

EML224 Sensor Recovery

This document is to be used as a guideline to reprogram an EML224 sensor in cases where a firmware upgrade through the SKIPPER Service Software has failed or for some reasons has changed the output speed from default 4800kb/s to e.g. 115200kb/s.

There have been cases where a sensor firmware upgrade has failed due to different reasons and where the sensor output speed has changed and will cause the repeaters to show "STW ERROR" just after powering up an EML224 Compact system. Diagnostic - Sensor Test2 will fail.

To recover sensor back to normal operation we recommend a download of two NMEA command lines to the sensor through a separate NMEA adapter instead of using the JB60 Electronics "HEAD" connector J202.

Any USB to two-way RS-422 NMEA adapter can be used but we do recommend Moxa Uport one channel with isolation.

Due to a higher speed we recommend connecting NMEA adapter directly to end of the sensor cable itself.

- 1) Leave the Sensor Power wires White (+) – Black/White (-) connected. Check the voltage reading and make sure it is between 18 and 32 Vdc.
- 2) Connect the NMEA Sensor In and Sensor Out to your NMEA adapter.
 - > Sensor: Black (+) – Yellow/Black (-) < Sensor: Orange (+) White/Orange (-)
- 3) Start the Skipper Service Software and select **Com Setup**.



- 4) Select the **IEC-61162-1/2 NMEA** Tab

The screenshot shows the IEC-61162-450 software interface. The top menu bar includes "Multi Configuration", "IEC-61162-1/2 NMEA", "IEC-61162-450 UDP", "DNV Test", and "ES logging". The "COM Port" section shows "Connected to COM7" and "Change COM" button. The "Baud Rate" is set to 115200. The "NMEA SENDING" window shows "0 bytes/s (0%)" and "Sending Parameters" with "Interval [ms]: 1000", "Lines pr msg: 1", and "Loop" checked. The "NMEA RECEIVING" window shows "127 bytes/s (1%)" and a "Receiving Log" with a list of NMEA messages. The "Log to file" section has "Start", "Stop", "Freeze", and "Clear Log" buttons. The "Received CRC errors" section shows "Count: 11" and "Show Errors" and "Clear Errors" buttons. The bottom status bar shows "Received Alarm" with "Alarm ID: -" and "Alarm state parameters: -".

Make sure correct Baud Rate has been selected, in this case 115200kb/s, un-tick the Loop box under the Sending Parameters. You should be able to see the data coming from sensor in the ReceivingLog window.

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- 5) We have two options when sending commands to the sensor – one is by selecting From File (txt file) in the Msg Source window or Custom Message. We will be using Custom Message in this procedure.
- 6) The sensor will need two sentences to be written, one for login and the second is the command to configure it back to 4800kb/s:

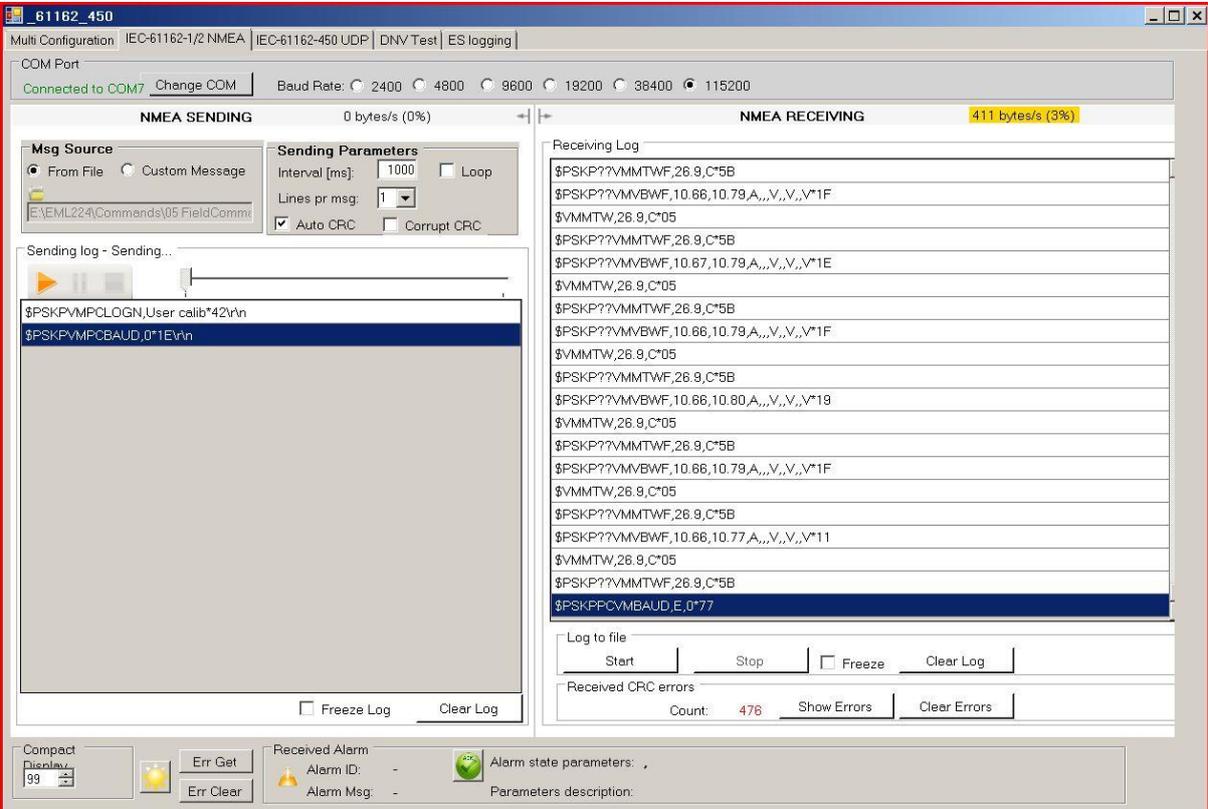
7-1) \$PSKPVMPCLGN,User calib

7-2) \$PSKPVMPGBAUD,0

Copy and paste above strings and send them one by one to sensor by pressing the **PLAY**  button.

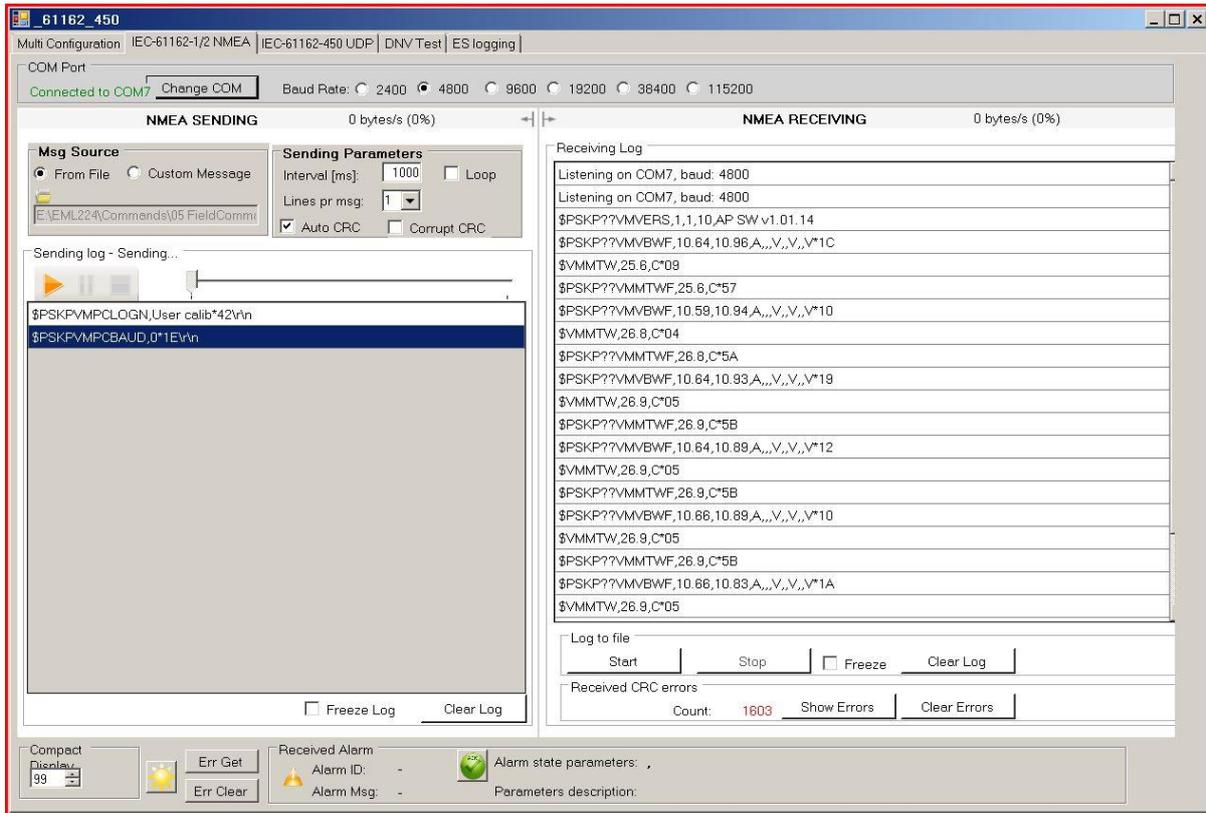
When the two sentences above have been written to sensor your ReceivingLog window should stop receiving messages if successful, this due to the Baud Rate change.

Please note that Login is required, else you will receive an Access Denied message.



The screenshot displays the IEC-61162-450 software interface. The top bar shows the configuration: Multi Configuration | IEC-61162-1/2 NMEA | IEC-61162-450 UDP | DNV Test | ES logging. The COM Port section indicates 'Connected to COM7' and 'Change COM' with a dropdown menu. The Baud Rate is set to 115200. The NMEA SENDING window shows '0 bytes/s (0%)' and contains a 'Msg Source' section with 'From File' and 'Custom Message' options. The 'Sending Parameters' section includes 'Interval [ms]: 1000', 'Loop' checkbox, 'Lines pr msg: 1', and 'Auto CRC' checked. The 'Sending log - Sending...' window shows two messages: '\$PSKPVMPCLGN,User calib*42\r\n' and '\$PSKPVMPGBAUD,0*1E\r\n'. The NMEA RECEIVING window shows '411 bytes/s (3%)' and a 'Receiving Log' section with a list of received messages, including the two sent messages. The 'Log to file' section has buttons for 'Start', 'Stop', 'Freeze', and 'Clear Log'. The 'Received CRC errors' section shows a 'Count: 476' and buttons for 'Show Errors' and 'Clear Errors'. The bottom status bar shows 'Compact Display 99', 'Err Get', 'Err Clear', 'Received Alarm', 'Alarm ID: -', 'Alarm Msg: -', 'Alarm state parameters: ,', and 'Parameters description: '.

- 7) Cycle sensor power and change the Baud Rate back to 4800kb/s. Messages should now appear in the ReceivingLog window.



- 8) Reconnect the sensor to the JB60 – Electronic.
- 9) Continue with normal configuration and calibration if not already performed.
- 10) This completes the reconfiguration of an EML224 Sensor from 115200kb/s to 4800kb/s.