vBPlus

Professional Vibration Analysis Software

User Manual

Version 1.34

For Use with the vB Hand Arm Vibration Meter

www.pulsarinstruments.com

Overview

Thank you for purchasing the Pulsar vB (vB001) Hand Arm Vibration Meter from Pulsar Instruments Plc. This manual is designed to show you how to install and operate the vBPlus software to be used alongside your vibration meter.

Should you need any further assistance in the operation of this software please contact us and we will be happy to help. We can also recommend suitable training courses in the UK should you wish to become a Competent Person for Human Vibration in the eyes of the law.

We pride ourselves on providing high quality products for our customers, and I'm sure you will find that this vibration analysis software meets those standards. We suggest however that if you are dissatisfied with this product in any way, please tell us immediately: -

Phone: +44 1723 339715 or email: sales@pulsarinstruments.com

Simon Rehill
Managing Director

Copyright

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Minimum System Requirements

- Pentium 4 1.5 GHz or Athlon XP 1500+ processor or higher
- 200MB Free hard disk space
- 256MB Ram
- One free USB Port
- Operating Systems (minimum operating system requirements also apply): -
  - Windows XP SP3
  - Windows Vista SP2
  - Windows 7 – 32 or 64 bit
  - Windows 8 – 32 or 64 bit
  - Windows 8.1 – 32 or 64 bit
  - Windows 10 – 32 or 64 bit

Windows 8.1 RT is not compatible with vBPlus.

Contacting Pulsar

This manual contains complete operating instructions for the Pulsar software vBPlus, read it carefully and you will quickly become familiar with its features and operation.

If you do encounter problems with the operation of your software please feel free to contact customer support with your enquiry on: -

Telephone:	+44 (0)1723 518011
Fax:	+44 (0)1723 518043
Website:	www.pulsarinstruments.com
Email:	sales@pulsarinstruments.com

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Chapter 1

Installing vBPlus

Installation of vBPlus requires full administrative privileges, please seek advice from your IT manager if required.

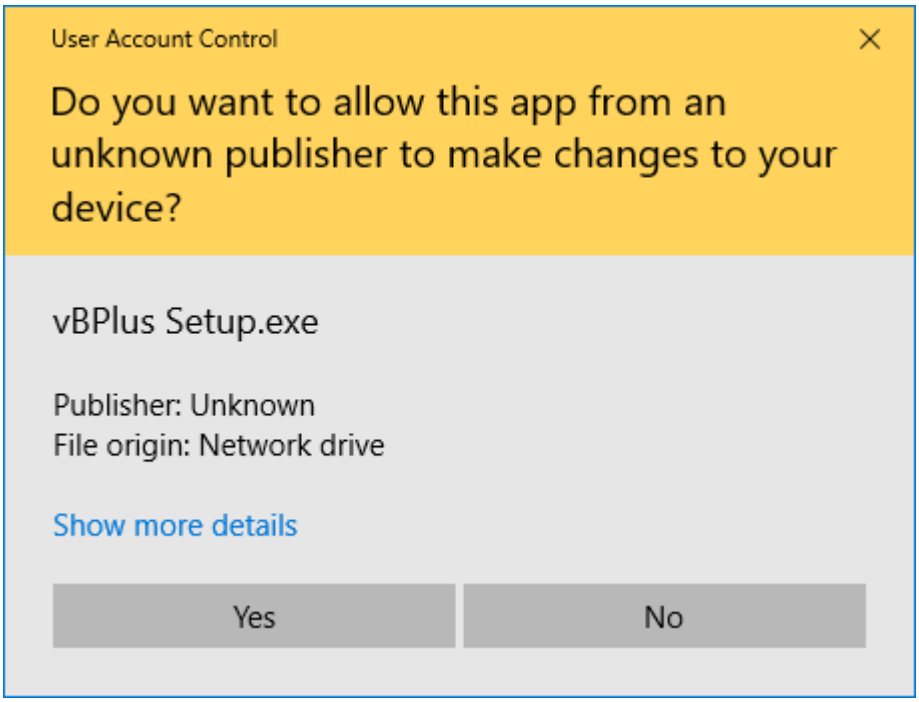
This example shows how to install vBPlus on Windows 10, installation on other operating systems will be similar but may show slight variations in screens: -

1. Unplug any vibration meter device from the PC or laptop.

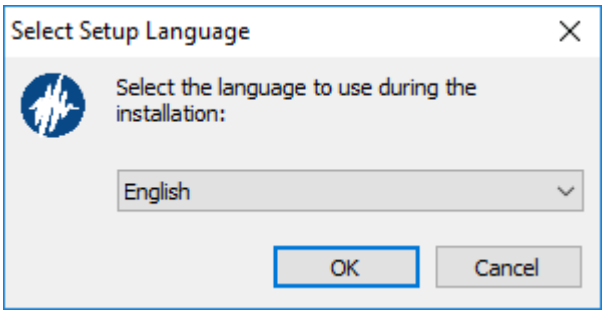
2. If you have downloaded vBPlus double click the saved file named **vBPlus Setup.exe** to start the installation.

3. If you have a vBPlus installation USB Flash Drive, insert the drive into a USB port on your computer and double click the file named **vBPlus Setup.exe** to start the installation.

4. Depending on the operating system setup you may need to allow permission for the application to be installed. Click **Yes** to continue and start the installation.



Click **Yes** to begin the installation of vBPlus, this will prompt the following screen to be shown: -

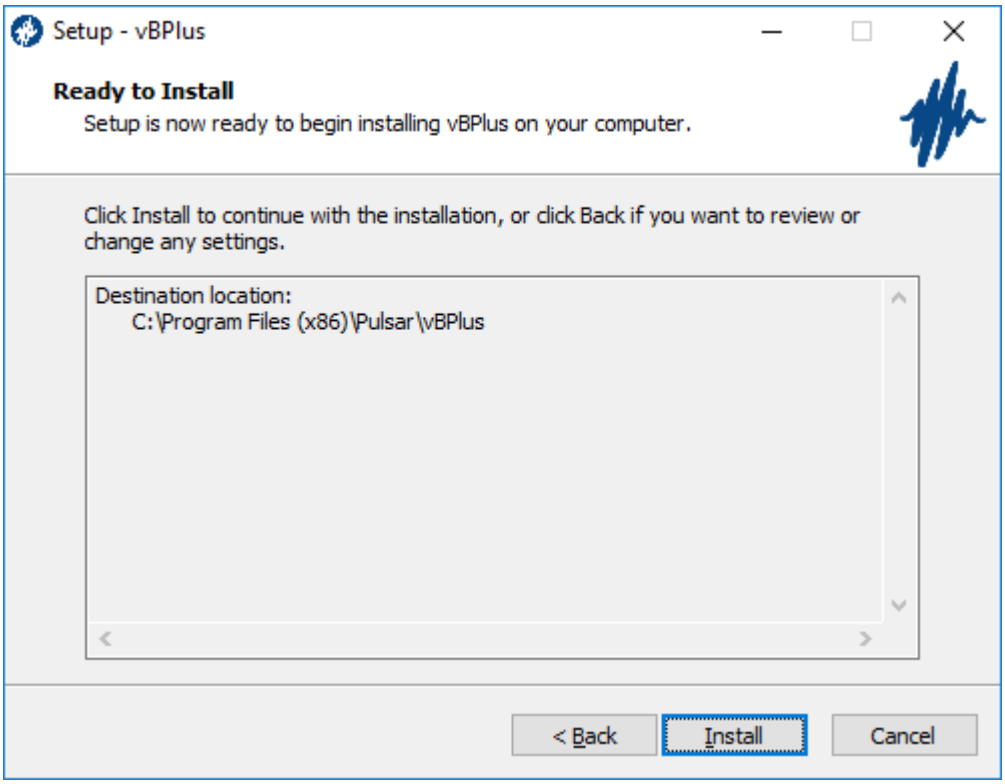


Select the installation setup language and click on OK to begin the installation.

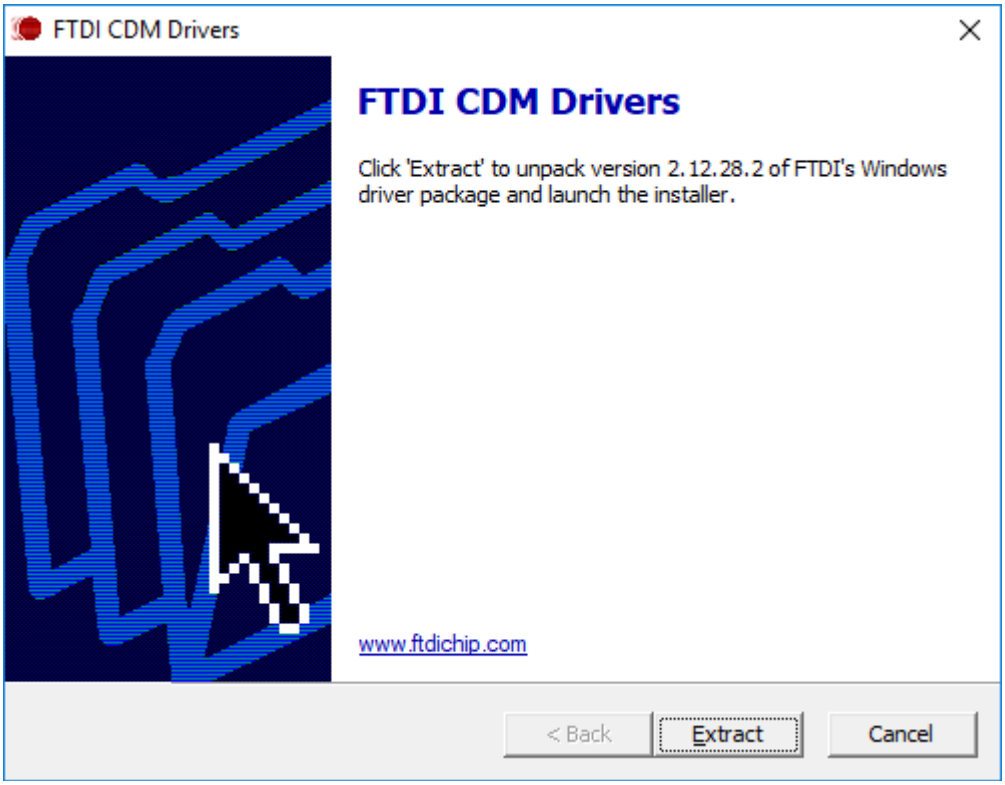
Follow the on screen instructions carefully to install your software correctly.

After navigating through the various setup windows your vBPlus software is ready to install.

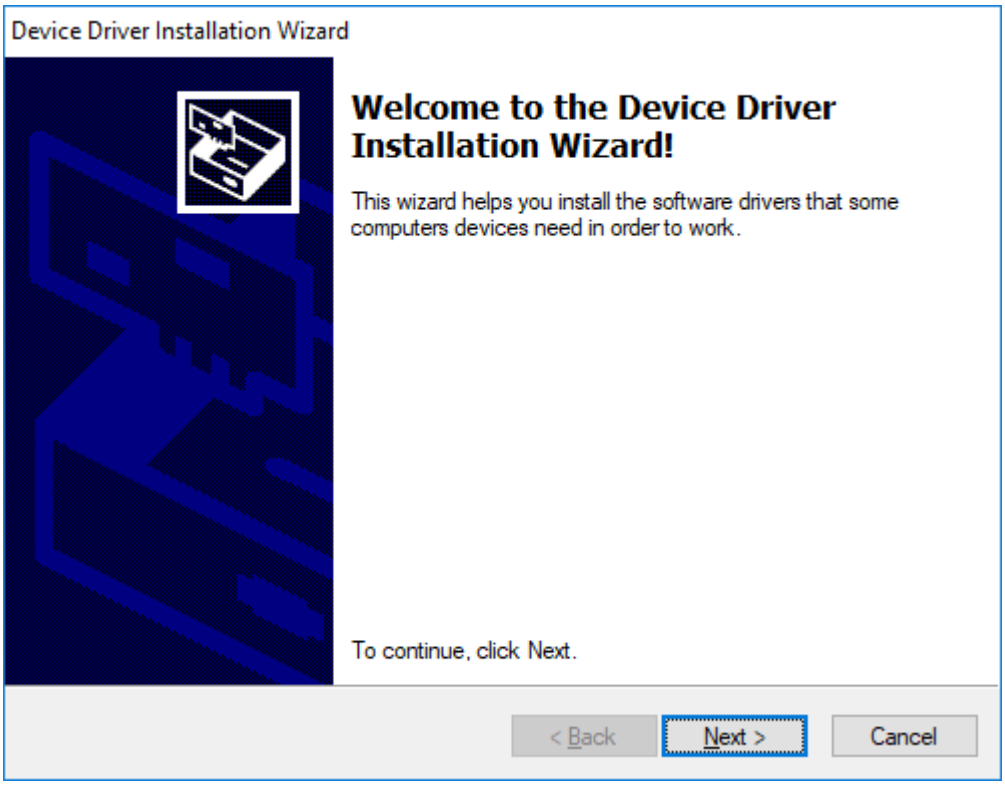
It is recommended that all other applications are closed before proceeding.



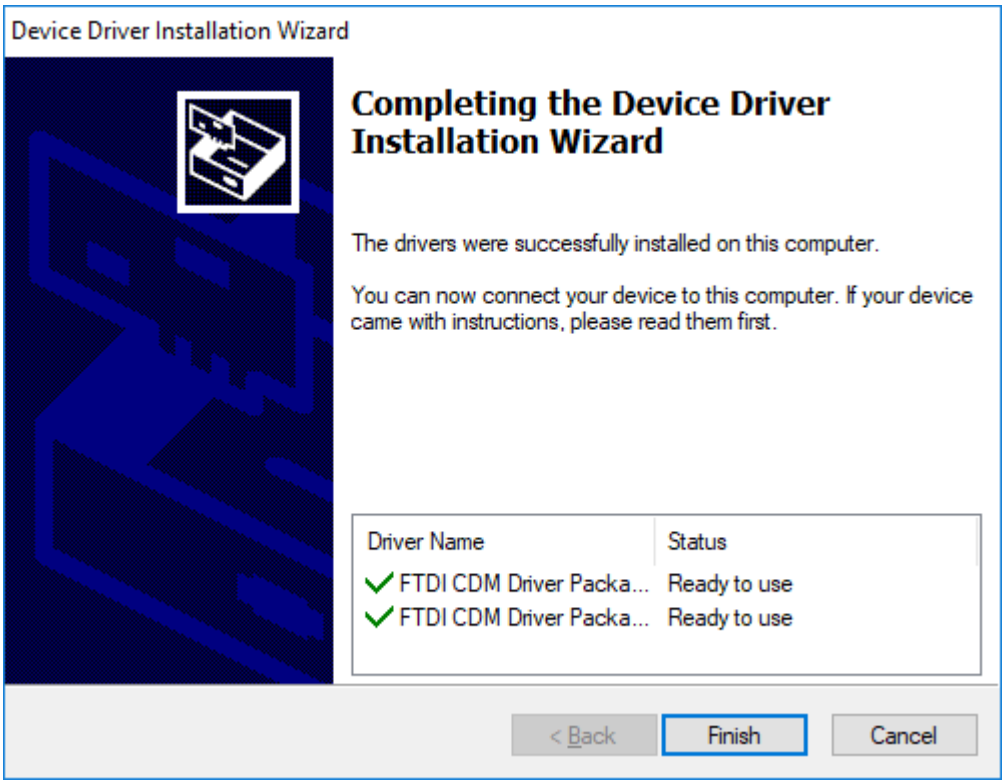
During the installation of vBPlus the USB device drivers for your vibration meter need to be installed: -



Click on **Extract** to open the **Device Driver Installation Wizard**.

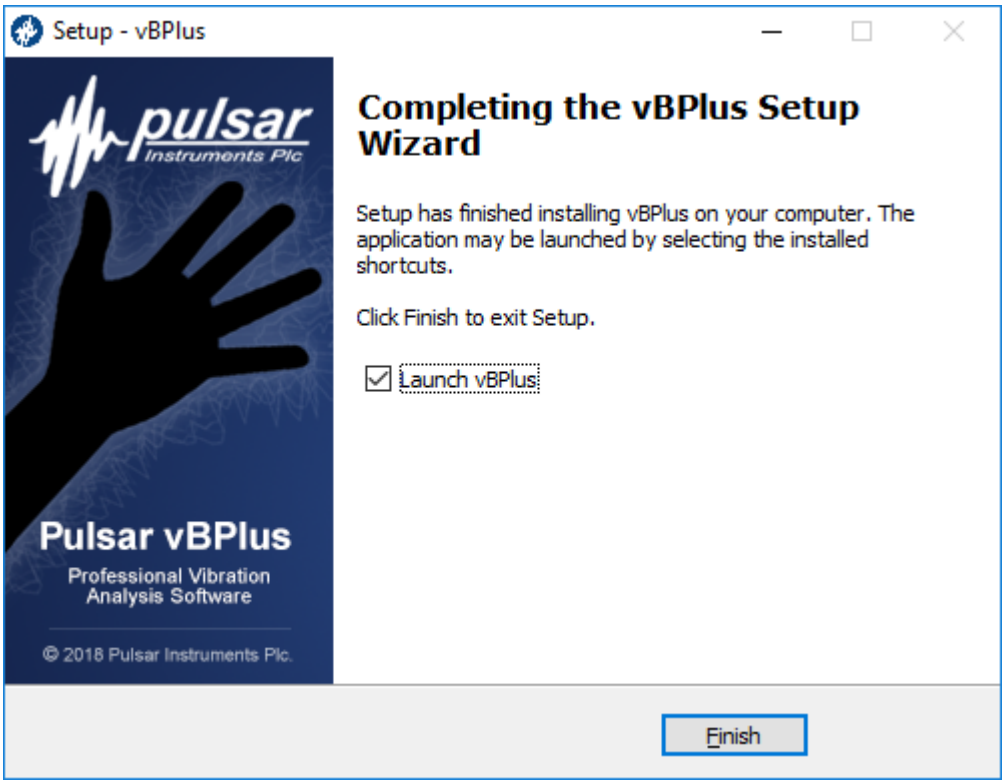


Click on **Next** to start Driver Installation.



When the driver installation is complete the above screen will be displayed.

Click on **Finish** to close the Driver Installation.

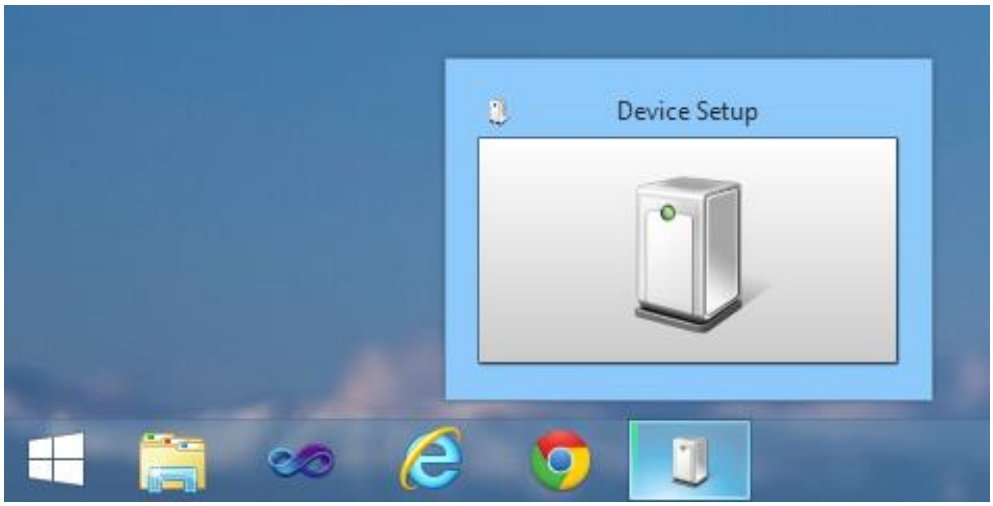


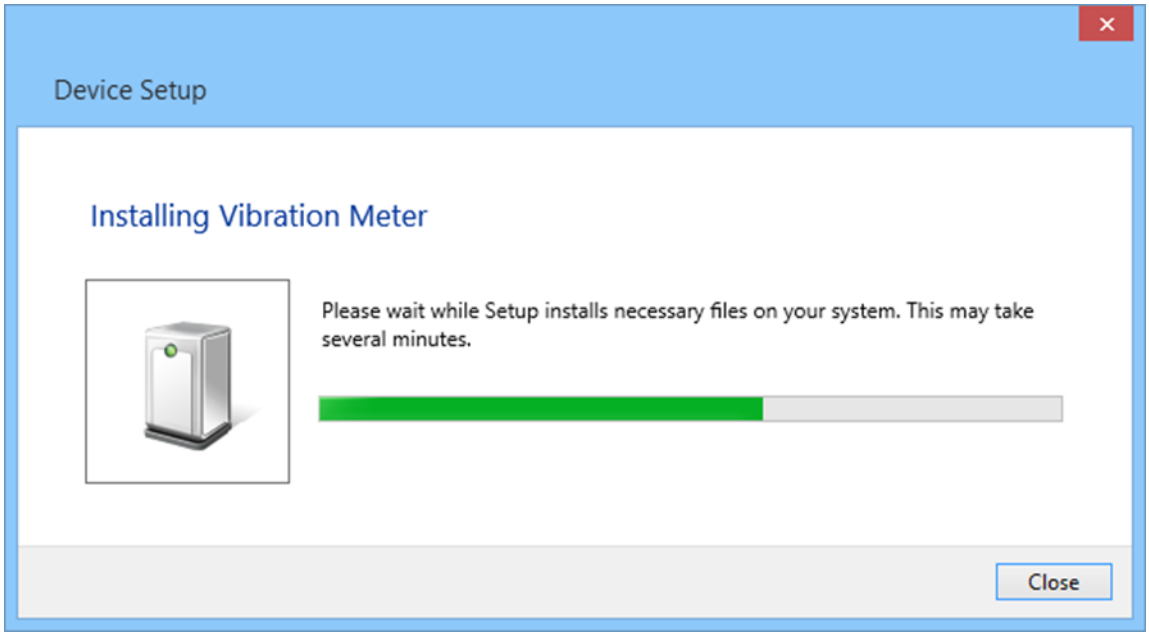
Click on **Finish** to complete the vBPlus installation.

5. Your vibration meter may now be attached to a spare USB port on your laptop or desktop PC.

   Note that the vB instrument must be turned ON.

   The first time the meter is attached, windows will automatically configure the device for use. Depending on your operating system, the following windows may be displayed: -





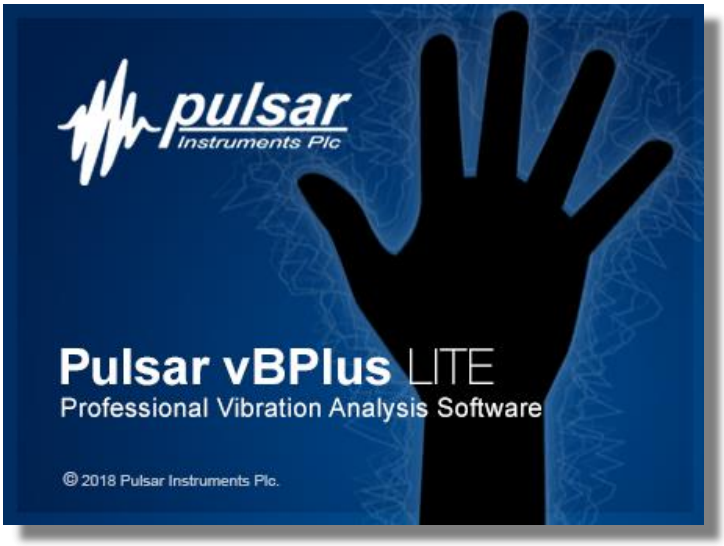
When complete your computer will be ready to download data from your vibration meter.

Chapter 2

vBPlus LITE

Pulsar instruments are supplied with a free version of vBPlus which has limited functionality.

Every time the software is opened, it will operate with limited functionality until the software has been unlocked. See **Registering** for further details.



This manual describes the functions that are available in the registered version of the software.

Functionality

In vBPlus LITE the following viewing screens are either unavailable or will display Not available: -

- Exposure Calculator
- Merge / Combine
- Adding Images
- Trend Analysis
- Add New Record

Registering

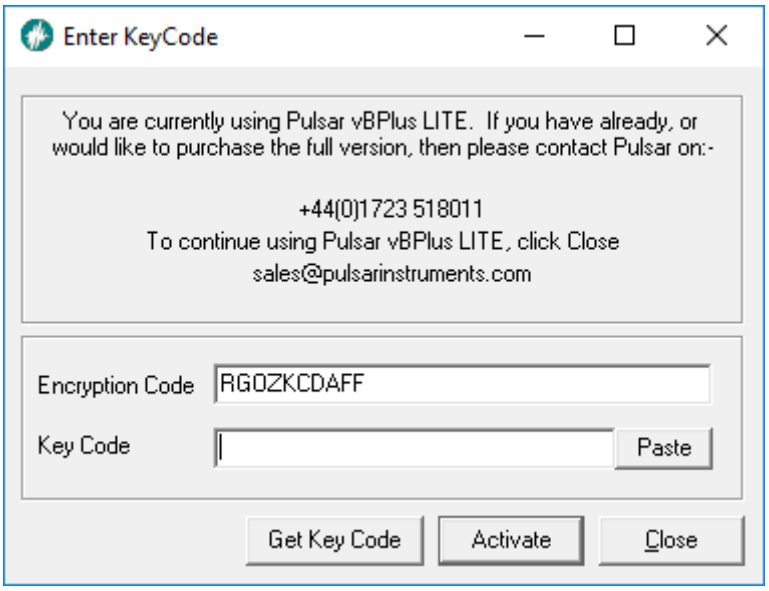
vBPlus LITE can easily be unlocked by entering a valid Unlock Key Code which can be purchased at any time.

If or when you have purchased vBPlus you can unlock the software using the 3 Step Procedure below.

Please note that the Encryption Code provided in Step 1 is randomly generated, therefore if the software is removed and installed either on the same PC or another PC you will need to repeat all the steps outlined below.

Step 1

Copy the Encryption Code from the 'Enter KeyCode' screen. This displays each time vBPlus LITE starts, or alternatively it can be opened by selecting '**Help**', '**Licensing...**' from the toolbar menu.



Step 2

Click on **Get Key Code** and enter the required fields to obtain your Key Code immediately. Please note an internet connection is required.

Alternatively please contact Pulsar on 01723 518011

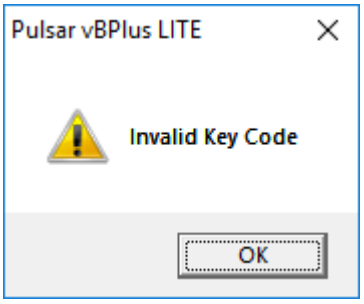
Step 3

Customer details will be validated and a valid Key Code will be issued by either email or telephone.

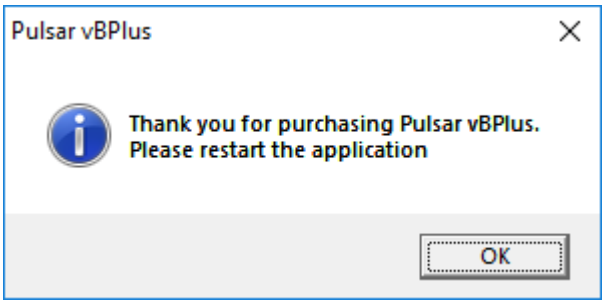
Enter the issued Key Code in the blank Key Code cell and press '**Activate**'.

All Unlock Key Codes must be entered in **UPPER CASE**.

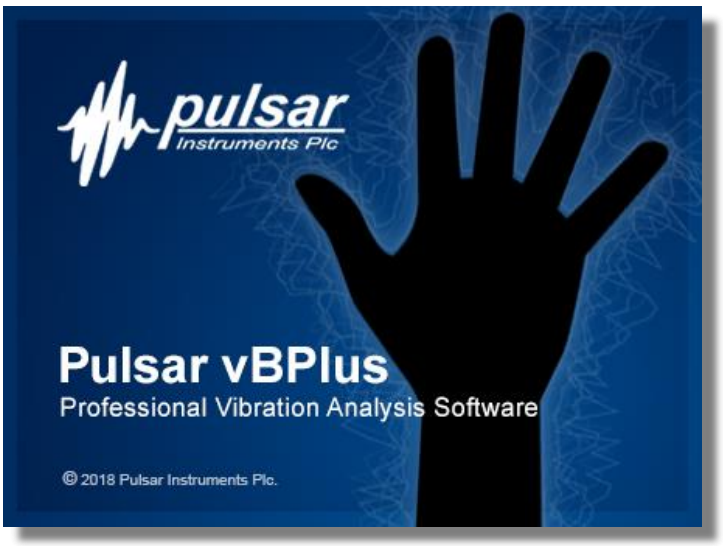
If the entry is not valid then the following will be displayed: -



If a valid Unlock Key Code is entered the following will be displayed. Please click '**OK**' and then restart vBPlus for the Unlock Key Code to take effect.



Your software is now registered and each time you start the software it will open with no restrictions.



Chapter 3

Connectivity

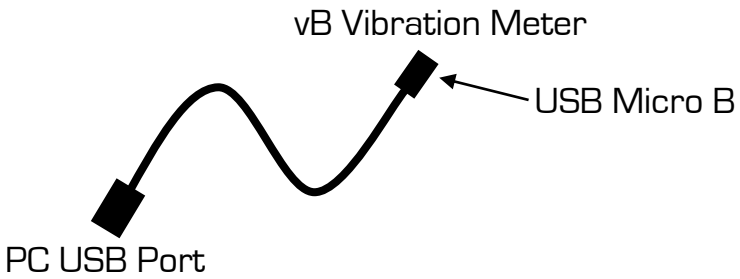
Downloading recorded data from your vibration meter into vBPlus is only possible if you are using the correct cable and the required device drivers are correctly installed during installation of the software.

Downloading recorded data from your vB instrument into vBPlus requires a spare USB port on your desktop or laptop and the installation of the supplied USB device driver which is installed during the installation of vBPlus please see **Installing vBPlus , Chapter 1** for more information.

Regardless of your operating system the USB device driver **MUST** be installed to allow communication between your vB instrument and your PC.

If the incorrect device driver or no device driver is installed then your instrument will not download.

Ensure your instrument is powered **ON** and then connect the supplied USB cable as shown below: -



The instrument is now ready for downloading data into vBPlus.

Please be aware of the Auto Shutdown feature on the vB instrument if no keys have been pressed for 10 minutes. Download will not occur if this feature has been activated.

Chapter 4

Getting Started

vBPlus can be run using either of the two options below: -

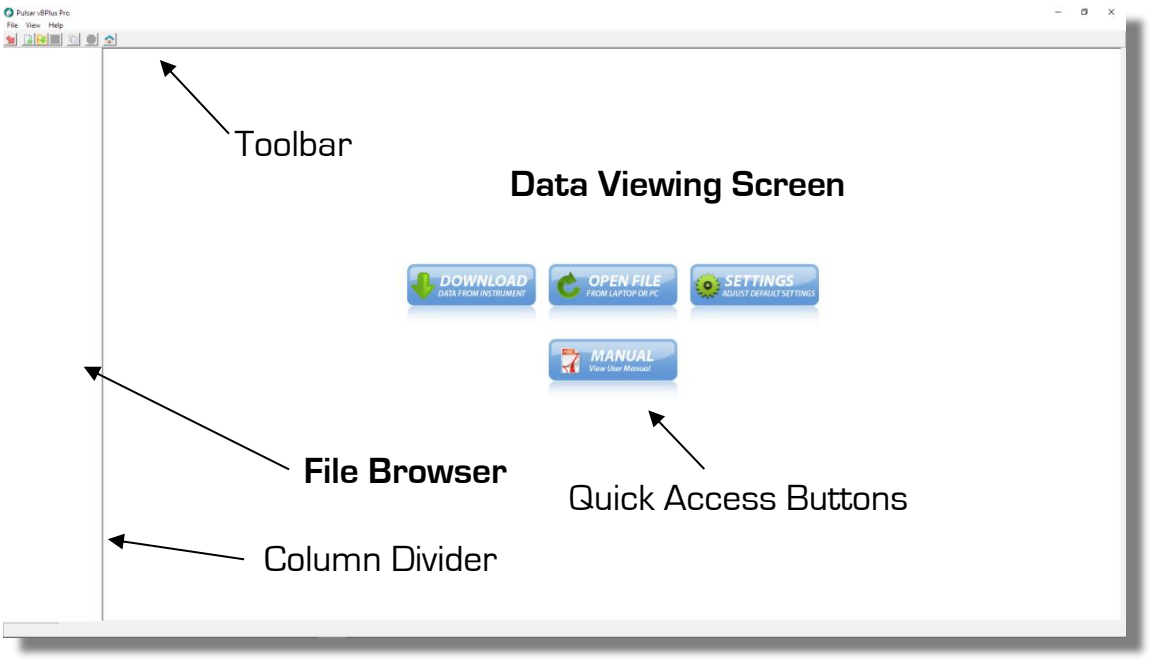
1. Double click on the desktop icon or single click on the quick launch icon, both of which are named **vBPlus**. Note these shortcuts are only available if selected during the installation process. Quick launch on Windows 7 or above will need to be turned on, alternatively simply pin the desktop icon to the taskbar.

2. On Windows 7 or below click the '**START**' button and select '**All Programs**', choose the folder '**vBPlus**' and finally select the application '**vBPlus**'.

   On Windows 8 or above, press and hold the **Windows** key on the keypad then press **S**. Type **vBPlus** in the search bar and then select the application **vBPlus**.

Opening Home Screen

The display area is split into two sections.



The left hand column named the '**File Browser**' will display details of any file opened within vBPlus.
The right hand area named the '**Data Viewing Screen**' displays downloaded data and instrument information relevant to the recording.

The Home Screen also contains quick access buttons to useful features of vBPlus.

The File Browser or Viewing Screen can be resized horizontally by grabbing and moving the column divider.

At the top left of the screen is the Toolbar which gives quick access to the commonly used functions within vBPlus.

Toolbar Options

The following toolbar options are available (some options listed below require an active file to be open): -

File Menu

Download	Download data from an instrument
New	Create a new blank folder
Open	Open a saved file
Save	Save the current data to a file
Save As	Save the current data to a new file specifying a new name
Close	Close the active data file
Close All	Close all the open data files
Print	Print current view
Exit	Close the application

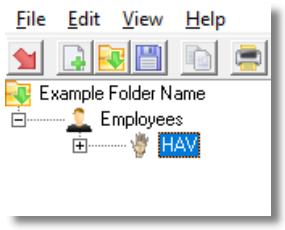
View Menu

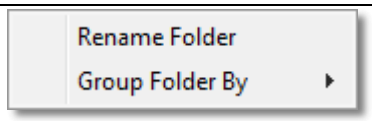
Toolbar	Toggle toolbar on / off
Settings	Open the Options window for Vibdata settings and user preferences

Help Menu

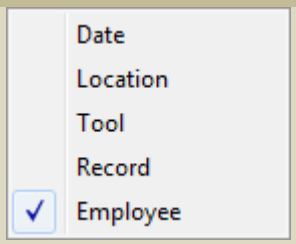
vBPlus Help	View the help file
Pulsar Homepage	Opens Pulsar's Website in a browser window
About vBPlus	Display the current software version
Update Instrument	Update vB instrument firmware

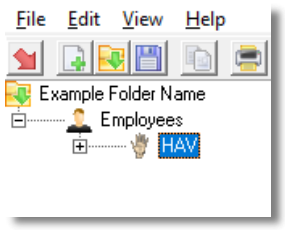
Edit Menu





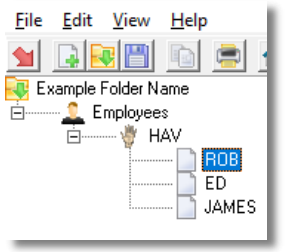
Click on the folder name and then click on Edit or right click on the folder name to show the options above and described below: -

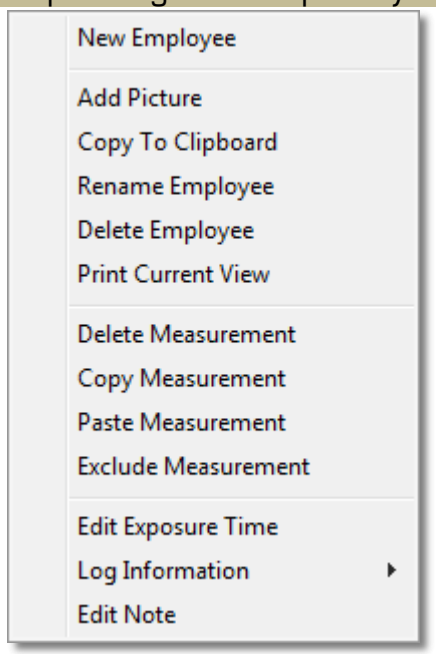
Rename Folder	
Group Folder By ↳ Date ↳ Location ↳ Tool ↳ Record ↳ Employee	 Regroup and sort the measurement folder by Date, Location, Tool, Record or Employee

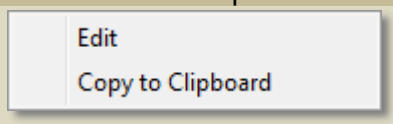


Click on HAV within the group and then click on Edit or right click on HAV type to show the options above and described below: -

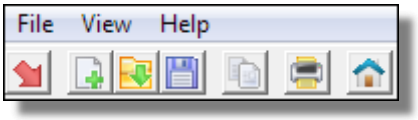
New ...	Create new :- • Employee, Tool, Record, Location or Date Depending on Grouped By selection





Click on a recording and then click on Edit or right click on the recording to show the options above and described below: -	
New ...	Create new :- • Employee, Tool, Record, Location or Date Depending on Grouped By selection
Add Picture	Add a picture to file
Copy To Clipboard	Copy selected file data to clipboard
Rename ...	Rename either: - • Employee, Tool, Record or Location Depending on Grouped By selection It is not possible to rename by Date
Delete ...	Delete Individual selection of either: - • Employee, Tool, Record, Location or Date Depending on Grouped By selection
Print Current View	Print current view
Delete Measurement	Delete selected indivdual measurement
Copy Measurement	Copy selected measurement
Paste Measurement	Paste selected measurement into group
Exclude Measurement *Include Measurement*	Exclude / Include selected measurement from calculations.
Edit Exposure Time	Enter a new Exposure Time
Log Information ↳ Edit ↳ Copy To Clipboard	 Edit Log Information such as Tool, Employee Copy all Log Information to the clipboard
Edit Note	Add a Note description to the measurement

Toolbar Buttons



From left to right, the buttons perform faster access to the following common actions: -

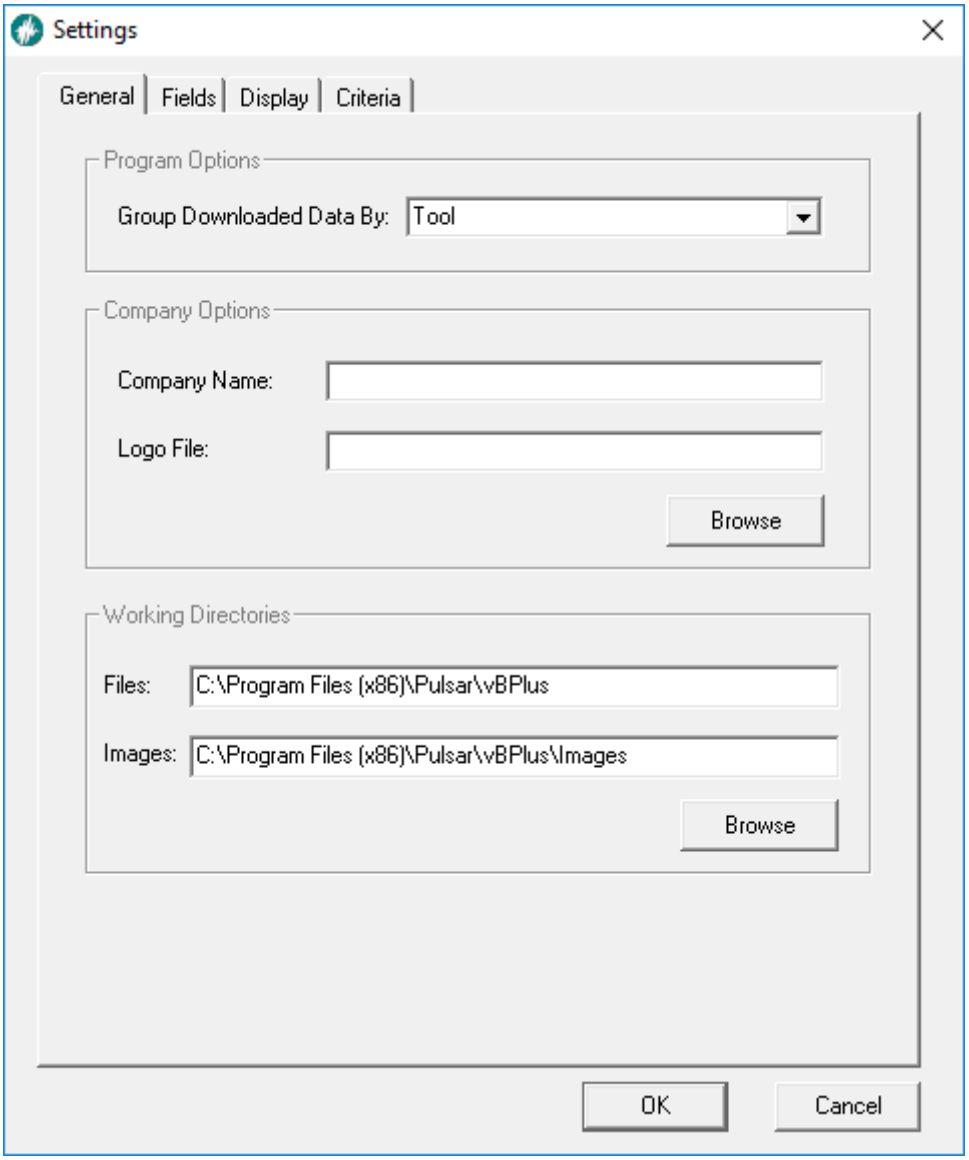
- Download data from an instrument
- Create a new blank folder
- Open a saved file
- Save selected data to a file
- Copy current view data to clipboard
- Print current view
- Home Screen

User Preferences and vBPlus Settings

To change user preferences and settings within vBPlus, select '**Settings**' from the '**View**' menu.

Some settings may require a restart of vBPlus to take effect.

General Tab



Program Options

Group Downloaded Data By:
Select how downloaded data will be grouped. The available grouping methods are by: -

- **Employee, Tool (Default), Record, Location, Date**

Data can be regrouped at any time if required after it has been downloaded.

Company Options

Company Name:
Enter your company name here.

Logo File:
Browse to the location of your company logo image file which is used when printing documents.

The image size is 170(W) * 57(H) pixels and must be in the .bmp or .wmf format.

Working Directories

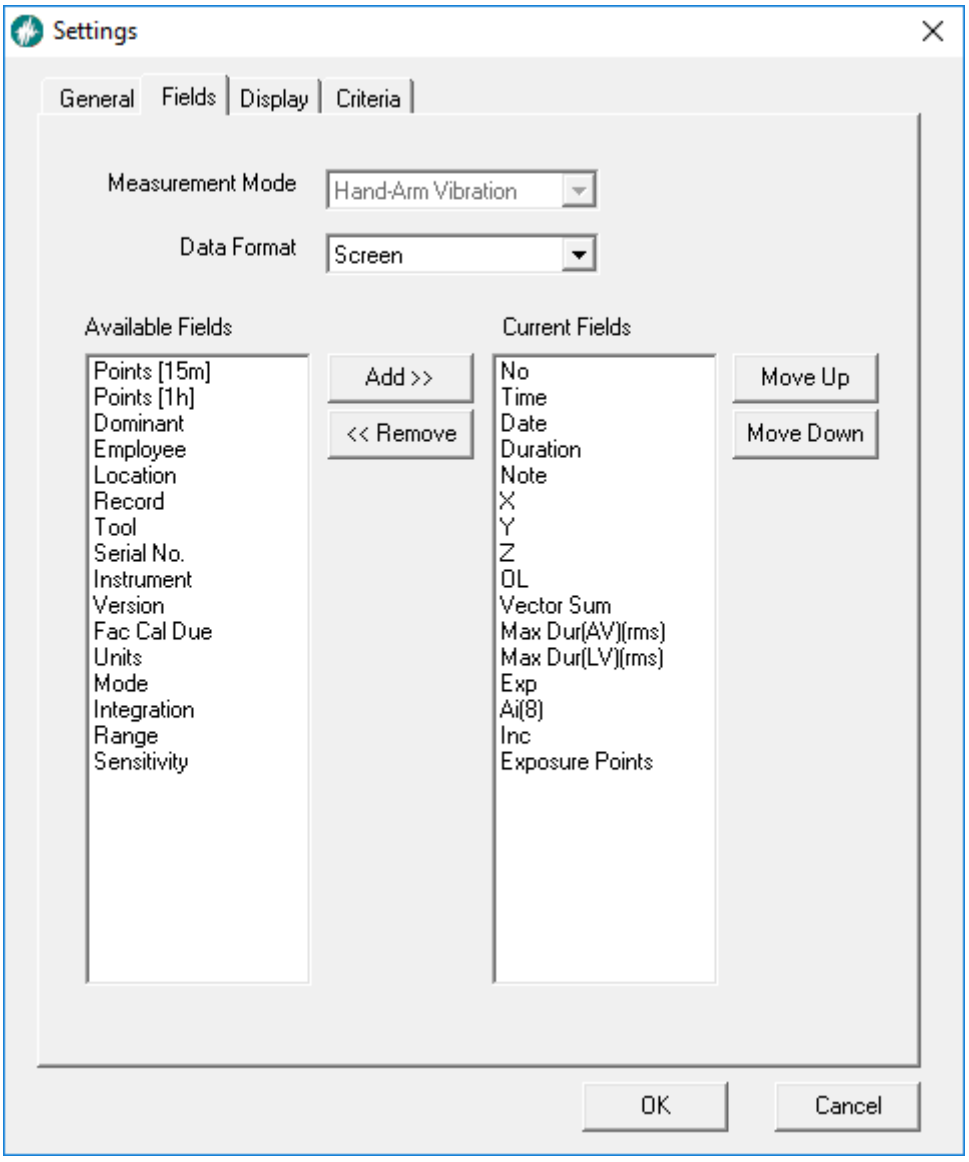
Files:
Point to the folder where you wish to open and save your data.

Images:
Point to the folder where you wish to open image files from.

Note that image files are 100(W) * 100(H) pixels and must be in either of the following formats: -

- **.jpg**
- **.bmp**
- **.gif**
- **.png**

Fields Tab



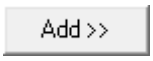
Use the Fields tab to select which information is: -

- **Displayed on screen**
- **Copied to the Clipboard**
- **Printed**

Use the drop down box labelled **Data Format** to select any of the following options: -

Screen	Select for parameters displayed on screen
Clipboard	Select for parameters copied to clipboard
Print	Select for parameters to be printed

Parameters in the Current Fields list will be displayed, copied or printed.

Highlight items under **Available Fields** and click on 

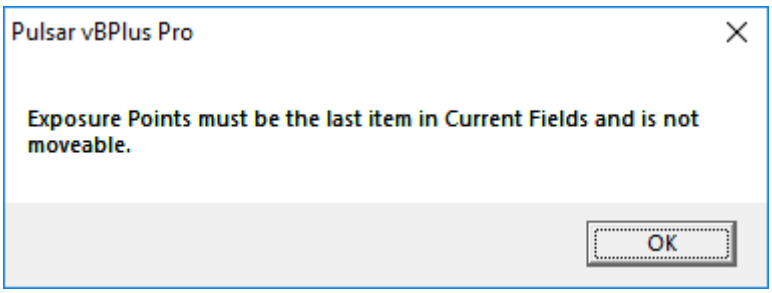
to add the parameter to **Current Fields**.

To remove parameters, highlight the item and click on

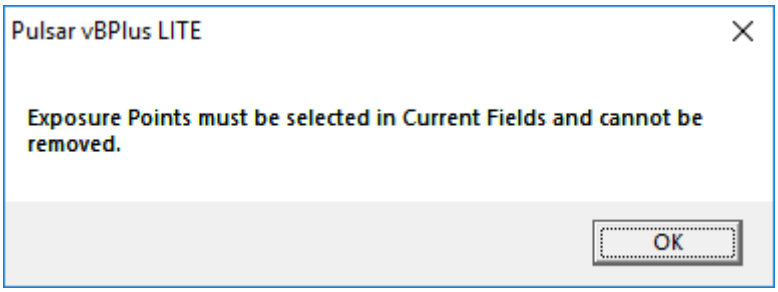
To change the order in which the parameters are displayed, copied or printed, highlight a parameter in the **Current Fields** list and then use the **Move Up** or **Move Down** buttons to move the selected item up or down the list.

Exposure Points are not moveable or removable from the **Current Fields** and are always the last parameter in the item list.

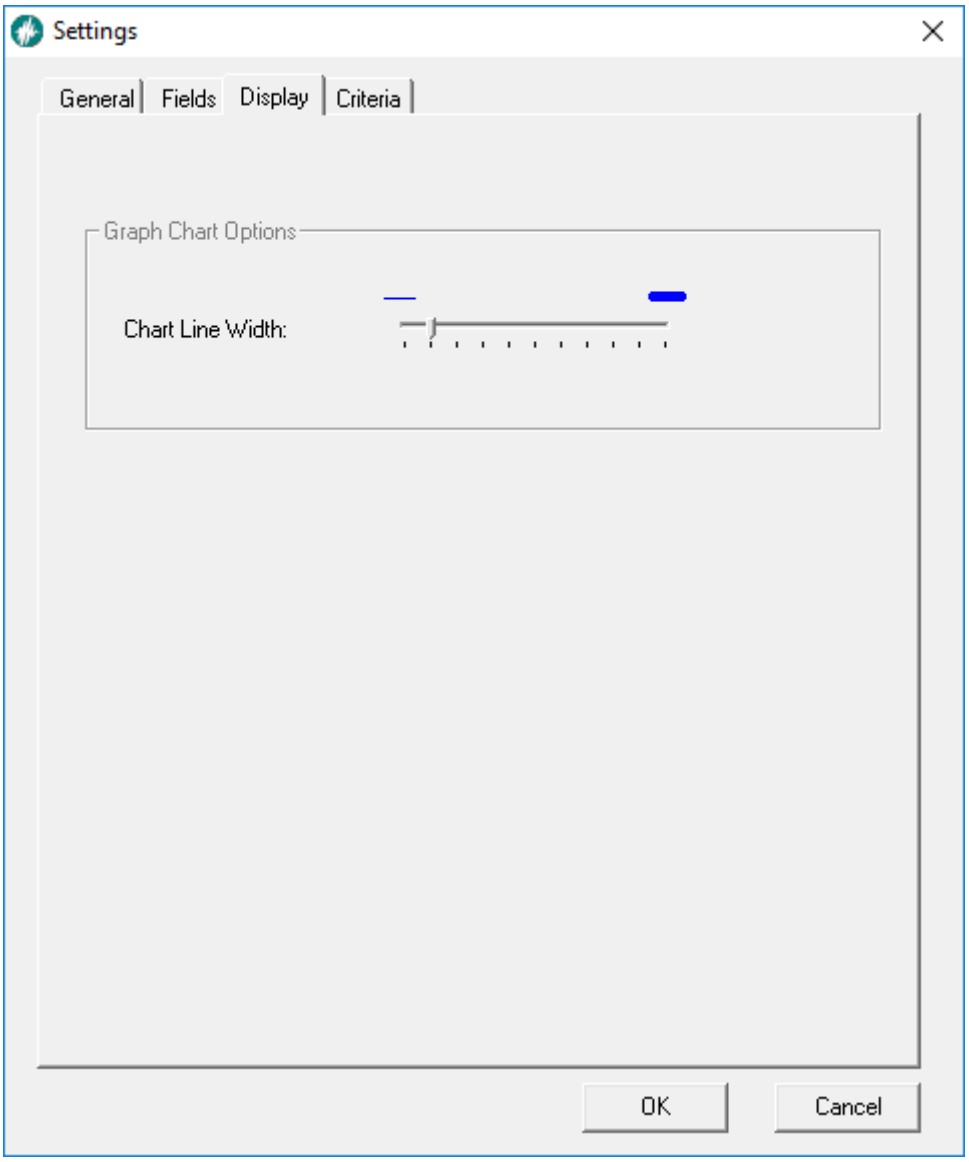
Attempts to move **Exposure Points** will display the following message: -



Attempts to remove **Exposure Points** will display the following message: -



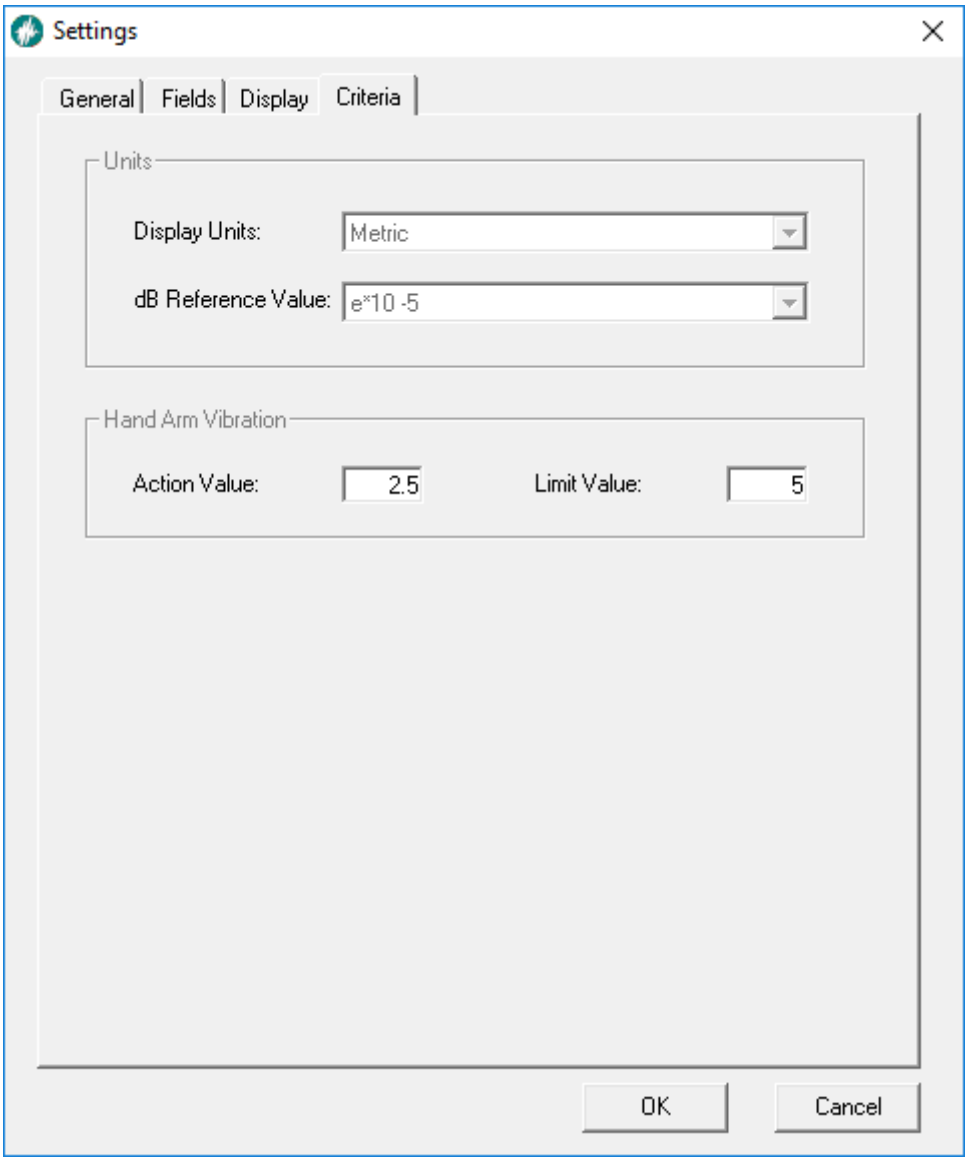
Display Tab



Display Options

Chart Line Width:
Move the slider to determine the line width used for graphing.

Criteria Tab



Use the Criteria tab to change the Action and Limit values as required.

In the UK, The Control of Vibration at Work Regulations 2005 stipulates the following Action and Limit Values: -

Vibration Type	Action Value (m/s^2)	Limit Value (m/s^2)
Hand Arm	2.5	5.0

Chapter 5

Downloading, Opening and Saving Data

Downloading Data

Please ensure the required drivers have been installed during installation, see '**Chapter 1, Installing vBPlus**' for more information.

Downloading data from your instrument is achieved by connecting your instrument to your PC or laptop via the supplied USB cable, see '**Chapter 3, Connectivity**' for more information.

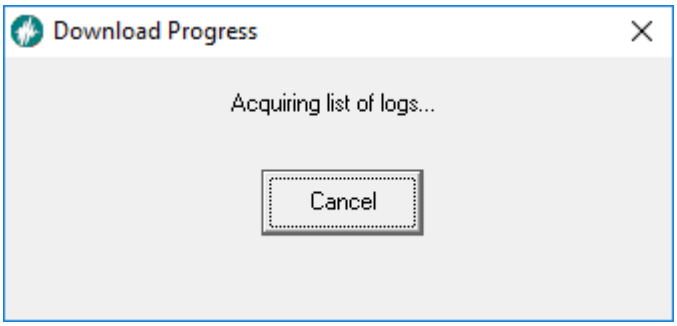
To download the data from your vB follow the procedure below: -

1. Ensure that the vB vibration meter is **ON**.

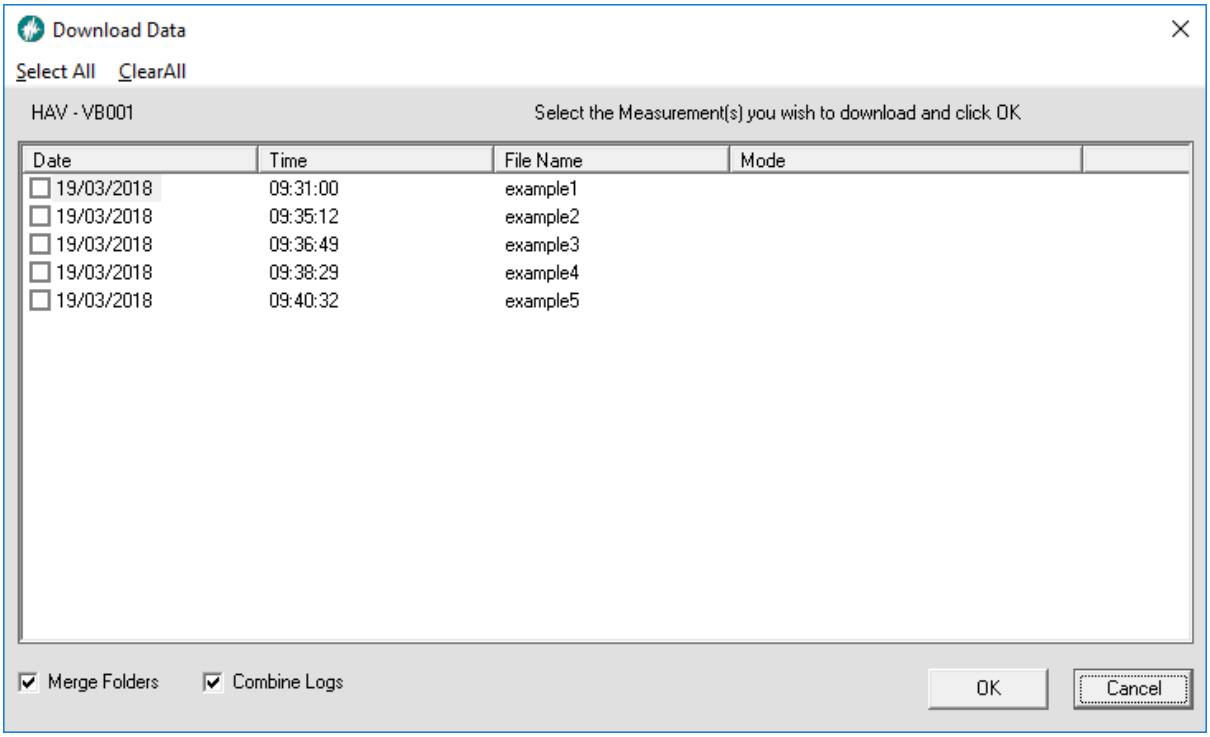
   Connect the USB lead to the instrument and to the PC.

2. Select '**Download**' from the File menu or click on the Download icon and vBPlus will attempt communication with your Vibration Meter.

   Once the instrument is identified the acquisition of available logs will begin.



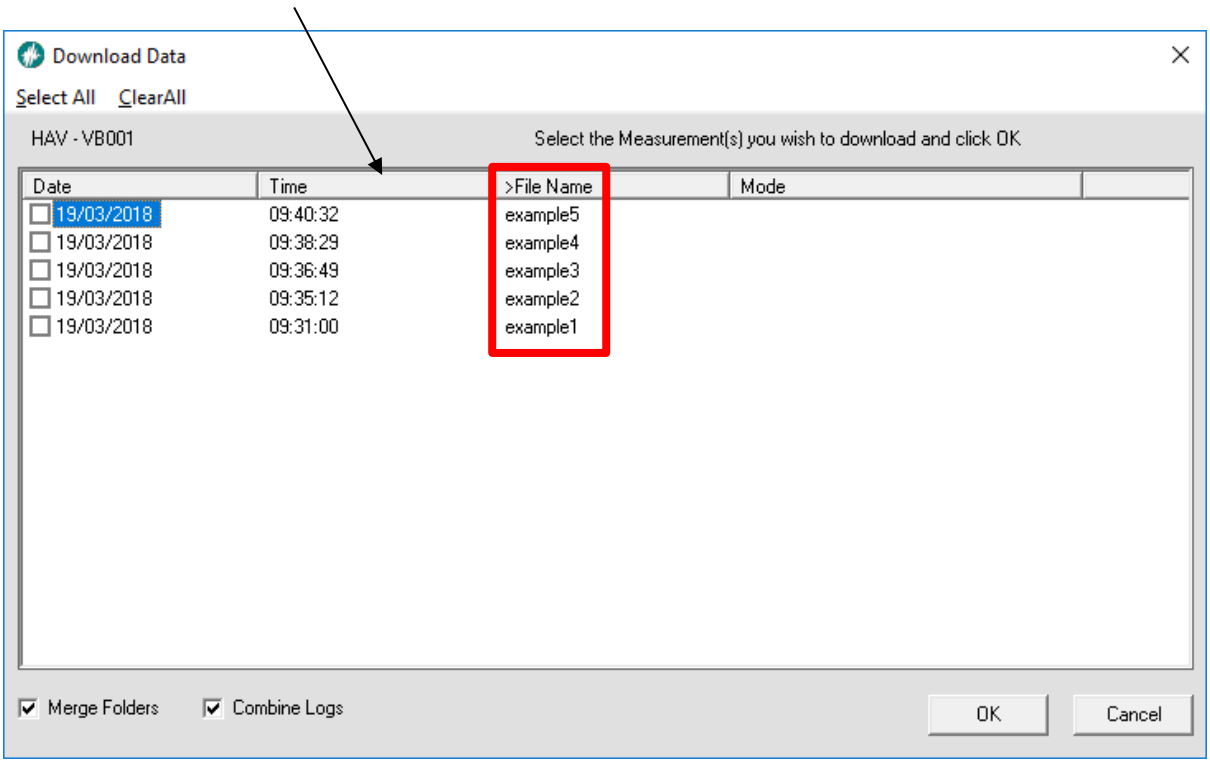
3. With acquisition complete a list of all available measurements is displayed.



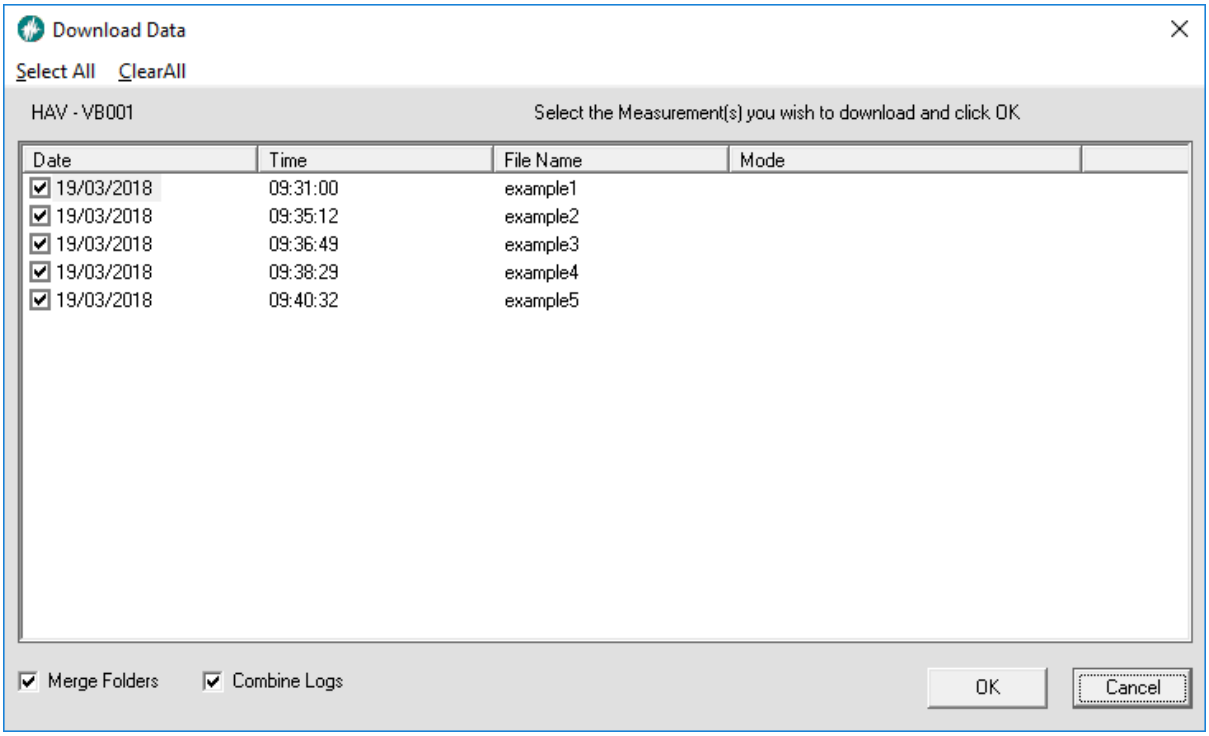
Available measurements can be sorted by clicking on the field name.

Sorted fields are identified by having the symbol '**>**' at the left of the field name. Reverse the order by clicking on the field name again.

The image below shows reverse sorting by **File Name**.



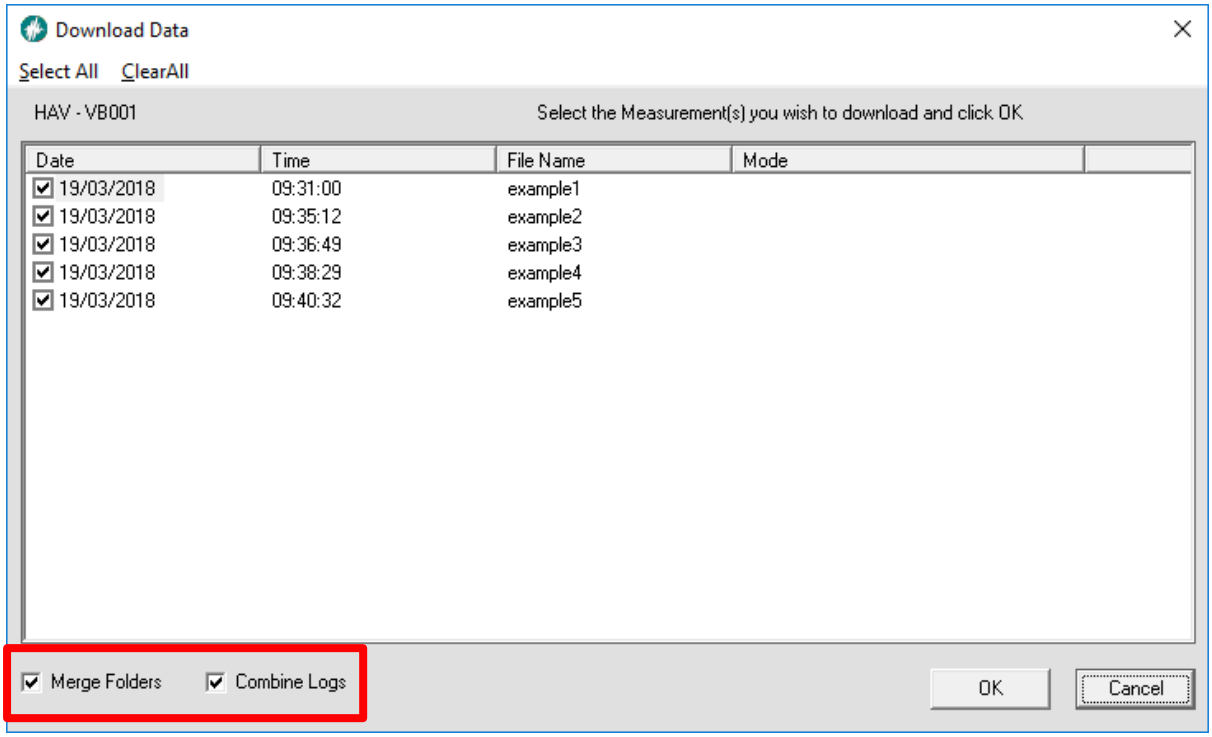
4. Select which measurements are required by clicking in individual tick boxes or by selecting '**Select All**' and then choosing **Measurements**.



5. Select or Deselect **Merge Folder** and / or **Combine Logs** using the tick boxes.

   Selecting **Merge Folders** will place the data to be downloaded into the active folder that is open in vBPlus. If no folder exists or if this option is not selected then the data will be downloaded into a new folder.

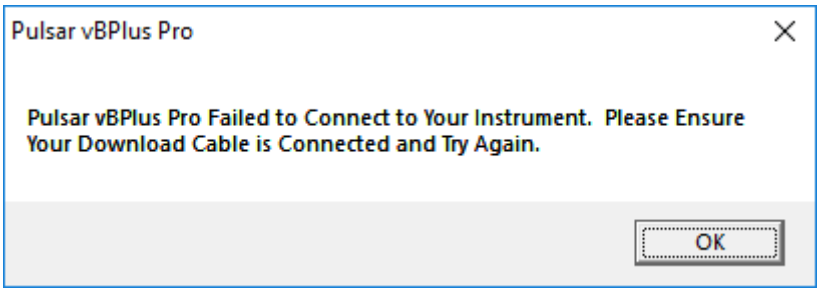
   Selecting **Combine Logs** will combine each measurement of the same name and of the same type into one measurement.



6. Once all preferences have been selected, press the **OK** button to start the data download from the instrument to vBPlus.

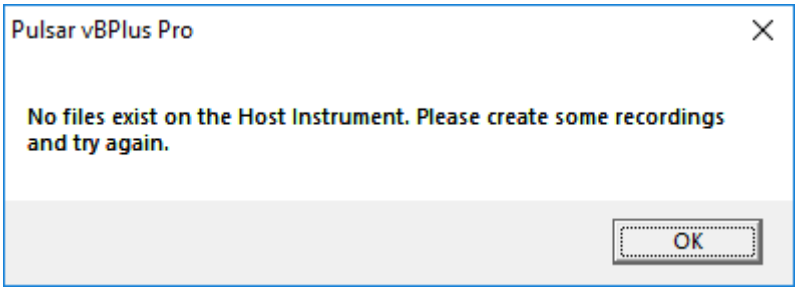
Error Messages

If vBPlus does not receive a response from your instrument then you will be shown the following error messages: -



If this occurs please see '**Chapter 3, Connectivity**' for instructions on connecting your instrument.

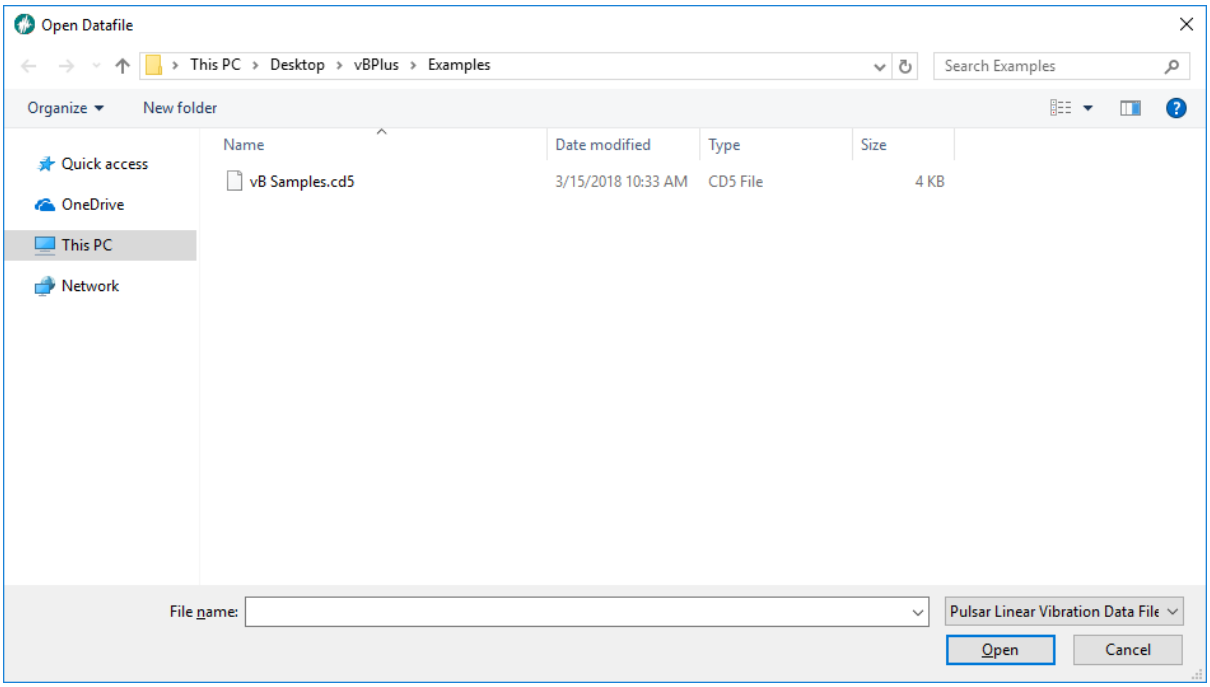
If an instrument is detected but no files have been recorded then the following message is displayed: -



If this occurs please create some recordings on the instrument.

Opening Data

To open a saved data file choose '**File**', '**Open**' or click the Open File icon.

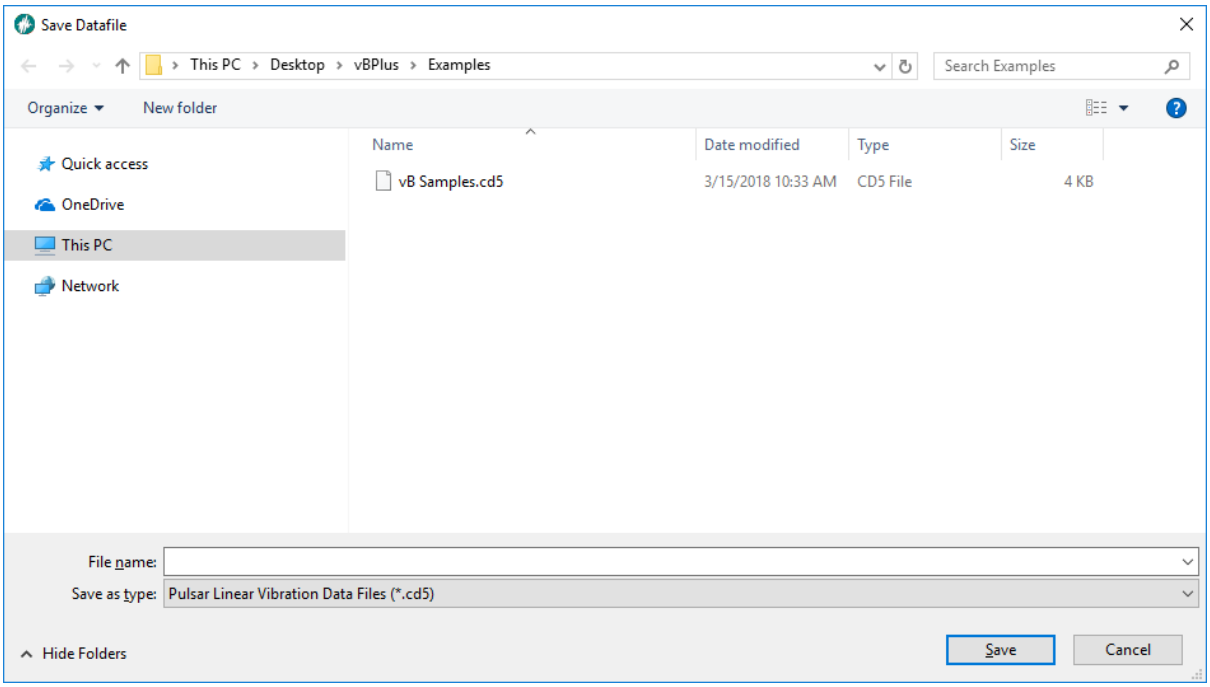


The initial default location for file storage is found under **Working Directories** from the **General tab** of **Settings**, this location can be changed if required, however vBPlus remembers the last folder location used enabling fast folder access.

To open the selected file double click on it or highlight it by a single click of the mouse button and then click on the '**Open**' button.

Saving Data

To save data to a log file choose '**File**', '**Save As**' or click the Save icon.



The initial default location for file storage is found under **Working Directories** from the **General tab** of **Settings**, this location can be changed if required, however vBPlus remembers the last folder location used enabling fast folder access.

Enter a file name and then click on the '**Save**' button.

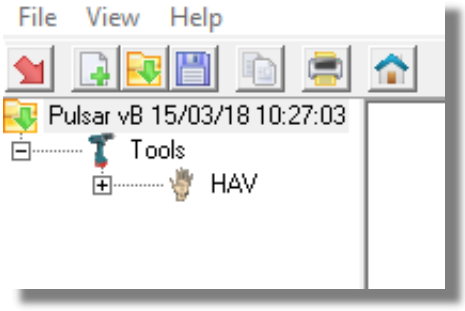
Once a file name has been specified quick saves are possible using the Save icon or '**File**', '**Save**'. To specify a new name, where required, use '**File**', '**Save As**' again.

File Browser

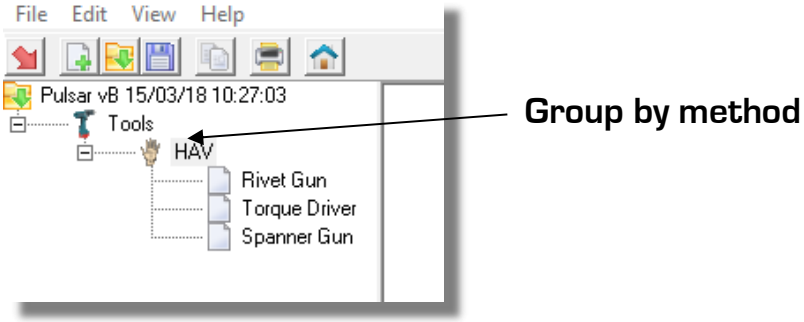
The File Browser is located at the left hand side of the screen. It is used to select which information is displayed in the Data Viewing screen.

The example below describes how to use File Browser: -

i. Open or download a file.

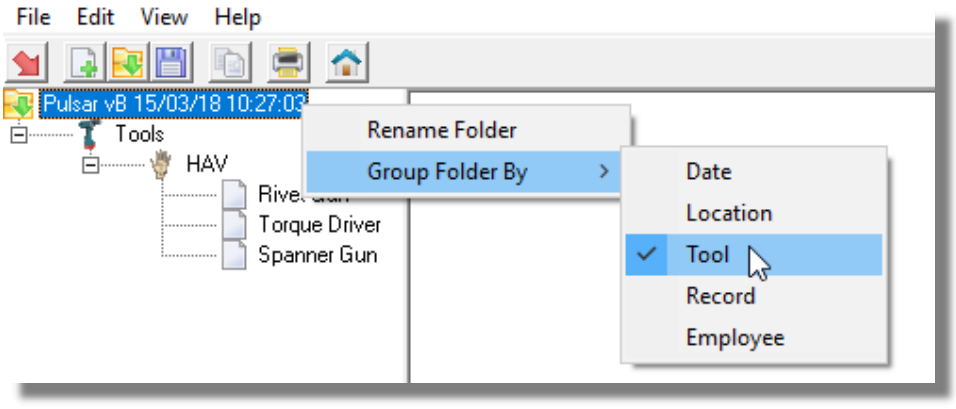


ii. Click on the '**+**' to the left of the vibration type icon to display the downloaded or saved file information.

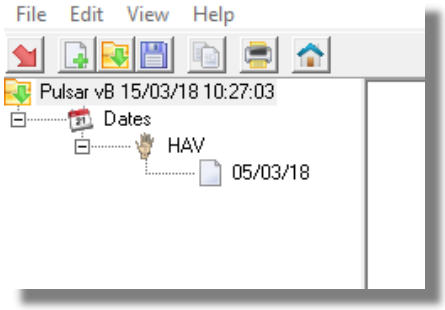


Click on the file you wish to view which will then appear in the Data Viewing Screen. By default all files are grouped by Tools, this can be changed under Settings.

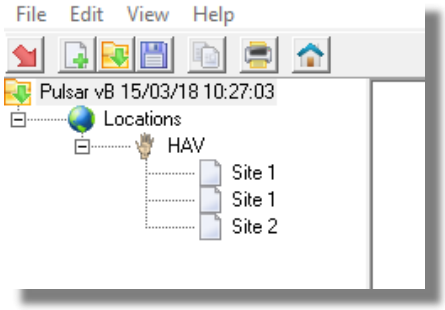
To regroup an open file, right click on the folder name and choose '**Group Folder By**': -



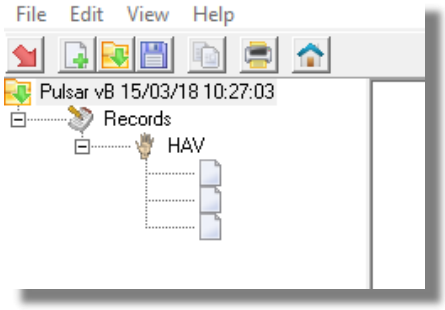
Group By Date:-



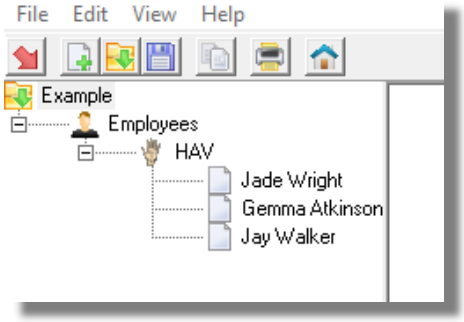
Group By Location:-



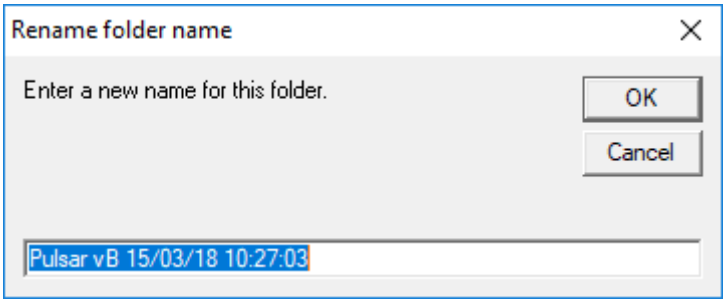
Group By Record:-



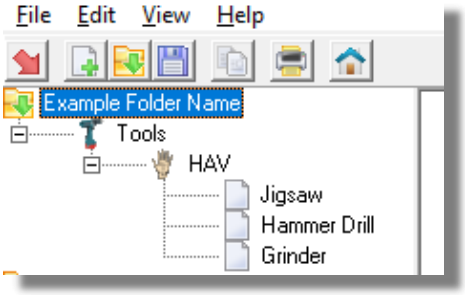
Group By Employee:-



It is also possible to rename folder names by right clicking on the folder name and selecting '**Rename Folder**'.



Enter the new name and press Ok. The renamed folder will be now be displayed: -

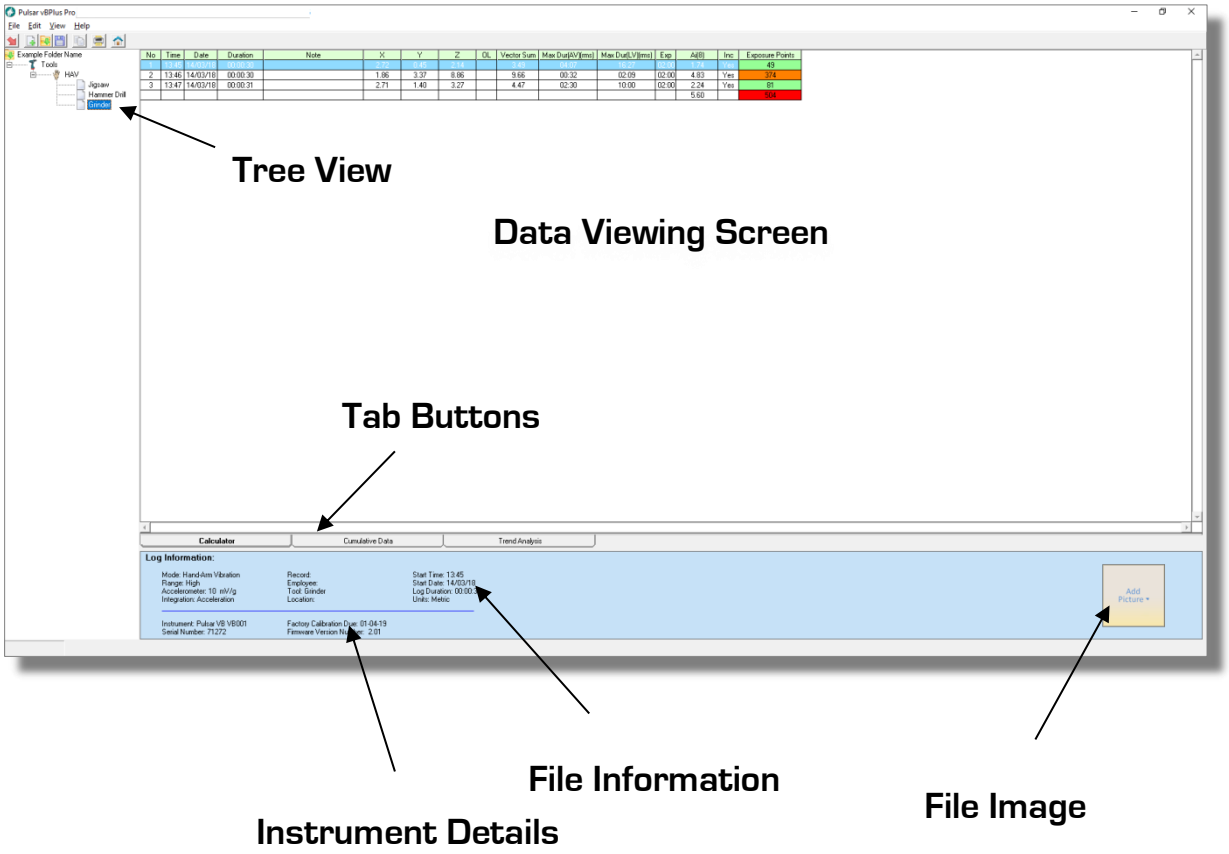


Chapter 6

Using vBPlus

Data Viewing Screen

The Data Viewing Screen is the main area at the right hand side of the screen which shows the recorded data for the chosen file in the tree view.



You will have the following selectable tab buttons at the bottom of the viewing screen: -

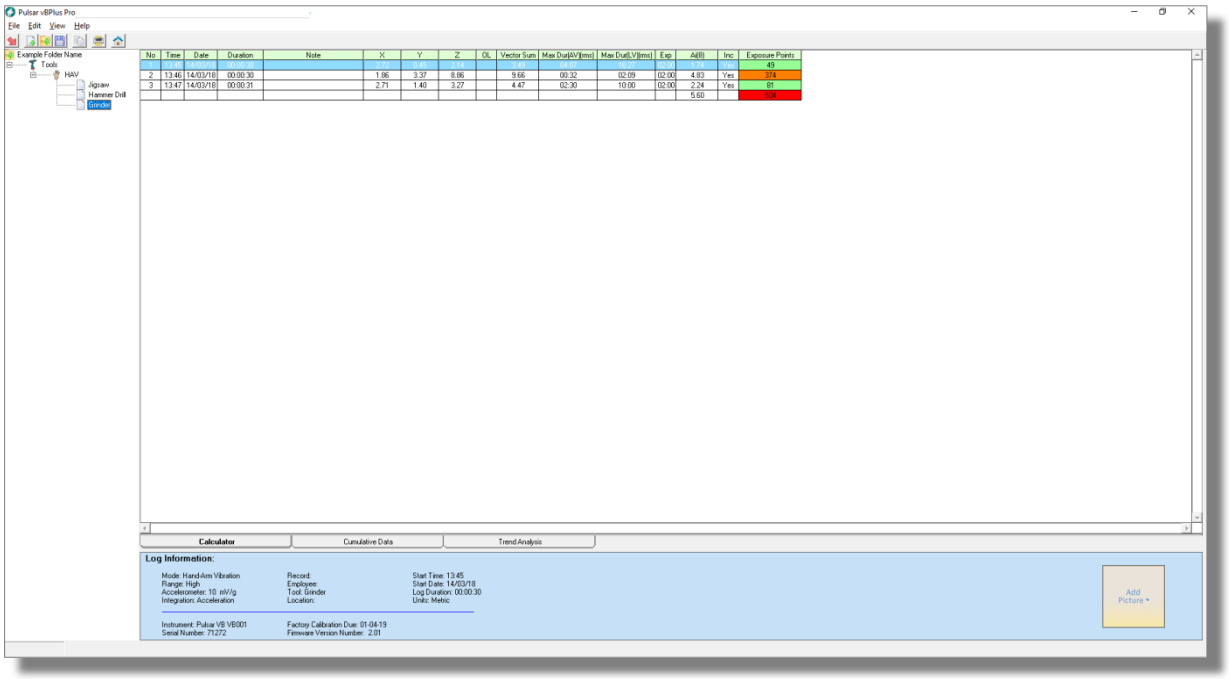
- Calculator
- Cumulative Data
- Trend Analysis (if more than one recording is grouped)

Click these to change the display in the data viewing screen.

Calculator

The **Calculator** tab displays the calculated variables selected under '**Options**', '**Fields**' for the recording selected and is always available for any recording.

Where multiple entries exist, click on the entry to highlight it. The relevant instrument details, file image and file information will be shown. The data for the selected file will also be shown when viewing different screens in the data viewing area.

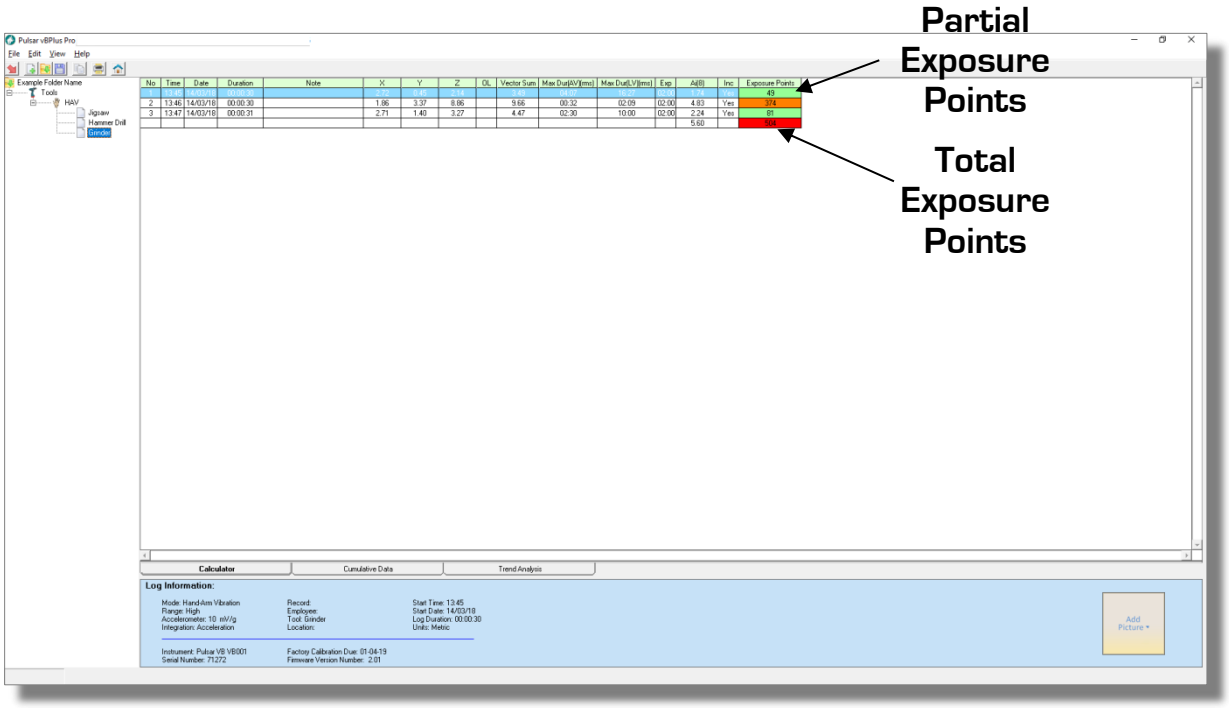


Exposure Points

The vibration exposure point system is based on the UK's Health & Safety Executive's system where vibration magnitude and exposure time are given in exposure points rather than ms^{-2}.

Partial exposure points of merged recordings are added together to produce a total points exposure for a working day.

Partial points are displayed by default, Points(1hr) and Points(15m) will need selecting in order to be displayed, copied or printed. See **User Preferences and vBPlus Settings** under **Chapter 4** for more information.



Each recording and the total exposure points are colour coded using the following criteria: -

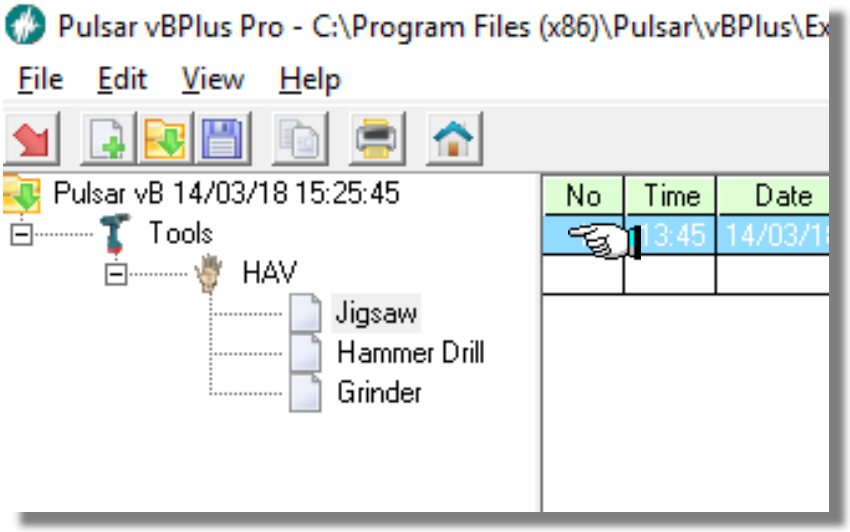
Hand Arm

>0 & <100	GREEN
>=100 & <400	ORANGE
>= 400	RED

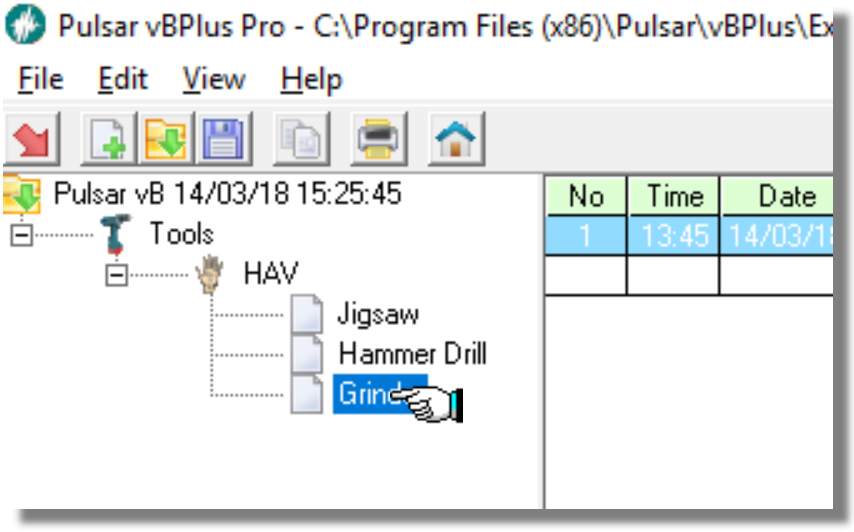
Drag & Combine Data

Whilst on the Calculator screen it is possible to use the drag and combine feature of vBPlus.

Click and hold the left mouse button on the data you wish to drag, the mouse will switch from an Arrow to a Pointed Hand.



Keep the mouse button down and move the Hand over the area on the Tree View where you wish the data to be placed then release the mouse button.



Data items such as Units, Type or Date must match to perform the requested operation.

If the drag is not possible then vBPlus will automatically place the data in the correct location, creating folders as and where required.

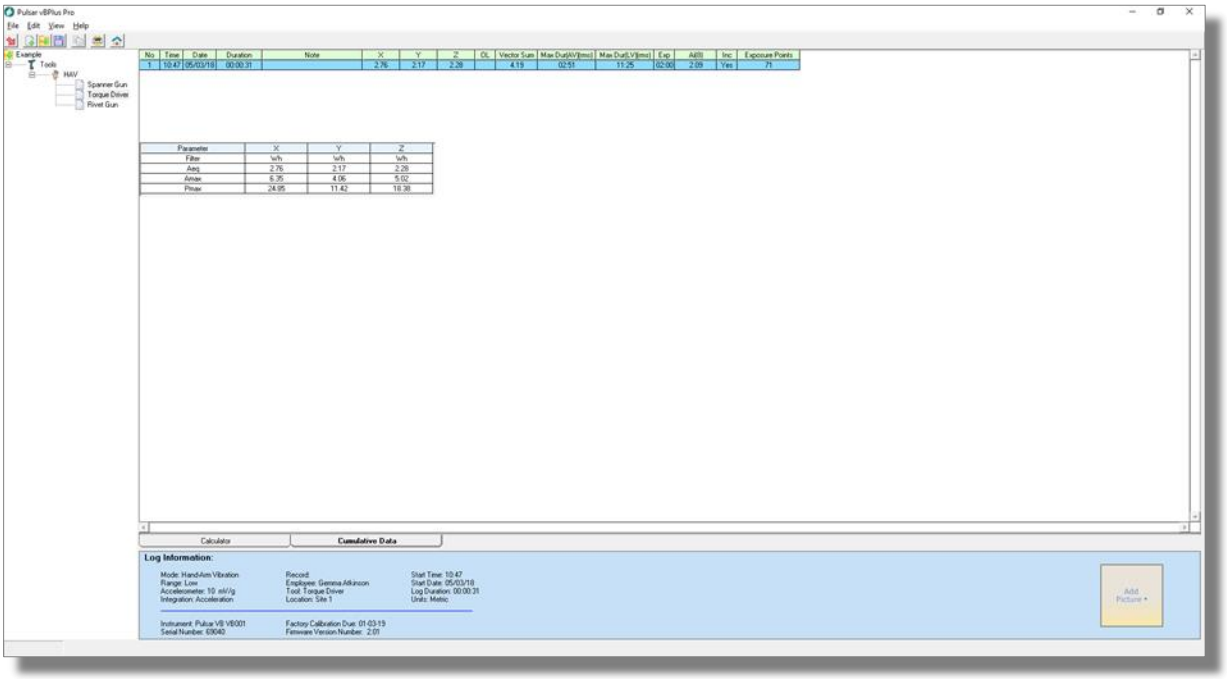
The overall combined A(8) and Exposure Points are then calculated on each recording that is in the calculator screen.

Cumulative Data

To view cumulative data use the **Cumulative Data** tab.

The cumulative data is a single overall figure calculated or measured over the measurement period for each available axis.

Individual data for recordings that have been combined can be viewed but are selected at the calculator screen. The information from the **Calculator** screen for the selected log is displayed at the top of the **Cumulative Data** screen to easily identify which recording is selected

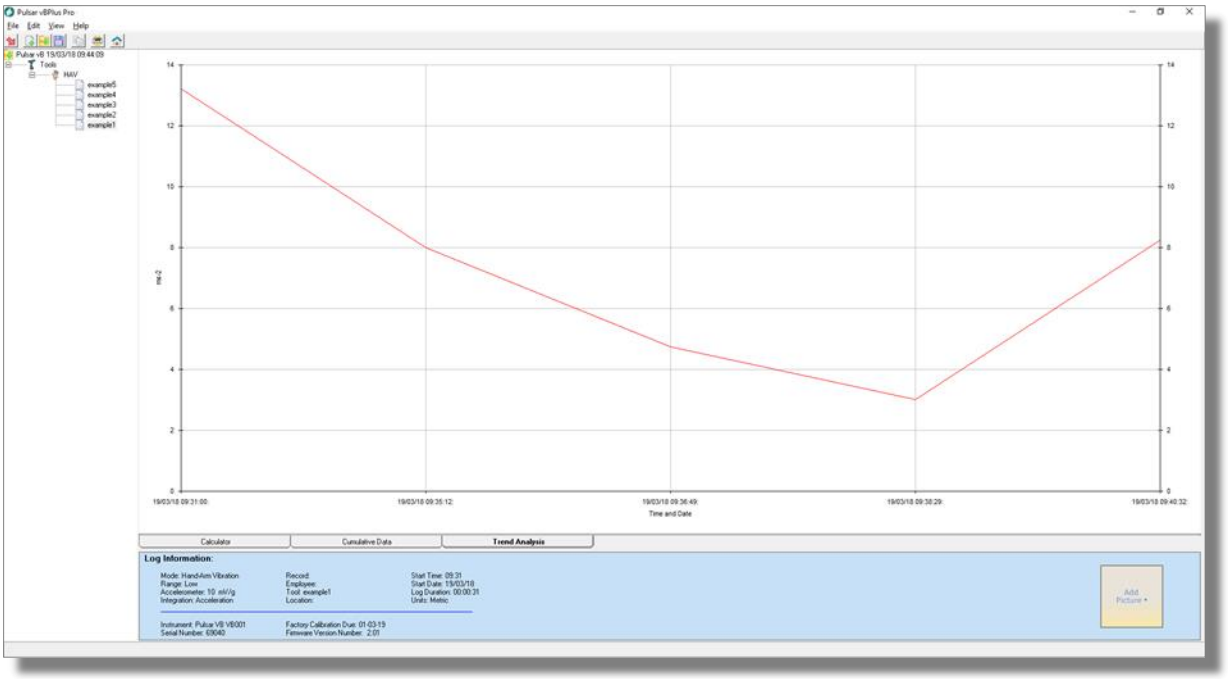


Trend Analysis

Combined recordings allow a **Trend Analysis** tab to become available.

Use this tab to plot graphically the cumulative average for each individual recording within the combined set.

The plot is graphed in the order the list is displayed in the **Calculator** screen (Time and Date) and is extremely useful for machine monitoring.



Chapter 7

Customer Support

Warranty and After Sales Service

In the event of a fault or problem occurring with your software during the warranty period, the software should be returned to Pulsar Instruments Plc in its original packaging or to an authorized agent. Please enclose a clear description of the fault or symptom.

Details of the warranty cover are available from Pulsar Instruments Plc or an authorized agent.

Should you have any queries regarding the use of the software or wish to suggest future improvements or additions then please feel free to contact Pulsar at sales@pulsarinstrument.com

For warranty return to: -

Pulsar Instruments Plc
Unit 2
Hunmanby Industrial Estate
Hunmanby
Filey
YO14 0PH
United Kingdom

Telephone: +44 (0)1723 339715

Email: sales@pulsarinstrument.com
Web: www.pulsarinstruments.com

During the one year warranty period of your software, upgrades or bug fixes will be issued free of charge whenever they become available.

Disclaimer

Whilst every effort is made to ensure the accuracy and reliability of both the software described and the associated documentation, Pulsar Instruments Plc makes no representation or warranties as to the completeness or accuracy of this information.

Pulsar Instruments Plc assumes no responsibility or liability for any injury, loss or damage incurred as a result of misinterpreted or inaccurate information.

Any documentation supplied with your product is subject to change without notice.

Software Details

For your records and for future correspondence with Pulsar Instruments Plc regarding your instrument, please complete the following details: -

Software Version

Serial Number

Purchase Date