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SeaTalk Nmea Bridge

Modes of operation and configuration

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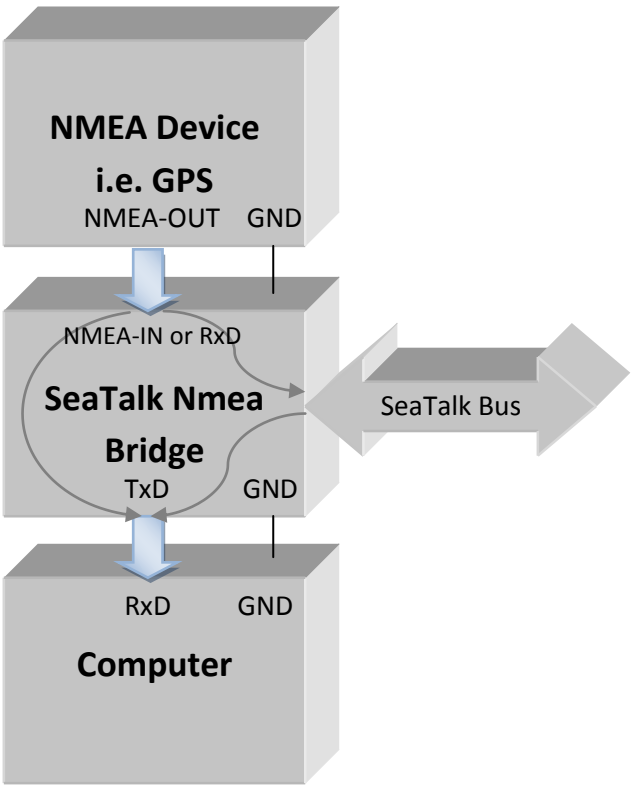
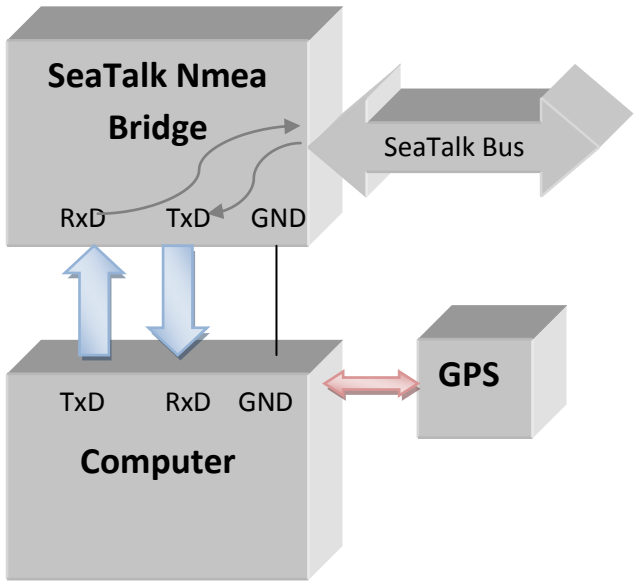
Basic modes of operation and configuration

The SeaTalk Nmea Bridge can be used in one of two basic modes of operation.

Pass through mode (Daisy Chain)	Direct mode
The **bridge receives data** from a NMEA device (i.e. GPS) and from attached SeaTalk instruments. This NMEA data (i.e. from GPS) are forwarded to the computer and are sent to the SeaTalk bus. Example : Computer receives NMEA Data and also it will receive data from attached SeaTalk devices like autopilot, wind instruments, depth, log etc. Data from the attached NMEA device are also sent to the SeaTalk bus directly from the SeaTalk Nmea Bridge. NMEA data will send from the NMEA device to the SeaTalk Nmea Bridge and from here to the SeaTalk bus. The Computer only receives data. Even if the computer is switched off, NMEA data (i.e. Waypoints from GPS) are sent to SeaTalk devices.	The **bridge receives data** from the computer and any attached SeaTalk device. The **computer can send data** to the bridge which will forward it to SeaTalk Network. Example: Computer is running navigation software. It will receive and display data from a SeaTalk autopilot, wind instrument, depth, log etc. Navigation software can send it's waypoint data to an attached SeaTalk autopilot, log, etc. In this example, the computer supplies all data to be sent to the SeaTalk Bus. For example – waypoint information for an autopilot can come from navigation software on the computer.





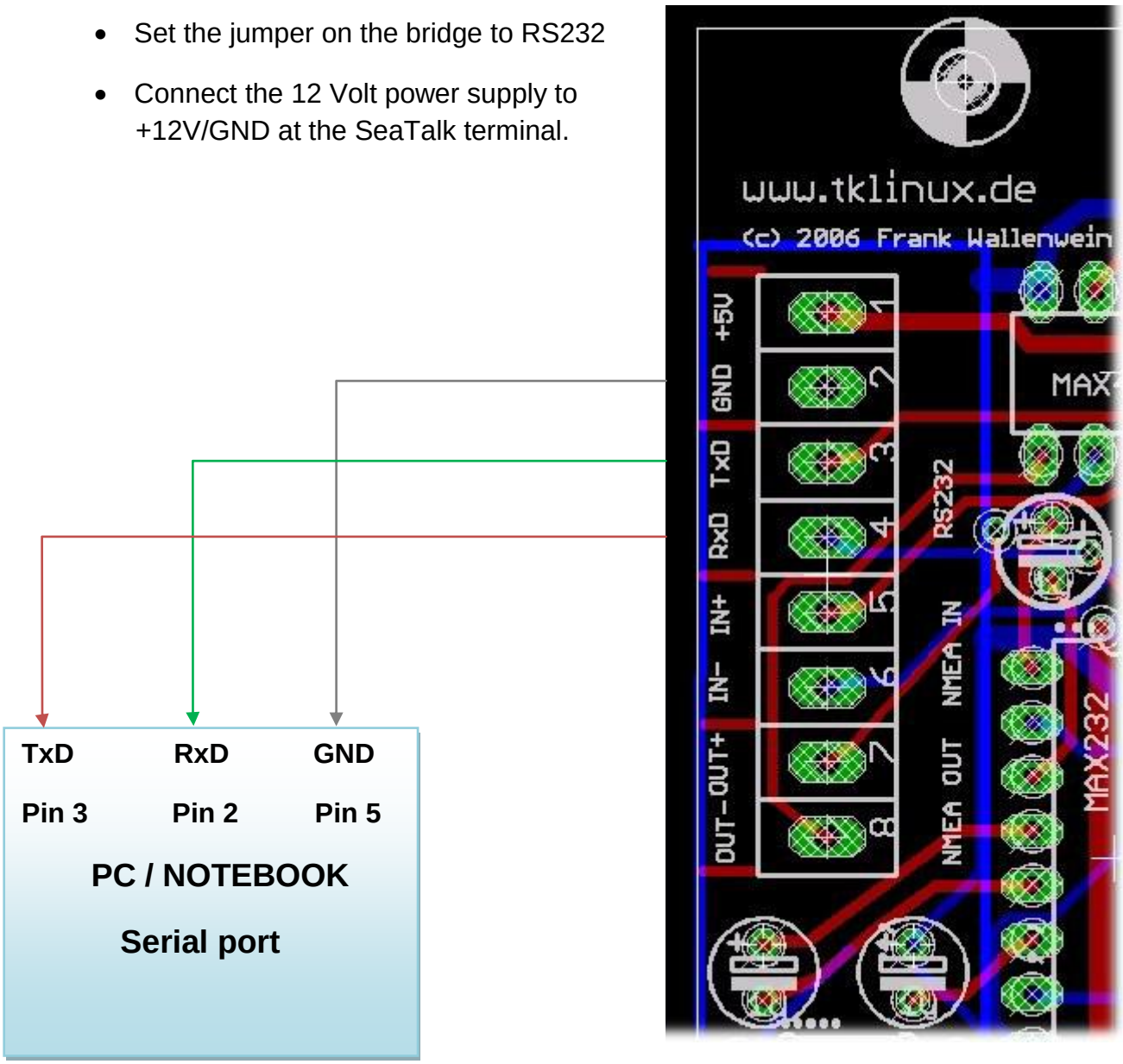
Configuration pass through mode	Configuration direct mode
In pass through mode, the SeaTalk Nmea Bridge has to forward all data it receives from its NMEA-IN port (or RxD port) to the NMEA-OUT port and it's TxD port.	In direct mode, the SeaTalk Nmea Bridge should not send NMEA data, it has received, back to computer. The computer would get it's own data. Some navigation software actually does send back everything it receives. If the bridge would also send back everything it receives, we would end up in an endless loop.

Since these two modes of operation require a different behavior of the SeaTalk Nmea Bridge, there are configuration settings available to adjust the bridge.

Configuration pass through mode	Configuration direct mode
$SNBSE,4,**1** Forward every received NMEA Sentence to NMEA-OUT and to Rs232 TxD port.	$SNBSE,4,**0** Do **not forward** received NMEA sentences to NMEA-OUT or RS232 TxD port.

Hardware connection

- Connect to Bridge to the configuration computer as shown below.
- Set the jumper on the bridge to RS232
- Connect the 12 Volt power supply to +12V/GND at the SeaTalk terminal.



Setting the configuration.

Connect the bridge to a PC as shown in previous chapter.
Open a terminal program (i.e. hyperterm[1]) and set it to 4800 Baud, 8 Bit, no parity, no flow control. Make sure the terminal program sends CR/LF upon pressing the ENTER Key.

As a first test, type $xxx and press ENTER

If the bridge responds with $xxx upon pressing ENTER, the connection to your bridge ok. If $xxx does not appear after you pressed ENTER, check connection, setting of Com-Port, Baudrate, jumper setting to RS232, correct wiring etc.
You will see the $xxx response only after the ENTER key was pressed.
You will not see the individual characters while typing $xxx.

Next type **$SNBSE,4** and press ENTER. (capital letters)

If the bridge responds with $SNBSE,4,0.00**0,** your configuration is set to direct mode

If the bridge responds with $SNBSE,4,0.00**1,** your configuration is set to pass-through mode

To change the setting to direct mode, type
$SNBSE,4,0 and press enter (capital letters)

To change the setting to pass-through mode, type
$SNBSE,4,1 and press enter (capital letters)

To check the settings, type $SNBSE,4 again.

New setting will become active after then next reboot.

[1] MS-Windows XP and older versions came with the terminal program hyperterm. Later versions don't have that anymore. A alternative would be TeraTerm (see http://ttssh2.sourceforge.jp/)

Using the terminal program.

When talking to the the SeaTalk Nmea Bridge with a terminal program, you will find it's behaving a little bit different than other RS232 devices.

The bridge is built to talk to NMEA devices (like GPS etc.) rather than humans. It expects to receive complete and valid NMEA sentences. Since NMEA devices cannot deal with error messages, it will simply not respond at all, when it receives an incomplete or invalid sentence or command.

As you type in the commands, you will **not** see any feedback. The bridge expects to receive a full valid NMEA sentence or command before it echo's back anything to your terminal.

Example : Testing connection with $xxx command

You type $ you see nothing on your terminal
You type x you see nothing on your terminal
You type x you see nothing on your terminal
You type x you see nothing on your terminal
You press the ENTER key

Now the bridge has received a complete command and a CR/LF.
It will send $xxx to your terminal

Example: Reading configuration with $SNBSE,4 command

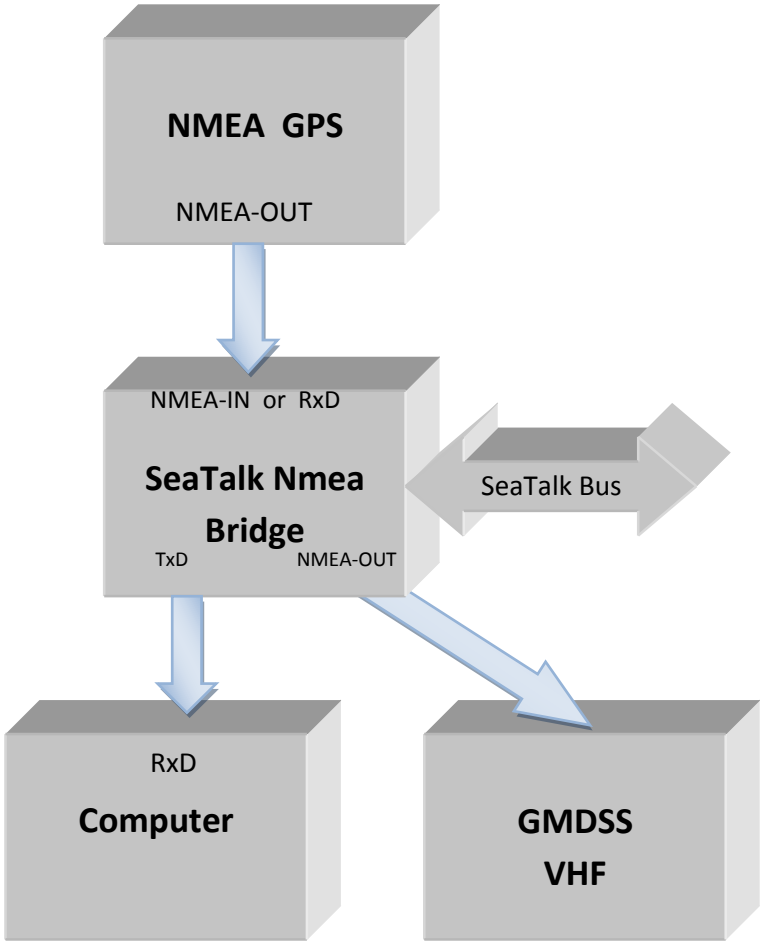
You type $SNBSE,4 and you see nothing on your terminal while typing.
Only when you press the ENTER key, the bridge will respond with $SNBSE,4,0.001

It might happen that you see no response at all. If you accidently press a wrong key – let's say $SNB**R**,4 – you won't get any response at all. The bridge just does not recognize it as a valid command, and it will do just nothing.

So if you don't get a response from the bridge,

- retype the command again. Maybe you just made a mistake when typing
- try the simple command $xxx . It's easy to type and should always work
- make sure you have set your terminal program to 4800Baud, 8 bit, no parity, no handshake. Make sure your terminal program is sending CR+LF as line termination.
- recheck the wiring and make sure the 12 volt power supply is working.

Another example for pass-through mode



GMDSS VHF receives position and speed over ground from GPS
and i.e. water speed from SeaTalk log instrument – regardless if the computer is switched on or off.