

Electronic Position Sender (EPS)

Introduction

The Katech Electronic Position Sender (EPS) is a device for sending fixed position information to a DSC-equipped maritime VHF or MF/HF transceiver. When such equipment is used at sea, the position information would typically be fed from a GPS receiver. However, when transceivers are used in a land-based coast station environment, it is still necessary to provide the radio with position information even though the installation is fixed. The EPS unit is a small black box that connects to the radio and provides the NMEA sentence that gives the station's position thus allowing the radio's in-built software to have knowledge of where it is located on the globe. The unit simply plugs into to the appropriate port(s) on the radio set and requires no other connections. It is important that the unit is powered from the radio; it must not be re-wired so that it is fed with a 24 hour supply. The EPS unit is available for connection to various different radio types, mainly from the SAILOR® range. The main difference between the models is the style of connecting lead, arranged to suit each particular radio. The unit has a single green LED for status indication and no user controls.

Connection to transceiver

The unit is self-contained and is powered from the radio it is connected to. It requires no external power supply and should not be re-wired to allow for an alternative power source. Some applications require just one connector while others require two connections as the power supply and data is not available on the same connector.

Software operation (version N1.0x)

Upon switch-on, the LED illuminates continuously for a second or two while internal checksum calculations are undertaken. If everything is normal, the LED will then blink to off, briefly, once a second to indicate when the NMEA sentence is being transmitted. If the LED flashes rapidly after the initial test period, then the internal EEPROM checksum calculations have failed and no NMEA sentences will be sent. In this case, service of the unit will be required as the EEPROM data has, most likely, been corrupted. Before returning the unit for service, however, the unit can be checked to see if the EEPROM device has not shaken out of its socket. The sentence sent is the \$GPGLL sentence with only the latitude and longitude parameters set. The end of sentence checksum is calculated and is included. The latitude and longitude is sent as whole degrees followed by minutes resolved to four decimal places. During testing of the unit with a »SAILOR«® RT4822 transceiver, it was noticed that the fourth decimal place of the latitude parameter as shown on the front-panel display of the control unit cannot be relied upon to be correct. One transceiver firmware version always shows this digit as a '9' while another version always displays it as a '0', irrespective of the incoming data value. It has not been determined whether the transceiver transmits the correct or erroneous value as part of a DSC call. It is of little importance as the position error will be only slight, but further information is being sought on this issue.

Time

Upon installation, the real-time clock and the time zone within the radio set should be set. If the radio were to be used to send a DSC message, then this information is used within the message. Note that the EPS unit does not convey any time information within its NMEA sentence and so it is important that the correct time is set within the transceiver.

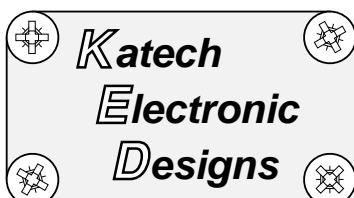
Programming of fixed position

The position that is sent is set at manufacture and is shown on a label on the front of the unit. The data for this position is held in an EEPROM which can be simply replaced by a competent engineer. EEPROMs for other positions can be programmed accordingly and shall be available by special order from Katech Electronic Designs.

Hardware versions

The units have been primarily developed for use with the SAILOR® and Skanti® VHF 4000 system (plus other badged versions) and with the SAILOR® RT5022 transceivers. Versions will be available for the earlier SAILOR® RM2042 and RM215x DSC receiver/modems if required.

Products from Katech Electronic Designs are designed and manufactured in Great Britain.



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