RIGEL MEDICAL

Innovating Together

MED-EBASE

test solution software

Last Update: 9th May 2017

Instruction Manual
383A550 Version 2.6

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Contents

Introduction

First of all thank you for choosing Rigel's Med-eBase software as your product of choice. We trust this product meets your requirements however, as we value a close partnership with our clients, we welcome your feedback in order to improve features, usability and benefits to your organisation and that of others.

Med-eBase is a versatile database program aimed to centralise data from biomedical test equipment and in particular Rigel's electrical safety analysers, vital signs simulators and performance analysers.

Whether you prefer a local database or centralised network access, Med-eBase can be configured and adapted to suit any business criteria.

With Med-eBase you can now download your Rigel testers, analyse data by automatic comparison against previous results and create test protocols asset libraries. Use the scheduling and upload function to interrogate your database and configure your test devices for fast and effective retesting.

As Rigel's product range increases, regular product updates are expected and to ensure we can improve our products, do let us have your feedback. Please contact us at support@rigelmedical.com with your suggestions.

1. Installation

1.1. Installing Med-eBase

To install Med-eBase Asset Management software V2, you will need to meet the minimum system requirements listed below.

Hardware

- IBM compatible 1 GHz or higher processor
- 512 MB of RAM
- 350 MB available hard drive space
- Colour monitor with 32-bit colour capability
- CD ROM drive

Software

- Windows XP SP2 or later, Windows 7, 8 or 10
- 32-bit/64-bit Operating System

Note: (a) Med-eBase will need to be installed. and the licence activated. by an Administrator.
(b) make sure, before installing, Med-eBase ensure no other applications are running.

1. Insert the Med-eBase CD (if applicable) into your CD drive and the installation should begin automatically.

2. If Med-eBase does not automatically install then open My Computer or Windows Explorer and view the CD drive. Locate and RUN the file **setup.exe** to begin the installation.

3. If you are using the installer package downloaded from the rigelmedical.com website, open the Rigel Med-eBase Installer .exe file to begin the installation from:

   http://www.rigelmedical.com/rigel-downloads?id=Software%20Download

4. Follow the onscreen instructions to complete the installation.

The language setting can be changed from the installation language once the software is fully installed.

Once the program is installed, a shortcut will be provided on your desktop. Double click the shortcut with your mouse to open Med-eBase V2.

Please refer to application note 0037 Installing Med-eBase onto a PC to aid in the installation process. http://www.rigelmedical.com/downloads/0037-Installing-Med-eBase-on-PC.pdf

1.2. Checking for Software Update

Med-eBase software has a built-in feature to automatically check for product updates and will notify the user when new features or versions are available.

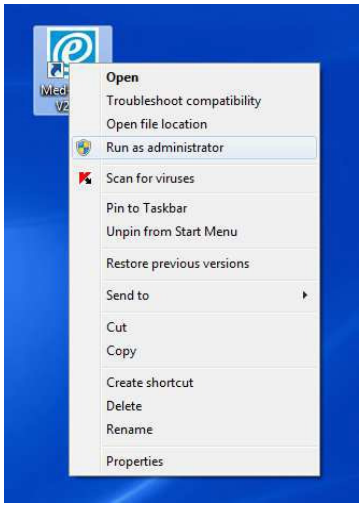
The automatic update feature ensures that the user can benefit from the latest features and functions without having to actively search for new updates, giving you peace of mind.

To benefit from the automatic updates, the user must have an internet connection and **Administrator** rights on the PC. Updates can be checked manually by clicking on the HELP button in the tool bar and select “check for updates”

If an update is available you will be informed. User confirmation is required prior to installation of the updates.

1.3. Windows 7 Operating Systems (or later)

Enhanced security settings in Windows 7 require the user to register the product as an **Administrator**. To do so, right click on the Med-eBase icon on the desk top, and select **Run as administrator**. This will ensure that the license codes are written and stored in the Windows registry.



Please refer to application note 0032 Med-eBase V2 with Windows 7 for details of this process.

1.4. Med-eBase Licensing

When first running Med-eBase the licence activation screen will be displayed. Follow the on-screen instructions to activate the 30-day trial or full Med-eBase program.

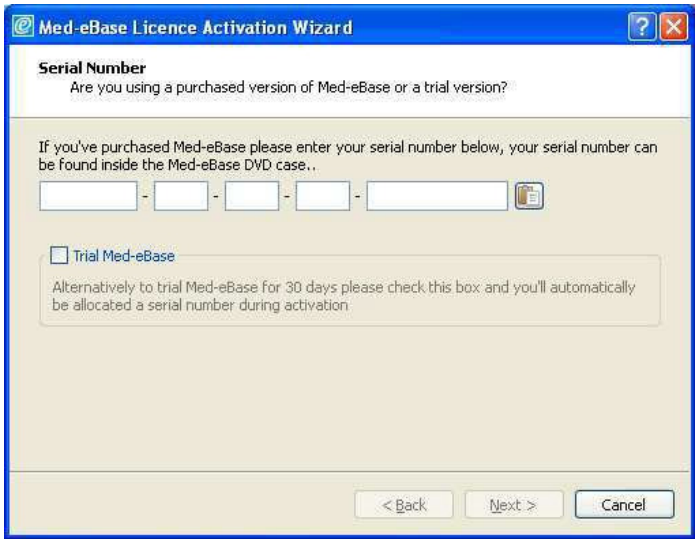
The Full license of Med-eBase V2.6 Software comes with 1 license as standard. This license entitles 1 copy of Med-eBase to be installed on 1 PC with 1 device type unlocked either;

- Electrical Safety (Rigel 288/62353 / Rigel 288+/62353+)
- Sim range (Uni-Sim/BP-Sim/SP-Sim).
- Uni-Pulse (and Uni-Pulse 400)
- Uni-Therm (and ESA-377/377+)
- Multi-Flo

To activate other device types an additional license must be purchased via your Rigel Medical supplier.

The 30 day Trial license allows the user full functionality of all device types for a period of 30 days from activation.

NOTE: The activation screens may look slightly different depending on the operating system



To activate a trial version of Med-eBase

Select the Trial Med-eBase option on the initial activation wizard screen (shown above).

To activate a Full version of Med-eBase

To activate the full Med-eBase program, input the serial number provided on your copy of Med-eBase into the Serial field.

If you have this in electronic format, you can use the paste icon  to enter the Serial Number and then select NEXT.

If you do not have a serial number and have purchased a full license for Med-eBase please contact Support@rigelmedical.com indicating the Rigel device requiring Med-eBase, your company details and the purchase order number.

Activation continues from this point identically for both Trial and Full Med-eBase licenses and can be accessed via online or offline activation.

1.5. Online activation

Med-eBase is activated online by default. If an internet connection is not available select the Activate Offline option when prompted, and then select NEXT.

When continuing with Activate Online follow the on-screen instructions.

The activation wizard will test the internet connection to the activation server.

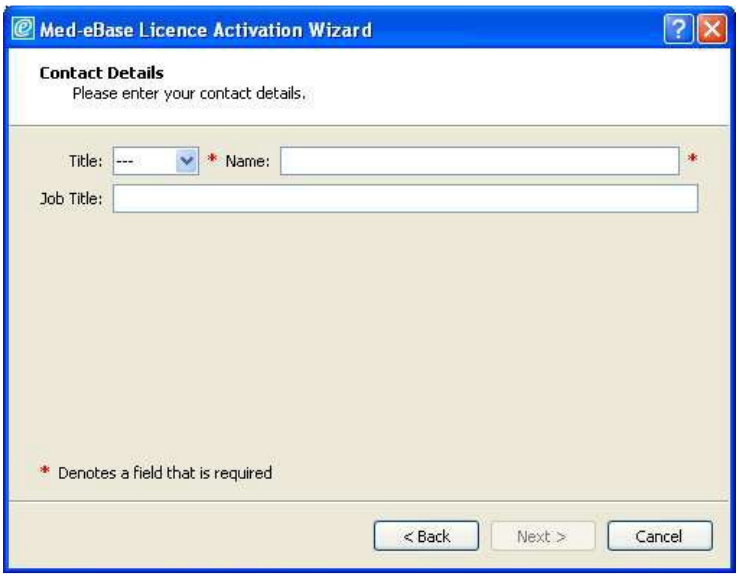
NOTE: Your IT department may need to assist you with any proxy setting issues

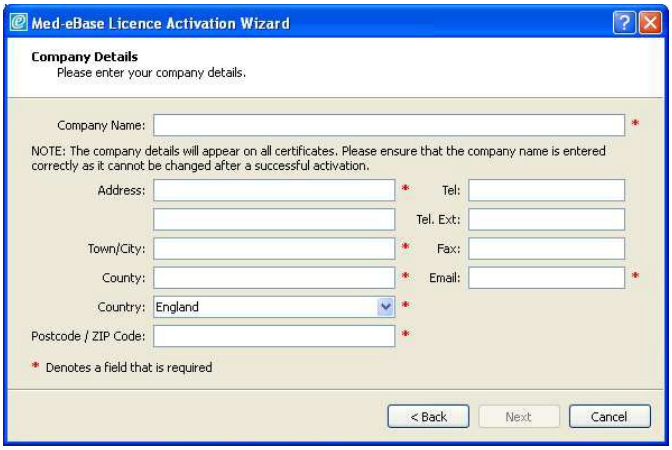
1.6. Activate Offline

If Activate Offline is selected please contact Rigel Medical, indicating the Rigel device requiring Med-eBase, your company details and if applicable the Main Serial Number.

Once the serial number and activation key have been entered select NEXT.

Enter your contact and company details.





NOTE: When providing contact details all required fields must be completed with the minimum character values for each field shown in the table below. If the NEXT icon is greyed out this indicates that a field does not meet the minimum requirement.

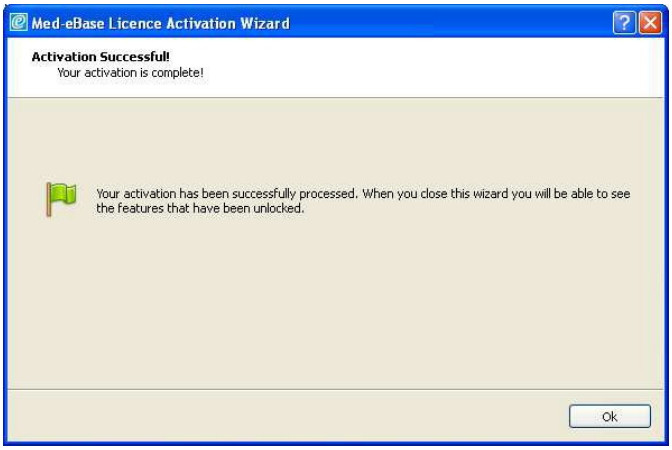
Minimum Characters for Med-eBase Activation

During activation the next button will only become available when all validation is satisfied:
All required fields must be filled in

Field	Minimum Length
Company Details	
Company Name	**6**
Address 1	**2**
Country	**2**
Post Code	**5**
Email Address	**@ and .XX (2 characters)**
Contact Details	
Contact Name	4

NOTE: If the postcode does not meet the minimum requirement or the location does not have a postcode please enter 5 values

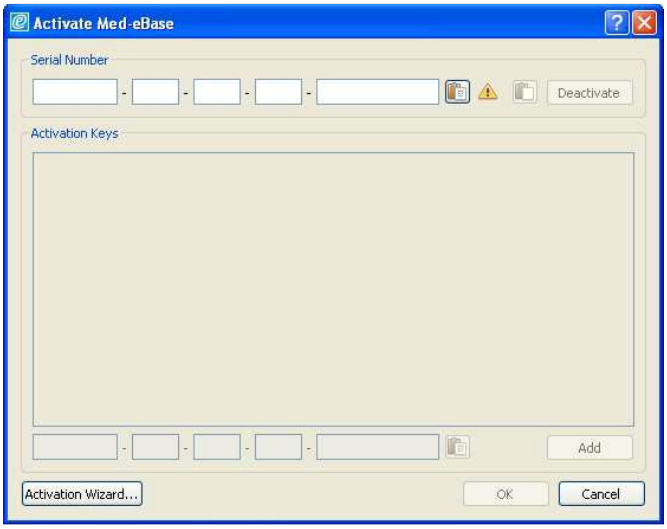
Once completed select NEXT to finalise the activation process and then select OK.



For a Trial Version

Once the activation is complete you will be sent a confirmation email with the Main Serial number and Activation Key which you will need to enter into the Med-eBase screen shown below. You will have access to all device types and functionality of Med-eBase for 30 days from the date of activation.

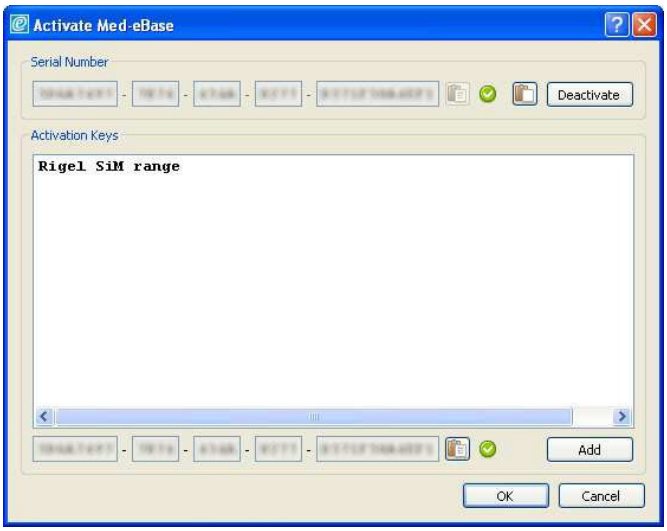
A copy button allows users to copy their serial number and activation key(s) and paste them into the required fields from the confirmation email rather than copying and possibly failing to type the correct key.



For a Full Version

You will have received one activation key for a Rigel device (e.g. Rigel 288). If you have purchased additional activation keys which unlock other Rigel device types then the Additional Activation Key(s) can be entered into the lower field under the activation key field, one at a time and then select ADD to activate each feature. The activated features will be listed in the large text box.

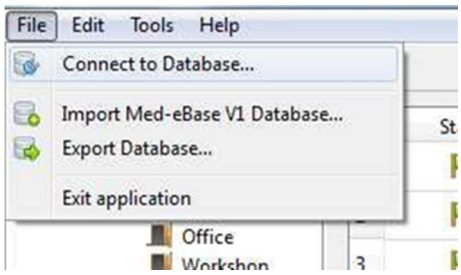
A copy button allows users to copy their serial number and activation key(s) and paste them into the required fields from the confirmation email rather than copying and possibly failing to type the correct key.



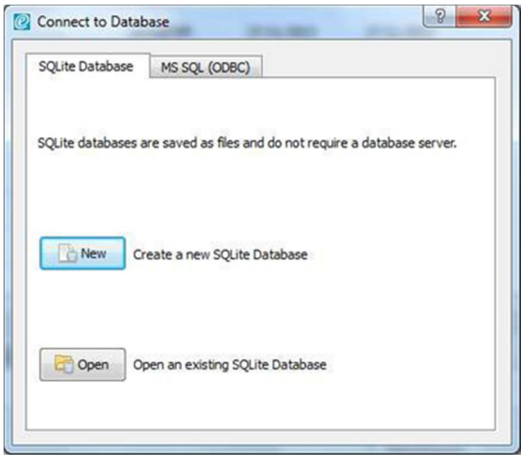
2. Getting Started

2.1. Creating a new Med-eBase Database

Select **File**, **Connect to Database** using the top menu.



To create a local database using SQLite select **New**, and then choose a name for your new database with the extension .db and select **Save**.



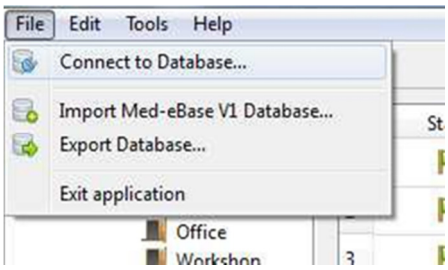
Med-eBase allows a choice of database formats:

- Local - which is fast, has no server, single user access and no concurrency issues
- Remote - which has all of the data stored in a centralised location for access by many people concurrently, and can be used with other database tools.

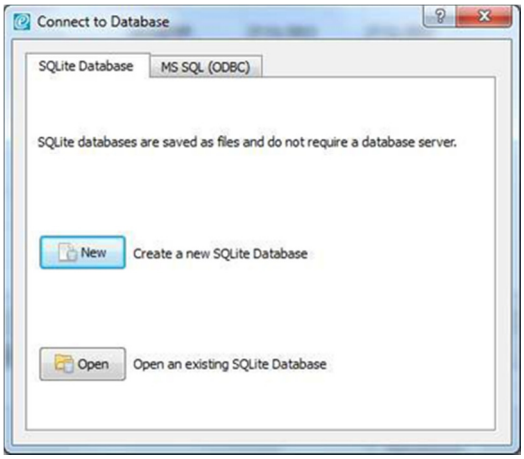
An Example database is held within the install which demonstrates an example of how a database can look and function. This feature lets the user see how the assets are laid out and how test results and certificate look before creating their own database.

2.2. Connecting to an existing Med-eBase Database

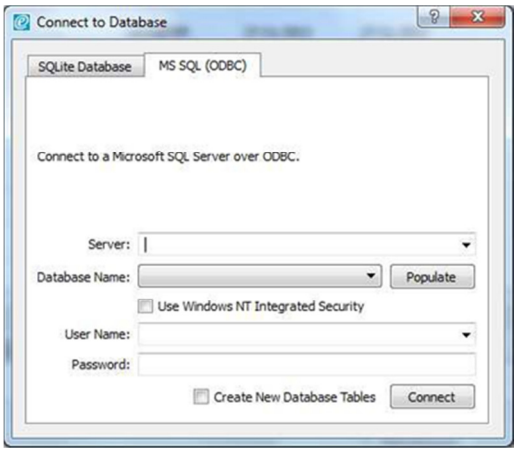
Select **File**, **Connect to Database** using the top menu.



Select **Open** to open an existing SQLite Database. Locate the .db file and select **Open**.



To connect to an MS SQL Server over Open Database Connectivity (ODBC), click on the **MS SQL (ODBC)** tab. The connection details will be issued by your network administrator.

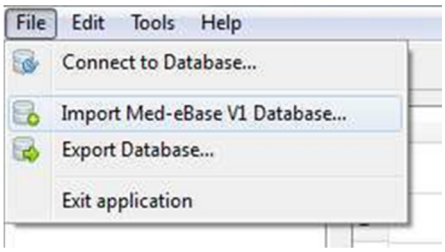


2.3. Importing a Med-eBase Version 1 Database

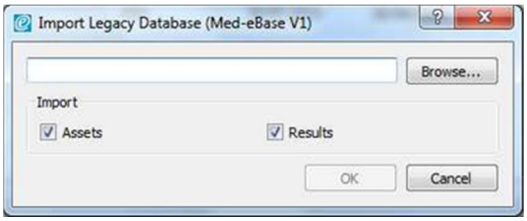
To convert a Version 1 database into Version 2.4. (or above) either SQL Express or SQL Server is required. Using either SQL Express or SQL Server the .mdf file on the V1 Database for Med-eBase must be mounted.

When this has been done Med-eBase will then know what the .mdf file is and be able to read it as a database file:

1. Mount .mdf in SQL Express / Server
2. Start Med-eBase.
3. Create a new SQLite database or open an existing SQLite database.
4. Select File and then Import Med-eBase V1 Database.



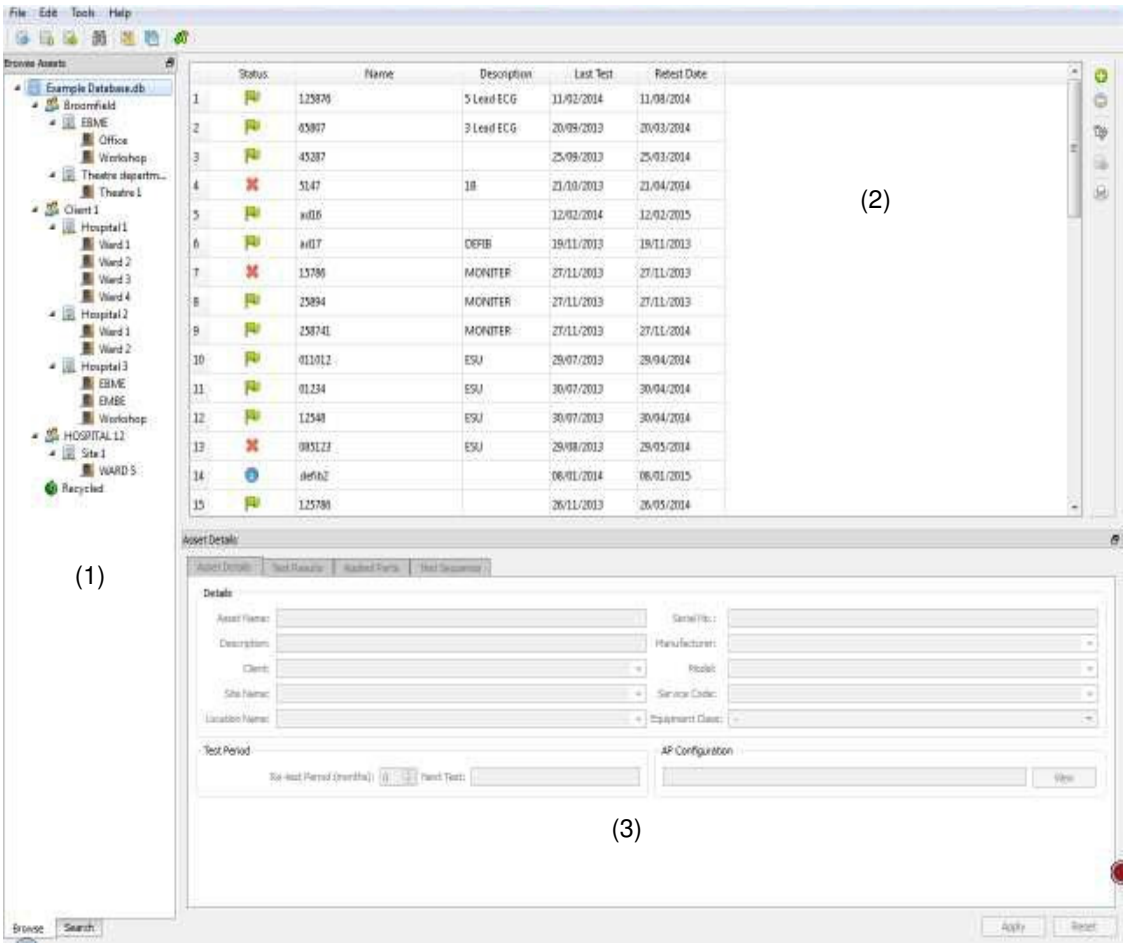
5. Browse for the .mdf file of the V1 database.



6. Click on OK and the import process will start.
7. The Med-eBase V1 Database data will be imported into the Med-eBase V2 Database.

***NOTE: SQL Express or SQL Server is required on the local computer to allow importing of a Med-eBase V1 Database. The user may need the assistance of their* IT department during this import**.

2.4. Navigating Med-eBase



The main screen explained:

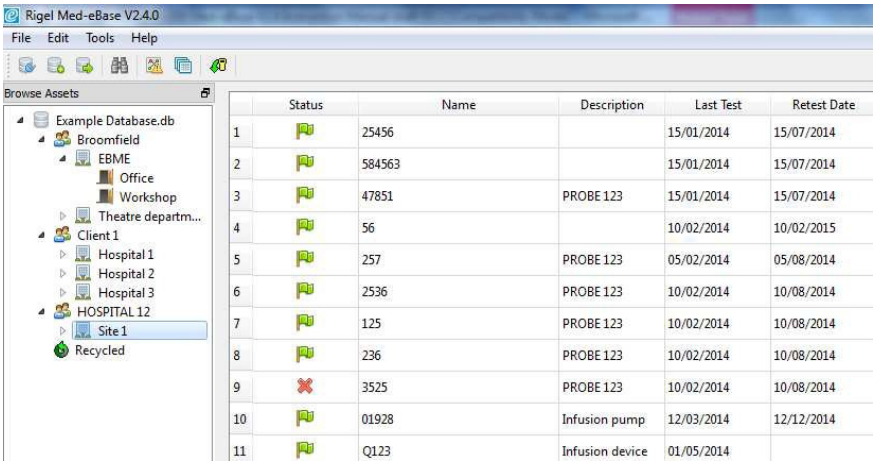
1. The **Browse Assets** view - with the **Browse** tab selected, the tree view shows the Assets in the selected database. Assets are organised by Client, Site and Location. The **Search** tab provides a way to only display assets based on a certain criteria such as Name, Description, Serial No. and Re-test Date.

2. The **Asset Table** view - this view displays all of the assets under a particular heading in the tree view.

3. The **Asset Details** view - this shows the selected asset details, including test results, applied part set-up and test sequences.

2.5. Data Structure

The Med-eBase database is structured around the owner, Known as the Client and the physical location of Assets which is divided into Site & Location.



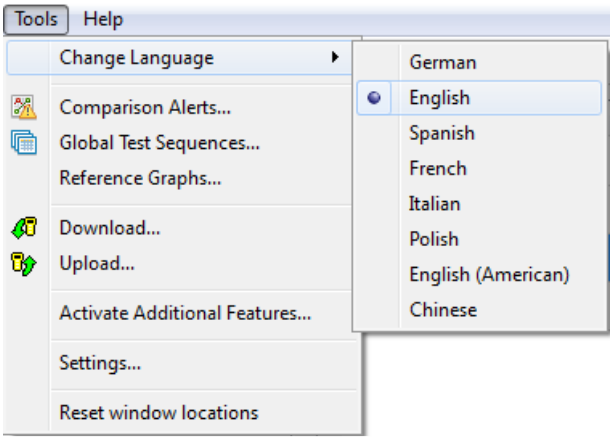
A site may include a number of different locations, such as individual wards within a hospital or departments within a company. By selecting a Site or Location from within the **Browse Assets** tree, shown above on the left, the **Asset Table,** on the right, displays all assets in the selected site or location.

The client name, sites and locations either comes directly from the information entered into the Rigel safety testers or can be manually entering into Med-eBase and edited by selecting the asset and entering new details.

2.6. Language Settings

Med-eBase comes with a number of language options.

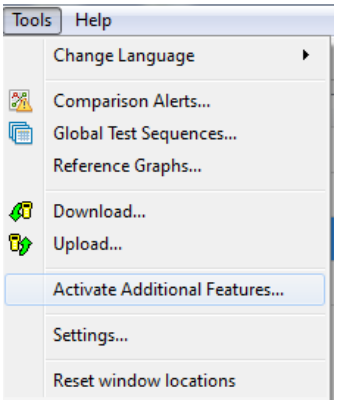
To change the language, select **Tools**, **Change Language** and select the required language.



NOTE: There may be different language options, than shown above, during the continuous improvement and development of Med-eBase.

2.7. Activate Additional Devices

To access the licence screens at a later date, such as to enable other device types after the initial activation, once in the Med-eBase software select Tools and then Activate Additional Features…

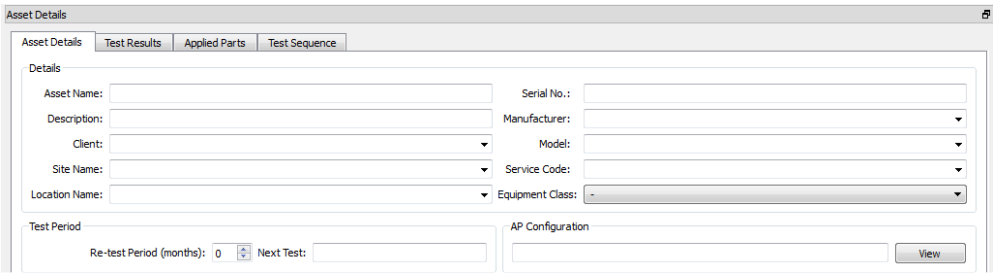


To install your Additional Activation Key, enter this in the bottom box and select ADD. This will allow access to the features associated with that device type.

A copy button allows users to copy their additional activation key(s) and paste them into the required fields.

2.8. Creating a new Asset

New assets can be created by clicking the **Add New Asset** button  on the top right hand side of the main screen. This will create a blank asset on the **Asset Details** panel.



The maximum length of each field is 25 characters.

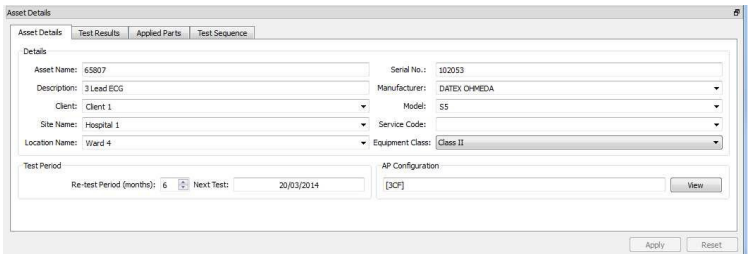
Asset Name is a mandatory field.

Each field's dropdown list holds the existing entries associated with this field.

To save the entries click **Apply** or discard the entries by clicking **Reset**.

3. Asset Details

The Asset details can be obtained by clicking on the Asset in the **Asset Table** view. The following information is displayed in the **Asset Details** panel.



The following tabs are available in the **Asset Details** view:

- Asset Details
- Test Results
- Applied Part configuration (Electrical Safety)
- Test Sequence

Asset Details - This shows the basic description of the Asset. The details entered here make it easier to search for the Asset from a larger database.

Test Results - This shows the test result history for that Asset. From this menu it is also possible to print test certificates for any of the previous tests.

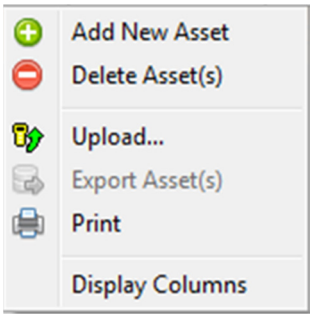
Applied Parts - This shows the Applied Part configuration used during the testing of this Asset for electrical safety.

Test Sequence - This shows the test sequence and individual test results for this Asset.

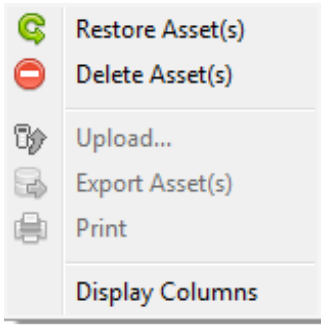
3.1. Context Menus

All icons have a right mouse button action. The following actions can be initiated from the right mouse button:

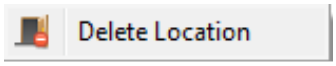
The Asset context menu, from any Asset in the **Asset Table** view, has the following options:



The Asset context menu from an Asset in the **Recycled** folder has the following menu options:



The context menu from Clients, Sites and Locations in the **Browse Assets** tree view only has the **Delete** option.



3.2. Deleting Clients, Sites, Locations or Assets

Clients, Sites, Locations and Assets may be deleted by right-mouse clicking the relevant item and selecting **Delete**, selecting **Edit, Delete Asset(s)** from the context menu (above), or by selecting the **Delete** icon on the right-hand tool bar.

All deleted assets are placed in the **Recycled** folder on the **Browse Assets** tree and can be displayed by selecting this folder. These assets can be restored by right clicking on the relevant Asset(s) and selecting **Restore Assets**. Similarly, they can be permanently deleted by selecting **Delete Assets** from this menu.

By holding the CTRL key, multiple assets may be selected and manipulated simultaneously in the **Asset Table** view.

Once the asset is permanently removed from the recycled folder the asset ID, Serial Number etc. can be reused on another Asset.

3.3. Med-eBase V2 Settings

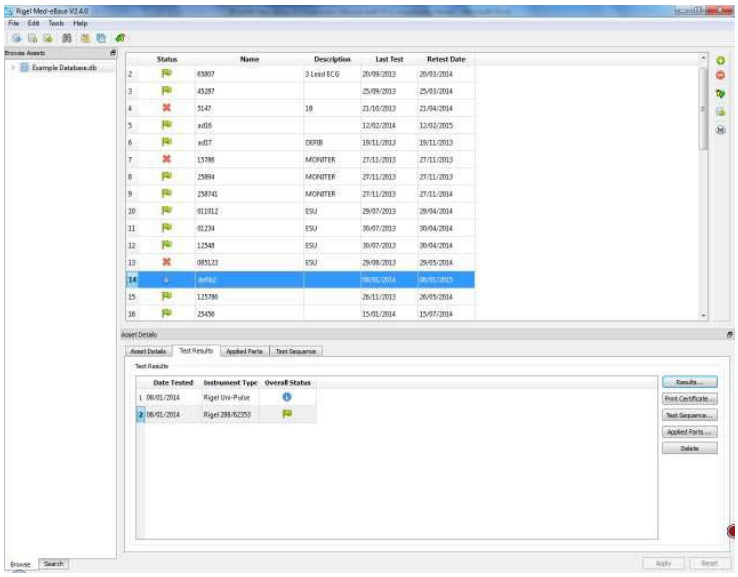
To open the Med-eBase V2 Settings menu, select **Tools**, **Settings**.

- **File Settings** - Tick the Use Native File Dialogs checkbox to enable the use of standard Windows dialog boxes for opening and saving files.
- **Log Settings** - In the event of a database issue, these options will enable extra information to be included in the debug file for diagnostic purposes. Use of this option will be advised by the Rigel Support team.
- **Restore Factory Settings** - This will remove the Med-eBase registry settings and will return Med-eBase to its initial state. Window size and position and last opened database will all be reset.

3.4. Merging Assets

Conducting tests on one asset on multiple instrument tester types i.e. defibrillator will have an electrical safety test using the Rigel 288 (+) and then performance testing using the Uni-Pulse.

If the two set of tests have the same asset ID and same asset trace variable information when downloaded into Med-eBase the tests will merge into one asset as indicated in the image below.



4. Data Transfer

4.1. Downloading Data from a Rigel Device

The method to download data from the Rigel devices is dependent on which Rigel product you are using. The methods are divided for:

- Electrical Safety Analysers (288 (+), 62353 (+)), and Vital Signs Simulators (Uni- Sim , BP Sim and SP-Sim)
- Performance Analyser (Uni-Pulse, Uni-Pulse 400)
- Performance Analysers (377, 377+, Uni-Therm, Uni-Pulse and Multi-Flo)

Please refer to instrument manuals and / or additional application notes for help to aid in the download process.

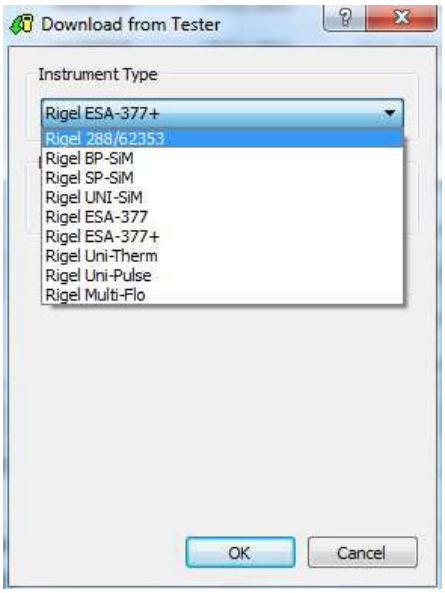
4.1.1. Electrical Safety and Vital Sign Simulators

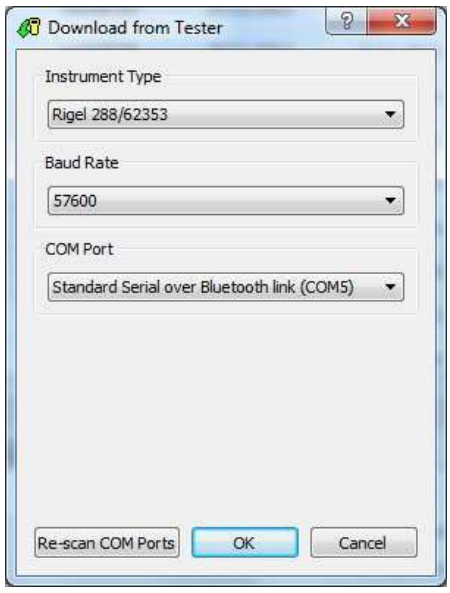
Electrical Safety (288 (+) and 62353 (+)) and Vital Sign Simulators (Uni-Sim, BP-Sim and SP-Sim) use the same method of downloading data from the Rigel devices into Med-eBase.

Results

Downloads can be selected from the **Download** option in the **Tools** menu or by using the **Download** icon on the taskbar.

After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.



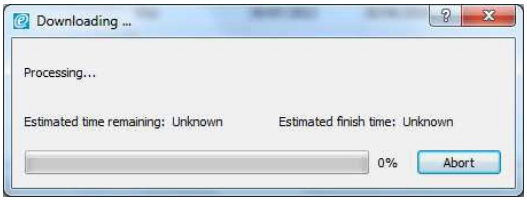


Select the relevant **Instrument Type** from the drop down list.

Ensure you have the correct **Baud Rate** (the default is 57600) and **COM Port** selected. The COM port is defined by your serial or Bluetooth connection. For a standard data cable connection (RS232) this will usually be COM1.

If you do not see the correct COM Port displayed in the drop down menu, select **Re-Scan COM Ports** to refresh the available COM Port list.

Select **OK** to begin the download from the software side.



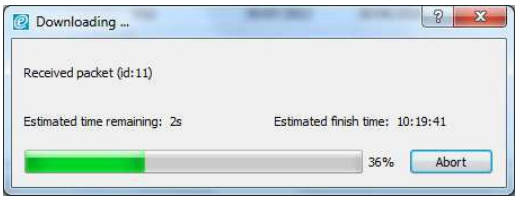
The software will stay in the download screen while the Rigel device is set up to transfer data.

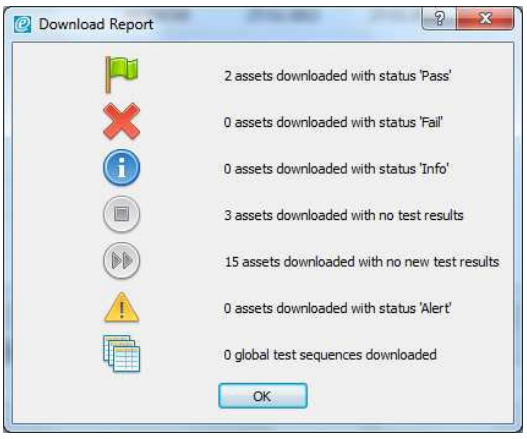
The download is initiated by starting the download on the Rigel tester. Instructions on how to do this will be included in the Instruction Manual for each Rigel device.

You will need to enter the Data Menu and select download to PC and the format is Rigel - SSS.

Once the download has started, a progress bar will indicate downloading on Med-eBase.

Upon completion of the download, the download window will close and the Download Report will be displayed on Med-eBase.





NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual or application note for your device.

Test Sequences

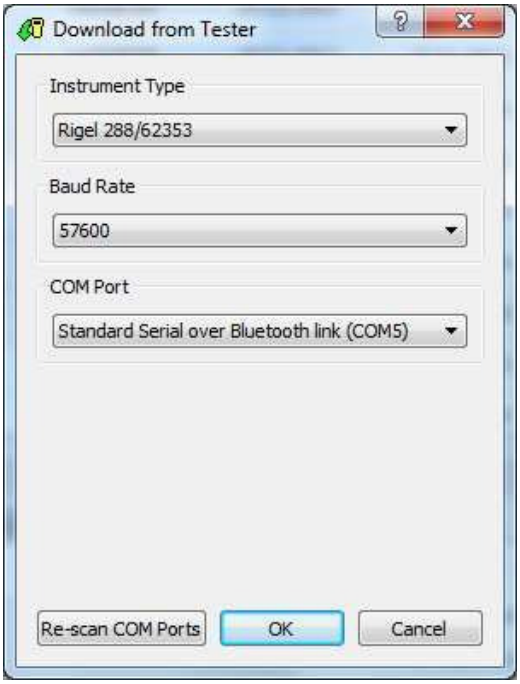
Test Sequence can be created on Rigel devices and then downloaded into the Med-eBase software as a global test sequence.

Download can be started from the **Download** option in the **Tools** menu or by using the **Download** icon on the taskbar.

After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.

Select the relevant **Instrument Type** from the drop down list.

NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instrument instruction manual or application note for your device.

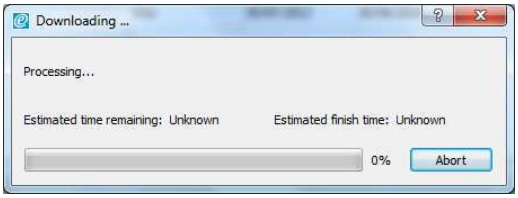


Select the relevant **Instrument Type** from the drop down list.

Ensure you have the correct **Baud Rate** (the default is 57600) and **COM Port** selected. The COM port is defined by your serial or Bluetooth connection. For a standard data cable connection (RS232) this will usually be COM1.

If you do not see the correct COM Port displayed in the drop down menu, select **Re-Scan COM Ports** to refresh the available COM Port list.

Select **OK** to begin the download from the software side.



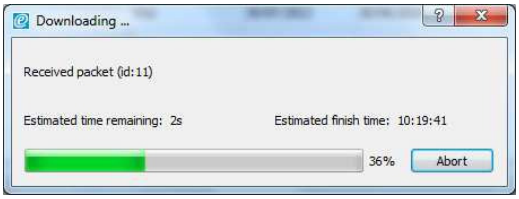
The software will stay in the download screen while the Rigel device is set up to transfer data.

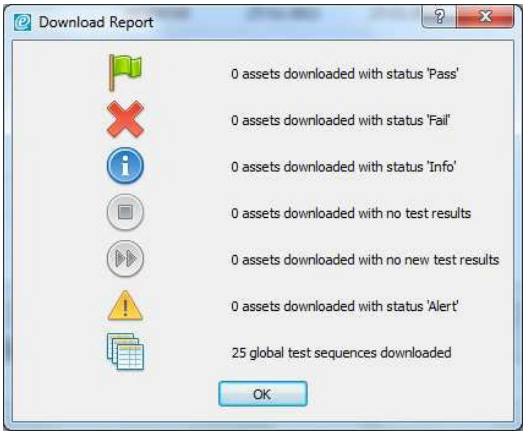
The download is initiated by starting the download on the Rigel tester. Instructions on how to do this will be included in the Instruction Manual or application note for each Rigel device.

You will need to enter the Data Menu and select download to PC to the format as Test Sequences.

Once the download has started, a progress bar will indicate downloading on Med-eBase.

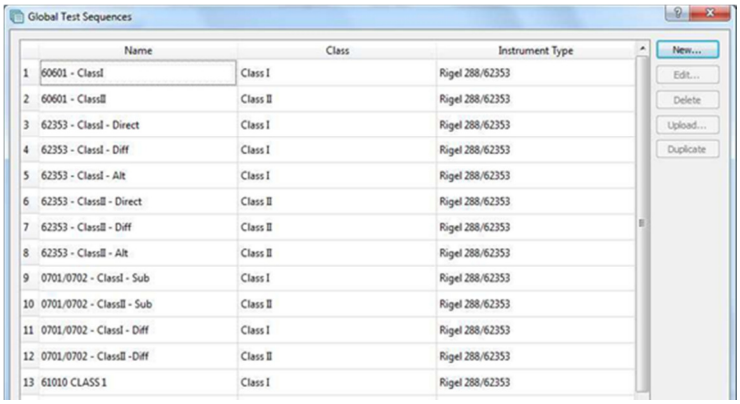
Upon completion of the download, the download window will close and the **Download Report** will be displayed on Med-eBase.





The downloaded sequences can be viewed in Med-eBase in Tools and then Global Test Sequence or the  icon on the top left hand side of the Med-eBase screen.

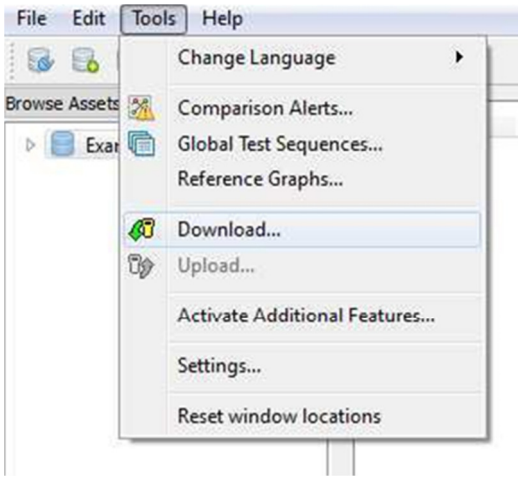
From this menu the test sequence can be viewed, edited and uploaded back into a Rigel Performance analyser (does not work with all analysers, refer to manuals / application notes).



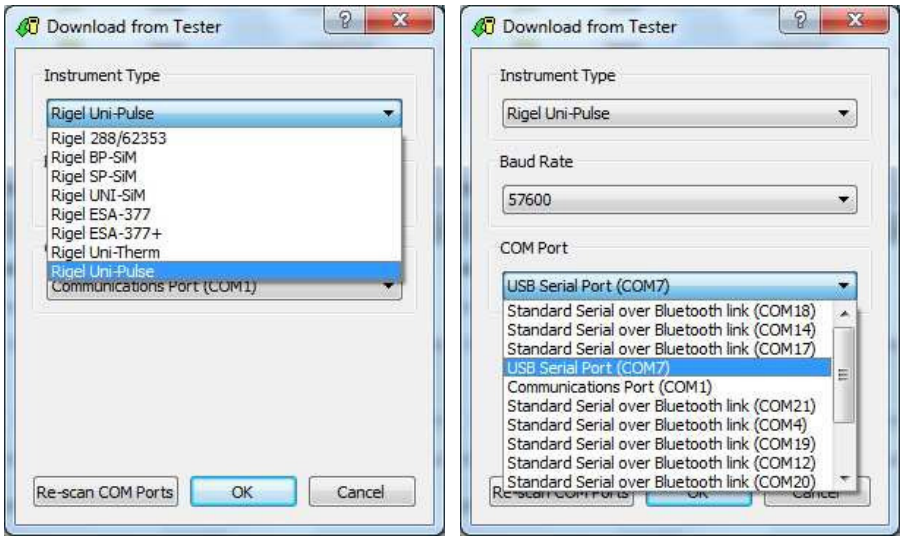
Please refer to application note 0038 Downloading from Rigel devices to Med-eBase to aid in the download process.

4.1.2. Performance Analyser Uni-Pulse

Downloading Results can be started from the **Download** option in the **Tools** menu or by using the  icon on the taskbar.



After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.



Select the relevant **Instrument Type** from the drop down list.

Ensure you have the correct **Baud Rate** (the default is 57600) and **COM Port** selected. For the Uni-Pulse the COM port is indicated as a USB Serial Port connection.

If you do not see the correct COM Port displayed in the drop down menu, select **Re-Scan COM Ports** to refresh the available COM Port list.

Select **OK** to begin the download from the software side.

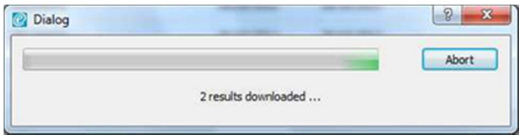
The software will stay in the download screen while the Rigel device is set up to transfer data.

The download is initiated by starting the download on the Rigel tester. Instructions on how to do this will be included in the Instruction Manual for each Rigel device.

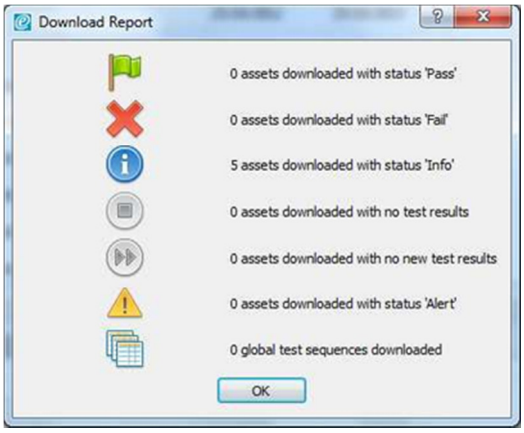
You will need to enter the Data Menu and search for the required results. Select Download to PC and then either **Download selected item?** or **Download all search items?**

NOTE: Med-eBase Data Transfer can only be conducted via USB for the Uni-Pulse.

During the download a progress bar appears on both Med-eBase and the Uni-Pulse.



When the download is complete and summary box appears on Med-eBase to enable the user to view what has been downloaded successfully.



NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual. The download is always initiated by the Rigel tester.

Also see application note 0045 **Downloading from the Rigel Uni-Pulse to Med-eBase** to aid in the download process.

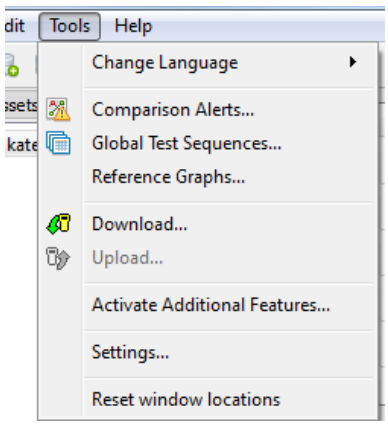
4.1.3. Performance Analyser Uni-Pulse 400

The download is initiated by Med-eBase, however, the Uni-Pulse 400 needs to be set-up first. Instructions on how to do this will be included in the Instruction Manual and / or corresponding Application note for each Rigel device.

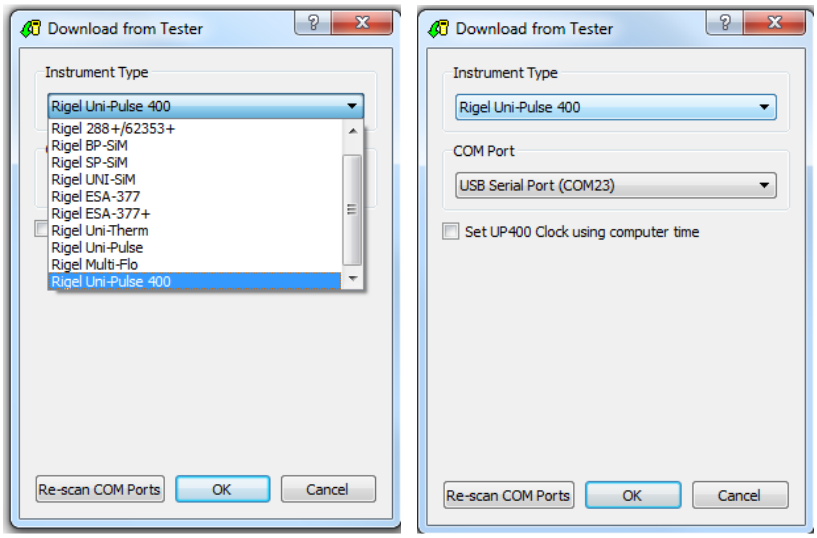
On the instrument, you will need to enter the Data Menu (**Select data**) and search for the required results. Select the Download to PC icon and then either **Download selected items?** or **Download all search items?** The Uni-Pulse 400 will display a **Sending** screen until the Med-eBase begins the download.

NOTE: Med-eBase Data Transfer can only be conducted via USB for the Uni-Pulse 400.

Downloading results can be started from the **Download** option in the **Tools** menu or by using the icon on the taskbar.



After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.



Select the relevant **Instrument Type (Rigel Uni-Pulse 400)** from the drop down list.

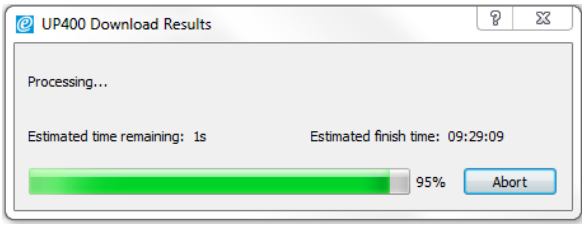
Ensure you have the correct **COM Port** selected. For the Uni-Pulse 400 the COM port is indicated as a **USB Serial Port** connection.

If you do not see the correct COM Port displayed in the drop down menu, select **Re-Scan COM Ports** to refresh the available COM Port list.

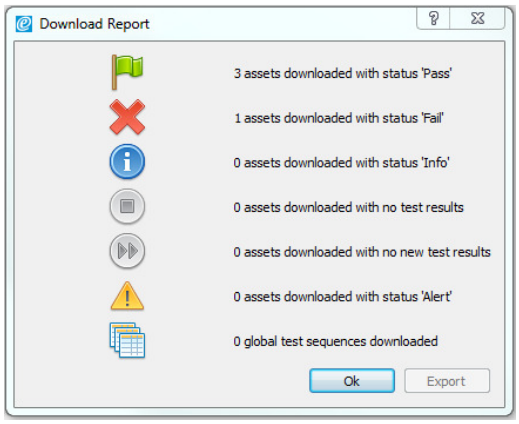
> Note: the **UP 400 Clock using computer time** can be used to set the time on the Uni-Pulse 400 if required.

Select **OK** to begin the download from the instrument.

During the download a progress bar appears on both Med-eBase and the Uni-Pulse 400



When the download is complete this is indicated on the Uni-Pulse 400 and **Download Report** appears on Med-eBase to enable the user to view what has been downloaded successfully and the status of these data.



NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual.

Also see application note 0074 **Downloading from the Rigel Uni-Pulse 400 to Med-eBase (version 2.6)** to aid in the download process.

4.1.4. Performance Analysers Uni-Therm and Multi-Flo

To transfer data from the Uni-Therm and Multi-Flo to Med-eBase on the Rigel device go to Menu and then Data and Data Transfer. This will take the user to the Data Transfer Screen

NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual for that device.

In the Data Transfer Menu the user must select which PORT for data transfer and the data format type using OPERATION required for the necessary data transfer.

OPERATION options are:

- Export Results
- Export Test Sequences
- Export CSV
- Import Results
- Import Test Sequences

PORT options are:

- USB Cable
- USB Memory Stick
- Bluetooth (Multi-Flo only)

Downloaded files can then be stored, transferred between Rigel devices of the same instrument type, PCs or to colleagues. It also is useful with any technical enquiries if the files can be sent with the enquiry.

Results

When downloading results into Med-eBase the Rigel device will act as a REMOVABLE DISC data storage device. The data file can be copied from the drive that appears in explorer or from the memory stick directly into Med-eBase.

NOTE: When using Med-eBase, the export of data will commence from the software once the Rigel device is in the TRANSFER READY state.

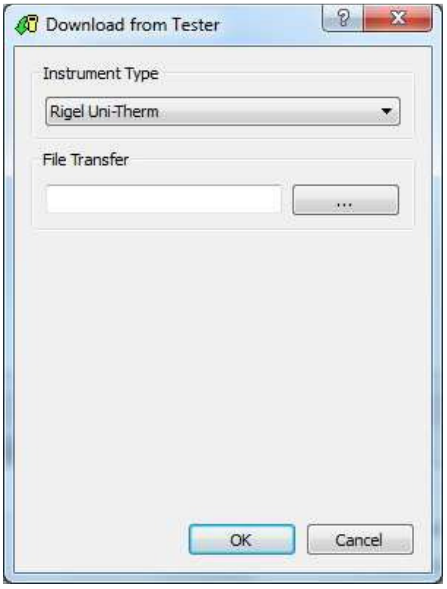
Start the download from the Rigel tester by pressing START F4. A Transfer Ready indication message appears on the Rigel unit with OK to select ONLY ONCE the transfer is complete from the PC.

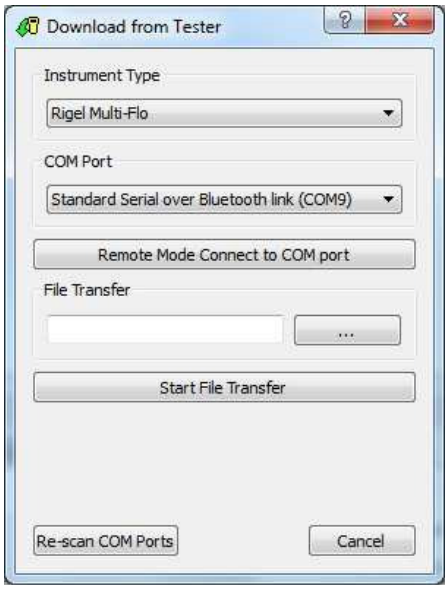
NOTE: When using a USB memory stick the stick needs to be inserted into the Rigel device before selecting START F4 on the Data Transfer screen.

Download can be started from the **Download** option in the **Tools** menu or by using the **Download** icon on the taskbar.

After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.

Chose the correct instrument type and then select the file transfer icon 



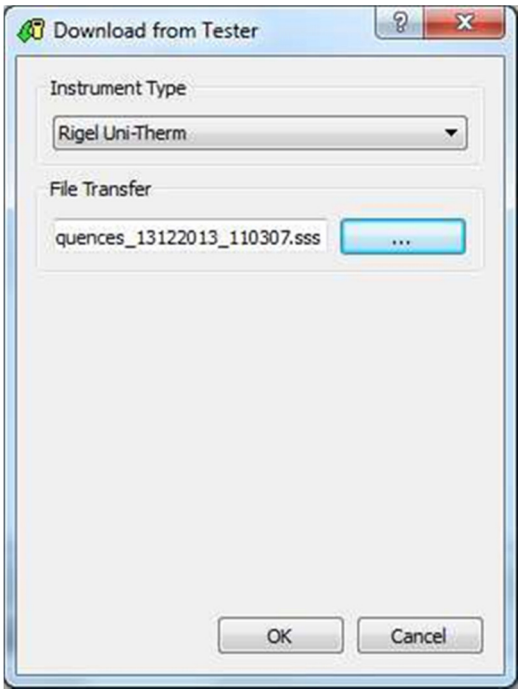


Then the user must select the removal disc which is associated with the Rigel tester (for example removal disk E:) to allow the test results to be transferred from the Uni-Therm or Multi-Flo.

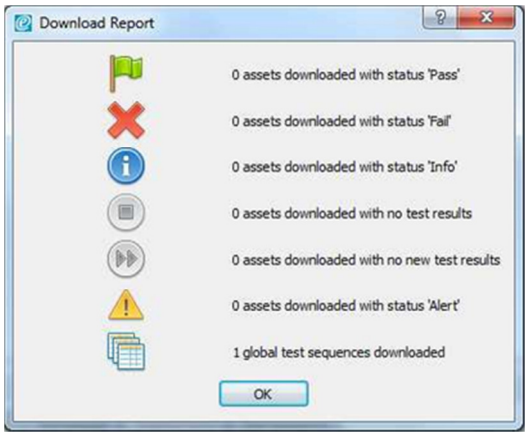
When downloading files from the Rigel Uni-Therm or Multi-Flo the latest file will contain all previous Sequences stored on the Rigel device and therefore only the last file needs to be used when transferring files between the Rigel device and Med-eBase. Select the appropriate file which should be in a format:

Results_DATE_TIME.sss in Format DDMMYYY and hhmmss

Then select OK. The file name should appear in the file transfer window and then select OK to transfer into Med-eBase.



A download report will appear when the transfer is complete to indicate what has been transferred. The downloaded results can be viewed in Med-eBase by looking for the Asset ID or date of test.



NOTE: If other tests e.g. electrical safety has been performed on the same device and downloaded into Med-eBase, the Performance analyser test results can be merged into the same Asset ID provided that the asset trace details are identical E.g. Only the Asset ID is entered into the Asset details window. See chapter 3 for further information.

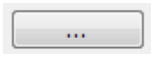
Test Sequences

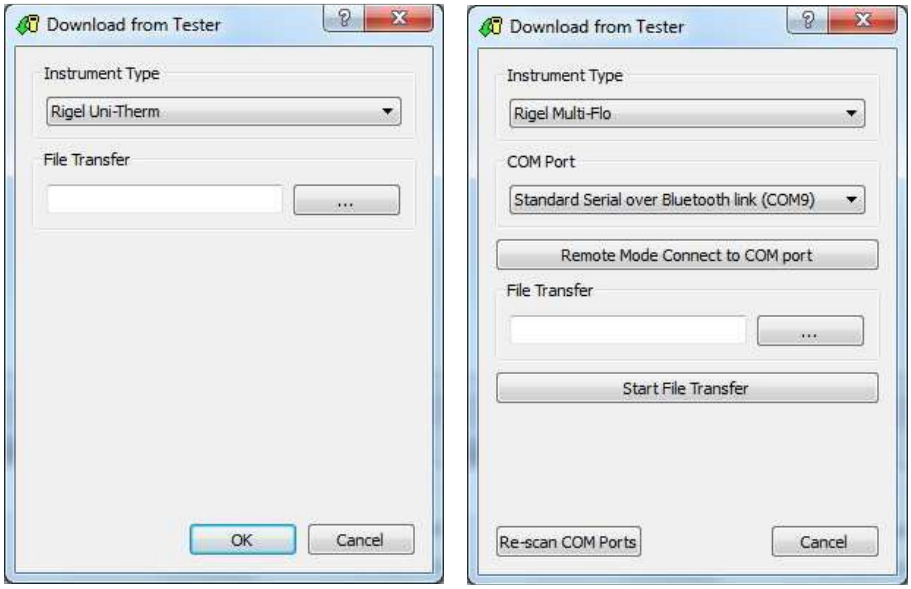
Test Sequence can be created on the Rigel devices and then downloaded into the Med-eBase software as a global test sequence.

From the data transfer screen select Start and connect the USB memory stick or cable.

NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual for that device or corresponding application note.
Download can be started from the **Download** option in the **Tools** menu or by using the **Download** icon on the taskbar.

After selecting the **Download** option, the **Download from Tester** dialogue box will be displayed.

Chose the correct instrument type and then select the file transfer icon 

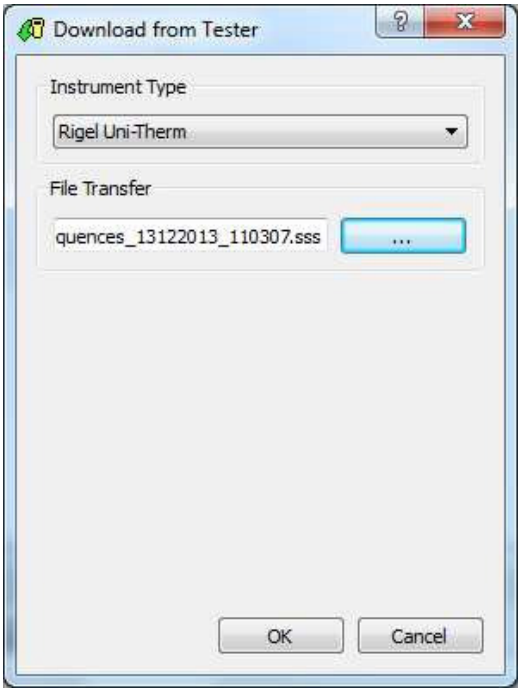


Then the user must select the removal disc which is associated with the Rigel tester (for example removal disk E:) to allow the test results to be transferred from the Uni-Therm or Multi-Flo.

Select the appropriate file which should be in a format:

Sequences__DATE_TIME.sss in Format DDMMYYY and hhmmss

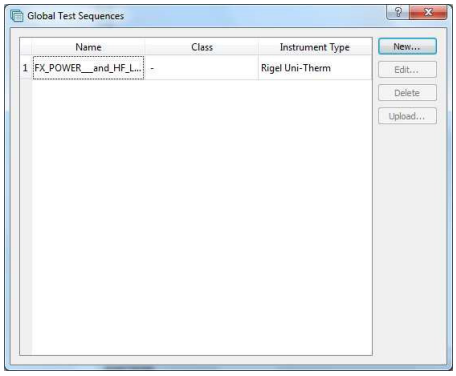
Then select OK. The file name should appear in the file transfer window and then select OK to transfer into Med-eBase



A download report will appear when the transfer is complete to indicate what has been transferred.

The downloaded sequences can be viewed in Med-eBase in Tools and then Global Test Sequence or the  icon on the top left hand side of the Med-eBase screen

From this menu the test sequence can be viewed, edited and uploaded back into a Rigel Performance analyser.



When downloading files from the Rigel Uni-Therm or Multi-Flo the latest file will contain all previous Sequences stored on the Rigel device and therefore only the last file needs to be used when transferring files between the Rigel device and Med-eBase.

Sequence files should be in format **Sequences_DATE_TIME.sss** in Format DDMMYYY and hhmmss

Please refer to application note 0048 **Downloading from the Rigel Uni-Therm and 377+** or 0049 **Uploading and downloading Test Sequences from Uni-Therm and Med-eBase** to aid in these processes.

4.2. Uploading Data from Med-eBase to a Rigel device

Test sequences can be uploaded from Med-eBase into some Rigel devices, please check the instruction manual or application note to confirm this.

NOTE: Sequences can only be uploaded to the same specific instrument test type there are associated with e.g. electrical safety test only to a Rigel 288 (+) or Rigel 62353 (+) only.

4.2.1. Electrical Safety and Vital Sign Simulators

Electrical Safety (288 (+) and 62353 (+)) and Vital Sign Simulators (Uni-Sim, BP-Sim and SP-Sim) use the same method of uploading test sequences from Med-eBase into the Rigel devices.

Sequence which have been created on Med-eBase as a Global Test Sequence or transferred from another Rigel device can then be uploaded into a Rigel electrical safety tester or vital signs simulator from Med-eBase.

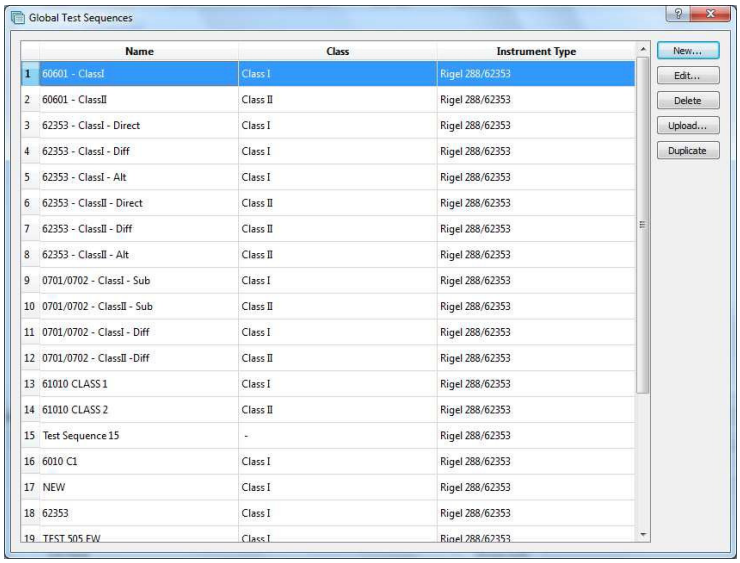
On the Rigel device select OK from the Data Transfer screen to upload.

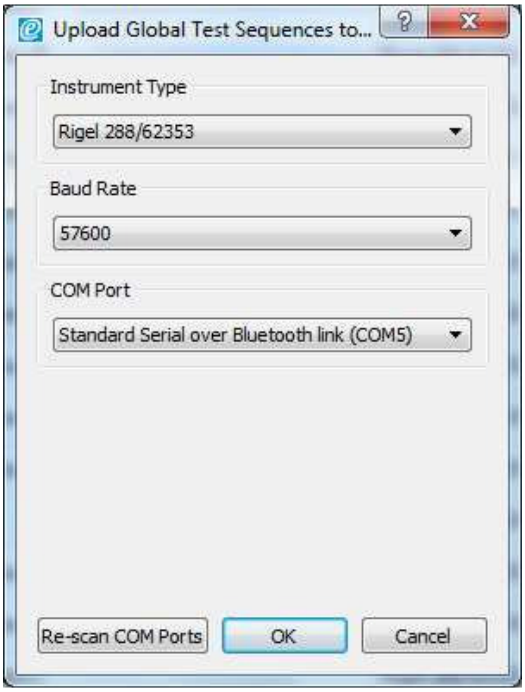
The Import Complete screen should appear to indicate that the import is complete.

Go into the Global Test Sequence menu on Med-eBase from Tools and then Global Test Sequence or the  icon on the top left hand side of the Med-eBase screen.

Highlight the test sequence(s) that are required to be uploaded and select UPLOAD from the right hand side of the screen.

NOTE: Multiple sequences can be uploaded simultaneously by holding CTRL and the selecting multiple sequences required. However they must all be the same instrument type.





The upload global test sequence to test dialog box will appear and the user must confirm the Instrument type, correct Baud Rate and COM Port setting for the Data Transfer. Select **OK** to begin the transfer.

4.2.2. Performance Analysers Uni-Therm and Multi-Flo

The Rigel Uni-Therm and Multi-Flo use the same method of uploading test sequences from Med-eBase into the Rigel devices.

Connect a USB memory stick or cable to the Rigel device. Enter the data transfer screen and select the required OPERATION and PORT. To upload the operation needs to be IMPORT

NOTE: For detailed instructions on how to connect your Rigel device for Data Transfer, please see the instruction manual that accompanied your device. The download is always initiated by the Rigel tester.

Sequences which have been created on Med-eBase as a Global Test Sequence or transferred from another Rigel device can then be uploaded into a Uni-Therm or Multi-Flo from Med-eBase.

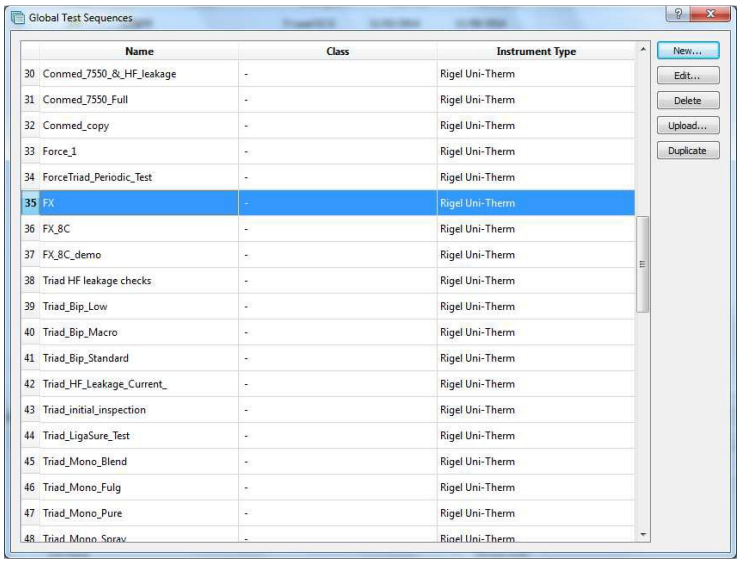
On the Rigel device select OK from the Data Transfer screen to upload.

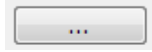
The Import Complete screen should appear to indicate that the import is complete.

Go into the Global Test Sequence menu on Med-eBase from Tools and then Global Test Sequence or the icon on the top left hand side of the Med-eBase screen.

Highlight the test sequence(s) that are required to be uploaded and select UPLOAD from the right hand side of the screen.

NOTE: Multiple sequences can be uploaded simultaneously by holding CTRL and selecting the multiple sequences required. However they must all be the same instrument type.



The upload global test sequence menu will appear and the user must indicate the instrument type. Then select the file transfer 

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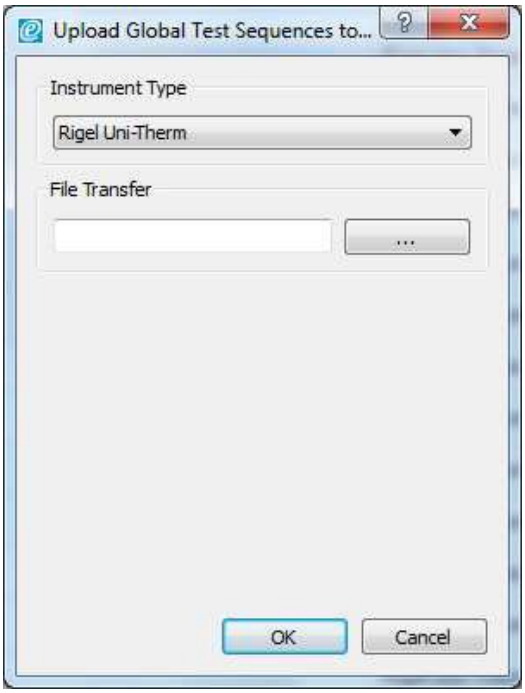
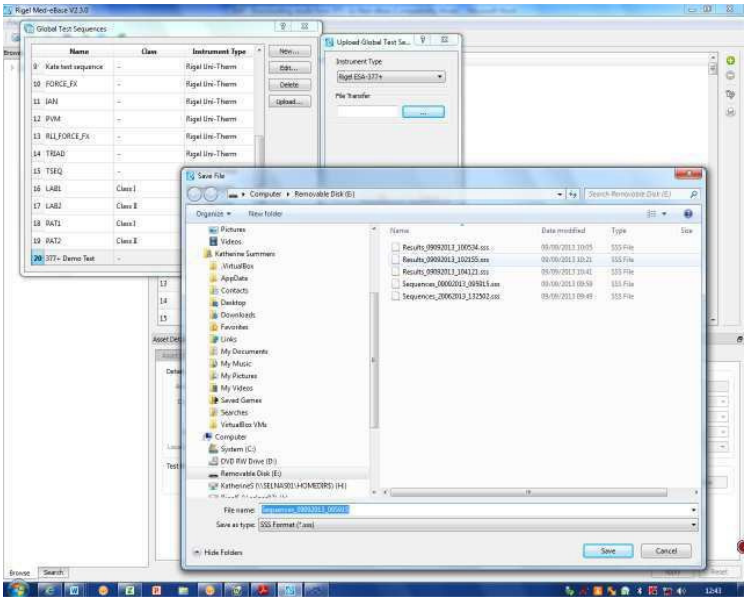
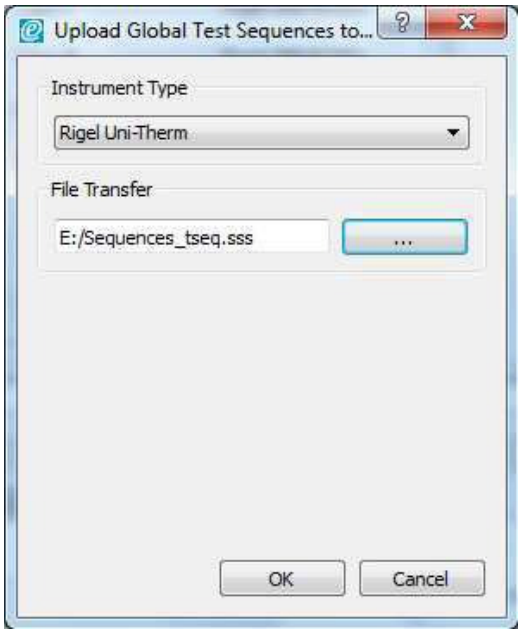


Then the user must select the removal disc which is the Rigel device memory (for example removal disk E:) to allow the test sequence to be saved onto the Uni-Therm or Multi-Flo.



The file must be named in the format **Sequences_DATE_TIME.sss** in Format DDMMYYY and hhmmss



Then select OK to upload the sequence.

Go back onto the Rigel device and select OK from the Data Transfer screen,

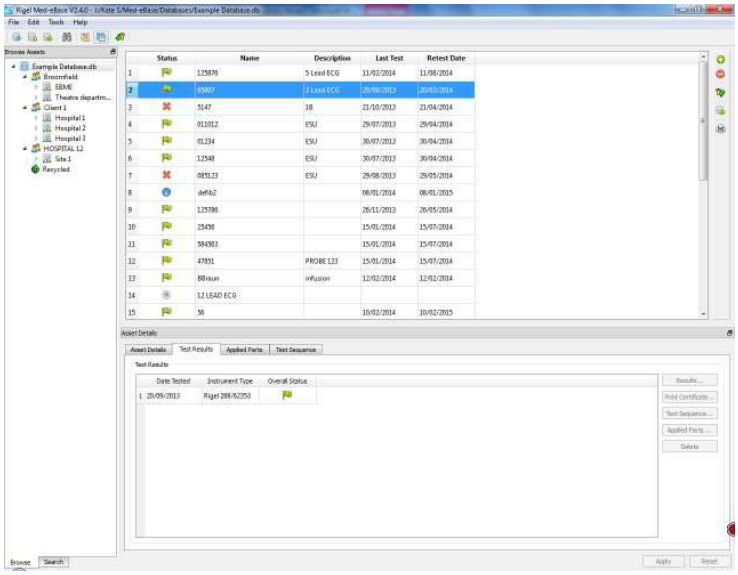
The Import Complete screen should appear to indicate that the import is complete.

Please refer to application note 0049 **Uploading and downloading Test Sequences from Uni-Therm and Med-eBase** to aid in this process.

5. Asset Details Tabs

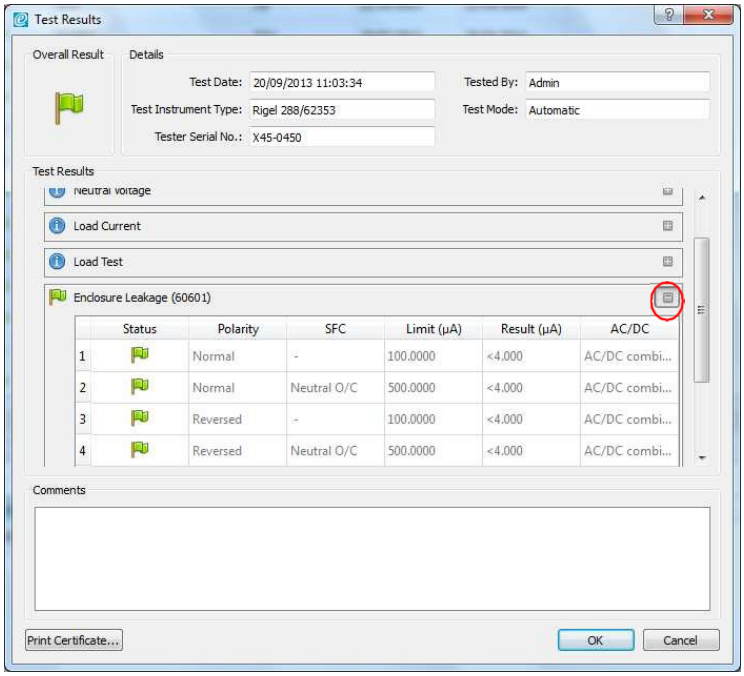
5.1. Test Results Tab

From the **Asset Details** panel, select the **Test Results** tab. This will display the Test Result history for that Asset.



Each row of the table in the **Test Results** tab refers to a complete result set.

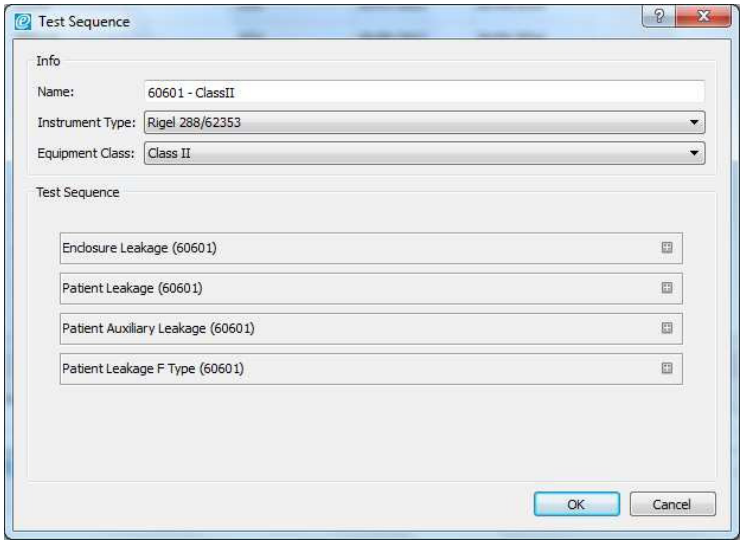
- Use the **Results** button to display the individual **Test Results** for each test.



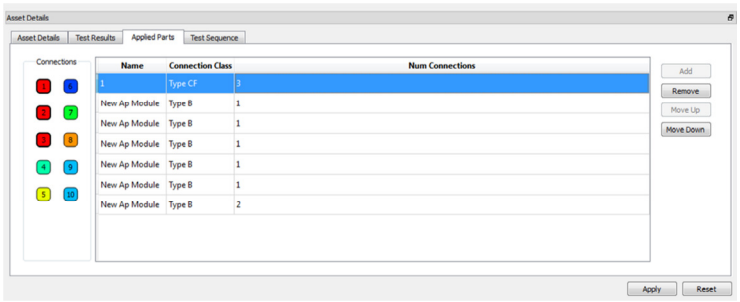
A green flag indicates the test result is a pass. The blue flag indicates the result is for information only. A red cross is a fail. Click on the **Plus** symbol to expand the test result information.

Note: Any additional user comments can be entered in the Comments field. These comments will appear on the test certificate.

- Use the **Print Certificate** button to create the test certificate for the highlighted test result.
- Use the **Test Sequence** button to view the Test Sequence used for this test.



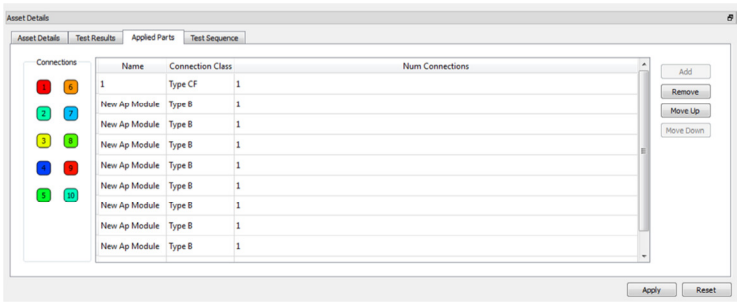
- Use the **Applied Parts** button to display the Applied Part configuration for this test when testing using the Rigel 288/62353 (+).



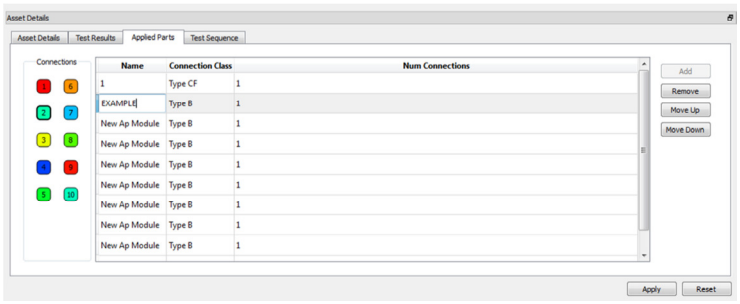
- Use the **Delete** key to permanently delete a highlighted test result.

5.2. Applied Parts Tab for Rigel 288/62353 (+)

The **Applied Part** tab displays the settings of the patient connections and applied parts for electrical safety testing using the Rigel 288/62353 (+). Each new Applied Part type has a colour code so that it can be distinguished from other Applied Part types in the **Connections** diagram.

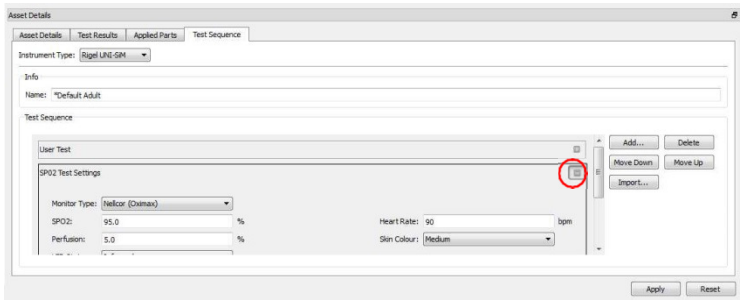


The Applied Parts can be set-up for new Assets using this tab. For previous tests, the Applied Part fields are for information only and cannot be edited.



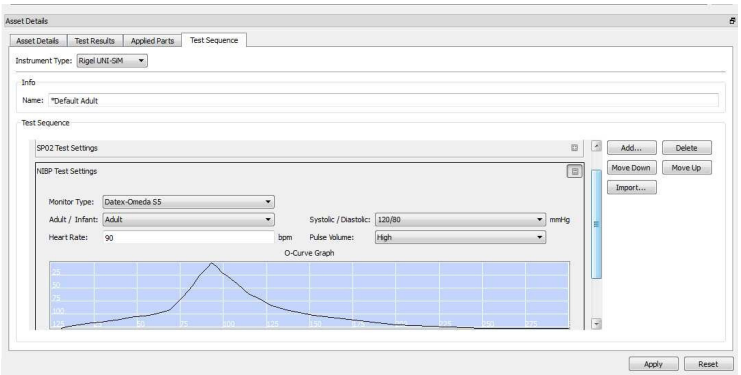
5.3. Test Sequence Tab

The **Test Sequence** tab displays the test sequence and individual test settings for this Asset. From this screen you can customise the test sequence associated with this Asset.



Select the **Add** button to add a test above the selected line.
Select **Delete** to remove the selected line from the Test Sequence.
Select **Import** to insert a Global Test Sequence into the Test Sequence.
Select **Move Up/Move Down** to move the selected test up or Down the Test Sequence.

Use the **Plus** symbol to expand and view the details of an individual test.



Each asset has an editable test sequence for each instrument type. This can be accessed via the **Instrument Type** drop down menu.

5.4. Searching for an Asset

Med-eBase contains a search facility to quickly find an Asset within the database. This can be accessed either by clicking on the **Search** icon on the top menu bar, or by selecting the **Search** tab in the **Browse Assets** window.

Enter the relevant **Search** criteria to filter the search results.

The results will be shown in the **Asset Table** view panel.

More than one search criteria may be entered in order to narrow down the results even further.

Filtered search and finding assets in Med-eBase can be done by using the wildcard '*' in the search field. This will allow for various combinations to be searched for. For example to search for an asset ID which has '234' in the middle of its name you would enter into the Asset ID Search field '*234'. All assets with 234 in their name will be displayed. The position of the * indicate what the software will search for:

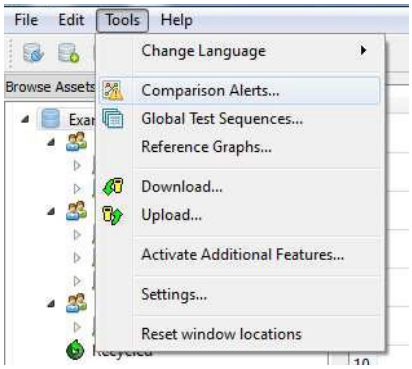
- *123 will look for assets with values before 123
- 123* will look for assets which start 123
- 1*3 will look for assets with 1 and 3 with some values in between.

To switch back to the **Browse Assets** view, select the **Browse** tab at the bottom of the window.

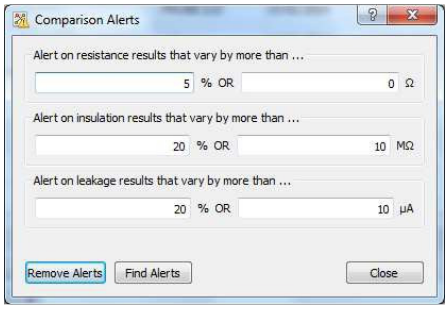
6. Comparison Alerts

The built-in **Comparison Alerts** feature can be activated to automatically warn users when test result values have deviated from a user-definable criteria or value. This provides peace of mind and avoids the user having to manually analyse their data. Test values can drift over time and whilst the latest values might still meet the PASS / FAIL criteria, a significant drift from previous or typical values could indicate a future problem or failure. Comparing data, will give you the assurance that your current downloaded data meets your expectation.

Select **Tools**, **Comparison Alerts**. This will open the **Comparison Alerts** window.

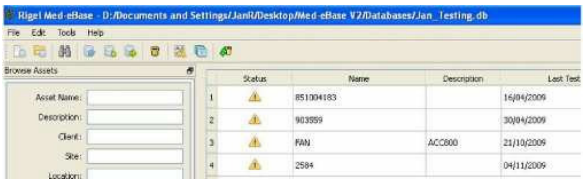


Specify a percentage or amount results change and Med-eBase will display assets where results vary accordingly.



Select **Find Alerts** to list all results sets that contain at least one result alert. Select **Yes** to view the Assets. To remove all active alerts, select **Remove Alerts**.

If any results are identified by the **Comparison Alerts**, then they will be identified with a warning symbol for user attention.

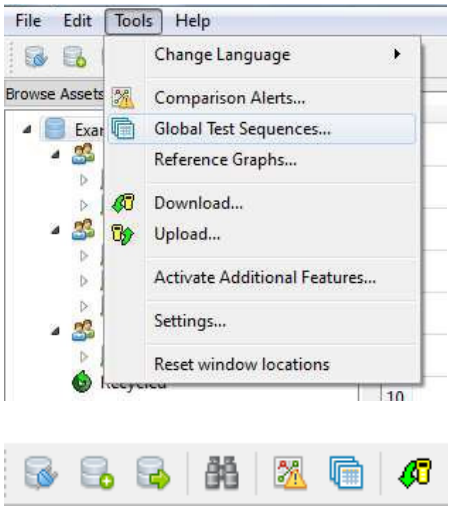


7. Creating Test Templates

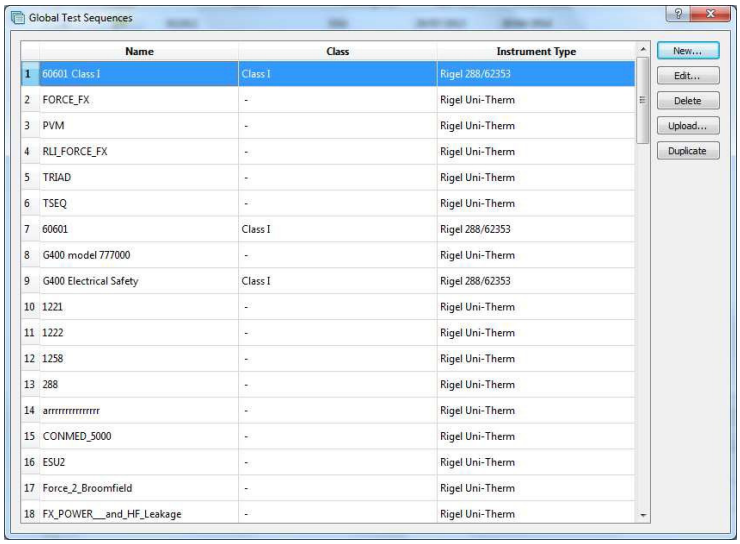
Med-eBase contains a function to create your own custom Test Sequence which can be uploaded from Med-eBase to your Rigel device.

This function allows you to plan your Test Sequence while using your PC, as an alternative to creating the Test Sequence using your Rigel device.

Select Tools, Global Test Sequences or the global test sequence icon on the task bar.

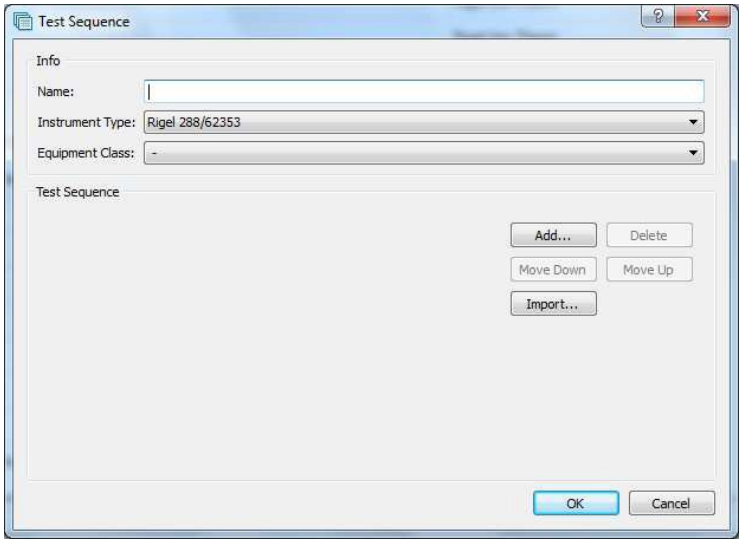


This will open the **Global Test Sequences** window.



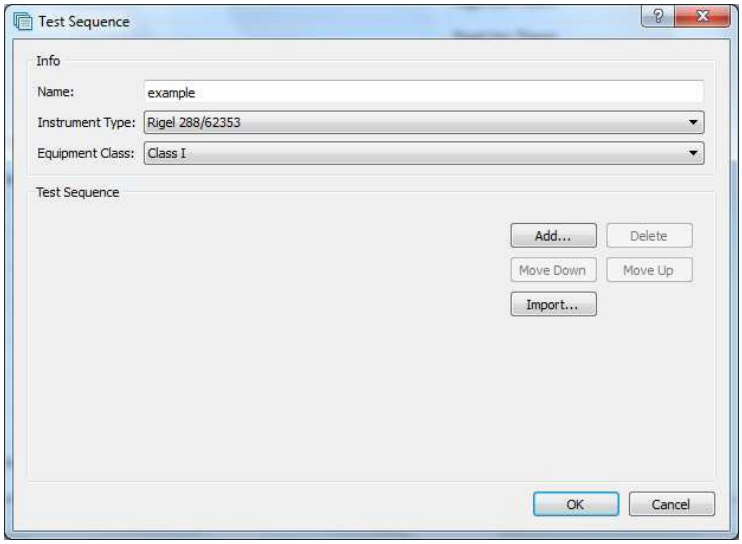
7.1. Creating a new Global Test Sequence

To create a new Global Test Sequence, select **New**. This will open a blank Test Sequence (note this function is not applicable to all instruments).

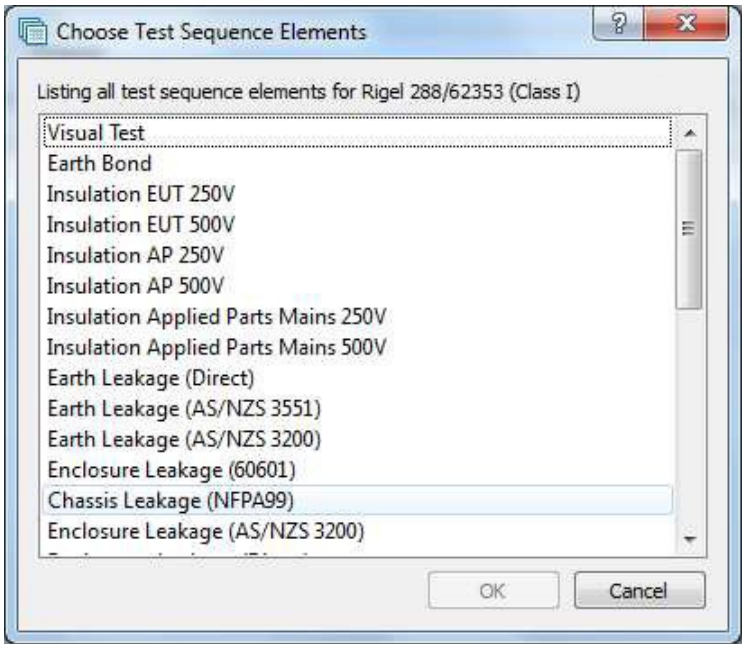


Enter the **Name** for your new Global Test Sequence. This should be something that is recognisable to yourself so you can easily identify the Global Test Sequence once it has been uploaded to your device.

Select the **Instrument Type** and **Equipment Class for Rigel 288 (+) ONLY** from the drop down menu. This will dictate which individual tests sequence elements are available for this Global Test Sequence.

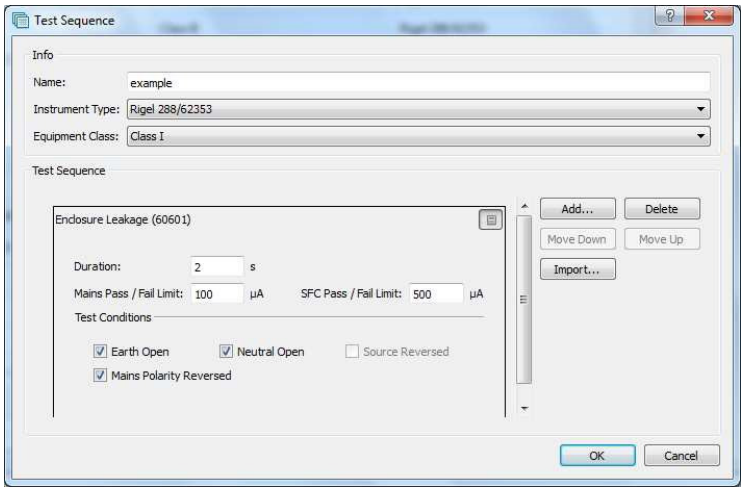


To add a test, click **Add**

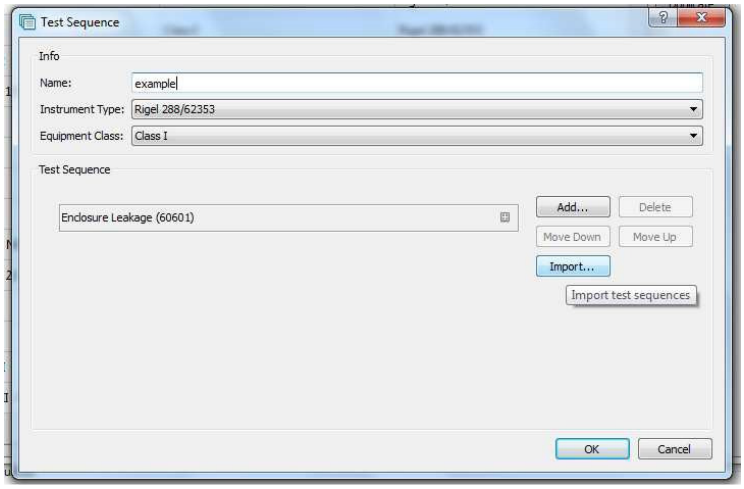


This will display the tests that re available for your device. Highlight the appropriate Test Sequence Element and select **OK**.

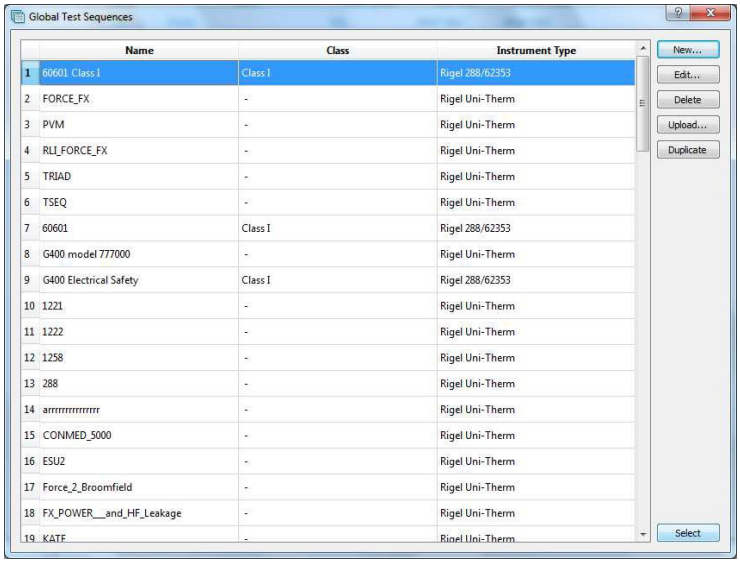
The selected Test Sequence Element will now appear as part of your new Global Test Sequence. You now have the option to edit the test parameters by selecting the **+** icon at the end of each individual test to open the test options. This allows you to change limits (if required), timings and number of tests etc.



To insert the Test Sequence Elements from another Global Test Sequence into your new Global Test Sequence, select **Import**. This will give you the option of importing an existing Test Sequence Element.



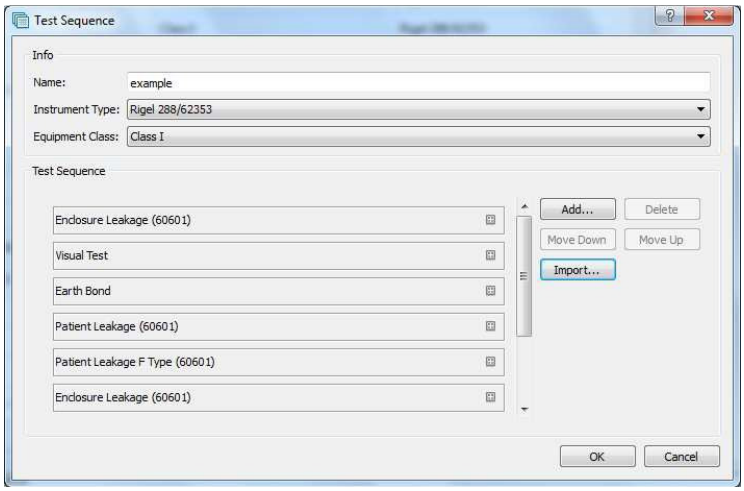
Highlight the Global Test Sequence and press the **Select** button.



NOTE: The imported sequence must be the same instrument type.

To delete an individual Test Sequence Element from your Global Test Sequence, highlight the individual Test Sequence Element and select **Delete**.

To move an individual Test Sequence Element up or down the Global Test Sequence, highlight the individual Test Sequence Element and select **Move Up**/**Move Down**.

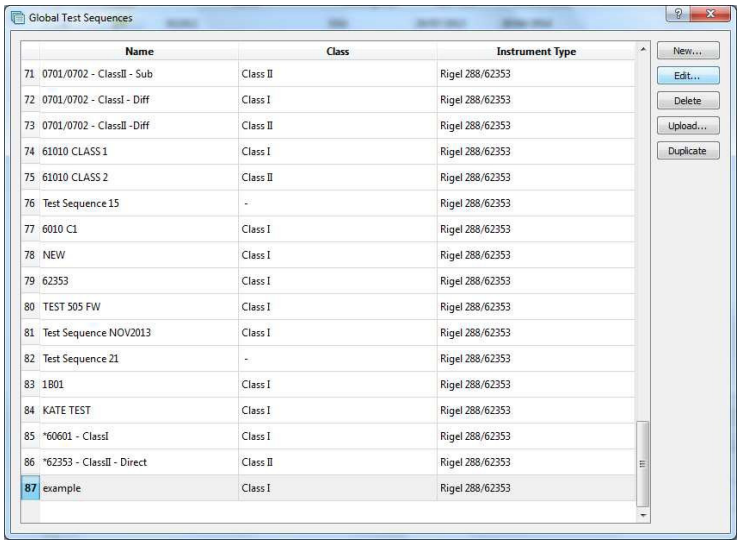


Select **OK** to save your Global Test Sequence.

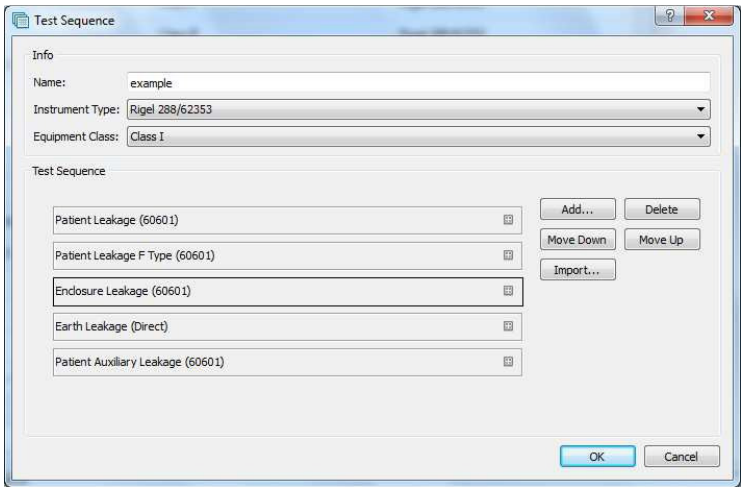
You will be redirected back to the **Global Test Sequence Menu** where you 'New' sequence should be located and is ready to be uploaded.

7.2. Editing a Global Test Sequence

To edit a **Global Test Sequence**, highlight the Test Sequence and select **Edit**.



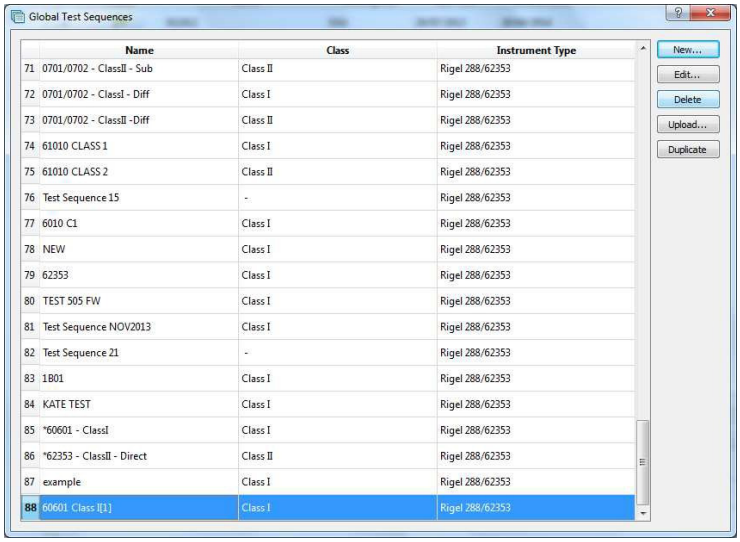
This will open the Global Test Sequence screen so that you can edit, add or remove any of the individual Test Sequence Elements in this Global Test Sequence.



Click **OK** to save the changes or **Cancel** to exit without saving.

7.3. Duplicate a Global Test Sequence

To copy a **Global Test Sequence**, highlight the test sequence and select **Duplicate.** This will allow the user to copy an existing global test sequence. The new sequence will be assigned the name of the original sequence with an [X] where is X is the number of iterations with the same name. Once the sequence has been duplicated the user can then rename the sequence and edit the tests within the new sequence.

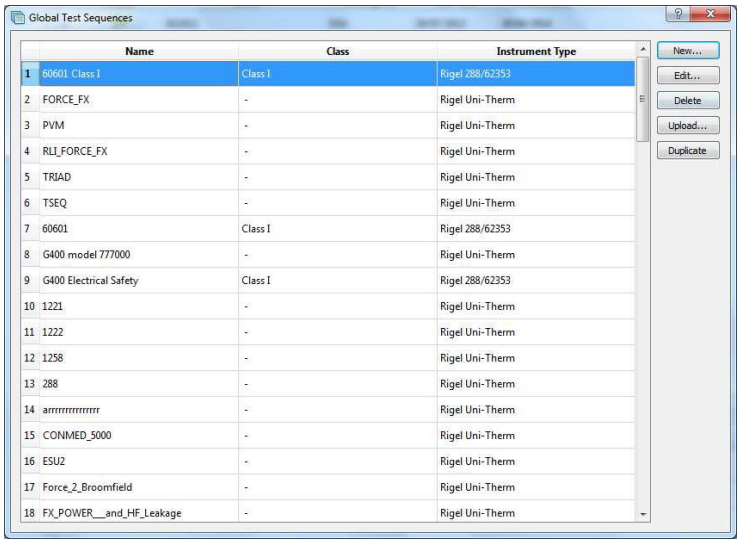


	Name	Class	Instrument Type
71	0701/0702 - ClassII - Sub	Class II	Rigel 288/62353
72	0701/0702 - ClassI - Diff	Class I	Rigel 288/62353
73	0701/0702 - ClassII -Diff	Class II	Rigel 288/62353
74	61010 CLASS 1	Class I	Rigel 288/62353
75	61010 CLASS 2	Class II	Rigel 288/62353
76	Test Sequence 15	-	Rigel 288/62353
77	6010 C1	Class I	Rigel 288/62353
78	NEW	Class I	Rigel 288/62353
79	62353	Class I	Rigel 288/62353
80	TEST 505 FW	Class I	Rigel 288/62353
81	Test Sequence NOV2013	Class I	Rigel 288/62353
82	Test Sequence 21	-	Rigel 288/62353
83	1B01	Class I	Rigel 288/62353
84	KATE TEST	Class I	Rigel 288/62353
85	*60601 - ClassI	Class I	Rigel 288/62353
86	*62353 - ClassII - Direct	Class II	Rigel 288/62353
87	example	Class I	Rigel 288/62353
88	60601 Class I[1]	Class I	Rigel 288/62353

7.4. Deleting a Global Test Sequence

To delete a **Global Test Sequence**, highlight the test sequence and select **Delete**.

Note: You will not be prompted for confirmation. The Global Test Sequence cannot be recovered once deleted.



7.5. Test Templates for the Rigel 288/62353 (+)

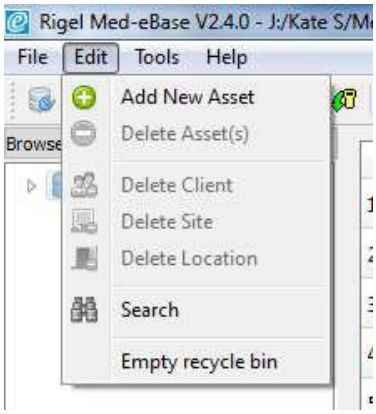
Templates can be created on Med-eBase for specific makes and models of devices to enable users and faster testing. The templates can be uploaded onto the Rigel 288 (+) and then the user can enter the device's serial number and run the test without requiring entering any other details as they are linked to the template.

Equipment required

- PC with Med-eBase software
- Rigel 288 (+) firmware version 5.00 or higher
- Required test sequence/user manuals for devices
- Bluetooth or serial communication between PC and Rigel 288 (+)

Creating the Template using Med-eBase

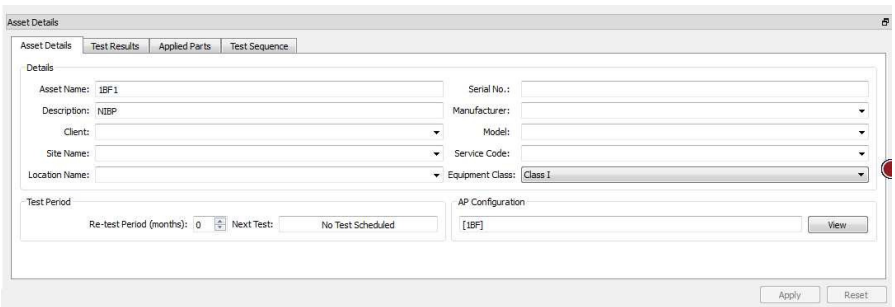
Firstly, the template needs to be created in Med-eBase. When Med-eBase is opened select either Edit and then Add New Asset or the icon on the right hand side of the screen.



On the Asset details tab the Asset Name and Equipment class need to be entered. The Asset Name should be the name for the template e.g. 1BF1 or 12 lead ECG. The select Apply.

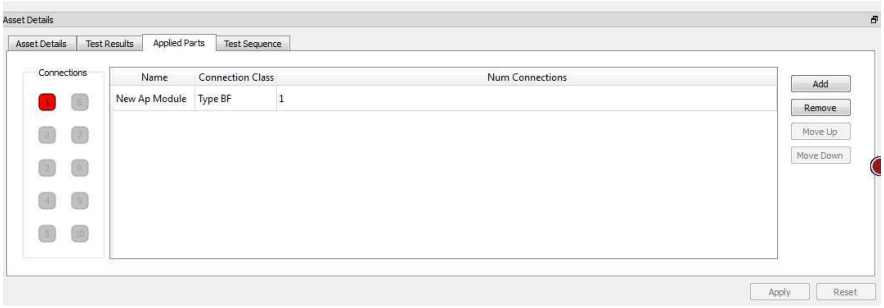
The description may also be filled in to describe the applied parts. All other fields are device specific and can therefore be added when the template is on the Rigel 288 (+) or after the results are downloaded back into Med-eBase after the testing is complete.

NOTE: The Asset ID field on the Rigel 288 (+) is case sensitive and therefore it is advised to keep names simple and to one case style.

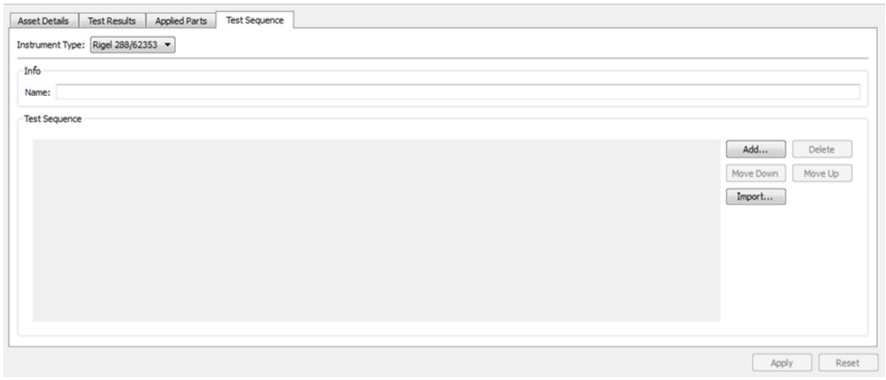


On the Applied Parts tab the Applied Parts need to be added by selecting the Add icon on the right hand side of the screen.

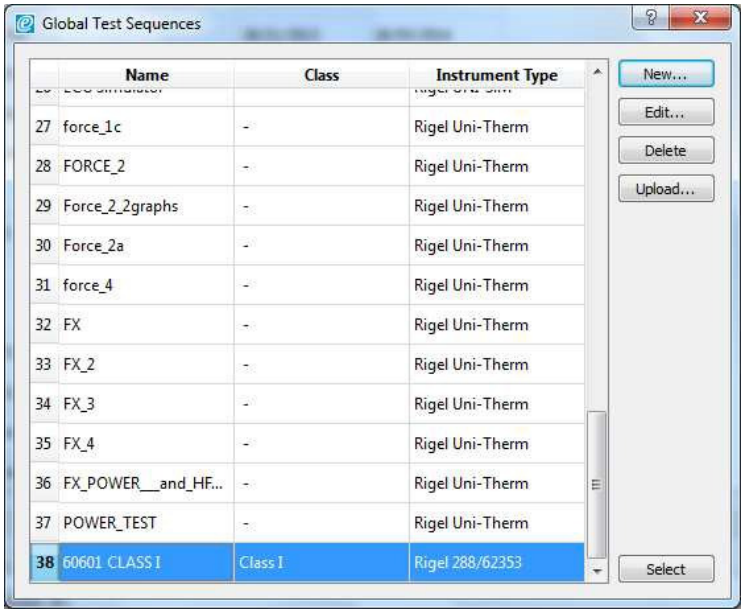
Once an Applied Part has been added double click on the required fields to change the Name, Connection Class and Number of Connections. E.g. For a 12 Lead ECG machine there are 10 CF APs. For defibrillators you will need to add another AP as defibrillators have both CF and BF APs; 2 BF for the paddles and 3 CF for 3 Lead ECG. Then select Apply.



On the Test Sequence tab make sure that the Instrument Type is Rigel 288/62353 (+). The test sequence to be performed needs to be added or imported in this tab.

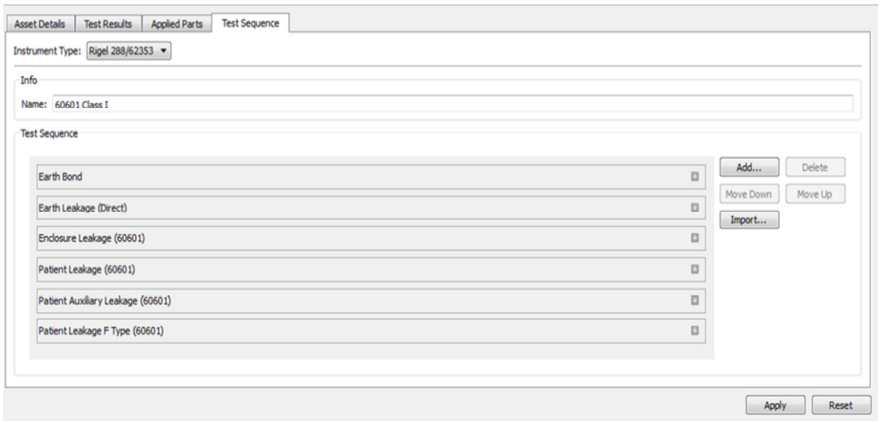


Global test sequences can be imported using the Import… icon which will open the global test sequence menu. The appropriate test sequence can be highlighted and then Select to import the sequences into the Asset Template.



Alternatively tests can be added to create a sequence using the Add… icon. Move down, Move Up and Delete allows the user to organise the test sequence as desired.

NOTE: Holding down Ctrl when selecting multiple tests allows them to be added simultaneously. The tests will be added in the order they were select and can therefore may creating a test sequence easier



The Name selected in the Info field will be the test name given on PDF and certificates once the test results are downloaded. E.g. 60601 Class 1 or 12 lead ECG class 1.

When complete select Apply to save changes. Upload the template onto the Rigel 288 (+)

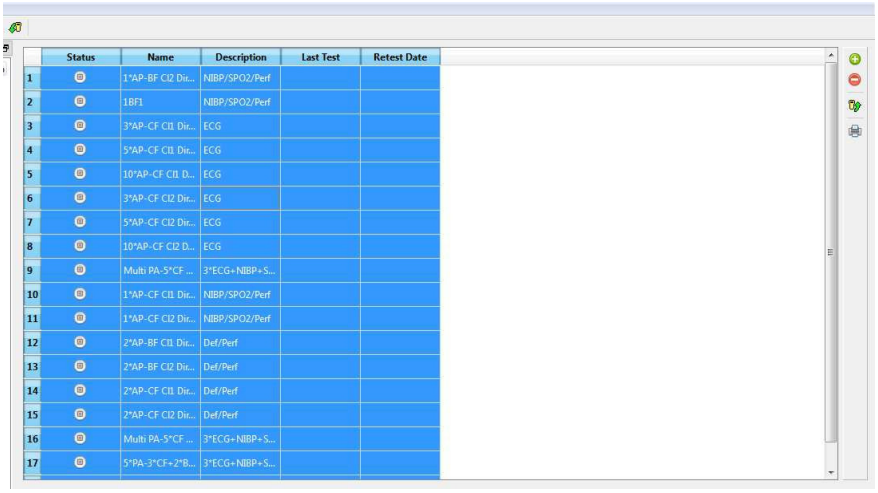
NOTE: This feature is only compatible with Rigel 288 (+) devices that have firmware Version 5 and higher.

Please see application note 0029 on how to upgrade Rigel 288 (+) Firmware for this feature to be available.

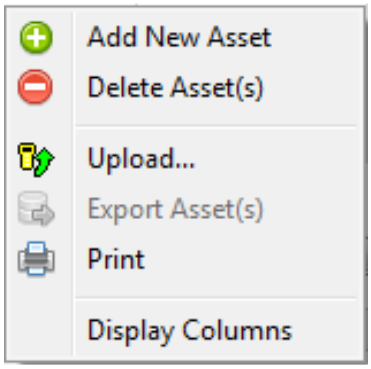
Firstly ensure that the PC and Rigel 288 (+) are connected either via RS 232 cable or Bluetooth.

Go to F4 > Data Transfer> Upload from PC> F4 tick to confirm

On Med-eBase select the Asset Template so that is it highlighted. Alternatively hold down Ctrl to add multiple assets or Ctrl A to select all.

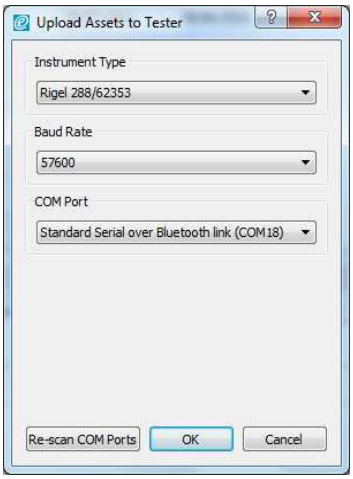


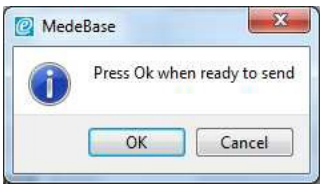
Right click and select upload or select the upload icon  from the right hand side of the screen or go to Tools> Upload.



Select the correct Instrument Type from the drop down list. The Default baud rate for the Rigel 288 (+) is 57600. Select the correct COM port which is the Bluetooth connection (you may need to look at your Bluetooth properties to check the correct COM port) or COM 1 if using a RS 232 serial cable.

Select Ok and once the Bluetooth icon appears in the right corner of the Rigel 288 (+) select Ok to start the upload.

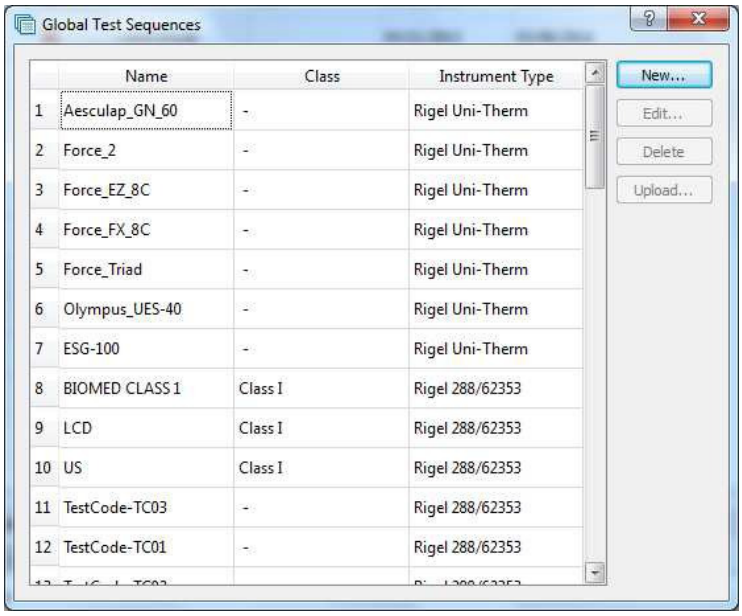




7.6. Test Templates for the Rigel Uni-Sim

To create a test sequence in Med-eBase select the Global Test Sequence icon  or select Tools and then Global Test Sequence…

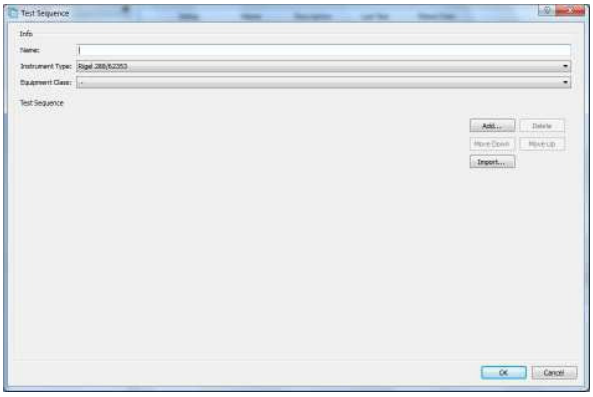
Select New

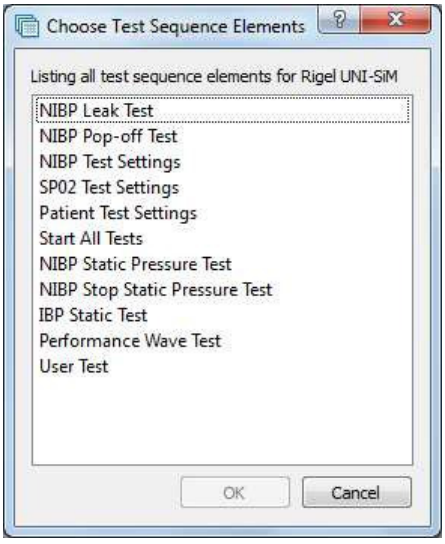


Enter the sequence name and also the instrument type.

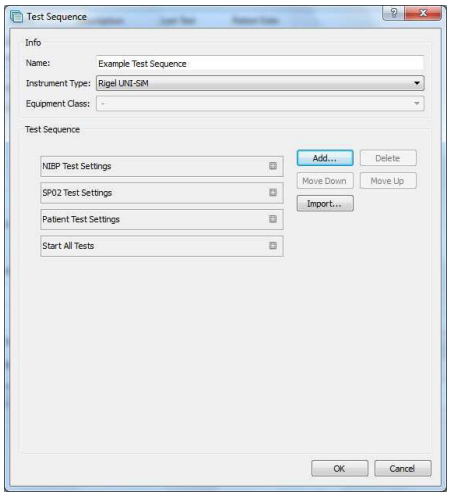
NOTE: Test sequences are for one instrument type only and therefore Med-eBase will not allow the user to mix tests from different Rigel devices (e.g. electrical safety and Vital Sign Simulations).

Select **Add** to insert a test or import to import an already created global test sequence. For the Uni-Sim test option are shown in the image below.

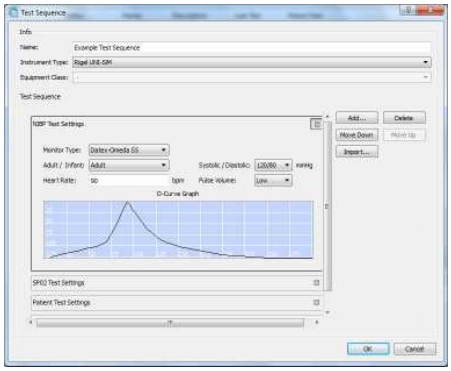




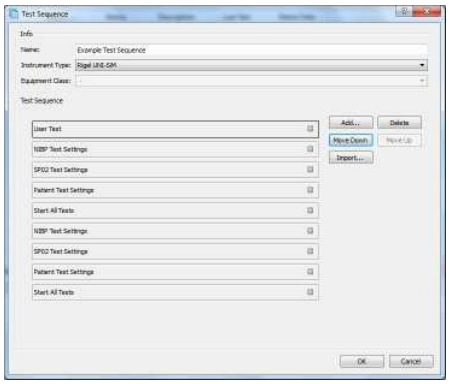
The user can select multiple tests by holding ctrl when selecting and the order of selection is remembered in the sequence when OK is selected.



Select the Expand on each individual test to change the test setting and during of test in the start all tests field.



After each group of simulations the start all tests must be inserted so that each simulation or change of settings has a set time for the Uni-Sim to recognise.



Once the test sequence is complete select OK.

Please refer to application note 0057 Creating Test Sequences for Rigel Uni-Sim for further details of this process.

Creating and uploading 'O Curves' into Med-eBase

To add an 'O Curve' onto the Med-eBase V2 software you will need to add the 'O Curve' to a folder structure which is location outside of the Med-eBase program.

For Windows XP: Go to C:\Documents and Settings\All Users\Application Data\Rigel\Med-eBase V2\OCurves

For Windows 7: Go to C:\ProgramData\Rigel\Med-eBase V2\OCurves

NOTE: Program Data and Application Data may be hidden folders.

The original csv file used to download the 'O Curve' onto the Uni/BP Sim needs to be altered by erasing lines 1 to 4.

The CSV file needs to be saved in the follow folder structure which is critical for loading 'O Curves' onto Med-eBase:

<O Curves>
<Monitor Type name> e.g. Datascope Passport 2. These folder names will be shown in the Monitor Type drop down list in Med-eBase
<Adult>
<Infant> These folders will contain the csv file for Adult or Infant curves
<CSV files> Each curve should be saved using the format of Systolic and Diastolic values as 3 digits e.g. 080_040.csv.

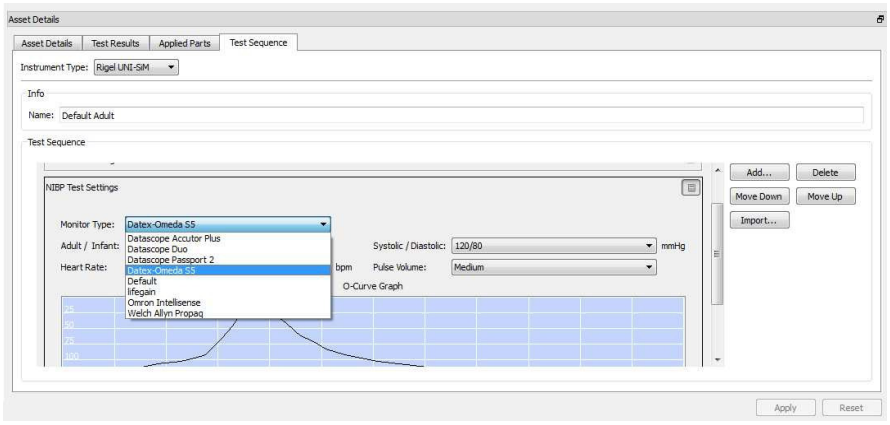
Re-open Med-eBase V2 and click on **Tools**, then **Global Test Sequences** and then **New**.

Then select **BP/Uni Sim** and enter the name of the new test sequence.

Select **Add**… then select '**NIBP Test Setting'**, click on the + and there will be a drop down list in

Monitor Type field where you can select your 'O Curve'.

Then in the **Adult/Infant** field select the type of patient and the chose the Systolic/Diastolic field to select the exact 'O Curve' you want to add to the test sequence.



Please refer to application note 0040 Creating and uploading 'O Curves' on Uni-Sim and Med-eBase for instructions on how to create O curve and further information on this feature.

Uploading 'R Curves' into Med-eBase

Manufacturers of SP02 monitors all use different algorithms to determine the R curves. By creating a custom 'R Curve' for a particular monitor or manufacturer types the UNI-SIM or SP-Sim can be made to match the SP02 Monitor more accurately.

The purpose of this document is to provide information on how to create 'R Curves' for an SP02 monitor and add them to part of a test sequence within Med-eBase.

NOTE: These 'R Curves' are for use with the optical finger adapter box only

Please refer to application note 0061 Creating and uploading 'R Curves' on Uni-Sim and Med-eBase for steps on how to create R Curves and further information on this feature.

We strongly advise that the 'R Curves' are inserted into Med-eBase V2.4.1 and above R Curves data folder to enable users to create test sequences using the software which can then be uploaded to the UNI/SP-Sim.

The 'R Curve' data folder can be found in one of the following locations which Med-eBase has been installed on.

For Windows XP:

C:\Documents and Settings\All Users\Application Data\Rigel\Med-eBase V2\RCurves

For Windows 7:

C:\ProgramData\Rigel\Med-eBase V2\RCurves

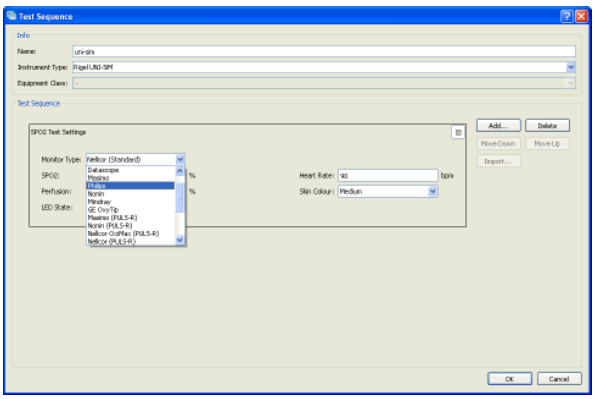
NOTE: Program Data and Application Data may be hidden folders.

Creating Test Template using R Curves

Open Med-eBase and select Tools > Global Test Sequences > New.

Then select SP/Uni Sim and enter the name of the new test sequence.

Add… then select 'SP02 Test Setting', click on the + and there will be a drop down list in Monitor Type field where you can select your 'R Curve'.



Any errors which have been detected in an R curve script file will be displayed in a dialogue box and the Curve will not be included in the drop down list. This was included so any errors can be caught with custom R curves which are user created.

Editing existing Test sequences

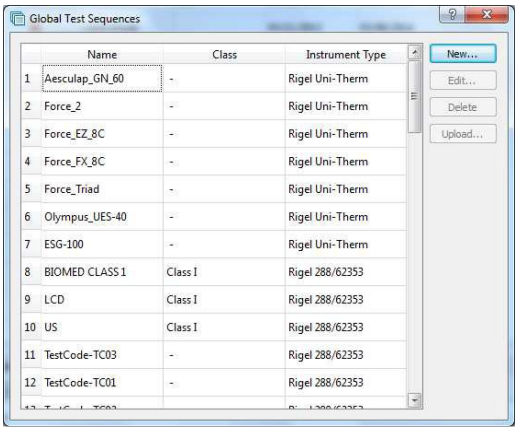
Existing test sequences can be downloaded from the UNI/SP-Sim into Med-eBase and will include a custom or existing R Curve data. If the data is a custom R curve which Med-eBase does not have in its R curve data folder, the R curve name from the test sequence will be included in the drop down list previously shown until another curve is selected.

Therefore it is strongly advises that all R Curves are not only stored within the R Curve data folder for Med-eBase but also on the UNI-SP-Sim itself to allow test sequences to be easily created and transferred between the Rigel unit and the software.

7.7. Test Templates for the Rigel Uni-Therm

To create a test sequence for the Uni-Therm in Med-eBase select the Global Test Sequence icon  or select Tools and then Global Test Sequence

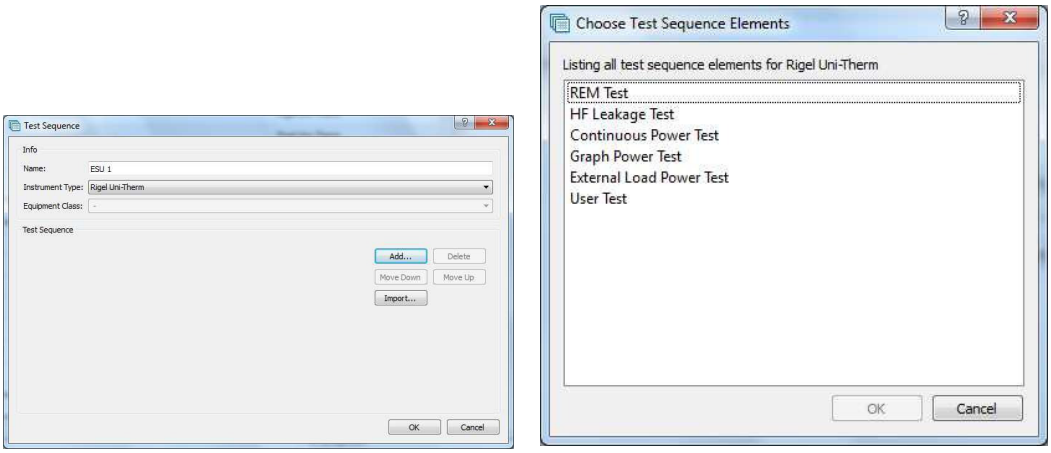
Select New



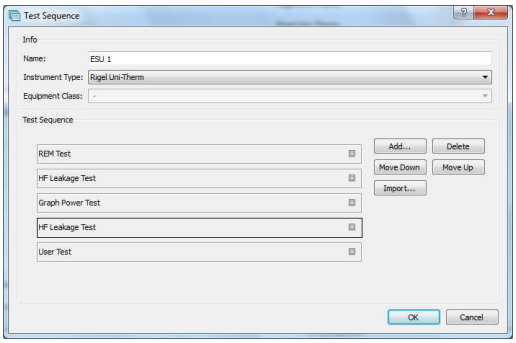
Enter the sequence name and also the instrument type.

NOTE: Test sequences are for one instrument type only and therefore Med-eBase will not allow the user to mix tests from different Rigel devices (e.g. electrical safety and Electrosurgical).

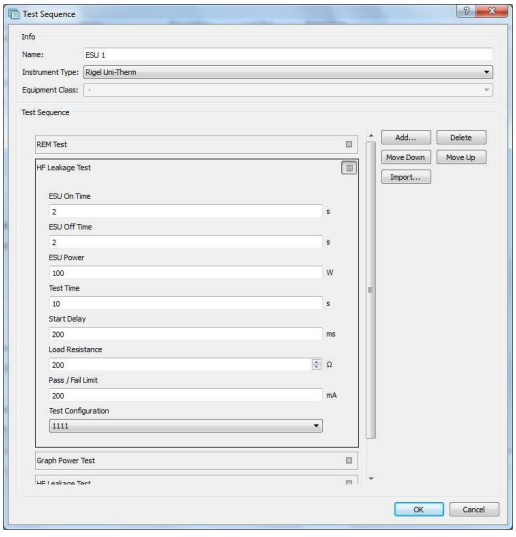
Select **Add** to insert a test or import to import an already created global test sequence into the new global test sequence. For the Uni-Therm test option are shown in the below image.



The user can select multiple tests by holding ctrl when selecting and the order of selection is remembered in the sequence when OK is selected.



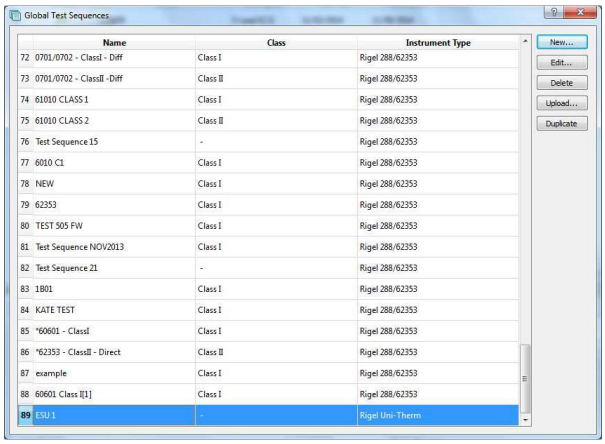
Select the Expand on each individual test to change the test setting and during of test in the start all tests field.



After each group of simulations the start all tests must be inserted so that each simulation or change of settings has a set time for the Uni-Sim to recognise.

Once the test sequence is complete select OK.

To upload the test sequence into the Uni-Sim highlight sequence and select upload



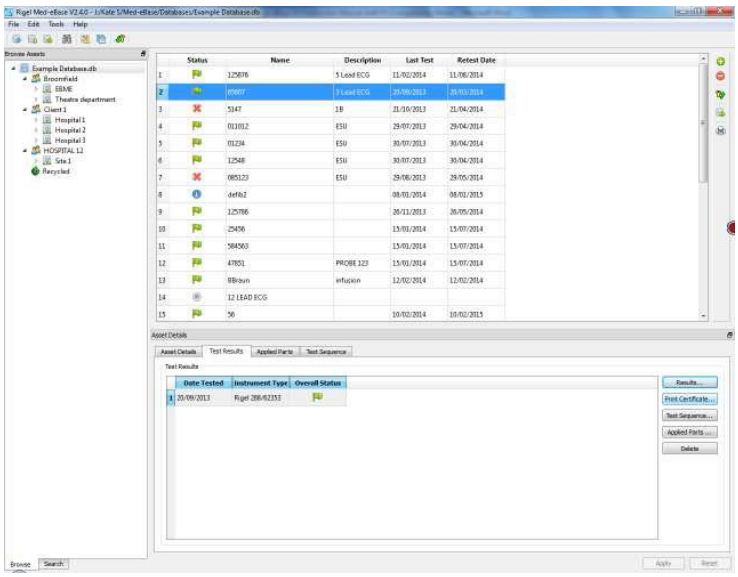
7.8. Test Templates for the Rigel Multi-Flo

Please refer to Chapter 10 on remote control Multi-Flo for information regarding test templates for the Rigel Multi-Flo.

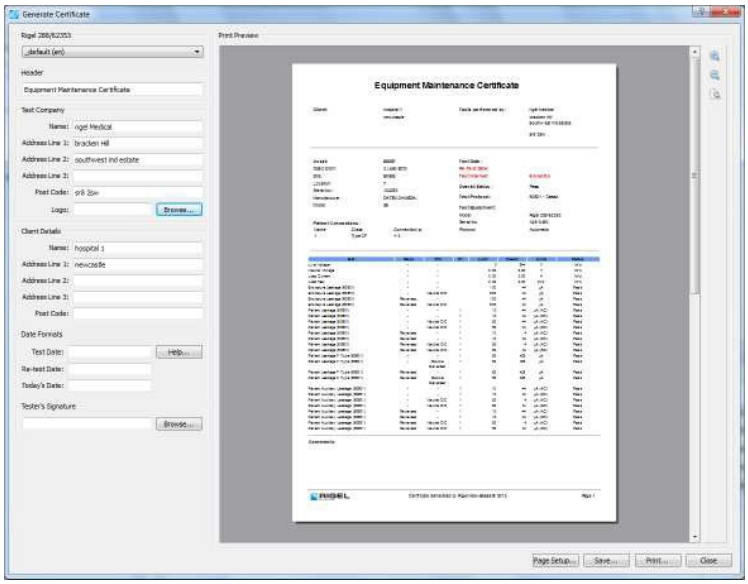
8. Test Certificates

Med-eBase contains an automatic certificate generator which will produce either a paper certificate (print), or an HTML or PDF version for easy electronic storage and transfer.

Highlight the relevant Asset and select the Test Results tab in the Asset Details view. Select the **Print Certificate** button from the side menu to create the test certificate for the selected Test Result.



From here you can edit the Test Company and Client details before selecting either to **Print** or **Save**.



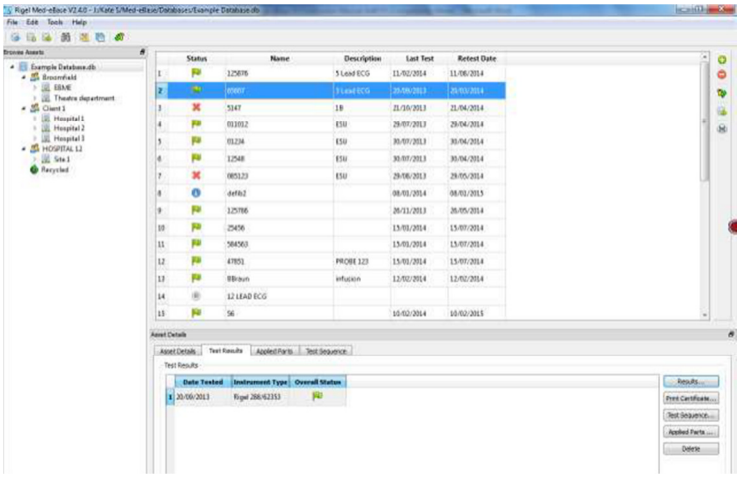
8.1. Med-eBase Multiple Print function

The print function can allow for an individual asset result or multiple result certificates to be printed. Results certificates must meet certain criteria to be able to print multiple certificates:

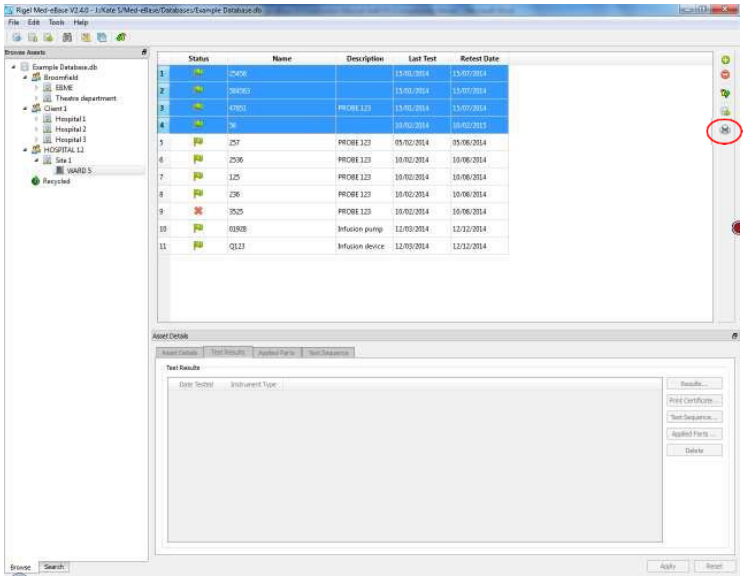
- The same Instrument Type (e.g. 288 (+))
- Assigned to the same client, in the asset browser,

Select the first asset from the main asset browse screen

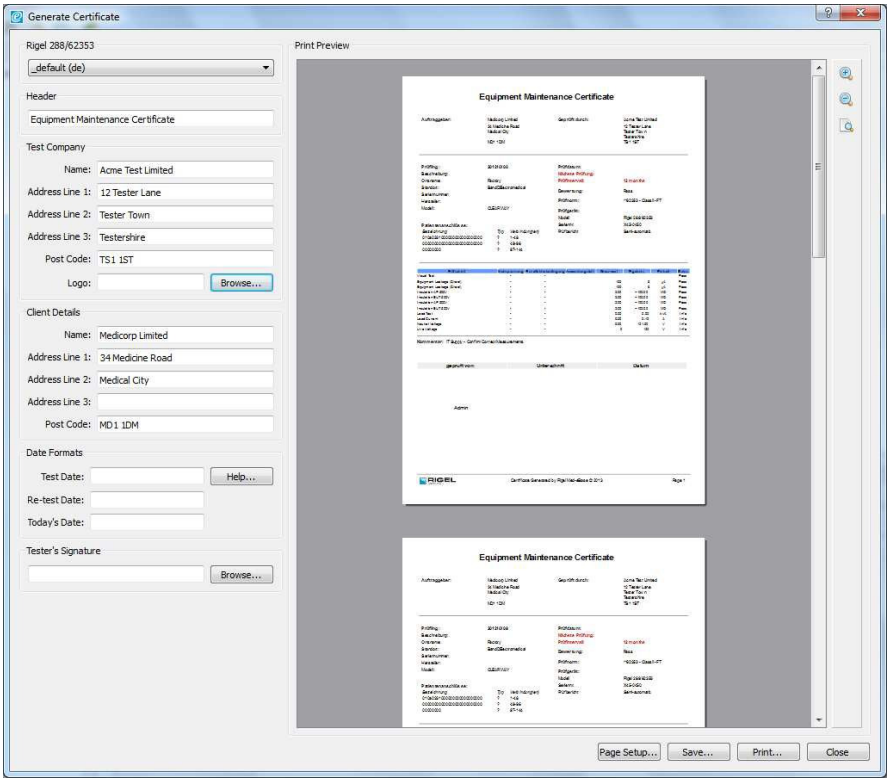
-



Press and hold ctrl to select additional assets. All selected assets should be highlighted.



Then select the Print icon on the right hand side and select the Device type - the generate certificate menu opens to allow you to scroll through the certificates, set the template and add additional details etc. before printing or saving the certificates as PDF.



Please refer to application note 0051 Med-eBase and multiple print functions for further information of this process.

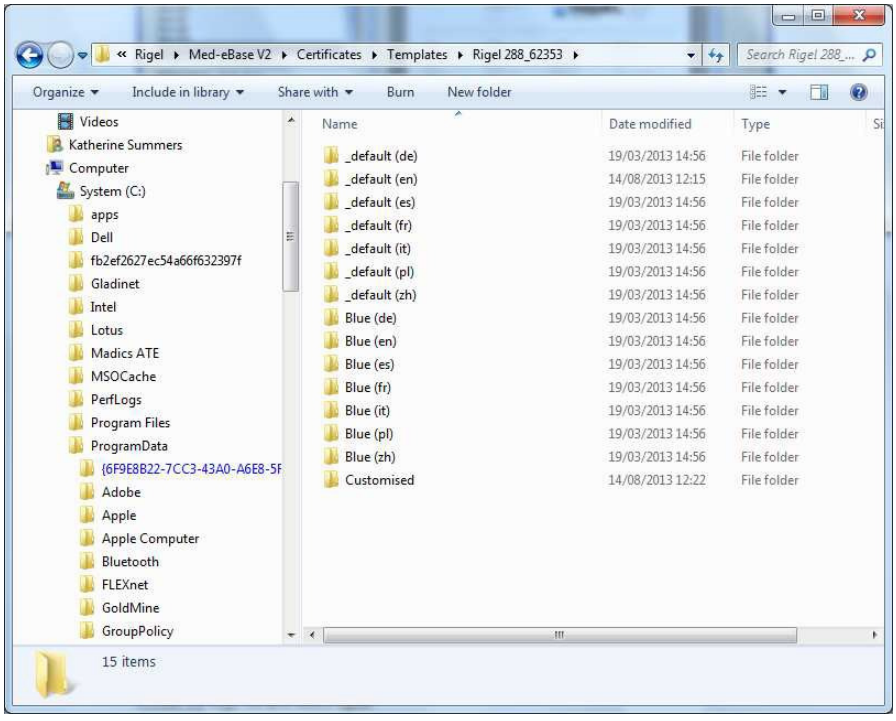
8.2. Changing the Certificate Template

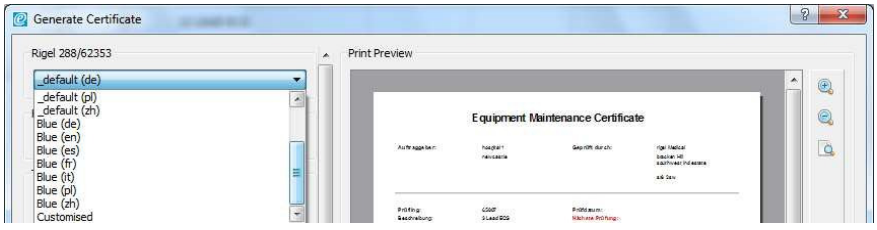
To change the certificate template, open the drop down **Template** menu.

The default choices are either the plain certificate or a blue themes certificate. These are both available in a range of languages.

With a basic knowledge of HTML it is possible to further customise these test certificates. The certificate templates may be found in the Windows application data directory for all users (for example C:\ProgramData\Rigel\Med-eBase V2\Certificates).

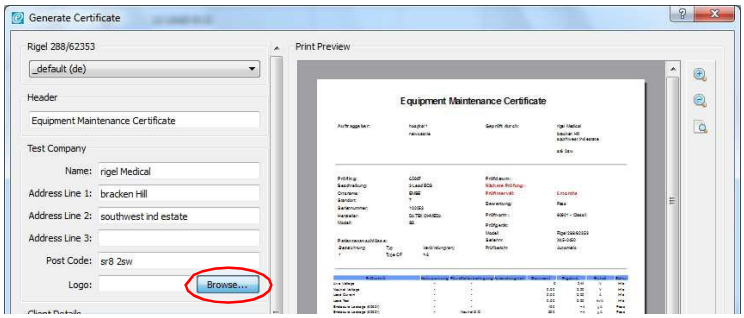
The saved file will then appear as a usable option in the **Template** drop down menu.



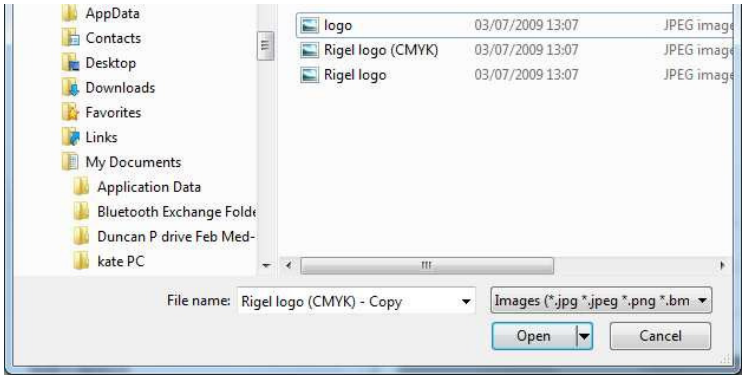


8.3. Inserting a company logo

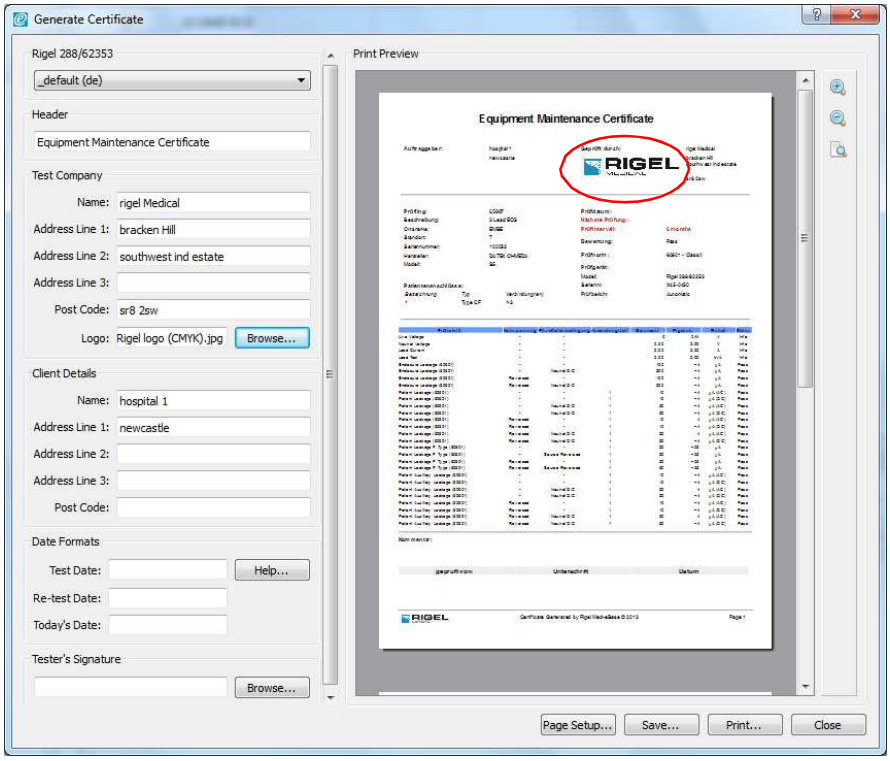
To insert your company/personal logo, select **Browse**. This will open a search window.



Locate the logo file and select **Open**.

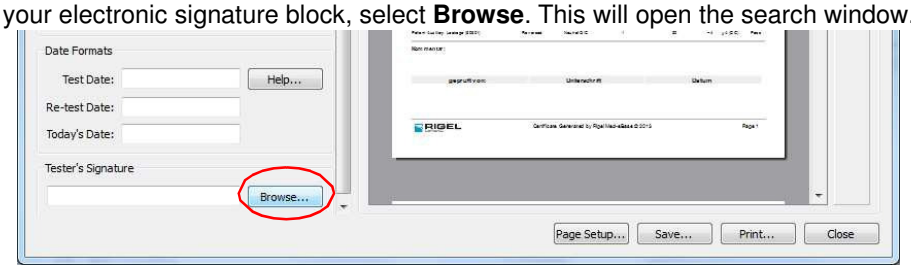


This will place your custom logo at the top of the test certificate.

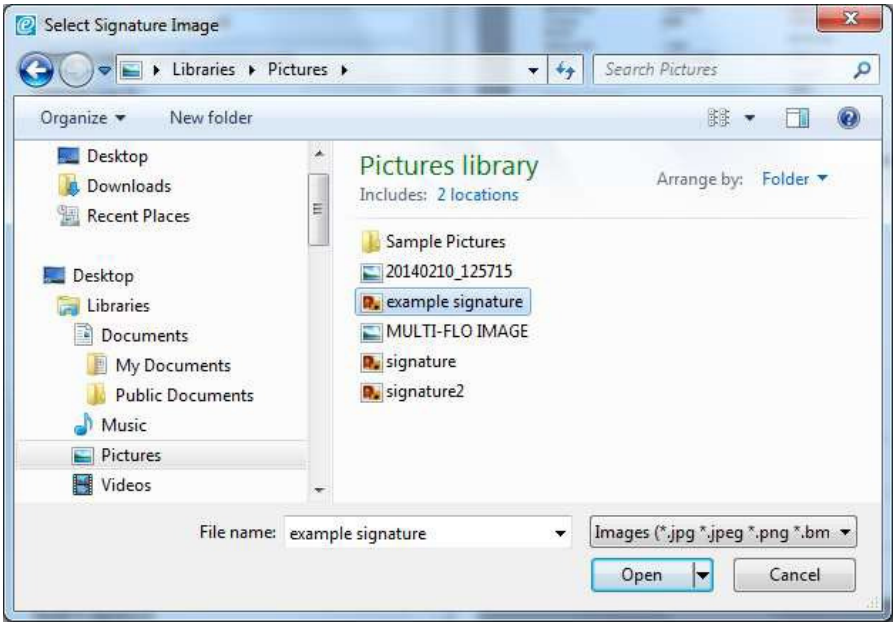


8.4. Inserting an electronic signature

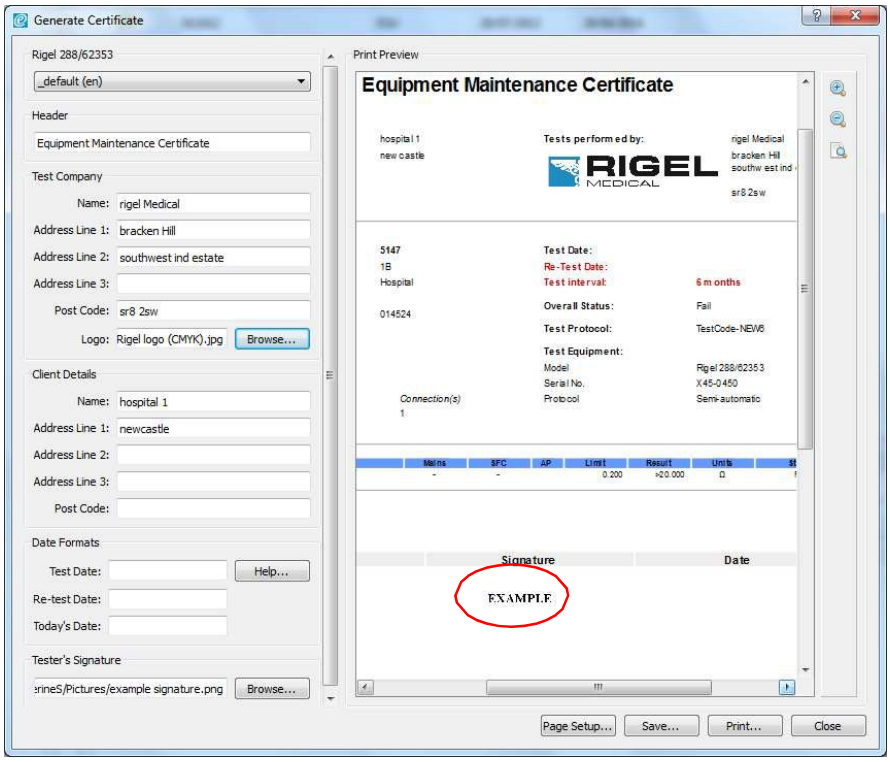
To insert your electronic signature block, select **Browse**. This will open the search window.



Identify the file containing your electronic signature and select **Open** to insert this into the test certificate.



The signature will now appear in the signature area of the test certificate.



8.5. Customising Certificate Templates

All certificates are located in:

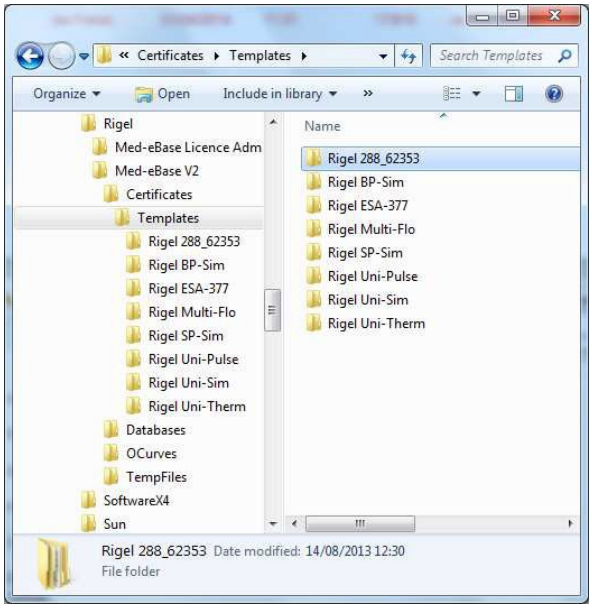
C:\ProgramData\Rigel\Med-eBase V2\Certificates\Templates.

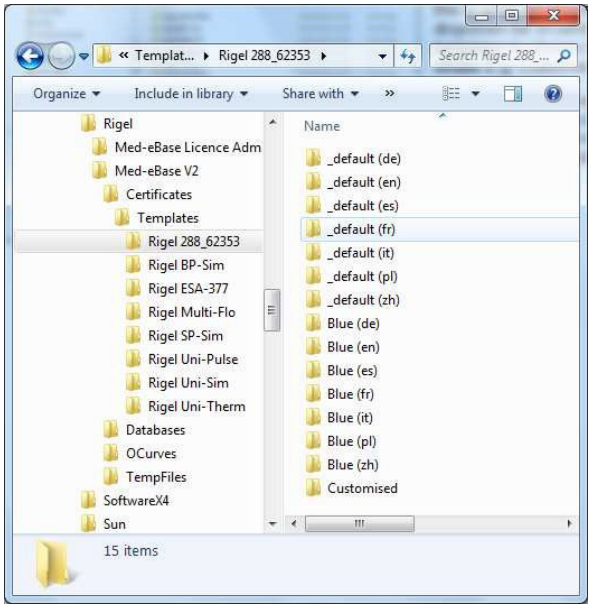
NOTE: Program Data may be a hidden folder and therefore you will need to go to 'Organize' and then to 'Folder and Search Options'. Select the 'View' tab and 'show hidden files and folders'. Click 'Apply' and then 'OK'. The program data folder should now be available to view.

Within the certificates Template folder all available Tester Type Folders can be selected and within each is the different certificate types and languages e.g. Rigel 288_62353 (+) inside this is all the default and blue certificates for the electrical safety testers.

The user can then copy a folder to customise or rename the certificate type most used so that it appears first in the list on Med-eBase. We advise that the new certificate needs to be renamed with a relevant name as this is what will appear on the dropdown list of certificate templates to choose from in Med-eBase E.g. Customised

NOTE: If the customised template folder is not renamed it could be overwritten when new versions of Med-eBase Software are installed in the future.





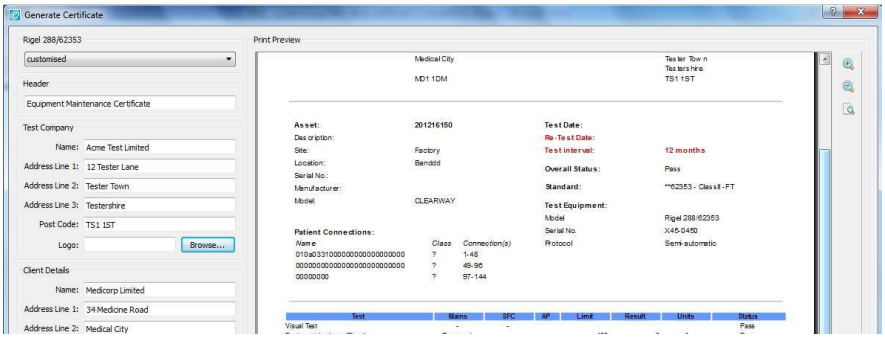
Select the copied folder and then open the file in either notepad or notepad++ to enable editing.

NOTE: Notepad ++ provides an easier layout to follow and is an open source program which can be download from the internet.

The ONLY words that can be customised are shown with the character string **"label"> :< /p>.** Select Ctrl F to find the title which you want to customise. E.g. Test Protocol and enter the new phase is in between the arrows. On Notepad ++ changeable words are indicated in black.

NOTICE: On notepad ++ do not change any words in GREEN as this is information that comes from the Rigel tester. If this is changed the information will not be transferred from the results onto the certificate

Once completed make sure the certificate has been saved. Then open Med-eBase, select the test asset you want to print and then select the print certificate icon. This takes you to the certificate screen where the dropdown menu for templates should include your customised template.



Please refer to application note 0044 Customising Med-eBase certificate for further details of this process.

8.6. Certificate Template Preference

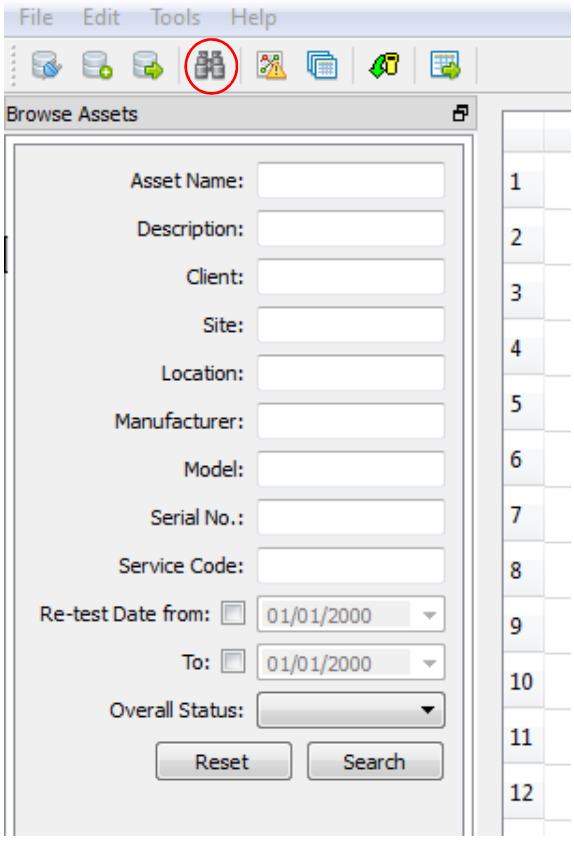
The latest certificate is remembered by Med-eBase the next time the user goes into the print certificate screen. However if the user does not have enough user admin rights this feature will not be able to write to the registry.

If the user does not have admin rights they can go into the certificates template folder (see 6.4) and remove the unnecessary languages or change the certificate name so that in alphabetical order it becomes first on the list in Med-eBase. There is also the option to customise certificates.

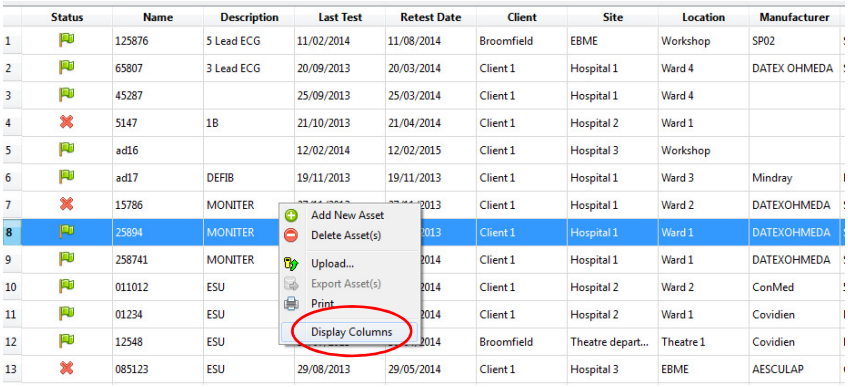
9. Data Export

9.1. Production of an Asset Report

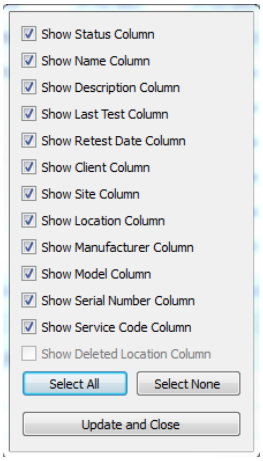
The results stored in a database can be exported as a CSV file from Med-eBase. However, before creating the CSV file the data can be filtered, to do this, use the binoculars in the tools menu to display the search window. The **Browse Assets** window can be used to select a section of the database to be exported, for example assets by date tested or test date due:



With your data filtered, if required, right mouse click on an asset and from the dropdown select **Display Columns**.



Selecting **Display Columns** produces a filter window which can be used to select the columns (data) that is required in the csv output. Select or deselect the options using the tick box and use the "Update and Close" button to save / close this window.



Selecting the **Export Table to CSV** icon (blue square with a green arrow) allows the **Asset List** to be saved as a CSV file.

The format of the filename to be exported is "AssetList_<DATE>.csv", however, this can be changed if necessary. Browse for an appropriate location to save the file.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Status	Name	Descriptic	Last Test	Retest Dat	Client	Site	Location	Manufact	Model	Serial Nur	Service Code	
2	Pass	125876	5 Lead ECG	########	########	Broomfiel	EBME	Workshop	SP02	S5	741256		
3	Pass	65807	3 Lead ECG	########	########	Client 1	Hospital 1	Ward 4	DATEX OH	S5	102053		
4	Pass	45287		########	########	Client 1	Hospital 1	Ward 4					
5	Fail	5147	1B	########	########	Client 1	Hospital 2	Ward 1			14524		
6	Pass	ad16		########	########	Client 1	Hospital 3	Workshop					
7	Pass	ad17	DEFIB	########	########	Client 1	Hospital 1	Ward 3	Mindray	Benehear	17		
8	Fail	15786	MONITER	########	########	Client 1	Hospital 1	Ward 2	DATEXOH	S5	25896		
9	Pass	25894	MONITER	########	########	Client 1	Hospital 1	Ward 1	DATEXOH	S5	25896		
10	Pass	258741	MONITER	########	########	Client 1	Hospital 1	Ward 1	DATEXOH	S5	25896		
11	Pass	11012	ESU	########	########	Client 1	Hospital 2	Ward 2	ConMed	5000	10014		
12	Pass	1234	ESU	########	########	Client 1	Hospital 2	Ward 1	Covidien	Force FX	102541		
13	Pass	12548	ESU	########	########	Broomfiel	Theatre d	Theatre 1	Covidien	Force 2	123684		

Finally, the CSV file can be opened in a software programme, such as Microsoft Excel, to manipulate your data.

> Note; if using large numbers, for example a serial number without letters, spaces or other characters, if this CSV file is opened in MS Excel this can change the way the data is displayed (for example, 1234567890123 can be displayed as 1.234567E+12).
> To revert this back to the original format, in MS Excel, right mouse click on the cell (or data cells) and using "Format Cells…" change the format to "Number" and "Decimal places: 0".

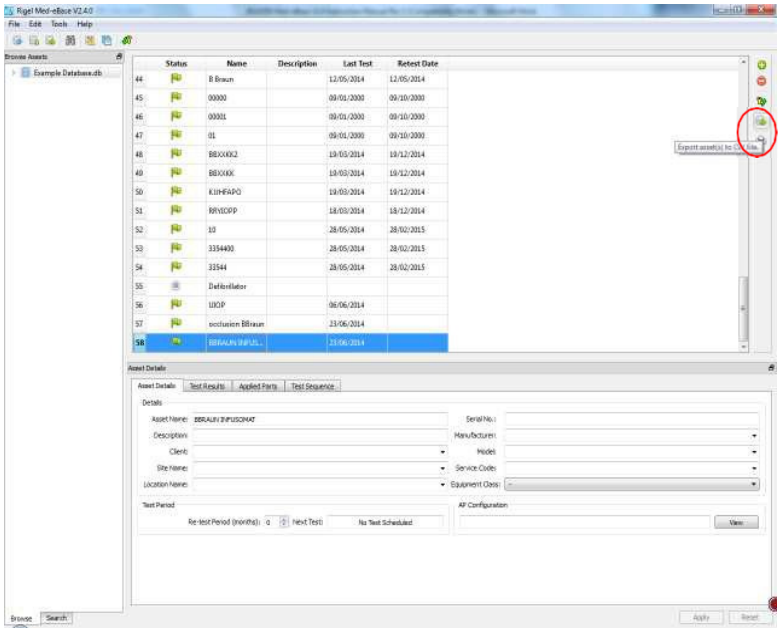
9.2. Exporting Multi-Flo Results

The results downloaded from the Rigel Multi-Flo can be exported as a CSV file from Med-eBase. This will enable the user to manipulate and create graphs and trumpet curves from the raw infusion data.

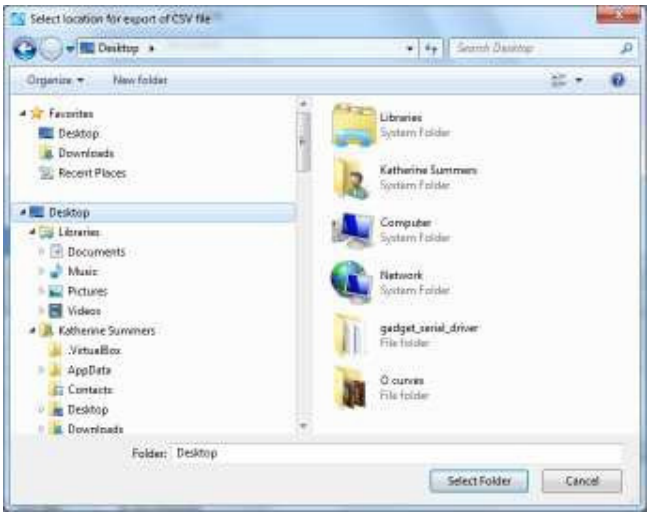
The format of the filename which is exported is "<ASSET ID>_<DATE>_<TIME>.csv".

It will export the last test result for the asset selected; this is because the export is located on the asset manager and not the result manager. The tests will be displayed horizontally with the data being displayed vertically.

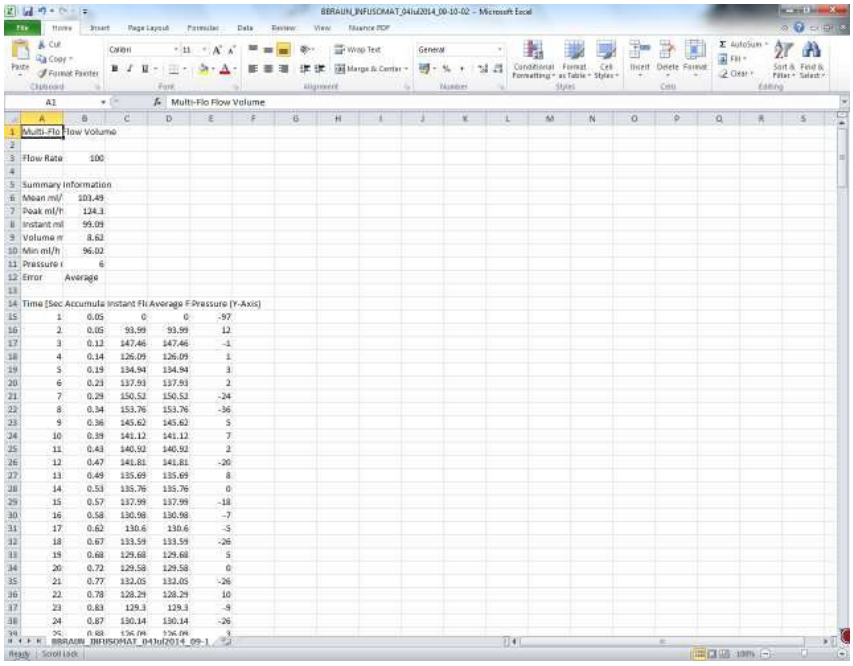
When results have been saved in Med-eBase the asset can be selected and then the user can select to export the raw data file in CSV format for specific analysis.



Select a folder location to store the results.



The CSV file can then be opened in Excel from the selected location.



Note; if using large numbers, for example a serial number without letters, spaces or other characters, if this CSV file is opened in MS Excel this can change the way the data is displayed (for example, 1234567890123 can be displayed as 1.234567E+12).
To revert this back to the original format, in MS Excel, right mouse click on the cell (or data cells) and using “Format Cells…” change the format to “Number” and “Decimal places: 0”.

10. Remote Control Rigel Multi-Flo

10.1. Gadget Serial

To use the remote control mode the user will need to install the Gadget Serial V2.4 Driver. The driver should have accompanied your upgrade package and therefore the user will need to save the gadget serial folder either on their desktop or in an easy to locate destination of their choosing.

Equipment required:

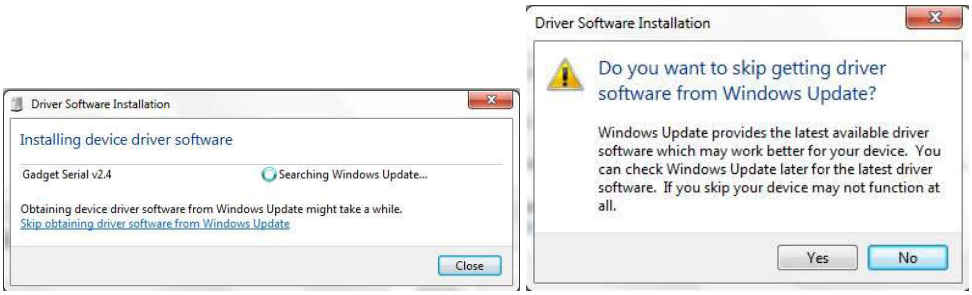
- Multi-Flo
- PC running Med-eBase V2.4.0 (or above)
- Gadget serial driver install files
- USB Serial cable

To install the gadget driver the Multi-Flo needs to be turned on and connected to the PC using the USB serial cable.

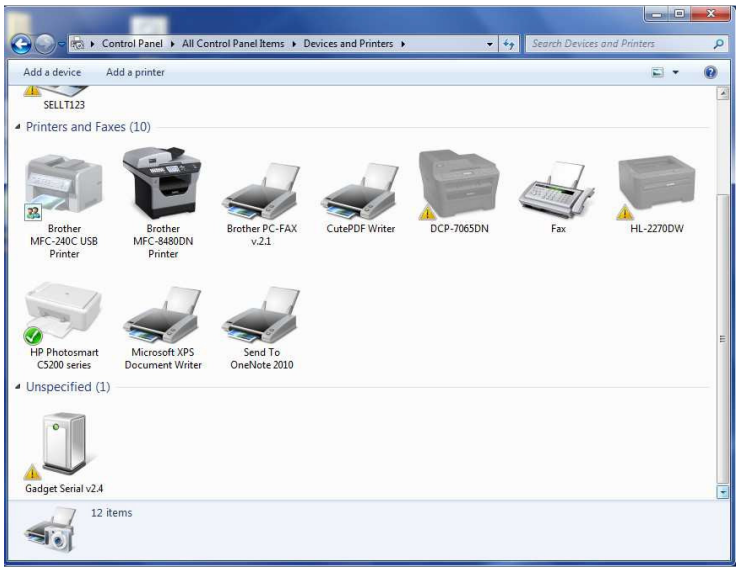
On the Multi-Flo menu scroll down and select Remote Control. The Multi-Flo will then try to connect with the PC.

The PC will attempt to download the install drivers for the gadget serial. As the driver are located on the PC and cannot be found on the internet this step is not required. Click on the icon when it appears as below.

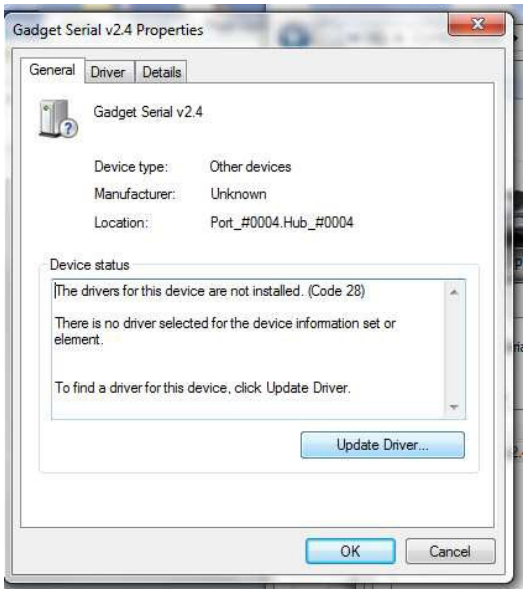
Select “Skip obtaining driver software” which is blue and underlined to stop widows looking for the driver as the Rigel device won’t be able to connect to the PC while the computer is performing this task. Select Yes on the driver software installation screen to skip the driver update.

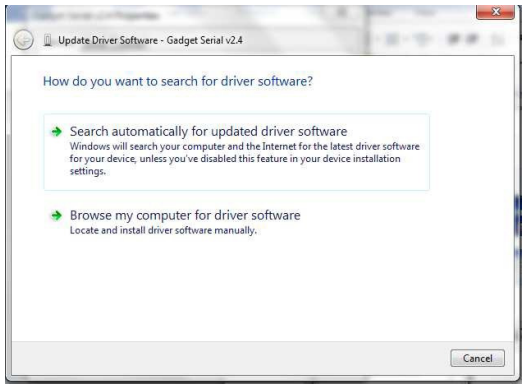


Once this is completed enter the Control Panel and go to ‘Devices and Printers’. The gadget serial will be an classed as an Unspecified Device. Right click on the gadget serial V2.4.0 and select Properties.

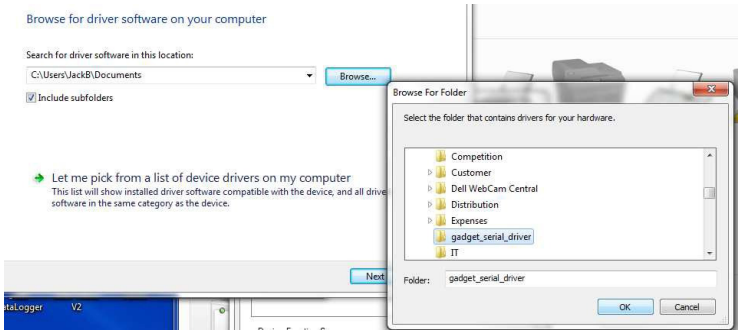


In the General Tab select Update Drivers and then choose 'Browse my computer for driver software'.

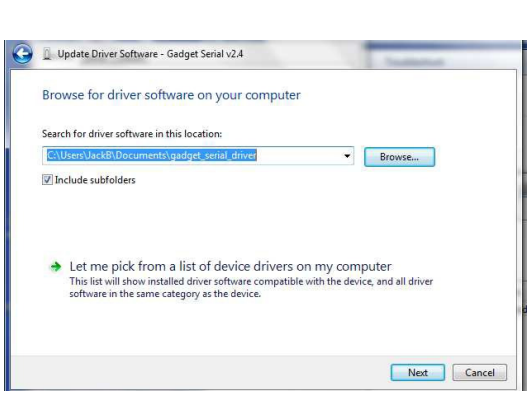


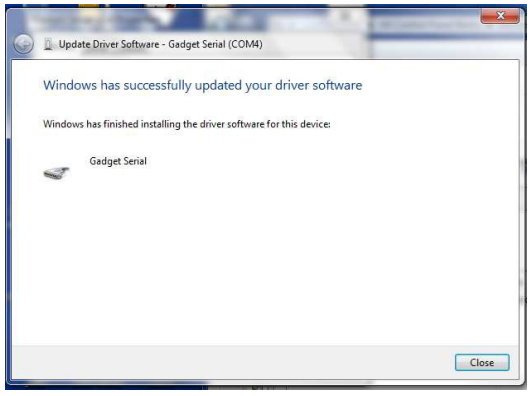


Select the folder where the gadget serial files are located. Select Ok to choose the folder and then Next.



Once the driver is installed select Next and then close the Control Panel.



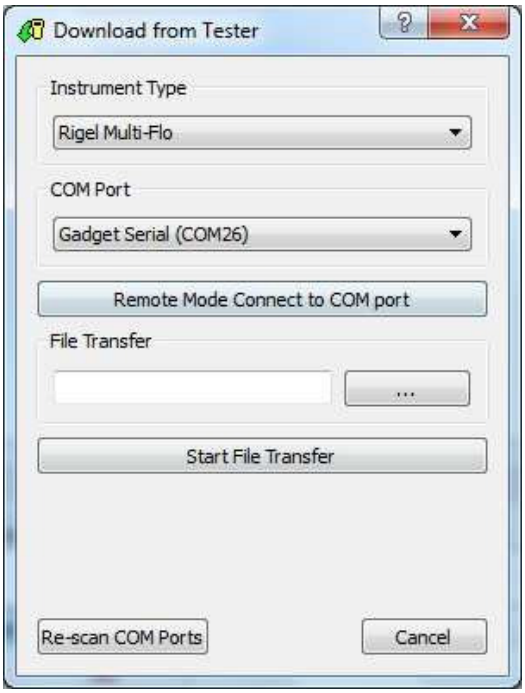


To confirm the gadget serial driver is installed correctly:

Open Med-eBase V2.4.0 (or above) making sure the Multi-Flo is connected and in Remote Control Mode.

On Med-eBase select 'Download from Tester' by either selecting Tools > Download or the download icon.

Choose Multi-Flo as the instrument type and then select Gadget serial as the COM port.



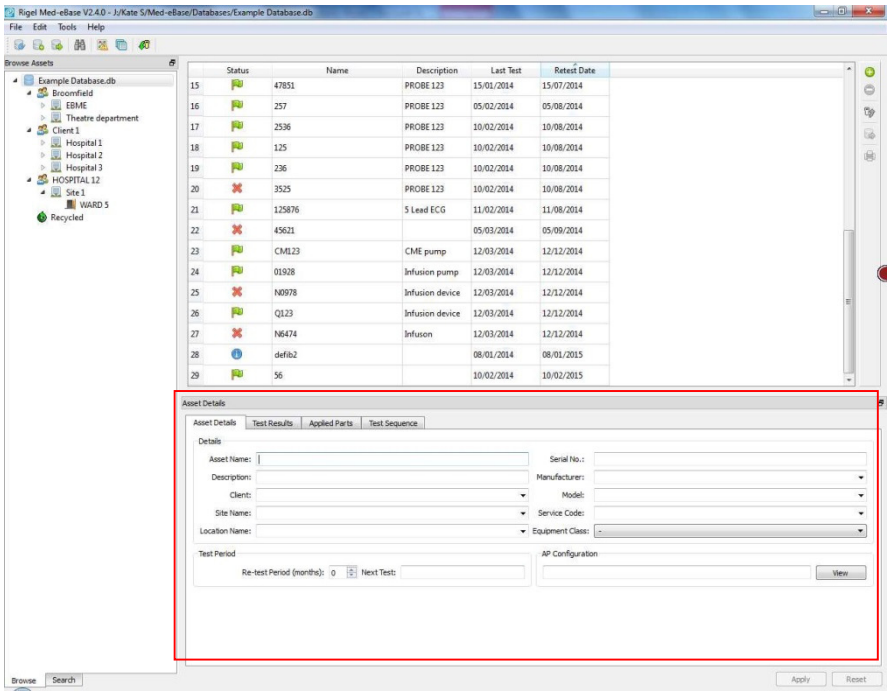
NOTE: If Med-eBase was open while installing the gadget serial driver the user may be required to close Med-eBase and reopen it or Re-scan COM Ports to locate the gadget serial.

10.2. Creating Test Sequences

10.2.1. Create an Asset ID

Before connecting to the Remote control dashboard the user will need to create an Asset ID for the infusion device if there is not one already created.

On the main Med-eBase screen select 'Add New Asset' by either the  icon on the right hand side or Edit > Add New Asset. The Asset details section will now be available to fill in.



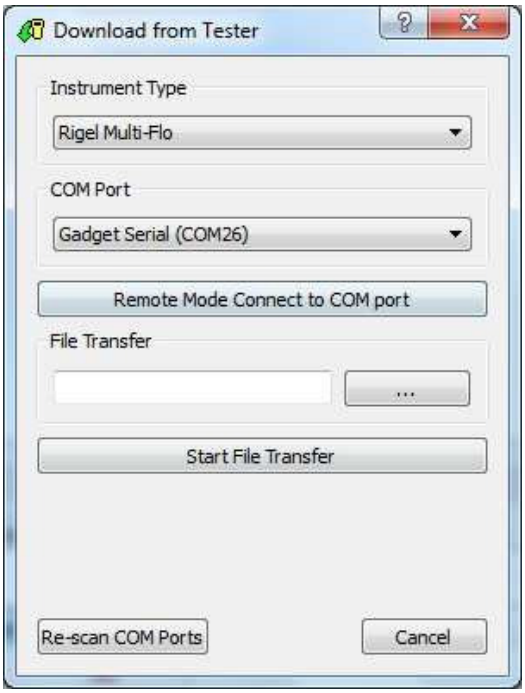
10.2.2. Connecting the Multi-Flo to Med-eBase V 2.4 (or above)

Turn on the Rigel Multi-Flo and select Remote Control from the main menu.

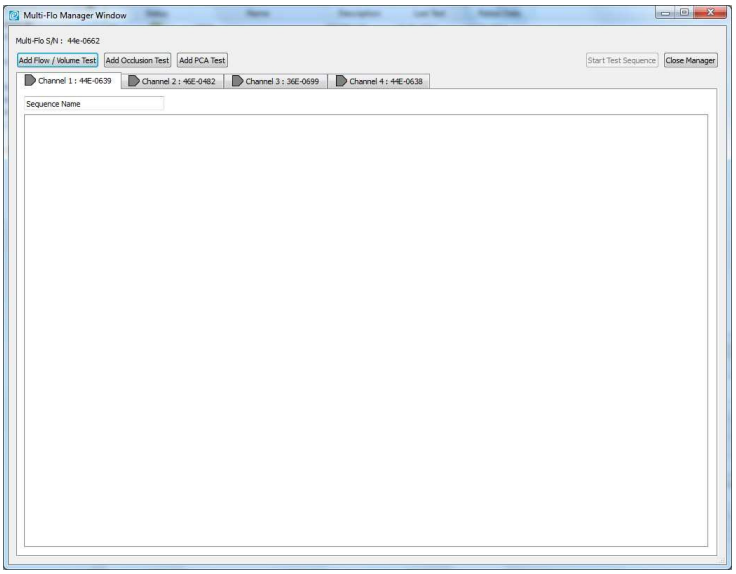
Connect the Multi-Flo to the PC using a USB serial cable.

To run Multi-Flo remote control open Med-eBase V2.4.0 (or above) and select 'Download from Tester' in Tools > download or the  . Chose the Multi-Flo from the dropdown instrument type list.

Then select the gadget serial as the COM port. If gadget serial port is not show you may need to re-scan COM ports. Then select ‘Remote Mode Connect to COM port’.



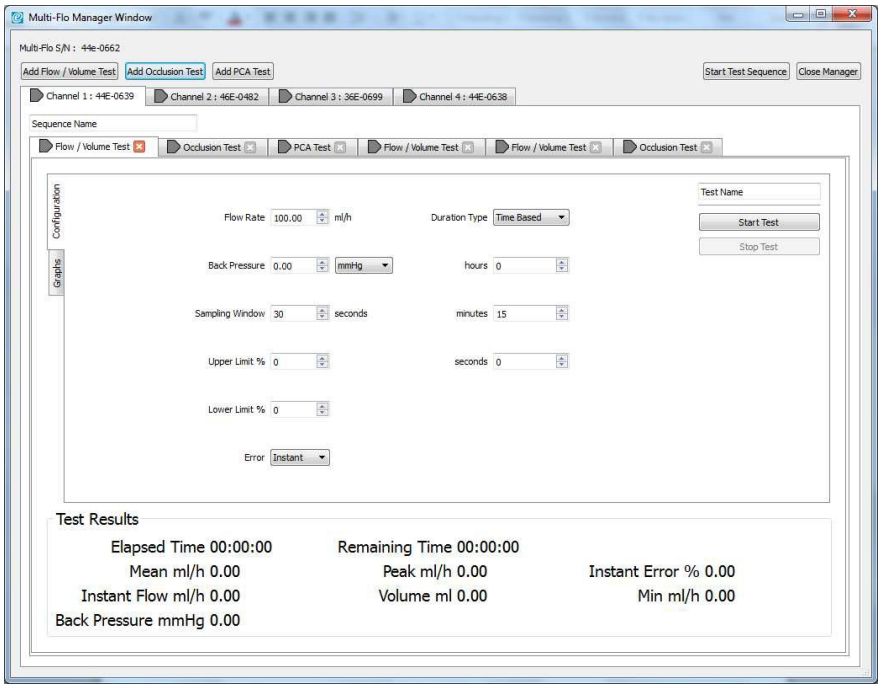
The Multi-Flo dashboard window will appear with details of the Multi-Flo and available channels.



10.2.3. Creating a Test sequences

From the remote control dashboard the user can create Flow/Volume, Occlusion and PCA Tests on any available channel by firstly selecting the channel and then adding the appropriate test.

Multiple tests can be inserted by clicking on Add test and the sequence order can be moved by dragging the test tabs to the desired location.



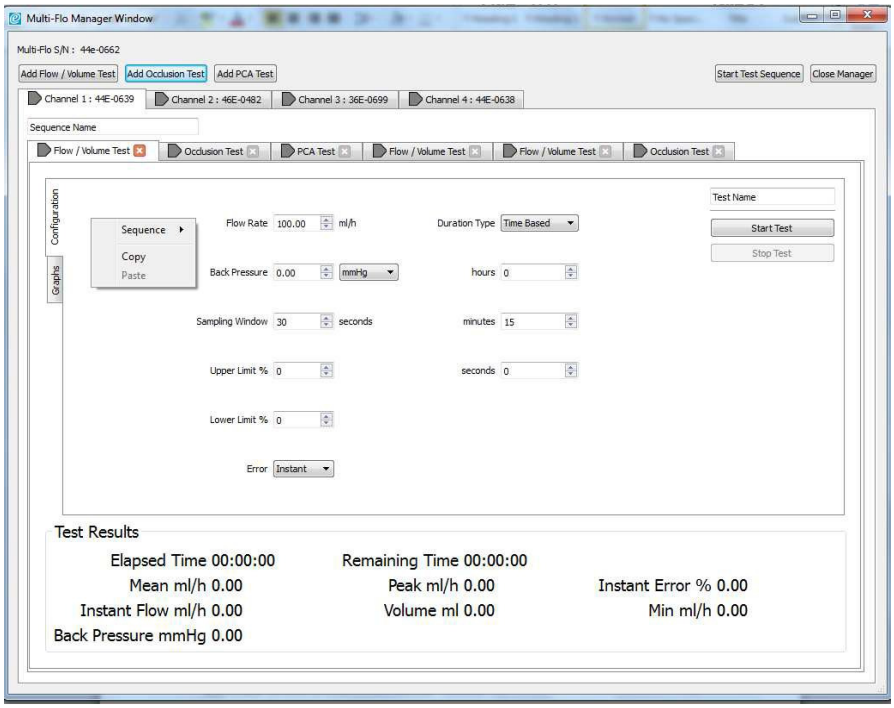
NOTE: User Tests cannot be added to a sequence in the Multi-Flo Dashboard. This can only be inserted in the Global Test Sequence menu.

The context menu allows the user to select multiple options for individual tests and sequences within the test set up:

- Test Name' is a single test configuration.
- 'Sequence Name' is a list of test configurations.
- 'Import' will load the test or sequence into the channel.
- 'Export' will save the test or sequence from the channel.

To activate the context menu the user needs to be on the configuration test tab. Right click anywhere on this screen to show the context menu.

This allows the user to edit, and copy Test sequences and tests between channels.



Individual Tests

Each individual test configuration has a "Test Name" which can be overwritten to indicate the test name.

Individual tests can be copied and paste into different channels or to repeat similar test set ups on the same channel. The user will need to add a test and then right click to open the context menu and select copy and then paste into the desired location.

Individual tests can be removed by clicking on the [X] on the configuration tab.

Test Sequences

Test Sequence can be given unique names by entering the name in the "Sequence Name" field.

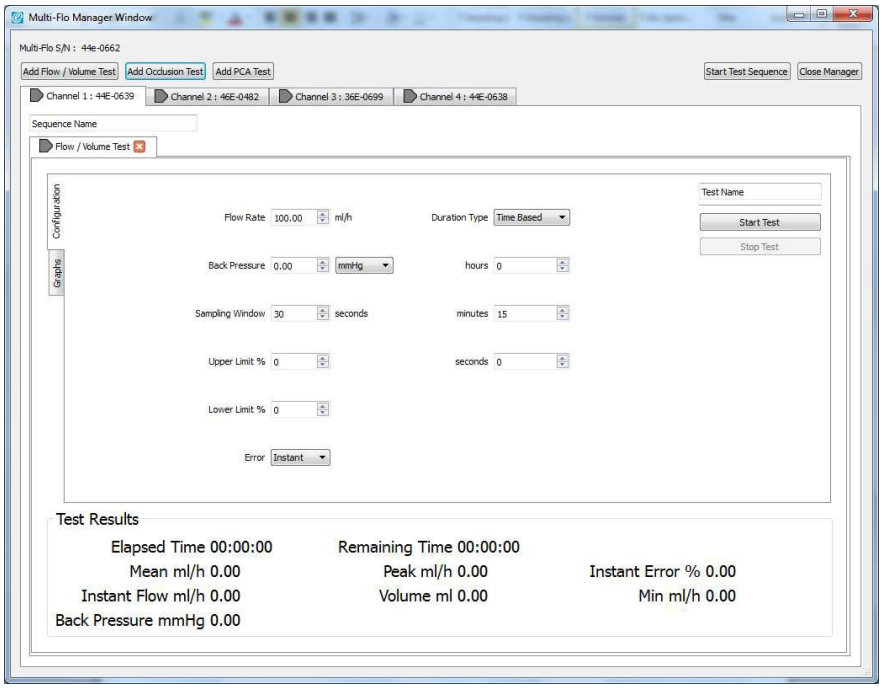
Test sequences can be exported into the main **Global Test Sequence** of Med-eBase. From here they can be used in the Multi-Flo dashboard, uploaded directly to a Multi-Flo unit or transferred to different PCs. The import function allows saved sequences from either the Multi-Flo dashboard or **Global Test Sequence** menu to be inserted into any channel.

NOTE: Only Multi-Flo test sequences can be imported into the remote control Multi-Flo dashboard

The user can also create test sequences from the main Med-eBase window as a **Global Test Sequence**. Please see Chapter 5 of for more details on creating sequence in this manner.

Flow/Volume Test

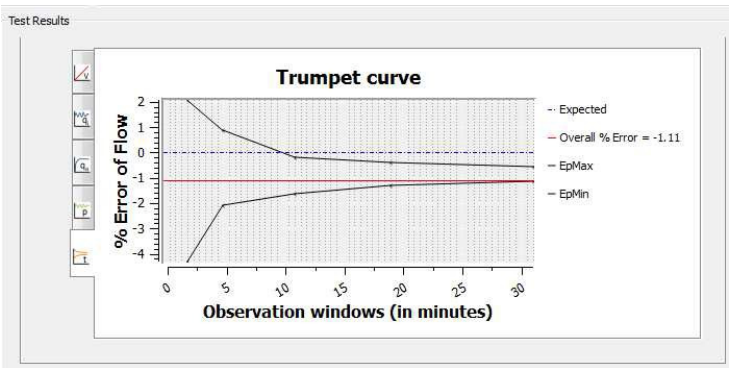
The Rigel Multi-Flo is capable of measuring the instantaneous flow at a resolution between 10µL/hr to 1500ml/hr. In addition, the flow rate can be viewed based over an average period which is user selectable, as well as detecting peak and minimal flow rates on real time curves Instantaneous flow measurement gives the benefit of quicker test times at low flow rates with maintained accuracy.



The test configuration tab allows the user to set the flow rate, back pressure, sampling windows and also upper and lower limits for the test which are specified by the manufacturer.
The test duration can be based on time, volume or manual stopped by selecting the appropriate option from the dropdown list.

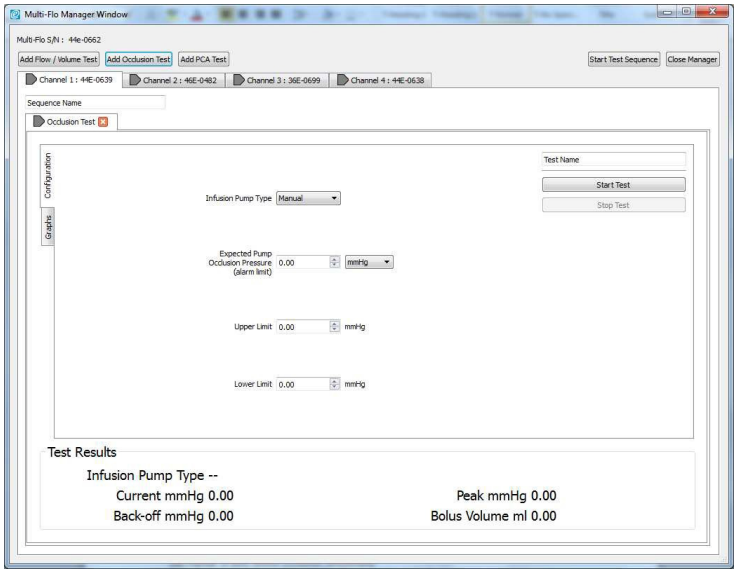
The test can be given a memorable name in the 'Sequence Test' field so that it can be import or exported to create sequences.

During testing instantaneous results are shown in the lower half of the screen and graphs can be viewed in the 'Graphs' tabs including accumulated volume, instant flow, average flow, pressure and trumpet curve.



Occlusion Test

The Multi-Flo Occlusion test simulates an obstruction in the infusion process and monitors the variation in pressure due to the blockage. Most infusion devices have the ability to detect this obstruction and provide an occlusion alarm. The occlusion test is able to test this alarm feature in infusion devices.



For the occlusion test the user must specify in the configuration tab whether the infusion pump has manual or auto rewind occlusion functionality.
Enter the excepted alarm value and also the acceptable limits for the device under test.

NOTE: There is a choice of units for pressure including mmHg, PSI, kPa and Bar.

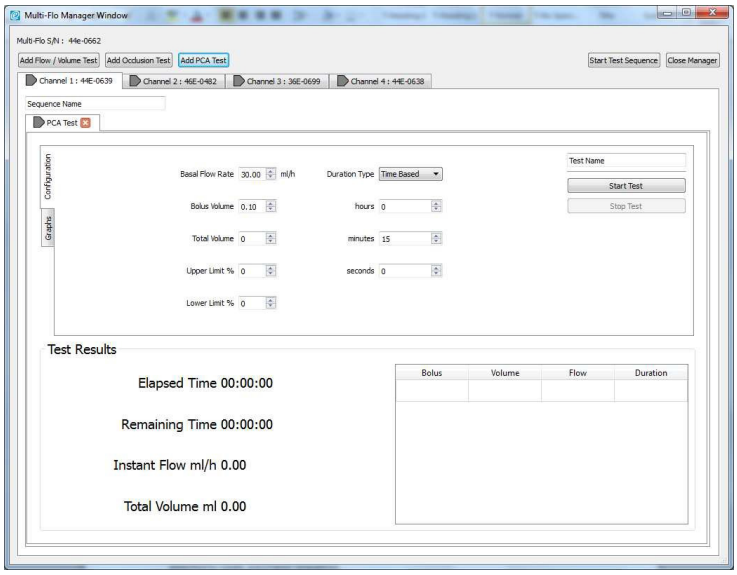
The test can be given a memorable name in the 'Sequence Test' field so that it can be import or exported to create automated sequences.

During the test instantaneous results are shown in the lower half of the screen and graphs can be viewed in the 'Graphs' tabs including accumulated volume, pressure and also tabulated values.
If the infusion pump is manual then the user must 'Stop' the test when the alarm sounds to record the occlusion pressure level.

For pumps which has auto rewind functionality when the alarm sounds the pump reverses the flow momentarily to relieve the occlusion and reduce the pressure. The test will stop and the results will display the maximum pressure at which the pump initiates the rewind function.

PCA Test

The PCA test determines the additional volume delivered on top of the basal flow rate set by the user. The additional volume or sometime referred to as BOLUS, is an indication of the correct safety settings of an infusion device. The user needs to enter the basal flow as the basal flow rate setting is used to determine the additional volume being delivered.



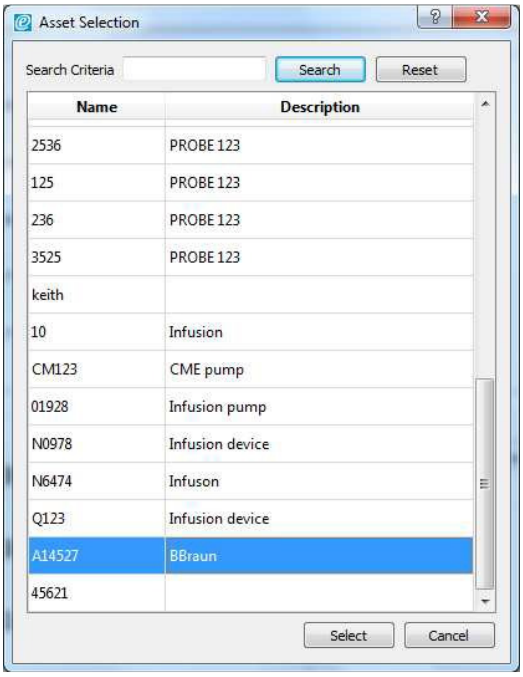
The test configuration tab allows the user to set the basal flow rate, bolus volume and total expected volume delivered during the test. The acceptable limits for the test will also need to be selected based on manufacturer's specification.

The test duration can be based on time, volume or manual stopped by selecting the appropriate option from the dropdown list.

The test can be given a memorable name in the 'Sequence Test' field so that it can be import or exported to create automated sequences.

During the test instantaneous results are shown in the lower half of the screen and graphs can be viewed in the 'Graphs' tabs including accumulated volume and instant flow. Tabulated results will be shown on the lower half of the screen following each bolus delivery and includes the bolus volume, the flow rate and the duration of the bolus and mean values for all bolus measurements.

The user can carry out tests individual or as a whole test sequence. When conducting a single test select 'Start Test' and then select the Asset ID associated with the device being tested. The search criteria can be used to find the correct Asset ID scroll to select the asset ID. If an asset have done been created for this device then the user will need to add an asset in the main Med- eBase menu. See Chapter 9.2.1 for more details of creating assets.



Once a test has started the Multi-Flo device will go to the appropriate test screen: Flow/Volume, Occlusion or PCA and the Elapsed Time field will indicate 'Ready' until the fluid enters the unit.

NOTE: If an asset ID has not been created the user needs to go back into the Main Med-eBase window and create an Asset ID for this test.

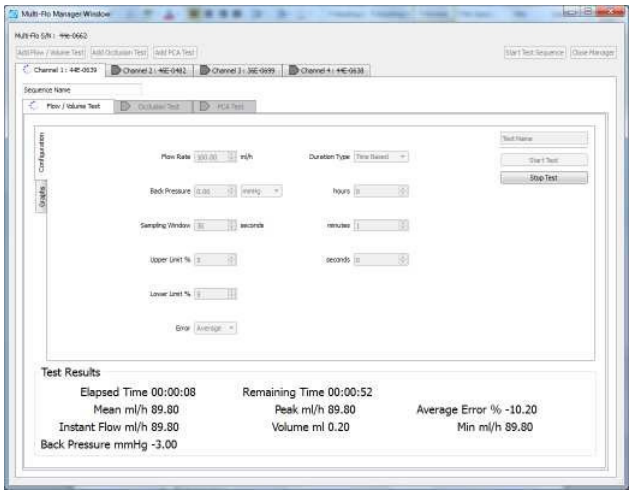
10.2.4. Running a Test Sequence

Once a test sequence has been created the user will select **Start Test Sequence.** When the sequence has started the screen with go to the first test in the sequence regardless of what screen the dashboard was in prior to starting the sequence.

***NOTE:* The infusion device will need to be set up with the flow rate, bolus delivery details etc. matching the appropriate test set up created on Med-eBase.**

NOTE: The infusion device can be activated before or after the test is set up as the Multi-Flo will only start recording when fluid is delivered through to the device.

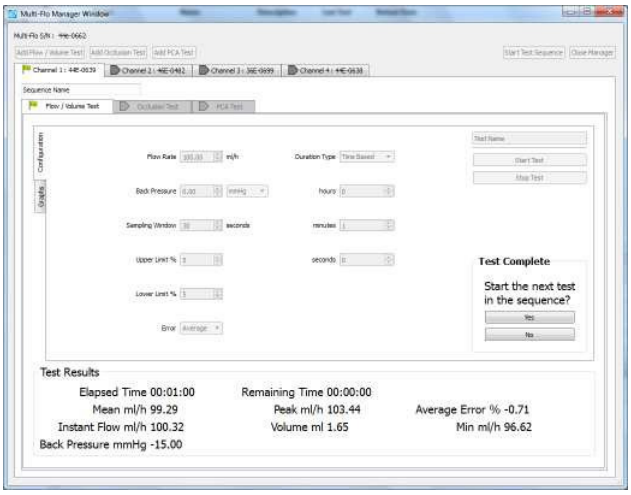
The active test is indicated with a blue circle and all other tests are greyed out and cannot be altered during a test sequence. Other channels are available to set-up edit and start testing while the Multi-Flo is testing on another channel.



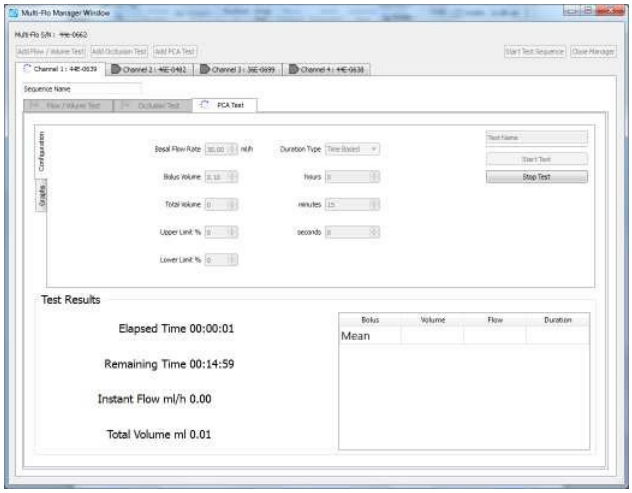
The user can look at the real time graphs during each test. More detail is provided in Chapter 8.2.6.

Once a test has completed the Multi-Flo Dashboard will show a confirmation that the test has completed and gives the user the options to:

- Continue to the next test in the sequence
- Exit sequence

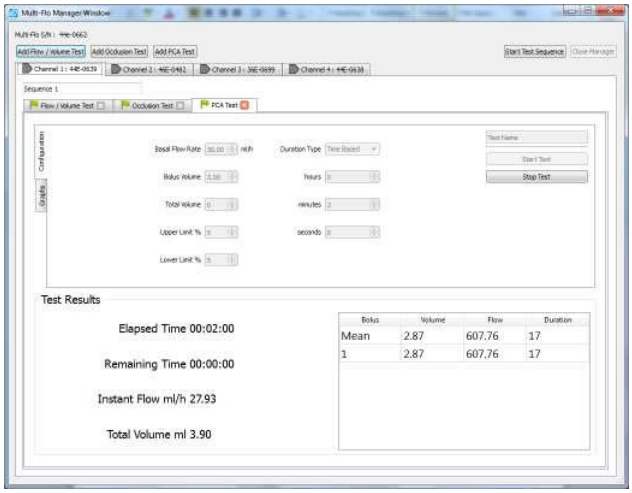


If the user chooses to continue to the next test the Manger will move to the next test tab and again all other test tabs are greyed out and unavailable to edit.



If the user selects No, to end the test sequence that the test sequence will stop and all tests will again become available to change.

After the test sequence all tests will become available and each test tab will indicate whether the individual tests passed or failed.



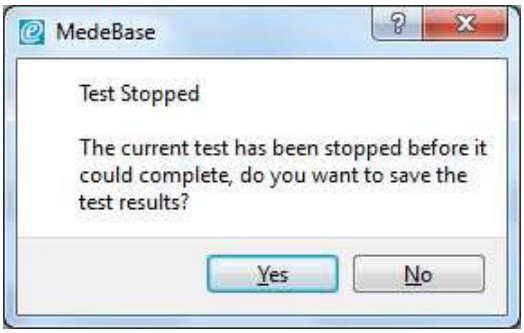
10.3. During Testing

The user can move between the configuration and graph tabs and toggle between the various graphs and tabulated results depending on the type of test.

When a test is complete if it was time or volume based it will stop automatically

For manual stop tests the 'Stop Test' Button needs to be pressed to indicate the end of the test.

If a test is stopped before either the time or volume in the setup has completed the user has the option to save the incomplete test results.



In case of an emergency all channels can be stopped by selecting the **RED** button on the Multi-Flo Infusion Analyser.

Flow/volume

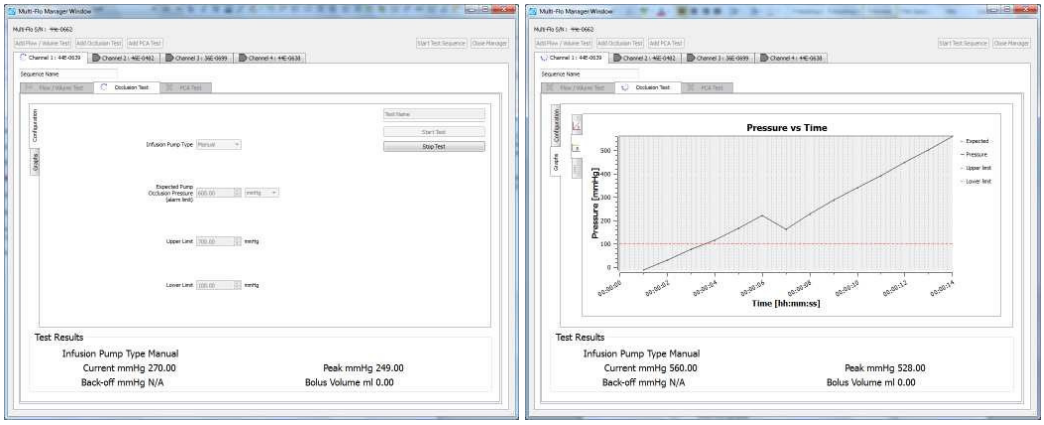
The user can toggle between instantaneous and average flow vs time graphs, which show the acceptable limits; the pressure during the test and also the trumpet curve showing the percentage error for the 2nd hour of testing.

The lower half of the test configuration screen shows the instantaneous results of instant, mean, min and peak flow (ml/h), total volume (ml), back pressure (mmHg) and error [instant or average flow or expected volume depending on set up choice],

Occlusion

The user can toggle between the pressure and the accumulated flow vs time graph, which shows the acceptable limit.

The lower half of the test configuration screen shows the type of occlusion test carried out (manual or auto rewind) and the instantaneous results of: current peak pressure and back off pressure (mmHg) and bolus volume delivered once the occlusion has stopped.

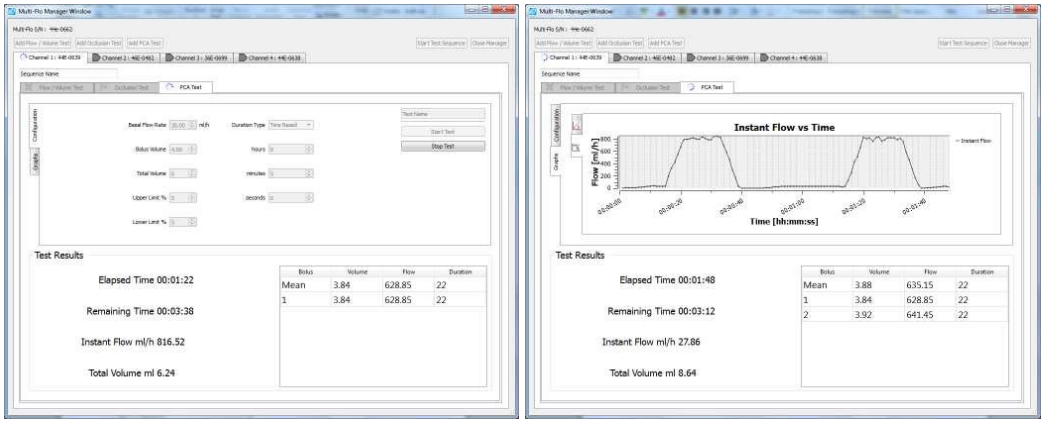


PCA

The user can toggle between the pressure and the accumulated and instant flow vs time graphs, which shows the acceptable limits. The bolus can be clearly shown on the instant flow vs time graphs

The lower half of the test configuration screen shows a bolus summary in tabulated format including average results of: mean volume, flow and duration as well as stats for each individual bolus measured. Test carried out (manual or auto rewind) and the instantaneous results of: current peak pressure and back off pressure (mmHg) and bolus volume delivered once the occlusion has stopped.

Test results information is also available including elapsed and remaining time, instant flow (ml/h) and total volume (ml).



Viewing graphs

The user can toggle a full graph and 60 second default view by selecting the graph by single left mouse button click and you can then press the spacebar to toggle between the two options.

The full data window will automatically scale the window using the full height of the graph to display the data.

The 60 second window will automatically scale the window to track the data and keep the data within the window; this also includes the expected, lower and upper limits.

On the graphs the user also has the options to do:

- **Scroll** by holding the left mouse button down on the graph and drag up, down, left and right to scroll the graph.
- **Zoom** in and out of the full data or a 60 second window:

Double left mouse button click will zoom in and double right click will zoom out on the mouse cursor point on the graph.

The user can draw around an area of interest and select CTRL and then hold the left mouse button down to create a range to zoom in.

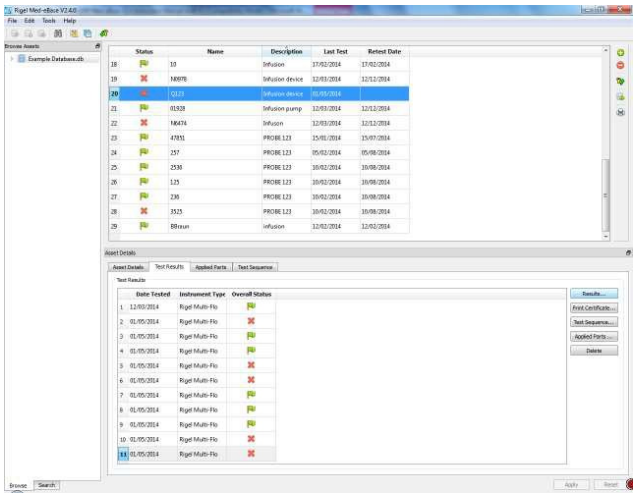
Mouse wheel enables zoom in and out of the graph.

Hold the right mouse button down and push forward or pull back on the mouse to zoom in and out.

10.4. Reviewing Results

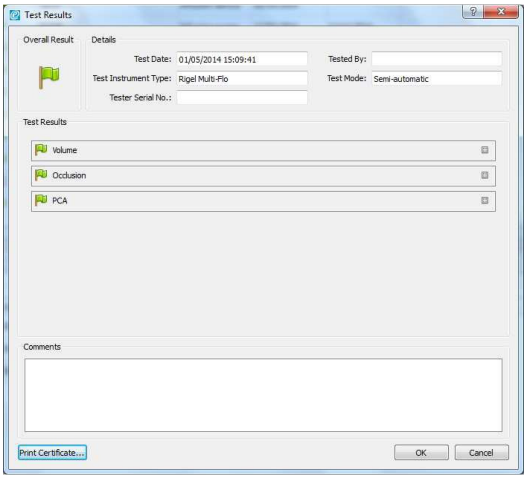
Once the test is complete the user may close the dashboard window or view the results within the dashboard

The test results can be view in the main Med-eBase software by selecting the Asset ID and then the **Test Result** tab.



Within the test results tab the sequence will be shown as one item with a pass or fail status. All tests or sequences carried out under that Asset ID will be shown in the results tab. All items will have the test date and instrument type shown to indicate the testing carried out.

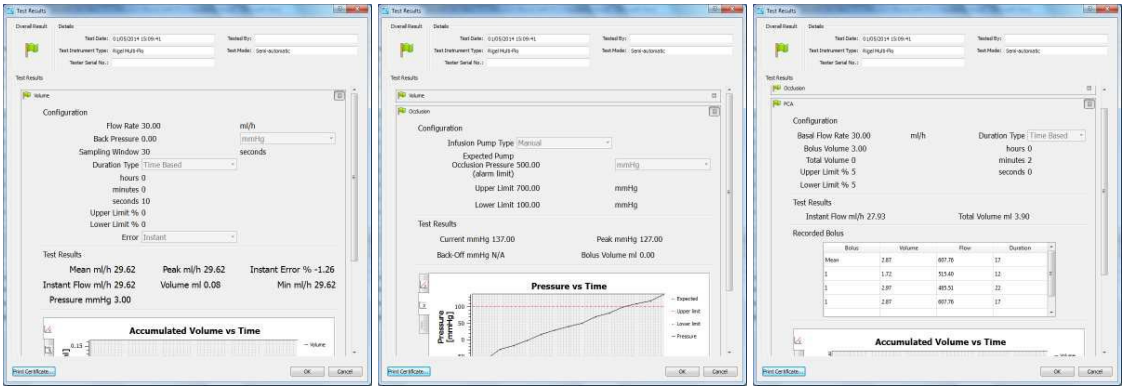
To view a particular test or sequence either double clicks on the item or select **Results…** from the right hand side of the asset details window.



A progress bar may appear while the test results are created depending on the amount of data and test length.

Expanding the test shows the summary of the test results, graphical results and when applicable tabulated data similar to the options available during testing. The pass or fail indication will be shown for each individual test within a sequence.

Flow **Occlusion** **PCA**



<u>Pass / Fail</u>

Once a test has completed the Med-eBase Multi-Flo Dashboard will indicate whether a test has passed or failed with a green flag icon or Red Cross in the tab for the specific test.

If no limits are set then the test will automatically pass. The pass fail logic for each test type is defined as:

Flow Volume

- The Error in configuration can be setup for Instant, Average and Expected.
- Instant flow is checked all the time and when the data is outside of the limits for more than 3 consecutive seconds it will be a fail.
- Average and Expected are checked on the last data value and outside of the limits it will fail.

Occlusion

- Performed on the peak of the test if it is outside of the limits it will be a fail.

PCA

- Performed on all bolus peaks of the test and if any are outside of the limits it will be a fail.

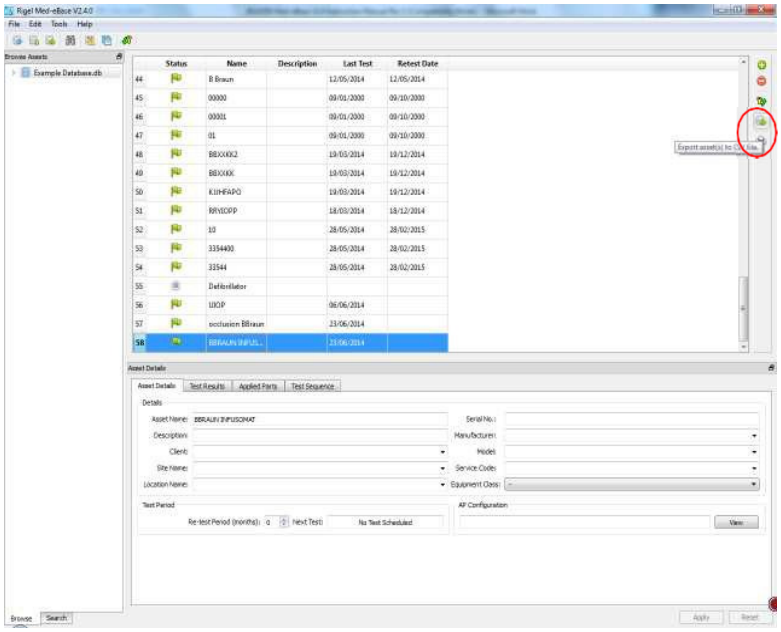
10.5. Exporting Multi-Flo Results

The results downloaded from the Rigel Multi-Flo can be exported as a CSV file from Med-eBase. This will enable the user to manipulate and create graphs and trumpet curves from the raw infusion data.

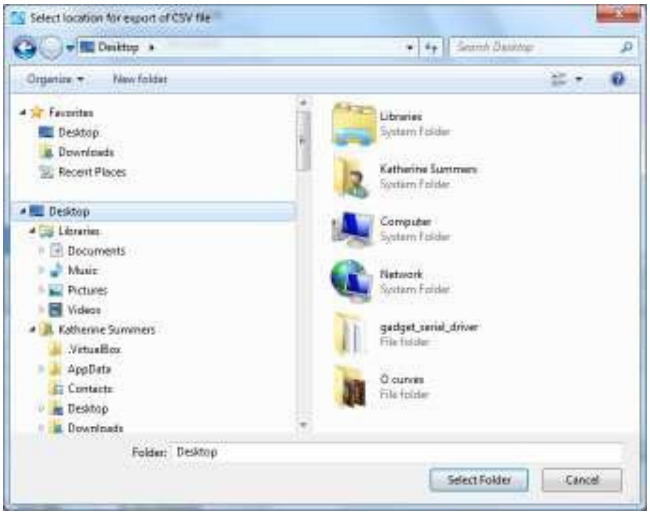
The format of the filename which is exported is "<ASSET ID>_<DATE>_<TIME>.csv".

It will export the last test result for the asset selected; this is because the export is located on the asset manager and not the result manager. The tests will be displayed horizontally with the data being displayed vertically.

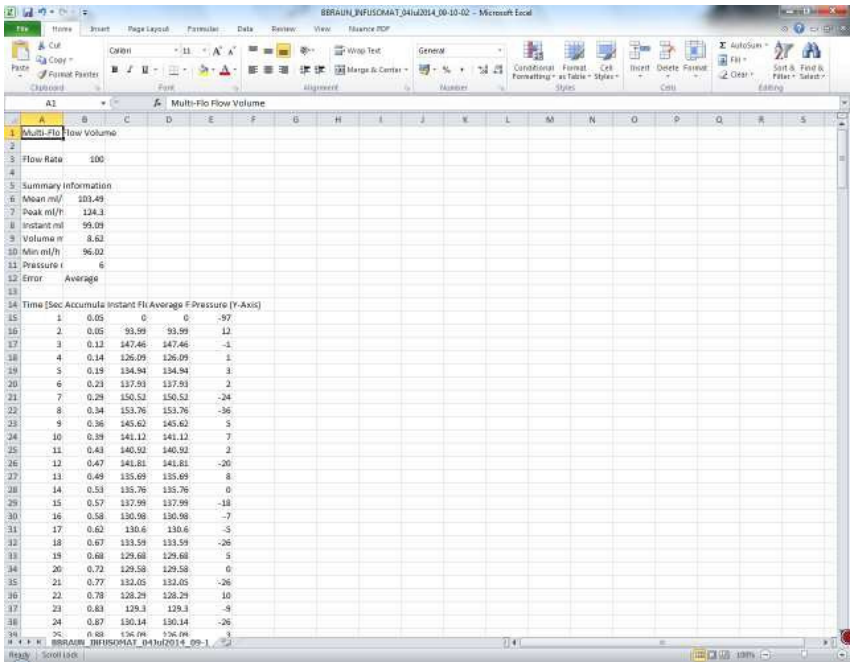
When results have been saved in Med-eBase the asset can be selected and then the user can select to export the raw data file in CSV format for specific analysis.



Select a folder location to store the results.



The CSV file can then be opened in Excel from the selected location.



11. Troubleshooting

Please ensure you have the latest version of Med-eBase V2 installed. The latest version is available to download from www.rigelmedical.com. This will install over your current version without affecting your data or license keys.

For technical queries, please email support@rigelmedical.com

For sales enquiries, including purchasing additional licenses, please email sales@rigelmedical.com