# **ADAM DU – Data Capture Utility for ADAM Balances & Scales**

ADAM DU (Data Utility) is an application that allows you to quickly and easily capture data from an ADAM Laboratory Balance or Weighing Scale and perform various functions on the collected readings.

ADAM DU can perform tasks, such as graphing the data, mathematical statistical analysis & export the readings to several common file formats. Also quickly export data to other applications (e.g. Microsoft<sup>®</sup> Excel<sup>®</sup>, Microsoft<sup>®</sup> Word<sup>®</sup> or the Windows<sup>®</sup> Clipboard). ADAM DU can provide basic remote control of the balance/scale\*.

Adam DU can collect data from up to 8 different balances/scales simultaneously, each data collection session can be individually monitored, configured and customised to your requirements.

Adam DU can also now speak the readings received. This is ideal if you want to stay informed of a scale's progress whilst completing other tasks or maybe you might be visually impaired.

# ADAM DU can quickly provide you with data, that is easy to integrate into any project!

\*(Note: the various ADAM products have different remote facilities). Microsoft, Windows, Excel & Word are registered trademarks of Microsoft Corporation in the United States and other countries.

Version: 1.0.21 20/12/2010 AE Part Number: 9230

## **Feature List:**

- Quick and easy to use interface, supports capturing data simultaneously over a serial communication port(s) from up to 8 balances/scales
- Main Commander Window to manage and overview all data capture sessions
- Graph readings in real-time
- Perform statistical analysis on readings (Min, Max, Median, Mean, Variance, Standard Deviation, Total) in real-time
- Use a Timer control to regularly poll balances/scales for readings
- Export captured readings to several file formats (Text, CSV, HTML, XML)
- Export captured readings automatically to other applications (MS Excel and MS word)\*
- Export captured readings to the Windows<sup>®</sup> Clipboard for quick importing into other Windows<sup>®</sup> applications
- Capture custom data along with the scales data readings, supports up to 6 additional user defined data fields that can have data inputted by a user
- User defined fields support drop down lists, to make it quick and easy to select data from pre-defined options. The lists of options can be imported from a CSV file - created from your computer systems or they can be manually entered
- Interact with the connected Balance/Scale send remote commands to control certain aspects of the balance/scale (certain commands are only applicable to certain models). Ideal for situations where you may only have remote access to a scale/balance
- Log calibration reports to file for complete tracking of calibration records
- Log form output (custom defined multiple line data from a balance) to a file
- Continuously log readings to a file in real-time
- Print datagrid readings and the graphed readings
- Collect date and time with readings, where supported collect the Scale/Balances serial number for unique identification of data readings/balance
- Quickly search for readings a specific reading(s), max or min reading
- Collect Density Determination readings when used with an appropriate balance and Density Determination Kit
- Collect unit weight, pieces count, unit price and total price from counting and retail scales.
- Capture Tare weight, Net weight and Total/Gross Weight from any scale for production line applications.
- Speak all readings received from a balance/scale using the Microsoft<sup>®</sup> Speech Synthesizer engine (Windows XP and later)

\*(You need a licenced copy of Microsoft® Word/Excel to use this facility)

## Installation

You can download an evaluation copy of ADAM DU from <a href="www.adamdu.com">www.adamdu.com</a> or you may have received an evaluation copy of the software on a CDROM that came with your ADAM balance/scale.

#### To install from the Website:

- 1. Visit <u>ADAM DU Download Page</u>. Make sure you have read the <u>hardware & software requirements</u> before downloading a copy of the evaluation software.
- 2. Once downloaded, run the "adamdu.msi" file.
- 3. Follow the on screen installation prompts to correctly install the software.
- 4. You now have a 14 day free evaluation of the ADAM DU software
- 5. To purchase the software before or after the evaluation period has expired, please visit: <u>ADAM DU Website</u> and follow the instructions on how to pay for a licence.

#### To install from a CDROM:

- 1. Insert the ADAM DU CDROM into the CDROM drive on your computer.
- 2. If "CDROM autorun" is enabled on your computer then shortly after inserting the disc you should see a menu screen with instructions on how to install an evaluation copy of ADAM DU on your computer.
- 3. If "CDROM autorun" is not enabled (or no menu appears) then open up Windows Explorer (File Manager). Click on your CDROM drive. Then run the program "adamdu.msi" and a installation menu with instructions will appear shortly..
- 4. You now have a 14 day evaluation of the ADAM DU software
- 5. To purchase the software before or after the evaluation period has expired, please visit: <u>ADAM DU Website</u> and follow the instructions on how to pay for a licence.

Quick Start Guide

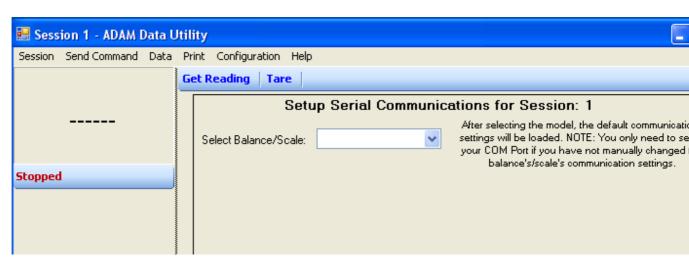
## **Quick Start Guide**

After running ADAM DU, a licence expiry reminder will pop up if you are running an evaluation copy of ADAM DU. If you are running ADAM DU for the first time then you will also have to agree to the terms of use in the licence. After that the ADAM DU Commander Window will appear.

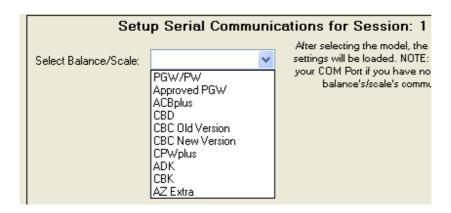


The Commander Window allows you to manage & obtain an overview of your data collection sessions. You can create a new data collection session by clicking on the green "Start New Data Collection Session" button.

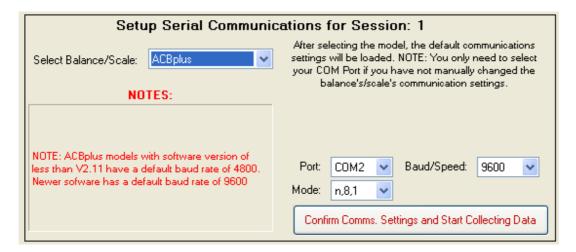
A new window will pop up:



Select your balance/scale from the drop down list.

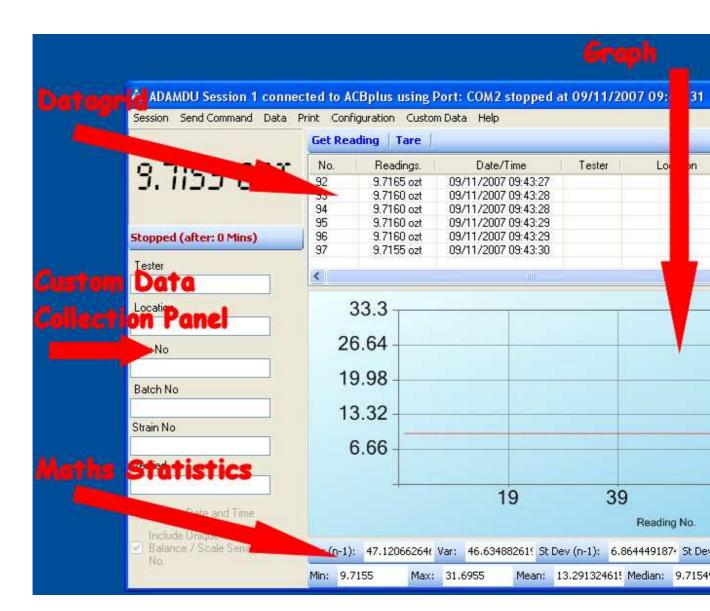


After selecting a model, more information will be displayed. Some notes may also be displayed about the particular ADAM model, also the default factory serial port communication settings will also be loaded.



Other than selecting the Com Port that your balance/scale is connected to, you should not need to change any of the other settings unless you have changed from the default factory settings in the balance/scale's software.

Press the "Confirm Comms. Settings and Start Collecting Data" button. The Datagrid(see diagram below of the main areas of the Session window) is enabled by default, depending upon the ADAM balance/scale model. You should be able to press the Print key on a balance/scale (please refer to the model's user manual for more details on how to print) and this should send the current reading to ADAM DU software.



If ADAM DU does not display a reading, try again, if it still does not work then check the serial port settings in the scale/balance (please refer to the user manual that came with the scale/balance or download the latest copy from our <a href="website">website</a>). More troubleshooting help may be found at: <a href="Problems connecting to a Balance">Problems connecting to a Balance</a> Section of this manual.

System Requirements

## **Hardware Requirements**

There are no specific hardware requirements but the computer must be good enough to run one of the required operating systems below. Note: obviously the more sessions and/or analysis functions you enable, the more processor & memory resources are used. See the <a href="Frequently Asked Questions">Frequently Asked Questions</a> section on customising ADAM DU to run on slower computers.

A RS-232 port is required on the computer to connect to the balance/scale and also a RS-232 Null Modem Cable (please see the user manual of your balance/scale for the exact wiring specification required). You can also use the computer's USB port with the addition of a "RS-232 serial port to USB converter" (available at most computer stores).

# **Operating System Requirements**

ADAM DU will work on Windows XP SP2\* and later, Windows Vista and Windows 7 - all operating systems should have the latest service packs & updates/security patches installed.

The Microsoft .NET v2 framework and v3 is also required as a minimum for the software to run. Though we would recommend installing the .Net Framework v3.5. Please note newer operating systems will have these Frameworks installed by default. The .Net Framework v3.5 can be downloaded through Windows Update or manually downloaded/installed from: Microsoft Web Site

\* This operating system must also have a minimum of Windows Internet Explorer v6 service pack 1 and Microsoft Installer V2. Again these can be downloaded from Windows Update or manually downloaded/installed from the following links:

## Windows Installer v3 for Windows XP

Microsoft, Windows, Excel & Word are registered trademarks of Microsoft Corporation in the United States and other countries.

# **Single End-User PC Licence Agreement**

#### 1 INTRODUCTION

**1.1** This Licence Agreement ("Agreement") is an agreement between you and Adam Equipment Co. Ltd. Please read these terms and conditions carefully before downloading/installing any software and applicable documentation as they contain important information about your rights and obligations. It governs your use of the software ("the Software") supplied to you by Adam Equipment Co. Ltd. and related documentation. In particular, we draw your attention to clause 8 (limitation of liability).

By downloading, installing or otherwise using the Software you agree to be legally bound by this Licence Agreement (it may be modified and released on our website www.adamdu.com without notice).

**1.2** If you do not wish to be bound by this Agreement, then you may not download or use the Software (you must remove any installed copies from your computer(s)).

#### **2 LICENCE**

- **2.1** Specific conditions of use which apply to the type of licence you have acquired from Adam Equipment Co. Ltd. are:
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#### 2.1.2 End-User PC Licence:

With a Single End-User PC Licence you may install and use one copy of the Software on a single computer. You may not share the licence between different computers, nor install it on a server based computer, nor use the Software on more than one computer at the same time.

The Software is tied into a single computer by examining certain computer hardware components and producing a key based on these. The license is based on this key.

## **3 RESTRICTIONS ON USE**

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- **3.5** You shall not reverse engineer, decompile or disassemble the Software except to the extent expressly permitted by any applicable local laws which may over-rule this restriction.
- 3.6 You may not distribute the Software to any third party.
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**3.11** Transfer of a valid licence from one computer you own to another computer you own, may be possible by contacting Adam Equipment Co. Ltd. It will be at Adam Equipment Co. Ltd's discretion - depending upon the circumstances of the reason for transfer.

#### **4 INTELLECTUAL PROPERTY RIGHTS**

The copyright, patents, trade marks and all other intellectual property rights in the Software and related documentation are owned by and remain the property of Adam Equipment Co. Ltd. and are protected by national laws and international treaty provisions. You do not obtain any rights in the Software other than those expressly granted in this Agreement.

#### **5 TERMINATION**

This Agreement is effective until terminated. This Agreement will terminate automatically if you fail to comply with any provision of this Agreement. Upon notice of termination from Adam Equipment Co. Ltd. you shall destroy the documentation and all copies of the Software promptly.

#### **6 UPDATE POLICY**

Adam Equipment Co Ltd. may create, from time to time, updates for certain versions of the Software. Maybe to fix bugs or release new features at Adam Equipment's discretion. Adam Equipment Co Ltd. may make any such updated versions available to licensees who have paid the update fee. If you acquire an update for your version of the ADAM DU Software then all copies of the previous version must be destroyed and not used, except for one copy which may be retained solely for archival purposes.

#### **7 WARRANTY**

- **7.1** Subject to the limitations upon its liability set out in clause 8, Adam Equipment Co. Ltd. warrants that:
- **7.1.1** for a period of 90 days from you purchasing the Software, it will materially conform to the electronic documentation provided with it; and
- **7.1.2** with respect to any physical diskette(s), the same shall be free from defects in materials and workmanship for a period of 90 days from purchase.
- **7.2** In the event of notification within the warranty period stated in clause 7.1, Adam Equipment Co. Ltd. shall replace the defective Software and/or diskette(s). Your remedy for breach of the warranties set out in clause 7.1 shall be limited to replacement of the defective materials and shall not encompass any other damages.
- **7.3** Save as stated herein, Adam Equipment Co. Ltd. expressly disclaims all other conditions, warranties, terms and undertakings, expressed or implied, statutory or otherwise, relating to the Software and related documentation or technical support including but not limited to warranties of quality, performance, satisfactory quality or fitness for a particular purpose.

#### **8 LIMITATION OF LIABILITY**

- 8.1 Nothing in this Agreement shall limit Adam Equipment Co. Ltd's liability for:
- **8.1.1** fraud or other criminal act:
- 8.1.2 personal injury or death caused by our negligence;
- **8.1.3** any other liability that cannot be excluded by law.
- **8.2** Subject to clause 8.1, Adam Equipment Co. Ltd. accepts no liability for any indirect or consequential loss or damage, or for any loss of data, profit, revenue, anticipated savings or business, however caused and even if foreseeable or made known to Adam Equipment Co. Ltd. **8.3** Except as provided in clause 8.1, Adam Equipment Co. Ltd's maximum liability to you for any cause whatsoever will be limited to the amount paid for the Software.

#### 9 SEVERABILITY

If a Court or other competent authority decides that any provision of this Agreement is void or otherwise ineffective in whole or in part then any other part and the other terms and conditions of this Agreement shall continue in full force and effect.

## **10 THIRD PARTY RIGHTS**

The parties do not intend that any term of this Agreement shall be enforceable solely by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person who is not a party to this Agreement.

## 11 ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all previous agreements, arrangements or undertakings between the parties relating to the subject matter of this Agreement and any representations or warranties previously given or made to it.

## **12 ASSIGNMENT**

You may not assign this Agreement nor any of its rights or obligations hereunder nor sub-license the use (in whole or in part) of the Software without Adam Equipment Co. Ltd's prior consent.

#### 13 NOTICES

- 13.1 All notices shall be given:
- 13.1.1 to Adam Equipment Co. Ltd. via e-mail at adamdu@adamequipment.com
- **13.1.2** to you at either the e-mail or postal address you provide during any ordering process.
- **13.2** Notice will be deemed received when an e-mail is received in full (or else on the next business day if it is received on a weekend or a public holiday in the place of receipt) or 3 days after the date of posting.

#### 14 GOVERNING LAW

This Agreement is governed by and interpreted in accordance with English law. Any disputes or claims relating to this Agreement shall be subject to the exclusive jurisdiction of the English Courts.

#### 15 U.S. GOVERNMENT RESTRICTED RIGHTS

If the software is to be used/installed in the U.S. then the Software and documentation are provided with Restricted Rights. Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or subparagraphs(c)(1),(2), and (3) of the Commercial Computer Software - Restricted Rights at 48 CFR 52.227-19, as applicable, and any amendments thereto.

Version 1.1 21/7/2008

# **Standard Data Collection & Analysis**

Data can be displayed & analysed in real-time in 3 separate ways, via the:

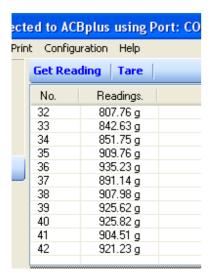
- 1. Datagrid
- 2. Graph
- 3. Mathematical Statistics

Note: Custom Data can also be collected - see <u>Custom Data Collection</u> for more details.

## **Datagrid**

You can toggle the Datagrid on/off via the "Data" menu in the Session window, then select the "Enable Data Grid" option.

If the Datagrid is enabled then each reading received by ADAM DU will be placed on the grid. A unique sequential reference number is placed next to each reading. The reading also includes the weighing measurement unit.



You can turn the Datagrid off if it is not required - freeing up processing & memory resources on the computer (see <a href="Frequently Asked Questions">Frequently Asked Questions</a> for more details about this). You can also restrict the amount of data readings that are displayed on the grid at any time by using the "Configuration" menu in the Session window. The "Number of Readings to Show on the Data Grid" menu option allows you to toggle between the following numbers of readings - 100, 1000, 10000 or All.

You can also search the Datagrid see: <u>Using the Data Collection Session</u> Window

## Graph

You can toggle the Graph on/off via the "Data" menu in the Session window, then select the "Enable Data Graphing" option.

If the Graph is enabled then each reading received by ADAM DU will be plotted on the graph. The graph displays the reading amount on the horizontal Y axis and the reading number on the vertical X axis.



You can turn the Graph off if it is not required - freeing up processing & memory resources on the computer (see <u>Frequently Asked Questions</u> for more details about this). You can also restrict the amount of data readings that are displayed on the Graph at any time by using the "Configuration" menu in the Session window. The "Number of Readings to Show on Graph" menu option allows you to toggle between the following numbers of readings - 100, 1000, 10000 or All.

You can print the graph from the "Print" menu in the session window.

## **Mathematical Statistics**

You can toggle the Graph on/off via the "Data" menu in the Session window, then select the "Enable Math Statistics" option.

If the Mathematical Statistics is enabled then each reading received by ADAM DU will be included in the statistics. The following statistics are calculated in real-time:

Variance Variance (n-1) Standard Deviation Standard Deviation (n-1) Minimum reading
Maximum reading
Mean reading
Median reading
Total or Arithmetic Sum of all readings



You can turn the Mathematical Statistics off if it is not required - freeing up processing & memory resources on the computer (see <a href="Frequently Asked Questions">Frequently Asked Questions</a> for more details about this). You can also restrict the amount of data readings that are displayed on the Mathematical Statistics bar at any time by using the "Configuration" menu in the Session window. The "Number of Readings to Perform Math Stats on" menu option allows you to toggle between the following numbers of readings - 100, 1000, 10000 or All.

Note: you can copy and paste the results from any of the statistics fields into another application.

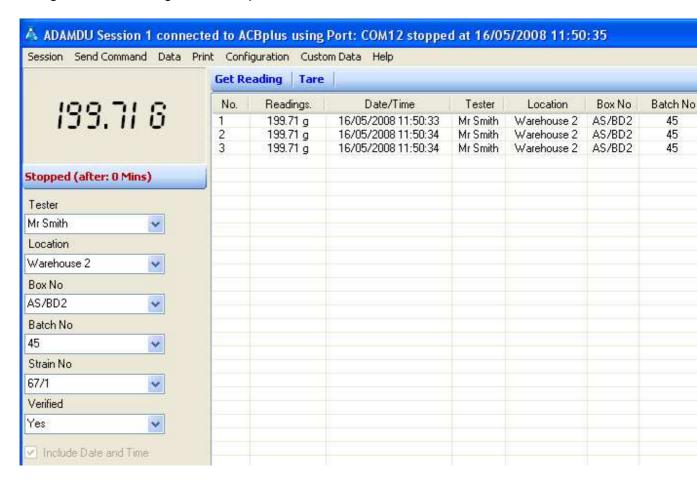
**Custom Data Collection** 

## **Custom Data Collection**

Custom data collection can be enabled by the "Enable Custom Data Collection Panel" option, from the "Data" menu in a Session window.

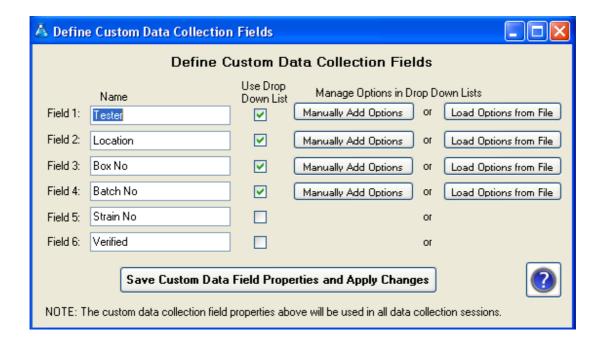
Note: the "Custom Data" menu will also appear once it has been enabled.

You can collect additional custom data besides the reading, using up to 6 customisable fields. The custom fields allow you to collect any additional data along with the reading, see example below:



When you print a reading from a balance/scale, any data currently entered into the custom fields will also be collected and entered into the Datagrid.

You can setup the names of the custom fields on the Datagrid from the "Define Custom Data Collection Fields", located on the Session Window, under the "Custom Data" menu option.



Simply type in the new names of the fields (you do not need to use all the fields) and make any adjustments to column widths for the Datagrid.

You can specify how many of the 6 custom fields you wish to use by using the "Enable/Disable Custom Data Collection Fields" option under the "Custom Data" menu. Simply tick/un-tick to enable/disable any fields.

The custom field column widths on the Datagrid will be automatically saved when you exit the session window, alternatively you can manually save the column widths from the "Configuration" menu, then select the "Save Data Grid Column Widths" option. Simply use the cursor to "grab" a column separator and drag it to the required width to display all your text in that column.

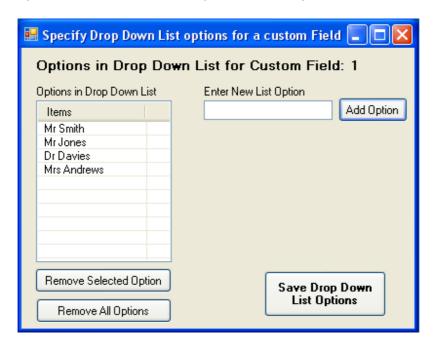
## **Using Drop Down Lists in the Custom Fields**

You can specify the custom fields to work with drop down lists, the list could for example contain a series of products or operator names. This helps to speed up data entry as you only need to type in a couple of characters and an item is auto-selected alphabetically. Simply tick the box next to each custom field that you require to use a drop down list.

You can manually specify the options to appear in a list or you can import the options into a list from a CSV file.

If you decide to manually type in the options for a custom field list, press the

"Manually Add Options" next the desired custom field. A new screen will appear (see below), this allows you to add an option, select and remove an existing option or remove all the options from the list. Once you have entered all your options click the "Save Drop Down List Options" button to save your data.



If you decide to import the list options from a file then you need to make sure the file is of a CSV (comma separated value) file, the options need to be separated by commas and the options need to be enclosed in speech marks. For example the CSV could look like:

"Mr Smith", "Mr Jones", "Mrs Andrews", "Dr Davies"

Click on the "Load Options from File" button, a pop up message reminds you of the required file format, then a new file selection window appears, select your .csv file. ADAM DU will do a basic check on the file contents to make sure it is of the correct format and will load the data into the list on the screen. Any blank options in the file will be removed. Once you have entered all your options click the "Save Drop Down List Options" button to save your data.

Notes: ADAM DU stores all the custom field lists in CSV files located in the sub folder "drop\_down\_list\_options" within the ADAM DU application folder. The drop down list does not restrict you to only the options in the list, you can still manually enter any text into the Datagrid.

## **Special Custom Fields**

There are 2 extra special custom fields besides the 6 user configurable custom fields. These are:

- Date and Time
- Balance/Scale Serial Number

"Date and Time" option will automatically collect & display the computers time in a separate column on the grid.

The "Balance/Scale Serial Number" option is only available if an ADAM DU is being used in conjunction with certain balances. The balances will transmit their ADAM serial number (e.g. AE123456789) when connected to ADAM DU. This allows you to get a unique identifier from the balance which may be useful for auditing purposes or help to identify a balance/station in a multiple balance/ADAM DU configuration environment.

Note: the PGW/PW & PGL balances must have up to date firmware installed to transmit their AE serial number to ADAM DU.

## Collection of Unit Weight, Piece Count, Unit Price or Total Price readings

Enabling of the collection of Unit Weight, Piece Count, Unit Price or Total Price readings (via the Data Menu - available only for certain models) will automatically use Custom Fields 1 & 2. The two Custom Fields will be automatically renamed and disabled from user customisation until this facility is switched off again.

## **Net/Total Weight Collection Mode**

This mode enables any scale to collect/calculate Tare weight, Net weight and Total/Gross weight (even if the scale does not natively support sending this data over the RS232/USB port).

To enable this mode, open a data collection session, select the Data menu, then select "Net/Total Weight Collection Mode".

After selecting this mode & starting a data collection session, custom data collection mode is auto enabled and first three custom fields are reserved.

To perform Net/Total weighing:

- 1. Place container on scale & press the scale's Print button to send the container weight (TW) to ADAM DU. Container weights are always stored in the odd number readings on the data grid..
- 2. Tare the scale

- 3. Put contents into the container on the scale
- 4. Press Print on the scale to send the Net Weight (NW) to ADAM DU
- **5.** ADAM DU will calculate the Total weight (NW + TW) and display this along with the individual Tare & Net weights in the custom fields. This happens on all even number readings/entries on the data grid.

If you make a mistake on a container weight or contents weight, simply stop the data collection session & delete the last reading. Then re-start the session again (with appending data option) & re-print the correct reading to ADAM DU.

## Specify Custom Fields to Preserve Data Entered via Keyboard

To help speed up data entry you can specify whether the data in each of the 6 user defined custom fields is wiped or preserved after each reading is received by ADAM DU. If a custom field's data does not change for each captured data reading, for example maybe a Testers Name - "Mr Smith" who is using the balance for a period of time - then you can specify it to preserve the typed in data using the "Preserve Data in Custom Fields after Data Collection" option under the "Custom Data" menu.

If a custom field is not specified to preserve data then, the field will be wiped after each collected reading, to allow you to type in new data.

## **Specify Custom Field data types for Excel Export**

When exporting data to Microsoft Excel, the imported data is examined by Excel & each cell is assigned a format automatically based on the data in it. This can cause problems sometimes for example with numbers that use Leading Zeros/Zero Padded. E.g. Custom Field 1 might contain 00123456789 but when exported to Excel, Excel determines it is an integer number and assigns a number format to the cell and the leading zeros are removed e.g. 123456789.

This behaviour may not be desirable if you wish to preserve the leading zeros (for example in product codes), so there is an option under the "Custom Data" menu called "Specify Custom Field data types for Excel Export". This menu option as a sub menu that allows you to specify any of the 6 custom fields to be exported to Microsoft Excel as a string - thus preserving the string as it is seen in ADAM DU.

## **Specify Custom Field Focus**

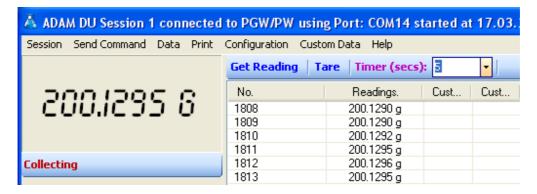
ADAM DU can be set to automatically place input focus/highlight on a selected

custom field after a reading is received. This can be useful to allow quick data entry into a single custom field or can be used in-conjunction with other applications that can place data directly into an application i.e. place data from a bar-code scanner into a specific custom field. This "Specify Custom Field Focus" option is located under the "Custom Data" menu. There is a submenu where you can select one of the six custom fields.

Only one custom field can be specified to have automatic focus - that custom field must be enabled for the focus to work.

# **Using the Timer Control to get Readings**

The timer control sends out a command via the RS232 com port to a balance/scale every x seconds. The timer control is located on the toolbar above the datagrid.



The interval can be changed quickly using the drop down list of options or a value can be manually entered. The frequency cannot be set smaller than 1 second. If you require faster readings than this, then it is best to set the scale/balance into continuous data mode (if the scale provides such a mode).

To use the timer, select an interval and start a data collection session, the interval can be changed whilst a session is running. To stop the timer either stop the data collection session or select "disabled" from the interval list options.

NOTE: If the timer control does not show on the toolbar then the scale/balance does not support a remote RS232 print command.

Exporting/Saving data to a file

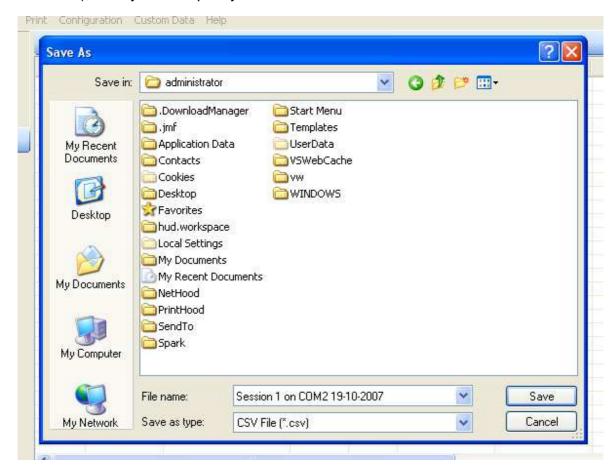
# **Exporting/Saving Data to a File**

Once you have captured some data readings you can save the readings to file in 4 different formats:

- 1. CSV Comma Separated Value format
- 2. TXT Basic Text file
- 3. HTML A web page
- 4. XML Extensible Markup Language file (commonly used to import data into other systems/applications)

To save your readings to file, under the "Data" menu, select the "Save Current Data Readings to File" option. (Note: you must have stopped the current data collection session before you save any data).

You will be presented with a file save dialog box (as commonly used in Windows), here you can specify the file location and name.



To specify the file type, click on the drop down box next to "Save as type" in the

bottom of the example above. You can select one of the 4 file formats.

Note: a default file name is automatically entered for the file, based on the session number, serial com port and the current date.

Depending upon how many readings you have collected, it may take some time to save the readings to a file. A progress indicator is placed at the top of session window showing its current progress.

Next to the progress indicator is a cancel button which can stop the process of saving the readings to file.

A pop up message window will appear informing you once all the readings have been saved to file.

If Custom Data fields have been used then these will be saved too. Though the custom field names must start with an alphabetic character (eg dont use: 1\_field or #678) if you are exporting to XML - as these are not valid field names for XML.

# **Exporting Data to another Application**

You can quickly and easily transfer collected readings to Microsoft<sup>®</sup> Word or Microsoft<sup>®</sup> Excel (You need Microsoft<sup>®</sup> Excel/MS Word installed on your computer to use this facility).

Under the "Data" menu, select the "Export Current Data to MS Excel" to transfer data to Excel or "Export Current Data to MS Word" to transfer data to Word from the Session window.

Depending upon how many readings you have collected, it may take some time to transfer the readings. A progress indicator is placed at the top of session window showing its current progress.

Next to the progress indicator is a cancel button which stop the process of saving the readings to file.

Microsoft® Excel or Microsoft® Word will be automatically displayed on the screen on completion of the process.

Notes: if you have collected a lot of readings, 65,000+, then Excel may have the readings displayed in multiple worksheets within the workbook, as older versions of Excel only support a limited amount of rows in a single worksheet. If Custom Data fields have been used then these will be exported too.

Data exported to Excel is automatically assigned a data type format in each cell, sometimes Excel assigns an incorrect cell format. This can be over-ridden to preserve the original data in ADAM DU, see section "Custom Data Collection - Specify Custom Field data types for Excel Export" for more information on this topic.

## **Exporting Data to another Application using the Windows Clipboard**

You can also transfer collected readings to the Windows<sup>®</sup> clipboard, which will then allow you to transfer the readings into other Windows<sup>®</sup> applications. Once the operation is complete you can then user Control+V to paste into your desired application.

Notes: the readings are placed into the clipboard using tab separators between the fields. If Custom Data fields have been used then these will be exported too.

Continual Data Logging

# **Continual Data Logging**

ADAM DU can be specified to continually save collected readings from a Session to a file in real-time. You can enable this option from the "Data" menu, then choose the "Continual Data Logging to File" option - move the mouse to side to click the "Enable" option.

A file save dialog box will be presented, allowing you to specify the filename and location. Also the file format can be specified, see <a href="Exporting/Saving data to a file">Exporting/Saving data to a file</a> for more information of the different file formats.

Once this option has been enabled, you can check the location of the saved file at any time, as an extra menu option will appear under "Continual Data Logging to File" menu item, listing the currently used file and location.

Note: the Continual logging options can only be enabled/disabled if the Data Collection Session is not currently collecting data.

# **Logging Calibration Reports**

If your PGW/PW balance has internal calibration that is enabled, then periodically the Balance will calibrate itself & output a calibration report over the RS-232 port. If you require this report (maybe for auditing purposes) then you can set ADAM DU to save it to file (it has no effect on the data readings captured).

From the "Data" menu option in the Session window, select the option "Collect Calibration Reports" & tick the "Enable" sub option. You will be presented with a Windows Save file dialog window. You can specify the filename and location of the log file.

The data is saved to a simple text file.

Selecting the same menu option will now display a sub menu item, showing the current filename & location of the file - should you forget.

Note: you can also manually force the PGW/PW balances to do calibrations (whether they have internal or no internal calibration).

This option can be remembered & set to auto start when the session starts, see section: Configuring a Data Collection Session

# **Logging Form Data**

PGW/PW balances have the option of outputting more detailed mult-line form data to the RS-232 port. If you require this data then you can set ADAM DU to save it to file (it has no effect on the data readings captured).

From the "Data" menu option in the Session window, select the option "Collect Form Data" & tick the "Enable" sub option. You will be presented with a Windows Save file dialog window. You can specify the filename and location of the log file.

The data is saved to a simple text file.

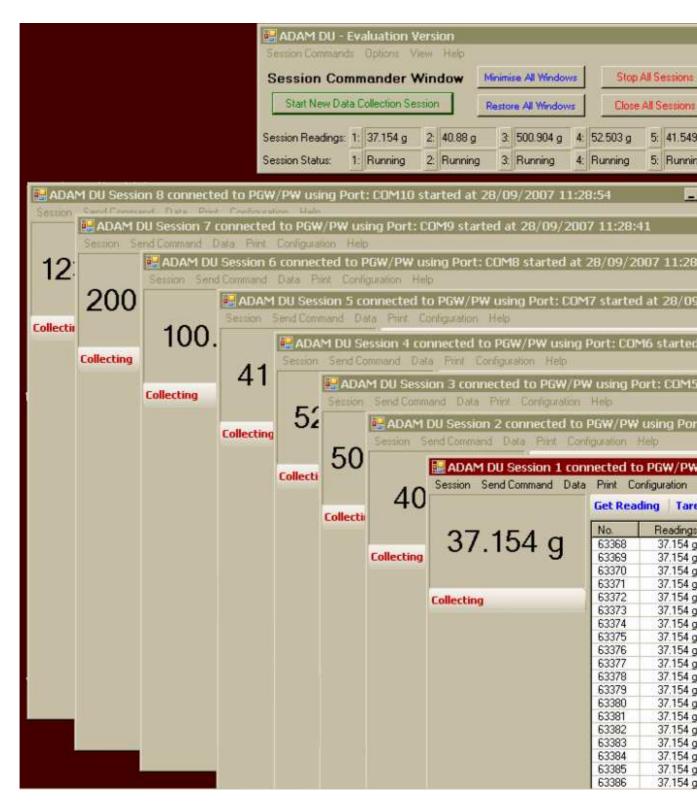
Selecting the same menu option will now display the current filename & location of the file should you forget.

This option can be remembered & set to auto start when the session starts, see section: Configuring a Data Collection Session

Configuring & Using the Commander Window

# **Configuring & Using the Commander Window**

The Commander Window allows you manage & oversee one or more sessions. The Commander Window will become more useful when using multiple sessions simultaneously taking data from scales/balances.



The Commander Window shows the current status of each session, along with the last reading received. This allows you minimse all the session windows to the taskbar and keep the smaller Commander Window open to oversee what is happening in each session.

You can also do several tasks quickly & easily via buttons on the Commander Window:

- Minimise & Restore all windows including the Commander Window & all open Session windows
- Stop All Sessions stop each Session that is currently collecting data readings
- Close All Sessions close each open session, whether it is collecting data or not.
- Re-Organise Windows it can get a bit cluttered on the desktop if you have up to 8 Session windows open at the same time. This function re-organises the all windows into a cascaded formation so you quickly access the window you want.

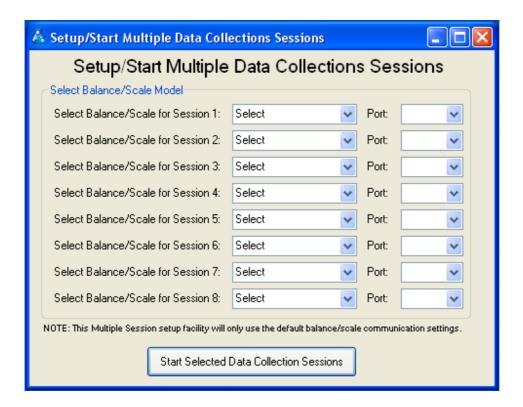
#### **Shortcuts**

You can quickly bring to the foreground a particular session window by double clicking on the session reading or status area on the Commander Window.

# **Starting Multiple Sessions Simultaneously**

To save time in starting lots of individual Sessions, you can start them from a single screen, from the Commander Window, select the "Session Commands" menu, then select the "Start Multiple Data Collection Sessions" option.

A new window will appear showing the options for starting up to 8 sessions at the same time:



For each session you want to start, select a Balance/Scale model & the serial com port it is connected to. Once you have specified all session details (leave session details blank if you do not need that particular Session), click on the "Start Selected Data Collection Sessions" to start them.

Notes: After using a Session in ADAM DU for the first time, the Com Port number will be remembered for the Session. So the above window will automatically load in a previously used Com Port numbers to help speed up the process.

This facility is restricted to using the factory default com port settings, so if you have manually changed the com port settings in the balance/scale for some reason then this facility will not work for you.

Standard computers only have one or two com ports, so you will need to purchase a device(s) to give you extra com ports if required.

## **Other Options**

From the "Options" menu are the following options:

- Remember Window Positions Enable this option if you wish to place/size any of the ADAM DU windows in specific positions on your desktop, then when you load ADAM DU or open a Session the windows will place/size in their last position/size.
- Reset All Window Positions if a window becomes "lost" or sized so it

- becomes a problem, this option will reset the window positions & sizes.
- Show Data readings from Sessions enables or disables the Data Readings bar in the Commander window
- Show Session Statuses enables or disables the Session Status bar in the Commander window
- Hide Session Windows when main window is minimised if this option is enabled then every time the Commander Window is minimsed all open Session windows will also be minimised.

## **Taskbar Options**

Whilst ADAM DU is running, a blue "laboratory flask" icon is placed on the taskbar:



Right clicking on the "Laboratory Flask" icon will present a menu of options, all of which have been explained earlier in this section of the user manual.

# **Using the Data Collection Session Window**

The <u>Quick Start Guide</u> covers the basics of connecting a Data Collection Session to an ADAM Balance and the section <u>Standard Data Collection and Analysis</u> covers what you can do with the data readings collected.

## Sending Commands via the RS-232 Port to a Scale/Balance

You can remotely control some of the functions of the balance/scale from ADAM DU. The amount of remote control options you have depends upon the model. After selecting a model during the connection process, the "Send Command" menu in the Session window will be populated with possible options.

Note: For some ADAM balances these options are further restricted depending upon the firmware/software version of the balance.

## **Printing**

If the Graph is enabled, you will be able to print this from the "Print" menu in the Session window.

If the Datagrid is enabled then you will be able to print the data in it from the "Print" menu in the Session window. Custom Data will also be printed if it has been collected. The Printing of the data in the Datagrid is fairly basic. If you require more advanced printing options/layouts then it is suggested you export the data to another application like Microsoft<sup>®</sup> Word or Excel where you can format the data to your requirements & then print.

Note: ADAM DU will print to the windows default printer. If you require other printers then you can export to another application for more flexible printing options.

## **Delete Last Reading**

This will delete the last recorded reading from the Datagrid and Maths statistics. This can also be done by pressing the Delete key on the keyboard.

## **Delete Selected Reading**

This will delete the selected/highlighted reading from the Datagrid and Maths

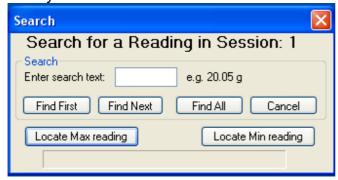
Statistics but only if the "Number of Readings to Perform Math Stats on" option is set to the same number as the "Number of Readings to Show on the Data Grid" option, i.e. the number of readings in the Maths Statistics are in sync with the number of readings in the Datagrid. If they are not in sync then the selected reading will just be deleted from Datagrid. This can also be done by pressing "Control S" key on the keyboard.

#### Clear All Data

This will wipe **ALL** the data from the current Data Collection Session. Once cleared, you will not be able to retrieve any of the data unless you have previously saved the data to a file or you have continual data logging to a file enabled.

## Searching on the Datagrid

You can search for readings on the Datagrid using the "Find Reading" facility - found under the "Data" menu on the Session window.



If you need to find a particular reading collected in a Session, rather than manually scrolling through the readings you can use this facility.

**Find First:** will find the first reading on the grid and highlight it.

**Find Next:** will find the next reading matching the search criteria after the previous match.

**Find All:** will find and highlight all readings matching the criteria.

Locate Max Reading: will find the the highest value during the data

collection session

**Locate Min Reading:** will find the lowest value during the data collection session

Notes: when searching for a reading you must also enter a space and the weighing unit after the numerical reading e.g. 1234.9 g or 0.15 kg etc. The

length of time to find a match will vary depending upon the speed of the computer and the number of readings captured in the session.

# **Configuring a Data Collection Session**

The Data Collection Session can be customised in many ways to tailor the way the Session collects data to your needs. There are lots on customisations you can set, to make your experience using ADAM DU quicker.

## **Data Readings Options**

You can restrict the amount of readings shown/used in the main core components of ADAM DU. These are set via the "Configuration" menu in the Session window:

- Number of Readings to Show on Graph
- Number of Readings to Perform Math Stats on
- Number of Readings to Show on the Data Grid

These are covered in more detail in section: <u>Standard Data Collection and Analysis</u>

## **Serial Communication Port Settings**

You can revisit the Serial Communication Port Settings at any time after initially starting to collect data when the Session window is first opened, by using the "Serial Communication Port Settings" option under the "Configuration" menu.

Note: that the current Session must be stopped before you can make any changes to the serial coms port.

## **Other Options**

If you are using ADAM DU with an approved balance or scale, then you can optional toggle whether to show or suppress the last digit in the reading. This can be set from the "Configuration" menu, then the "Use Last Digit for Approved Scales/Balances" option.

By default if the Datagrid is enabled, it is set to refresh with every reading received by ADAM DU and also make sure the last reading is visible on the grid. If you do no wish the screen to keep refreshing/scrolling to the newest reading then you can toggle the option using the "Ensure Last Reading is Always Visible on Data Grid" menu option under the "Configuration" menu.

The "View Debug Data Panel" option is designed for support staff from Adam Equipment to help diagnose problems should the need arise.

Similarly the "Save Debug Log to File for Support" option may be used upon request of the ADAM DU support team.

## **Remember Settings for this Session**

This menu option expands into another sub menu, allowing various options to be set, so the next time you start the current session certain settings will be remembered. These options are:

- Remember the Serial Port Settings used for this Session: Next time you open
  the current Session window, all the last com port settings will be shown
  automatically. This will over ride the default settings that are first used by
  ADAM DU for the selected balance/scale.
- Collecting Form Data Remember Filename and Auto Start: If the you are
  using ADAM DU with a PGW/PW balance that outputs Form data reports on a
  regular basis & tick this option to remember the filename/path & auto start the
  logging the next time the Session starts (once the file details have been
  specified for the first time).
- Collecting Calibration Reports Remember Filename and Auto Start: If the you are using ADAM DU with a PGW/PW balance that is set to output calibration data reports on a regular basis & tick this option to remember the filename/path & auto start the logging the next time the Session starts (once the file details have been specified for the first time).
- Continual Logging to File Remember Filename and Auto Start: If you are using continual file logging, you can use this option to remember the filename/path & auto start saving when the Session starts (once the file details have been specified for the first time).
- Continual Logging to File Always Append to file when Starting New Session: If you are using the option above you specify the action to be taken if the file exists.
- Continual Logging to File Always Overwrite file when Starting New Session:
   The alternative option to appending the to the log file is to overwrite the log file
- Always Enable Maths Stats for this Session: Whenever the current session starts Maths Stats will be visible.
- Always Enable Graphing for this Session: Whenever the current session starts the Graph will be visible.
- Always Enable Data Collection Grid for this Session: Whenever the current session starts the Datagrid will be visible.
- Always Enable Custom Data Collection Panel for this Session: Whenever the current session starts the Custom data collection panel will be visible.
- Always use Last Digit for Approved Scales/Balances: Whenever the current Session starts & the balance/scale is approved, then the last digit can be made visible or suppressed - the specified option will be remembered for the

next time the Session starts.

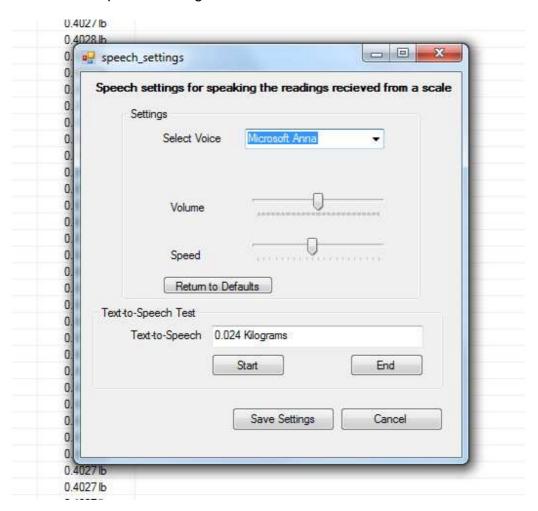
Note: each Session 1-8 has its own "Remembered" settings & also per model, so this allows you to easily use a wide selection of different ADAM Balances/Scales and cater for different setups.

# **Configuring Speech**

The Data Collection Session can be configured to speak each reading that is received from a balance/scale. This is ideal if you want to stay informed of the scale's progress whilst completing other tasks or maybe you might be visually impaired.

The speech is performed using the the Microsoft<sup>®</sup> Speech Synthesizer engine. This is built into the Microsoft<sup>®</sup> Operating system (Windows XP and later) - so nothing extra needs to be installed/setup.

To access the speech settings click on the "Configuration" menu in a session, then select "Speech Settings". A new window should as below:



If more than one Text-to-Speech engine is installed on your computer then you may choose a different voice to announce the readings. Different MS Windows

operating systems come with different voice engines installed by default.

The volume and speed of speech can also be altered if desired. The "text-to-speech" test box can be used to test the voice with the current volume and speed settings. Simply enter some text (like the default text above) and click the "start" button to hear sample speech.

When you are happy with the settings click the "Save Settings" button.

# **Enabling Speech**

To enable speech for a session, simply select the "Configuration" menu and then select "Speech Enabled" option. Now every reading will be spoken.

**Notes:** If you enable speech in more than one session then obviously the speech may conflict if the readings received co-inside with each other.

We do not recommend you using the Adam DU timer control with an interval lower than about 3-4 seconds or you may find the computer struggles to get the speech out in time before the next reading is spoken. If you have a slow computer you may also find you need stay away from the smaller time intervals.

Also using a scale in continuous RS-232 output mode would not be a good idea as they usually output up to 10 readings a second and the computer cannot speak that quickly obviously...

## Loading Test Data from a file created by a Moisture Balance

From the "Moisture Analysis" menu (available when using a Moisture Balance like the PMB) you can select "Load Test Results". This will prompt you to select a results file created by a Moisture Balance.

The results file can be saved from the PMB to a USB Memory stick device. The Memory stick can then be connected to the computer, making the results files available to ADAM DU.

The data readings will be extracted from the file and loaded into ADAM DU. Then the readings will be processed (as if they had been directly received by ADAM DU via RS-232/USB). If the graphing/maths stats are enabled these will also be computed.

This enables you to analyse data when the Moisture Balance cannot be connected directly to a computer due to its location or maybe you want to review previously saved results.

#### FAQ:

# 1. My computer operates slowly when running ADAM DU, is there anything i can do?

Each session & each individual real-time process in that session (graphing, datagrid, continual file logging & maths stats) takes up some processing power and memory from your computer. So if you run ADAM DU on a slower computer it will help if you disable any real-time features that are not needed (you turn features on/off in each session under the "Data" menu option on the Session window).

Also most of the real-time features display data on the screen & refresh it regularly, keeping ADAM DU minimised on the taskbar stops the need for this and thus frees up more of the CPU.

If you have problems with running out of memory, check that the real-time processes: Datagrid, Graph and Maths stats (if enabled) are NOT set to work on ALL the collected readings, this will especially help if you are collecting tens or hundreds of thousands of readings. You can restrict the real-time processes to only work on the last 100, 1000 or 10000 readings - thus restricting the amount of memory used. This is done from each session window under the "Configuration" menu.

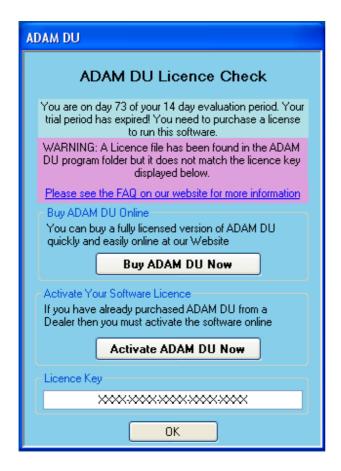
2. I have a licenced copy of ADAM DU & it has suddenly stopped working - its telling me my evaluation period has expired?

OR

I have just purchased/activated ADAM DU but it still says I am using an evaluation version

OR

I get a warning message of "A Licence file has been found in the ADAM DU program folder but it does not match the licence key displayed below"



You might see a message window similar to this, the purple area explains that the licence file is not valid, as it does not match your licence key. This may have occurred because of 2 reasons:

- 1. You have changed some main hardware components in your computer since you licenced/activated ADAM DU.
- 2. You incorrectly entered your licence key into the ADAM DU website whilst activating or purchasing ADAM DU.

The licence key is tied into the main hardware components of your computer (to stop illegal software copying).

If the main hardware components of your computer change then the Licence key will also change thus it does not match licence file we issued to you.

Please contact us via our website support page for assistance in obtaining a new licence <a href="https://www.adamdu.com">www.adamdu.com</a>

3. My Balance/Scale is not mentioned in the List of Supported Models by ADAM DU.

If you have recently purchased a new ADAM balance/scale that has an RS-232 port and it is not listed in the Supported Models then please visit <u>ADAM DU Website</u> as a newer version of ADAM DU will be most likely available for download that will contain support for current models. Just install the newer version of ADAM DU over your old version to benefit from the latest software. If you still cannot see the your Model listed on the website, then please use the "Contact Us" form on the website for further information

## 4. Can I get software updates/bug patches for free?

Adam Equipment may provide free software updates for your version of ADAM DU at our discretion, as per the <u>Licence</u> agreement. See the download page on the <u>ADAM DU Website</u> for more information on the latest updates for ADAM DU & the changes from previous updates. If there is a newer update available then you can simply download it and install it on your computer. It will automatically upgrade your current version.

# 5. Is it ok to unplug the USB lead/switch the HCB off whilst ADAM DU is running?

Please do not unplug or switch off the HCB whilst ADAM DU is running as the sudden disappearance of the virtual com port can cause ADAM DU to have problems reconnecting back to the HCB. If you do disconnect the HCB you may have to close ADAM DU down & restart it, if it has problems accessing the HCB's virtual com port or it does not show it in the list of available com ports.

# 6. Can the CBK A (USA version) work with ADAM DU when using the lbs & oz weiging unit?

No, due to mathematical calculations inside ADAM DU, the space separator between the lbs and the ozs causes too many problems to make it feasible to work. All the other weighing units are supported on the CBK eg Lbs, ozs, KG, g etc..

## **Problems with ADAM DU**

Problems Connecting to a Balance/Scale or not Receiving Readings Correctly or not able to send a remote command to the scale.

#### Points to check:

- 1. Check the serial data cable is correctly wired as per the RS-232 specification in the user manual for your ADAM scale/balance (not all serial cables are wired the same!)
- 2. Check that the Serial port settings in the balance/scale match the serial port settings in ADAM DU baud rate (speed) & mode. Please see the relevant section in the scale/balance's user manual or see this section: <u>Supported Balances and Scales</u>. If you get some yellow pop up information balloons from ADAM DU, warning you about "unusable data" whilst trying to receive readings from your balance/scale, then this would indicate a mis-match in the communications settings between ADAM DU & your balance/scale.
- 3. Determine that the RS-232 Serial Com port/USB port on the computer is working by connecting another device to it if possible. You can always use Windows HyperTerminal to connect to the balance/scale to see if you can receive data readings in raw format from the scale/balance. The readings should look something like what is displayed on the display of the balance/scale (though there may be other text included with the reading).

## **Unexpected Crashes**

Unexpected crashes in the software can be caused by a corrupted version of the Microsoft .NET Framework version 2. Try uninstalling the Framework (from add & remove programs) and then re-install it. Then visit the Microsoft Updates website for your operating system and download the latest service pack for the Framework.

**Techincal Support** 

# **Technical Support**

Please make sure you have looked at the relevant section in the ADAM DU manual with regards your problem. Also look at the following sections for help: <a href="Problems with ADAM DU">Problems with ADAM DU</a> & <a href="Frequently Asked Questions">Frequently Asked Questions</a>.

If you cannot find the answer to your problem, then please look at the support section of our <u>website</u> as that may have more up to date support information than in this user manual.

You may also see if there are any software updates for ADAM DU on the website, there will will be a change release log on the download page. Consult this to see if an update has fixed your current problem.

If the above options have not helped then please visit the website Support section for instructions on how to contact Adam Equipment for Technical Support.

#### **How to Purchase ADAM DU**

You must install ADAM DU on the computer you intend to run ADAM DU on when licenced/purchased - as part of the purchasing process you need to provide a licence key. The licence key is unique to a single computer.

When ADAM DU is first run it activates a 14 Day Evaluation Period. During that evaluation period, every time you start ADAM DU you will be presented with a small pop up screen informing you that it is in Evaluation mode, how long you have left before the evaluation runs out and the licence key - should you wish to purchase the software.

You can also get the licence key from the "Help" menu on any ADAM DU window, then select the "How to Purchase On-line" option & follow instructions

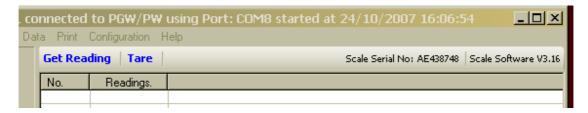
If you are unable to purchase online then please contact your local Dealer or ADAM office, details of local ADAM offices can be found on the <u>ADAM Website</u>

Note: If the evaluation period expires before you purchase a licence then you will still be presented with the pop up screen giving instructions on how to purchase ADAM DU before ADAM DU automatically closes.

#### Miscellaneous

## **Miscellaneous**

ADAM DU will collect the PGW,PW & PGL Balance's serial number & firmware version automatically when a Session is started (if the firmware in the PGW/PW/PGL balance supports this function, otherwise the information will not appear). This information is displayed on the top right section of the Session window, see below:



The collection of the Serial number of the balance may be included in the captured data via the custom data collection facility - to help uniquely identify a data collection session/balance.

## **Supported ADAM Balances & Scales**

- PGW Precision Balances
- PW Analytical Balances
- ACBplus Compact Balances
- CBD Counting Scales
- CBC Bench Counting Scales
- CPWplus Weighing Scales
- ADK Precision Balances
- CBK Bench Scales
- CBK M Approved Bench Scales
- AZextra Price Computing Retail Scales
- AE 202 Indicators
- BFW Platform Scales
- CFW Check Weighing Floor Scales
- HCB Compact Balances
- CFC Floor Counting Scales
- PGL Precision Balances
- AE 401 Indicators
- GK Indicators
- GKM Indicators
- GFK Weighing Scales
- GFKM Weighing Scales
- PMBMoisture Analyser
- AE 402 Indicators
- GC Counting Indicator
- GFC Floor Counting Scale

## **ADAM Factory Default Serial Communication Settings**

## **PGW/PW Precision Balances**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

Note: prior to v2.41 default baud rate was 9600

#### **ACBplus Compact Balances**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

Note: prior to v2.11 default baud rate was 4800

#### **CBD Counting Scales**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **CBC Bench Counting Scales**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

### **CPWplus Weighing Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **ADK Precision Balances**

2400 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **CBK Bench Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **CBK M Approved Bench Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

### **AZextra Price Computing Retail Scales**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **AE 202 Indicators**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **BFW Platform Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

Note: RS-232 Pin 2 is output & Pin 3 is input - which is the reverse of most standard RS-232 cables. See BFW user manual for more details.

#### **CFW Check Weighing Floor Scales**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **HCB Compact Balances**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **CFC Floor Counting Scales**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

### **PGL Precision Balances**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **AE 401 Indicators**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **GK Indicators**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **GKM Indicators**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

#### **GFK Weighing Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

### **GFKM Weighing Scales**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **PMB Moisture Analyser**

4800 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **AE 402 Indicators**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

# **GC Counting Indicator**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

## **GFC Floor Counting Scale**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)

# **GBC Bench Counting Scale**

9600 Baud N,8,1 (No Parity, 8 Data bits, 1 Stop Bit)