



# Connect Software Operating Manual



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# 1. Introduction

Valeport Connect has been specifically developed for Valeport's Bluetooth equipped profilers taking advantage of low power Bluetooth in battery operated devices. It replaces DataLog x2 for SWIFT and rapidPro profilers.

- Presently available for windows 10 PC and iOS portable devices, Android will follow.
- Bluetooth line of site ranges expected are:
  - LE \ Classic: 10m (higher ranges have been seen)
  - with an external antenna: 30 to 40mAn antenna will allow the autonomous operation of an instrument on back deck with the controlling PC inside e.g. operation with a winch
- Functionality:
  - Instrument set up and set to work
  - Auto Bluetooth reconnect and last file download
  - display: alpha numeric and graphical including geo-location on Open Street Maps
  - Industry standard data formats export – e mail and cloud services

In version 1.0.4.0 the following major changes have been implemented:

1. Operation with SWiFTplus Profilers and associated new firmware version
2. .VP2 data file format has replaced .VPD as the standard Valeport file format
3. Import functionality of .VP2 files
4. Option for 'up-cast' data collection
5. Full delete functionality from the instrument

## 1.1. Install Connect

### PC Software

Run the Valeport Connect Installer (vpConnectSetup.exe). This is available on the flash drive supplied with your SWiFT.

It can also be downloaded from <http://valeport.download>



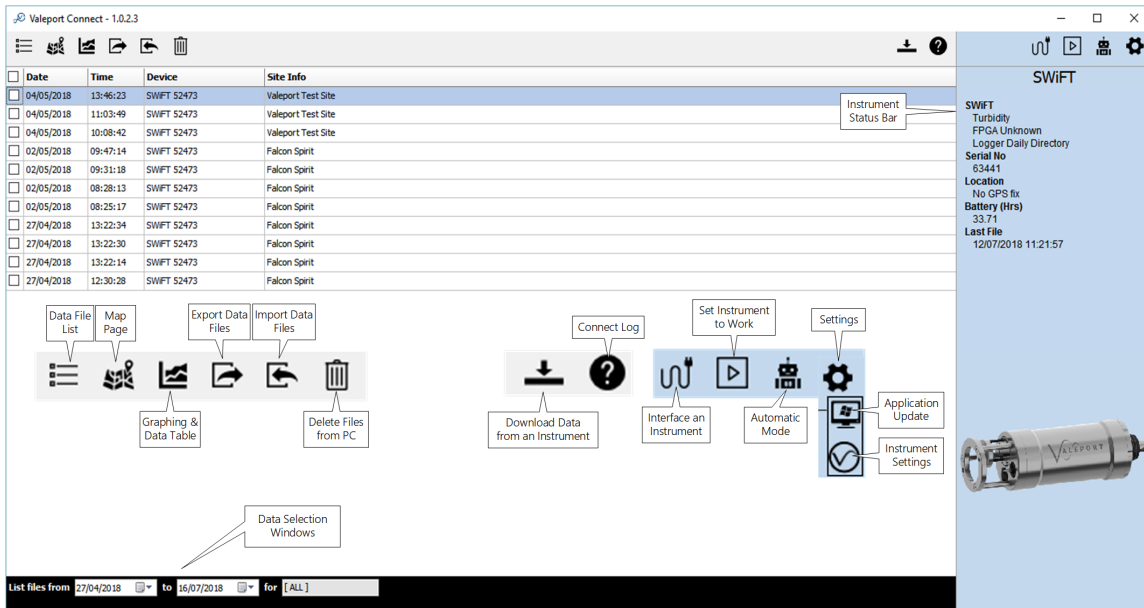
Create a short cut on your desktop

Open Valeport Connect

### iOS Software

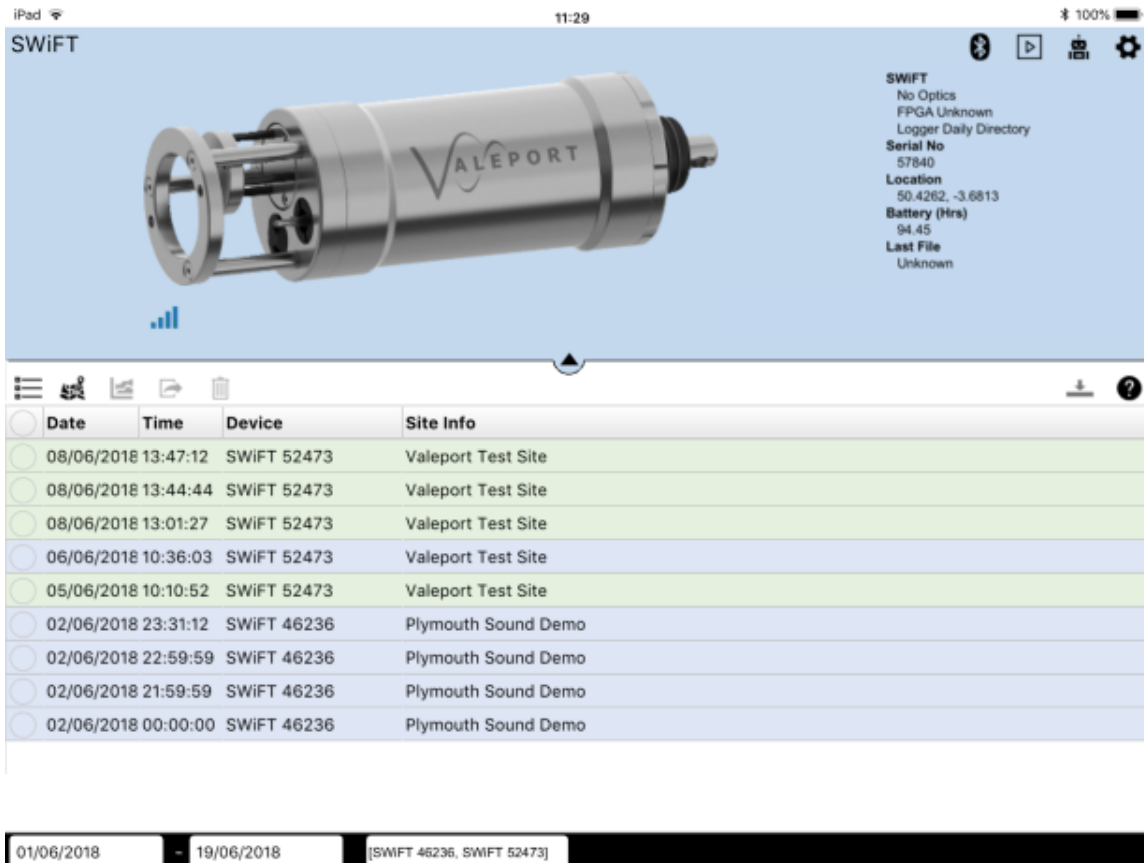
iOS Software is available from the iTunes Store. Search for 'Valeport'.

## 2. Interface Description - PC Software



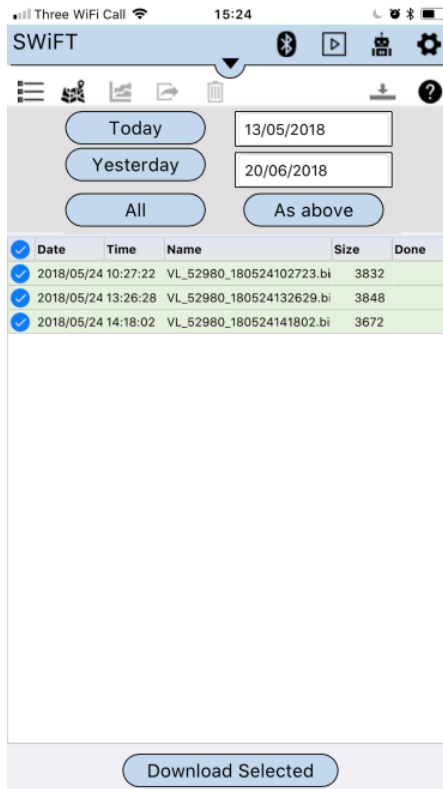
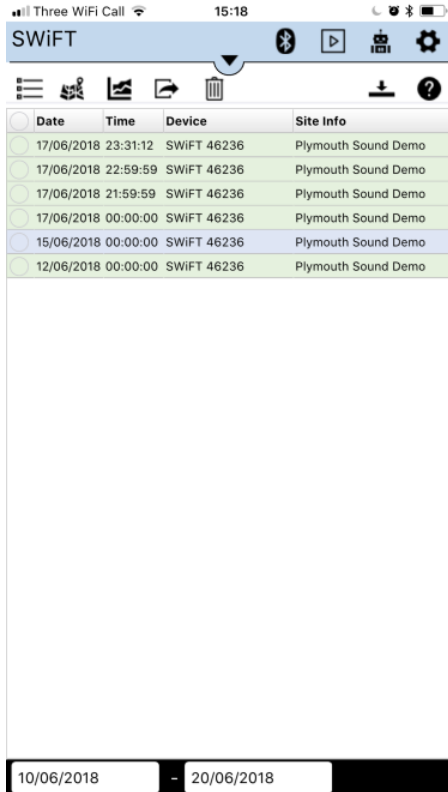
### 2.1. iOS App - iPad

The iOS App works in a very similar way to the PC software; the interface functionality is the same.




## 2.2. iOS App - iPhone

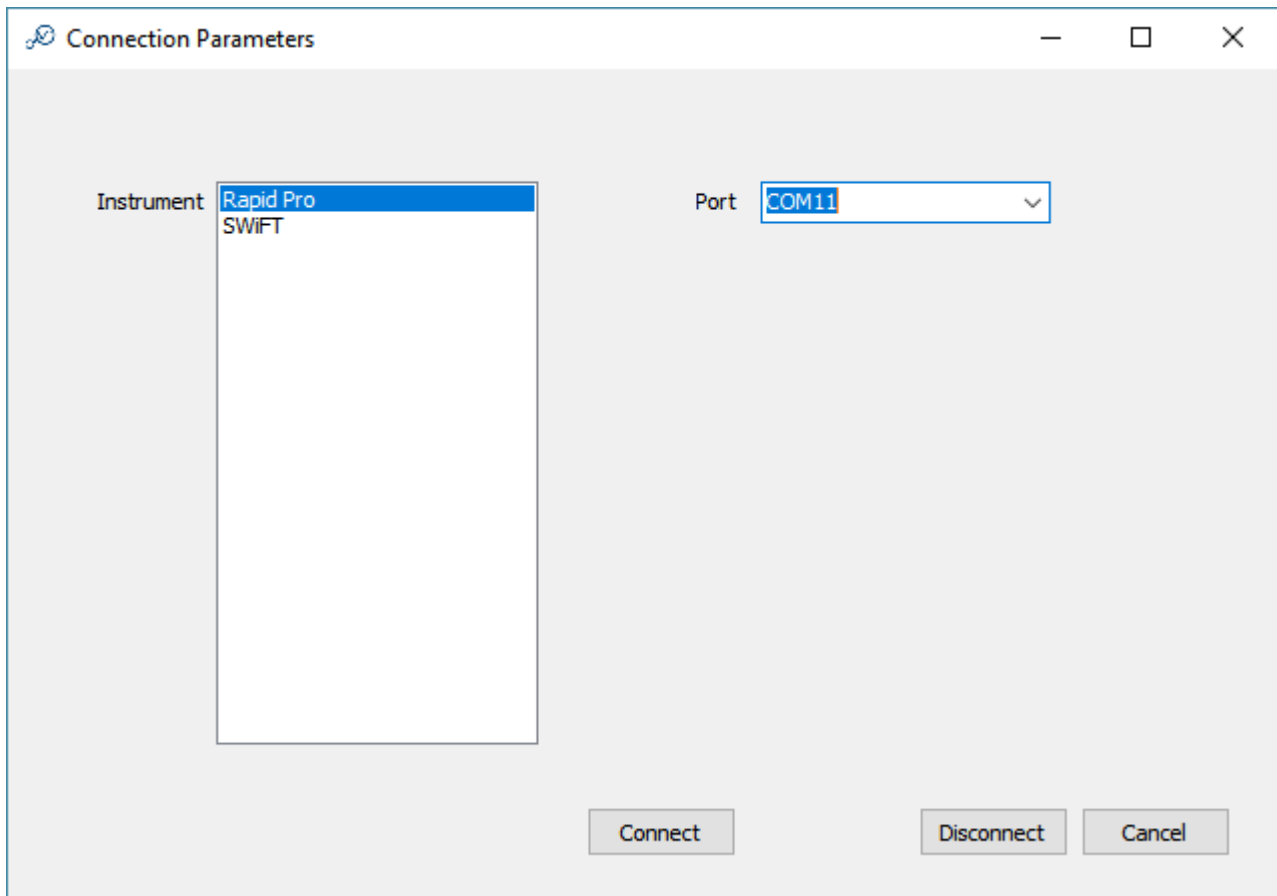
The iPhone App again, follows the PC software as much as possible. The same data off load methods as the iPad are available from an iPhone.



### 3. Interfacing an Instrument

Connect can communicate with an Instrument via the provided USB or the supplied Bluetooth adapter.

- Ensure the instrument is on
- Interface to the PC using the provided cable or Bluetooth adapter
- Click on the Interfacing Icon: 
- Select the instrument type
- Select the appropriate com port.




On successful connection, the status panel on the right hand side of the main screen should populate with information from the instrument.

## 4. Application and Instrument Settings

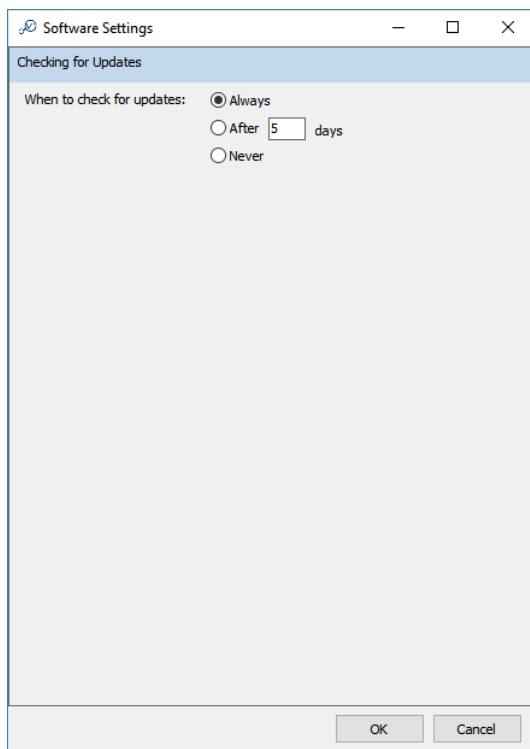
Click on the Settings Icon:




### 4.1. Application Settings

Click on the Application Settings Icon: 

Set how often you would like to check for Application updates. You will need an internet connection to receive update posts:



## 4.2. Instrument Settings

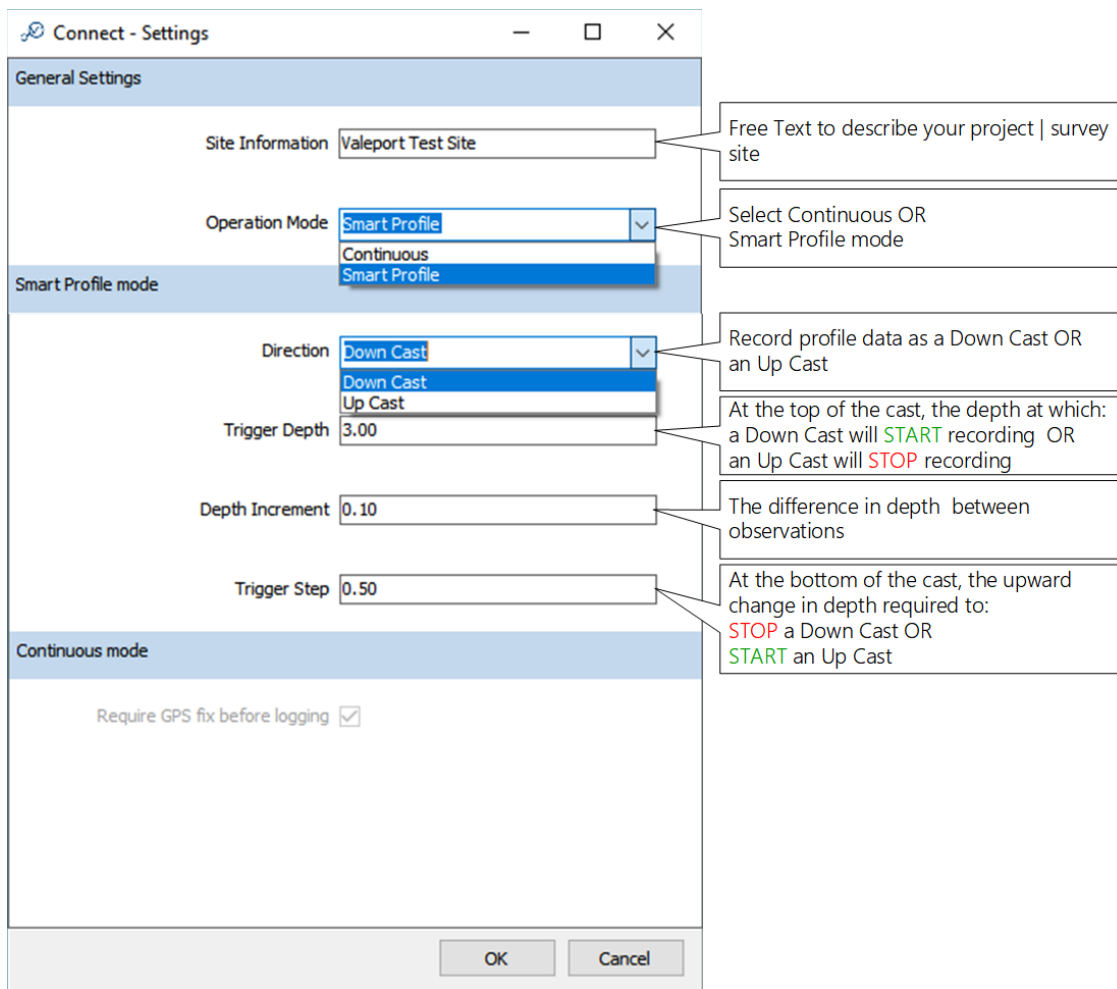
Click on the Instrument Settings Icon: 

The instrument settings allow for the operational mode of the instrument to be set.

Refer to the Instrument manual for further information on the specific modes and their application. Unless a user calibration factor has been programmed into the Instrument the units in the dialogue are metres.

### 4.2.1. SWiFT and SWiFTplus

SWiFT and SWiFTplus can operate in two modes, Smart Profile or Continuous:



The screenshot shows the 'Connect - Settings' dialog box with the following settings and callouts:

- General Settings**
  - Site Information: Valeport Test Site (Free Text to describe your project | survey site)
  - Operation Mode: Smart Profile (Select Continuous OR Smart Profile mode)
- Smart Profile mode**
  - Direction: Down Cast (Record profile data as a Down Cast OR an Up Cast)
  - Trigger Depth: 3.00 (At the top of the cast, the depth at which: a Down Cast will **START** recording OR an Up Cast will **STOP** recording)
  - Depth Increment: 0.10 (The difference in depth between observations)
  - Trigger Step: 0.50 (At the bottom of the cast, the upward change in depth required to: **STOP** a Down Cast OR **START** an Up Cast)
- Continuous mode**
  - Require GPS fix before logging:

Buttons: OK, Cancel



#### 4.2.1.1. Smart Profiling Mode

Smart Profiling allows the operator to specify a change in depth to trigger an observation set to be recorded.

The profile can be recorded either as a Down Cast or an Up Cast with start and stop triggers specified as required using the Settings dialogue.

##### The Down Cast

The Trigger Depth is the depth, close to the surface, at which the Profile will start and open a new logging file.

The Trigger Step is the change in depth upwards, that will cause the Profile to stop and close the logging file. This should be set to a magnitude greater than the local swell.

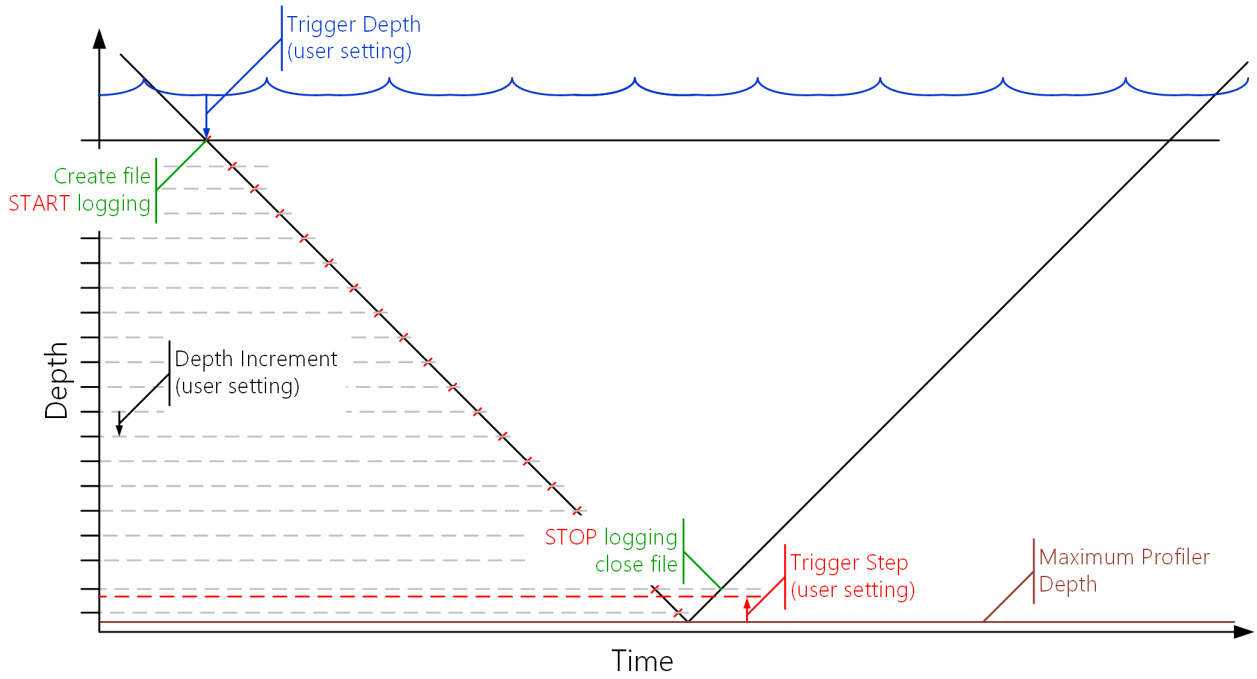
##### The Up Cast

The Trigger Step is the change in depth upwards, that will cause the Profile to start and open a new logging file. This should be set to a magnitude greater than the local sea and swell.

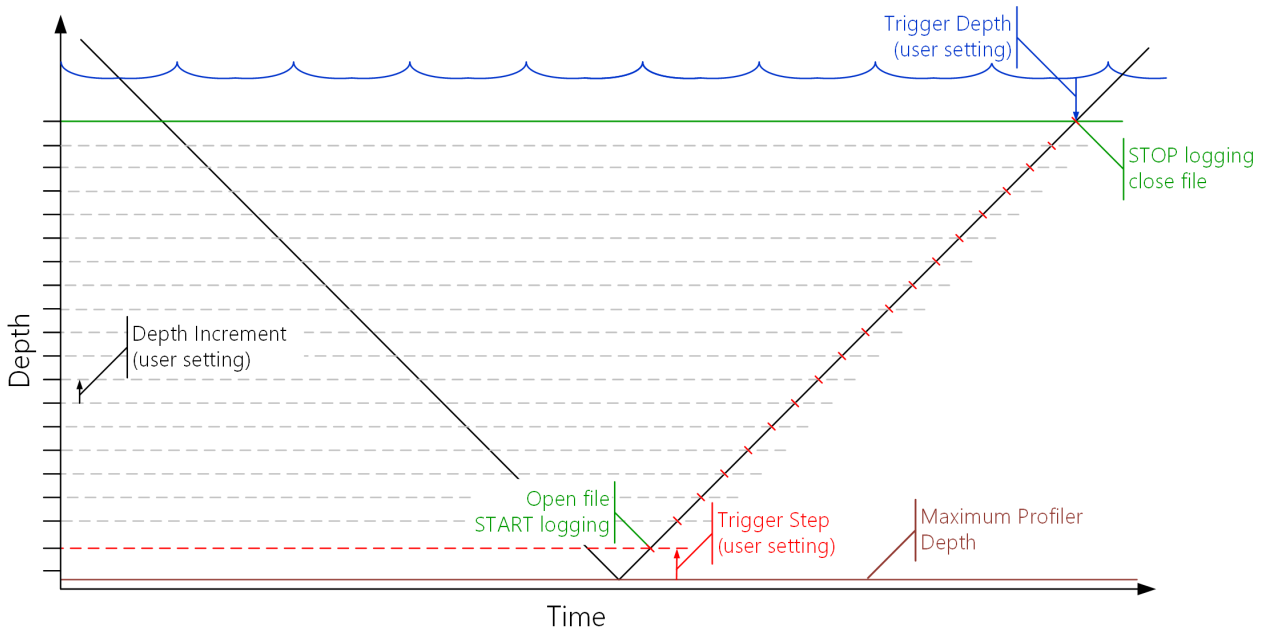
The Trigger Depth is the depth, close to the surface, at which the Profile will stop and close the logging file.

An observation for each sensor - Sound Speed, Temperature, Pressure and Optical in the case of a SWIFTplus, will be recorded at each Depth Increment as defined in the settings dialogue.

### 4.2.1.1.1 Down Cast



### 4.2.1.1.2 Up Cast



## 4.2.2. Continuous Mode

In Continuous mode a set of observations will be recorded at a rate of 1Hz. Data will be recorded from the moment the Instrument is set to work and will continue until the Instrument is interrupted.

SWIFT SVP will record an observation for each sensor every second. That observation will be an average of 32 readings (32Hz observation period).

The SWIFTplus will record an observation for the Optical sensor, Temperature, Pressure and Sound Speed every second.

Connect - Settings

General Settings

Site Information: Valeport Test Site

Operation Mode: Continuous

Smart Profile mode

Start Depth: 0.50

Depth Increment: 0.10

Stop Step: 2.00

Direction: Down Cast

Continuous mode

Require GPS fix before logging

In Continuous mode - do you require a GPS fix before starting data collection?

OK Cancel

### 4.2.3. rapidPro

a rapidPro profiler can operate in one of two modes, Rapid Mode or Continuous:

The screenshot shows the 'Connect - Settings' dialog box with the following fields and callouts:

- Site Information:** Text field containing 'Test Site'. Callout: 'Free Text to describe your project | survey site'.
- Operational Mode:** Dropdown menu with 'Rapid Mode' selected. Callout: 'Select Rapid Mode OR Continuous'.
- Output Rate:** Dropdown menu with '4 Hz' selected. Callout: 'Select the rate at which all sensor data will be recorded: 1, 2, 4, 8, 16 or 32 Hz'.
- Rapid mode section:**
  - Trigger Depth:** Text field containing '5.00'. Callout: 'In Rapid Mode: At the top of the cast, the depth at which the profile will **START**'.
  - Trigger Step:** Text field containing '3.00'. Callout: 'In Rapid Mode: At the bottom of the cast, the upward change in depth required to **STOP** the profile'.

Buttons for 'OK' and 'Cancel' are located at the bottom of the dialog.

### 4.2.3.1. Rapid Mode

In Rapid mode all sensors are observed and data recorded based on time and is only available as a Down Cast. In the example below all sensors will be observed and recorded 4 times a second - 4Hz. This includes optical sensors, if fitted. If you require a different observation regime please contact Valeport.

The Trigger Depth should be set to the depth that you require the Down Cast profile to start recording.

The Trigger Step should be set to the depth difference, in an upward direction as the rapidPro is recovered, that will cause the data recording process to stop. It should be set to a value greater than the local sea and swell to avoid the profile being stopped prematurely as the vessel pitches and rolls.

The screenshot shows the 'Connect - Settings' window with the following configuration:

- Site Information: Test Site
- Operational Mode: Rapid Mode
- Output Rate: 4 Hz (selected from a dropdown menu containing 1 Hz, 2 Hz, 4 Hz, 8 Hz, 16 Hz, and 32 Hz)
- Trigger Depth: (empty field)
- Trigger Step: 3.00

A callout box points to the Output Rate dropdown with the text: "Select the rate at which all sensor data will be recorded".

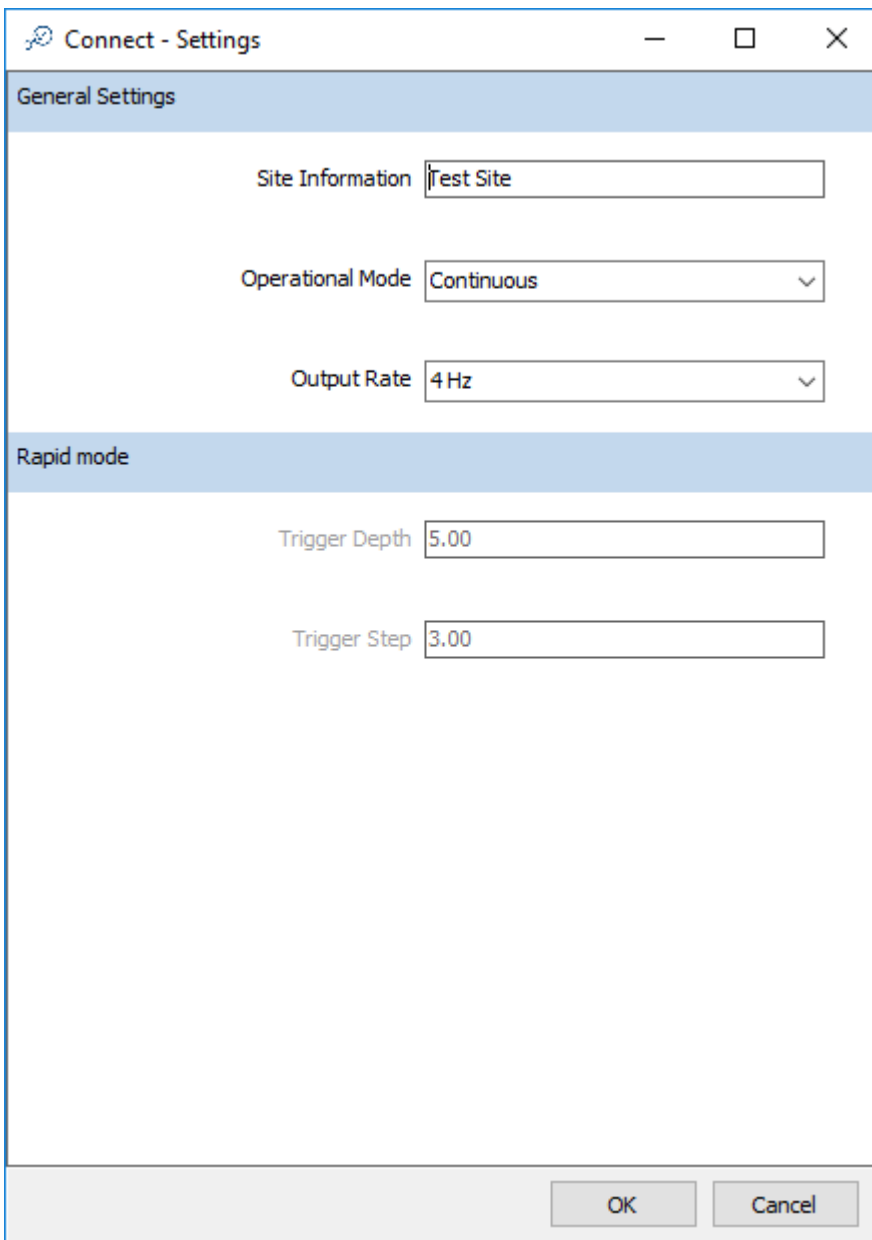
### 4.2.3.2. Continuous Mode

In Continuous Mode the rapidPro will start recording data as soon as it is put into a Run mode and will record data at the rate selected Output Rate in Hz.

There are no options for either a Trigger Depth or Trigger Step.

In order to record a GPS fix in the header, ensure the rapidPro is in clear view of the sky and has been given sufficient time to calculate a fix. Once you are confident you have a valid GPS fix reset the Profiler.

In continuous mode a file is closed when the instrument is interrupted by an interrogation from Connect. On completion of the interrupt the instrument is placed back in run mode and a new logging file created.



| General Settings |            |
|------------------|------------|
| Site Information | Test Site  |
| Operational Mode | Continuous |
| Output Rate      | 4 Hz       |

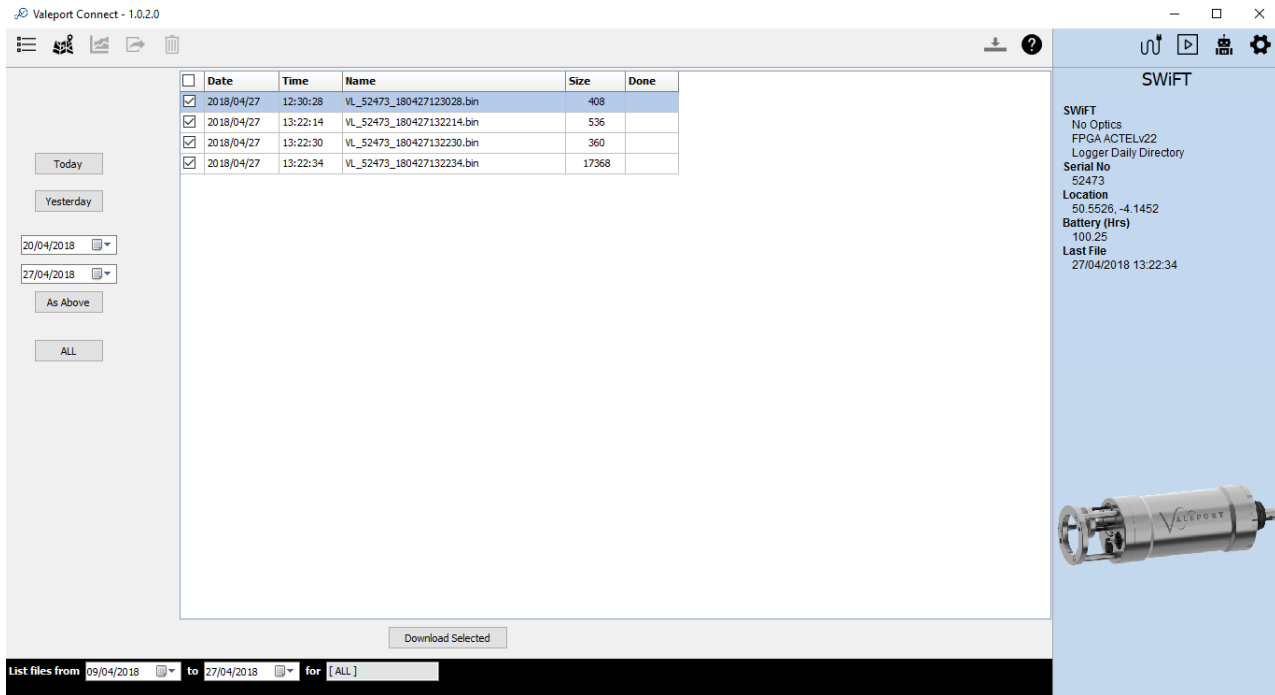
| Rapid mode    |      |
|---------------|------|
| Trigger Depth | 5.00 |
| Trigger Step  | 3.00 |

OK Cancel

## 5. Download Data Files from an Instrument

Once an instrument is recovered to the surface and interfaced to Connect by either Bluetooth or a cable, to download the data file click on the Download Icon:

The following screen will be displayed:



The file download interface interacts with the instrument to download a file listing. Options are to list files from:

- Today
- Yesterday
- Date range
- All files on instrument

§ This may take some time if there a lot of files or some very large files (e.g. Continuous Mode)

It is recommended that this option is only used of a wired connection.

Select the files required (previously downloaded files will not be automatically checked)

and click:

Files will be downloaded in the native binary format and stored in:

C:\Users\Public\Public Documents\uk.co.valeport\connect\Raw

They will also be automatically converted to vpd (Valeport Data Format) and stored in:


C:\Users\Public\Public Documents\uk.co.valeport\connect


Files should not be deleted or moved from these directories

All Instruments record data using UTC time for both file naming and for any time stamp.

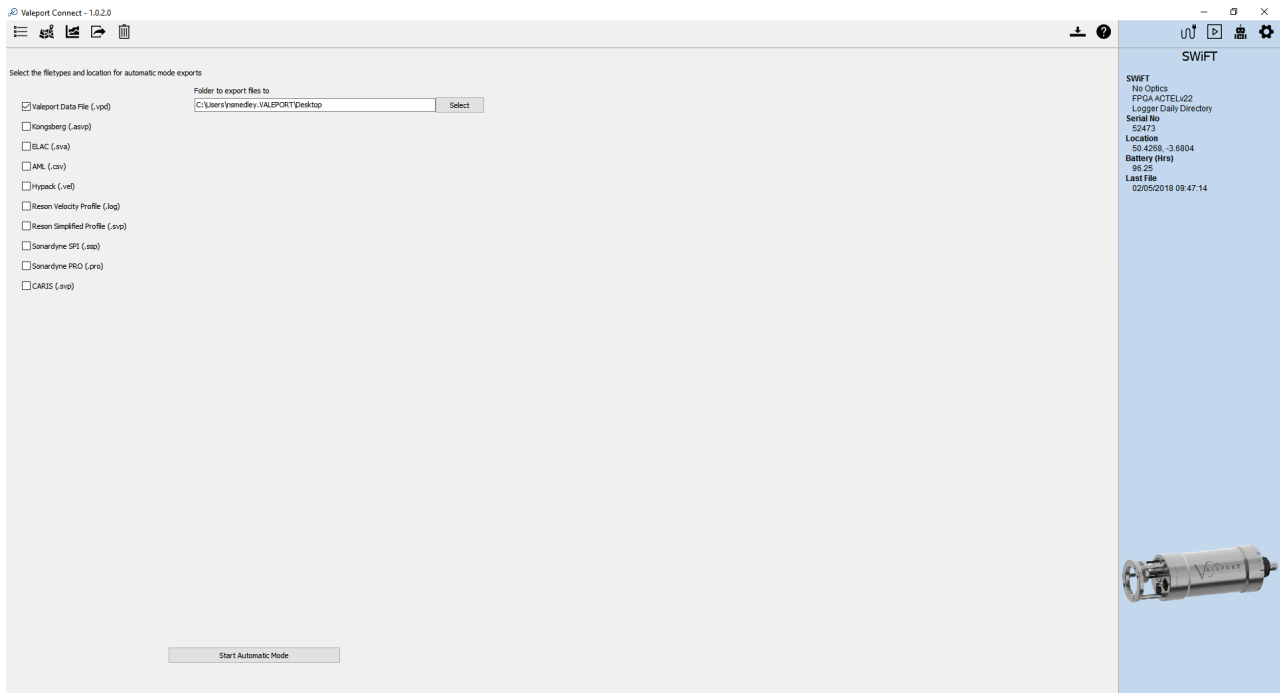
When listing files based on Today and Yesterday the files displayed are selected based on local time to fit with the working day.

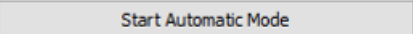
## 6. Automatic Download Mode

Click on the Auto Mode Icon to select the setup page 

The icon is green when the Mode is enabled 

The auto download mode allows for fully automatic download and conversion of files from an Instrument to Connect.



- File export formats are the same as the standard export protocols.
- File location can be set as any drive Connect has access to.
- Winch control is for specific equipment. Leave this unchecked unless you have the required equipment - contact Valeport for further information.
- Click  to start.



- When automatic mode is activated, a green bar will appear and the Auto Mode (robot) icon will turn green
- The broadcast information from the Instrument (seen in right hand bar) is monitored.
  - This means that once the Instrument is back on the surface and within Bluetooth range it will be automatically reacquired and the broadcast message will be received and processed.
- If the latest file message is detected to have changed, Connect will automatically download the file and convert it to the formats specified.
- After acquisition, the Instrument will be set into run mode ready to be deployed.

Valeport Connect - 1.0.2.0

Auto Mode Active

| <input type="checkbox"/>            | Date       | Time     | Device      | Site Info           |
|-------------------------------------|------------|----------|-------------|---------------------|
| <input checked="" type="checkbox"/> | 16/04/2018 | 12:13:35 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 12:06:30 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 10:32:22 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 09:24:38 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 08:57:22 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 08:48:00 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 16/04/2018 | 08:43:01 | SWIFT 52473 | Falcon Spirit       |
| <input type="checkbox"/>            | 05/04/2018 | 12:18:38 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 05/04/2018 | 11:39:38 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 05/04/2018 | 10:46:22 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 05/04/2018 | 09:46:19 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 05/04/2018 | 09:18:45 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 04/04/2018 | 09:37:12 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 01/04/2018 | 23:31:12 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 01/04/2018 | 22:59:59 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 01/04/2018 | 21:59:59 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 01/04/2018 | 00:00:00 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 30/03/2018 | 00:00:00 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 27/03/2018 | 07:05:34 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 27/03/2018 | 00:00:00 | SWIFT 46236 | Plymouth Sound Demo |
| <input type="checkbox"/>            | 23/03/2018 | 09:02:02 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 22/03/2018 | 13:31:32 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 22/03/2018 | 13:07:04 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 22/03/2018 | 12:52:48 | SWIFT 59845 |                     |
| <input type="checkbox"/>            | 21/03/2018 | 13:43:05 | SWIFT 59845 |                     |

**SWIFT**

No Optics  
FPGA ACTELV22  
Logger Daily Directory

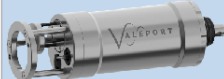
**Serial No**  
52473

**Location**  
50.5526, -4.1451

**Battery (Hrs)**  
99.55

**Last File**  
27/04/2018 13:22:34

**Max Depth in last download**  
0.066m



Automatic mode started

List files from 26/02/2018 to 28/04/2018 for [ALL]

# 7. List View

Click on the File List page:

This is a listing of all the files downloaded onto the local PC.

The screenshot shows the 'Valeport Connect - 1.0.2.0' application window. On the left, a table lists files with columns for Date, Time, Device, and Site Info. The first six rows are selected. On the right, a detailed view for a 'SWIFT' device is shown, including metadata like 'No Optics', 'FPGA ACTELV22', 'Logger Daily Directory', 'Serial No 52473', 'Location 50.5525, -4.1452', and 'Battery (Hrs) 99.99'. A 3D model of the device is displayed at the bottom right of this panel. At the bottom of the window, a filter bar shows 'List files from 12/04/2018 to 28/04/2018 for [SWIFT 52473, SWIFT 5...]'.

| Date                                | Time       | Device   | Site Info   |               |
|-------------------------------------|------------|----------|-------------|---------------|
| <input checked="" type="checkbox"/> | 16/04/2018 | 12:13:35 | SWIFT 52473 | Falcon Spirit |
| <input type="checkbox"/>            | 16/04/2018 | 12:06:30 | SWIFT 52473 | Falcon Spirit |
| <input checked="" type="checkbox"/> | 16/04/2018 | 10:32:22 | SWIFT 52473 | Falcon Spirit |
| <input type="checkbox"/>            | 16/04/2018 | 09:24:38 | SWIFT 52473 | Falcon Spirit |
| <input checked="" type="checkbox"/> | 16/04/2018 | 08:57:22 | SWIFT 52473 | Falcon Spirit |
| <input type="checkbox"/>            | 16/04/2018 | 08:48:00 | SWIFT 52473 | Falcon Spirit |
| <input checked="" type="checkbox"/> | 16/04/2018 | 08:43:01 | SWIFT 52473 | Falcon Spirit |

The file list can be filtered by date, Instrument or serial number using the controls on the bottom bar.

Files are selected by clicking the selection box on the left hand side of the list.

Selected files are used in the Graph View and Data Export.

## 7.1. Filtered by Date

This screenshot shows the same software interface as above, but with a calendar overlay for April 2018. The file list is filtered to show files from 01/03/2018 to 28/04/2018. The calendar shows the dates 27 and 28 of April 2018 highlighted. The filter bar at the bottom now reads 'List files from 01/03/2018 to 28/04/2018 for [SWIFT 52473, SWIFT 5...]'.

## 7.2. Filtered by Instrument

Filter by instruments
— □ ×

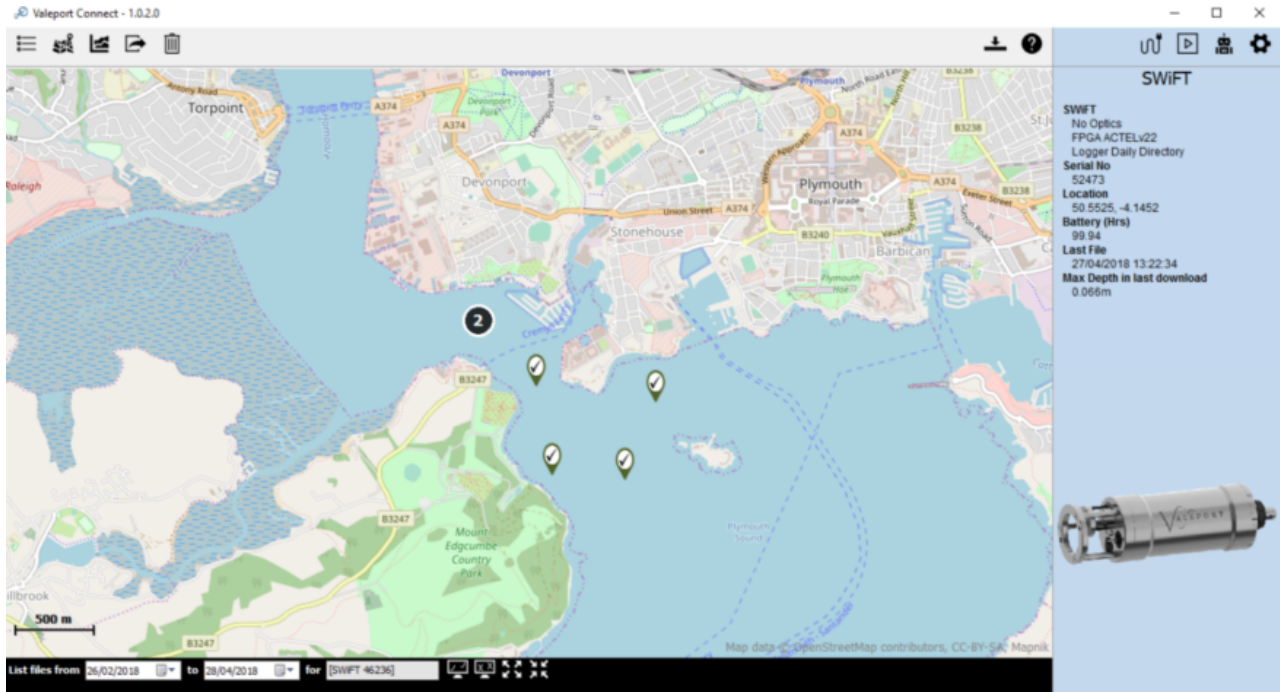
Only include files related to the following instruments

|                                     | Instrument  |
|-------------------------------------|-------------|
| <input checked="" type="checkbox"/> | SWIFT 46236 |
| <input checked="" type="checkbox"/> | SWIFT 52473 |
| <input checked="" type="checkbox"/> | SWIFT 59845 |

Apply Cancel

## 8. Map View

Click on the Map View Icon: 



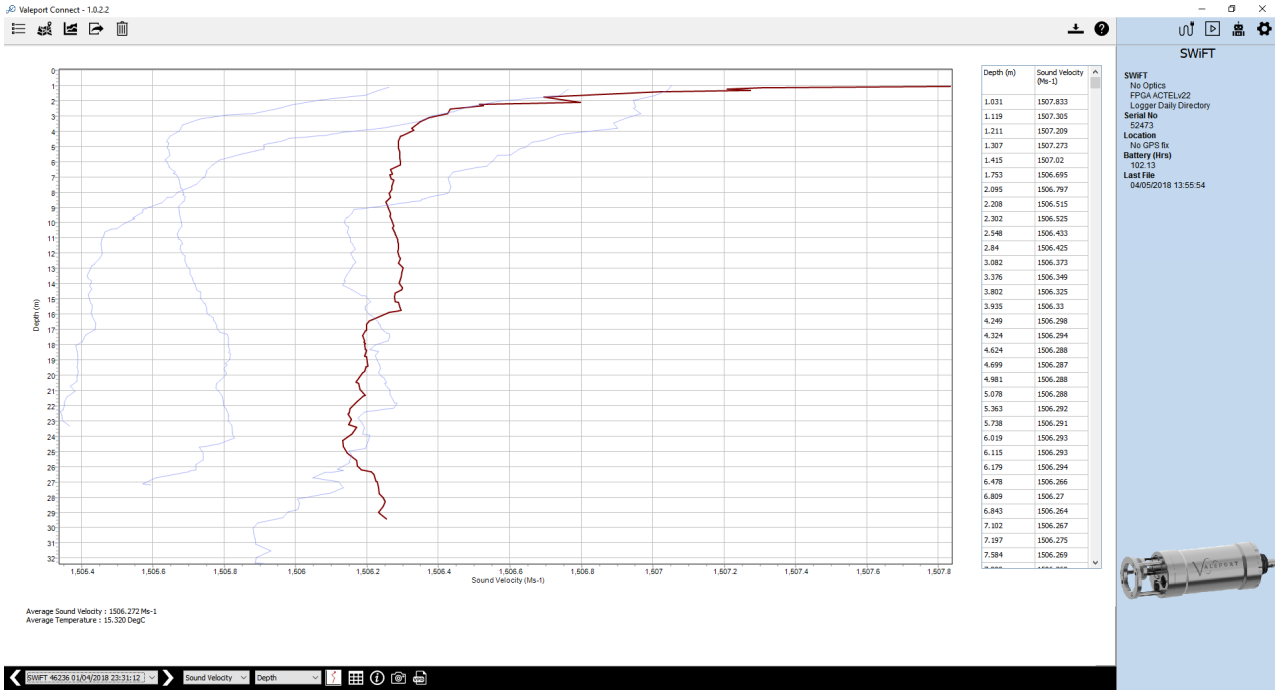
- Selection status is shown with a green tick or red cross.
- Files can be selected or deselected using the map view.
- Numbered icons indicate multiple profiles in one location. Clicking on the number will zoom into that location.
- Date and instrument filters are also available on the lower bar.

Mapping is provided by OpenStreetMap and is cached i.e. any map tiles downloaded will still be visible if no internet connection is available.


# 9. Graph View

Click on the Map View Icon: 


The graph view allows for graphical visualisation of the files selected either via the file listing or the map view.




- The default view is a graph of Sound Velocity vs Depth. This can be changed using the drop down lists on the bottom selection tool bar.
- The highlighted profile (in red) is the currently selected profile in the bottom selection tool bar, far left drop down window. Use the left and right arrows to select the next or previous profile.
- Icons on the lower bar are:

 single plot view toggles to:

 multi-plot view and vice versa

 Toggles the tabular data to the right of plot on/off

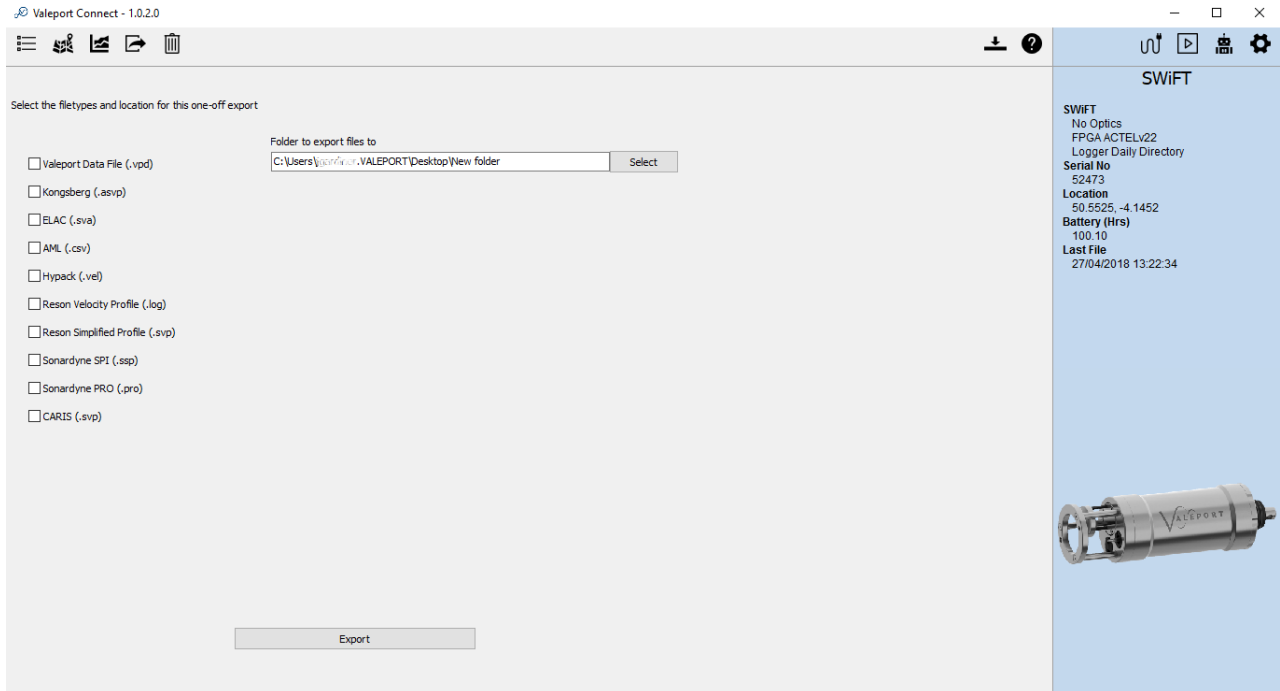
 Toggles the Average Data window on and off below the plot. It will display average data for the selected profile

 Takes a Snapshot of the graph and copies it to the clipboard

 Toggles between the Graph View and the Raw Data table. The Raw Data table can be cut and pasted into another program.

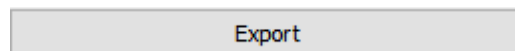
## 10. Data Export - PC Software

Click on the Data Export Icon: 



Files can be exported in a number of industry formats by selecting them from the list. The Data export function will export the selected files, from the list page, in the formats specified to your selected directory.

click the Export button:



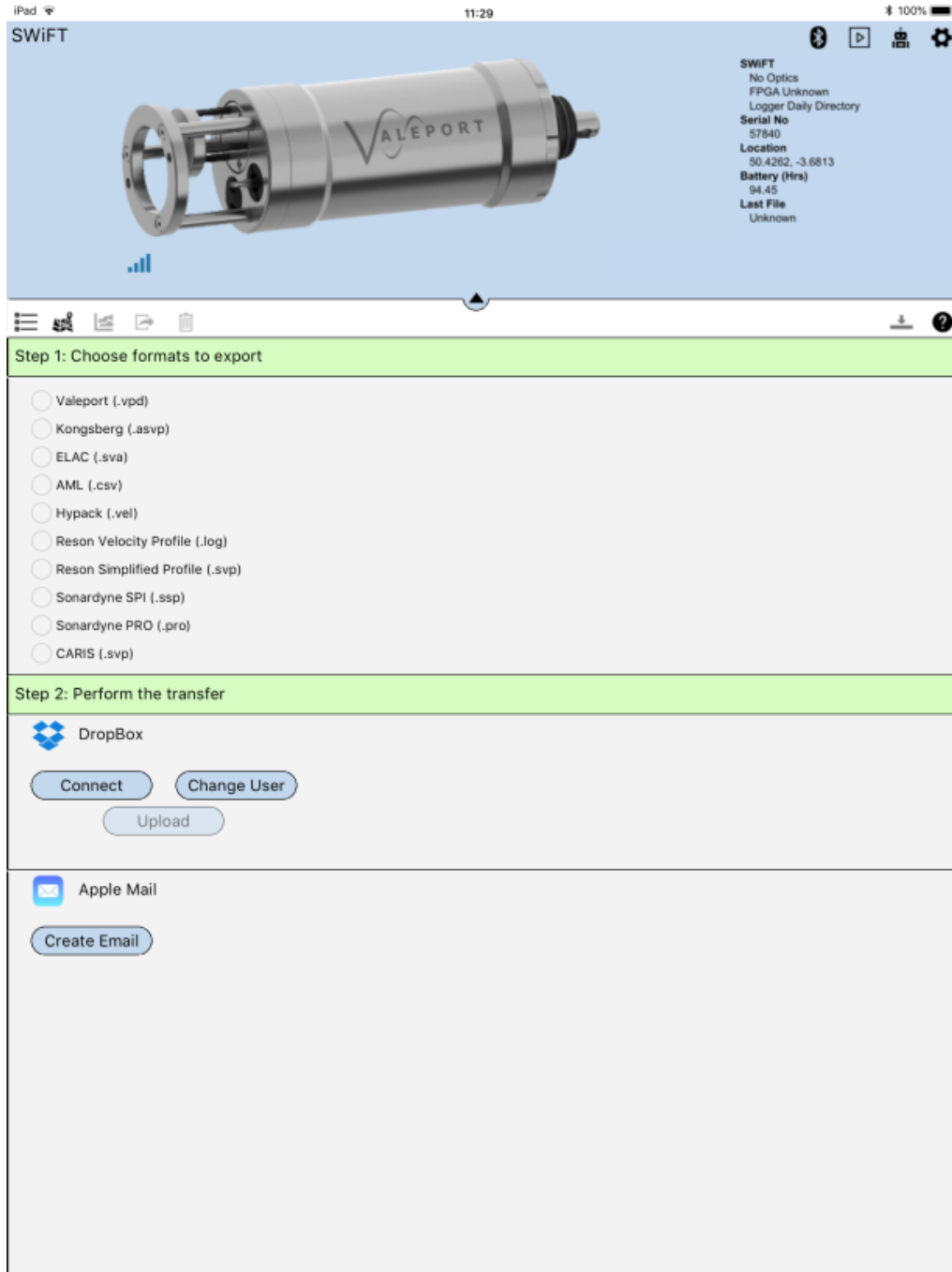
## 10.1. Export Data from an iOS Portable Device

There are two ways to export data directly from your iOS device:

- Drop Box
- Apple Mail

You must use an existing accounts or set up a new one for either method.

Follow the on screen instructions:



Alternatively, use iTunes on your PC or Mac Computer to connect directly to your device and download .VPD files from the Valeport Connect Shared Files directory.

## 10.2. Valeport Format Files

.VPD files have been the standard ASCII format for all instruments up until 3Q 2018. .VP2 files were introduced with Connect version 1.0.4.0 to allow standardisation of a data file header format across all Valeport instruments.

The major differences between .VPD and .VP2 formatted data files are:

- The introduction of an instrument code to identify the instrument that generated the data.
- The removal of the column count in each header section
- The inclusion of calibration data in the header.
- The simplification of data file import into Connect.

.VPD files already downloaded into Connect will be converted to .VP2 on software upgrade and all files exported from Connect version 1.0.4.0 onwards will be VP2.



## 10.2.1. .VPD

There are 3 sections:

Header | Columns | Data

### 10.2.1.1. [Header]\_VPD

Contains all the header information, either downloaded from the instrument, or read from the file. There is a fixed set of header tags at the beginning, followed by a variable set built from anything else found in the instrument or file. The fixed set will appear in all files saved, and will appear at the top. The variable set only appear if they exist. Many fixed set tags are populated from the various previous header tags found from previous software applications to form a common set. The order of the header tags is not important. The names of the header tags should be used to identify the value - as used in the Windows INI File specification. The header tags are NOT case sensitive, and should not be treated as such.

A list of the fixed tags are:

```
[Header]
[Header]
Count=18
Instrument=SWIFT SVP
Device_Series=SWIFT
Device_Type=SVP
Serial_Number=46103
Firmware=0650734B5 Apr 22 2016 10:34
Sampling_Mode=SMART PROFILE
Sampling_Rate=32 Hz
Site_Info=
Latitude=50.3543395996094
Longitude=-4.15983152389526
Battery=3.94 Volts
Pressure_Tare=10.225
Pressure_Tare_Mode=SUBTRACTED
Time_Stamp=2016/06/07 10:32:25
Time_Interval=0.03125
Battery_Remaining=74.7 Hrs
Average_SoS=1504.087 Ms-1
Average_Temp=14.267 DegC
```

### 10.2.1.2. [Columns]\_VPD

Contains a list of the columns available in the data section, including name,type, units, calculated flag.

The values encoded in the [Columns] section are:

Name=Type;Units;Calculated

the word "calculated" exists only on fields that have been calculated by Connect.

Other key words could be introduced in the future.

### 10.2.1.3. [Data]\_VPD

Contains the data received/downloaded. Not strictly an INI section as it does not bear the key-value relationship. The First row repeats the Column Names, second row repeats the units and the third and subsequent rows are the data. The Column names and units are repeated, so that the data can be more easily copied into spreadsheets. Connect only reads and interprets the column names and types that are in the [Columns] section - so this section should be maintained when saving the files.

### 10.2.1.4. Example Files\_VPD

#### Example 1: SWiFT SVP

##### [Header]

```
Count=24
Instrument=SWIFT SVP
Device_Series=SWIFT
Device_Type=SVP
Serial_Number=46236
Firmware=0650724A1 Jul 24 2015 09:04
Sampling_Mode=SMARTPROFILE
Sampling_Rate=32 Hz
Sampling_Period=
Average_Type=
Average_Period=
File_Number=
Site_Info=
Latitude=50.3462371826172
Longitude=-4.13151168823242
Density=
Gravity=
Battery=3.56399989128113
Pressure_Tare=10.0897665023804
Pressure_Tare_Mode=
Pressure_Tare_Time=
Time_Stamp=2018/07/28 10:54:36.000
Time_Interval=0.03125
Logger_Firmware=
Battery Remaining=14.245454788208
```

##### [Columns]

```
Count=6
Date/Time=Date/Time;;
Sound Velocity=Float;ms-1;
Pressure=Float;dBar;
Temperature=Float;DegC;
Salinity=Float;PSU;
Density=Float;kg/m3;
```

##### [Data]

| Date/Time               | Sound Velocity<br>ms-1 | Pressure<br>dBar | Temperature<br>DegC | Salinity<br>PSU | Density<br>kg/m3 |
|-------------------------|------------------------|------------------|---------------------|-----------------|------------------|
| 2018/07/28 10:54:36.000 | 1507.776               | 0.531            | 15.745              | 33.909          | 1024.966         |
| 2018/07/28 10:54:36.531 | 1507.769               | 1.047            | 15.761              | 33.852          | 1024.919         |

## Example 2 - SWiFTplus

## [Header]

```

Count=19
Instrument=SWIFT SVP
Device_Series=SWIFT
Device_Type=SVP
Serial_Number=59285
Firmware=0650735A1 Mar 1 2018 10:49
Sampling_Mode=SMART PROFILE
Sampling_Rate=32 Hz
Site_Info=Bristol Harbour
Latitude=51.4493865966797
Longitude=-2.62453842163086
Battery=4.09 Volts
Pressure_Tare=9.855
Pressure_Tare_Mode=SUBTRACTED
Time_Stamp=2018/03/05 08:38:42
Time_Interval=0.03125
Battery_Remaining=96.5 Hrs
Average_SoS=1432.767 Ms-1
Average_Temp=3.343 DegC
Average_Optics=1136.352 ntu
    
```

## [Columns]

```

Count=10
Date/Time=Date/Time;;
Depth=Float;m;Calculated
Pressure=Float;dBar;
Sound Velocity=Float;Ms-1;
Temperature=Float;DegC;
Salinity=Float;PSU;Calculated
Density=Float;kg/M3;Calculated
Nephelometer=Float;ntu;
OBS=Float;btu;
Turbidity=Float;ntu;Calculated
    
```

## [Data]

| Date/Time               | Depth<br>m | Pressure<br>dBar | Sound Velocity<br>Ms-1 | Temperature<br>DegC |
|-------------------------|------------|------------------|------------------------|---------------------|
| 2018/03/05 08:38:42.000 | 0.498      | 0.502            | 1424.952               | 4.030               |
| 2018/03/05 08:38:42.750 | 0.600      | 0.605            | 1424.422               | 3.970               |

continued:

| Salinity<br>PSU | Density<br>kg/M3 | Optics 1<br>NTU | Optics 2<br>BTU | Turbidity<br>NTU |
|-----------------|------------------|-----------------|-----------------|------------------|
| 2.429           | 1001.926         | 0.000           | 0.000           | 0.000            |
| 2.230           | 1001.767         | 234.229         | 167.205         | 234.229          |

## 10.2.2. .VP2

.VP2 files were introduced with Connect version 1.0.4.0 to enable data import and allow standardisation of data file header format style across all Valeport instruments.

The main change is the inclusion of the instrument code in the header file and the inclusion of calibration data in the Header section.

There are 3 sections:

Header | Columns | Data

### 10.2.2.1. [Header]\_VP2

Contains all the header information, either downloaded from the instrument, or read from the file. There is a fixed set of header tags at the beginning, followed by a variable set built from anything else found in the instrument or file. The fixed set will appear in all files saved, and will appear at the top. The variable set only appear if they exist. Many fixed set tags are populated from the various previous header tags found from previous software applications to form a common set. The order of the header tags is not important. The names of the header tags should be used to identify the value - as used in the Windows INI File specification. The header tags are NOT case sensitive, and should not be treated as such.

### 10.2.2.2. [Columns]\_VP2

Contains a list of the columns available in the data section, including name,type, units, calculated flag.

The values encoded in the [Columns] section are:

Name=Type;Units;Calculated

the word "calculated" exists only on fields that have been calculated by Connect.

Other key words could be introduced in the future.

### 10.2.2.3. [Data]\_VP2

Contains the data received/downloaded. Not strictly an INI section as it does not bear the key-value relationship. The First row repeats the Column Names, second row repeats the units and the third and subsequent rows are the data. The Column names and units are repeated, so that the data can be more easily copied into spreadsheets. Connect only reads and interprets the column names and types that are in the [Columns] section - so this section should be maintained when saving the files.

### 10.2.2.4. Example Files\_VP2

#### Example 1: SWIFT SVP

##### [HEADER]

Instrument=SWIFT SVP  
InstrumentCode=00101136  
DirectFromInstrument=0  
DeviceSeries=SWIFT  
DeviceType=SVP  
SerialNumber=52980  
InstrumentFirmware=0650735A9 Jun 29 2018 12:09  
OperationalMode=SMART PROFILE  
SamplingRateHz=32  
OpticsReadingsIn=0  
OpticsReadingsOut=0  
OpticsType=0  
InstrumentCalSv=14285299.00;83571.00  
InstrumentCalPressure=0.00;0.00;-0.09  
InstrumentCalTemp=0.00;0.00;-244.24  
UserCalSv=0.00;1.00;0.00  
UserCalPressure=0.00;0.00;0.00  
UserCalTemp=0.00;1.00;0.00  
InstrumentCalOpticsCal1=0.00;1.00;0.00  
InstrumentCalOpticsCal2=0.00;1.00;0.00  
UserCalOpticsCal1=0.00;1.00;0.00  
UserCalOpticsCal2=0.00;1.00;0.00  
SiteInfo=Valeport Test Site  
Latitude=50.4260711669922  
Longitude=-3.68135833740234  
BatteryVoltage=3.71  
BatteryRemaining=61.6  
PressureTareDbar=10.204  
PressureTareSubtracted=1  
DataStartTime=2018/08/02 14:39:50  
SamplingInterval=0.03125  
RowCount=3151  
AverageSosMps=0.000  
AverageTempDegC=25.354  
MinTime=201808021439  
MaxTime=201808022304

##### [COLUMNS]

Date/Time=Date/Time;;  
Depth=Float;m;Calculated  
Pressure=Float;dBar;  
Sound Velocity=Float;Ms-1;  
Temperature=Float;DegC;  
Salinity=Float;PSU;Calculated  
Density=Float;kg/M3;Calculated  
Conductivity=Float;mS/M;Calculated

[DATA]

| Date/Time               | Depth  | Pressure | Sound Velocity | Temperature |
|-------------------------|--------|----------|----------------|-------------|
|                         | m      | dBar     | Ms-1           | DegC        |
| 2018/07/28 10:54:36.000 | 25.493 | 25.716   | 1506.617       | 14.868      |
| 2018/07/28 10:54:36.531 | 25.393 | 25.615   | 1506.652       | 14.866      |

continued:

| Salinity | Density  | Conductivity |
|----------|----------|--------------|
| PSU      | kg/M3    | mS/M         |
| 34.925   | 1026.057 | 42.718       |
| 34.965   | 1026.088 | 42.758       |

## Example 2 - SWIFTplus

## [HEADER]

Instrument=SWIFT SVP  
 InstrumentCode=00180172  
 DirectFromInstrument=0  
 DeviceSeries=SWIFT  
 DeviceType=SVP  
 SerialNumber=57840  
 InstrumentFirmware=0650735A9 Jun 29 2018 12:09  
 OperationalMode=SMART PROFILE  
 SamplingRateHz=32  
 OpticsReadingsIn=2  
 OpticsReadingsOut=3  
 OpticsType=8  
 InstrumentCalSv=14285299.00;83571.00  
 InstrumentCalPressure=0.00;0.00;-0.09  
 InstrumentCalTemp=0.00;0.00;-244.24  
 UserCalSv=0.00;1.00;0.00  
 UserCalPressure=0.00;0.00;0.00  
 UserCalTemp=0.00;1.00;0.00  
 InstrumentCalOpticsCal1=0.00;1.00;0.00  
 InstrumentCalOpticsCal2=0.00;1.00;0.00  
 UserCalOpticsCal1=0.00;1.00;0.00  
 UserCalOpticsCal2=0.00;1.00;0.00  
 SiteInfo=Valeport Test Site  
 Latitude=50.4260711669922  
 Longitude=-3.68135833740234  
 BatteryVoltage=3.82  
 BatteryRemaining=61.6  
 PressureTareDbar=10.204  
 PressureTareSubtracted=1  
 DataStartTime=2018/08/02 14:39:50  
 SamplingInterval=0.03125  
 RowCount=3151  
 AverageSosMps=0.000  
 AverageTempDegC=25.354  
 MinTime=201808021439  
 MaxTime=201808022304

## [COLUMNS]

Date/Time=Date/Time;;  
 Depth=Float;m;Calculated  
 Pressure=Float;dBar;  
 Sound Velocity=Float;Ms-1;  
 Temperature=Float;DegC;  
 Salinity=Float;PSU;Calculated  
 Density=Float;kg/M3;Calculated  
 Conductivity=Float;mS/M;Calculated  
 Nephelometer=Float;ntu;  
 OBS=Float;btu;  
 Turbidity=Float;ntu;Calculated

[DATA]

| Date/Time               | Depth  | Pressure | Sound Velocity | Temperature |
|-------------------------|--------|----------|----------------|-------------|
|                         | m      | dBar     | Ms-1           | DegC        |
| 2018/06/26 06:36:26.906 | 25.493 | 25.716   | 1506.617       | 14.868      |
| 2018/06/26 06:36:28.656 | 25.393 | 25.615   | 1506.652       | 14.866      |

continued:

| Salinity | Density  | Conductivity | Optics 1 | Optics 2 | Turbidity |
|----------|----------|--------------|----------|----------|-----------|
| PSU      | kg/M3    | mS/M         | ntu      | btu      | ntu       |
| 34.925   | 1026.057 | 42.718       | 36.329   | 26.374   | 36.329    |
| 34.965   | 1026.088 | 42.758       | 9.395    | 18.766   | 9.395     |

#### 10.2.2.4.1 Turbidity Column

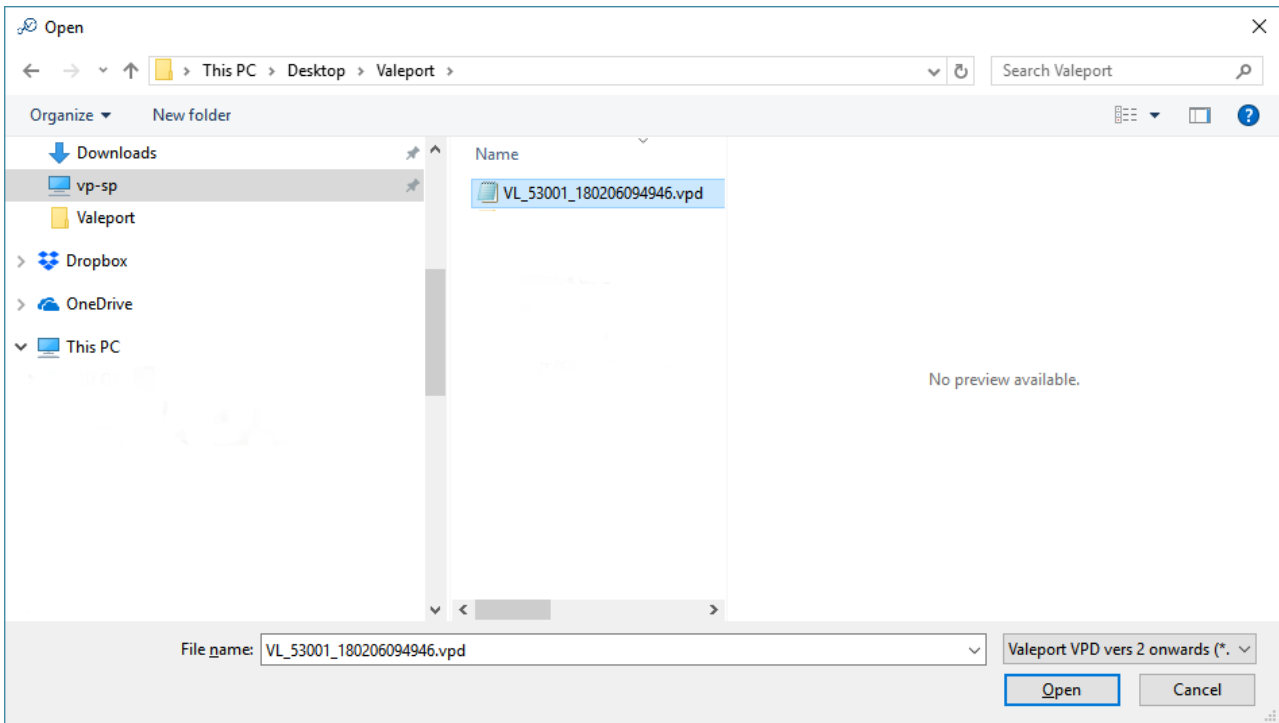
Where a turbidity sensor is present, in addition to the Optics 1 and 2 columns, there is a dedicated Turbidity column. This will be populated with the reading as observed by the Nephelometer if the reading is less than 1000 NTU, the linear region of observation. If the Nephelometer reading is greater than 1000 NTU then the Turbidity column will be populated with the OBS value.



# 11. Data Import

Click on the Data Import Icon: 

Valeport's .VP2 files can be imported into Connect so files downloaded onto different devices can be compared graphically




## 12. Deleting Files

Click on the Delete Files Icon: 

Delete any selected files from the Connect workspace. The deleted files will no longer appear in the file listing or the map view.

The raw/converted files will remain in the file directory.

They will not be deleted from the instrument.

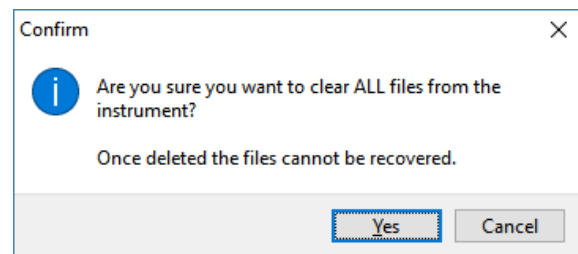
To delete files from the Instrument, click on the Download Icon: 

List the files from the instrument and select those that you want to delete.


Press the  button on the bottom Tool Bar.

You will be given the option to cancel this operation:

Once the files have been deleted there is no way to recover them.

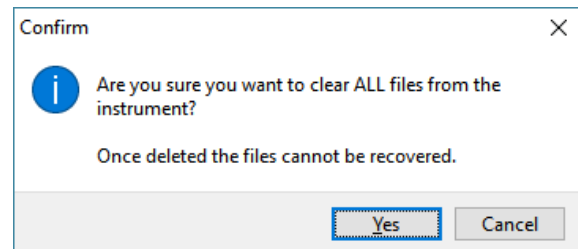


You also have the option to clear all files from the instrument.

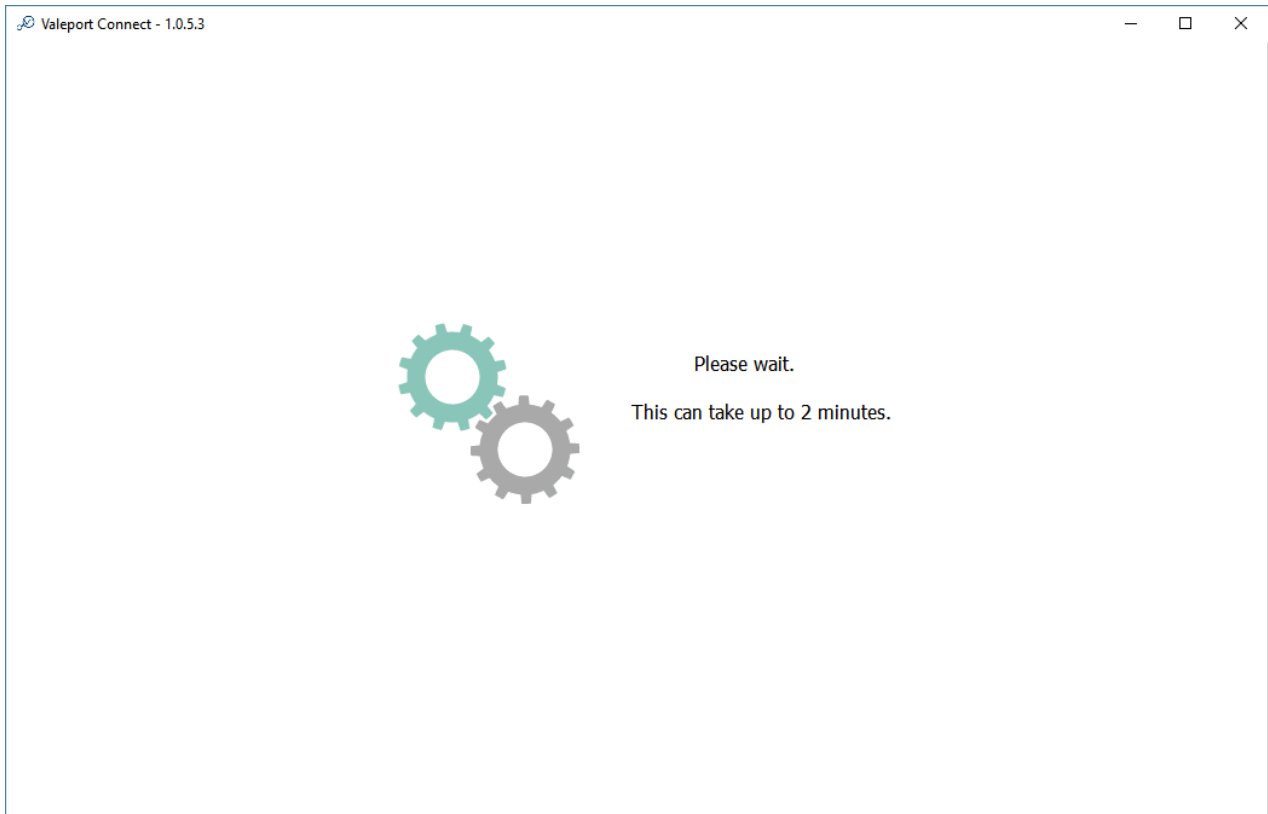
Press the  button on the bottom Tool Bar. This process formats the internal SD card.

You will be given the option to cancel this operation:

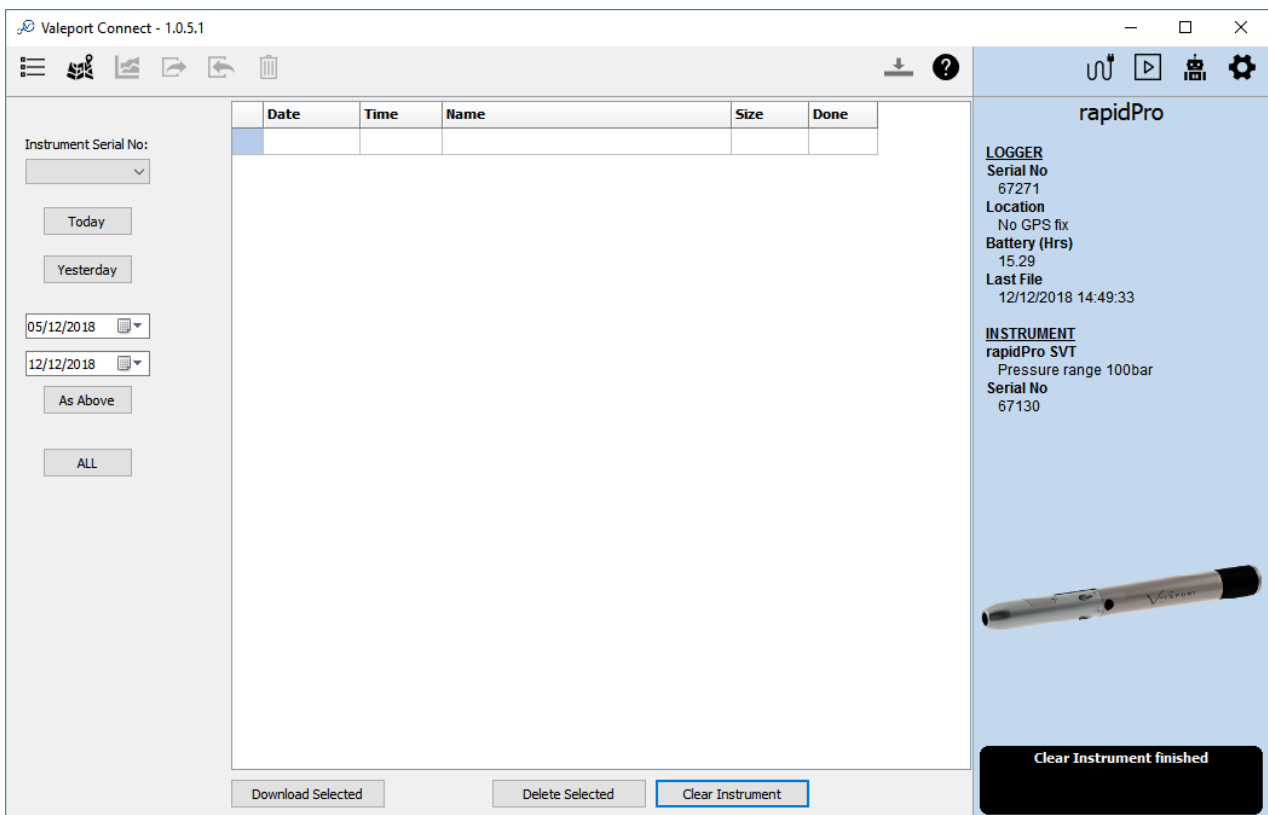
Once the files have been deleted there is no way to recover them.



Deleting files from the Instrument is only available when interfaced to a PC. It can take a while - please be patient.



When complete there will be a notification at the bottom right hand side of the window:



## 13. Connect Log

Click on the Data Export Icon: 

The Log keeps a track of all messages that are produced by the program.

You can edit the Log and add textual comments

You can save the Log as a text file

