

STARSHIP RESPIRATORY OXIMETRY SOFTWARE – SETUP AND DOWNLOADING WITH PROFOX

A number of softwares are available to download from oximeters. The software used, data editing performed and how data is presented has a big impact on its interpretation. Readers are directed to the following guides for more information over the technical performance and interpretation of oximetry in children.

[Australasian Sleep Association - Oximetry Guideline](#)

[Starship Children's Health – Oximetry Guideline](#)

PROFOX

Profox is a common software utilised in New Zealand. Users ought to be familiar with its setup and editing features by reading the user guide which can be found under “Help” at the top in the “Main Menu”

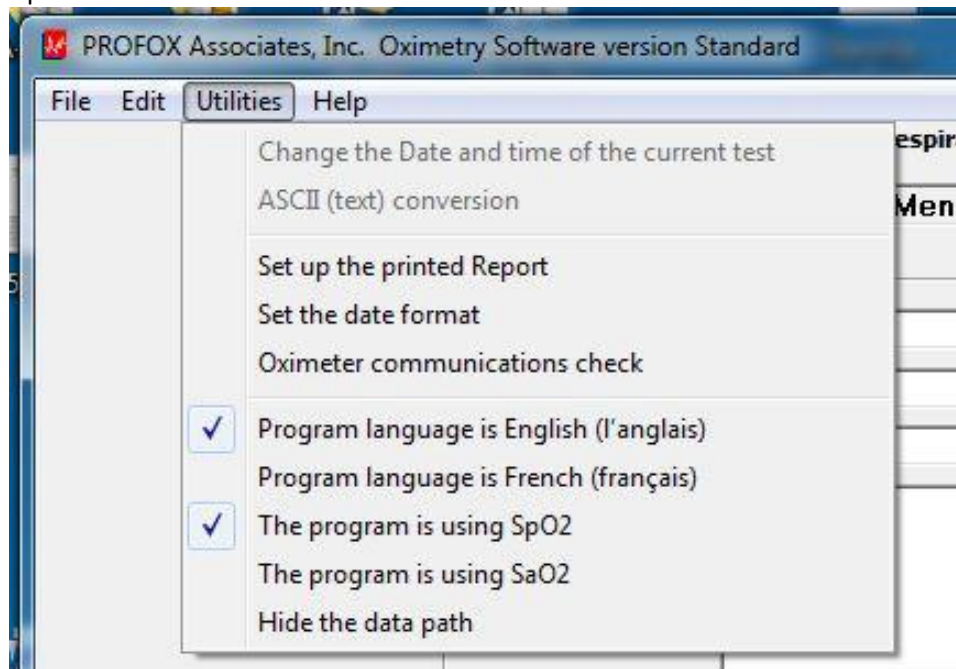


1. SETUP

The Profrox distributor ought aid with the initial installation and licensing of Profrox software. The following are suggestions of how best to set it up for paediatric studies.

Printed report indices:

From the “Main Menu” select “Utilities” from top menu (below) and select “Set up the printed Report”.



Fill in fields as appropriate (below).

PROFOX: Printed Report Setup

File Edit Utilities Help

The summary and comprehensive reports have "Time with SpO2" <90, <80, <70 and <60 percent saturation. You may also have one additional saturation level generated, from 40 to 100. Enter a 0 to inhibit this additional line from being printed:

The comprehensive report can print the "Time with SpO2" <90, <80, <70, <60 and the additional time above, or can print the "Time with SpO2" =88, =89, =90 and <=88, <=89 and <=90.
☒ All the times. ☐ Just the time between 88 and 90.

The summary and comprehensive reports can report the longest continuous amount of time spent less than and equal to a particular saturation level, from 40 to 100. Enter a 0 to inhibit this line from being printed:

Which scaling would you like on the % times (graphic) report: ☐ Linear ☒ Logarithmic

The summary report can be full page (regular) or condensed. The condensed report leaves the bottom half of the page blank, which allows room for physician comments or interpretation. Which report would you like:
☐ Regular. ☒ Condensed.

Please enter the target range to use when reporting the saturation target range:
 Low Target: High Target: Show target on graphs: ☐ Yes ☒ No

Print page numbers in the footer
 Format: Page X of XX ☒ Yes ☐ No

During calculation, a desaturation event is defined as when the saturation drops by a particular number. What number would you like to use (1-20):
☐ Report events using just this number.
☒ Report events using drops of 2, 3 and this number.

The saturation graphs can be set to always scale from 40-100, or automatically scale from either 40-100 or 70-100.
☐ 40-100 ☒ 40-100 or 70-100

A respiratory event is when the RRA decreases to a specific value and has to be less than or equal to a certain time period. What values would you like?
 Value (2 - 10) Time in seconds (10 - 300)

The most important include:

- "Print numbers in the footer" – "yes"
- "During calculation ..." - "Report events using drops of 2,3 and this number", "10"
- "The saturation graphs can be set..." – "40-100 or 70-100"
- NB: The rest of the report format is selected at the time of print / preview in 5.0 below.

Date Format:

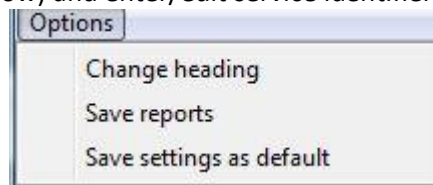
From the "Main Menu" select "Utilities from the top menu (above) and select "Set the date format". Choose DD/MM/YY.

Language / SpO2:

From the "Main Menu" select "Utilities from the top menu (above) and select "English" and "SpO2" as shown above.

Report header:

From the print/preview main page, select "Change heading" from the "Options" menu (below) and enter/edit service identifiers as appropriate.



Report Saving and PDF creation:

To adjust how and where reports are saved, select "Save Reports" from the "Options" menu (above). A new page will open which allows you choose where reports will be saved to (drive location), and the format. To automatically create a PDF file whenever a report is previewed or printed, select "Save the entire report in a Portable ...", select "Do not password protect the files" and tick "Always save when previewing or printing" (see below). Select "Set as default".

PROFOX: Save reports

Change Path

Reports Path: p:\Profox Files\Unchecked Profox Reports

You can save reports in three file formats listed below. You can change the location for storing these files by clicking on "Change path" above.

If you have any file formats selected and also choose to "Always save when previewing or printing", then the selected files will be saved automatically every time you print or preview reports.

If you click the "Make Files Now" button, then the selected files will be made now and you will be returned to the Main Menu. This enables you to save the selected report file format without having to preview or print the reports.

File Formats:

☐ Save the Summary report in ASCII text format (.TXT)

☐ Save the Summary report in Rich Text format (.RTF)

☒ Save the entire report in Portable Document Format (.PDF)

☒ Do not password protect the PDF files.

☐ Always use the following password for all PDF files:

☐ Ask for a password every time a PDF file is created.

For Health Insurance Portability & Accountability Act (HIPAA) compliance, you should password protect PDF files that you email or send to another party. Of course, you will have to provide the password to each party.

Please check with your compliance department if you have questions.

☒ Always save when previewing or printing.

Make files now

Set as default

OK

Cancel

2. DOWNLOADING

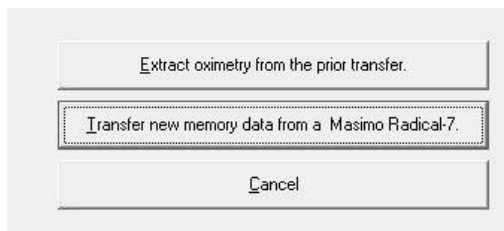
- Confirm patient identification for the oximeter and date of study. This is extremely important!
- Login to the PC using the appropriate login
- Ensure the oximeter is correctly engaged into it's cradle (if applicable), plug it into the wall AC outlet and turn it on.
- Connect the download cable into the back of the oximeter
- Open the Profox software
- Choose "New Patient" – see screen shot below
- Enter patient details. Name should be 'surname' then 'comma', then 'space', then 'firstname'. A consistent approach aids finding studies subsequently. Report comments such as "room air", "6cmH2O CPAP all night", "CPAP until 2 am" are very valuable. Click "Save".

The screenshot shows the 'Starship Respiratory' software window. At the top is a menu bar with 'File', 'Edit', 'Utilities', and 'Help'. Below the menu bar is a title bar that says 'Starship Respiratory'. Underneath the title bar is a 'Main Menu' button. The main area of the window is divided into several sections. The first section is labeled 'Current Patient' and contains four text input fields: 'PATIENT NAME' (filled with 'Joe BLOGGS'), 'ID NUMBER' (filled with 'XYZ1234'), 'REQ. PHYSICIAN' (filled with 'Dr Seuzz'), and 'REPORT COMMENTS' (filled with 'In room air'). Below this section is a section labeled 'Oximetry Test:' with a dropdown menu showing 'None'. Below that is a section labeled 'Path for storing tests:' with a text input field containing 'c:\ProgramData\PROFOX\Oximetry\Tests'. At the bottom of the window are four buttons: 'New Patient', 'Oximetry Data (transfer)', 'Select Another Patient', and 'Print or Preview Reports'.

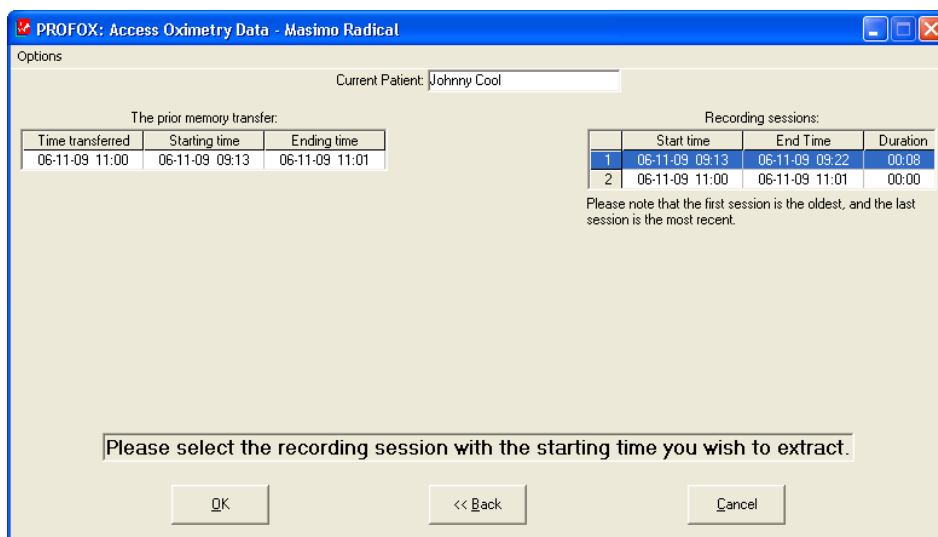
- Again, make very sure you have the right oximeter for the right patient.
- The software will return to the startup menu with the new patient details. Now click "Oximetry Data (transfer)". Ensure the correct oximeter manufacturer and model is selected (see below). If your manufacturer / model isn't shown then the software may need updating. Click "Next".

The screenshot shows a dialog box titled 'Please select an oximeter:'. It contains two columns of radio button options. The first column is labeled 'Manufacturer' and lists: BCI, Criticare, Datex-Ohmeda, Draeger Medical, Invacare, Invivo, Konica Minolta, MD300w, Medaid, Masimo (selected), Nellcor, Nonin, Novamatrix, Phillips, Quartz Medical, Respirationics, and SPO Medical. The second column is labeled 'Oximeter Model' and lists: Masimo Rad-5, Masimo Rad-57, Masimo Rad-8, Masimo Rad-87, Masimo Rad-87 with Respiration, Masimo Rad-9, Masimo Radical, Masimo Radical-7 (selected), Masimo Radical-7 with Respiration, and Quartz Q-400. At the bottom of the dialog box are two buttons: 'Next' and 'Cancel'.

- Click “Transfer new memory data from...”. This is important as otherwise you could incorrectly assign previously downloaded data to the “new patient”.



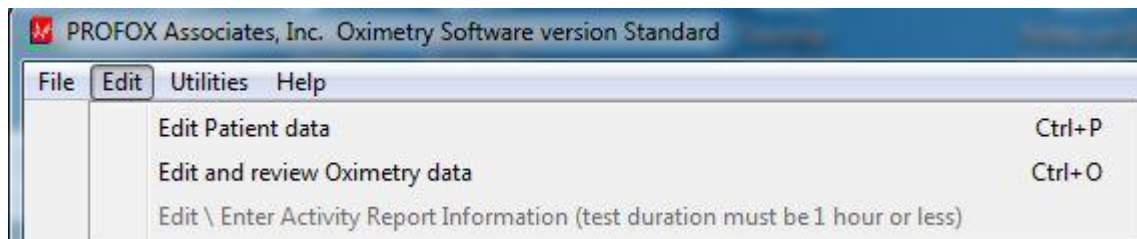
- The download should begin. If not ensure the oximeter is turned on, has wall power and is connected properly. If still not working ask for further assistance. The download port may be wrong.
- The download may take some minutes. On completion the screen should look something like the screenshot below



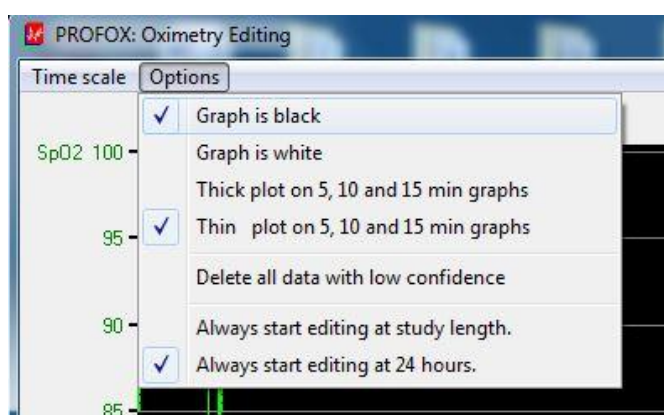
- Select the first recording session you wish to download (top right hand corner). Follow the instructions provided until you have downloaded all the oximetry data needed. Click “Save this test”. Confirm it belongs to the right patient. You have a further opportunity to correct patient details and report comments at this point. Click “OK”

3. EDITING DOWNLOADED DATA

After downloading data it is still possible to edit the patient details and comments. Select “Edit Patient Data” from “Edit” of the “Main Menu” as shown below and correct details as appropriate.



Data can be edited to remove artefact (poor quality erroneous data) or limit the time range (eg limit to a time with a specific therapy). Select “Edit and review oximetry data” from the “Edit” menu at the top as shown above. A screen showing the SpO2 and HR data will appear (example below).



Removing artefact:

- **Low confidence data:** This is data the oximeter judged as of suspect quality (devices will vary). In un-edited reports this will be shown on the report but with a black marker in the signal quality bar. This can be removed by selecting “Delete all data with low confidence” from the “Options” menu as shown above.
- **Manual editing:** SpO2 and HR data can be manually deleted. This requires expertise and if performed must be documented in the comments. It may be appropriate if only part of the recording is of interest or if some of the data is erroneous / irrelevant. Poor signal data that may be misleading is often present around sleep onset / waking due to motion artefact. It may be appropriate to delete data at the beginning or end of the recording accordingly. It is usually best to change the time scale so that editing can be accomplished accurately by choosing a timescale from the “Time scale” menu at the top. . Manual editing is performed by choosing “Begin edit” at the bottom of the Oximetry editing screen. The practitioner then moves a line to select the beginning and end of area to be edited and chooses what to remove.
- **Aberrant data:** Profox will also identify data it thinks implausible – it targets single points of saturation greater than 10 from prior and subsequent points and single points of pulse that are greater than 20 from prior and subsequent points. You are always given this option as you leave the oximetry editing page and can either remove it all or review each point individually.
- At the end of editing save the report separate to the raw one and describe the editing performed in the comments section. “Low confidence data removed”, “Aberrant data removed”, and/or “Manual editing of apparent artefact performed” (+/- greater detail).

5. PRINTING AND CREATING PDF REPORTS

From the Main Menu choose “Print or Preview Reports”. The Report window will open (screen shot below). These are the usual settings for Starship Respiratory.

The screenshot shows a software window titled "Options" with a sub-header "Report heading: Starship Children's Health". The window contains several sections of settings:

- Print Options:** A list of checkboxes for different report types. The "Print 1 page of summary report" and "Print 1 page of graphs at 8 hours per page" are checked. Other options include comprehensive report, % times at saturation (graphic/text), 40 deepest desaturations, respiratory (RRa) events, graphs at 24/12 hours, 2-hour graphs, and 3-hour graphs.
- Longest Continuous Times:** Radio buttons to select "Report the longest time" (selected) or "Report the 3 longest times".
- Report Language:** Radio buttons for English (selected), French, German, Spanish, and Swedish.
- Print in color:** Radio buttons for Yes or No (No is selected).
- Saturation Times:** Radio buttons for "Time in ranges" (selected) or "Time in target".
- Graphs at 2 hours per page:** A sub-section with a label "Type of graphs at 2 hours per page:" and radio buttons for "All pages" (selected) or "1 page with lowest average SpO2".
- Graphs at 1 hour per page:** A sub-section with a label "Type of graphs at 1 hour per page:" and radio buttons for "All pages" (selected) or "1 page with lowest average SpO2".
- Activity Report:** A checkbox for "Print the activity report" with a note: "(The activity report can only be selected if the test duration is 60 minutes or less)".
- Action Buttons:** Three buttons on the right: "Print Preview" (highlighted with a dashed border), "Print Report", and "Cancel".

Click on “Print Preview”. The report can be viewed on the screen at this point and can be printed. At the same moment (if set up correctly) a PDF version will be created which can be disseminated. Alternatively /additionally some PCs will give you the opportunity to create a PDF when “printing.”