



**sy.factory Version 3.15.03**

## **User Manual**

(C) Derek Cook 2008-2023

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## **What's New in sy.factory 3.15.03 (23/12/2023)**

- Improved registration process. You now no longer have to quit the program to activate the disabled features.
- Provided a workaround for the OSX Java file selector bug that reports a non existent directory when you have double clicked a directory to select it.

## **Previous Versions**

## V3.15.02 (10/09/2023)

- Fixed an issue with the import of TG77 Multis.

### V3.15.01 (20/12/2022)

- Add an export sample menu option to allow internal SY99 samples to be saved to WAV files.
- Fixed a bug in drag and drop (most noticeable in kronos.factory and montage.factory due to file sizes) where drag and drop operations were occasionally failing and providing an error message about copy and paste not being possible.
- Fixed a bug where using the View/Refresh menu option killed drag and drop.
- Updated the status bar's file name display to show a truncated path (with the filename fully visible) if the the full path will not fit in the available space.

### What's New in sy.factory V3.15.00 (08/05/2022)

- Updated how the applications are built. The Java Runtime is now embedded and updated to Java 17 as the minimum version. There is no longer a need for a standalone version of Java to be installed
- New installers for OS X (DMG), PC (MSI) and Linux (DEB) and basic ZIP and TAR packages.
- The OS X DMG package is notarized for compatibility with the OS X security model.

### V3.14.01 (05/07/2020)

- Fixed problem on OS X Mojave and Catalina which was preventing access to protected folders.
- Fixed checksum calculation bug that was stopping samples being imported into empty WaveBlade BIN files.
- Added an error check to prevent Wave Card files greater than 2MB being saved.
- tritonus sample libraries are now provided with the application package, as Java 11 no longer seems to recognise external libraries on OS X in the /Libraries/Java/Extensions path.

### V3.14.00 (21/06/2020)

- The file checksum is now computed and shown in the status bar when editing a WaveBlade BIN file.
- Added improved status reporting and logging for WaveBlade support.
- WaveBlade uploads and downloads are now checked to ensure the transfer has been successful by comparing the upload/download against the checksum that is computed by the WaveBlade.
- In WaveBlade Preferences you can set the delay parameter for WaveBlade downloads.

### V3.13.02 (07/06/2020)

- Updated the serial port library required for the Sector 101 WaveBlade for Java 11 compatibility.

### V3.13.01 (28/04/2020)

- Fixed a bug with the default library path that was creating a new library under the main library.

### V3.13.00 (18/04/2020)

- If you use a triple click action on a voice, the MIDI router is automatically opened after the voice is exported.
- The Minimum Java Version is now Java 11, and I have rebuilt the applications with the latest support libraries. The migration to Java 11 is a significant step, as I have been help back from migrating to Java 9 and above due to Java PC MIDI issues that were causing garbled MIDI port names, which made it impossible to select MIDI ports. These issues are now resolved in the recommended JREs. Please see the [Java Support](#) page on the website for more details.
- The applications support iMac Retina displays.

### V3.13.00 (10/11/2019)

- You can now set the path for your library.
- Fixed a bug that was preventing the import of some WNN files
- You can now create MIDI buffer sizes up to 5,000 bytes.

### V3.12.00 (12/07/2019)

- If you double click on a voice in the Library view, a Tree View or Table view, it will automatically be exported to the SY edit buffer.
- There is a new option in the Library view that, when set, allows you to automatically export a voice to the SY edit buffer when it is selected.
- You can now select multiple Voices in the Library and set Comments, Ratings, Category in one step.
- You can now load 512KB SY77 Wave Card BIN images to the WaveBlade Programmer.
- Added support for reading SY77 Data Card BIN images

- Added support for importing DX7 data in MIDIQUEST SQ or SQL formats.
- Fixed a bug when importing DX7 data and the resulting JNN was corrupt if the sy.factory DEVICE type was set to SY99. sy.factory now correctly creates an SY77 or SY99 JNN file depending on the DEVICE setting.

### **V3.11.06 (22/12/2018)**

- Fixed bug in SYSEX file saving where all voices were loaded into the voice one slot".
- Fixed bug in SY99 sample file read/write, where a "Z09" file was being created as "Z9".
- The Application is now built using new build tools and libraries, as some of the ones I was using were obsolete and no longer supported. I am changing these as part of longer time migration plans to Java 9 and above.
- The Minimum Java Version is now Java 8, as Java 7 as Oracle no longer provide public updates to Java 7.

### **V3.11.05 (24/10/2017)**

- Fixed a bug when exporting Multis in a SYSEX File.
- OSX Users - Updates to how devices are named in CoreMIDI4J to provide better device identification, which means that you may need to reselect your devices in MIDI Preferences as they may now be named differently.
- OSX Users - I've finally figured out how to get rid of the confusing default drag image that OS X adds on top of the drag images that I am generating.
- Small GUI update to change background colour of object selections (the default colours since Java 7 are not good).

### **V3.11.04 (13/08/2017)**

- Further improvements to error logging.

### **V3.11.03 (08/07/2017)**

- Changed behaviour of delete operation for voices to ensure that four Element (Large) Voices remain in Voice Bank D. The delete operation behaves as usual when it can and places new voices at the end of the voice collection to preserve the voice count at 64 voices, but if the delete operation would cause any remaining large voices to move out of Bank D, then the new voices replace those deleted. At some point I may think of a better way of doing this, but for now this stops a potentially serious bug of sy.factory trying to put Four Element voices in banks A-C.
- Fixed bug which was generating null pointer exceptions when importing from MIDI and WaveBlade support was not enabled.
- General improvements in MIDI report handling to report identified port issues to the user.
- When importing many items and MIDI timeouts are being experienced, then you now have the option to abort or continue the transfer
- Fixed bug in the database that prevented the author being correctly displayed when it was being edited, and added context menu options to allow multiple objects to have the Author value edited at the same time.
- Added application error logging to make debugging easier.

### **V3.11.02 (04/03/2017)**

- Fixed bug when importing SY99 multis, which meant that the SY99 additional data was being ignored.
- Fixed bug when testing MIDI comms which meant that the Device ID setting was being ignored.
- Fixed bug on WaveBlade device name update when there are no comm ports.
- Updated to latest CoreMIDI4J version.

### **V3.11.01 (24/12/2016)**

- Fixed a problem that was preventing connection to the WaveBlade programmer if the programmer was not set to QUIET mode.
- Improved database access performance when editing information.

### **V3.11.00 (16/12/2016)**

- sy.factory now has support for communicating directly with Sector101's WaveBlade Programmer
- Additional categories added to Database category to ensure all SY categories (embedded in names are supported).
- Fixed a problem when trying to use SAVE AS to SYSEX files.

### **V3.10.00 (25/07/2016)**

- CoreMidi4J is now embedded in the application for OS X Users. So there is no longer a need to download and install a MIDI Service Provider extension for OS X.

### **V3.9.02 (29/05/2016)**

- Fixed a bug in exporting SY99 TNN files to MIDI, which was prevent the export when Waves/Samples were selected for bulk export

### **What's New in sy.factory V3.9.01 (02/05/2016)**

- Fixed a bug in saving TG77 SYSEX/MIDI Files

### **What's New in sy.factory V3.9.00 (28/03/2016)**

- Updated all x.factory Librarians to use CoreMID4J on Mac OSX.
- Updated all x.factory Librarians to use Launch4J application launcher on PC.
- The minimum JRE version is now Java 7.
- Finalised support for the SY "Wave Card" Format for use with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer.

### **What's New in sy.factory 3.8.00 (28/06/2014)**

- Updated all x.factory Librarians to use a new automated licensing system.

### **V3.7.00 (23/12/2013)**

- Support added for SY99 Card (CNN) files (e.g. data saved on an MCD64).
- Improved sample playback, including fixing the playback issues in Java 7 on PC.

### **V3.6.00 (30/10/2013)**

- SY99 support extended to include full support for Waves, Samples and MIDI Data Recordings.
- Metal look for dialogs.

## **Previous Versions**

### **V3.5.01 (18/12/2012)**

- SY99 support extended to allow SYSEX data transfers via MIDI for everything except Wave/Sample data (coming next!).
- Improved the import of DX7 data, correcting some algorithm errors and tweaking some parameters to get better results. Given the differences in architecture between the DX and the SY, the imports are now much closer to reference DX7 voices that I have loaded in my FS1r (I no longer have a DX7, but I use an FS1r feature in fs.factory that allows the direct import of DX7 edit buffer data, and the FS1r FM architecture is closer to the DX7 than the SY, so I am happy to use the FS1r as a reference).

### **V3.5.00 (29/10/2012)**

- Updated the application to allow the conversion of Voices and Performances in DX7 and DX7II SYSEX files to SY77 Voice format. Single files can be opened, or you can batch convert files.

### **V3.4.00 (27/08/2012)**

- Updated the application to provide access to two MIDI devices. For example, I have an SY77 and a TG77 and need access to both.
- Updated MIDI Router to allow the MIDI Channel to be either the channel sent by the source device, or to be the channel specified in the **MIDI Options Dialog**.

### **V3.3.00 (23/08/2012)**

- Updated application to work with MMJ on OS X to provide access to external MIDI devices. The move to MMJ is required because the Mandolane MIDI SPI is no longer supported and doesn't work on OS X Lion and above.
- The MIDI Router is now available on the MIDI Menu.

### **V3.2.00 (19/01/2012)**

- Updated Java Launcher to work on OSX Snow Leopard and OSX Lion.

### **V3.1.02. (07/11/2012)**

- Updated Windows Installer to detect 32 or 64 Java Runtime Environments (JREs) and to configure the application launcher to make use of a 64 bit JRE if available.
- Fixed bug that was preventing the selection of Table Views if the application was not registered

### **V3.1.01 (29/10/2011)**

- Fixed a bug that was not allowing Files in the Library to have the Author parameter set.

### **V3.1.00 (11/08/2011)**

- Added a new feature to recreate files from the library (note this will only work with Libraries created in V2.2. onwards)
- Added File and Author views to the Database.
- Added an context menu option to the Database views to allow you to see what files are using an object.
- File/Save As now allows you to change the file type when saving the file.

### **V3.0.00 (07/05/2011)**

- SY99 support added. (See notes on what is currently supported)
- TG77 support added.
- The "Save As" option can now allows you to select the type of file being saved.
- Support for MIDI file types added, allowing sy.factory to read embedded SY SYSEX data.
- Batch importer for importing SY77/SY99 and TG77 files into the Library
- Library Statistics dialog added, allowing you to see how big the Library is!

### **V2.0.01 (16/12/2009)**

- Corrected problem where file data paths on non-English locales were not being found.
- Updated license code to allow sy.factory to unpack a license.zip if it is found in the license folder, which simplifies installation particularly for Mac OSX users, where the standard zip extractors were causing problems with the license file. sy.factory can also now detect a license.lic file if this has been inadvertently extracted

### **V2.0 (23/11/2009)**

- Library support has been added, which allows you to keep all of your favourite items (Voices, Multis, etc.) in one Library database, and then sort and filter them to find the patch that you want. This feature is only available for [registered users](#).

### **V1.0 (23/03/2008)**

- First release of sy.factory

# Installation and Configuration of sy.factory

sy.factory is downloaded as a self installing file, so installation is quite easy if you follow the installer prompts  
A native installer for Windows is also available.



## Registering sy.factory

You need to register sy.factory to allow MIDI data to be exported to the SY, for data to be saved to your computer and for [Library Support](#) to be enabled.

Please refer to the [x.factory Librarian Registration Page](#) for details on how to register sy.factory.

# Running sy.factory

Starting up sy.factory is as simple as starting any application, simple double click on the icon and you're away.

If you have [registered](#) sy.factory, then the Library will be created (if it doesn't already exist) and opened.

During start-up, a "Splash Screen" is shown. This stays visible until a few seconds after the program has loaded and is ready for use, but can be dismissed at any time by clicking on the Splash Screen.

sy.factory remembers the size and position of the main window between sessions, so the main window will be sized and positioned as you left it the last time.

## PC

Simply double click on the program icon for the program either in an Explorer shell, or from the desktop if you let the installer placed a shortcut there.

You can also select the program from the **Start Menu**. By default, sy.factory can be found under the **x.factory Librarians** Program Group.

**IMPORTANT NOTE:** If the application is failing to launch on a PC with a 32 bit version of Windows, then please read the Section on adjusting the [JRE Memory Configuration](#), as the failure is more than likely to be due to an out of memory condition.

## MAC OS X

Navigate to the **Applications** folder in **Finder** and double click the sy.factory application.

You can also create "**Aliases**" of the application and place them anywhere you wish, such as on the desktop

To make an alias you can choose any one of the following methods:

- Click the sy.factory item you have just identified and hold down the mouse button. Then, while holding down the **Command** and **Option** keys simultaneously, drag the item to where you want the alias to appear then let go of the mouse button and finally release the two keys. This will create an alias at your desired location. While dragging, the 'ghosted' item will display a shortcut arrow which will remain on the aliased icon when it has been created.
- Hold down the **Ctrl** key, and then click the sy.factory item as identified previously. The context menu will be displayed, and one of the choices will be **Make Alias**. Click that option, and then release the key. The sy.factory alias will appear next to the original item and can be dragged to your location of choice.
- Select the sy.factory item you identified previously by clicking it once then press **Command-L** (lowercase L). The sy.factory alias will appear next to the original item and can be dragged to your location of choice.
- Click the sy.factory item once to select it, and then from the **File** menu, select **Make Alias**. The sy.factory alias will appear next to the original item and can be dragged to your location of choice.

Note that if your alias does not have a small arrow in the lower left corner then you have not correctly created an alias and have probably just dragged the application launcher to a new location. If so, drag it back to the Application folder and start again.

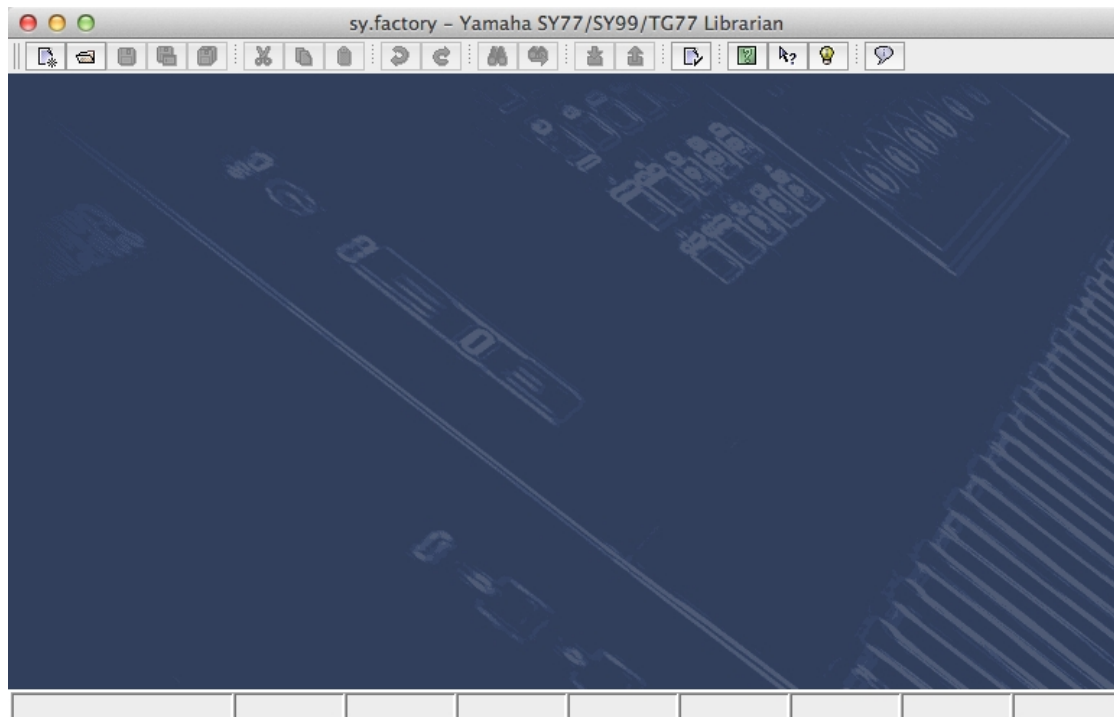
## Command Line

You can also startup sy.factory from a command shell (e.g. MsDOS). Simply change directory to where sy.factory is located and type the following:

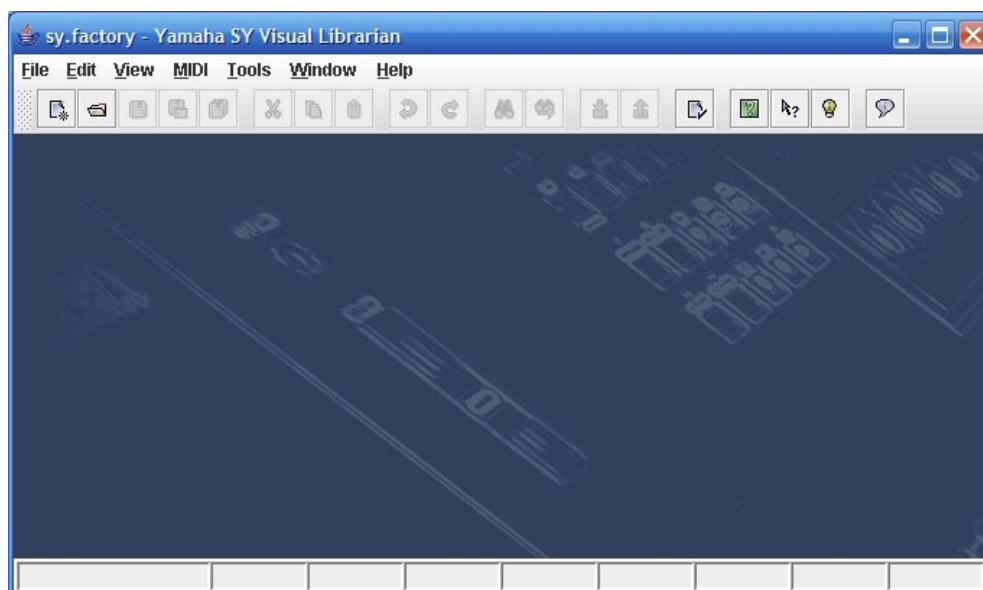
```
java -jar syfactory.jar
```

# The sy.factory Window

The main sy.factory window on OS X looks like this



The main sy.factory window on Windows looks like this



The sy.factory user interface is a Multiple Document Interface (MDI), which allows you to have more than one file open at a time.

The interface is divided into the now familiar layout of (from top to bottom):

- The Title Bar
- The [Menu Bar](#) (on OS X this appears at the top of the screen)
- The [Tool Bar](#)
- The [Desktop](#)
- The [Status Bar](#)

## Menu Bar

The sy.factory menu bar provides a means of selecting common operations; typically those that affect a complete file, or those that don't fit naturally upon a context sensitive popup menu.

[Keyboard Shortcuts](#) are provided for common operations.

sy.factory also provides context sensitive popup menus, which are accessible by right clicking over data shown in a [Child Window](#). Naturally the contents of the popup menus varies according to the type of data over which the menu was popped up.

## Main Menu Headings

The following menu headings are available on OS X.

**sy.factory** File Edit View MIDI Tools Window Help

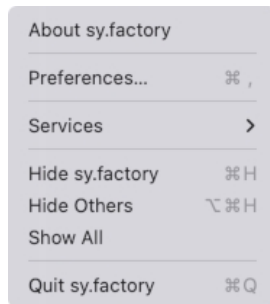
The following menu headings are available on Windows and Linux.

File Edit View MIDI Tools Window Help

- [sy.factory Menu](#) (OX X only)
- [File Menu](#)
- [Edit Menu](#)
- [View Menu](#)
- [MIDI Menu](#)
- [Tools Menu](#)
- [Window Menu](#)
- [Help Menu](#)

## The Application Menu

The **Application** menu is available on OS X to provide a native look and feel for OS X users; some menu options from the standard menus are migrated here (where OS X Users would expect them to be).



### About sy.factory...

This menu provides the standard OS X application menu, with the following sy.factory specific options along with the standard OS X options for Services (none defined for sy.factory) and Window control.

Displays the sy.factory [About Dialog](#), which provides some basic information about the program, such as the version number.

### Preferences ...

Opens the sy.factory [Preferences Dialog](#).











### Quit sy.factory

Exits the sy.factory application.

If any files have been modified and have not been saved, you will be given the option of saving them.

## The File Menu

The **File** menu provides the following options (OS X and Windows versions are shown):

 New ...	⌘N
 Open ...	⌘O
Close	⌘W
Close All	⇧⌘W
 Save	⌘S
 Save As ...	⇧⌘S
 Save All ...	⌘L
Open Work Space...	⌘⇧O
Save Work Space ...	⌘⇧S
Export to	▶
1: /Development/SY99/Sample test/Yes Demo/YESDEMO.T01 2: /Development/SY77/Voices/1MANBAND.T01 3: /Development/SY99/MDR Test/TEST20.T01 4: /Development/SY99/Voices/ACT2.J02 5: /Development/SY77/Voices/- NEW - J04 6: /Development/SY99/MDR Test/TEST3.T03 7: /Development/SY99/MDR Test/TEST21.T01 8: /Development/SY99/MDR Test/TEST4.T04 9: /Development/SY99/MDR Test/BASELINE.T01	
 New ...	Ctrl-N
 Open ...	Ctrl-O
 Save	Ctrl-S
 Save As ...	Ctrl-A
 Save All ...	Ctrl-L
Open <b>W</b> ork Space...	Ctrl+Alt+O
Save <b>W</b> ork Space ...	Ctrl+Alt+S
Export to	▶
<b>Exit</b> 1: C:\Development\SY77\Voices\FACTORY.T01 2: C:\Development\SY77\Voices\7702BMID.MID 3: C:\Development\SY77\Voices\TARKUS.T04 4: C:\Development\SY77\Voices\EQUINOX1.T06 5: C:\Development\SY77\Voices\SY77 pads & textures SYSEX.syx 6: C:\Development\SY77\Voices\77NEWAGE.T04 7: C:\Development\SY77\Voices\AROTHEWO.T01 8: C:\Development\SY77\Voices\77WORK07.T01 9: C:\Development\SY77\Voices\COREA1.T05	

### New ...

Shows the [Create New File](#) Dialog, which allows you to create a new file.

### Open ...

Shows the [Open File](#) Dialog, which allows you to open a specified file.

### Save

Saves a file using its current name.

If the file in question is a newly created file, then the [Save File](#) Dialog is brought up to allow a name to be entered.

This option is only enabled if your copy of sy.factory is [registered](#).

### Save As ...

Saves the selected file after a name has been entered in the [Save File](#) Dialog.

This option is only enabled if your copy of sy.factory is [registered](#).

## Save All

Saves all open files that have been modified using their current names.

This option is only enabled if your copy of sy.factory is [registered](#).

## Open Workspace ...

This option allows you to select a previously saved [Workspace](#), which is a Collection of open windows, and the size and positions within the main sy.factory window.

When you select this option, a dialog opens which allows you to select an sy.factory workspace file (EXW).

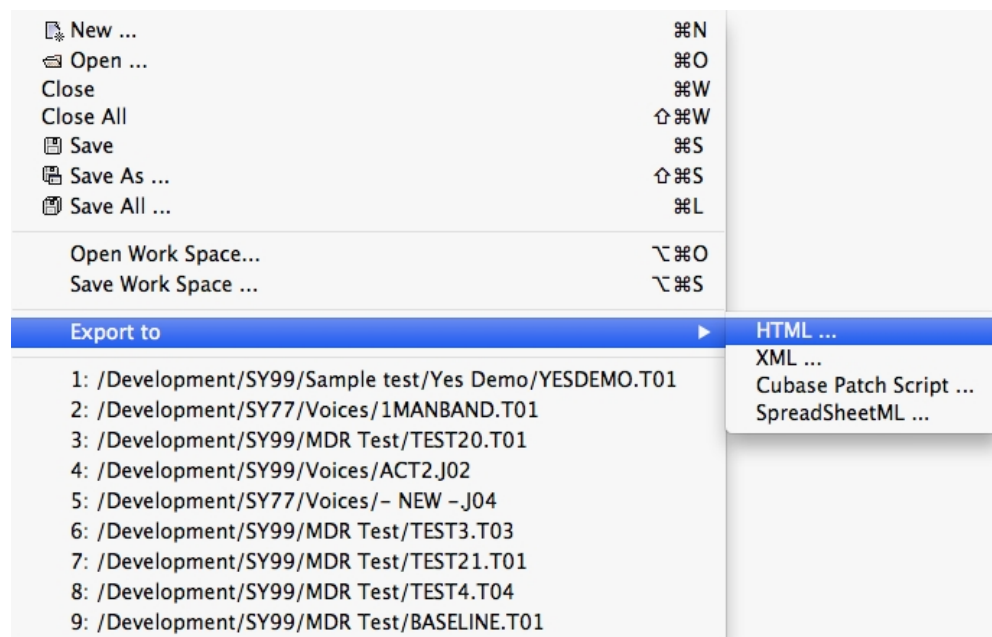
## Save Workspace ...

This option allows you to save the current size and position of the main sy.factory window, and the arrangement of the open windows within sy.factory to a [Workspace](#) file.

This option is only enabled if your copy of sy.factory is [registered](#).

## Export to

This option brings up the following sub menu:



These options allow you to [Export](#) the data in the currently selected file to a variety of different formats.

This option is only enabled if your copy of sy.factory is [registered](#).

## Exit

This menu option is not available if the host operating system is OS X. On OSX there is a **Quit** menu option in the [sy.factory Application Menu](#).

Exits the sy.factory application.

If any files have been modified and have not been saved, you will be given the option of saving them.

## The Edit Menu

The **Edit** menu provides the following options:

↶ Undo	⌘Z
↷ Redo	⌘Y
Clear Undo Buffer	
✂ Cut	⌘X
📄 Copy	⌘C
📄 Paste	⌘V
🔍 Find ...	⌘F
🔍 Find Next	F3
📄 Goto ...	⌘G

### Undo

Undos the previous edit stored in the [Undo Buffer](#).

### Redo

Redos the next edit stored in the [Undo Buffer](#).

### Clear Undo Buffer

Clears the [Undo Buffer](#).

### Cut

Places a copy of the selected Object(s) onto the [Clipboard](#) and deletes the selected Object(s) from the file.

### Copy

Places a copy of the selected Object(s) onto the [Clipboard](#).

### Paste

Copies the Object(s) on the [Clipboard](#) into the highlighted location within the current file.

### Find ...

sy.factory supports the ability to find Objects either by name or by category.

Searches start from the currently selected Object.

Selecting the **Find ...** option brings up the [Find](#) dialog, that allows you to specify the string to search for, along with options that can be used to refine the search.

### Find Next

If you have defined the **Find** criteria within the **Find** dialog, then this option will repeat the search using the same criteria.

### Goto ...

Selecting this option brings up the [Goto](#) Dialog, which allows you to quickly navigate to a numbered Object.



## The View Menu

The View menu provides the following options on OS X:

<input checked="" type="checkbox"/> Tool Bar	<input checked="" type="checkbox"/> Tool Bar	<input checked="" type="checkbox"/> Tool Bar
<input checked="" type="checkbox"/> Status Bar	<input checked="" type="checkbox"/> Status Bar	<input checked="" type="checkbox"/> Status Bar
<input checked="" type="checkbox"/> No Split	No Split	No Split
Horizontal Split	<input checked="" type="checkbox"/> Horizontal Split	Horizontal Split
Vertical Split	Vertical Split	<input checked="" type="checkbox"/> Vertical Split
<input checked="" type="checkbox"/> Tree	Left Pane ▶	Top Pane ▶
Table	Right Pane ▶	Bottom Pane ▶
Refresh	Refresh	Refresh

The View menu provides the following options on Windows and Linux:

<input checked="" type="checkbox"/> Tool Bar	<input checked="" type="checkbox"/> Tool Bar	<input checked="" type="checkbox"/> Tool Bar
<input checked="" type="checkbox"/> Status Bar	<input checked="" type="checkbox"/> Status Bar	<input checked="" type="checkbox"/> Status Bar
<input checked="" type="radio"/> No Split	<input type="radio"/> No Split	<input type="radio"/> No Split
<input type="radio"/> Horizontal Split	<input checked="" type="radio"/> Horizontal Split	<input type="radio"/> Horizontal Split
<input type="radio"/> Vertical Split	<input type="radio"/> Vertical Split	<input checked="" type="radio"/> Vertical Split
<input checked="" type="radio"/> Tree	Left Pane ▶	Top Pane ▶
<input type="radio"/> Table	Right Pane ▶	Bottom Pane ▶
Refresh	Refresh	Refresh
Preferences ...	Preferences ...	Preferences ...

Note how some of the options change depending on whether or not the [Child Window](#) is split.

When the [Child Window](#) is split the **Left/Top Pane** and **Right/Bottom Pane** menu options have the following sub menu.

<input checked="" type="radio"/> Tree
<input type="radio"/> Table

### Tool Bar

When checked the sy.factory [Tool Bar](#) is visible.

### Status Bar

When checked the sy.factory [Status Bar](#) is visible.

### No Split

When checked the current [Child Window](#) is not split.

### Horizontal Split

When checked the current [Child Window](#) is split horizontally.

### Vertical Split

When checked the current [Child Window](#) is split vertically.

### Tree

When checked the main/left/top pane in a [Child Window](#) displays data in a [Tree View](#).

### Table

When checked the main/right/bottom pane in a [Child Window](#) displays data in a [Table View](#).

### Refresh

Refreshes all open [Child Windows](#).

This command is provided in case the screen is not properly updated following an edit operation. There are a couple of odd bugs I cannot track down on screen updates. So if you come across them as well, then this command will force a redraw of the windows.

## Preferences ...

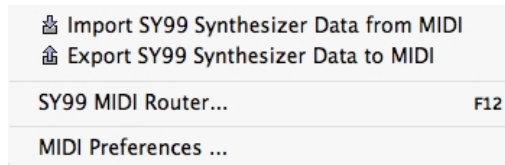
This menu option is not available if the host operating system is OS X. On OSX there is a **Preferences...** menu option in the [sy.factory Application Menu](#).

Opens the sy.factory [Preferences Dialog](#).

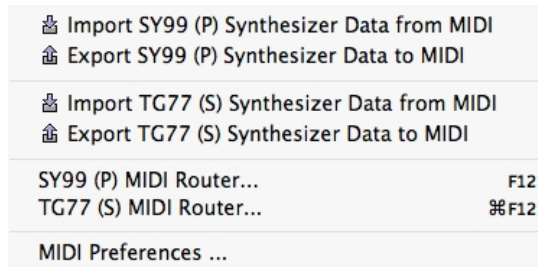
## The MIDI Menu

The naming and number of options on this menu adapts to the number of devices you have set up and the devices that you have selected.

The MIDI menu provides the following options when the **Enable Secondary Device** option in the [Device Options](#) Tab in the [Preferences](#) Dialog is unchecked.



The MIDI menu provides the following options when the **Enable Secondary Device** option in the [Device Options](#) Tab in the [Preferences](#) Dialog is checked.



### Import [DEVICE] Synthesizer Data From MIDI

Imports Voices and Performances from the SY/TG device via MIDI to the currently selected Window.

### Export [DEVICE] Synthesizer Data to MIDI

Exports Voices and Performances to the SY/TG Device via MIDI from the currently selected Window.

Note: The **Export To MIDI** option is only enabled if you have [registered](#) sy.factory.

### [DEVICE] MIDI Router ...

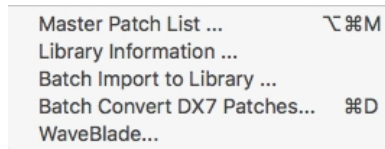
Opens the [MIDI Router](#) Dialog which allows you to use another keyboard to audition SY/TG Device Data.

### MIDI Preferences ...

Opens the [Preferences](#) Dialog with the [MIDI Preferences](#) Tab active.

## The Tools Menu

The **Tools** menu provides the following options:



### Master Patch List ...

Opens the [Master Patch List](#) dialog.

This option is only enabled if your copy of sy.factory is [registered](#).

### Library Information ...

Opens the [Library Statistics](#) dialog.

This option is only enabled if your copy of sy.factory is [registered](#).

### Batch Import to Library ...

Opens the [Batch Import To Library](#) dialog.

This option is only enabled if your copy of sy.factory is [registered](#).

### Batch Convert DX7 Patches ...

Opens the [Batch Convert DX7 Patches](#) Wizard.

This option is only enabled if your copy of sy.factory is [registered](#).

### WaveBlade ...

Opens the [WaveBlade](#) Dialog.

This option is only visible if sy.factory WaveBlade support is enabled in the [WaveBlade Tab](#) of the [Preferences Dialog](#).

## The Window Menu

The **Window** menu provides the following options:

Tile Horizontal	
Tile Vertical	⌘V
Maximise Windows	⌘M
Restore Windows	⌘R
Minimise Windows	⌘I
✓ View SY99 (P) Synthesizer Data	
View SY77 (S) Synthesizer Data	
View SY Library	
77NEWAGE.T04	
SY99 Synthesizer	
FACTORY.T01	

In the example given above, you'll see that after the predefined menu options there are menu options that allow you to select the windows currently open within sy.factory (77NEWAGE.T04 and FACTORY.T01 in our example menu).

### Tile Horizontal

Arranges all non-minimised [Child Windows](#) along the horizontal axis.

### Tile Vertical

Arranges all non-minimised [Child Windows](#) along the vertical axis.

### Maximise Windows

Maximises all [Child Windows](#) so they all occupy the size defined by the desktop.

### Restore Windows

Restores all maximised/minimised [Child Windows](#) to their normal state.

### Minimise Windows

Reduces all [Child Windows](#) to their iconised state.

### View SY Synthesizer Data

Opens or closes the [SY Synthesizer Window](#) which provides a view on preset and user SY synth data.

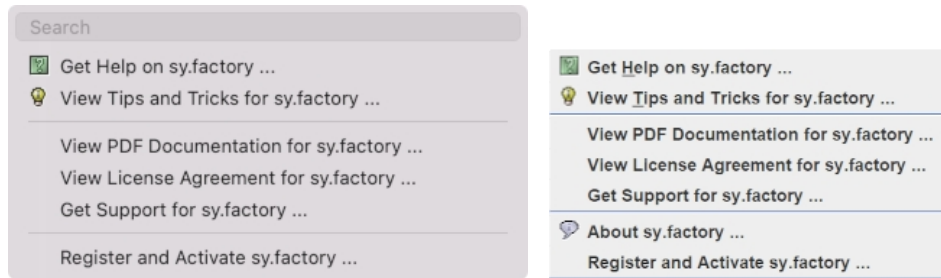
### View SY Library

Note: This menu option is only visible if you have [registered](#) sy.factory.

Opens or closes the [SY Library Window](#) which provides a view on the SY Library.

## The Help Menu

The **Help** menu provides the following options (OS X and Windows versions are shown):



### Search

OS X only. This is a standard OS X Menu function currently not working with sy.factory. One day....

### Get Help on sy.factory ...

Displays the sy.factory [Online Help](#) system.

### View Tips and Tricks for sy.factory ...

Displays the sy.factory [Tips and Tricks](#) Dialog.

### View PDF Documentation for sy.factory ...

Displays the PDF documentation for sy.factory. Note that there needs to be a registered viewer for PDF files on your system for this command to work

### View License Agreement for sy.factory ...

Displays the sy.factory [License Agreement](#) in a dialog box.

### View License Agreement for sy.factory ...

Provides a link to the [x.Librarian's Support Page](#).

### About sy.factory ...

This menu option is not available if the host operating system is OS X. On OSX there is an **About sy.factory** menu option in the [sy.factory Application Menu](#).

Displays the sy.factory [About Dialog](#), which provides some basic information about the program, such as the version number.




















### Register and Activate sy.factory ...

Displays the sy.factory registration and activation Dialog.

See the [Registration Section](#) for details of how to register sy.factory.

## Tool Bar

The Tool Bar contains buttons for common operations, such as opening and saving files.

-  Creates a new file
-  Displays the [Open File](#) Dialog to allow you to select a file to open
-  [Saves](#) the currently selected file
-  Displays the [Save As](#) Dialog to allow you to select a different name for the currently selected file
-  [Saves](#) all the open files to disk
-  Cuts the selected Objects and places them on the [Clipboard](#)
-  Copies the selected Objects and places them on the [Clipboard](#)
-  Pastes the contents of the [Clipboard](#) to the current selection
-  [Undos](#) the previous edit
-  [Redos](#) the previous edit
-  Displays the [Find](#) Dialog to allow you to define the search criteria and then search for the first occurrence
-  Searches for the next occurrence of the search criteria defined in the [Find](#) Dialog
-  Imports Voices/Performances from the SY via the [MIDI](#) interface
-  Exports Voices/Performances to the SY via the [MIDI](#) interface
-  Displays the [Preferences](#) dialog where you can configure sy.factory
-  Displays the sy.factory [Online Help](#) index page
-  Enables [Context Sensitive](#) Help
-  Displays the [Tips and Tricks](#) Dialog
-  Displays the [About](#) Dialog

The Save and MIDI export buttons are only enabled if sy.factory is [Registered](#).

The Tool Bar can be dragged and made a floating toolbar by clicking and dragging the handle to the left of the Tool Bar.

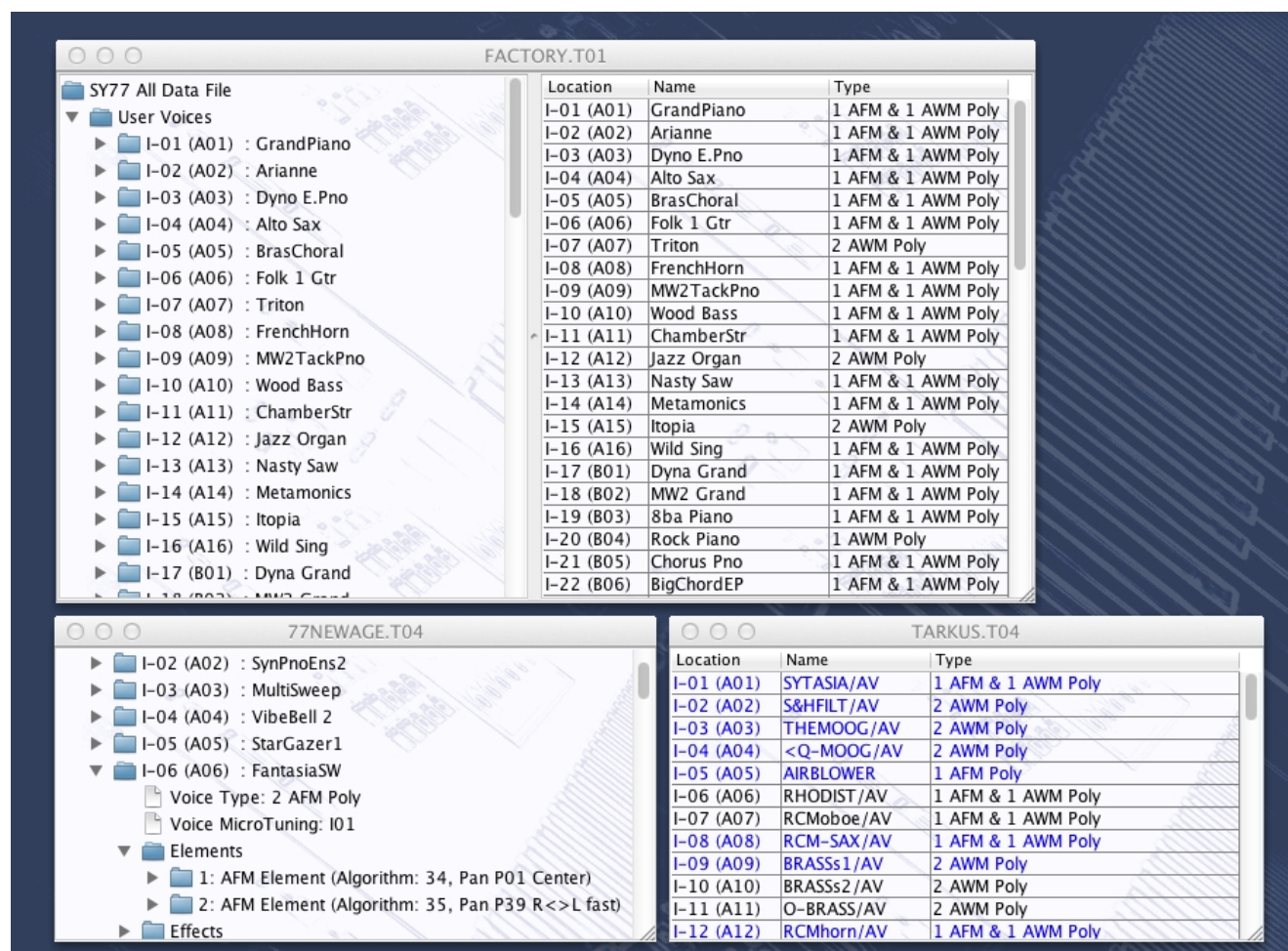
The Tool Bar can also be dragged to a different window border other than the top border.

The Tool Bar can be hidden/unhidden by the **Tool Bar** menu option on the [View](#) menu.

The Tool Bar whilst floating can be docked once more by closing it.

## Desktop

The Desktop portion of the window is where the SY data is portrayed. Several files may be opened and shown within [Child Windows](#) upon the Desktop portion of the window. The following example shows three [Child Windows](#) open on the Desktop.



The [Window Menu](#) provides menu options to:

- Tile (either vertically or horizontally) all [Child Windows](#) that are not iconised
- Minimise all [Child Windows](#)
- Maximise all [Child Windows](#)
- Restore all [Child Windows](#)
- Select a specific [Child Window](#)
- Open the [SY Synthesizer Window](#)
- Open the [SY Library Window](#)

When a file is opened, a [Child Window](#) is added to the Desktop Area.



## Child Window

The Child Window provides the **View** upon the data within the file it is associated with.

The Child Window is maximised by default when it is opened, and can be minimised, restored or closed by the buttons to the right of the Child Window's title bar.

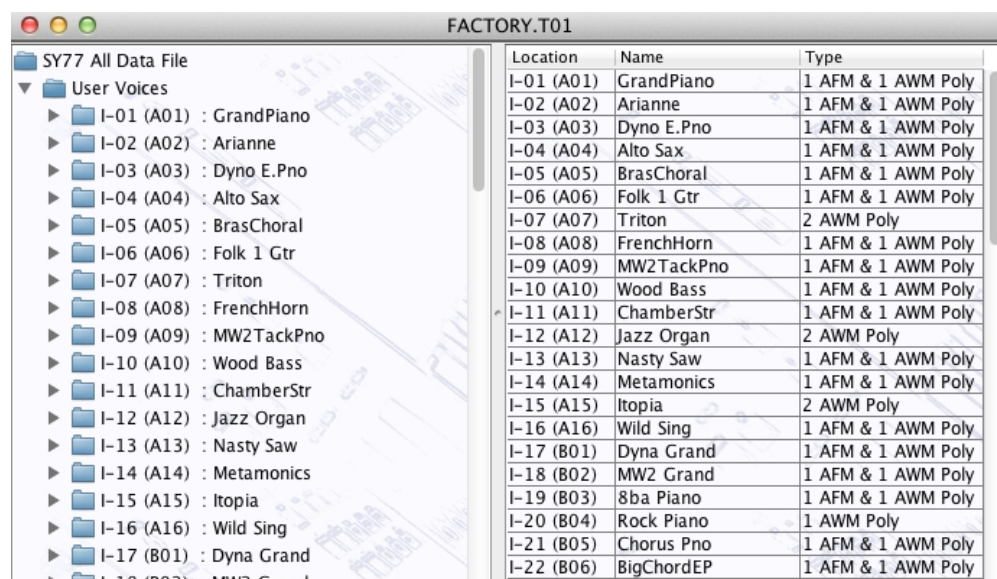
The menu options on the [View](#) menu can be used to change the View to a [Table](#) view, which can show either a Voice Table or a Performance table.

It's also possible to have either a horizontally or a vertically split View which can show any of the following combinations:

- A [Tree](#) and a [Table](#)
- A [Table](#) and a [Tree](#)
- Two [Trees](#)
- Two [Tables](#)

The default Child Window View applied when a file is opened is set in the [Default View Tab](#) of the [Preferences](#) Dialog.

The following example shows a Child Window that is split and showing both a [Tree View](#) and a [Table View](#) on the same data.



Location	Name	Type
I-01 (A01)	GrandPiano	1 AFM & 1 AWM Poly
I-02 (A02)	Arienne	1 AFM & 1 AWM Poly
I-03 (A03)	Dyno E.Pno	1 AFM & 1 AWM Poly
I-04 (A04)	Alto Sax	1 AFM & 1 AWM Poly
I-05 (A05)	BrasChoral	1 AFM & 1 AWM Poly
I-06 (A06)	Folk 1 Gtr	1 AFM & 1 AWM Poly
I-07 (A07)	Triton	2 AWM Poly
I-08 (A08)	FrenchHorn	1 AFM & 1 AWM Poly
I-09 (A09)	MW2TackPno	1 AFM & 1 AWM Poly
I-10 (A10)	Wood Bass	1 AFM & 1 AWM Poly
I-11 (A11)	ChamberStr	1 AFM & 1 AWM Poly
I-12 (A12)	Jazz Organ	2 AWM Poly
I-13 (A13)	Nasty Saw	1 AFM & 1 AWM Poly
I-14 (A14)	Metamonics	1 AFM & 1 AWM Poly
I-15 (A15)	Itopia	2 AWM Poly
I-16 (A16)	Wild Sing	1 AFM & 1 AWM Poly
I-17 (B01)	Dyna Grand	1 AFM & 1 AWM Poly
I-18 (B02)	MW2 Grand	1 AFM & 1 AWM Poly
I-19 (B03)	8ba Piano	1 AFM & 1 AWM Poly
I-20 (B04)	Rock Piano	1 AWM Poly
I-21 (B05)	Chorus Pno	1 AFM & 1 AWM Poly
I-22 (B06)	BigChordEP	1 AFM & 1 AWM Poly

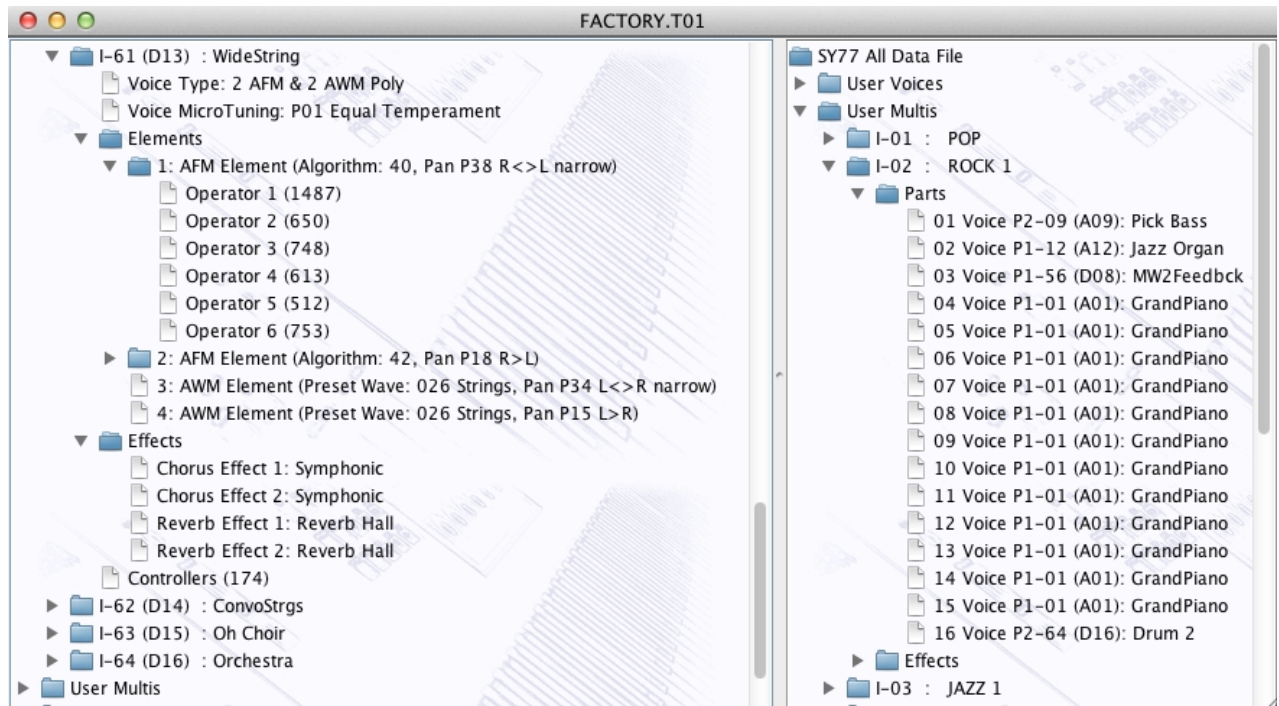
The [Tree](#) and [Table](#) views support drag [move](#) and drag [copy](#) operations, and the views will automatically scroll whilst drag operations are in progress.

sy.factory also provides two special Child Windows:

- The [SY Synthesizer](#) Window.
- The [SY Library](#) Window (This Window is only available if you have [registered](#) sy.factory).

## Tree View

The **Tree View** shows the SY data as a hierarchical tree, and can show more information than the [Table View](#). The following example shows a split [Child Window](#) with two Tree Views.



Basically, information is shown as a set of hierarchical **Objects**. Objects may have children attached to them, and they themselves may have further child Objects (e.g. a Voice Object, has a child Object for its Elements, and this Object groups all the Elements of the Voice).

The basic tree structure is a **Root Object** at the top of the tree under which are various Object **Collections** which themselves contain further data.

You can double click on an item, and if the item is a voice, it will be exported to the synth's Edit buffer

You can also triple click on an item, and if the item is a voice, it will be exported to the synth's Edit buffer and the [MIDI Router](#) will also be opened

Objects are displayed in one of two colours:


- Black if the Object is not referenced by another Object
- Blue if an Object is referenced by another Object (e.g. a Voice being used within a Multi)

The Tree View allows multiple Objects to be selected, which is useful for performing operations only upon certain Objects. You can only perform operations upon Objects of the same type.

If you wish to perform an operation upon all Objects in a Collection, simply select the Collection containing the Objects.

## Table View

The Table View provides a more high level overview of the data than the [Tree View](#), and the representation of the data is more compact. The following example shows a [Child Window](#) with a single Table View providing information on a file's Voices.



Location	Name	Type
I-01 (A01)	GrandPiano	1 AFM & 1 AWM Poly
I-02 (A02)	Ariane	1 AFM & 1 AWM Poly
I-03 (A03)	Dyno E.Pno	1 AFM & 1 AWM Poly
I-04 (A04)	Alto Sax	1 AFM & 1 AWM Poly
I-05 (A05)	BrasChoral	1 AFM & 1 AWM Poly
I-06 (A06)	Folk 1 Gtr	1 AFM & 1 AWM Poly
I-07 (A07)	Triton	2 AWM Poly
I-08 (A08)	FrenchHorn	1 AFM & 1 AWM Poly
I-09 (A09)	MW2TackPno	1 AFM & 1 AWM Poly
I-10 (A10)	Wood Bass	1 AFM & 1 AWM Poly
I-11 (A11)	ChamberStr	1 AFM & 1 AWM Poly
I-12 (A12)	Jazz Organ	2 AWM Poly
I-13 (A13)	Nasty Saw	1 AFM & 1 AWM Poly
I-14 (A14)	Metamomics	1 AFM & 1 AWM Poly
I-15 (A15)	Itopia	2 AWM Poly
I-16 (A16)	Wild Sing	1 AFM & 1 AWM Poly
I-17 (B01)	Dyna Grand	1 AFM & 1 AWM Poly
I-18 (B02)	MW2 Grand	1 AFM & 1 AWM Poly
I-19 (B03)	8ba Piano	1 AFM & 1 AWM Poly
I-20 (B04)	Rock Piano	1 AWM Poly
I-21 (B05)	Chorus Pno	1 AFM & 1 AWM Poly
I-22 (B06)	BigChordEP	1 AFM & 1 AWM Poly
I-23 (B07)	Ice Piano	1 AFM & 1 AWM Poly

The Table View can only show one Collection of Objects at a time.

You can select what a Table View shows by right clicking within the table to access the context sensitive menu, upon which can be found menu options to select the different data types available in a file.

Each row within the table shows one Object.

You can double click on a row, and if the item is a voice, it will be exported to the synth's Edit buffer

You can also triple click on an row, and if the item is a voice, it will be exported to the synth's Edit buffer and the [MIDI Router](#) will also be opened

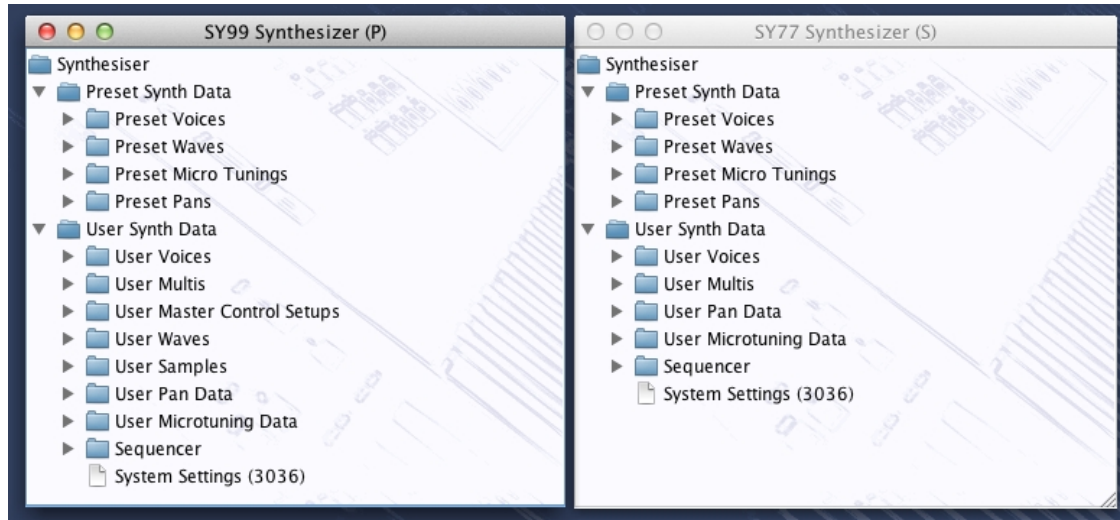
The Table View's context sensitive popup menus support editing operations. The cells in a Row that contain the Object's **Name** can be directly edited by clicking in them.

## SY Synthesizer Window

One or two Synth Windows are available depending on whether the **Enable Secondary Device** option in the [Device Options](#) Tab in the [Preferences](#) Dialog is checked or unchecked.

The SY Synthesizer Data Window is made visible by ensuring the **View [DEVICE] Synthesizer Data** option in the [Window Menu](#) is checked.

The Title of the Window indicates whether or not the connected synthesizer (as defined in the [Device Type](#) tab of the [Preferences Dialog](#)) is an SY77, TG77 or SY99. The example below shows two Synth Windows for an SY99 as the Primary Device and an SY77 as a secondary Device



This Child Window is a special View that shows the following SY **Preset and User Data Collections**:

- Preset Voices
- Preset Waves
- Preset Microtunings
- Preset Pans
- User Voices
- User Multis
- User Master Control Setups (SY99 only)
- User Waves (SY99 only)
- User Samples (SY99 only)
- User Pan data
- User Microtuning Data
- User Sequencer data (SY77/SY99 only)
- System Settings

The purpose of showing these User Data Collections is to allow drag and drop transfers of User data, such as Voices and Multis between sy.factory and the SY via the [MIDI Interface](#).

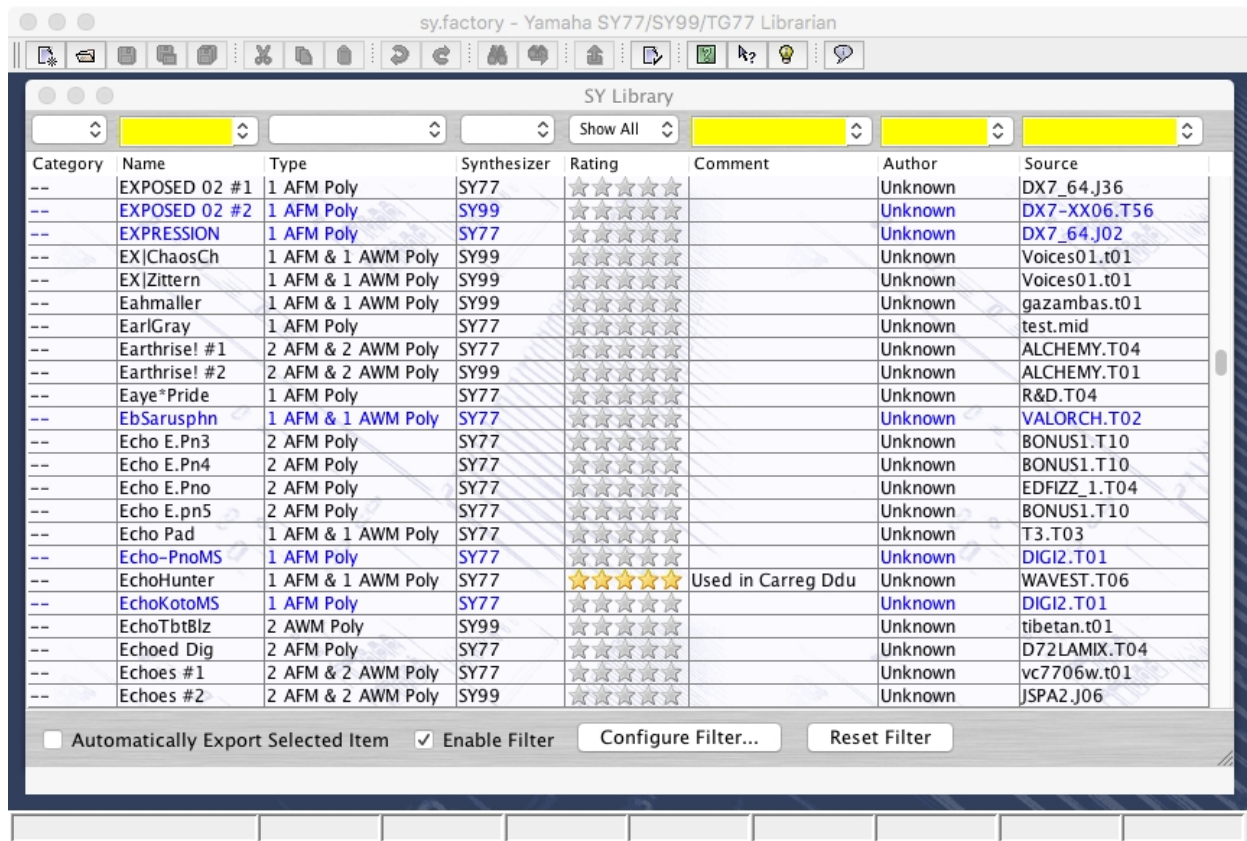
The Preset data can be drag copied onto user data if required. For example, you can drag a Preset Voice onto a Multi part.



## SY Library Window

Note: This Window can only be opened if you have [registered](#) sy.factory.

The SY Library Data Window is made visible by ensuring that the **View SY Library** option in the [Window Menu](#) is checked.



This Child Window is a special View that shows the contents of the SY Library.

Like the standard [Table View](#), you can select the view of type of objects that you wish to view (e.g. Voices, Performances, etc.), which includes Files and Authors that are stored in the Database.

The window can be configured to be either a [Tree](#) or a [Table](#) view. The [Table](#) view is recommended because filtering capabilities are available, which are described below.

### SY Library Table View Columns

The following columns can be found in the Library table. Not all columns are available in a table view, depending on the type of data being viewed. For example, only Voices have the **Type** Column.

<b>Category</b>	The Category of an Object. Not all Objects have a defined Category
<b>Name</b>	The Name of an Object. Note that this name can be up to 50 characters long, so you can provide a more meaningful name for an object within the Library (the original name is preserved for when the object is copied from the Library).
<b>Type</b>	The type of the object (e.g. the type of voice). Not all Objects have a defined Type.
<b>Synthesizer</b>	The synthesizer that this object is for: either SY77, TG77 or SY99. This allows you to filter or sort by synthesizer type.
<b>Rating</b>	Each Object object can be assigned a rating, from unrated to five stars. Filtering on this column will allow you to quickly find you favourite items.
<b>Comment</b>	Each object can have a comment associated with it of up to 100 characters. For example, you could use this field to contain keywords that you use to describe a sound's character in more detail. This could help you to define a filter to search for a sound.
<b>Author</b>	You can define the Author for each Object. This field defaults to "Unknown" when objects are added to the Library. You can setup sy.factory to prompt you for an Author name when a new file is being added to the database.
<b>Source</b>	The name of the source file that an Object was copied from when it was added to the Library.

### Table Sorting

You can sort a table by a column by clicking on a column heading in the table header. for example to sort voices by name, then click on the **Name** column heading. The sorting will cycle through the following states each time you click a column header:

- Unsorted
- Sort Ascending
- Sort Descending

## Data Export

If you check the **Automatically Export Selected Item** option, then when you select a Voice it is automatically exported to the SY Voice Edit Buffer.

This, for example, allows you use the cursor keys to move through the library Voices and have them automatically exported to the Edit Buffer without having to do anything else. Please note however, that with this option enabled, then the scrolling is slowed down. Don't forget that you can double click on a Voice to export it.

## Table Filtering

The database table provides a very comprehensive filtering capability, which allows you to filter on any column or combination of columns. For example, you can filter on voices with a name that contains the phrase "Fred", combined with a category filter for "pads", combined with a type filter for AWM voices, and finally filter for those which have a three star rating.

You can enter a filter for each column using the filter header that is above the table column names.

Table filtering works in conjunction with table sorting

A filter with a grey background is restricted to filtering by items that you can select from the drop down list. For example, a rating value can only be unrated or rated between 1 and 5 stars

A filter with a yellow background allows you to enter a [PERL Regular Expression string](#) that acts as a filter. Consider the following PERL examples for filtering by name:

- **drum** will match all names containing the phrase **drum** (anywhere in the name);
- **^t** will match all names beginning with the letter **T** ('^' anchors the search to the start of the name);
- **[0-9]\$** will match all names ending with a number character between **0** and **9**. ('\$' anchors the search to the end of the name);
- **^M[0-9]** will match all names starting with letter **M** followed by a numeric character.

That is just an overview of how you can use regular expressions for filtering. More details for how you can form regular expression patterns can be found on the [PERL Regular Expression Page](#)

The drop down list for a Perl Regular Expression filter provides a history of the search terms entered during the session.

## Table Filter Controls

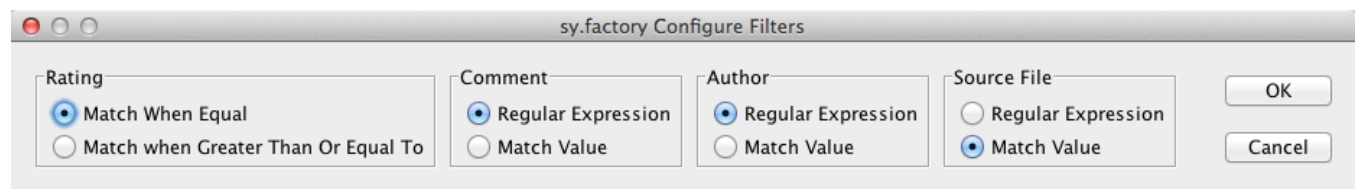
At the bottom of the table is a toolbar with the following controls:

<b>Enable Filter</b>	Turns the filter on or off.
<b>Configure Filter</b>	Brings up the Configure Filter dialog box allowing you to control the default behaviour of how the Rating, Comment, Author and Source File columns are filtered.
<b>Reset Filter</b>	Resets the filter.

The Filter control also shows you how many Objects out of the total available are being shown by the filter.

## Table Filter Configuration

When the **Configure Filter Dialog** button is selected, the following dialog appears that allows you to control the behaviour of the filter for specific columns.



- **Rating** - allows you to select whether or not an exact match is required, or if the filter is to allow ratings greater than or equal to the one shown.
- **Comment** - allows you to select if a PERL Regular Expression can be entered, or if choices are restricted to the choices provided in the drop down dialog.
- **Author** - allows you to select if a PERL Regular Expression can be entered, or if choices are restricted to the choices provided in the drop down dialog.
- **Source File** - allows you to select if a PERL Regular Expression can be entered, or if choices are restricted to the choices provided in the drop down dialog.

The default state of the filters can be configured on the [Library Preferences](#) tab in the [Preferences Dialog](#).

## Status Bar

/Development/SY99/Sam...	SY99 TNN File	Modified		PM = 1572864	SM = 262144	RM = 497664	Voices	Multis
--------------------------	---------------	----------	--	--------------	-------------	-------------	--------	--------

The Status Bar provides the following pieces of information (from left to right) for the [Child Window](#) which is currently selected:

- The name of the file currently open, if any. If no file has been selected then this field is blank
- The type of the file
- Whether or not the file has been modified
- If the File is an SY99 TNN file, and the Primary Device is an SY99, then the amount of Primary Memory (PM) fitted (as set in the [Device Type Preferences](#) tab of the [Preferences](#) Dialog) is shown. If the Required Memory (RM) is greater than the Primary Memory (PM) then the PM amount is shown in red text to indicate that this TNN will not load into the SY99.
- If the File is an SY99 TNN file, and the Secondary Device is an SY99, then the amount of Secondary Memory (SM) fitted (as set in the [Device Type Preferences](#) tab of the [Preferences](#) Dialog) is shown. If the Required Memory (RM) is greater than the Secondary Memory (SM) then the SM amount is shown in red text to indicate that this TNN will not load into the SY99 (this is shown as an example in the screenshot - the Primary SY99 has five memory cards fitted, and the Secondary SY99 has no memory cards fitted).
- If the File is an SY99 TNN file then the amount of Required Memory (RM) for the Samples is shown.
- If the left/top split pane is a table this indicator identifies what the table is showing (e.g. Voices or Multis)
- If the right/bottom split pane is a table this indicator identifies what the table is showing (e.g. Voices or Multis)

The Status Bar can be hidden/unhidden by the **Status Bar** menu option on the [View](#) menu



# Program Features

sy.factory provides the following features:


- [File Operations](#)
- [Undo/Redo Support](#)
- [Clipboard Support](#)
- [MIDI Support](#)
- [Library Support](#)
- [Find and Goto Support](#)
- [Editing Features](#)

## File Operations

sy.factory supports the following file operations:

- [Create New Files](#)
- [Open Existing Files](#)
- [Save Files](#)
- [Open and Save Workspaces](#)
- [Export Data](#)

## Create New File

When the **New File ...** option from the [File](#) Menu or the  button on the [Toolbar](#) is selected, the following dialog is shown:




This dialog allows you to select the type of file to create from the following:

- SY77 TNN (SY77 All)
- SY77 JNN (SY77 Synth All)
- SY77 KNN (SY77 Sequencer All)
- SY77 SYX Memory Bulk Dump (SY77 SYSEX format)
- SY77 SYX Voice Edit Buffer (SY77 SYSEX format)
- SY77 MIDI Memory Bulk Dump (SY77 SYSEX embedded in MIDI file format)
- SY77 MIDI Memory Edit Buffer (SY77 SYSEX embedded in MIDI file format)
- TG77 SYX Memory Bulk Dump (TG77 SYSEX format)
- TG77 SYX Voice Edit Buffer (TG77 SYSEX format)
- TG77 MIDI Memory Bulk Dump (TG77 SYSEX embedded in MIDI file format)
- TG77 MIDI Voice Edit Buffer (TG77 SYSEX embedded in MIDI file format)
- SY99 TNN (SY99 All)
- SY99 JNN (SY99 Synth All)
- SY99 CNN (SY99 Card File)
- SY99 KNN (SY99 Sequencer All)
- SY99 BNN (SY99 MIDI Data Recording)
- SY99 WNN (SY99 Single Wave)
- SY99 SYX Memory Bulk Dump (SY99 SYSEX format)
- SY99 SYX Voice Edit Buffer (SY99 SYSEX format)
- SY99 MIDI Memory Bulk Dump (SY99 SYSEX embedded in MIDI file format)
- SY99 MIDI Voice Edit Buffer (SY99 SYSEX embedded in MIDI file format)
- SY77 Data Card Format
- SY77 Wave Card Format (for use for use with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer)

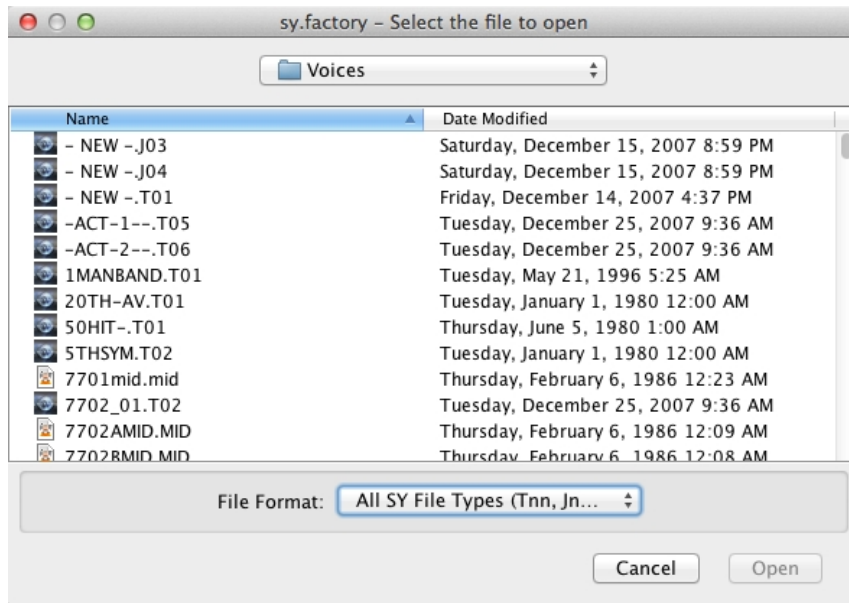
The new data file is given a name in the form of "syFactory\_n", where **n** is a number that increments every time a file is created.

Note, this is different from initialising data in a file, as a totally new file is created.

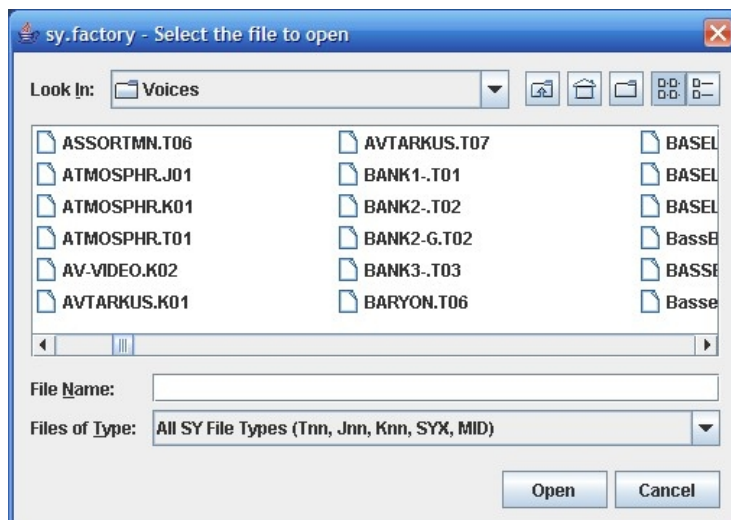
## Open Existing File

When the **Open ...** option from the **File** menu or the  button on the **Toolbar** is selected the following dialog will appear, allowing a file to be selected.

The File Open dialog on OS X is shown below:



The File Open dialog on Windows is shown below:



sy.factory can open the following file types:

- TNN (SY77/SY99 All) (including SY99 Multi-disk files)
- JNN (SY77/SY99 Synth All)
- CNN (SY99 Card File)
- KNN (SY77/SY99 Sequencer All)
- BNN (SY99 MIDI Data Recording)
- WNN (SY99 Wave)
- SYX format files containing SY77/TG77/SY99 bulk dump or voice edit buffer data (e.g. a file created by MIDIOX)
- MID sequence format files containing SY77/TG77/SY99 SYSEX data

SY factory will automatically detect if a TNN, JNN or KNN file is an SY77 or SY99 format file.

SY factory will automatically detect if SYSEX or MIDI files contain SY77, SY99 or TG77 data, including whether or not the file is a bulk memory dump or an edit buffer file. Note that TG77 voice only dumps will be interpreted as SY77 dumps as the voice structure and SYSEX messages are identical.

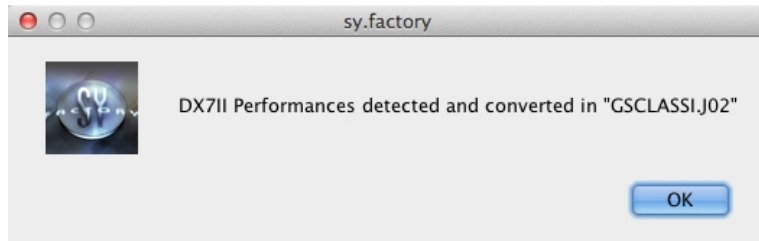
sy.factory will read and write SY99 TNN multi-disk sets (TNN/ZNN files). All files have to be in the same directory.

When sy.factory saves TNN/ZNN files, you may find that the resulting files are smaller than the source files, this is because the SY99 memory management of samples is not brilliant, and sy.factory can pack the samples into less space.

If a file selected for opening is already open, sy.factory will ask if you want to replace the file that is in memory.

You can also open DX7/DX7II SYSEX files (if sy.factory is registered). Please read the [DX7 Notes](#) Section for information on the conversion process.

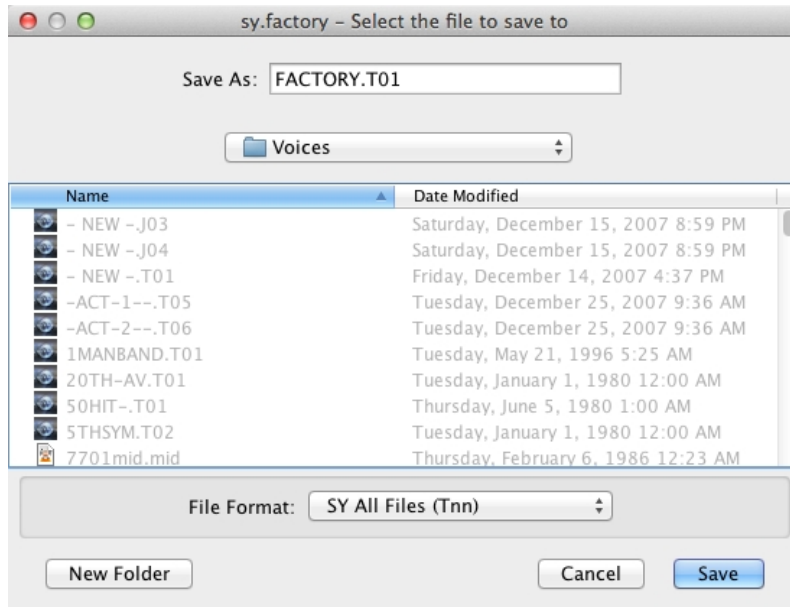
If DX7II performances are detected when you open a DX7 SYSEX file, a J02 file is created and a dialog will be displayed to let you know that a J02 file has been created.



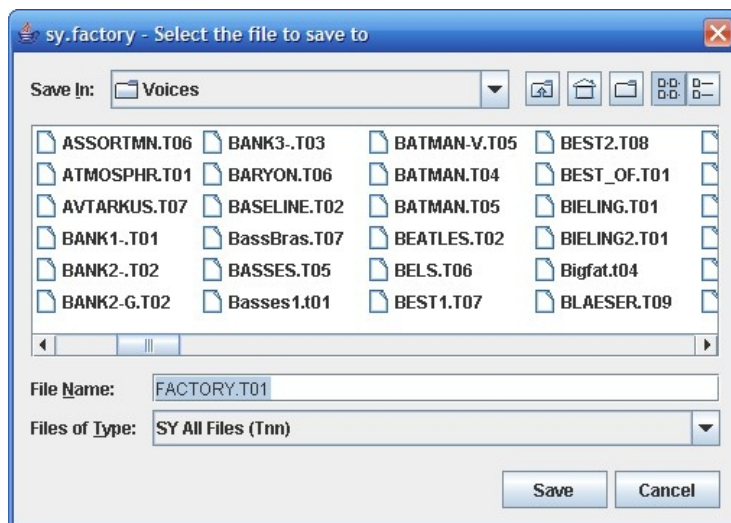
## Save Open Files

When you save a file to disk using: the **Save As ...** command from the [File](#) Menu, or when a file created using the **New ...** command from the [File](#) Menu is saved for the first time, the following dialog appears to allow you to select a name for the file

The File Save dialog on OS X is shown below:



The File Save dialog on Windows is shown below:



You can save a file to a different type by selecting **Files of Type** to be the new file type.

## Workspaces

sy.factory allows you to save the current size and position of the main sy.factory window, and the arrangement of the open [Child Windows](#) within sy.factory to a file known as a **Workspace**.

This allows you to save a **Workspace** you are using for future recall at a later date.

The following for each [Child Window](#) remembered:

- Window size, position and status (normal, maximised or minimised)
- Horizontal/Vertical Splits, including split position
- Pane type(s) (e.g. Tree, Voice Table or Performance Table)
- Tree node expansion status
- Table column widths
- Scroll position of the pane(s)
- Selection state of the tree nodes, or table rows

## Export Data

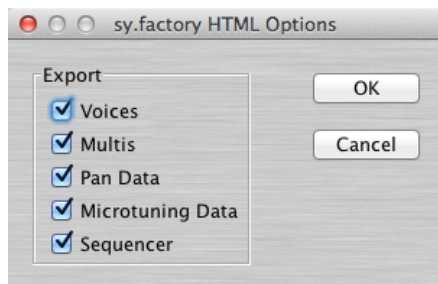
sy.factory allows you to export the data in the currently selected file to a variety of different formats.

- [HTML](#)
- [XML](#)
- [Cubase VST Patch List](#)
- [SpreadSheetML](#)

### HTML ...

This option allows you to export a listing of the data in HTML format.

If the file being exported is either a TNN or JNN file, the following dialog will appear allowing you to select the features to be exported:

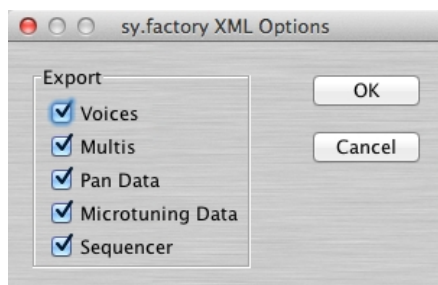


### XML ...

This option allows you to export a listing of the data in XML format.

This export option is intended to provide a means of importing SY data into other programmes, e.g. a database

If the file being exported is either a TNN or JNN file, the following dialog will appear allowing you to select the features to be exported:



### Cubase VST Patch Script ...

This option allows you to export a listing of the Voice/Performance data in Cubase VST patch script format.

This allows you to create patch scripts for use within Cubase to ease the selection of patches within the Cubase environment.

Consult your sequencer documentation for details on how to install the patch scripts within your sequencer.

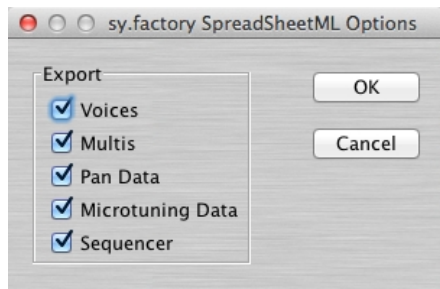
### SpreadSheetML ...

This option allows you to export a listing of the data in Microsoft SpreadSheetML format.

This export option is intended to provide a means of importing SY data into either Microsoft Word or Excel, which is a great way to start documenting your patch collections

If the file being exported is either a TNN or JNN file, the following dialog will appear allowing you to select the features to be exported:





## Undo Buffer

sy.factory supports a multi-level Undo/Redo Buffer facility on all edits.

The number of edits which are stored is 100.

The Undo/Redo commands can be found both within the [Edit Menu](#), and on the [Toolbar](#).

Please note that the undo buffer is global across all open files, and is cleared when any file is closed. This may be improved in later releases.

The undo buffer can be cleared by the selecting the **Clear Undo Buffer** option on the [Edit Menu](#). The intention of this feature is to help cope with low memory situations, as it will free up the memory used by stored edits.

## Clipboard Support

The sy.factory clipboard works just like the clipboard in other applications. It allows you to place an Object or a copy of an Object upon the clipboard and then paste that Object elsewhere within a file or another file.

You can Cut/Copy either a single Object or a Collection of Objects onto the clipboard.

You can only paste from the clipboard to the current location in a file if it makes sense to do so. For example:

- You cannot paste a Voice onto a Multi
- You cannot paste ten Voices at the end of a Voice Collection if the selection is at Voice 56 or higher

The sy.factory clipboard is "local" to the application, and only sy.factory Objects can be placed upon it.

sy.factory does not support the system clipboard so it is not possible to cut and paste between sy.factory and other applications. I don't think this is a major drawback because I cannot think of any circumstances where you would wish to do this!

## MIDI Support

The first step is to configure the Device types that you have in the [Device Type Preferences](#) tab in the [Preferences](#) Dialog. Up to two device types are supported: a Primary device and a Secondary Device.

You can select a Device to be either an SY77, SY99 or TG77. The Secondary Device is not enabled by default, and you need to enable it if required.

To use sy.factory MIDI Export support, your copy of sy.factory needs to be [registered](#).

### Configuring MIDI Support

To configure MIDI support, go to the [MIDI Preferences](#) tab in the [Preferences](#) Dialog, and set up the following:

- **Input MIDI Port** and **Output MIDI Port** should be set to the MIDI port(s) to which the SY is connected
- **SYSEX Device Number** should match the SY **Device Number** setting

If the Device Number on the SY is set to **ALL** then it will accept data for any SYSEX Device.

You can check that these settings work by pressing the **Test SY MIDI Settings** button. When you press this button a test message is sent to the SY and the subsequent Dialog will tell you if communication was successful or if there was a problem.


The above steps set up the basic communication mechanism for MIDI support, and you then can set up the remaining options according to your preferences:

- If you never work with Multis then you can exclude them from the bulk transfers by clearing the **Include Multis in Bulk Transfer** checkbox
- If you wish for sy.factory to always read the SY data on startup then check the **Read SY MIDI Data on Startup** checkbox
- If you wish for changes made to the SY Synthesizer Window to be automatically written to the SY then check the **Automatically Update SY after Synth Window Edit** checkbox
- You can adjust how long that sy.factory will wait for a response from the SY by adjusting the **Timeout Delay** value, which is given in milliseconds

The **Transmit Buffer Size**, **Transmit Delay Between Buffers** and **Transmit Delay Between Objects** values should not require adjustment. sy.factory sends data to the SY by dividing the data into packets the size of which are specified by the **Transmit Buffer Size** value. When sy.factory sends a packet it waits for the time period specified by **Transmit Delay Between Buffers** before sending the next packet, and it waits for the time period specified by **Transmit Delay Between Objects** after the last packet is sent. The delay parameters are specified in milliseconds. You may need to adjust these values (smaller buffers, longer delays) if communications is not reliable, and you may if you wish adjust these values (larger buffers, smaller delays) to maximise data transfer performance. If you adjust these values, please ensure that you test the transfer to ensure it is reliable, *otherwise you may risk losing data*. Note: Some MIDI interfaces do not like large packet sizes: I recently upgraded to a MOTU interface and ran into problems with MIDI export until I altered sy.factory to send messages in small chunks defined by the above parameters!

### Copying/Moving Data

In operation, using MIDI is quite straightforward.

You can get all the MIDI data into any [Child Window](#) (including the [SY Synthesizer](#) Window) by selecting the **Import from MIDI** option on the [MIDI Menu](#), or the  button on the [Tool Bar](#).

This imports all the data that you have set in the [MIDI Preferences](#) options to be included in bulk transfers.

Similarly you can also export all data using the **Export MIDI** option on the [MIDI Menu](#), or the  button on the [Tool Bar](#).

Note if you import or export MIDI data to/from a [Child Window](#) which is opened from a data file, then the [SY Synthesizer](#) Window is also updated with the data being imported/exported.

You can also import/export individual Objects or a selection of Objects by selecting the Import/Export memory options upon the Object's Context Sensitive Menu. You can also use the [keyboard shortcuts](#) for doing this.


And you can also [move/copy](#) Objects between the [SY Synthesizer](#) Window and [Child Window](#) using drag and drop.

You can also import/export a Object to/from the SY Edit Buffer by selecting a single Object and selecting the import/export to/from SY Edit Buffer options from the Object's Context Sensitive Menu. You can also use the [keyboard shortcuts](#) for doing this

Exporting Objects from sy.factory to the SY Edit Buffer is really handy, for example, when trying to find a particular Object in a file and you don't wish to load the file into the SY.

Finally you can also perform all the operations on Objects in the [SY Synthesizer](#) Window that you can upon Objects in a normal [Child Window](#).

If you have the **Automatically Update SY after Synth Window Edit** option active, when you change data the [SY Synthesizer](#) Window then the changes are automatically exported to the SY. If you are making a lot of changes, you may find yourself waiting quite a lot during the time it takes to do these exports.

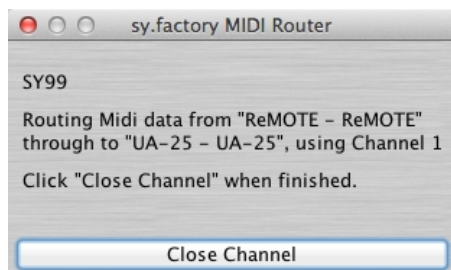
So you may wish to turn the **Automatically Update SY after Synth Window Edit** option off during intensive editing sessions. Once you've made all your changes you then select the **Export MIDI** option on the [MIDI Menu](#), or the  button on the [Tool Bar](#) Export option to manually export the changes.

If you quit sy.factory with changes still present in the [SY Synthesizer](#) Window that have not been exported, then you will be asked if you wish to export the data or not.

## MIDI Keyboard Routing

sy.factory has a facility to allow MIDI data from an additional MIDI input port, defined in the [MIDI Preferences](#) options dialog, to be routed to the port you have selected for sy.factory to output MIDI data on. This allows, for example, you to use a master keyboard (which may be closer to your computer) to be used when auditioning SY sounds that you've sent from sy.factory to the SY edit buffer.

You access this feature by selecting the **[DEVICE] MIDI Router ...** options in the [MIDI Menu](#) or by pressing the **F12** function key whenever you need it, which activates the following dialog.



The MIDI menu will provide one or two routing options depending on whether the **Enable Secondary Device** option in the [Device Options](#) Tab in the [Preferences](#) Dialog is checked or unchecked.

The name of the menu option will change depending on the selected device. A MIDI router option also exists for the secondary device if enabled.

The router uses the MIDI channel defined in the [MIDI Preferences](#) dialog This can either be the channel transmitted by the source device, or the specified channel.

The routing is active until you close the dialog by selecting the **Close Channel** button or by pressing the **ESC** key.

## Library Support

To use the sy.factory Library, your copy of sy.factory needs to be [registered](#).

### Configuring the Library

To configure the Library, go to the [Library Preferences](#) tab in the [Preferences](#) Dialog, and set up the preferences for the Library.

### Adding Objects to The Library

The following Objects can be added to the Library.

- Synthesizer
- Voices
- Multis
- Master Control Setups (SY99)
- Pans
- Microtunings
- Sequences

You can add Objects to the Library using the following methods:

- Use the **Add To Library** function that can be found in an Object's context menu;
- [Drag Copy](#) an Object or Selection of Objects over the [SY Library Window](#).
- Using the copy and paste functions of the [Clipboard](#).

Please note that you can only **Drag Copy** Objects to the [SY Library Window](#); you cannot **Drag Move** them.

Referenced objects are also copied to the Library if they are not already present in the Library. For example, if you copy a Performance and it references Voices then they are also copied if required.

If an object is copied to the Library and it is already present in the library (either a complete match or just a match in name), then the actions you have configured in the [Library Preferences](#) tab in the [Preferences](#) Dialog are taken.

You can also [Batch Import](#) files to the library

### Copying Objects From The Library

You can copy Objects from the Library to a file using the following methods:

- [Drag Copy](#) an Object or Selection of Objects from the the [SY Library Window](#) to a file.
- Using the copy and paste functions of the [Clipboard](#) to copy an object from the [SY Library Window](#) and paste it to a destination file.

Referenced objects are also copied from the Library if they are not already present in the destination file and if the destination file supports them. For example, if you copy a Performance and it references Voices then they are also copied if required.

### Deleting Objects From The Library

To delete an object from the library, right click over the Object or selection of Objects and select the **Delete** option from the context menu

### Exporting Voices From The Library to the SY

You can send Voices from the Library to the SY edit buffer by right clicking over a selected object and selecting the **Export to SY Edit Buffer** option from the context menu.

You can also [Drag Copy](#) a Voice or Selection of Voices from the the [SY Library Window](#) to the [SY Synth Window](#)

If you check the **Automatically Export Selected Item** option, then when you select a Voice it is automatically exported to the SY Voice Edit Buffer.

This, for example, allows you use the cursor keys to move though the library Voices and have them automatically exported to the Edit Buffer without having to do anything else. Please note however, that with this option enabled, then the scrolling is slowed down.

You can also double click on a Voice to export it.

## Extracting Files from the Library

If you set the Library Table View to show Files, you can right click over a file and select the **Extract File** menu option, which will recreate the original file from all the source data held in the database. The file can then be saved. This option is also available for Files shown in the Library Tree View

## List File Usage

If you right click over an object in the Library, and select the **List File Usage...** menu option, a dialog will be displayed which shows all the files in the Library that make use of that object.

Several files may refer to a single object based on the setting on the Library import preferences if they are set not to add identical objects. If this is set only a single copy is stored, and all files that contained the identical object only refer to that single object within the Library

## New Author

If you set the Library Table View to show Authors, you can right click in the Table and select the **New Author** menu option, which displays a dialog that allows you to create a new Author. This option is also available in the Library Tree View by right clicking over the **Author** branch

## Library Information ...

This option is found on the [Tools Menu](#).

Opens the [Library Statistics](#) dialog.

# Find and Goto Facilities

## Find Dialog

sy.factory supports the ability to find Objects by name.

Searches start from the currently selected Object.

Selecting the **Find ...** option on the [Edit Menu](#) brings up the **Find** dialog, that allows you to specify the string to search for. In addition, there are several options that can be selected to help refine the search.

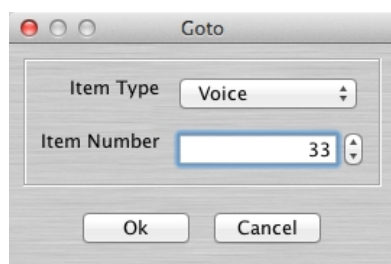


<b>Find What</b>	The text string to search for.
<b>Match Case</b>	If this option is checked then the search is case sensitive. If this option is not checked then the search is case insensitive.
<b>Match Whole Name</b>	If this option is checked then the search string must match the entire name of an Object. E.g. "pan" would match a Voice called "pan", but not a Voice called "pandora". If this option is not checked then the search can match a sub string within a name. E.g. "dor" would match a Voice named "dor" and a Voice called "pandora".
<b>Use Wild Cards</b>	If checked sy.factory will treat the "Find What" text as a "regular expression" to allow you more control over the search, such as matching text at the start of a name, or the end of a name, words with numbers in, etc.

The regular expression language used for sy.factory wild card support is the Perl Regular Expression Syntax. Rather than try and write up this powerful syntax myself into the sy.factory documents, I'll direct you to the [Perl Regular Expression Syntax](#) page for a description of how to use this powerful feature.

## Goto Dialog

Selecting this option on the on the [Edit Menu](#) brings up the **Goto** Dialog



<b>Item Type</b>	The type of Object to go to <ul style="list-style-type: none"><li>• The types of Objects that can be selected depends upon the type of file</li><li>• If a Table View is selected then you can only go to the type of objects shown by the Table</li></ul>
<b>Item Number</b>	The number of the Object to go to.

Note that **Goto** is not supported in the [SY Library Window](#).



## Editing Features

sy.factory supports the following editing features:

- [General Editing Features](#)
- [Synth Editing Features](#)
- [Voice Editing Features](#)
- [Multi Editing Features](#)
- [Master Control Setup Editing Features](#)
- [Wave Editing Features](#)
- [Sample Editing Features](#)
- [Pan Data Editing Features](#)
- [Microtuning Data Editing Features](#)
- [Sequencer Editing Features](#)
- [MIDI Data Recording Editing Features](#)
- [System Settings Editing Features](#)

## General Editing Features

sy.factory supports many editing features, some of which are classed as general features that are applicable to all or most Objects.

The general features are described here in one place for convenience:

- [Copy/Move Object](#)
- [Initialise Object](#)
- [Rename Object](#)
- [Insert Object](#)
- [Delete Object](#)
- [List Object References](#)
- [Sort Objects](#)
- [Add Objects to Library](#)

The following table shows whether or not a general edit operation can be applied to a particular type of Object:

Object Type	Move	Copy	Initialise	Rename	Insert	Delete	List	Sort	Add To Library
Synth Object	Y	Y	Y	N	N	N	N	N	Y
Voice Collection	Y	Y	Y	N	N	N	N	Y	Y
Voice	Y	Y	Y	Y	Y	Y	Y	N	Y
Voice Microtuning	Y	Y	Y	Y	N	N	N	N	N
Voiced Element Collection	Y	Y	Y	N	N	N	N	N	N
Voiced Element	Y	Y	Y	N	Y	Y	N	N	N
Voice AFM Element Operator	Y	Y	Y	N	Y	Y	N	N	N
Voice Effects Collection	Y	Y	Y	N	N	N	N	N	N
Voice Chorus Effect Unit 1	Y	Y	Y	N	N	N	N	N	N
Voice Chorus Effect Unit 2	Y	Y	Y	N	N	N	N	N	N
Voice Reverb Effect Unit 1	Y	Y	Y	N	N	N	N	N	N
Voice Reverb Effect Unit 2	Y	Y	Y	N	N	N	N	N	N
Voice Controllers	Y	Y	Y	N	N	N	N	N	N
Multi Collection	Y	Y	Y	N	N	N	N	Y	Y
Multi	Y	Y	Y	Y	Y	Y	N	N	Y
Multi Part Collection	Y	Y	Y	N	N	N	N	N	N
Multi Part	N	N	Y	N	N	N	N	N	N
Multi Effects Collection	Y	Y	Y	N	N	N	N	N	N
Multi Chorus Effect Unit 1	Y	Y	Y	N	N	N	N	N	N
Multi Chorus Effect Unit 2	Y	Y	Y	N	N	N	N	N	N
Multi Reverb Effect Unit 1	Y	Y	Y	N	N	N	N	N	N
Multi Reverb Effect Unit 2	Y	Y	Y	N	N	N	N	N	N
Master Control Setup Collection	Y	Y	Y	N	N	N	N	Y	Y
Master Control Setup	Y	Y	Y	Y	Y	Y	N	N	Y
Master Control Setup Zone	Y	Y	Y	N	Y	Y	N	N	N
Wave Collection	Y	Y	Y	N	N	N	N	Y	Y
Wave	Y	Y	Y	Y	Y	Y	N	N	Y
Sample Collection	Y	Y	Y	N	N	N	N	Y	Y
Sample	Y	Y	Y	Y	Y	Y	N	N	Y
Pan Data Collection	Y	Y	Y	N	N	N	Y	Y	Y
Pan Data	Y	Y	Y	Y	Y	Y	N	N	Y
Microtuning Data Collection	Y	Y	Y	N	N	N	N	Y	Y
Microtuning Data	Y	Y	Y	Y	Y	Y	Y	N	Y
Sequencer	Y	Y	Y	Y	N	N	N	N	Y
Sequencer Track Collection	Y	Y	Y	N	N	N	N	N	N
Sequencer Track	Y	Y	Y	N	Y	Y	N	N	N
Sequencer Pattern Collection	Y	Y	Y	N	N	N	N	N	N
Sequencer Pattern	Y	Y	Y	N	Y	Y	N	N	N
Sequencer Pattern Chain Collection	Y	Y	Y	N	N	N	N	N	N
Sequencer Pattern Chain	Y	Y	Y	N	Y	Y	N	N	N
Sequencer Time Signature Collection	Y	Y	Y	N	N	N	N	N	N
Sequencer Time Signature	Y	Y	Y	N	Y	Y	N	N	N
MIDI Data Recording Collection	Y	Y	Y	N	N	N	N	Y	N
MIDI Data Recording	Y	Y	Y	Y	Y	Y	N	N	N
System Parameters	Y	Y	Y	N	N	N	N	N	N

## Copy/Move Object

sy.factory makes extensive use of drag and drop for copying and moving Objects.

You can drag copy or move Objects within a file or between files, and you can drag single items or multiple items.

The default drag operation is to move an Object, and there are two types of move operations:

- Moving an Object within its Parent Collection (e.g. moving a Voice from location 1 to location 4)
- Moving an Object to a new Parent Collection (e.g. moving a Voice from one file to another file)

When you move an Object to a new Parent Collection then the original Object is removed and replaced with an initialised Object of the same type.

To copy an Object using drag and drop, you must have the **DRAG MODIFIER** key held down during the operation. The **DRAG MODIFIER** key is platform dependent. On the PC platform it is the **CTRL** key.

You can tell that a copy operation is in progress as the drag image icon has a + sign visible.

When you drag multiple items they must be of the same type. For example you can drag several Voices, but not Voices and Performances together.

sy.factory provides the following drag/drop feedback to assist in determining the effects of a drag/drop operation:

- Cursor: Indicates if the move is either a copy or a move, or if the drop is invalid (e.g. trying to drag a Voice onto an Element)
- Drag image: A simple pictorial representation of what is being dragged
- Drop Point: sy.factory shows the drop point as either a cue line drawn between Objects if an Object is being moved within its parent (e.g. an Operator within a Voice), or a cue rectangle drawn around the drop location for all other moves and copy operations which are valid

When a [Child Window](#) is split, Objects can be dragged and dropped between either side of the split point. This is handy, for example, for dragging Objects between the start of a Collection and the end of a Collection.

The [Tree](#) and [Table](#) views will auto-scroll in drag and drop operations, when you move the cursor to either the top or the bottom of the pane and hold it there.

If you drag an Object onto a [Tree View](#) and over a valid parent Object (e.g. an Operator over a Voice) and the parent Object is collapsed within the Tree, and you hold the cursor over the Parent Object for a few seconds it will automatically expand.

sy.factory will maintain the references to Voices in Performance Parts when moving Voices within a file.

For example if you move a Voice from Location 2 to Location 10, then any Multi Parts which are referencing Voices at Locations 2 and above will be updated to ensure they still reference the same Voices after the move operation as they were before the move operation.

The ability to update Object references following a move or to copy referenced Objects during a move to a new file can be selectively turned on or off within the [Preferences](#) Dialog.

## Initialise Object

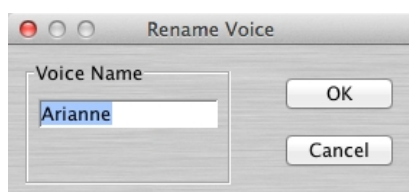
Initialises the selected Object to its default state.

Multiple Objects of the same type can be selected for initialisation.

The **Initialise** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

## Rename Object

Renames the selected Object using the following dialog, which can also be used to change the object category:



Only one Object can be selected for renaming.

The **Rename** command is found upon the **Context Sensitive Menu** in the [Tree View](#)

To rename Objects in the [Table View](#), simply double click in the **Name Cell** of the required Object to edit the name.

### **Insert Object**

Inserts an Object into a Collection at the current location.

The **Insert** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

You can insert more than one Object at a time by selecting multiple Objects prior to executing the **Insert** command.

For example if you wish to insert three Multis at location 10, select Multis 10, 11 and 12 and then execute the **Insert** command.

Note that when you insert one or more Objects, then the commensurate number of Objects at the end of the Parent Collection are removed if required. This is necessary to maintain the correct number of Objects in a Collection.

For example, an SY Voice Collection can only contain 64 Voices, so if two Voices are inserted into the Collection then two Voices must be removed from the end of the Collection to maintain the correct size.

sy.factory will maintain the Multi Part references to Voices when inserting Voices.

For example if you insert a Voice into a file at Location 10, then any Multi Parts which are referencing Voices at Locations 10 and above will be updated to ensure they still reference the same Voices after the insert operation as they were before the insert operation.

### **Delete Object**

Deletes an Object at the current location.

The **Delete** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

You can delete more than one Object at a time by selecting multiple Objects prior to executing the **Delete** command.

For example if you wish to delete three Multis at location 10, select Multis 10, 11 and 12 and then execute the **Delete** command.

Note that when you delete one or more Objects, then a commensurate number of Objects at the end of the Parent Collection are added if required. This is necessary to maintain the correct number of Objects in a Collection.

For example, an SY Voice Collection must contain 64 Voices, so if two Voices are deleted from the Collection then two Voices must be added to the end of the Collection to maintain the correct size.

sy.factory will maintain Multi Part references to Voices in a Collection when deleting Voices.

For example if you delete a Voice from a file at Location 10, then any Multi Parts which are referencing Voices at Locations 10 and above will be updated to ensure they still reference the same Voices after the delete operation as they were before the delete operation.

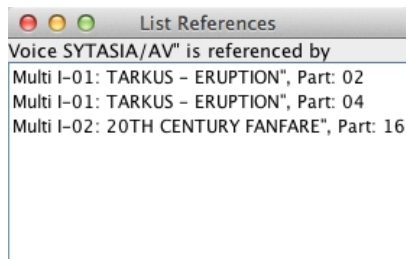
### **List Object References**

The **List References** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

The **List References** command is only available if:

- Only one Object is selected
- The Object selected is referenced by another Object, which is indicated by the Object being coloured blue

The references are shown as follows:



The Object being referenced is shown at the top of the Dialog followed by the Objects referencing it.

### Sort Objects

The **Sort by Name** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

In the [Tree View](#) the sort options are accessed via the **Context Sensitive Menu** for the Collection that you wish to sort (e.g. the Voice Collection to sort Voices).

In the [Table View](#) the sort options are accessed via the **Context Sensitive Menu** for any Object. The sort can also be initiated by clicking in the **Name** column header.

## Synth Editing Features

sy.factory supports the following editing operations upon the **Synth Object** within the [Tree View](#) of a [Child Window](#):

- [Move](#)
- [Copy](#)
- [Initialise](#)
- [Edit...](#) (Wave Card files only)
- [Import from SY Memory](#) (not available for Wave Card files)
- [Export to SY Memory](#) (not available for Wave Card files, and only available for other file types if sy.factory is [registered](#) and MIDI support is enabled)
- [Add To Library](#) (not available for Wave Card files)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access these features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Synth Object** to activate the **Synth Object's** Context Sensitive Menu.

The **Synth Object** is only shown within a [Tree View](#) and is the first Object in the [Tree View](#). Its name identifies the type of file.

For example, a **Synth Object** representing an SY77 Bulk Dump SYSEX file is labelled:

*SY77 Internal Memory SYSEX File*

### Import from SY Memory

Imports data from the SY Memory locations into the currently selected [Child Window](#).

This feature is not available for Wave Card files.

### Export to SY Memory

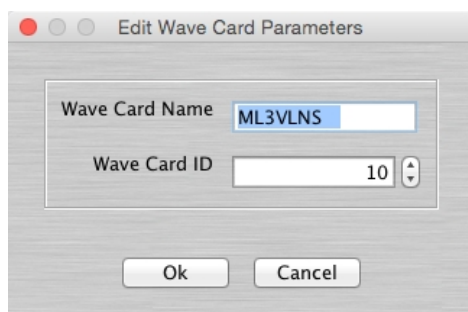
Exports data from the currently selected [Child Window](#) to the SY Memory locations.

This feature is not available for Wave Card files.

### Edit...

This feature is only available for Wave Card files. It allows you to edit the Name of the Wave Card and the numeric ID.

Selecting this feature opens the following dialog.



You can type a name for the Wave Card of up to ten characters.

Each Yamaha Wave Card has a unique numeric ID, and this allows you to set your own.

Refer to the following discussion on Yamaha Forums.

### [Wave Card Information](#)

The synopsis of the information on Wave Card IDs (as I understand it) is:

- AWM voices in the host synth need to know this card ID so that they can warn you if you have selected a voice that uses a card which is not installed).
- Therefore each Wave Card Image that you make should have a unique ID.
- Known Yamaha ROM Cards have IDs in the range of 0-20 (decimal)
- So I would suggest you start your own IDs from, say, 100 onwards.

- If the user community decides to start sharing Card Images, it might be worth setting up a scheme for allocating numbers so they are unique

## Voice Editing Features

sy.factory supports the following editing operations upon the **Voice Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data From SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Voice Collection** Object in a file is only shown within a [Tree View](#) and is called **User Voices**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Collection** to activate the **Voice Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Voice Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [New](#)
- [List References](#)
- [Import from SY Memory](#)
- [Export to SY Memory](#) (only if available sy.factory is [registered](#))
- [Export to SY Edit Buffer](#) (only if available sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Voice** or selection of **Voices** to activate the **Voice's** Context Sensitive Menu.

Within the [Tree View](#) of a [Child Window](#) you can also directly edit the following Objects that make up a Voice :

- [Voice Microtuning](#)
- [Voice Elements](#)
- [Voice Effects](#)
- [Voice Controllers](#)

### New

Allows you to create a new Voice at the selected location from one of the following SY voice types.

- 1 AFM Mono
- 2 AFM Mono
- 4 AFM Mono
- 1 AFM Poly
- 2 AFM Poly
- 1 AWM Poly
- 2 AWM Poly
- 4 AWM Poly
- 1 AFM and 1 AWM Poly
- 2 AFM and 2 AWM Poly
- Drum

This is different to initialising a voice, which always creates a default AWM voice.

Note that the options for **4 AFM Mono**, **4 AWM Poly** and **2 AFM and 2 AWM Poly** voices are only available if the selected voices are in voice Bank D, as the SY only allows these voices to saved in Bank D.

### Import from SY Memory

Imports Voices from the SY Memory locations into the currently selected [Child Window](#).

You can import:



- A Single Voice
- A Selection of Voices
- All Voices by selecting the Voice Collection

### Export to SY Memory

Exports Voices from the currently selected [Child Window](#) to the SY Memory locations.

You can export:

- A Single Voice
- A Selection of Voices
- All Voices by selecting the Voice Collection

### Export to SY Edit Buffer

Exports the Voice currently selected within the active [Child Window](#) to the SY Voice Edit Buffer.

Note if you have more than one Voice selected then this operation is not available

### Voice Microtuning Unit Editing Features

sy.factory supports the following editing operations upon the **Voice Microtuning Unit** Object shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Set Microtuning](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move, Copy and Set (which you do via "Drag and Drop"), right click over the **Voice Microtuning Unit** to activate the **Voice Microtuning Unit's** Context Sensitive Menu.

### Set Microtuning

Preset **Microtunings** from the [SY Synthesizer Window](#) can be dragged onto a Voice's Microtuning Unit. Please note, the drag operation for this is **COPY** only. You cannot **MOVE** a Microtuning onto an Microtuning Unit.

You can also drag User **Microtunings** from the same file onto the Microtuning Unit.

## Voice Element Editing Features

sy.factory supports the following editing operations upon the **Voice Element Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Element Collection** to activate the **Voice Element Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Voice Element Objects** within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Set Wave](#)
- [Initialise](#)
- [Insert](#)
- [Delete](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move, Copy and Set (which you do via "Drag and Drop"), right click over a **Voice Element** or selection of **Voices Elements** to activate the **Voice Element's** Context Sensitive Menu.

### Set Wave

The Wave for an AWM Element can be set by drag copying a Preset Wave onto the Element.

Please note, the drag operation for this is **COPY** only. E.g. you cannot **MOVE** a Preset Wave onto an Element.

## AFM Element Operator Editing Features

sy.factory supports the following editing operations upon the **Voice AFM Element Operator Objects** within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Insert](#)
- [Delete](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Voice AFM Element Operator** or selection of **Voice AFM Element Operators** to activate the **Voice AFM Element Operator's** Context Sensitive Menu.

## Voice Effects Editing Features

sy.factory supports the following editing operations upon the **Voice Effects Units Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Effects Units Collection** to activate the **Voice Effects Units Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the individual **Voice Effects Objects** (Chorus and Reverb effects units) within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Voice Effect** or selection of **Voice Effects** to activate the **Voice Effects's** Context Sensitive Menu.

### **Voice Controller Editing Features**

sy.factory supports the following editing operations upon the **Voice Controllers** object shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Controllers** object to activate the **Voice Controllers'** Context Sensitive Menu.

## Multi Editing Features

sy.factory supports the following editing operations upon the **Multi Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data from SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Multi Collection** Object in a file is only shown within a [Tree View](#) and is called **User Multis**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Multi Collection** to activate the **Multi Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Multi Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Import from SY Memory](#)
- [Export to SY Memory](#) (only if available sy.factory is [registered](#))
- [Export to SY Edit Buffer](#) (only if available sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Multi** or selection of **Multi** to activate the **Multi's** Context Sensitive Menu.

Within the [Tree View](#) of a [Child Window](#) you can also directly edit the following Objects that make up a **Multi**:

- [Multi Parts](#)
- [Multi Effects](#)

### Import from SY Memory

Imports Multis from the SY Memory locations into the currently selected [Child Window](#).

You can export:

- A Single Multi
- A Selection of Multis
- All Multis by selecting the Multi Collection

### Export to SY Memory

Exports Multis from the currently selected [Child Window](#) to the SY Memory locations.

Note if you have more than one Multi selected then this operation is not available

### Export to SY Edit Buffer

Exports the Multi currently selected within the active [Child Window](#) to the SY Edit Buffer.

Note if you have more than one Multi selected then this operation is not available

### Multi Part Editing Features

sy.factory supports the following editing operations upon the **Multi Part Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)

- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Multi Part Collection** to activate the **Multi Part Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Multi Part Objects** within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Insert](#)
- [Delete](#)
- [Set Voice](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Copy, Move and Set Voice (which you do via "Drag and Drop"), right click over a **Multi Part** or selection of **Multi Parts** to activate the **Multi Part's** Context Sensitive Menu.

### **Set Voice**

A **User Voice** from the same file can be dragged onto a Multi Part to set the Voice used by the Multi Part.

**Preset Voices** from the [SY Synthesizer Window](#) can be dragged onto Multi Parts as well.

Please note, the drag operation for this is **COPY** only. You cannot **MOVE** a Voice onto a Multi Part.

## Multi Effects Editing Features

sy.factory supports the following editing operations upon the **Multi Effects Units Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Multi Effects Units Collection** to activate the **Multi Effects Units Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the individual **Multi Effects Objects** (Chorus and Reverb effects units) within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Multi Effect** or selection of **Multi Effects** to activate the **Multi Effects's** Context Sensitive Menu.

## Master Control Setup Editing Features

sy.factory supports the following editing operations upon the **Master Control Setup Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data from SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **User Master Control Setup Collection** Object in a file is only shown within a [Tree View](#) and is called **User Master Control Setups**.

In the following guide, they will be called **Masters** for brevity.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Master Collection** to activate the **Master Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Master Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy and Set (which you do via "Drag and Drop"), right click over a **Master** or selection of **Master** to activate the **Master's** Context Sensitive Menu. Note that the SY99 does not allow individual masters to be transmitted and received via MIDI

Within the [Tree View](#) of a [Child Window](#) you can also directly edit the following Objects that make up a **Master**:

- [Master Zones](#)

### Import from SY Memory

Imports Masters from the SY Memory locations into the currently selected [Child Window](#).

You can export:

- A Single Masters
- A Selection of Masters
- All Masters by selecting the Master Collection

### Export to SY Memory

Exports Masters from the currently selected [Child Window](#) to the SY Memory locations.

Note if you have more than one Master selected then this operation is not available

## Wave Editing Features

sy.factory supports the editing of Waves in:

- [SY99 TNN files](#).
- [SY Wave Card Format](#) for use with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer.

### SY99 TNN Files.

sy.factory supports the following editing operations upon the **Wave Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)

- [Initialise](#)
- [Sort by Name](#)
- [Import Data From SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Wave Collection** Object in an SY99 TNN file is only shown within a [Tree View](#) and is called **User Waves**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Wave Collection** to activate the **Wave Collection's** Context Sensitive Menu.

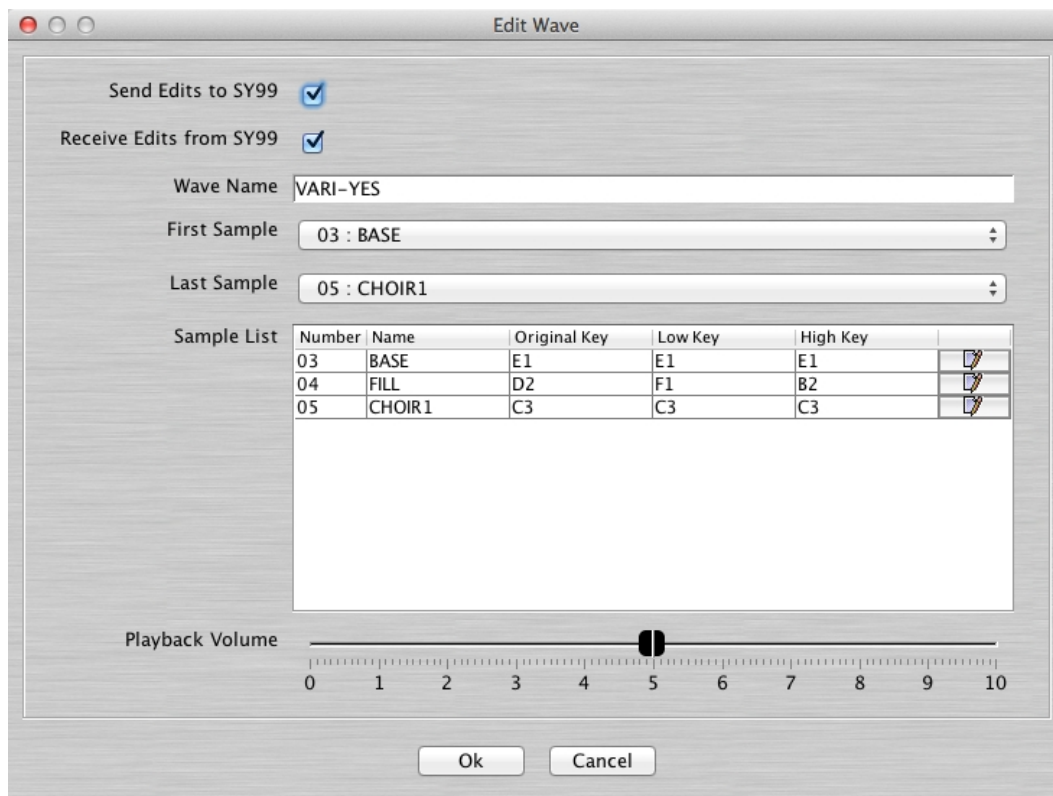
sy.factory supports the following editing operations upon the **Wave Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Edit](#)
- [List References](#)
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Wave** or selection of **Waves** to activate the **Wave's** Context Sensitive Menu.

### Edit SY99 Wave

The Edit Wave Dialog allows you to edit the Wave parameters. You can also audition the Wave using a keyboard connected to the Keyboard Input MIDI Port defined in the [MIDI Preferences](#) options dialog to play notes. Please note that the MIDI support is "simplistic" mono note detection, don't try and play chords!



The Edit Wave Dialog provides the following controls.

<b>Send Edits To SY99</b>	When this option is checked, edits within the dialog will be transmitted to the SY99.
<b>Receive Edits From SY99</b>	When this option is checked, Wave edits received from the SY99 will update the controls within the dialog.



<b>Wave Name</b>	A text box that allows you to edit the name of the Wave.
<b>First Sample</b>	A drop down box that allows you to select the first sample referenced by the Wave.

### Import from SY Memory

Imports Waves from the SY Memory locations into the currently selected [Child Window](#).

You can import:

- A Single Wave
- A Selection of Waves
- All Waves by selecting the Wave Collection

### Export to SY Memory (SY99 only)

Exports Waves from the currently selected [Child Window](#) to the SY Memory locations.

You can export:

- A Single Wave
- A Selection of Waves
- All Waves by selecting the Wave Collection

### SY Wave Card Files

sy.factory allows the editing of Wave Card files for use with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer.

### A Note on Wave Keymaps

It is worth noting that how the keymap for samples within a Card Wave works might be a little different compared to what you are used to compared to the keymapping features in modern samplers!

There are no key range cross fade options, and there are no velocity layers.

There are no "low key" parameters; there are only high keys. The key range of a sample extends from the note above the high key of the previous sample up to its specified high key.

The keymap is held within the wave, and it is not very tightly coupled with the samples; this made it a challenge in deciding what sy.factory should do with the keymap when moving, inserting, deleting, adding or importing waves. The following table explains what happens to a wave comprised of five samples when various operations are performed. The philosophy is to preserve the keymap as much as possible. Following an edit, you may need to go and adjust the keymap as required.

To help the descriptions, the effects of each operation on some example samples (with their high key numbers given in brackets) is given for each type of edit. The example samples are

- Kick Drum(C1)
- Snare Drum(C2)
- Tom Tom(C3)
- High-Hat(C4)
- Ride(G8)

The high key of the last sample must always be G8.

Due to the way that Card Wave keymaps work, I would recommend that you import all of the samples that you require into a Wave and get them in the right order before setting the high keys.

### Editing Options

sy.factory supports the following editing operations upon the **Waves Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Add Wave](#)
- [Sort by Name](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Wave Collection** Object in an SY Wave Card file is only shown within a [Tree View](#) and is called **Waves**. The number of Waves is also shown, along with the amount of memory required (in 16 bit words).

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Wave Collection** to activate the **Wave Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Wave Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

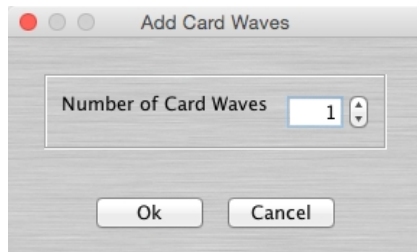
- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Add Wave](#)
- [Add Sample](#)
- [Edit...](#)
- [Import...](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Wave** or selection of **Waves** to activate the **Wave's** Context Sensitive Menu.

### Add Wave

Adds a new initialised Wave to the Waves Collection.

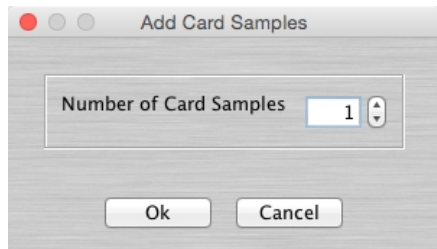
If you hold down the ALT key whilst making the menu selection, a Dialog will appear allowing you to specify the number of waves to add.



### Add Sample

Adds a new initialised Sample to a Wave Object.

If you hold down the ALT key whilst making the menu selection, a Dialog will appear allowing you to specify the number of samples to add.



Samples are added to the end of the sample list, and the parent Wave's keymap is adjusted so that all samples have a high key. The existing keymap is preserved as much as possible and adjustments are made in the high key range. For example if you add a sample, the keymap for that sample is G8 (the last sample's high key must always be G8), the high key of the sample below it becomes F#7.

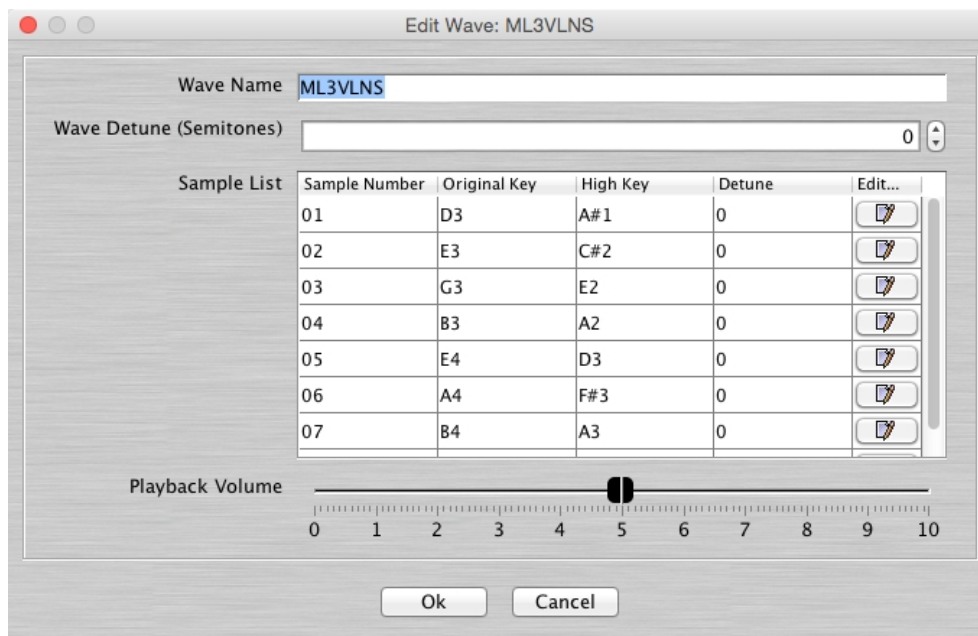
### Import...

Imports an audio file into the Wave; a Sample object is created and added to the Wave. You can import multiple audio files

The parent Wave's keymap is adjusted so that all samples have a high key. The existing keymap up to the last sample is preserved. For example if you import a sample, it becomes the last sample, and the keymap for that sample is G8 (the last sample's high key must always be G8), the high key of the sample below it becomes F#7.

### Edit...

The Edit Wave Dialog allows you to edit the Wave parameters. You can also audition the Wave using a keyboard connected to the Keyboard Input MIDI Port defined in the [MIDI Preferences](#) options dialog to play notes. Please note that the MIDI support is "simplistic" mono note detection, don't try and play chords!



The Edit Wave Dialog provides the following controls.

### Sample Editing Features

sy.factory supports the editing of Samples in:

- [SY99 TNN files.](#)
- [SY Wave Card Format](#) for use with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer.

### SY99 TNN Files.

sy.factory supports the following editing operations upon the **Sample Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Export](#)
- [Sort by Name](#)
- [Import Data From SY99 Memory](#)
- [Export Data to SY99 Memory](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Sample Collection** Object in an SY99 TNN file is only shown within a [Tree View](#) and is called **User Samples**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Sample Collection** to activate the **Sample Collection's** Context Sensitive Menu.

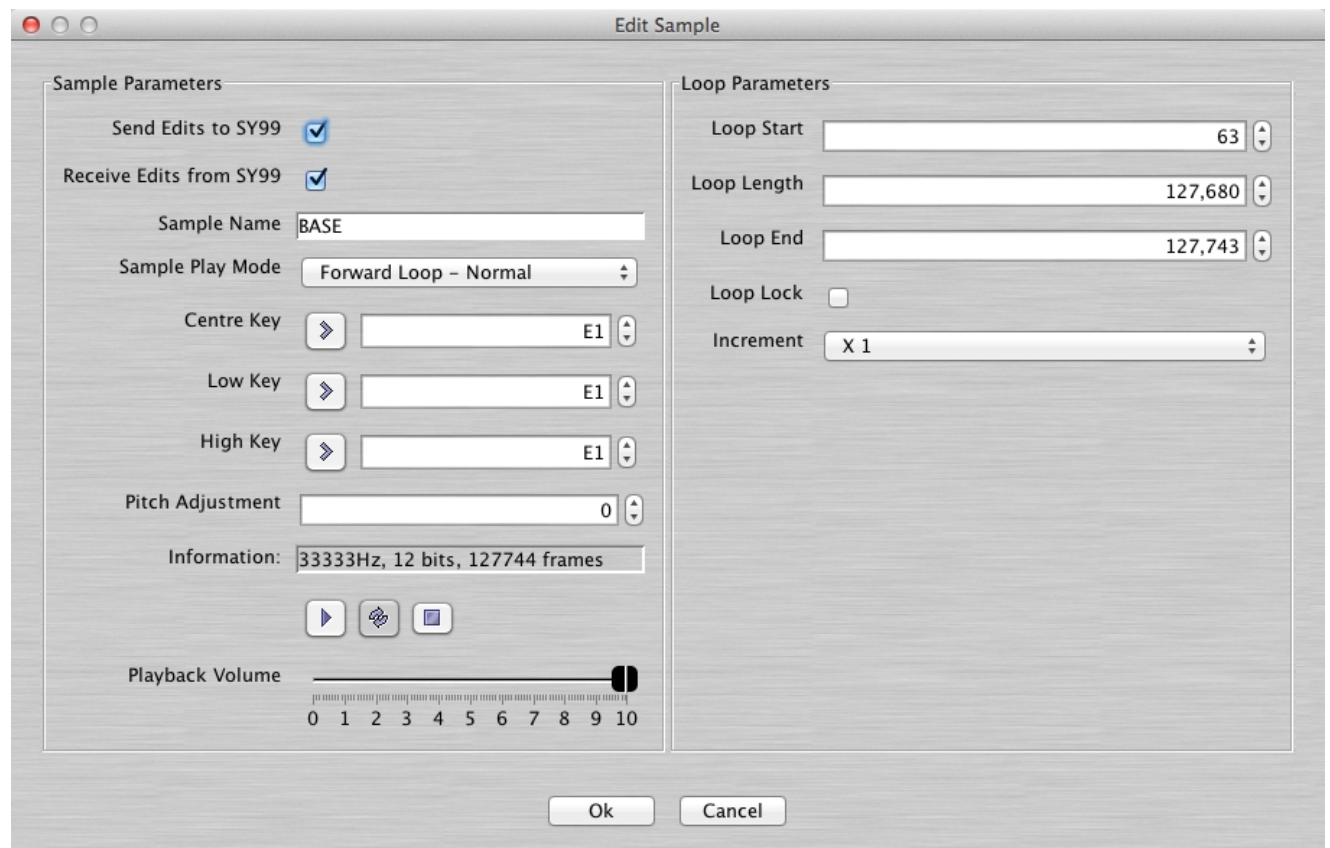
sy.factory supports the following editing operations upon the **Sample Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Edit](#)
- [Import](#)
- [List References](#)
- [Import From SY99 Memory](#)
- [Export Data to SY99 Memory](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Sample** or selection of **Samples** to activate the **Sample's** Context Sensitive Menu.

## Edit Sample

The Edit Sample Dialog allows you to edit the Sample parameters. You can also audition the Sample using a keyboard connected to the Keyboard Input MIDI Port defined in the [MIDI Preferences](#) options dialog to play notes. Please note that the MIDI support is "simplistic" mono note detection, don't try and play chords!



The Edit Sample Dialog provides all the controls available in the SY99 Sample Edit Mode.

<b>Send Edits To SY99</b>	When this option is checked, edits within the dialog will be transmitted to the SY99. Note the SY99 does not support the reception of loop points.
<b>Receive Edits From SY99</b>	When this option is checked, Wave edits received from the SY99 will update the controls within the dialog. Note the SY99 does not support the transmission of loop points.
<b>Sample Name</b>	A text box that allows you to edit the name of the Sample.
<b>Sample Play Mode</b>	A Combo box that allows you to select the playback mode for the sample from the modes supported by the SY99.
<b>Centre Key</b>	A spinner control that allows you to select the high key for the sample. You can use the up/down arrows to increment/decrement the centre key. You can also type a key value, or play a note on a keyboard connected to the Keyboard Input MIDI Port defined in the <a href="#">MIDI Preferences</a> options dialog. You can also edit the Detune parameter by double clicking in the cell and editing it.
<b>Low Key</b>	A spinner control that allows you to select the low key for the sample. You can use the up/down arrows to increment/decrement the centre key. You can also type a key value, or play a note on a keyboard connected to the Keyboard Input MIDI Port defined in the <a href="#">MIDI Preferences</a> options dialog. You can also edit the Detune parameter by double clicking in the cell and editing it.
<b>High Key</b>	A spinner control that allows you to select the high key for the sample. You can use the up/down arrows to increment/decrement the centre key. You can also type a key value, or play a note on a keyboard connected to the Keyboard Input MIDI Port defined in the <a href="#">MIDI Preferences</a> options dialog. You can also edit the Detune parameter by double clicking in the cell and editing it.
<b>Pitch Adjustment</b>	Allows you to fine tune the pitch of the sample. Note the SY99 pitch adjustment is not in cents (1200 divisions per octave), but 1024 divisions per octave.
<b>Information</b>	Shows some basic information about the sample: Sample Rate, Bit Depth and length.  The background of this text is set red if the calculated sample playback frequency exceeds 48KHz, which is a limitation of Java. The impact of this when it occurs is that the playback pitch for the note you are playing may not be correct, which is why the program provides

	feedback in colouring this text background red. There's not much that can be done about this Java limitation, I'm afraid.
<b>Playback Controls</b>	<p>The Edit Sample Dialog provides three controls to allow Samples to be played back manually within sy.factory:</p> <ul style="list-style-type: none"> <li>• ▶ Plays the Sample</li> <li>• ⏏ Breaks out of the Sample loop (if the Sample is looped)</li> <li>• ■ Stops playback of the Sample</li> </ul> <p>Note: Java has a maximum Sample playback rate of 48KHz. When shifting the playback key, the adjustment is achieved by changing the Sample rate (as on the SY99). If changing the playback key causes the Java sample rate to be exceeded, sy.factory will sample rate convert the Sample to maintain the Sample rate within limits. When this happens the playback button is coloured orange (as shown above). When no sample rate conversion has taken place the button is its normal colour.</p> <p>Note you must have the <a href="#">Tritonus</a> Java Sound extension libraries installed for sy.factory to be able to perform the sample rate conversion. If the Playback button is coloured orange the playback frequency will not be correct.</p> <p>If the Sample is looped then the Sample playback will remain in the loop until either:</p> <ul style="list-style-type: none"> <li>• The ⏏ button is pressed, following which Sample playback will continue to the end of the Sample</li> <li>• The ■ button is pressed, following which Sample playback is halted</li> </ul>
<b>Playback Volume</b>	Sets the playback volume for the sample.
<b>Loop Start</b>	Sets the start point of the loop.
<b>Loop Start</b>	Sets the length of the loop.
<b>Loop End</b>	Sets the end point of the loop
<b>Loop Lock</b>	If this control is checked then the length of the loop is preserved when you adjust the start or end point (e.g. if you adjust the start point, then the end point is also adjust to maintain the loop length).
<b>Increment</b>	Sets value by which the loop controls increment by.

### Import Sample

When you select this option, sy.factory will prompt for the file to import. You can select more than one file to import if you wish

### Import from SY99 Memory

Imports Samples from the SY99 Memory locations into the currently selected [Child Window](#).

You can import:

- A Single Sample
- A Selection of Samples
- All Samples by selecting the Sample Collection

### Export to SY99 Memory

Exports Samples from the currently selected [Child Window](#) to the SY Memory locations.

Please be aware of SY99 Sample issues, which may affect your export to the SY99.

You can export:

- A Single Sample
- A Selection of Samples
- All Samples by selecting the Sample Collection

### SY Wave Card Files

sy.factory supports the following editing operations upon the **Sample Objects** within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Insert](#)
- [Delete](#)
- [Add Sample](#)
- [Edit...](#)



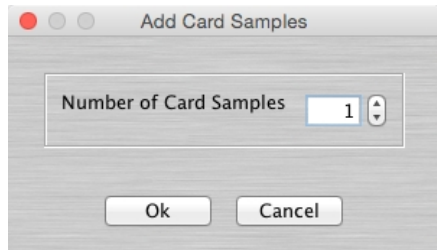
- [Import...](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Sample** or selection of **Samples** to activate the **Sample's** Context Sensitive Menu.

### Add Sample

Adds a new initialised Sample to a Wave Object.

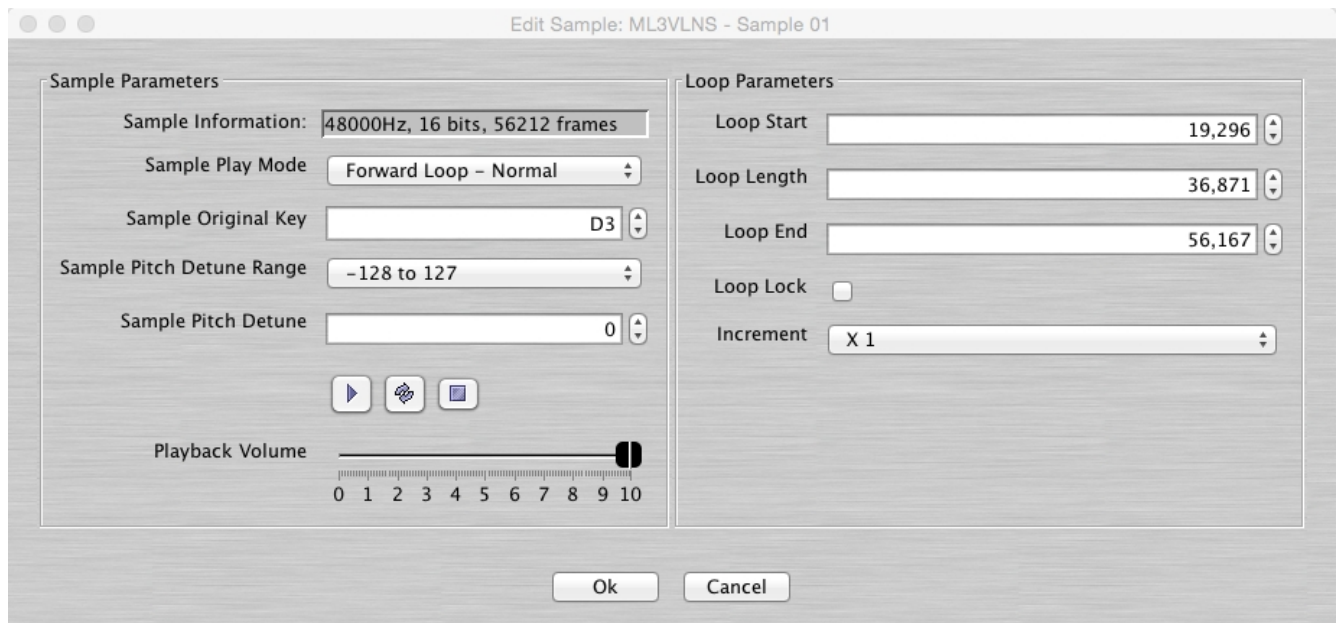
If you hold down the ALT key whilst making the menu selection, a Dialog will appear allowing you to specify the number of samples to add.



Samples are added to the end of the sample list, and the parent Wave's keymap is adjusted so that all samples have a high key. The existing keymap is preserved as much as possible and adjustments are made in the high key range. For example if you add a sample, the keymap for that sample is G8 (the last sample must always be G8), the high key of the sample below it becomes F#7.






### Edit Sample

The Edit Sample Dialog allows you to edit the Sample parameters. You can also audition the Sample using a keyboard connected to the Keyboard Input MIDI Port defined in the [MIDI Preferences](#) options dialog to play notes. Please note that the MIDI support is "simplistic" mono note detection, don't try and play chords!



The Edit Sample Dialog provides all the controls available in the SY99 Sample Edit Mode.

<b>Sample Information</b>	Shows some basic information about the sample: Sample Rate, Bit Depth and length.  The background of this text is set red if the calculated sample playback frequency exceeds 48KHz, which is a limitation of Java. The impact of this when it occurs is that the playback pitch for the note you are playing may not be correct, which is why the program provides feedback in colouring this text background red.  <u>There's not much that can be done about this Java limitation, I'm afraid.</u>
<b>Sample Play Mode</b>	A Combo box that allows you to select the playback mode for the sample from the modes supported by the Wave Card.
<b>Sample Original Key</b>	A spinner control that allows you to select the original key for the sample. You can use the up/down arrows to increment/decrement the centre key. You can also type a key value, or

	play a note on a keyboard connected to the Keyboard Input MIDI Port defined in the <a href="#">MIDI Preferences</a> options dialog. You can also edit the Detune parameter by double clicking in the cell and editing it.
<b>Sample Pitch Detune Range</b>	Allows you to select one of two pitch detune ranges supported by the Wave Card. Either <b>-128 to + 127</b> , or <b>-726 to -472</b> . This is one of the strange parts of the Wave Card format. I don't fully understand why you have the two ranges, only that the actual SY77 ROM waves all are detuned in the <b>-726 to -472</b> range!
<b>Sample Pitch Detune</b>	Allows you to fine tune the pitch of the sample. Note the Wave Card pitch adjustment is not in cents (1200 divisions per octave), but 1024 divisions per octave.
<b>Playback Controls</b>	<p>The Edit Sample Dialog provides three controls to allow Samples to be played back manually within sy.factory:</p> <ul style="list-style-type: none"> <li>•  Plays the Sample</li> <li>•  Breaks out of the Sample loop (if the Sample is looped)</li> <li>•  Stops playback of the Sample</li> </ul> <p>Note: Java has a maximum Sample playback rate of 48KHz. When shifting the playback key, the adjustment is achieved by changing the Sample rate (as on the SY series). If changing the playback key causes the Java sample rate to be exceeded, sy.factory will sample rate convert the Sample to maintain the Sample rate within limits. When this happens the playback button is coloured orange (as shown above). When no sample rate conversion has taken place the button is its normal colour.</p> <p>Note you must have the <a href="#">Tritonus</a> Java Sound extension libraries installed for sy.factory to be able to perform the sample rate conversion. If the Playback button is coloured orange the playback frequency will not be correct.</p> <p>If the Sample is looped then the Sample playback will remain in the loop until either:</p> <ul style="list-style-type: none"> <li>• The  button is pressed, following which Sample playback will continue to the end of the Sample</li> <li>• The  button is pressed, following which Sample playback is halted</li> </ul>
<b>Playback Volume</b>	Sets the playback volume for the sample.
<b>Loop Start</b>	Sets the start point of the loop.
<b>Loop Start</b>	Sets the length of the loop.
<b>Loop End</b>	Sets the end point of the loop
<b>Loop Lock</b>	If this control is checked then the length of the loop is preserved when you adjust the start or end point (e.g. if you adjust the start point, then the end point is also adjust to maintain the loop length).
<b>Increment</b>	Sets value by which the loop controls increment by.

### Import Sample

When you select this option, sy.factory will prompt for the file to import. The imported file overwrites the existing sample. If you wish to import new samples, then use the import option available on the parent wave's context sensitive menu.

## Pan Editing Features

sy.factory supports the following editing operations upon the **Pan Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data From SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Pan Collection** Object in a file is only shown within a [Tree View](#) and is called **User Pan Data**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Pan Collection** to activate the **Pan Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Pan Data Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [List References](#)
- [Import from SY Memory](#)
- [Export to SY Memory](#) (only if available sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Pan** or selection of **Pans** to activate the **Pan's** Context Sensitive Menu.

### Import from SY Memory

Imports Pans from the SY Memory locations into the currently selected [Child Window](#).

You can import:

- A Single Pan
- A Selection of Pans
- All Pans by selecting the Pan Collection

### Export to SY Memory

Exports Pans from the currently selected [Child Window](#) to the SY Memory locations.

You can export:

- A Single Pan
- A Selection of Pans
- All Pans by selecting the Pan Collection



## Microtuning Editing Features

sy.factory supports the following editing operations upon the **Microtuning Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data From SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Microtuning Collection** Object in a file is only shown within a [Tree View](#) and is called **User Microtuning Data**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Microtuning Collection** to activate the **Microtuning Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **Microtuning Data Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [List References](#)
- [Import from SY Memory](#)
- [Export to SY Memory](#) (only if available sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Microtuning** or selection of **Microtunings** to activate the **Microtuning's** Context Sensitive Menu.

### Import from SY Memory

Imports Microtunings from the SY Memory locations into the currently selected [Child Window](#).

You can import:

- A Single Microtuning
- A Selection of Microtunings
- All Microtunings by selecting the Microtuning Collection

### Export to SY Memory

Exports Microtunings from the currently selected [Child Window](#) to the SY Memory locations.

You can export:

- A Single Microtuning
- A Selection of Microtunings
- All Microtunings by selecting the Microtuning Collection

## Sequencer Editing Features

sy.factory supports the following editing operations upon the **Sequencer Object** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Import Data From SY](#)
- [Export Data to SY](#) (only available if sy.factory is [registered](#))
- [Add To Library](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Sequencer** to activate the **Sequencer's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the Sequencer **Track, Pattern, Pattern Chain** and **Time Signature Collections** within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Collection** to activate the **Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the Sequencer **Track, Pattern, Pattern Chain** and **Time Signature Objects** within the [Tree View](#) of a [Child Window](#):

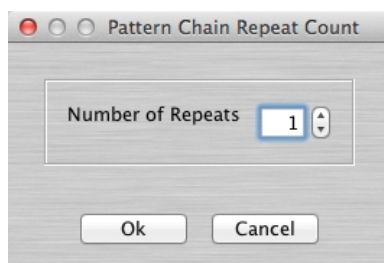
- [Copy/Move](#)
- [Initialise](#)
- [Insert](#)
- [Delete](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over an **Object** to activate the **Object's** Context Sensitive Menu.

**Pattern Chain Objects** also have the following extra commands on the context menu:

- Start Repeat
- End Repeat
- End Pattern Chain

If you hold down the **ALT** key whilst selecting the **End Repeat** menu option, the following dialog will be shown, which allows you to set the repeat count for the **Pattern Chain Repeat**



### Import from SY Memory

Imports Sequencer data from the SY Memory locations into the currently selected [Child Window](#).

### Export to SY Memory

Exports Sequencer data from the currently selected [Child Window](#) to the SY Memory locations.

## MIDI Data Recording Editing Features

sy.factory supports the following editing operations upon the **MIDI Data Recording Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **MIDI Data Recording Collection** Object in a file is only shown within a [Tree View](#) and is called **User MIDI Data Recording Data**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **MIDI Data Recording Collection** to activate the **MIDI Data Recording Collection's** Context Sensitive Menu.

sy.factory supports the following editing operations upon the **MIDI Data Recording Data Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **MIDI Data Recording** or selection of **MIDI Data Recordings** to activate the **MIDI Data Recording's** Context Sensitive Menu.

## System Settings Editing Features

sy.factory supports the following editing operations upon the **System Settings** Object shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **System Settings** Object is only shown within a [Tree View](#) and is called **System Settings**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **System Settings** Object to activate its Context Sensitive Menu.

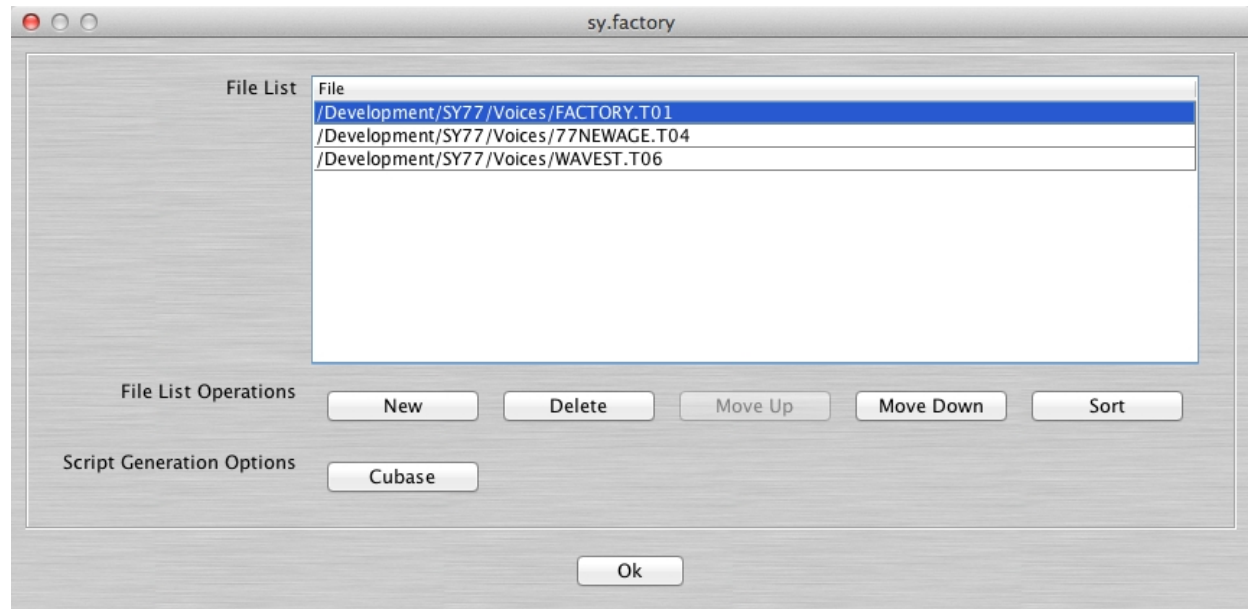
## Master Patch List

The Master Patch List Dialog is found on the [Tools](#) menu.

This feature is only available if your copy of sy.factory is [registered](#).

The Master Patch List Dialog provides a means for you to generate a single patch list from a list of files. Currently only Cubase Patch Scripts can be generated, but future versions may support other sequencers.

The Master Patch List dialog is shown below:



This dialog has the following options:

<b>File List</b>	The list of files to incorporate into a single patch list.  If you click on one of the lines then you can edit the file either by typing or by using the [...] button to the right of the line to bring up a file selector dialog.  Note, if you are editing a line, and you are finished, you need to select another line, or press the <b>RETURN</b> key for the changes to be stored.
<b>New</b>	Inserts a new line in the file list.
<b>Delete</b>	Deletes the currently selected line in the file list. If no line is selected this control is disabled.
<b>Move Up</b>	Moves the currently selected line in the file list up one line. If no line is selected or the selected line is the first in the list then this control is disabled.
<b>Move Down</b>	Moves the currently selected line in the file list down one line. If no line is selected or the selected line is the last in the list then this control is disabled.
<b>Sort</b>	Sorts the lines into ascending alphabetical order
<b>Cubase</b>	Exports the files identified in the file list to a Cubase format patch script file, which is compatible with Cubase VST/SX/SL/SE.
<b>OK</b>	Closes the dialog.

### Generating The Cubase Master Patch List

When you generate a Cubase Patch Script, it is written to the directory specified by the **Cubase Patch Script Directory** field in the [Misc Preferences](#) Tab of the [Preferences](#) Dialog. You can set this field up to export the master patch list directly to the directory read by Cubase upon startup. This directory on my system is **C:\Documents and Settings\Derek\Application Data\Steinberg\Cubase SX 3\Scripts\Patchnames\inactive\yamaha** where "C:" is the root drive that Cubase is installed on, "Derek" is my Windows user name, and "Cubase SX 3" is my version of Cubase. You will need to vary these according to your system drive and of course your own user name and version of Cubase.

By default the **Application Data** folder is hidden in Windows Explorer, so you may not see this folder first of all. If you cannot see the folder:

1. In Windows Explorer select **Folder Options** from the **Tools** menu and click the **View** tab.
2. Look down the **Advanced Settings** list and find the **Hidden Files and Folders** option.

3. Select the **Show Hidden Files and Folders** sub option.
4. Select **OK** to close the dialog.

Cubase only looks for and reads patch scripts when it starts up, so if you're in Cubase after generating the patch script then exit Cubase and start it up again.

### Configuring Cubase to Use the Master Patch List

The patch scripts generated by sy.factory should be compatible with Cubase VST/SX/SL/SE. The instructions given below are for Cubase SX, which is the version I use. Consult your Cubase documentation for how to install patch scripts if you have a different version.

Within Cubase:

1. Select **MIDI Device Manager** from the **Devices** Menu.
2. Click on the **Install Device** button.
3. Click on the **SY - Master Patch List** option (this is the sy.factory generated file). At the bottom of this dialog, select your output MIDI port that the SY is connected to. You can now close this dialog. If you cannot see the **SY - Master Patch List** then you have not placed it in the right folder.

This installs the patch list within Cubase and allows you to use it elsewhere within the application.

In the main Cubase screen, select or create a MIDI track that you wish to be used with the SY. In the **Inspector** window (the panel to the left of the main window) click on the **out** control and you should now be able to see and select the **SY - Master Patch List** option in amongst the MIDI ports. Also ensure the MIDI channel number for the track matches the SY channel number.

Now when you click in the **Programs** control, just below the **out** control, you'll see a drop down list containing all of the SY Voices names generated by sy.factory.

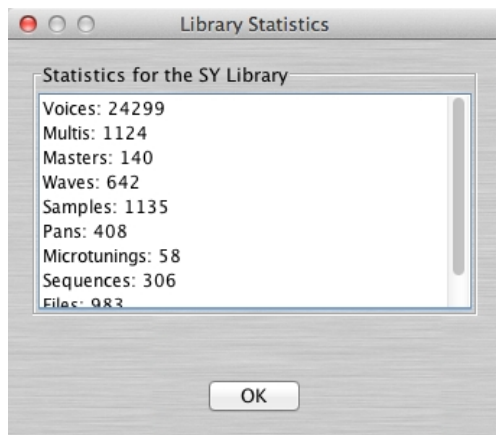
You can now scroll through the lists to find a Voice, and you can also type in filter text to quickly look for a Voice.

### Library Statistics

The Library Statistics menu option is found on the [Tools](#) menu.

This feature is only available if your copy of sy.factory is [registered](#).

The Library Statistics Dialog provides a means for you to see a summary of the contents of the Library.



### Batch Import To Library

The Batch Import To Library Wizard is found on the [Tools](#) menu.

This feature is only available if your copy of sy.factory is [registered](#).

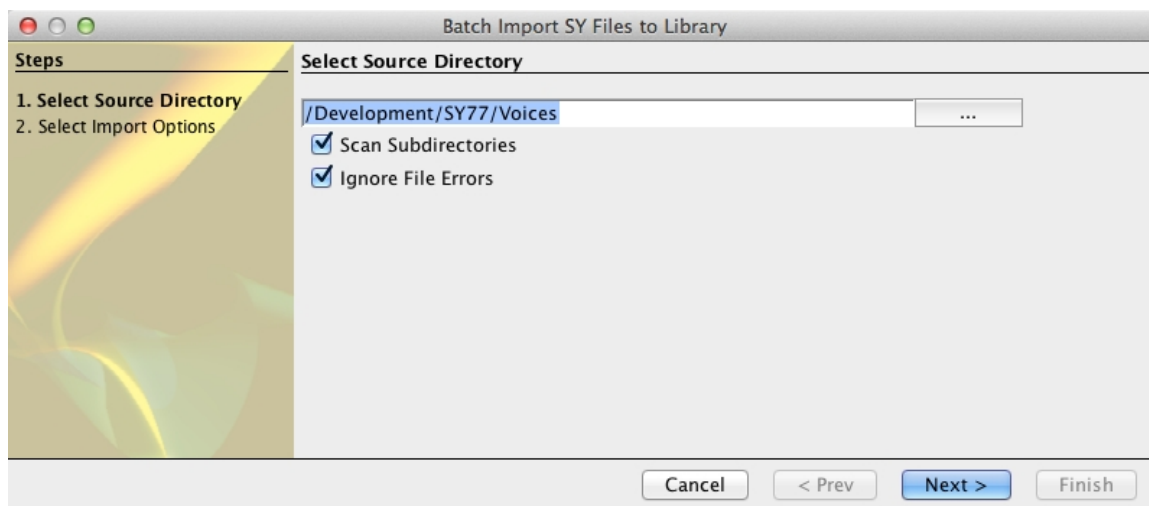
The Batch Import To Library Wizard provides a means for you to import several SY files to the library in one go.

The Batch Import To Library Wizard has two pages to navigate through:

- The Select Source Directory Page
- The Select Destination Directory Page

## Select Source Directory Page

The Select Source Directory Page is shown below

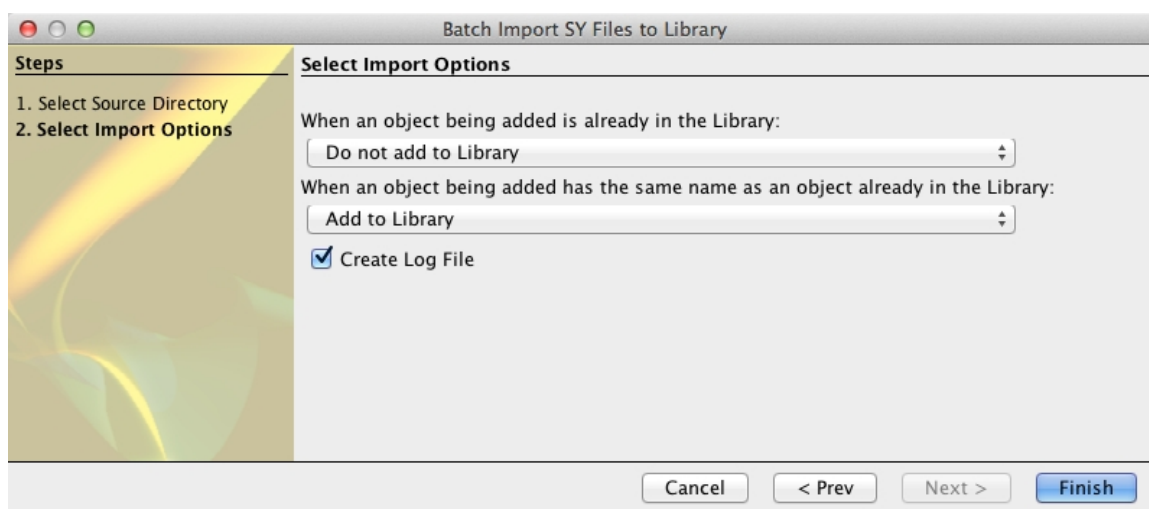


This page has the following options

<b>Source Directory</b>	You can type the name of the source directory in this control. Or if you click the [...] button to the right of the line, this will bring up a file selector dialog.
<b>Scan Subdirectories</b>	If this control is checked, then the Batch Converter will also include any subdirectories that it finds within the source directory when looking for files to convert.  If this control is not checked then any subdirectories in the source directory will be ignored.
<b>Ignore File Errors</b>	If this control is not checked then any errors detected during file loading will halt the conversion process.  If this control is checked then these errors are ignored, but are logged if logging is enabled.

## Select Destination Directory Page

The Select Destination Directory Page is shown below



This page has the following options

<b>When an Object being added is already in the Library</b>	Provides the action to do if an Object is added to the Library and there is already an identical Object in the library. The choices are: <ul style="list-style-type: none"> <li>• Add to Library (with a new name)</li> <li>• Do not add to Library</li> <li>• Overwrite Object in the Library</li> </ul>
---	---

<b>When an Object being added already has the same name as an Object in the Library</b>	Provides the action to do if an Object is added to the Library and there is already an Object in the library with the same name. The choices are: <ul style="list-style-type: none"> <li>• Add to Library (with a new name)</li> <li>• Do not add to Library</li> <li>• Overwrite Object in the Library</li> </ul>
<b>Create Log File</b>	If this control is checked then a log file is created in the destination directory.  This log file is called "Log File.txt", and can be opened with any text editor

### Using the Batch Importer

Using the importer is quite simple.

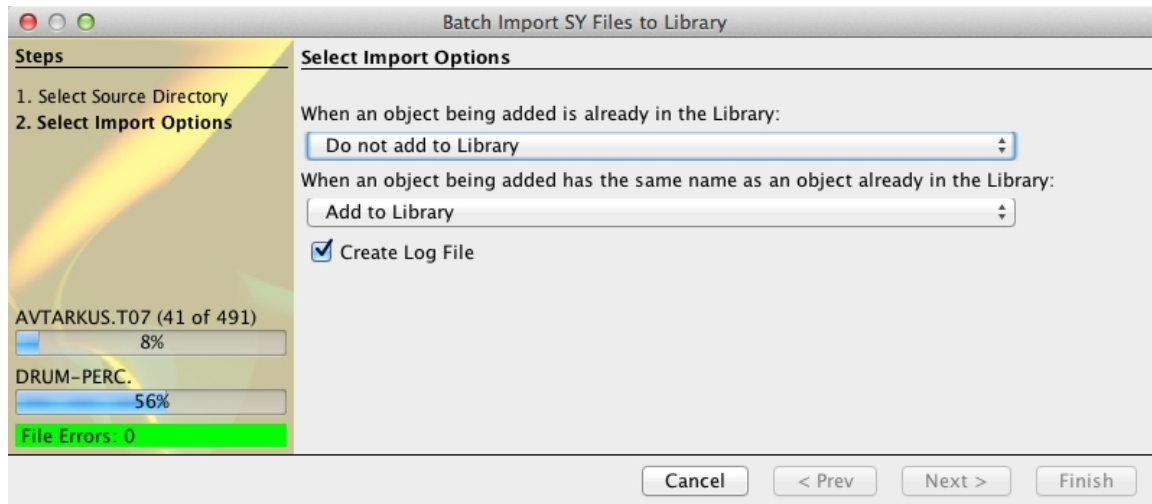
Importing an SY file takes about 20 seconds, so if you have a lot of files to import, be prepared to leave the importer running for a while! The import of a file will be slower if you have a large library as sy.factory needs to check to duplicate data, so the larger the library the more data the batch importer has to search.

The importer is a simple "Wizard" and you can step through the choice pages using the **Prev** and **Next** buttons, or exit the Wizard using the **Cancel** Button

Select the source and destination directory options and once that is done click on the **Finish** button to start the Batch Import Wizard.

The Wizard will not allow you to select a directory that doesn't exist.

Once the Wizard starts the progress of importing files is shown in the information pane.



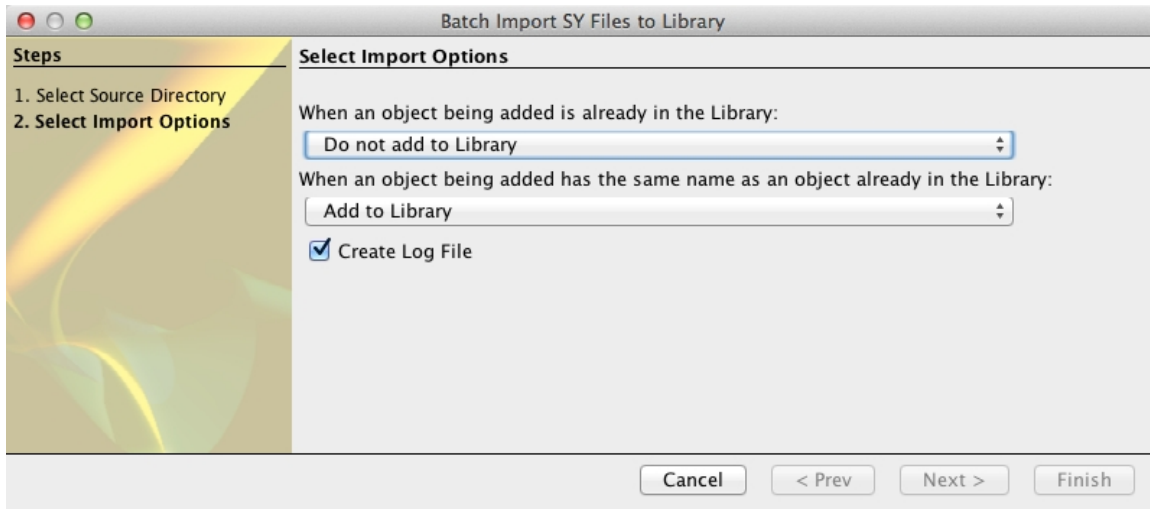
There is a progress bar that shows the progress for all the files that the importer has detected, and a progress bar for the objects in the file currently being imported.

The Wizard also shows how many file errors have been encountered (assuming you have set the options to ignore File errors).

You can cancel the import at any time by pressing the **Cancel** button, but you may need to wait for sy.factory to finish the current file import before the batch conversion is cancelled.

Once completed, a summary results page is shown that summarises the import.





The Wizard can be dismissed by clicking the **Close** button.

You can check the results of the import by opening the **Log File.txt** file (assuming you left logging enabled).

The log file is a simple text file that lists each source file and whether any errors were detected.

All errors are preceded by \*\* (two stars), so you can use your text editor's find/search facilities to look for \*\* to quickly find any errors.

## Batch Convert DX7/DX7II Files

The Batch Convert DX7/DX7II Files Wizard is found on the [Tools](#) menu.

This feature is only available if your copy of sy.factory is [registered](#).

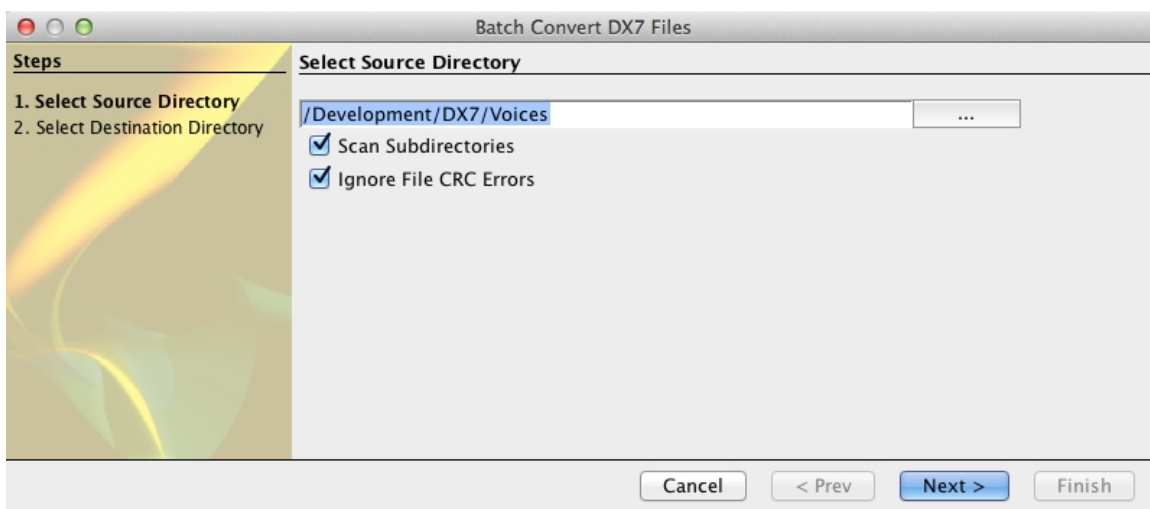
The Batch Convert DX7/DX7II Files Wizard provides a means for you to convert several DX7/DX7II SYSEX files and convert them to SY77 JNN format files. Please read the [DX7 Notes](#) Section for information on the conversion process

The Batch Convert DX7/DX7II Files Wizard has two pages to navigate through:

- The Select Source Directory Page
- The Select Destination Directory Page

### Select Source Directory Page

The Select Source Directory Page is shown below



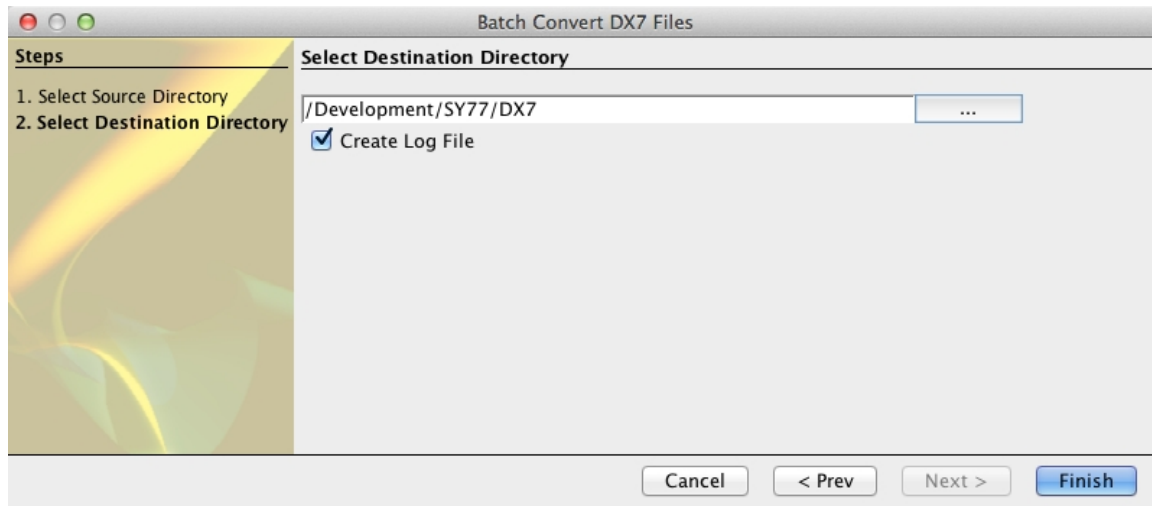
This page has the following options

<b>Source Directory</b>	You can type the name of the source directory in this control. Or if you click the [...] button to the right of the line, this will bring up a file selector dialog.
-------------------------	---

<b>Scan Subdirectories</b>	<p>If this control is checked, then the Batch Converter will also include any subdirectories that it finds within the source directory when looking for files to convert.</p> <p>If this control is not checked then any subdirectories in the source directory will be ignored.</p>
<b>Ignore File CRC Errors</b>	<p>If this control is not checked then any errors detected during file loading will halt the conversion process.</p> <p>If this control is checked then these errors are ignored, but are logged if logging is enabled.</p> <p>It's recommended that this option is set, as there are many DX7 files on the Internet with checksum errors</p>

### Select Destination Directory Page

The Select Destination Directory Page is shown below



This page has the following options

<b>Destination Directory</b>	<p>You can type the name of the destination directory in this control.</p> <p>Or if you click the [...] button to the right of the line, this will bring up a file selector dialog.</p>
<b>Create Log File</b>	<p>If this control is checked then a log file is created in the destination directory.</p> <p>This log file is called "Log File.txt", and can be opened with any text editor</p>

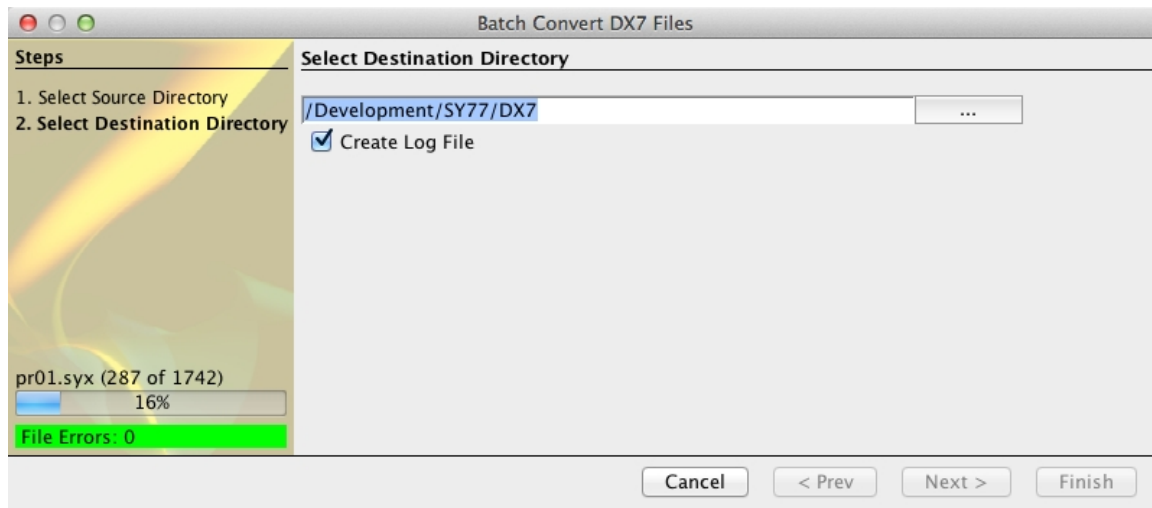
### Using the Batch Converter

The converter is a simple "Wizard" and you can step through the choice pages using the **Prev** and **Next** buttons, or exit the Wizard using the **Cancel** Button

Select the source and destination directory options and once that is done click on the **Finish** button to start the Batch Convert Wizard.

The Wizard will not allow you to select a directory that doesn't exist, and the source and destination directories must be different to prevent you from accidentally overwriting the source DX7 files.

Once the Wizard starts, the progress of converting files is shown in the information pane.

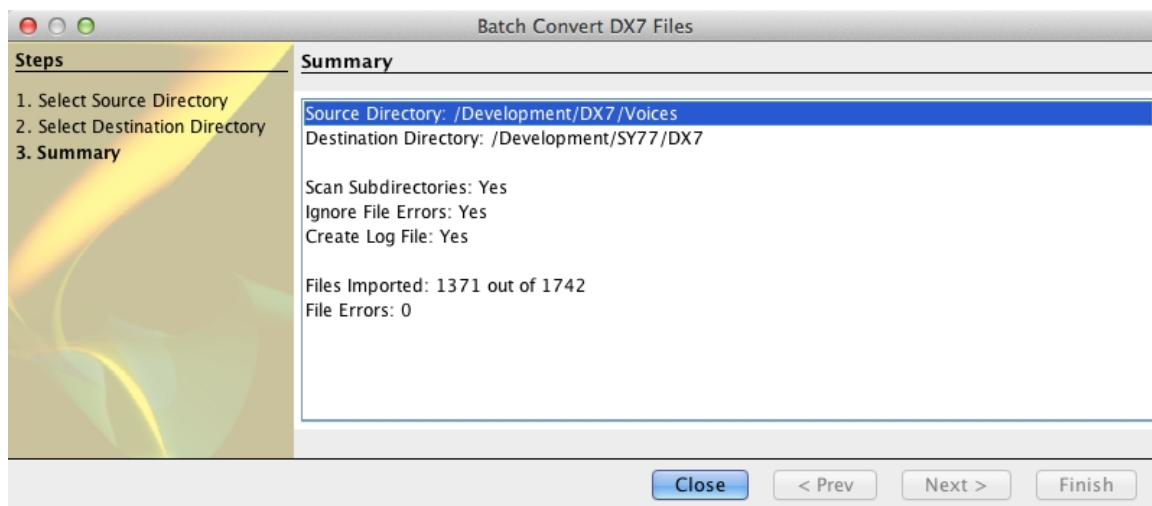


There is a progress bar that shows the progress for all the files that the converter has detected.

The Wizard also shows how many file CRC errors have been encountered (assuming you have set the options to ignore File errors).

You can cancel the conversion at any time by pressing the **Cancel** button, but you may need to wait for sy.factory to finish the current conversion before the batch conversion is cancelled.

Once completed, a summary results page is shown that summarises the conversion.



The Wizard can be dismissed by clicking the **Close** button.

You can check the results of the conversion by opening the **Log File.txt** file (assuming you left logging enabled).

The log file is a simple text file that lists each source file and whether any errors were detected.

All errors are preceded by \*\* (two stars), so you can use your text editors find/search facilities to look for \*\* to quickly find any errors.

### DX7 Conversion Notes

Like any conversion where the Voice Architectures are different, perfect conversion results cannot be guaranteed. I had a further challenge because I sold my DX7II a number of years ago as the SY77 (and my FS1R) made it redundant! So I haven't had a reference DX7 to compare the results against. However I have used the DX7 import features of fs.factory (which use the FS1r's built in DX7 conversion feature) to create files to check the SY conversion against.

The FS1r is actually a better architecture to map DX7 voices onto, as it is much closer to the original DX7 architecture than the SY series. So I was happy to use it as a reference.

Of course I haven't checked all the thousands of DX7 files that I have. I wrote a scanning program to find 10 examples of each DX7 algorithm and that gave me a list of files to focus testing on to ensure that all algorithms were covered. Once I was happy with the converter I then did some random sampling of files to check the results.

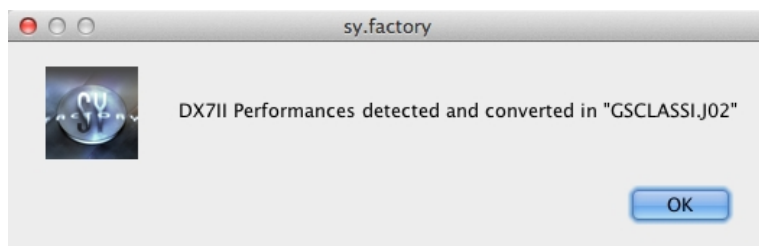
While the SY77 is very obviously based on the DX7 6 Operator implementation, it is quite different in a number of areas, the key ones being:

- There are 45 algorithms on the SY77 and a mapping between DX7 and SY77 algorithms has to be made. This is more complicated than it sounds, as instead of setting a single algorithm value (like on the DX7) there are parameters in the operators that need to be carefully setup that define how they work within the algorithm as the SY77 has a more complex FM implementation (e.g. multiple and programmable feedback paths).
- A lot of parameters have either a more limited or greater range on the SY77, so DX7 values need to be scaled to match the SY77 range.
- The big difference between the DX7 and SY77 is operator level scaling. On the DX7 you program a single breakpoint(key value) and then a depth and curve type (exponential or linear) either side of the breakpoint. On the SY77 you have four breakpoints and a level for each one. So this is where the biggest difference in sound occurs as the scaling can only be approximated. This may result in voices being brighter or duller in tone (for scaling on a modulating operator) or volume (for scaling on a carrier operator) than the source DX7 Voice.
- The envelopes on the SY77 have more segments.

There is a preference setting in the [Voice Preferences Tab](#) in the [Preferences Dialog](#) which, if checked, will add a little reverb, delay and chorus to the converted voices to make them a little less dry. If this option is not checked then the SY77 Voice Effects section is disabled.

## DX7II Conversion Notes

If a SYSEX file contains DX7II information (64 Voices, 32 Performances), a file containing the voices is created with a J01 extension, and a file containing the performances (based on the referenced voices) is created with a J02 extension. A dialog will be displayed to let you know that a J02 file has been created when you open a single DX7II file. The Batch Converter will write a line to the log file to indicate that a J02 file has been created for a file being imported.



Voices in the J01 file are Single Element AFM Poly Voices. Voices in the J02 file are Dual Element AFM Poly Voices, created to match the type of DX7II Performance (Single, Dual, Split), including settings like key range, layer balance, layer detuning, etc.

Multis are not used on the SY because there are only 16 of them and you can only play a single channel from the keyboard at the same time, and you can't enter a lot of the DX7II Performance info into them. So a Multi cannot really be used for a DX7II Performance, and a Dual Element AFM Voice approach was more appropriate. However I wanted to access both Performances and individual voices from a DX7II file, and creating two files, one for the Voice bank and one for the Performance bank, seemed the best solution.

## WaveBlade Support

sy.factory supports direct integration with [Sector 101's](#) WaveBlade programmable Wave Card and WaveBlade Programmer. It allows you to directly program [SY Wave Card Format Images](#) that you have created using sy.factory (or other suitable software). This is complementary support to [Sector 101's](#) own WaveBlade toolset (which still provide a little more fine control for some tasks).

The WaveBlade Dialog is found on the [Tools](#) menu, but only if you have enabled WaveBlade support in the [WaveBlade Tab](#) of the [Preferences Dialog](#).

WaveBlade support is currently provided via a simple dialog. Before opening the dialog, please ensure that:

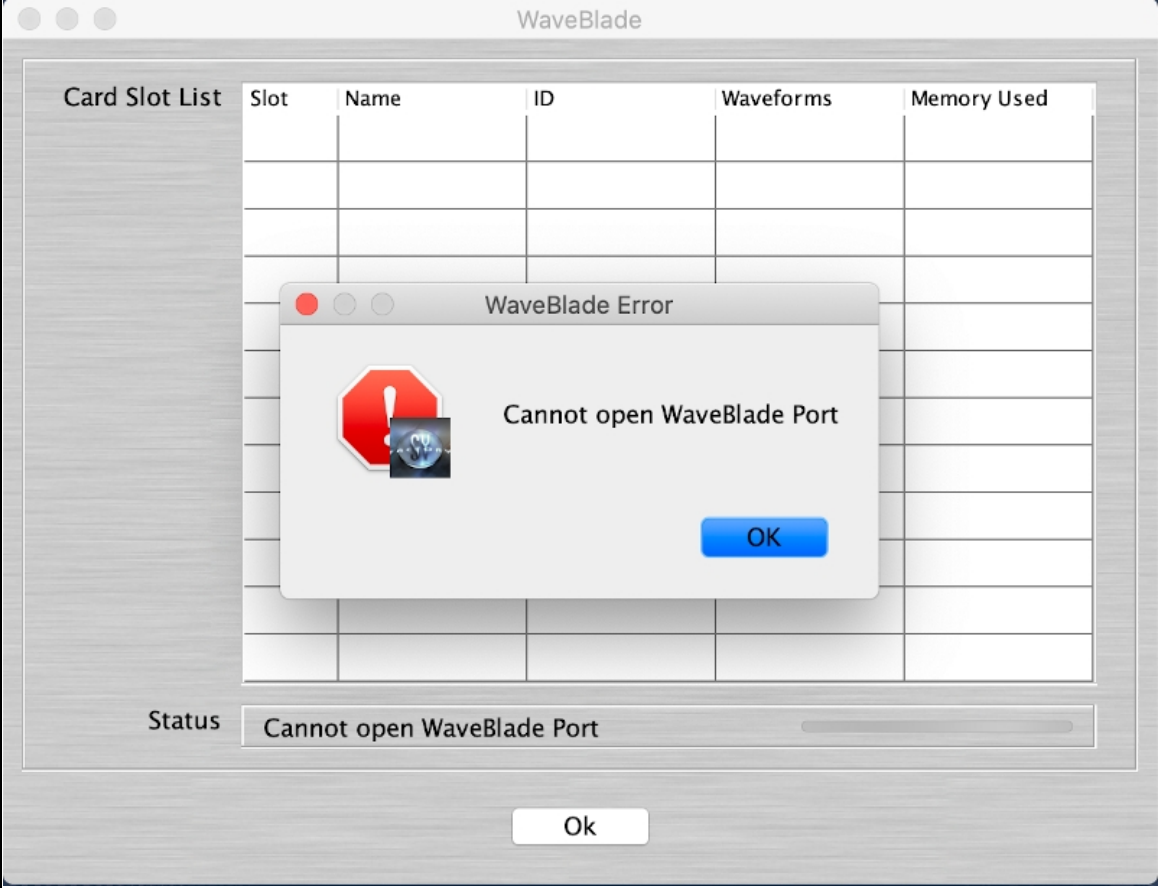
- WaveBlade support must be enabled in the [WaveBlade Tab](#) of the [Preferences Dialog](#), and the port and baud rate parameters must be correctly set. (Hint holding F1 whilst pressing reset will set 115,200 Baud and holding F1 and F2 whilst pressing Reset will set 460,800 Baud)
- The WaveBlade Programmer must be connected to the computer.
- A WaveBlade card must be installed in the programmer.

When it comes to baud rates, 115,200 is the default rate for the programmer, and this is a good "safe speed" to start with. However, you can experiment with setting it faster to reduce upload/download times. I can run at 460,800 on two computers but on a third one, whilst the uploads are OK, I get download errors. So this does seem dependent on the local setup. It is safe to experiment with speeds as sy.factory checks the uploads and downloads against the computed checksum for a file, so if there is an error in transmission, you will be alerted and you can retry the operation. If you consistently get errors at a certain speed then it is best to drop to a lower speed. Or you can experiment with setting the WaveBlade DELAY parameter, which can be set in

the [Preferences Dialog](#) from between 0 to 9 microseconds. This delay setting will insert a delay of the specified value between each byte transmitted by the WaveBlade

When you select the WaveBlade menu option, the dialog will open. The initial WaveBlade card data will of course be blank, as the WaveBlade function is still initialising

As sy.factory initialises the connection to the WaveBlade Programmer, you will see in the status bar the current step in the progress to establish connections and read the WaveBlade Card data, the progress indicator will be "sweeping" to show that an operation is taking place. The initialisation steps are:

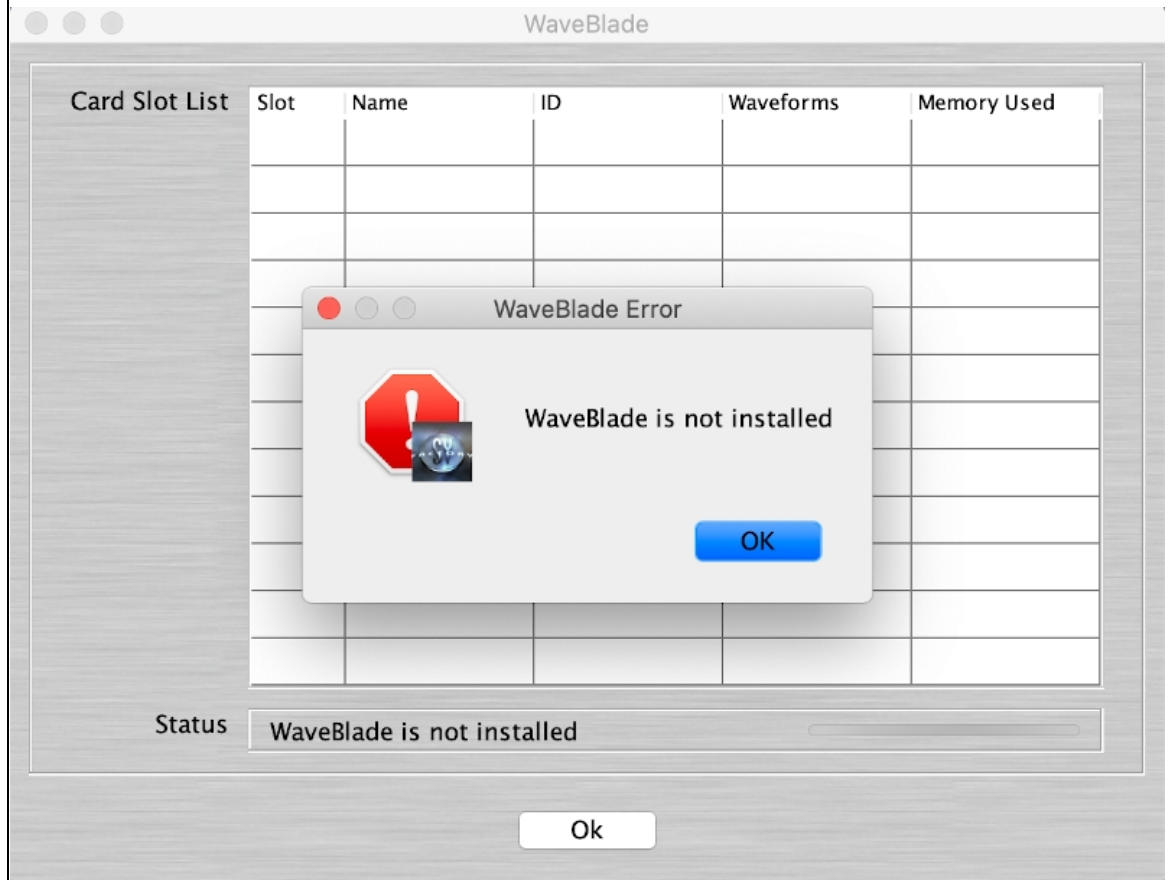
Step	Description
Connecting to WaveBlade Programmer	<p>sy.factory attempts to open the serial port using the port name and BAUD rate set in the <a href="#">WaveBlade Preferences Tab</a>.</p> <p>If connection is successful, you will briefly see a "WaveBlade Programmer is connected" message displayed before the next step.</p> <p>If the programmer is not connected then you will see the following error dialog:</p>  <p>Ensure that the WaveBlade Programmer is connected before trying again.</p>
Setting WaveBlade QUIET mode	<p>The WaveBlade needs to be set to QUIET mode (see WaveBlade manual Section 6) to remove all of the "pretty formatting" that the WaveBlade programmer sends to provide the character based user interface when you are using a terminal emulator. All of this information is not needed in a program like sy.factory, and setting QUIET mode will remove all the extraneous information. When the sy.factory WaveBlade dialog is dismissed, the WaveBlade Programmer will be set to VERBOSE mode so you can use it with a terminal program again</p> <p>If setting QUIET mode is successful, you will briefly see a "WaveBlade QUIET mode is SET" message displayed before the next step. If QUIET mode cannot be set an error dialog is displayed and the connection process terminates.</p>

Checking for WaveBlade Card

Checks to ensure that a WaveBlade Card is installed on the Programmer.

If this check is successful, you will briefly see a "WaveBlade Card is ready" message displayed before the next step.

When you select the WaveBlade menu option, if a WaveBlade is not installed on the programmer then you will see the following error dialog:



Ensure that a WaveBlade is installed on the Programmer before trying again.

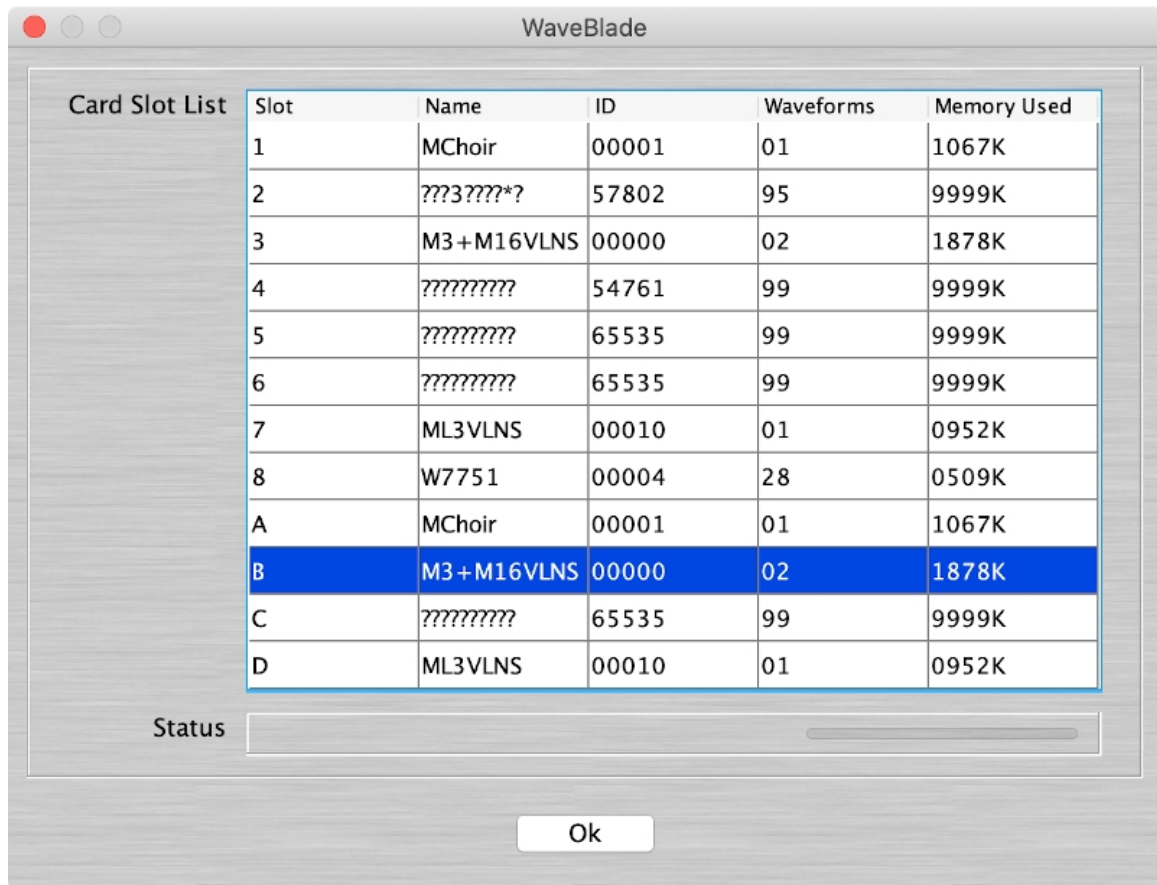
Requesting WaveBlade status

Requests the current status from the card.

If this command is successful then you should now see your WaveBlade Card contents in the dialog! The status bar is now clear showing that no operations are currently in progress.



Once communication is established with the WaveBlade Programmer then the WaveBlade dialog is shown below:



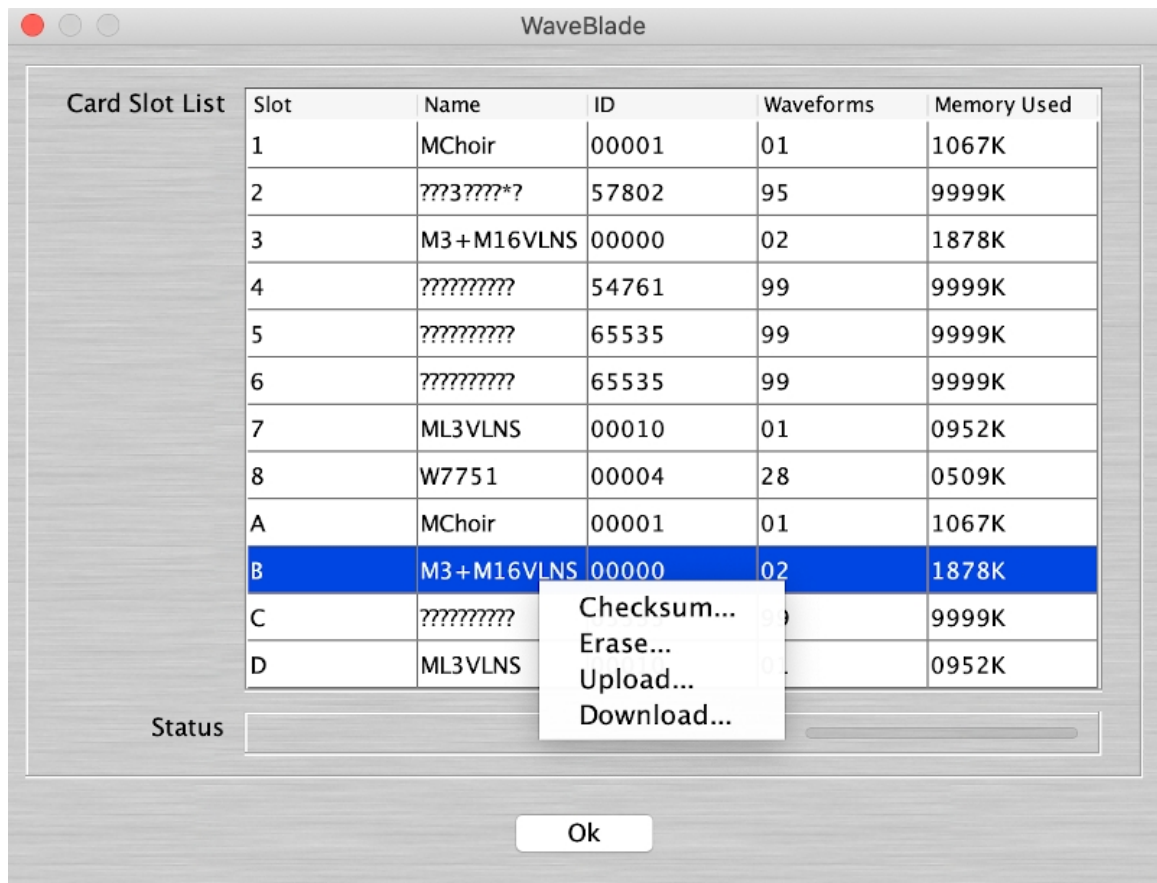
This dialog shows a table for the 8 1MB slots and the 4 2MB slots. In this example, I am using the 2MB slots and have data in the first two (A and B). The second two slots are empty. You will of course see data in slots 1 to 4 as the 1MB slots and 2MB slots overlap.

Each row shows (from left to right):

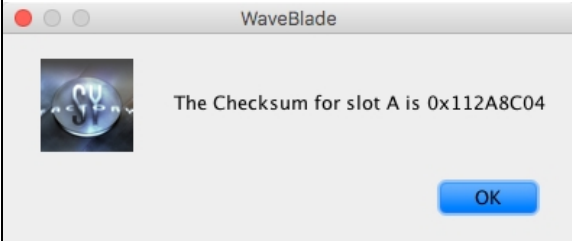
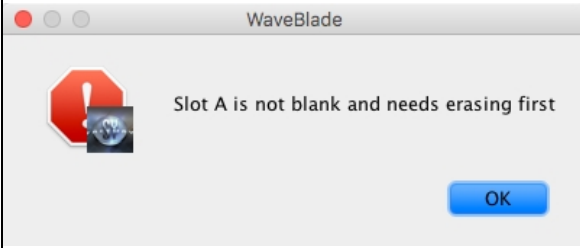
- The slot ID (1-8 for the 1MB slots and A-D for the 2MB slots).
- The name that you have programmed for the Card File. The WaveBlade Programmer reports ?????????? for a blank slot.
- The ID that you have programmed for the Card File. The WaveBlade Programmer reports 65535 for a blank slot.
- The number of waves that you have programmed for the Card File. The WaveBlade Programmer reports 99 for a blank slot.
- The amount of memory used by the Waves that you have programmed for the Card File. The WaveBlade Programmer reports 9999K for a blank slot.

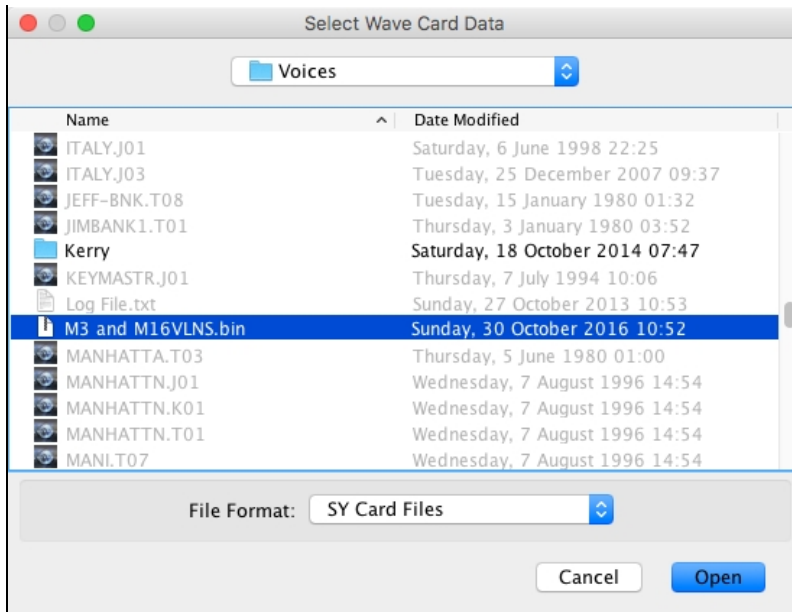


To perform operations upon a slot, simply select the slot and right click over it to get a context menu.



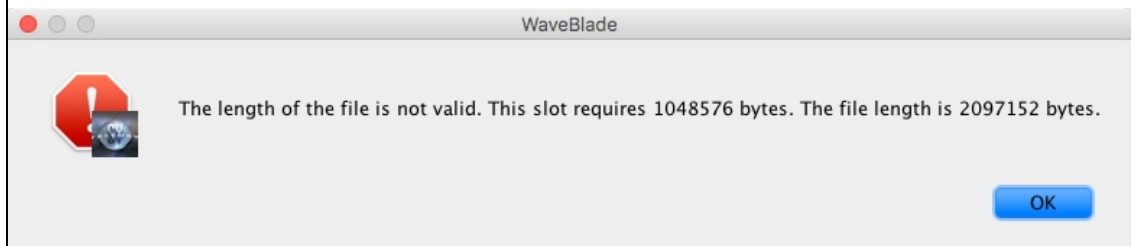
The menu allows you to perform the following actions.

<b>Checksum...</b>	<p>Computes the checksum of the Slot and displays the following dialog.</p> 
<b>Erase...</b>	<p>Erases the selected Slot.</p> <p>Note that a slot must be blank (erased) before you try and upload data to it.</p>
<b>Upload...</b>	<p>Uploads a card image file to the WaveBlade Programmer.</p> <p>When you select this option, sy.factory will check and see if the slot is blank. If it is not then you will get the following error dialog.</p>  <p>Always Erase a slot first before uploading to it.</p> <p>If the slot is blank then you will get the following file open dialog.</p>

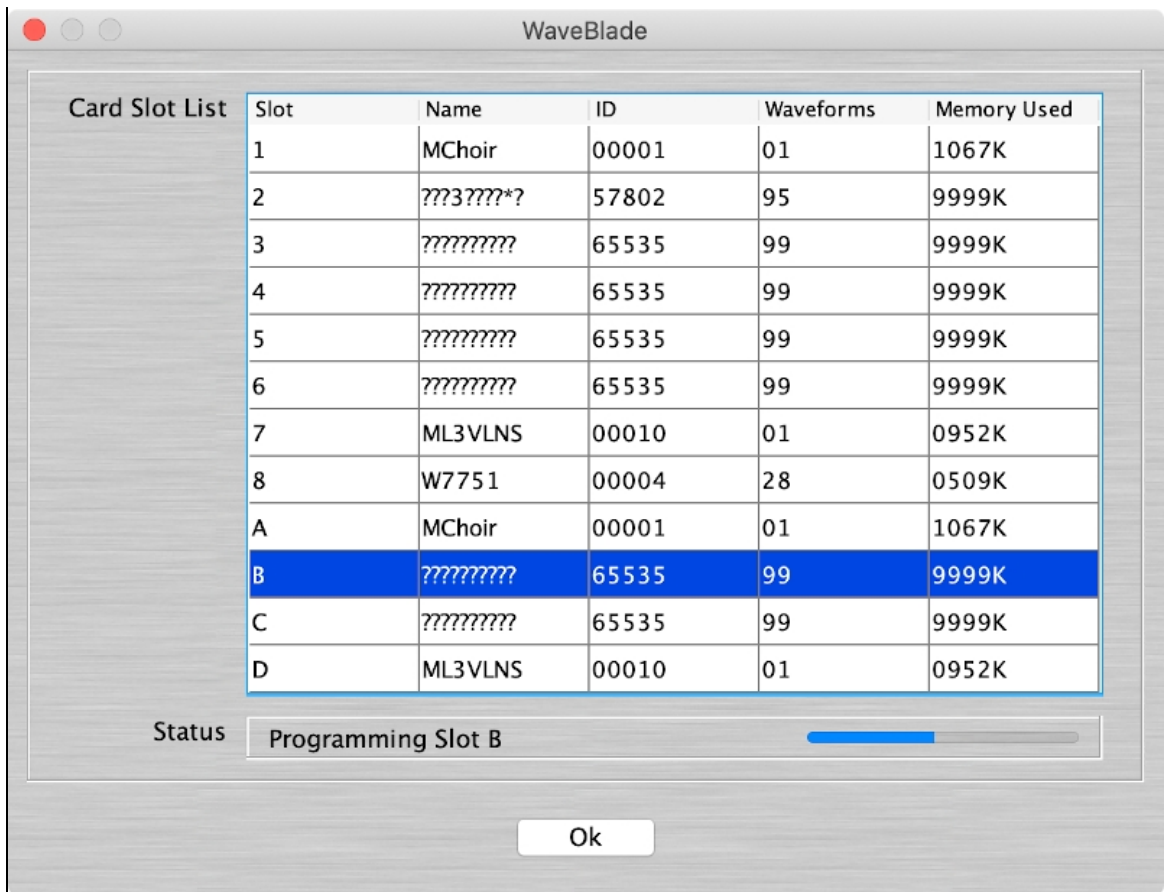


Select a BIN file and press **Open** to upload the file or **Cancel** to stop the upload.

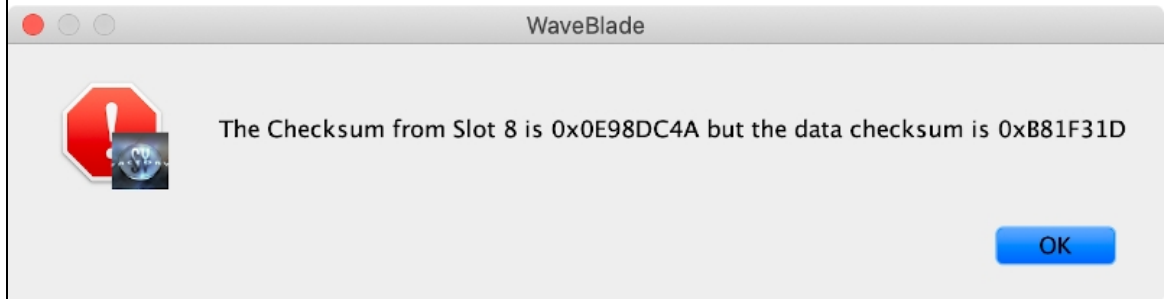
Note that no checks are made regarding the validity of the file other than it must be the right length: 512KB or 1MB for Slots 1-8 and 2MB for slots A-D. If you try and upload a file of the wrong size then you get the following error dialog (in this example a 2MB file has been selected for a 1MB slot).



If the file size is valid for the Slot then the upload will commence, and the progress of the upload is shown in the status area.

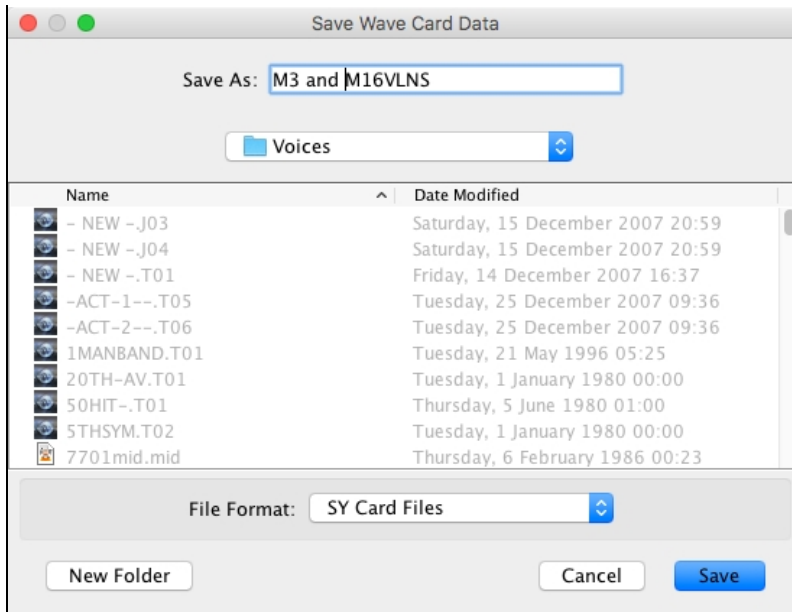


After the data is uploaded, sy.factory will request the checksum from the slot and check that against the data it sent. If the upload was successful a short success message is briefly displayed in the status area. If there is a checksum mismatch the the following error is displayed and you will need to try the upload again.

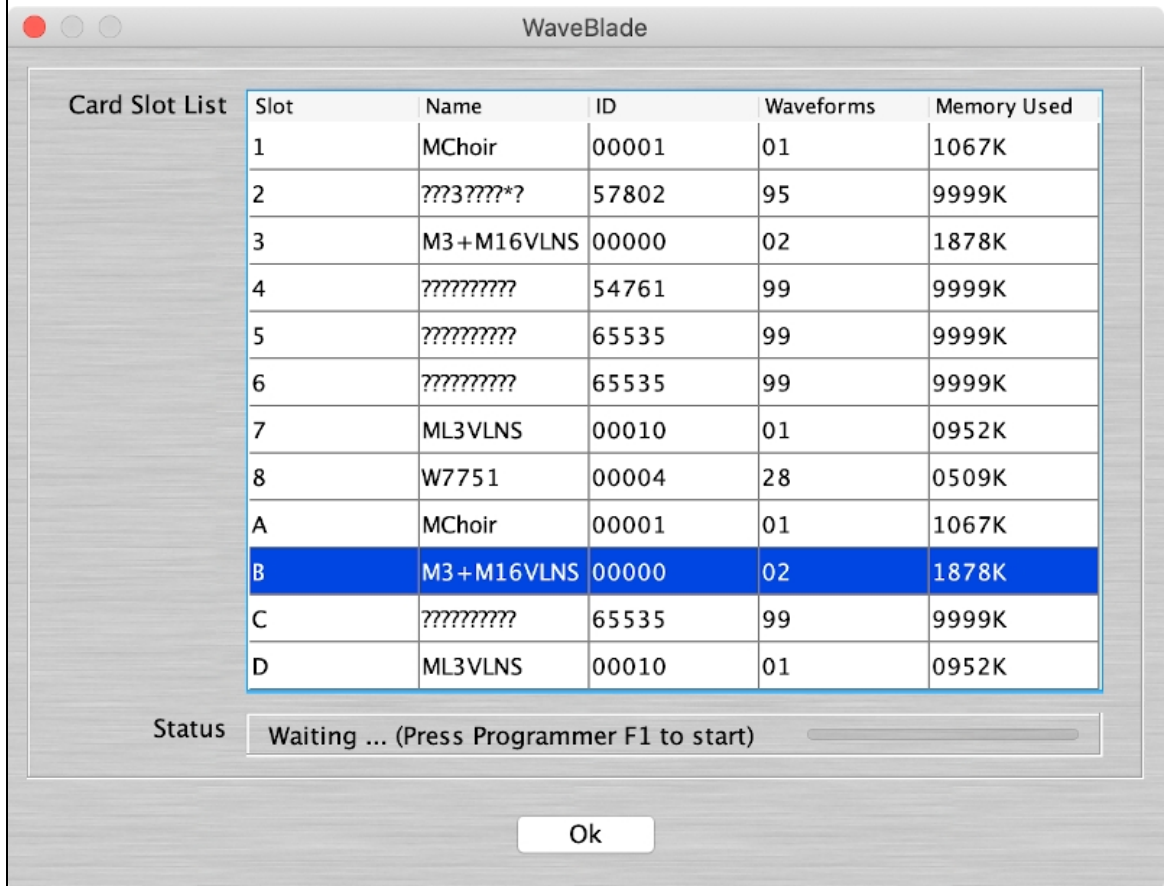


**Download...** Allows you to download the contents of a Slot to a BIN file, which you can archive or open in sy.factory for editing.

When you select this option, you first get a File Save Dialog.

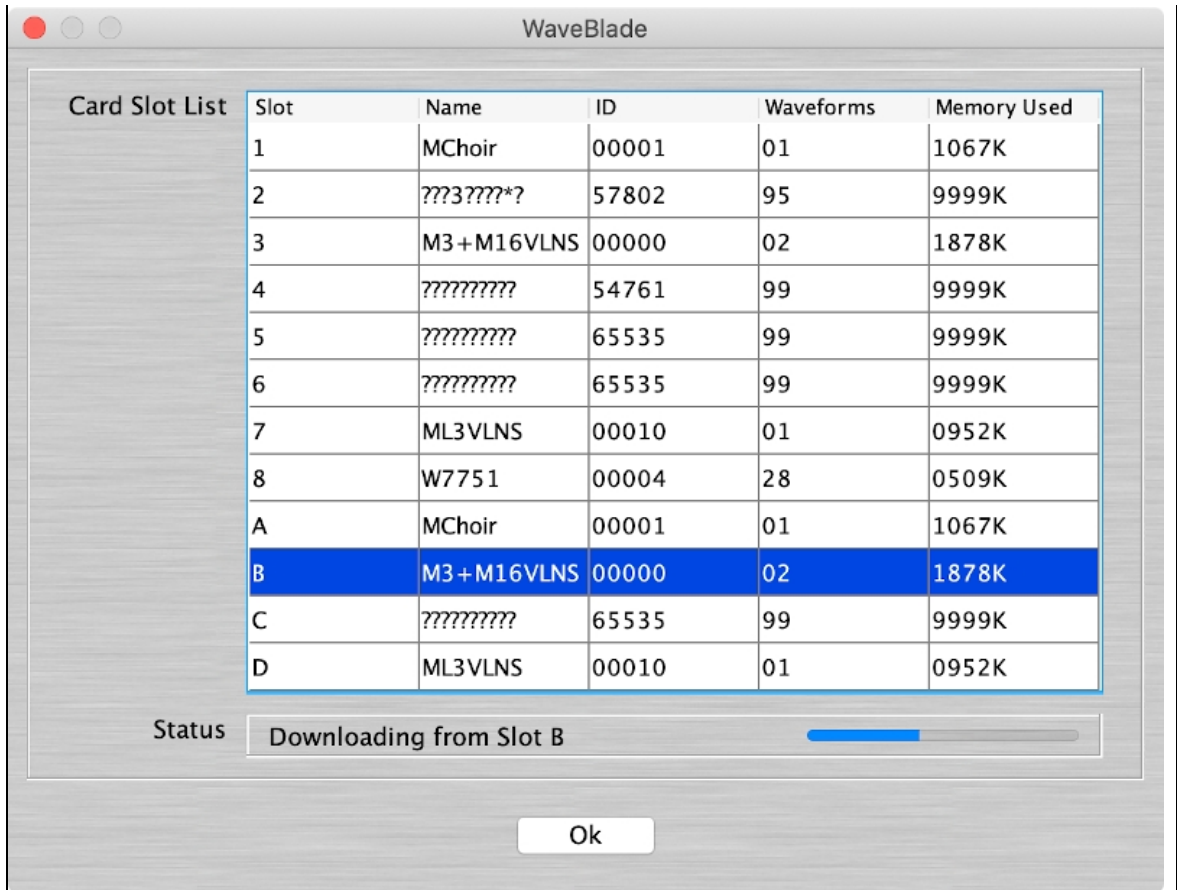


If you select a name and click the **Save** button then you will get the following dialog

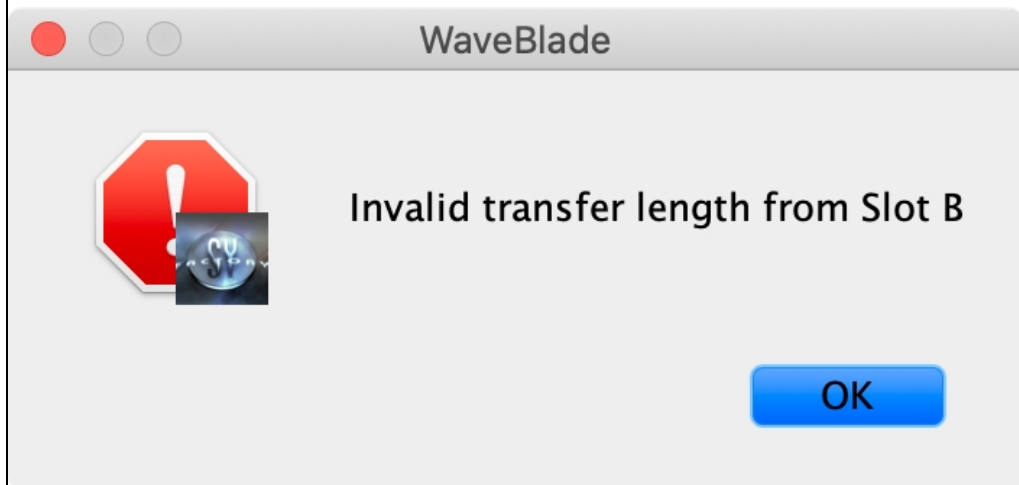


sy.factory is now waiting for you to initiate the data transfer on the WaveBlade Programmer. Press the Programmer **F1** button to start the transfer or the **F2** button to cancel the transfer.

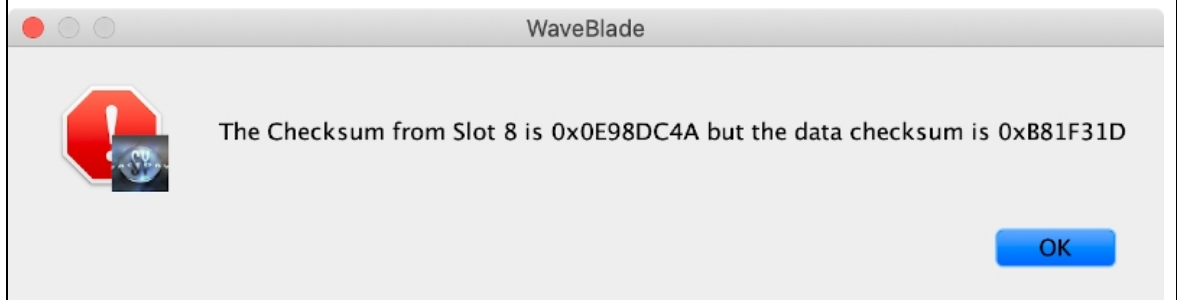
If you pressed the **F1** button then the download will start and the data will be saved to the file that you specified. The status area will show the progress of the download.



If you press **F2** to cancel the download, or if not all expected data bytes are received then, sy.factory will report the following error



After the data is downloaded, sy.factory will request the checksum from the slot and check that against the data it received. If the download was successful a short success message is briefly displayed in the status area. If there is a checksum mismatch the the following error is displayed and you will need to try the download again.



# Preferences

The sy.factory preferences are accessed via the **Preferences ...** option on the [View](#) menu or the [sy.factory Application Menu](#) on OS X, or the  button on the [Toolbar](#).

Selecting this option opens a Tabbed dialog with the following tabs which group related parameters:

- [Device Type Preferences](#)
- [Voice Preferences](#)
- [Multi Preferences](#)
- [Wave Preferences](#)
- [Check Preferences](#)
- [Default View Preferences](#)
- [MIDI Preferences](#)
- [Library Preferences](#)
- [WaveBlade Preferences](#)
- [Miscellaneous Preferences](#)

To view and modify a set of parameters, click on the relevant tab.

Note: The options to copy referenced Objects with "parent" Objects (e.g. moving Voices with Multis) work by:

- Checking the destination file to see if the referenced Object exists
- If it does then the parent Object is updated after being moved to point to the existing Object in the destination file
- If not then sy.factory checks to see if a blank or empty child Object is present in the destination file (e.g. in the case of moving a Voice, a blank "INIT VOICE" is looked for)
- If a blank Object is found then the child Object is moved or copied and the parent Object is updated after being moved to point to the new Object in the destination file
- If no blank Object is found then sy.factory gives up. Note this may result in a Partial edit (e.g. it may have only been possible to copy a subset of Objects due to the amount of free Objects in the destination file)
- The child Objects are only ever copied irrespective of whether the parent Object is being moved or copied. This is to avoid the problem that would occur when a child Object is moved (say a Voice with Multi), where the source child Object (which would have been initialised after the move) is also referenced by other Parent Objects (e.g. another Multi)

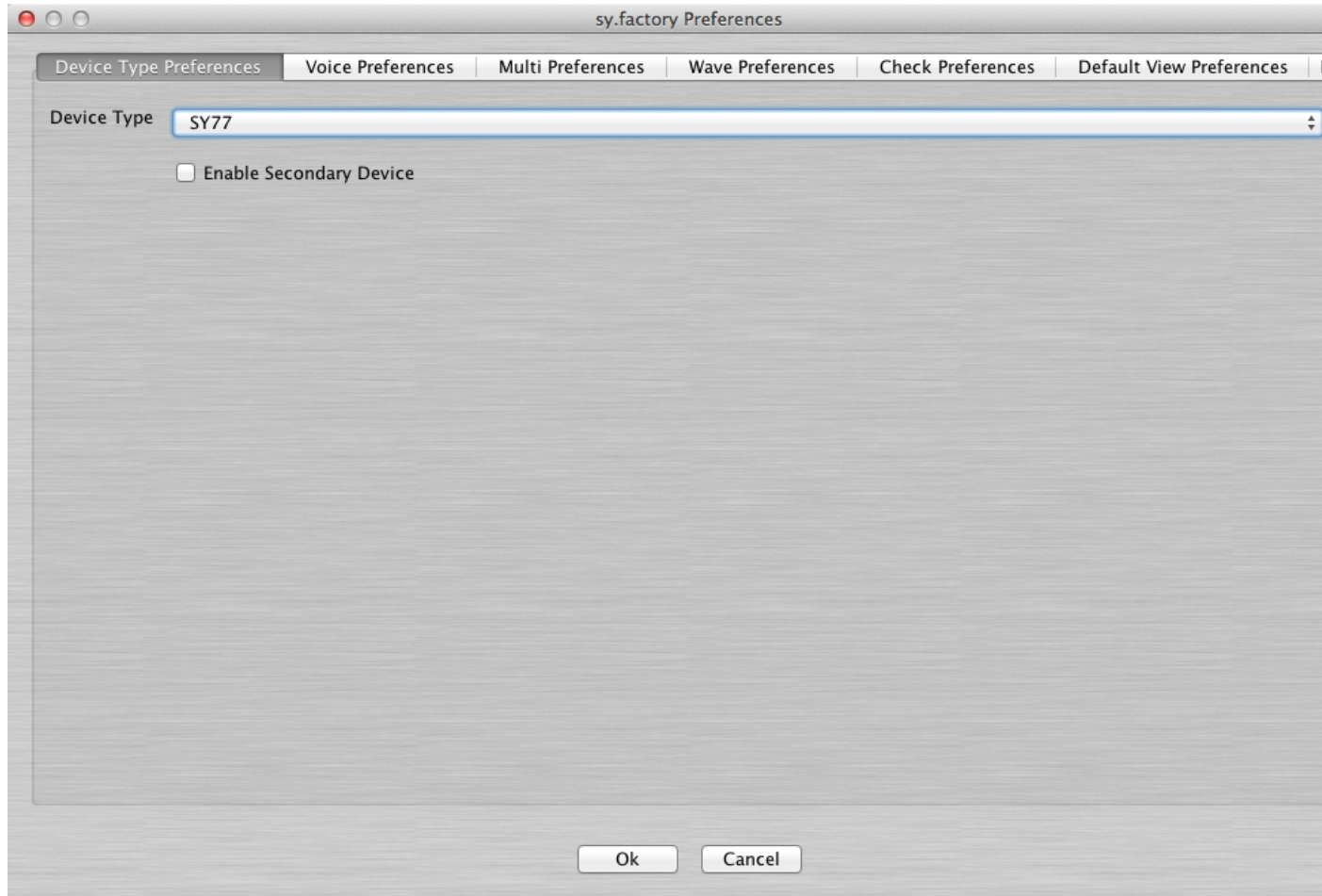
All the above options are sensitive to what is being dragged. For example a Multi Part, Multi Part Branch, Multi or Multi Branch can be dragged and the necessary Objects will be copied

## Device Type Preferences

The Device Type Preferences tab allows you to set one or two device types to match your synthesizers that sy.factory will control.

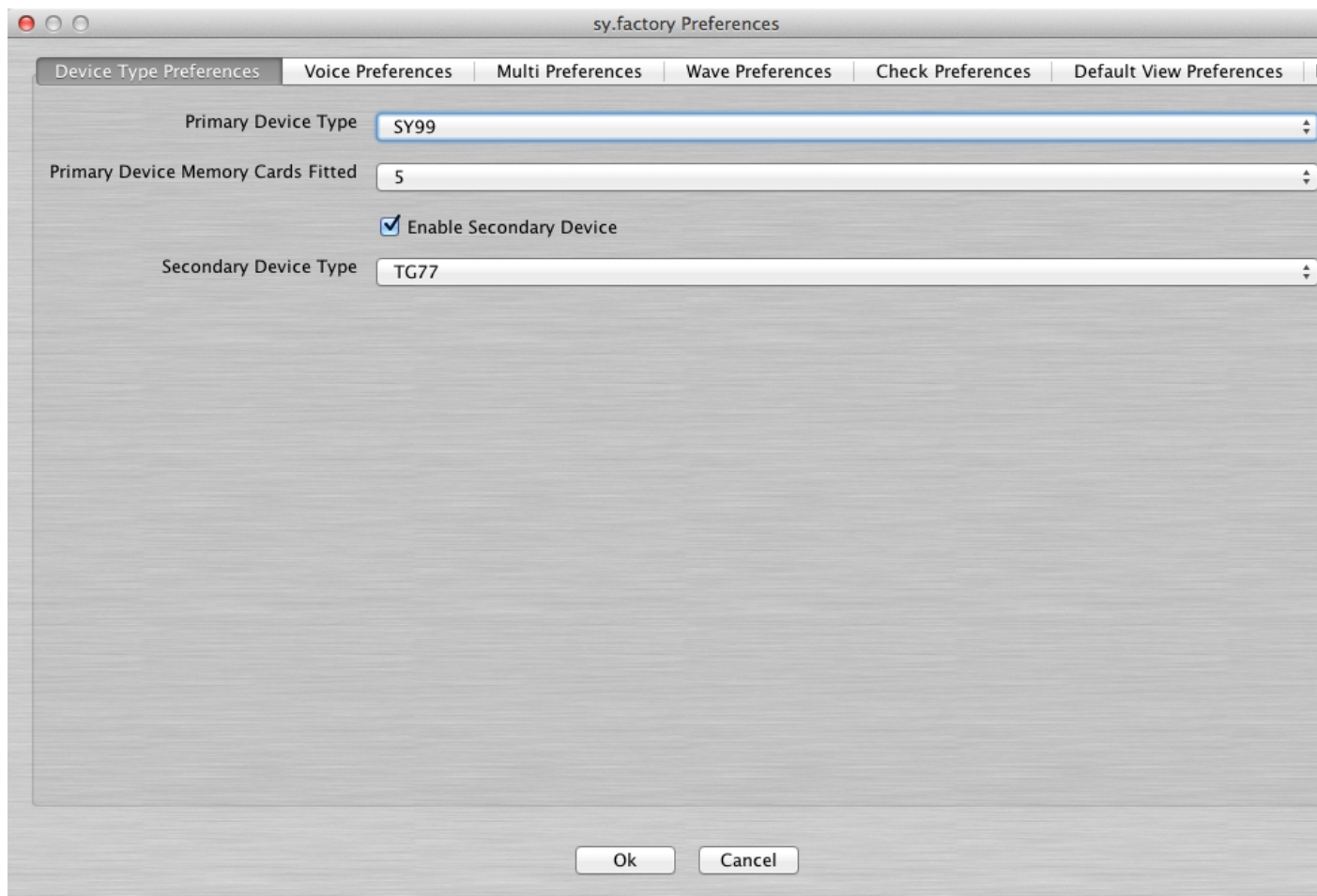
This tab will adjust the visible controls depending on whether or not you have a secondary device enabled, and will also add controls if the primary or secondary device is set to be an SY99.

An example of the Device Type Preferences tab where you do not have a secondary device enabled is shown below:



An example of the the Device Type Preferences tab where you have the Primary Device set as an SY99 and the secondary device enabled is shown below:





This tab has the following options:

<b>[Primary] Device Type</b>	<p>Allows you to select the type of Device that you have from the following options:</p> <ul style="list-style-type: none"> <li>• SY77</li> <li>• SY99</li> <li>• TG77</li> </ul> <p>This parameter is used by sy.factory to determine what MIDI messages to send to the connected device. When a TG77 is selected then no sequence data is sent or requested from the device.</p>
<b>[Primary] Device Type Memory Cards Fitted</b>	<p>This control is only visible if the selected device type is an SY99. It allows you to tell sy.factory how many memory cards are fitted within your SY99.</p> <p>This parameter is only used by sy.factory to determine if the samples in a loaded TNN file will fit within the SY99's memory. If the Samples are too large, then the RM parameter shown in the status bar is highlighted in red.</p>
<b>Enable Secondary Device</b>	<p>If you wish to have sy.factory to integrate with two SY series devices, then check this control, and the secondary device controls will be shown.</p>
<b>Secondary Device Type</b>	<p>This control is only visible if the <b>Enable Secondary Device</b> option is checked.</p> <p>Allows you to select the type of Device that you have from the following options:</p> <ul style="list-style-type: none"> <li>• SY77</li> <li>• SY99</li> <li>• TG77</li> </ul> <p>This parameter is used by sy.factory to determine what MIDI messages to send to the connected device. When a TG77 is selected then no sequence data is sent or requested from the device.</p>
<b>Secondary Device Type Memory Cards Fitted</b>	<p>This control is only visible if the <b>Enable Secondary Device</b> option is checked and if the selected device type is an SY99. It allows you to tell</p>



sy.factory how many memory cards are fitted within your SY99.

This parameter is only used by sy.factory to determine if the samples in a loaded TNN file will fit within the SY99's memory. If the Samples are too large, then the RM parameter shown in the status bar is highlighted in red.

## Voice Preferences

The Voice Preferences tab is shown below:



This tab has the following options:

<b>Update Voices After Microtuning Move</b>	If you move a Microtuning within a file then the Voices are updated to ensure that the correct references to User Microtunings are maintained.
<b>Update Voices After Panning Move</b>	If you move a User Panning within a file then the Voice Elements are updated to ensure that the correct references to User Pannings are maintained.
<b>Update Voices After Wave Move (SY99)</b>	If you move a User Wave within a file then the Voice Elements are updated to ensure that the correct references to User Waves are maintained.
<b>Copy User Microtunings With Voice</b>	If you move or copy a Voice from a file to another file, then any User Microtuning referenced by the Voice is also copied to the destination file if the Microtuning is not already present in the destination file.
<b>Copy User Pannings With Voice</b>	If you move or copy a Voice from a file to another file, then any User Pannings referenced by the Voice are also copied to the destination file if the User Pannings are not already present in the destination file.
<b>Copy User Waves With Voice (SY99)</b>	If you move or copy a Voice from a file to another file, then any User Waves referenced by the Voice are also copied to the destination file if the Waves are not already present in the destination file.
<b>Add Reverb and Delay to Converted DX7 Voice</b>	If this option is checked then a DX7 voice converted to SY77 format will have default reverb and delay applied so that the voice is not "dry".

# Multi Preferences

The Multi Preferences tab is shown below:

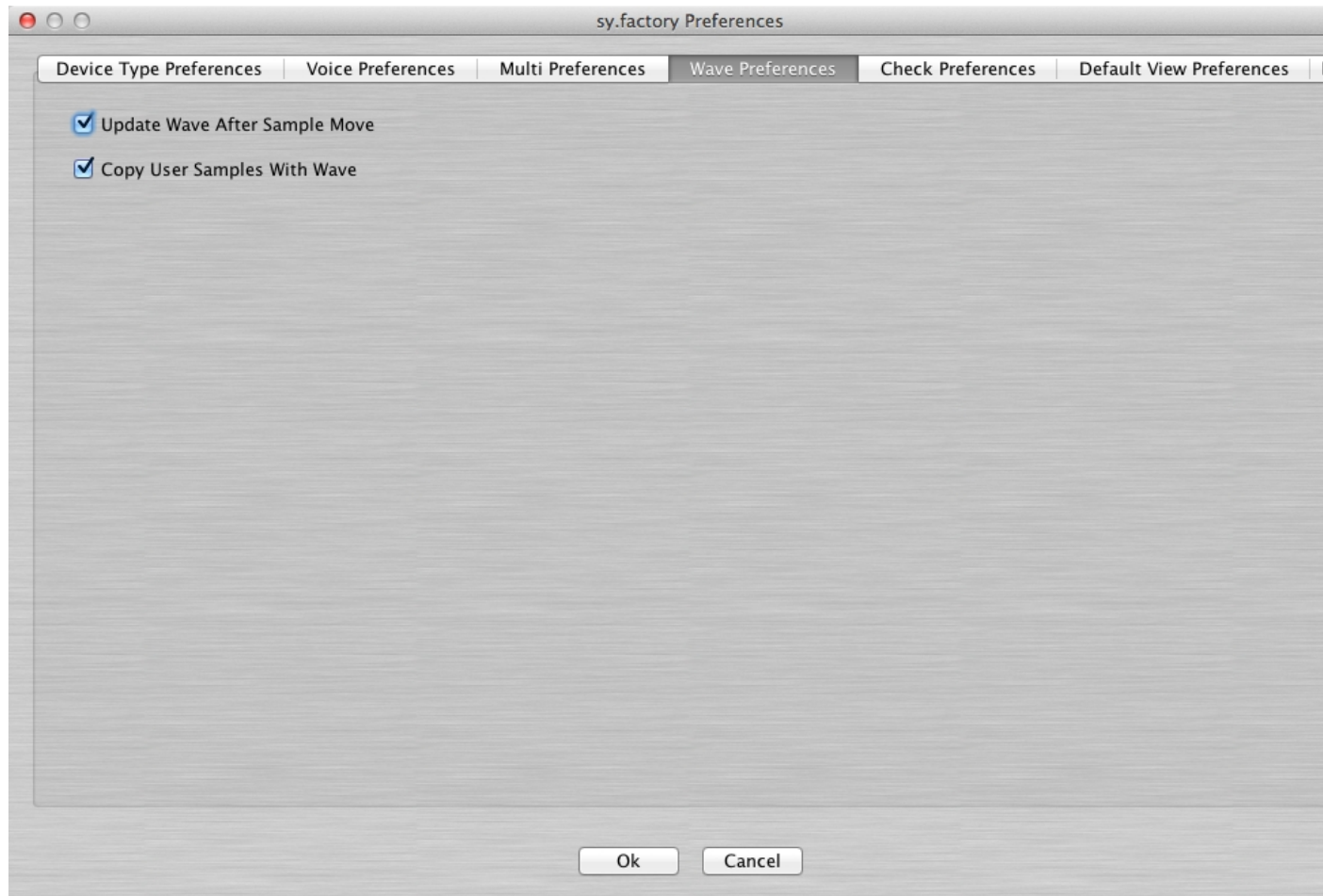


This tab has the following options:

<b>Update Multis/Parts After Voice Move</b>	If you move a Voice within a file then the Multis and their Parts are updated to ensure that the correct references to User Voices are maintained.
<b>Copy User Voices With Multi</b>	If you move or copy a Multi from a file to another file, then any User Voices referenced by the Multi and its Parts are also copied to the destination file if the Voices are not already present in the destination file.

## Wave Preferences

The Wave Preferences tab is shown below:

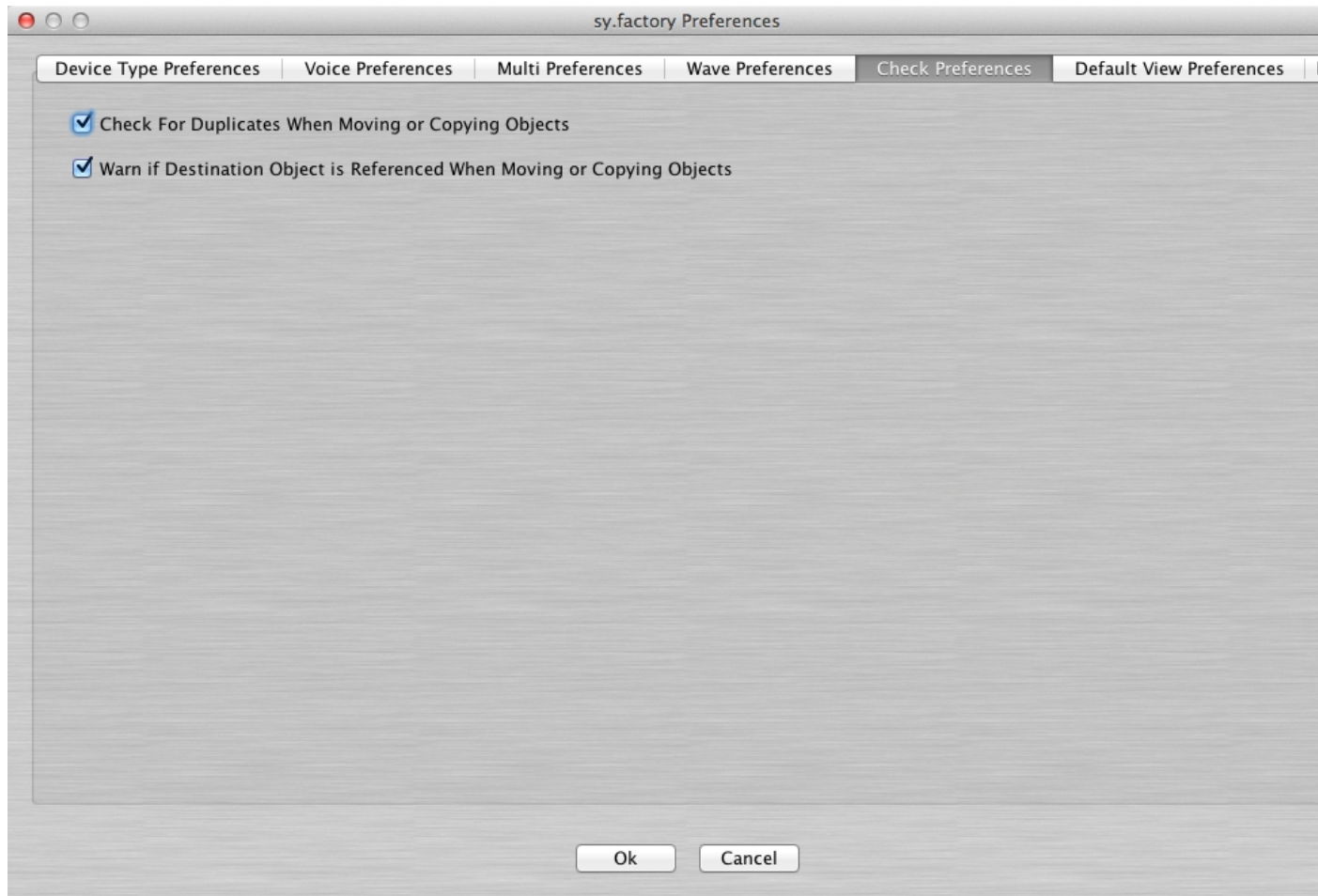


This tab has the following options:

<b>Update Waves After Sample Move</b>	If you move a Sample within a file then the Waves are updated to ensure that the correct references to User Samples are maintained.
<b>Copy User Samples With Wave</b>	If you move or copy a Wave from a file to another file, then any User Samples referenced by the Wave are also copied to the destination file if the Waves are not already present in the destination file.

## Check Preferences

The Check Preferences tab is shown below:

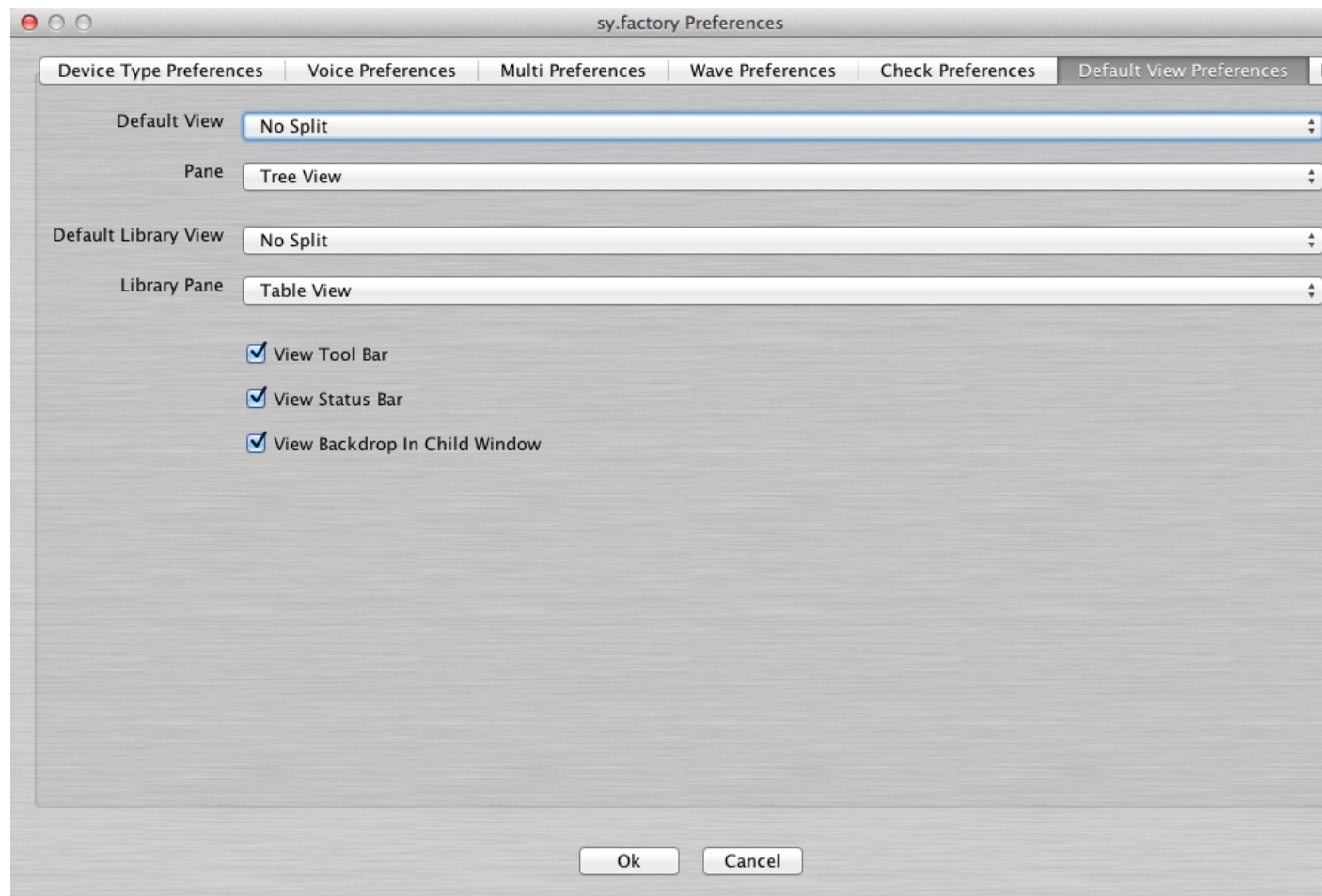


This tab has the following options:

<b>Check For Duplicates When Moving or Copying Objects</b>	If you move or copy an Object to a destination file and the Object already exists then a warning is presented giving you the option to continue or cancel the operation.
<b>Warn if Destination Object is Referenced When Moving or Copying Objects</b>	If you move or copy an Object and it is overwriting an Object that is being referenced, or you are deleting a referenced Object, then a warning is presented giving you the option to continue or cancel the operation.

## Default View Preferences

The Default View Preferences tab is shown below:



<b>Default View</b>	<p>Defines the type of view that is applied to a Child Window when it is first opened.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> <li>• No Split</li> <li>• Horizontal Split</li> <li>• Vertical Split</li> </ul>
<b>Pane/Left Pane/Top Pane</b>	<p>Defines the type of view shown in the single pane of an unsplit view, the left pane of a horizontally split view or the top pane of a vertically split view.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> <li>• Tree View</li> <li>• Table View</li> </ul>
<b>Right Pane/Bottom Pane</b>	<p>This control is only visible if the <b>Default View</b> option is set to either <b>Horizontal Split</b> or <b>Vertical Split</b>.</p> <p>Defines the type of view shown in the right pane of a horizontally split view or the bottom pane of a vertically split view.</p> <p>The following options are available:</p> <ul style="list-style-type: none"> <li>• Tree View</li> <li>• Table View</li> </ul>
<b>View Tool Bar</b>	Controls if the toolbar is visible at startup.
<b>View Status Bar</b>	Controls if the status bar is visible at startup.
<b>View Backdrop In Child Window</b>	<p>This option controls if the image backdrop is displayed in Child Windows.</p> <p>You may wish to turn off this option if you find the scrolling of the Child Window is slow on your machine.</p>

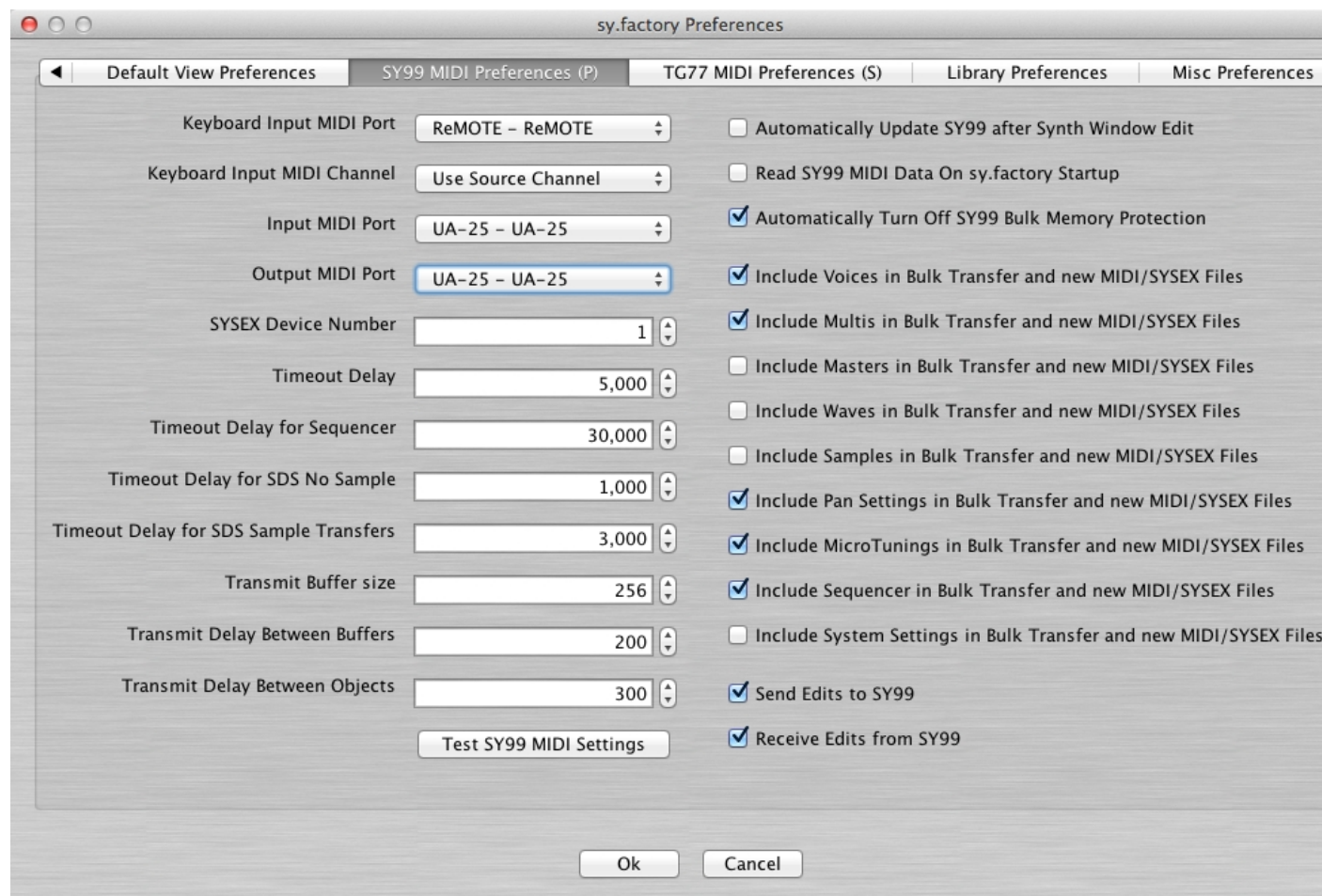


## MIDI Preferences

The MIDI Preferences tab is shown below. One or two MIDI Preferences tabs will be visible depending on whether the **Enable Secondary Device** option in the [Device Options](#) Tab in the [Preferences](#) Dialog is checked or unchecked.

The Title of the tab will indicate the name of the selected device and whether or not it is the Primary (**P**) or Secondary (**S**) Device.

The controls on both Primary and Secondary tabs are identical, so only one is described. Some controls may be disabled if they are not supported by the selected Device.



This tab has the following options:

<b>Keyboard Input MIDI Port</b>	Sets the port used for accepting MIDI data from a keyboard and routing it to the output MIDI port using the <a href="#">MIDI Router</a> Dialog.
<b>Keyboard Input MIDI Channel</b>	Sets the channel to be used for transmitting MIDI data using the <a href="#">MIDI Router</a> Dialog. The first option <b>Use Source Channel</b> in the drop down list, means that the MIDI channel from the source device is not altered.
<b>Input MIDI Port</b>	Sets the port used for MIDI input from the available ports.
<b>Output MIDI Port</b>	Sets the port used for MIDI output from the available ports.
<b>SYSEX Device Number</b>	Sets the SYSEX device number used for SYSEX transfers. This must match the <b>Device No</b> value set in the SY's <b>MIDI</b> pages. If the SY <b>Device No</b> is set to <b>all</b> then it will receive all SY SYSEX messages irrespective of the device number in the message.
<b>Timeout Delay</b>	Sets the time that sy.factory waits for a response from the SY before timing out and reporting an error. The value is specified in milliseconds.
<b>Timeout Delay for Sequencer</b>	Sets the time that sy.factory waits for a response from the SY before timing out and reporting an error during Sequencer data transfers. The value is specified in milliseconds.
<b>Timeout Delay for SDS No Sample</b>	Sets the time that sy.factory waits for a response from the SY before timing out and reporting an error when requesting a Sample Dump Standard (SDS) transfer. The value is specified in milliseconds. SDS devices will not respond to a sample transfer request if a sample does not exist at the requested sample location.

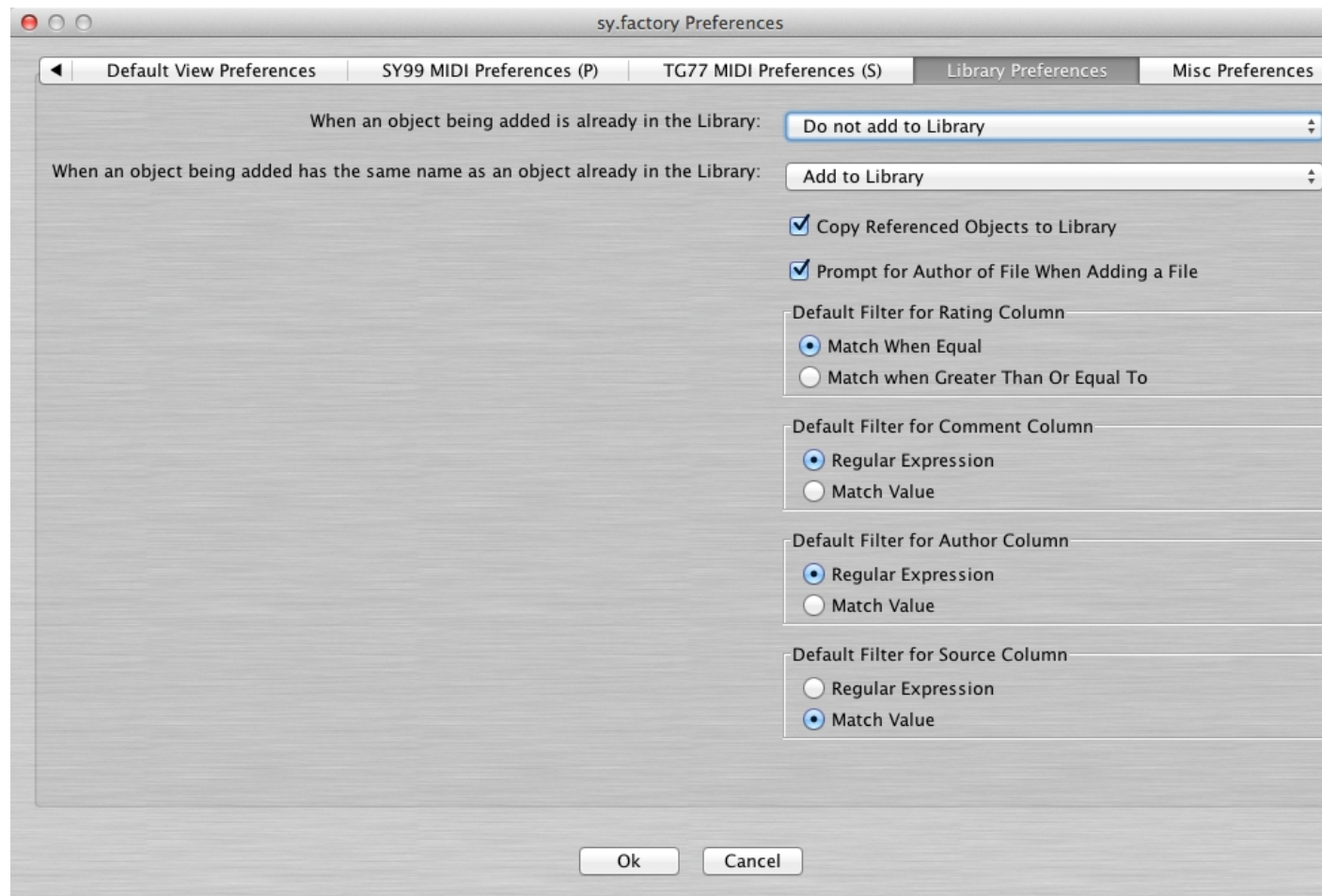
<b>Timeout Delay for SDS Sample Transfers</b>	Sets the time that sy.factory waits for a response from the SY before timing out and reporting an error during SDS Sample Transfers. The value is specified in milliseconds.
<b>Transmit Buffer Size</b>	Sets the size of the transmit buffer used for sending data to the SY. Some MIDI interfaces don't like data coming in big chunks and you may need to set this to get a reliable transfer of data. The value is specified in milliseconds.
<b>Transmit Delay Between Buffers</b>	This sets the delay that sy.factory waits for between sending buffer sized data packets. The value is specified in milliseconds.
<b>Transmit Delay Between Objects</b>	This sets the delay that sy.factory waits for after sending a complete object. The value is specified in milliseconds.
<b>Test SY MIDI Settings</b>	Tests to see if MIDI communications is working using the specified values.
<b>Automatically Update SY after Synth Window Edit</b>	When this option is checked, if the SY Synthesizer Window is edited then the edited data will be automatically sent to the SY.
<b>Read SY MIDI Data On sy.factory Startup</b>	When this option is checked the Voices and Performances (if enabled) are read from the SY during the sy.factory startup phase.
<b>Automatically Turn off SY Bulk Memory Protection</b>	When this option is checked, sy.factory will turn off the SY bulk memory protection setting before sending data via MIDI.
<b>Include Voices In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Voices are included in bulk transfers, and a Voices collection will be included in new MIDI/SYSEX files that you create.
<b>Include Multis In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Multis are included in bulk transfers, and a Multis collection will be included in new MIDI/SYSEX files that you create. You may wish to uncheck this option if you don't use Multis.
<b>Include Masters In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Master Control Setups are included in bulk transfers, and a Master Control Setup collection will be included in new MIDI/SYSEX files that you create (SY99 files only). You may wish to uncheck this option if you don't use Master Control Setups.
<b>Include Waves In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Waves are included in bulk transfers, and a Wave collection will be included in new MIDI/SYSEX files that you create (SY99 files only). You may wish to uncheck this option if you don't use custom Waves.
<b>Include Samples In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Samples are included in bulk transfers, and a Sample collection will be included in new MIDI/SYSEX files that you create (SY99 files only). You may wish to uncheck this option if you don't use Custom Samples.
<b>Include Pan Settings In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Pan Settings are included in bulk transfers, and a Pan Settings collection will be included in new MIDI/SYSEX files that you create. You may wish to uncheck this option if you don't use custom Pan Settings.
<b>Include Microtunings In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Microtunings are included in bulk transfers, and a Microtuning collection will be included in new MIDI/SYSEX files that you create. You may wish to uncheck this option if you don't use custom Microtunings.
<b>Include Sequencer In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the Sequencer data is included in bulk transfers, and a Sequencer will be included in new MIDI/SYSEX files that you create (SY77/SY99 files only). You may wish to uncheck this option if you don't use the Sequencer.
<b>Include System Settings In Bulk Transfer and New MIDI/SYSEX Files</b>	When this option is checked, the System Settings are included in bulk transfers, and a System Settings Object will be included in new MIDI/SYSEX files that you create.
<b>Send Edits To SY99</b>	When this option is checked, the Wave and Sample Editor dialogs will be initialised to transmit their edits to the SY99.
<b>Receive Edits From SY99</b>	When this option is checked, the Wave and Sample Editor dialogs will be initialised to receive edits from the SY99.

The **Transmit Buffer Size**, **Transmit Delay Between Buffers** and **Transmit Delay Between Objects** values should not require adjustment. sy.factory sends data to the SY by dividing the data into packets the size of which are specified by the **Transmit Buffer Size** value. When sy.factory sends a packet it waits for the time period specified by **Transmit Delay Between Buffers** before sending the next packet, and it waits for the time period specified by **Transmit Delay Between Objects** after the last packet is sent. The delay parameters are specified in milliseconds. You may need to adjust these values (smaller buffers, longer delays) if communications is not reliable, and you may if you wish adjust these values (larger buffers, smaller delays) to maximise data transfer performance. If you adjust these values, please ensure that you test the transfer to ensure it is reliable, *otherwise you may risk losing data*. Note: Some MIDI interfaces do not like large packet sizes: I recently upgraded to a MOTU interface and ran into problems with MIDI export until I altered sy.factory to send messages in small chunks defined by the above parameters!



# Library Preferences

The Library Preferences tab is shown below:



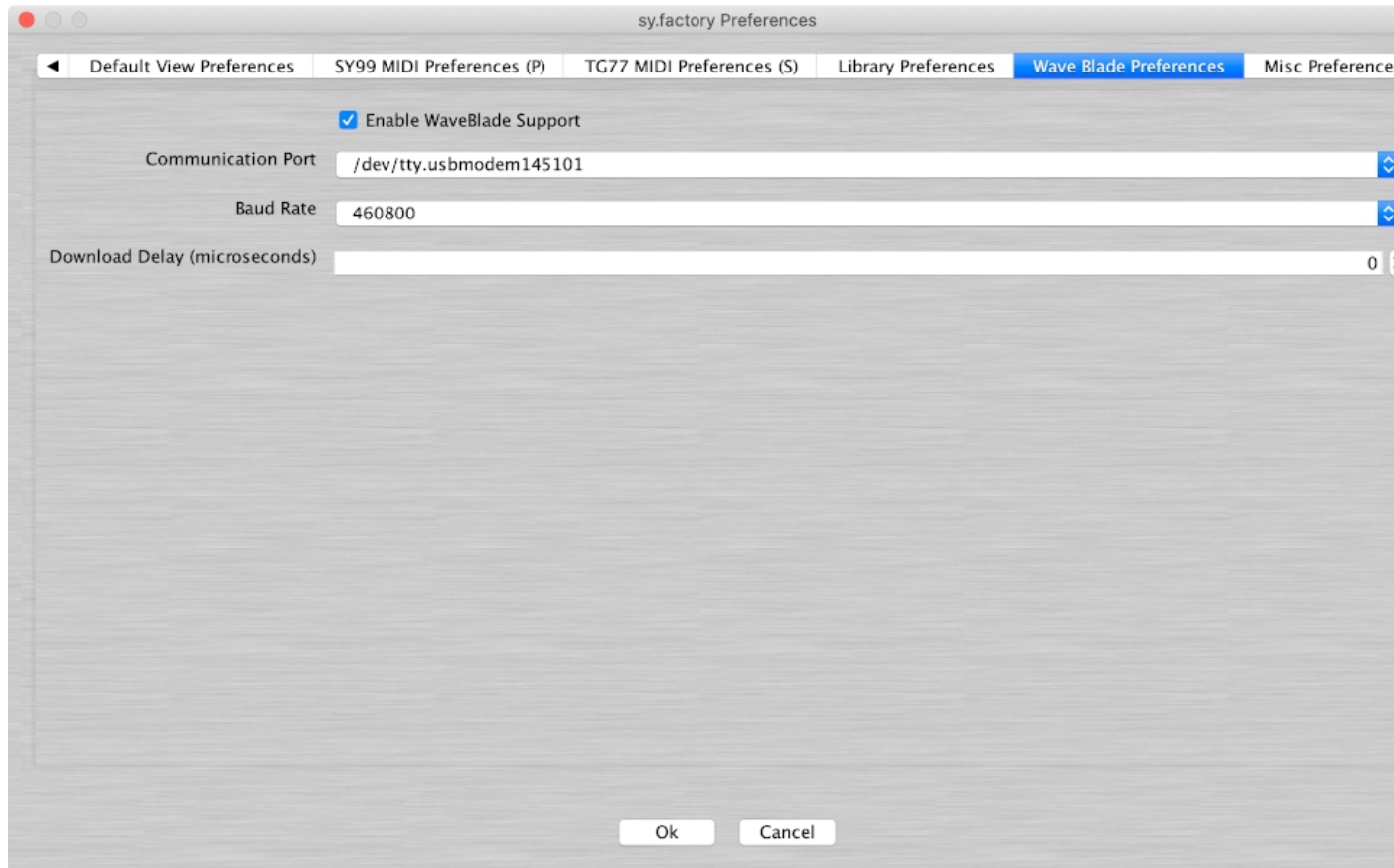
This tab has the following options:

<b>When an Object being added is already in the Library</b>	Provides the action to do if an Object is added to the Library and there is already an identical Object in the library. The choices are: <ul style="list-style-type: none"> <li>• Add to Library (with a new name)</li> <li>• Do not add to Library</li> <li>• Overwrite Object in the Library</li> <li>• Ask What To Do</li> </ul>
<b>When an Object being added already has the same name as an Object in the Library</b>	Provides the action to do if an Object is added to the Library and there is already an Object in the library with the same name. The choices are: <ul style="list-style-type: none"> <li>• Add to Library (with a new name)</li> <li>• Do not add to Library</li> <li>• Overwrite Object in the Library</li> <li>• Ask What To Do</li> </ul>
<b>Copy Referenced Objects to Library</b>	If this Option is checked, then any Objects being referenced by an Object being added to the Library are also added to the Library.
<b>Prompt for Author of File When Adding a File</b>	If this Option is checked then sy.factory will ask for the Author of the file if one has not already been entered.
<b>Default Filter for Rating Column</b>	Sets the default filter type for the <b>Rating</b> column. The choices are: <ul style="list-style-type: none"> <li>• Regular Expression (can contain Perl Regular Expressions)</li> <li>• Match Value (can only be selected using an existing value)</li> </ul>
<b>Default Filter for the Comment Column</b>	Sets the default filter type for the <b>Comment</b> column. The choices are: <ul style="list-style-type: none"> <li>• Regular Expression (can contain Perl Regular Expressions)</li> <li>• Match Value (can only be selected using an existing value)</li> </ul>
<b>Default Filter for the Author Column</b>	Sets the default filter type for the <b>Author</b> column. The choices are: <ul style="list-style-type: none"> <li>• Regular Expression (can contain Perl Regular Expressions)</li> <li>• Match Value (can only be selected using an existing value)</li> </ul>

<b>Default Filter for the Source Column</b>	Sets the default filter type for the <b>Source</b> column. The choices are: <ul style="list-style-type: none"> <li>• Regular Expression (can contain Perl Regular Expressions)</li> <li>• Match Value (can only be selected using an existing value)</li> </ul>
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## WaveBlade Preferences

The WaveBlade Preferences tab is shown below:

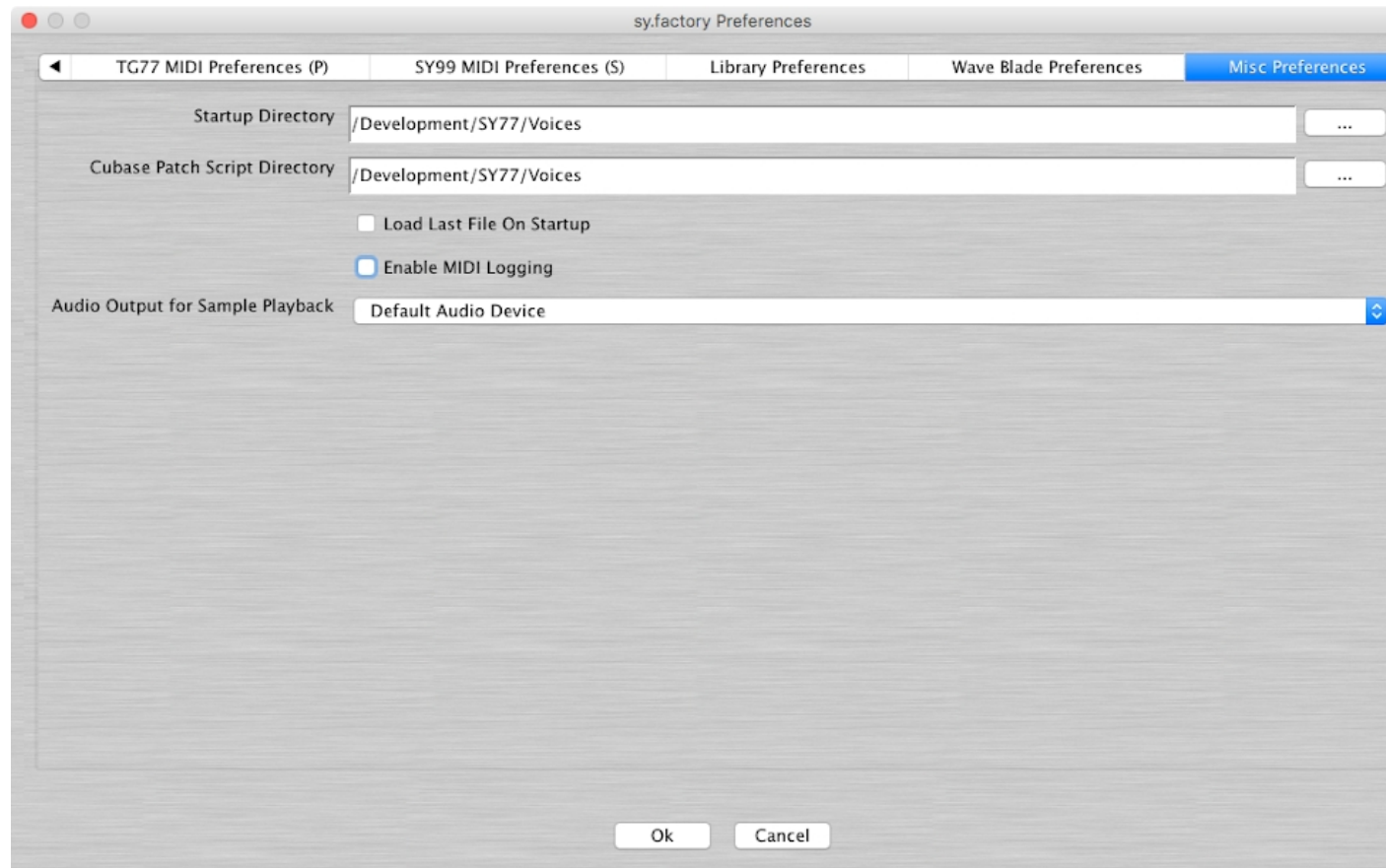


This tab has the following options:

<b>Enable WaveBlade Support</b>	By default, WaveBlade support is disabled (so the software does not cause problems for those that do not have the WaveBlade), so if you wish to use this feature then you need to enable it.
<b>Communication Port</b>	Sets the USB port used to communicate with the WaveBlade. The WaveBlade must be plugged in when setting this option.
<b>Baud Rate</b>	Sets the baud rate to communicate at. This must be set to match the baud rate you have set on the WaveBlade.
<b>Download Delay (microseconds)</b>	Sets the download delay that will be inserted between each byte during a WaveBlade Programmer download. You may wish to experiment with this parameter and increase the delay if you are getting download errors (either invalid download sizes that are not 1MB or 2MB or checksum errors).

## Miscellaneous Preferences

The Miscellaneous Preferences tab is shown below:




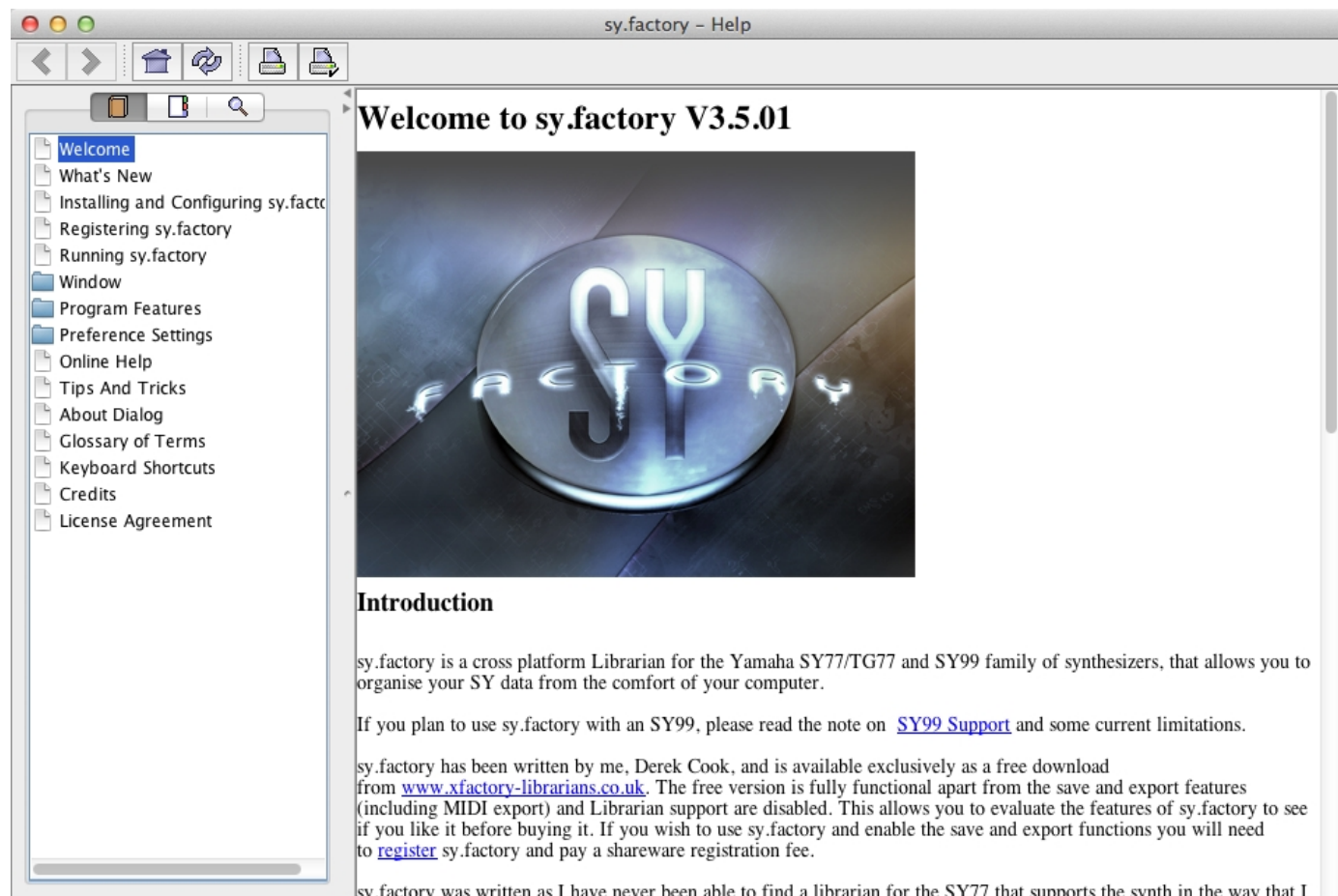
This tab has the following options:

<b>Startup Directory</b>	<p>Allows the startup directory to be specified. Note: no validation is performed on this pathname, so please ensure it is valid. I may add validation later.</p> <p>The [...] button to the right of the field brings up a dialog that allows you to select the directory instead of typing it in.</p>
<b>Cubase Patch Script Directory</b>	<p>Specifies the directory where Cubase patch scripts are written. Note: no validation is performed on this pathname, so please ensure it is valid. I may add validation later.</p> <p>The [...] button to the right of the field brings up a dialog that allows you to select the directory instead of typing it in.</p>
<b>Load Last File On Startup</b>	<p>Controls if the last file opened in the previous session is automatically loaded when sy.factory is next invoked.</p>
<b>Enable MIDI Logging</b>	<p>When checked, MIDI communications is logged to the sy.factory log file. Only turn this on when you need to, as the amount of data being written to the logs will slow down MIDI operations.</p>
<b>Audio Output for Sample Playback</b>	<p>Allows you to select the audio device used for playback of SY99 samples.</p>

# Online Help

sy.factory provides a full online version of the sy.factory manual.




If you select **Help ...** from the [Help Menu](#) or the  button on the [Tool Bar](#), the Help Window is opened.









The Help Window works just like a web browser window, so its operation should be quite familiar to you.

The left pane of the Help Window shows a tabbed navigation pane to allow you to quickly navigate to a topic, whilst the right hand pane shows the help topic.

The navigation pane can show three different views, depending on which tab you select:


-  Displays the Table of Contents Navigation Pane, providing a structured list of sy.factory topics
-  Displays the Index Navigation Pane, providing an indexed list of sy.factory topics
-  Displays the Search Navigation Pane, allowing you to search the help topics for keywords

The Help Window has the following Tool Bar buttons:

-  Navigates backwards to the last page in the access sequence. If you press and hold the mouse button over this button, you will get a list of accessed pages
-  Navigates forwards to the next page in the access sequence. If you press and hold the mouse button over this button, you will get a list of accessed pages
-  Selects the home page
-  Refreshes the current page
-  Prints the current page
-  Displays the print settings dialog

## Context Sensitive Help

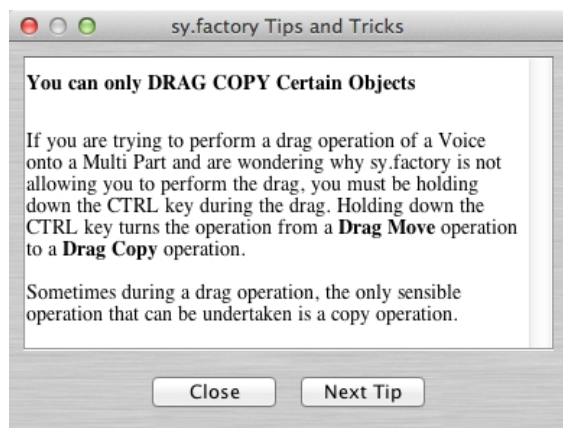
You can access context sensitive help by:

- pressing the your Computer Platform's **Help Key** ( **F1** on the PC platform), which will load the help page associated with the Component within the sy.factory [Window](#) that currently has **Focus** (is responding to the keyboard and mouse).
- pressing the  button on the [Tool Bar](#) and the clicking over the item of interest

You can press the **Help Key** in any sy.factory Dialog to access the relevant help page for the Dialog.

# Tips and Tricks

The sy.factory tips and tricks dialog is shown below:



This dialog has the following controls:

<b>Close</b>	Closes the <b>Tips and Tricks</b> Dialog
<b>Next Tip</b>	Selects the next tip in sequence
<b>Show Tips at Startup</b>	If checked then when sy.factory starts up, the <b>Tips and Tricks</b> Dialog is automatically opened

## List of Tips and Tricks

Just in case you want the tips and tricks shown by the dialog as one single list, here they are.

### Double Clicking a voice

If you double click a voice in a file or the library, it will be sent to the synth's edit buffer. If you triple click instead, the MIDI Router dialog will be opened after the voice is sent to the synth's edit buffer.

### Library Support

sy.factory provides a Library facility that allows you to store all your data in one place, and use filtering and sorting facilities to locate the data that you want.

(NOTE: Library features are available only to registered users).

### MIDI Support

sy.factory supports the transfer of Voices, Multis and other data types between sy.factory and the SY via MIDI.

(NOTE: The MIDI export features are available only to registered users).

### Context Sensitive Help

If you press the **Help Key** ( **F1** on a PC) then you can get context sensitive help, including within Dialogs.

### Keyboard Shortcuts

sy.factory supports numerous keyboard shortcuts as an alternative to using the mouse.

Take a look in the online help or the sy.factory manual for details of the supported keyboard shortcuts

### Object Colouring

If a Voice is coloured **blue**, then it is being referenced by a Multi.

If you right click over a **blue** Voice you'll find a "**List References**" context menu item, which will show you the Multis that reference this Voice.

An Object in the sequencer data is coloured **green** if it has data stored in it.

An Object in the sequencer data is coloured **red** if it has no data in it.



## Table Sorting

You can sort Voice and Multi Tables by name by clicking in the Table **Name** Column header, and they can be sorted by category by clicking in the Table **Category** column header.

## New Voice

You can create a new voice using the **New** popup menu item in the tree view and the table view.

## You can only DRAG COPY Certain Objects

If you are trying to perform a drag operation of a Voice onto a Multi Part and are wondering why sy.factory is not allowing you to perform the drag, you must be holding down the CTRL key during the drag. Holding down the CTRL key turns the operation from a **Drag Move** operation to a **Drag Copy** operation.

Sometimes during a drag operation, the only sensible operation that can be undertaken is a copy operation.

## Copying/Moving Objects to a Different File

When you copy an Object to a different file then any Objects it references can also be copied at the same time.

For example if you move a Multi to a new File, then the referenced Multis are also copied:

This feature can be off if required within the Preferences Dialog.

## MIDI Router

Press the F12 key and you get a "MIDI Router" popping up which, whilst active, will route MIDI data from the Keyboard MIDI Port through to the Motif Output MIDI Port. This allows you to have the USB connection selected on the Motif, whilst allow you to play data coming from a standard MIDI interface.

## Master Patch List

The **Master Patch List** dialog under the **Tools** menu allows you to define a list of files that are exported, along with preset voice definitions, as a master patch list for use in supported sequencers to select patches. Currently only Cubase VST/SX/SE/SL patch lists are supported.

## Setting a Pattern Chain Repeat

When you select the **End Pattern Chain Menu** option and hold down the **ALT** key at the same time, a dialog appears that allows you to select the number of repeats.

## Workspaces

sy.factory allows you to save a Window arrangement as a **Workspace** which you can then recall at a later date.

## Moving Voices within a File

When you move a Voice within a file then any Multis that reference the Voice being moved can be updated to ensure they all still reference the correct Voices after the move.

I think you'll agree this is a cool feature!

This feature can be off if required within the Preferences Dialog.

## The SY Synthesizer Window

sy.factory has a special window called the SY Synthesizer Window. This is a special window that represents the SY synthesizer itself.

By setting up the MIDI preferences settings you can:

- Automatically import data from the SY synth into this SY Synthesizer Window when sy.factory starts up
- Automatically export data from the SY Synthesizer Window to the SY Synth when the data in the SY Synthesizer Window is edited

## Copying Voice and Multi Effects Units

Within sy.factory you can copy Voice Effects Units (Reverb and Chorus) to Multi Effects units and vice versa.

## **Exporting Cubase/Protools Patch Lists**

You can export Patch lists from SYSEX files for use within either Cubase VST, Protools or Sonar.

You can also export file information to HTML, XML or SpreadSheetML formats.

The relevant options can be found on the **File** Menu under the **Export** option

## **The Number After An Operator**

In the Tree View you may notice that an operator has a number included after it in brackets. This number is the "checksum" value associated with the operator, and is included as a signature and as a simple way of distinguishing between operators.

## **Exporting Files to MIDI**


You can export a file directly to MIDI once it is opened. If you do this, then the data being exported is also copied to the SY Synthesizer Window.

## **Importing Files from MIDI**

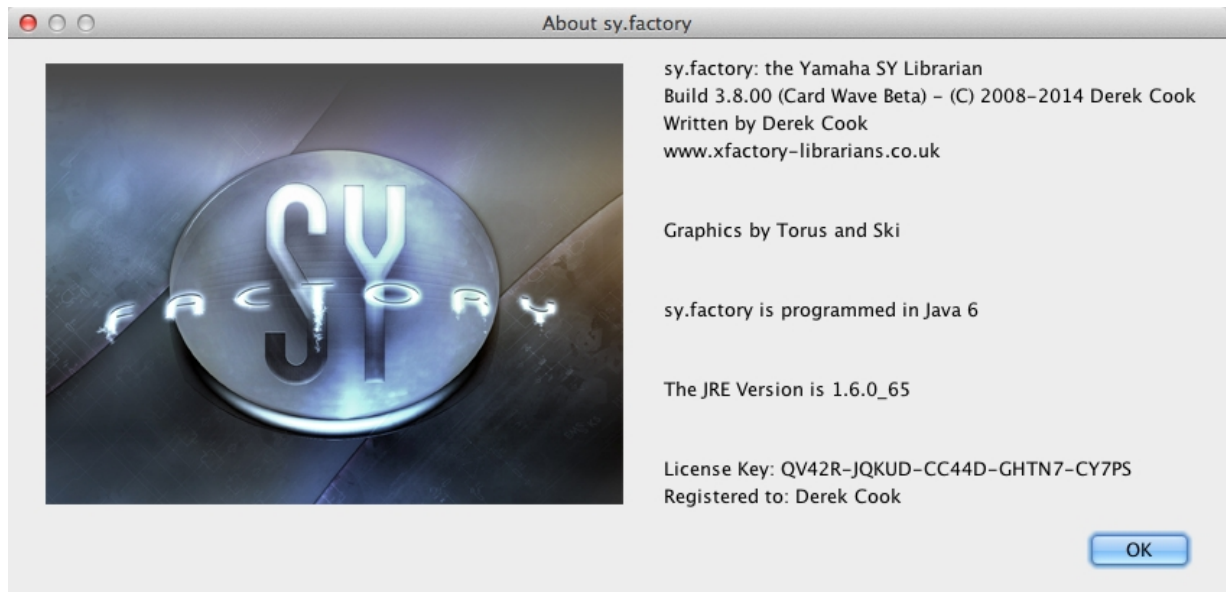
You can import directly from MIDI into a file. If you do this, then the data being imported is also copied to the SY Synthesizer Window.



## About sy.factory

The about dialog is shown when the **About ...** option from the [Help Menu](#) or the  button on the [Tool Bar](#) is selected.

On OS X, there is an **About sy.factory** menu option on the sy.factory application menu.



The dialog shows some basic information about the program including the version number and the [License](#) status of sy.factory.

It also shows which Java Run Time Environment that sy.factory is running in.

It's also a chance to take a close look at the excellent Splash Graphic provided by Torus!

# Glossary

Term	Definition
Child Window	A window associated with an SY data file that you have opened that is used to display the contents of the file.  Several <b>Child Windows</b> can be open within the sy.factory <b>Desktop</b> .
Clipboard	A temporary storage area used for transferring data within a <b>Child Window</b> or between <b>Child Windows</b> .
Collection	A group of similar and related <b>Objects</b> .  For example a Voice <b>Collection</b> stores the 64 Voice <b>Objects</b> that a file can contain
Context Sensitive Help	The ability of the help system to tailor the help being displayed according to where the user pressed the Help key.
Context Sensitive Menu	The popup menu that is displayed in either the <b>Tree View</b> or <b>Table View</b> that provides a set of commands specific to the currently selected <b>Object</b>
Desktop	The area within the sy.factory window where <b>Child Windows</b> can be opened
Drag and Drop	The name for the mechanism that allows a use to move data by dragging it with a mouse and dropping it at a new location.
DRAG MODIFIER	The keyboard key that is held down to turn a Drag and Drop <b>move</b> operation into a <b>copy</b> operation.  On the PC platform, the <b>DRAG MODIFIER</b> key is the <b>CTRL</b> (control) key
JRE	Java Run-time Environment. This provides the Java environment which sy.factory needs in order to run.  Sun Microsystems provides the JRE for PC systems, and Apple provide their own JRE for MacOS X
Library	A repository where you can store all of your data.
MDI	Multiple Document Interface. The type of user interface used by sy.factory which allows several <b>Windows</b> to be open within the main application window.
Menu Bar	The area of the sy.factory Window that contains the set of menus used for accessing the main functions provided by the application.
MIDI	Musical Instrument Digital Interface. The primary means by which digital data is exchanged in a serial form between synthesizers and computers.
MMJ	A MacOS X specific library that provides the means by which external MIDI devices can be accessed with the Java MIDI framework.
Object	A piece of SY data such as a Voice or Multi.
Reference	The means by which the SY associates an <b>Object</b> (such as a Voice) with another <b>Object</b> (such as a Multi Part). The reference provides the link between the two, and in the case of the SY, the link is simply the number of the referenced <b>Object</b> .
Regular Expression	A system by which certain character sequences are interpreted not as plain text but as commands that can provide a tailored search for occurrences of text
Status Bar	The area of the sy.factory Window that is used to display status information upon the currently selected <b>Child Window</b> .
SY Library Window	A special instance of a <b>Child Window</b> that doesn't display data in a file, but which displays the data stored in the SY <b>Library</b> .
SY Synthesizer Window	A special instance of a <b>Child Window</b> that doesn't display data in a file, but which displays User data imported from the SY via MIDI
Table View	A <b>View</b> which displays data in a file arranged in tabulated rows of data
Tool Bar	The area of the sy.factory Window that contains a set of buttons to provide easy access to commonly used commands
Tree View	A <b>View</b> which displays data in a file arranged in a hierarchical tree structure.
View	The means by which the data in a file is viewed.  A <b>Child Window</b> provides the view upon an SY File that you have opened.  The view can be either a <b>Tree View</b> or a <b>Table View</b> .  You can have several views open upon the same data, for example when you have split a <b>Child Window</b> .
Workspace	An arrangement of the main sy.factory Window and Child Windows which can be saved for subsequent recall.

# Keyboard Short Cuts

sy.factory provides many keyboard shortcuts for navigation and performing editing operations.

In general, navigating between components uses these keys:

- **Tab.** Moves keyboard focus to the next component or to the first member of the next group of components.
- **Ctrl-Tab.** Moves keyboard focus to the next component or to the first member of a group of components when the current component accepts a tab (as in text fields, tables, and tabbed panes).
- **Shift-Tab.** Moves keyboard focus to the previous component or to the first component in the previous group of components.
- **Arrow keys.** Move keyboard focus within the individual components of a group of components--for example, within menu items in a menu or within tabs in a tabbed pane.

The shortcuts are divided into the following categories:

- [Keyboard shortcuts for the Desktop and Child Windows](#)
- [Keyboard shortcuts for Tree Views](#)
- [Keyboard shortcuts for Table Views](#)
- [Keyboard shortcuts for Editing within Tree and Table Views](#)
- [Keyboard shortcuts for the Preferences Dialog](#)
- [Keyboard shortcuts for Text Editing Fields](#)

## Keyboard Shortcuts for the Desktop and Child Windows

Action	Keystroke	Notes
New File	Ctrl-N	
Open File	Ctrl-O	
Save File	Ctrl-S	
Save File As	Ctrl-A	
Save All Files	Ctrl-L	
Open Workspace	Ctrl-ALT-O	
Save Workspace	Ctrl-ALT-S	
Tile Horizontally	Ctrl-H	
Tile Vertically	Ctrl-V	
Maximise Windows	Ctrl-M	
Restore Windows	Ctrl-R	
Minimise Windows	Ctrl-I	
Closes Child Window	Ctrl-F4	
Moves Child Window	Ctrl-F7	
Resizes Child Window	Ctrl-F8	
Minimizes Child Window	Ctrl-F9	
Switch to next Child Window on the Desktop	Ctrl-F6	

## Keyboard Shortcuts for Tree Views

Action	Keystroke	Notes
Expands current Object	Right arrow	
Collapses current Object, or moves focus to Parent Object	Left arrow	
Moves focus up one Object	Up arrow	
Moves focus down one Object	Down arrow	
Moves focus to first Object in Tree View	Home	
Moves focus to last Object in Tree View	End	
Moves up one view	Page Up	
Moves down one view	Page Down	
Selects all Object in Tree View	Ctrl-A, Ctrl-/	
Deselects all Object in Tree View	Ctrl-\	
Extends selection down	Shift-down arrow	
Extends selection up	Shift-up arrow	
Extends selection to beginning of Tree View	Shift-Home	
Extends selection to end of Tree View	Shift-End	
Extends selection up one view	Shift-PgUp	
Extends selection down one view	Shift-PgDn	

## Keyboard Shortcuts for Table Views

Action	Keystroke	Notes
Moves up one row	Up arrow Shift-Return	
Moves down one row	Down arrow Return	
Scrolls up one view	Page Up	
Scrolls down one view	Page Down	
Moves focus and view to first cell in the current row	Home	
Moves focus and view to last cell in the current row	End	
Moves focus and view to first cell in the current column	Ctrl-Home	
Moves focus and view to last cell in the current column	Ctrl-End	
Allows editing in a Category cell	F2, Down Arrow	
Allows editing in a Name cell.	F2	
Resets cell to the state it was in before it was edited	Escape	
Selects entire table	Ctrl-A	
Extends selection up one row	Shift-up arrow	
Extends selection down one row	Shift-down arrow	
Extends selection to beginning of table	Ctrl-Shift-Home	
Extends selection to end of table	Ctrl-Shift-End	
Extends selection up one view	Shift-PgUp	
Extends selection down one view	Shift-PgDn	

## Keyboard Editing Short Cuts for both Tree and Table Views

Action	Keystroke	Notes
Undo	Ctrl-Z	
Redo	Ctrl-Y	
Cut	Ctrl-X	
Copy	Ctrl-C	
Paste	Ctrl-V	
Find	Ctrl-F	
Find Next	F3	
Goto	Ctrl-G	
Insert Object	INS	Not allowed on Collections
Delete Object	DEL	Not allowed on Collections
Rename Object	F4	Single Named Object Only
Initialise Object	F5	
List References	F6	Single Named Object Only
Export to MIDI Edit Buffer	F8	Single Voice or Performance Only
Export to MIDI Memory	Shift-F8	Voices or Performances Only
Import from MIDI Edit Buffer	F9	Single Voice or Performance Only
Import from MIDI Memory	Shift-F9	Voices or Performances Only

## Keyboard Shortcuts for the Preferences Dialog

Action	Keystroke	Notes
Navigates through tabs	Arrow keys	
Moves from tab to its associated content pane	Ctrl-down arrow	
Moves from content pane to its associated tab	Ctrl-up arrow	

## Keyboard Shortcuts for Text Editing Fields

Action	Keystroke	Notes
Moves insertion point one character to the right	Right arrow	
Moves insertion point one character to the left	Left arrow	
Moves insertion point to beginning of next word	Ctrl-right arrow	
Moves insertion point to beginning of previous word	Ctrl-left arrow	
Moves insertion point to beginning of field	Home	
Moves insertion point to end of field	End	
Submits text entry	Enter, Return	
Extends selection to beginning of line	Shift-Home	
Extends selection to end of line	Shift-End	
Extends selection one character to the left	Shift-left arrow	
Extends selection one character to the right	Shift-right arrow	
Extends selection to next word	Shift-Ctrl-right arrow	
Extends selection to previous word	Shift-Ctrl-left arrow	

# SY99 Sample Transfer Issues

The SY99 Sample implementation is a little bit buggy or is missing features.

This section describes those issues that I know of. At this point the problems are only summarised. I may expand this section when time allows.

1. [MIDI Sample Dump Standard Loop Point Messages Not Supported](#)
2. [MIDI Sample Dump Standard Bug](#)
3. [You Cannot overwrite an Existing Sample](#)
4. [Problems with Certain Sample Frequencies](#)

## MIDI Sample Dump Standard Loop Point Messages Not Supported

Sadly the SY99 does not seem to support the transmission or reception of these MIDI SDS messages. So whilst sy.factory can edit loop points, you cannot synchronise them to the SY99, unless you delete the sample on the SY99 and resend the sample

## MIDI Sample Dump Standard Bug

Some versions of the SY99 operating system (1.24 and previous I think) can corrupt Samples in TNN files for samples 54 and above. The effect is that you cannot send these samples via MIDI Sample Dump Standard, and if you try and receive the Sample from the SY99, the receiving program (e.g sy.factory) will think it is receiving a very, very large sample, and the transfer never completes

## You Cannot overwrite an Existing Sample

The SY99 does not allow you to overwrite an existing Sample when sending a Sample via MIDI Sample Dump Standard; it will put the sample in the next free sample slot. If you want to send a Sample to a location that already has a Sample in it, you will need to delete it first.

## Problems with Certain Sample Frequencies

If the Sample has a playback rate lower than 21KHz then the pitch code calculations will be significantly wrong.



## Credits

- Jim Atfield for general debugging duties, including OSX compatibility, and for also checking out the behaviour of the installer on MAC OSX, and then for loaning me his iMac so that I could sort out some more pervasive issues. I now have my own Mac so I don't have to keep borrowing Jim's, or hassling him for OSX duties anymore, but OSX support all started with Jim's help.
- Thanks to the late Clyde Atkinson for digging into his archives and providing hand worked examples of some of the DX7 voices that he manually converted to SY77 format. It was also Clyde's enthusiasm for the SY series that made me buy one in the first place!
- Thanks also go to Dennis (AKA "SynthJoe"), Dimitar Barbutov, and Malte Krug for their help in providing SY99 and TG77 data files for me to work up upon for performing initial beta testing on Release 3.0.

The following "open source" projects are used either within or to build and install sy.factory:

### 3rd party software used in sy.factory

The following 3rd part software is used to build sy.factory and provide some program features.

#### CoreMIDI4J License

sy.factory makes use of [CoreMIDI4J](#) to provide MIDI support on OS X, which is issued under the [EPL 1.0 License](#).

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I have adapted the Wizard software to allow me to display two progress bars in the Wizard. If anybody wishes to have the source code for how I did this, please email me at [supportx@xfactory-librarians.co.uk](mailto:supportx@xfactory-librarians.co.uk) and I will happily provide the adapted source code.

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