.
Repeater reports “NO GPS Signal”	Not getting NMEA from the GPS Receiver	Check GPS Receiver is set up to send NMEA version 2.0 (or higher) at 4800 Baud.
Repeater reports “NO GPS Signal”	Not getting NMEA from the GPS Receiver	Check GPS Receiver is on and has acquired lock. Check wiring connections.
Repeater shows “No GPS DEST” or “No GPS SOG” or “No GPS CTE”	No Waypoint selected on GPS Receiver	Select waypoint
Repeater shows “No GPS POSN	Receiver still acquiring position	Wait for acquisition
Information on Repeater appears different to GPS Receiver	The Receiver has not updated its NMEA output	Wait for update

TROUBLE SHOOTING

PROBLEM	LIKELY CAUSE	REMEDY
Information on Repeater appears different to GPS Receiver	The Receiver is not set to display knots, nautical miles, etc.	Reset Receiver to show Nautical units.
Bearings are different on the Repeater	The Receiver is not set to magnetic	Set the Receiver to read Magnetic bearings. If true readings are desired, set Receiver to magnetic, and set zero magnetic deviation
Left and Right symbols are reversed.	Difference in convention. Some receivers show direction TO desired track, others show your position RELATIVE to desired track.	Remember the convention in use

IMPORTANT READ THIS BEFORE UNPACKING INSTRUMENT

Prior to unpacking this instrument read and fully understand the installation instructions. Only proceed with the installation if you are competent to do so. Nasa Marine Ltd. will not accept any responsibility for injury or damage caused by, during or as a result of the installation of this product. Any piece of equipment can fail due to a number of causes. Do not install this equipment if it is the only source of information and its failure could result in injury or death. Instead return the instrument to your retailer for full credit. Remember this equipment is an aid to navigation and not a substitute for proper seamanship. This instrument is used at your own risk, use it prudently and check its operation from time to time against other data. Inspect the installation from time to time and seek advice if any part thereof is not fully seaworthy.

LIMITED WARRANTY

Nasa Marine Ltd. warrants this instrument to be substantially free of defects in both materials and workmanship for a period of one year from the date of purchase. Nasa Marine Ltd. will at its discretion repair or replace any components which fail in normal use within the warranty period. Such repairs or replacements will be made at no charge to the customer for parts and labour. The customer is however responsible for transport costs. This warranty excludes failures resulting from abuse, misuse, accident or unauthorised modifications or repairs. In no event shall Nasa Marine Ltd. be liable for incidental, special, indirect or consequential damages, whether resulting from the use, misuse, the inability to correctly use the instrument or from defects in the instrument. If any of the above terms are unacceptable to you then return the instrument unopened and unused to your retailer for full credit.

Name _____

Address _____

_____

Dealer Name _____

Address _____

_____

Date of Purchase _____

Proof of purchase may be required for warranty claims.

Nasa Marine Ltd.
Boulton Road, Stevenage, Herts SG1 4QG England

Declaration of Conformity
NASA Marine Ltd declare this product is in compliance with the essential requirements of R&TTE directive 1995/5/EC.
The original Declaration of Conformity certificate can be requested at info@nasamarine.com
THIS PRODUCT IS INTENDED FOR USE ONLY ON NON SOLAS VESSELS

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