

# **Starmon**

Troubleshooter

**STAR : ODDI**

Logging Life Science

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# 1 Connecting to the Recorder

In order to be able to communicate with the recorder, the cable must be connected to the correct COM port, as indicated in SeaStar.

## 1.1 Communication Errors

1. If using a laptop, please make sure that the power cable/DC power supply is located as far as possible away from the Communication Box and the communication cable.
2. Make sure that no electrical devices/power sources are close to the communication cable/box.
3. Check the cable connection between the PC and the Communication Box.
4. If a **Device Error** is reported upon connection, please check if the SeaStar program has been opened more than once. This error can also occur if a different program is open and is using the same communication port as SeaStar.

### 1.1.1 Defining the Com Port for USB Serial Converter

The easiest way to find the correct Com Port is to use the **Connection Wizard**, which can be found under the **Wizards** menu in the software.

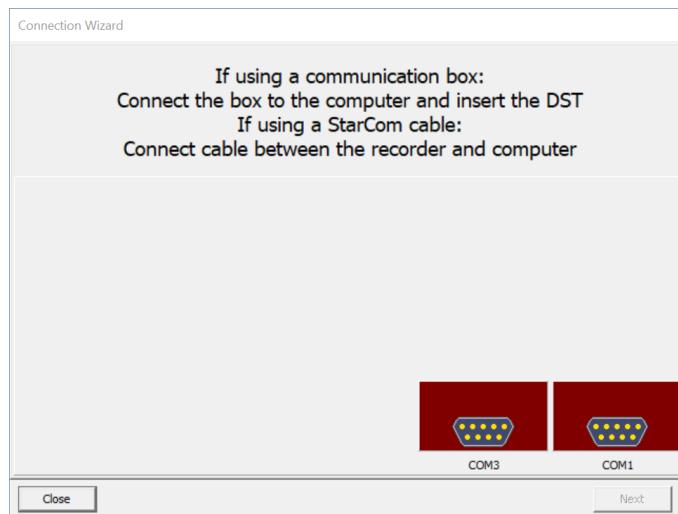


Figure 1.1: Connection Wizard.

The wizard will display all the com ports available. Plugin the USB cable, and the selected com port will turn green.

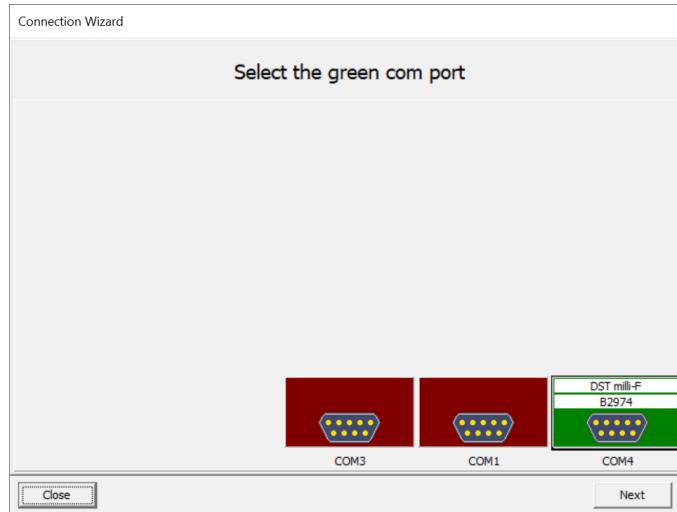


Figure 1.2: Connection Wizard with green USB port showing the recorder connected via the Communication Box.

**NOTICE:** If no connection can be established with the logger using the USB connection cable, the following procedure should be performed.

After you plug in the USB cable, you will see a new communication port in your device manager, called **USB Serial Port**. Make sure that the port is enabled and select the appropriate port in SeaStar.

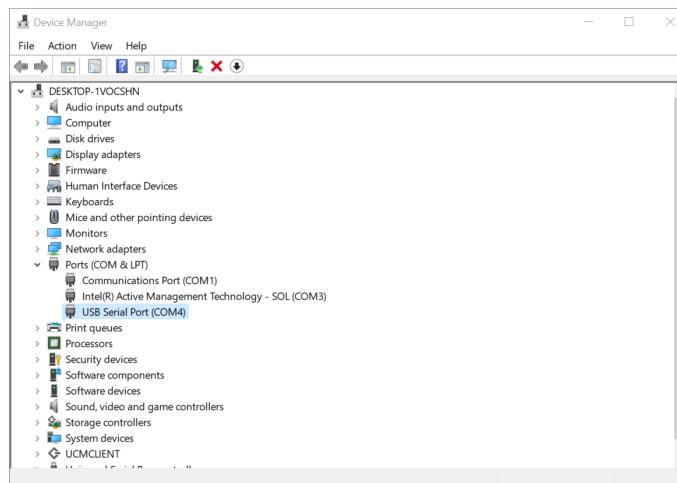


Figure 1.3: USB Communication Port in Device Manager

To check which communication ports are available on your computer, open your Device Manager. On Windows 10 you can do the following: **Control Panel > Hardware and Sound > Device Manager**, or go to **Search** and type **Device Manager**.

Under **Ports** you can view all available ports. Ensure that the port you intend to use is enabled: right-click on the appropriate port and select properties. Under **Device status** it should state "**This device is working properly**".

If the connection is still not enabled, double click on USB Serial Port in Device Manager and select **Port Settings**. Click the **Advanced button** and the following window appears:

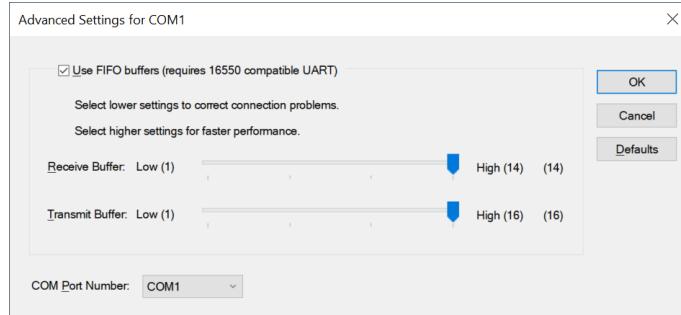


Figure 1.4: Advanced Port settings

Under **COM Port Number** you can define a com port for the USB serial converter. After having selected the COM Port Number, make sure to close SeaStar. When reopening SeaStar, the COM port should become active in SeaStar and can be viewed either under the Connection Wizard or **Settings > Communication > Serial Ports**. If the COM port number does not become active in SeaStar please try another COM port number. Even though the Device Manager of the computer reports that a COM port number is 'in use', it might be possible to define and use those COM ports for the USB.

There is no "one" solution here, as it varies between computers, and the user may have to try several times to define a few different COM port numbers. It might also be necessary for the user to shift the USB plug between different USB inputs on the computer. If the USB cable is switched to another port, the computer may not find it at first, but it is likely to be found if it is unplugged and re-plugged.

## 1.2 CRC Error

The CRC test is a safety check performed by the software when retrieving the Recorder Information Data (RID). The CRC is a register in the RID file, which is calculated and **placed in the recorder's RID** when starting up a new measurement sequence. When retrieving the RID from the recorder, SeaStar calculates the CRC **from the retrieved and matches it against the recorder's CRC** register. If they do not match, a CRC error is reported.

The reason why a CRC error occurs is most likely due to poor communication. Check section 1.1.

It is possible to disable the CRC check while connecting. This is done under **Settings > Connection** in the software. Usually, the CRC should not be disabled, but the following scenarios are an exception where CRC check can be disabled:

- A communication error occurred while connecting. Please check section 1.1 before disabling the CRC check.
- A communication error occurred while initiating a new measurement sequence.
- A communication error occurred after data retrieval while updating status in the recorder.
- A communication error occurred while putting the recorder to sleep.
- A communication error occurred while updating status in the recorder upon POR (Power-on Reset) error detection. When connecting to the recorder and POR error is detected, new status is initiated in the recorder, and the RAM data is reset.
- Repeated CRC error occurs, and the above does not apply/has been checked. This may, though, produce errors in the RID file, which again may produce errors in data conversion.

## 1.3 Disable CRC Check

- Go to **Settings > Connection** and disable **Perform CRC test when retrieving RID**.
- Try connecting to the recorder in **Recorder > Connect**.

3. If the connection is OK, then examine the RIT file for possible errors. These possible errors may manifest themselves as very high (>E20) or very low (<E-20) calibration constants. Other errors may be abnormal times/dates and abnormally high measurement sequence numbers in the RIT file. Usually, SeaStar will come up with a warning if the calibration constants or time/date is not regular. If the RIT shows these errors, please request a recorder backup file (RBD) from Star-Oddi.
4. If the recorder has been measuring data, try to retrieve the data (**Recorder > Retrieve Data**). If data cannot be retrieved, there is a fault with the PC com port, the Communication Box/cable, or the recorder. If this is the case, please contact Star-Oddi.
5. Make a short measurement test and start the recorder with a new measurement sequence in **Recorder > Start New Measurement Sequence**.
6. Connect to the recorder after the short measurement test, **Recorder > Connect**. The CRC check is automatically enabled. If a communication/CRC error occurs, there is a fault with the PC com port, the Communication Box /cable, or the recorder. If this is the case, please contact Star-Oddi
7. Retrieve data from the short test **Recorder > Retrieve Data**. Analyze the data and verify that the values are correct.

### 1.3.1 Updating Settings to Recorder Fault

If there is an existing communication problem while using a USB serial converter, the user can disable the **Check Data Echo in the SNMS** option. This option will bypass data echo checks, resulting in less restriction on the communication protocol.

By choosing the **Settings** menu and the **Connection** option command, the following window appears:

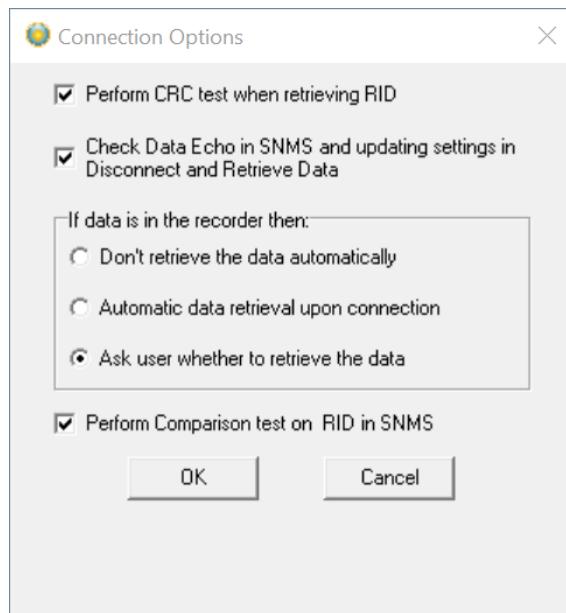


Figure 1.5: Connection Options

Disable **Check Data Echo in SNMS**. Press **OK** and try to connect again.

### 1.3.2 Comparison Test Error

The comparison test takes place when the PC has sent all the settings data to the recorder, and it reads the whole file back and compares it to what was sent. Bad communication can cause errors in the information file when read back. If the data echo check is enabled, it is guaranteed that the information file was transferred correctly to the recorder. Therefore it is OK to disable the comparison test.

## 2 Starting a New Measurement Sequence

### 2.1 Communication Errors

1. Timeout on command echo (no response from recorder).

Check if the cable is properly connected the PC COM port and the recorder.

2. Other communication errors.

Other communications problems can occur although the logger is still on-line. The user is prompted to try starting the logger again in a new measurement sequence. If the user chooses to connect to the logger again, a CRC error will most likely occur. In that case, the user should disable the **CRC** check (in **Settings > Connection**).

# 3 Retrieving data

## 3.1 Communication Errors

### 1. Timeout on command echo.

There is no response from recorder. The recorder is off-line. Please try to connect again

### 2. Other communication errors while retrieving data.

The result of the retrieval can be viewed in the MIT file. Usually, if the communication is in order and all the data is retrieved correctly, SeaStar will automatically convert the data from the decimal values (.DAD) to the unit values (\*.DAT). If this is not the case, then SeaStar may drop the conversion part, and it is up to the user to either retrieve the data again or manually convert the data, depending on the retrieval status. If a communication error occurs in the middle of data retrieval, the logger goes off-line. The user must connect to the logger again and retrieve the data again.

### 3. Communication errors while updating logger status.

If a communication error occurs while updating the status in the logger, i.e., after retrieving the data, the CRC register in the logger is probably corrupt. Thus when connecting again to the logger, a CRC error will likely occur. If so, please disable CRC check as described under CRC error in chapter 1.1.