

## About Evolution Audio Pro...

Displays a Dialog with brief details about the program.

## Arrange Icons

Rearranges any icons (minimized windows) on the desktop, starting at the bottom left.

## Audio System Settings...

If your computer contains a sound card capable of audio playback, you can configure it here.

The .WAV files are read direct from hard disk, so it is possible to play files of any length - you can play any file which can fit on the hard disk.

The Dialog contains the following:

**Audio System On / Off** This determines whether the audio system is active. Turning it off frees the wave audio driver so it can be used by another program. It also frees all memory used by the audio system.

**Realtime Format Conversion** If this switch is on, the program will convert the format of any wave file which does not match the current playback format. The necessary calculations are done in real time during playback. Conversions of quarter, half, double and quadruple speeds are possible. If you can still hear waves being played back at the wrong speed, choose a Playback Format which is closer to that of the files you are using.

**Buffer Size** This combo box allows you to decide how much of the PC's memory is used for buffering the audio data. In general, the slower your PC, the larger the buffer you will need. If you are using Realtime Format Conversion you will need more buffer memory. If you hear gaps in the playback of a wave file, try increasing the buffer size.

**Playback Format** The three sets of radio buttons allow you to set the format of your sound card to the format of the wave files you intend to use. The Audio Pattern Settings Dialog will tell you the format of any wave file. If your wave files are not all the same format, turn on Realtime Format Conversion so they will be replayed correctly.

**Show Names in Patterns** If this switch is on, the names of audio patterns are displayed in the Track Window.

**Draw Waves in Patterns** If this switch is on, the program will show a graphic representation of wave files inside the patterns.

**Draw Waves in Dialogs** If this switch is on, the program will show the wave file in the Audio Pattern Settings Dialog.

**OK** Pressing this button exits the dialog, and acts on the settings you have made.

**Cancel** Exits the dialog without acting on the settings you have made.

See also:

[Audio Pattern Settings.](#)

## Cascade Windows

Overlaps all open windows but does not disturb the Transport, Editors or Fast Menu Windows.

## Change Lengths...

Allows you to change the length of one or more notes. It displays a Dialog where you set the amount by which the notes will be changed, and the Scope of the change.

The lengths may be changed in the following ways:

<b>By Amount</b>	Make notes <b>Longer</b> or <b>Shorter</b> by a definable number of ticks.
<b>Make Legato</b>	Change so there are no rests between the notes.
<b>Remove Overlaps</b>	Change so notes don't overlap.
<b>Fixed Length</b>	Make all notes the same length.

## Change Timing...

Allows you to change the time taken to play a group of events. It displays a Dialog where you set the **Percentage** of the original time for the events to be played in. For example, a setting of 50% will result in the notes being played in half the time, while 200% will make them play in double the time of the original. All types of event are affected, so a melody line with pitch bend will still sound right after having its timing changed - the relative positions of the notes and pitch bend data will be maintained.

## Change Velocity...

Allows you to change the velocity of one or more notes. It displays a Dialog where you set the **Amount** by which the notes will be changed, and the Scope of the change. You can change velocities **Up** or **Down** or set all velocities to a **Fixed** amount. Use the **Maximum** and **Minimum** settings to limit the change in velocity.

Clear

Removes the selected items from the song.



## Clipboard

An area of computer memory used for temporary storage of data.

## Close All

Closes all windows which are capable of being closed except the Track Window.

# Conductor Window



**Zoom In** - display fewer bars in the same space.



**Zoom Out** - display more bars in the same space.

To get to the furthest extent of a zoom, hold down the Control key while clicking on a zoom button.

## Button



Close the window.

## Selector



This affects how Conductor Points line up when you move them. For example, if it is set to 'Bar', they will 'snap' to the nearest bar.

## Displays



1. The **Information Line** shows detailed information about a selected point. You can adjust these values with the mouse.

2. The **Time line** shows the bars and beats currently being displayed. The width of each bar depends on the Time Signature - this can change if there are Time Signature changes defined in the Time Signature Display. By clicking on the time line while holding down the CONTROL key, the Play Position will jump to the mouse position.

3. The **Time Signature Display** is where Time Signature Points are shown. The horizontal position indicates time.

4. The **Key Signature Display** is where Key Signature Points are shown. The horizontal position indicates time.

5. The **Tempo Display** is where Tempo Points are shown. The horizontal position indicates time. The vertical position indicates tempo - the higher the point, the faster the tempo.

## Selecting Conductor Points

You can select points in any one of the three displays with either of these two methods:

1. Click on a point - it changes colour to indicate selection. Click on another one and that becomes the selected point. If you hold SHIFT and click on a point you can toggle its status between selected and normal. By using SHIFT clicking you can select several points.

2. With the left mouse button click on a part of the display where there isn't a point. Any selected points become deselected. While still holding down the left mouse button, drag down and to the right, enclosing points in the dotted 'drag rectangle' as you go. Release the mouse button. The points inside the drag rectangle become selected. This method is called lassoing.

When one point is selected, detailed information about it is given in the Information Line. You can use the Up and Down arrow keys to move selection to adjacent points.

## Using the Edit functions

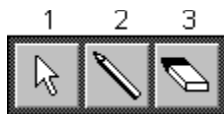
When using functions from the Edit menu, whether points are affected depends on their selection states. If you have selected one or more points, those points will be affected. If no points are selected, none will be affected.

One method of copying one or more points is to select them and use the Copy function to place a copy of them on the clipboard. You can then Paste them into the display at the current Play Position.

## Moving and Copying Conductor Points

Selected points can be moved and copied. Click on any one of the group and drag to a new position then let go of the mouse button. If you hold down the CONTROL key before you click, a copy of the points will be made at the new position, leaving the originals intact. The newly copied points then become the selected ones. Time and Key Signature Points can be dragged horizontally only. The first Tempo Point can only be dragged vertically to make sure it stays at position 1:01:000. The first Time and Key Signature Points cannot be dragged at all for the same reason.

## Mouse Tools



To select a different mouse, hold down the right mouse button to bring up the **Mouse Tool Selector**. Move the mouse until the one you want is highlighted. Let go of the right mouse button - the selector disappears and the mouse cursor changes to the new shape.

1. The **Arrow** is at the top left so you can change back to it quickly - click the right button and release immediately - there's no need to drag.

2. The **Pencil** is used for entering new points. Click in the Time Signature, Key Signature or Tempo Displays and a new point is added. A warning message is displayed if there is already a point at that position. Time Signatures must be entered on bar lines in order to make musical sense. When you enter a Time Signature, it will be 4/4. If you need to change this, click on it to select it, then change its value in the Information Line with the left and right mouse buttons. Similarly, a Key Signature starts off as C, so click on it and change it in the Information Line to the signature you require.

3. The **Eraser** is used to delete points. Click on a point with the eraser and it disappears. If you click on one of a group of selected points, all the selected points are deleted. The first entry in each display cannot be deleted - in order to make musical sense the Conductor must contain an initial Tempo, Time Signature and Key Signature.

## Playback

During playback the Transport Window shows the changing Tempo and Time Signatures providing the Conductor Switch is turned on.

### **Undo & Redo**

You can use the Undo function to reverse the effects of the last editing operation. You can then use the Redo function to reverse the effects of the Undo function.

See also:

General Window Information, Transport Window.

## Configure Fast Menu...

Displays a Dialog where the contents of the Fast Menu Window can be chosen.

To add a function, click on its name in the **Functions** list, then click on the **Add** button. The new function will now be visible in the **Selections** list. You can change the order in which a function will appear by clicking on its name in the Selections list, then clicking on the **Up** or **Down** buttons.

To remove a function from the Selections list, click on its name, then click on **Delete**.

To remove all functions from the Selections list, click on the **Empty** button.



Welcome to the magical, musical world of [Evolution Audio Pro](#) brought to you by leading UK musical software developers, Evolution Electronics. [Evolution Audio Pro](#) provides a unique combination of Digital Audio and MIDI recording, allowing you to make the most of your musical ideas. Its user friendly, graphical interface ensures a fast learning curve, leaving you to concentrate on the most important thing of all; making great music!

It is strongly recommended that you follow the step by step tutorials for Evolution Audio Pro to familiarize yourself with the software.

[What is Evolution Audio Pro?](#)

[Evolution Audio Pro Tutorials](#) Full Tutorial guide.

[Menus](#) Help on menu items.

[Windows](#) Explanation of each editing window.

[Keyboard Shortcuts](#) "Power User" short cuts!

[Glossary](#) Fast Access to all topics.

[Technical Support](#) Support details.

[Evolution Product Range](#) Other Evolution products

## Copy

Copies the selected items to the Clipboard.

See also:

Cut, Paste.



## Cut

Copies the selected items to the Clipboard and removes them from the song.

See also:

Copy, Paste.

## Delete Events...

Allows you to delete one or more events. It displays a Dialog where you choose which types of events are to be deleted, and the Scope of the change (for Notes and Polyphonic After touch).

If you are deleting Controllers, there are 128 of them to choose from, including Volume, Pan, Data Entry etc. Set the **Controller Scope** to be **All** or **Specific**. If deleting a specific Controller, use the combo box to choose the one you want to delete.

## Delete...

This allows you to delete a file on disk. The File Dialog is displayed and you can choose a particular file type if you only want to look at one type of file.

## Delete Identical Events

Allows you to delete events which start at the same position and are identical in all respects.

When this is called from the Track Window only the selected pattern(s) will be treated. If you have not selected any patterns, all patterns on the selected track will be treated.

If you call it from an editing window (e.g. Piano Roll or Event) you can define which events are treated. If you select a number of events, only those events which are selected will be treated. If you have not selected any events, all events will be treated.

## Describe Clipboard...

Informs you what data, if any, is currently stored on the Clipboard.

## Devices...

If your computer has any MIDI interfaces installed, they will show up in the Devices Dialog. You can choose which ones to use by clicking on their names. A device is in use if it is selected (white text on a black background). Note that **Inputs** and **Outputs** are treated separately, so you can, for example, turn off the MIDI Out on the MPU-401 but still use its MIDI In.

The devices in use will be shown in the various selectors used in other parts of the program, such as the Metronome Dialog and Track Columns.

## Select Drum Columns...

Displays a Dialog where you can choose which of the columns are displayed in the Drum Window. For example, if you prefer to see Drum Names but not the Channels and Notes they assigned to, turn on the **Drum Name** switch and turn off the **Channel** and **Key** switches.

# Drum Window



**Zoom In** - display fewer bars in the same space.



**Zoom Out** - display more bars in the same space.

To get to the furthest extent of a zoom, hold down the Control key while clicking on a zoom button.

## Toggle Switches



**Speaker Switch** - enable sending of selected hits to MIDI Out.



**MIDI Edit Switch** - enable MIDI Input to edit selected hit.



**Step Switch** - enable Step Time entry.

## Buttons

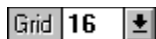


Close the window.



Restore the pattern's original contents.

## Selector



Determines the resolution of the Hit Display. This value is also used as the step advance amount in Step Time entry.

## Displays

Name	Ch	Key	Vel	Len
Bass Drum 1	10	C 1	127	48
Side Stick	10	C#1	127	48
Acoustic Snare	10	D 1	127	48

1. The **Drum Display** shows the name of each drum and various settings associated with it. You can choose which settings are visible by changing which Columns are visible. Click on any of the column headings and the Select Drum Columns Dialog will be displayed. Here you can turn columns on and off as required.

To the right of the columns is the **Divider**. You can drag this left and right so that some or all of the columns are obscured by the Hit Display.



2. The **Time Line** shows the bars and beats currently being displayed. The number of beats per bar depends on the Time Signature - this can change if there are Time Signature changes defined in the Conductor Window. By clicking on the time line while holding down the CONTROL key, the Play Position will jump to the mouse position.

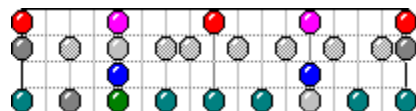


Position	9:01:144	Chan	1	Pitch	C 1	Vel	101	Length	42
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3. The **Information Line** shows detailed information about a selected hit. You can adjust these values with the mouse.

Kit **General MIDI**

To the right is the name of the current Kit. When the program loads, the GM.DRM Drum Kit file loads automatically. This contains the General MIDI Kit.



4. The **Hit Display** is a grid where notes are shown as coloured LEDs - based on the drum machine layout of a row of LEDs which indicate hits. Here, however, different colours are used to indicate velocity. The possible colours are: Red, Purple, Blue, Green, Dark Cyan, Dark Grey, Grey, Light Grey. If a hit is Red, it is at or above the Velocity setting for that drum. If it is Purple, it is at or above 10 below the Velocity setting. Each colour change represents a further reduction of 10.

## Drum Settings

- Name** Can contain up to 20 characters.
- Ch** MIDI Channel.
- Key** MIDI Note associated with this drum.
- Vel** MIDI Velocity of hits when entered with the large Drum Stick.
- Len** The length in ticks of the note created when a hit is entered.

Drum settings can be changed directly with the mouse or in the Drum Settings Dialog. If you want to give a drum a different Name, double click on it and the Drum Settings Dialog is displayed. Here you can type the new Name and change any of the settings which appear in the Drum Columns. You can also rename the Kit. When you change the Key or Channel of a drum, a warning is given if that Key-Channel combination is already in use by another drum. It is possible to define a Kit which uses all 16 Channels, and with the same Key used on different Channels e.g. E1 used on Ch10 and Ch11 to play Snare Drums on two different patches.

If you decide to use more than one Channel (in case more than one synth or synth patch is being used for drum sounds), set the channel of the track containing the drum patterns to 0 so no rechannelization occurs when MIDI is sent.

If you click once on a drum's Name, you can move it up or down to a new position by dragging it with the mouse. This makes it possible to change the order of the drums to put them in a preferred order, e.g. to put all the Toms together.

## Drum Buttons

- Mute** Prevents any MIDI data from being sent by a drum.
- Solo** MIDI data will be sent from the soloed drum ONLY. All other drums are muted. You can still click on the drum buttons to turn muting off if you want to hear other drums as well as the soloed one. When you click on a solo button, the statuses of all the mute buttons are stored, so that when solo is turned off the mute buttons return to their previous settings. If you then solo the SAME drum the statuses of the mute buttons return to what they were when the drum was soloed. If you solo a DIFFERENT drum to last time, all mute buttons are turned on.

## Selecting Drum Hits

You can select hits with either of these two methods:

1. Click on a hit - it turns black to indicate selection. Click on another one and that becomes the selected hit. If you hold SHIFT and click on a hit you can toggle its status between selected and normal. By using SHIFT clicking you can select several hits.

2. With the left mouse button click on a part of the Hit Display where there isn't a hit. Any selected hits become deselected. While still holding down the left mouse button, drag down and to the right, enclosing hits in the dotted 'drag rectangle' as you go. Release the mouse button. The hits inside the drag rectangle become selected. This method is called lassoing.

When one hit is selected detailed information about it is given in the Information Line. You can use the Up and Down arrow keys to move selection to adjacent hits.

### Using the Edit, Options & Procedures functions

When using functions from the Edit and Options menus, whether hits are affected depends on their selection states. If you have selected one or more hits, ONLY those events will be affected. If no hits are selected, ALL hits will be affected. Remember though, that in the Options Menu functions the Scope setting may exclude some of them.

One method of copying one or more hits is to select them and use the Copy function (Edit Menu) to place a copy of them on the clipboard. You can then Paste them into the pattern at the current Play Position.

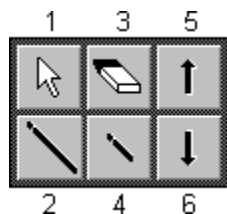
### Moving and Copying Drum Hits

Selected hits can be moved and copied. Click on any one of them and drag to a new position then let go of the mouse button. If you hold down the CONTROL key before you click, a copy of the hits will be made at the new position, leaving the originals intact. The newly copied hits then become the selected ones.

### Functions Menu

<b>Add Drum</b>	Adds a new drum at the bottom of the list.
<b>Delete Drum</b>	Deletes the selected drum from the list.
<b>Delete All Drums</b>	Deletes all drums in the list.

### Mouse Tools



To select a different mouse, hold down the right mouse button to bring up the **Mouse Tool Selector**. Move the mouse until the one you want is highlighted. Let go of the right mouse button - the selector disappears and the mouse cursor changes to the new shape.

1. The **Arrow** is at the top left so you can change back to it quickly - click the right button and release immediately - there's no need to drag.

2 & 4. The **Drum Sticks** are used to enter new hits. The large stick enters a hit at the Velocity setting for that drum. The small stick enters a hit at a velocity 10 less than the Velocity setting. These two sticks therefore allow the entry of two levels of velocity, which can be regarded as normal and accented hits. If a stick clicks on an existing hit, it changes that hit's velocity.

3. The **Eraser** is used to delete hits. Click on a hit with the eraser and it disappears. If you click on one of

a group of selected hits, all the selected hits are deleted.

5 & 6. **Velocity Modifiers** - The Up arrow increases the velocity of a hit by 10. This would make a purple hit red. The Down arrow decreases the velocity of a hit by 10. This would make a purple hit blue.

### **Step Time Entry**

The Step Switch must be in the ON position. Notes arriving at MIDI In are recorded at the current Play Position with a length determined by the Grid setting. When you release the notes on the MIDI keyboard the Play Position advances by the same amount. To advance the Play Position without entering a note, press the space bar.

### **Using the PC Keyboard**

The top row of keys on the computer keyboard can be used to play drums. The key on the far left plays the selected drum (the one whose name is highlighted) and the next one plays the drum below and so on. This makes it possible to play any set of drums simply by changing which drum is selected.

You can also use the keys in step time entry. The Play Position doesn't advance automatically, but stays in the same place to make it easy to enter successive hits at the same position. Press the space bar to advance the Play Position.

The Note and Velocity of a selected hit can be changed by MIDI input or the keys.

### **Undo & Redo**

You can use the Undo function to reverse the effects of the last editing operation. You can then use the Redo function to reverse the effects of the Undo function.

See also:

[General Window Information](#), [Conductor Window](#).

# Edit Menu

The Edit Menu contains the following Menu Items:

- Undo
- Redo
- Copy
- Cut
- Paste
- Clear
- Select All
- Describe Clipboard...

# Editors Window

Each button opens a particular window. If that window is already open, it moves to the top of the pile. If it is minimized, it is restored.



1. Track



2. Piano Roll



3. Event



4. Score



5. Drum



6. Conductor



7. Notepad



8. Mixer



9. Keyboard



10. Lyrics

See also:

[General Window Information](#), [Keyboard Shortcuts](#).

# Event Window

## Toggle Switches



**Speaker Switch** - enable sending of selected notes to MIDI Out.



**MIDI Edit Switch** - enable MIDI Input to edit selected note.



**Step Switch** - enable Step Time entry.

## Buttons



Close the window.



Restore the pattern's original contents.



Insert an event of the type shown in the Ins Type selector.



Delete the selected event(s).



Make an identical copy of the selected event.

## Selectors

Note Length **16**

Note Length - used in conjunction with the Insert button and in Step Time entry.

Insert Type **Note**

Choose the type of event to be added when the Insert button is pressed.

**Note** Aftertouch Controller Program Pressure Bend Sysex

Use the **Display Filters** to specify which event types are shown. In this example any Notes, Program Changes and Pitch Bend will be shown.

	Position	Ch	Event	Key	Vel	Length
	9:01:144	1	Note	C 1	101	42

The last three column headings change depending on what type of event is first in the list, or if any are selected, the type of the first selected event. In this example they are describing the Key, Velocity and Length of a note.

You can use the mouse to directly change the values in these columns, plus the event position.

Each type of event is shown in a different colour: the colours are the same as those used in the Piano Roll Window's Velocity Display.

During playback the left hand column shows a moving arrow which points to the events as they are played. If you click in this column while holding down the CONTROL key, the Play Position will jump to the

mouse position.

## Selecting Events

You can select events with either of these two methods:

1. Click on an event's name - it turns black to indicate selection. Click on another one and that becomes the selected event. If you hold SHIFT and click on an event you can toggle its status between selected and normal. By using SHIFT clicking you can select several events.

2. Click on an event's name - any selected events become deselected. While still holding down the mouse button, drag up or down, selecting more events as you go. Release the mouse button when you have selected all you want.

To deselect all selected events, click in the left hand column.

## Using the Edit, Options & Procedures Functions

When using functions from the Edit and Options menus, whether events are affected depends on their selection states. If you have selected one or more events, ONLY those events will be affected. If no events are selected, ALL events will be affected. Remember though, that in the Options Menu functions the Scope setting may exclude some of them.

To copy one or more events select them and use the Copy function (Edit Menu) to place a copy of them on the clipboard. You can then Paste them into the pattern at the current Play Position.

## System Exclusive Editor

This allows you to edit directly the contents of a System Exclusive message. You can move the text caret around and type in new values in hexadecimal. To call it up, double click on the name of a Sysex event.

## Step Time Entry

The Step Switch must be in the ON position. Single notes and chords arriving at MIDI In are recorded at the current Play Position with a length determined by the Note Len setting. When you release the notes on the MIDI keyboard the Play Position advances by the same amount.

## Undo & Redo

You can use the Undo function to reverse the effects of the last editing operation. You can then use the Redo function to reverse the effects of the Undo function.

See also:

General Window Information, Piano Roll Window.



Step by step help on all the features of EVAP

[Getting Started.](#)

[The Arranging Tutorial](#)

[The Drum Editor Tutorial](#)

[The Piano Roll Editor Tutorial](#)

[The Event Editor Tutorial](#)

[The Score and Lyrics Editors Tutorial](#)

[The Conductor Tutorial](#)

[The Mixer Tutorial](#)

[The Recording Tutorial](#)

[The Chords Track Tutorial](#)

[The Fast Menu Tutorial](#)



## **Evolution Audio Software Specifications**

256 Track MIDI sequencer  
Audio Wave Support  
16 Track Mixer with MU Meters  
Piano Roll Editor  
Score Editor and Printing

Event List Editor  
Drum Editor  
16 Built-In styles  
Virtual Band Facility with Jammer  
On-Screen Keyboard



Evolution is a premier manufacturer of MIDI and Audio products for the PC. Evolution offers a wide range of hardware and software with the emphasis on affordable music products for the novice and professional PC Musician alike. Expand your musical horizons with the exciting range of Evolution products, all designed with ease of use in mind.

[Hard Disk Recording Software](#)

[Keyboards](#)

[Software Package](#)

[Ordering Information](#)

## Fast Menu Window

This window allows you to choose up to ten menu items and have them visible at all times. A single mouse click executes the function instead of going via the Menu Bar. Each menu item is represented by a button. Pressing that button executes the menu item. You can change which menu items appear in the Fast Menu Window in the [Configure Fast Menu](#) Dialog.

See also:

[General Window Information](#).

# File Menu

The File Menu contains the following Menu Items:

New  
Open  
Save Song  
Save...  
Save As...  
Merge Song...  
Merge MIDI File...  
Delete...  
Quit

## File Formats

The contents of each type of file are as follows:

### Song (.SNG)

Tracks used.  
Patterns used.  
Timebase.  
Tempo & Time Signature.  
Song Start Time & Frame Format.  
Left & Right Locators.  
Lyric channel.  
Notepad.

### Pattern (.PAT)

Contents of pattern.

### Drum Kit (.DRM)

Contents of Drum Kit.

### MIDI (.MID)

Standard MIDI File format, Type 0 or 1.

### Definitions (.DEF)

Contains values from the Options Menu items:

Preferences...  
Metronome Settings...  
Devices...  
Mixer Settings...  
Audio System Settings...  
Lyric Font...

Also, the current drum kit file plus the Port-Channel-Patch List connections and the knowledge of which Patch Lists are in use.

The file DEFAULT.DEF is saved each time you Quit from the program, and loaded the next time you run it, so these settings are preserved between sessions.

## **Window Layout (.WND)**

### **For each Window and the Program Window**

- Size and position.
- Whether maximized or minimized.

### **Transport Window**

- Auto Return.
- Record Mode.
- Toggle switches.

### **Track Window**

- Visible Columns.
- Horizontal & Vertical Zoom levels.
- Snap settings.

### **Piano Roll Window**

- Horizontal & Vertical Zoom levels.
- Grid resolution.
- Speaker, MIDI, & Step switches.

### **Event Window**

- Note Length.
- Insert Type.
- Speaker, MIDI & Step switches.
- Display Filters.

### **Score Window**

- Resolution.
- Note Length.
- Speaker, MIDI & Step switches.
- Contents of Score Settings Dialog.

### **Drum Window**

- Zoom level.
- Grid Resolution.
- Speaker, MIDI & Step switches.
- Visible Columns.

### **Conductor Window**

- Zoom Level.
- Snap.

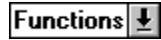
### **Fast Menu Window**

- Menu Items.

The file DEFAULT.WND is saved each time you Quit from the program, and loaded the next time you run it, so these settings are preserved between sessions.

# General Window Information

## Functions Menu



Displays a pop-up menu containing functions relevant to that window.

## Adjusting Values

The left and right mouse buttons are used to change the values displayed in a window as follows:

Left Button	-1
SHIFT + Left Button	-10 (-12 for notes = one octave)
Right Button	+1
SHIFT + Right Button	+10 (+12 for notes = one octave)

Holding down a mouse button causes the values to change repeatedly until the limit for that particular value is reached. To move quickly through the values without using the SHIFT key, hold down the opposite mouse button to the one you started with. For example, click on the left button to reduce a value in steps of 1. Without taking your finger off the left button, hold down the right button - the values will start to reduce in steps of 10 (12 for notes). Take your finger off the right button and the values revert to reducing in steps of 1.

# Getting Started.

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[CD sound](#)

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[Direct-to-disk recording](#)

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## What is Evolution Audio Pro?

Evolution Audio Pro is a powerful MIDI sequencer with integrated digital audio playback facilities. You can record and arrange music for a MIDI synthesizer and add digital audio patterns such as vocal riffs, drum loops, ambient background sounds and so on.

EVAP also has a **Chords** track so you can add instant accompaniments in a variety of styles to your music. This is very easy to use and can save hours of arranging time.

EVAP supports up to 256 tracks. If you don't use a Chords or Audio track, you can have 256 MIDI tracks. Using a Chords or an Audio track will reduce the number of available MIDI tracks to 255 or 254. But even seasoned sequencer users are unlikely to use them all! Using EVAP is like having your own band or orchestra - except you have much more control over your music with EVAP than you have over a band!

You can record audio in sync with EVAP by purchasing the 2 Track Audio Amplitude Late program.

## EVAP Highlights

As its name suggests, EVAP is a professional piece of software with many high-end features. However, because of its design and intuitive user-interface it's easy to use by professional musicians and beginners alike. Here are just a few of its many features:

- \* Intuitive Track window where you can copy and drag music patterns to create a song.
- \* Audio track where you can add audio parts to a MIDI arrangement.
- \* Chords track to let you create instant accompaniments with a few mouse clicks.
- \* A programmable Mixer which shows Controller information present in the tracks and which allows you to perform real-time mix downs.
- \* A grid-based Drum editor to help create and edit drum tracks.
- \* An easy-to-use Piano Roll editor which displays note velocity and MIDI Controller data.
- \* A multi-stave Score editor where you can see, edit and print your music in traditional notation.
- \* A Lyrics window which displays lyrics on screen in time to the music.

- \* A graphic Conductor window where you can quickly make adjustments to the time and key signatures.
- \* Full support for Standard MIDI Files.
- \* Patch Lists which let you select sounds by name rather than number.
- \* Support for multiple MIDI outputs - you can channel some tracks to your sound card's FM output, some to its Wave table sound and others to a MIDI interface.
- \* Comprehensive synchronization including MIDI Clock, MIDI Timecode and SMPTE, allowing you to synchronize EVAP to many other music devices.

EVAP has many more powerful features which you'll soon become familiar with, all fully explained in this manual.

### **What you need**

To run EVAP you require the following:

- \* A 386 IBM PC or compatible running at a minimum speed of 33 MHz, preferably faster.
- \* Windows 3.1 or Windows 95.
- \* 4Mb of RAM with Windows 3.1, 8Mb of RAM with Windows 95.
- \* 5Mb of hard disk space for the program plus additional hard disk space to store digital audio files. CD-quality stereo sound uses 10Mb of hard disk space per minute although you don't have to use such high quality if you don't need it. See the section on Digital Audio basics for more information
- \* A VGA resolution monitor or better. A Super VGA display will let you see more of the contents of each window and it's easier to work with more than one window at the same time.
- \* A MIDI interface or PC sound card with a MIDI interface. If you want to use EVAP's digital audio playback facilities, you will also need a sound card which supports digital audio. See the sound card section for more information.
- \* A MIDI input device to record MIDI data. A keyboard is the most popular device but you could use a MIDI guitar or MIDI wind controller. Evolution produces a small keyboard specifically designed for use with computers. Ask Evolution for more information (contact details are at the front of the manual in the Technical Support section). Even without an input device, you can still enter music into EVAP through step-time note entry and with the program's Keyboard.
- \* A MIDI output device in order to hear the music. If you are using a standard MIDI interface this will be a synthesizer, sound module or sampler. If you have a sound card, you can use its built-in sounds.

### **Sound Cards**

There are dozens of PC sound cards on the market. EVAP will work with any Windows-compatible card, that is one which has drivers for Windows. You will see these in the Drivers section of the Control Panel and be able to select them in the MIDI Mapper in the Control Panel. All modern sound cards are compatible.



EVAP works with MIDI and audio data so there are two aspects of the sound card to consider. Most modern sound cards have a set of on-board sounds which can be used to play the MIDI parts. Most cards, too, also support digital audio. In order to work with EVAP, the card must have separate drivers for MIDI and audio. Again, all modern ones do.

Some older cards do not support digital audio. They will still work with EVAP providing they have Windows drivers but you will not be able to use EVAP's digital audio playback facilities. Also, some older cards use the same device driver for both audio and MIDI which will not allow you to play MIDI and audio simultaneously in EVAP.

### **Testing the sound card**

Make sure your sound card is installed correctly and the drivers are set up properly before using EVAP. The software which comes with the sound card should include routines to test the card. You must make sure it is running correctly under Windows, not just DOS.

An easy way to test the card is with the **Media Player** which you will find in Windows' Accessories Program Group. Look in the Device menu and you should see MIDI Sequencer... and, if your card supports digital audio, Sound...

Try playing the CANYON.MID file which Windows installs automatically in the Windows directory. Then try playing a .WAV file. Again, there should be some in the Windows directory.

If either of these items is missing from the Device menu it means the drivers have not been loaded. Go back to the Drivers Control Panel and install the correct drivers. Refer to your sound card's manual and the Windows Users' Guide for more information.

### **The MIDI Interface**

Many sound cards have a built-in MIDI interface which is accessed from a joystick connector on the backplane of the card. To use it you need a MIDI adapter. One end plugs into the joystick socket and the other terminates in MIDI plugs or sockets which you connect to your MIDI equipment. Some sound card packs include the adapter but many of the cheaper ones do not.

There are also several dedicated MIDI interfaces available. Many are on plug-in cards which are fitted and installed into the PC just like a sound card.

There are also external MIDI interfaces which connect to the PC's printer port or serial port. You can install them without opening up your PC and they are ideal for use on portable PCs. You still have to install driver software for them. Some have a Thru socket which enables you to plug in your printer and use it without removing the interface. Other's don't.

### **Sequencer basics**

If you're completely new to computer-based sequencing, read this otherwise you can skip to the next section.

A sequencer is the computer equivalent of a multi-track audio tape recorder - but with several important differences. On a traditional multi-track machine, each instrument will typically be recorded on its own track. To construct a song, each part has to be recorded from the beginning through to the end.

A MIDI sequencer such as EVAP has many more tracks than any multi-track recorder it's possible to

build. Instead of forcing you to work from the beginning of a song to the end, EVAP uses patterns which enables you to assemble a song from many different phrases, dropping them into the song wherever you wish. This is infinitely more flexible and is the way many composers think and work.

Another important difference lies in the type of data the systems use. Multi-track recorders use audio data, sequencers use MIDI data which is simply lists of numbers. Every MIDI event has a corresponding set of numbers so you can alter any MIDI event simply by changing the numbers.

You can, for example, adjust the volume of a single note, add pitch bend to it or even change its sound completely. These things are impossible to do with a multi-track. You can change the tempo of a piece without changing the pitch and vice versa - another multi-track impossibility.

In short then, a sequencer gives you an enormous amount of control over every aspect of your music.

There's one very important point to remember - a sequencer stores details about a MIDI performance such as which keys were pressed, how hard, how long they were held down for, when the pitch bend wheel was moved and so on. It does not store the sounds used, rather it uses a system of Bank Select and Program Change messages to select sounds on the playback instrument.

This is actually very helpful as it means you can also change the sound used by a music part, changing a flute line to a trombone or set of bagpipes. Try to do that with a multi-track!

## Digital Audio basics

If you're familiar with the principles of digital audio you can skip to the next section.

Digital audio recording is the process of converting audio data - sound - into digital data, essentially a list of numbers, which can be stored on a computer. The device which does this is built into most sound cards and is known, quite helpfully, as an Audio-to-Digital converter. This is often abbreviated to ATD or just AD.

To convert the digital data back into sound, the card uses a DA converter. No prizes for guessing what this means.

To capture sound, the AD converter takes a sample of it so-many times each second. This is known as the sample rate and it's measured in kHz or so-many thousand samples per second. The higher the rate, the more samples the AD takes and the more accurate the digital representation of the sound will be.

The sampling resolution is the accuracy or fineness of the measuring scale used to store the sound and is measured in bits. There are two resolutions currently in common use - 8 bits and 16-bits - and most modern sound cards support both. Some of the latest generation of sound cards have a higher resolution, 18 bits, which should result in even higher quality, professional sound reproduction.

To give you an idea of the relevance of the **sampling resolution**, imagine two people are building a house. One is using a measuring stick marked to the nearest foot. The other has a stick marked to the nearest inch.

The one using the finer scale will build a more accurate house and although the other's may not fall down, it will certainly be a bit rough around the edges. That's how we perceive sound recorded at a lower sample resolution.

## CD sound

CD quality audio is recorded at a sample rate of 44.1kHz with 16 bit resolution. Many Multimedia programs use a lower rate such as 22.05kHz or even 11.025kHz, and many use 8 bits. This is often quite

adequate if the sound is played through inexpensive PC speakers but you would almost certainly be able to tell the difference if it was played through a good hi fi system.

### **Harry Nyquist and his theorem**

A little bit of theory here. Mathematician Harry Nyquist developed a sampling theorem which says, roughly, that in order to capture any sound accurately you must sample it at twice its highest frequency. (To be strictly accurate, it's actually about 30 to 50 percent of the sample rate but half is near enough for most folk who aren't recording engineers.)

The average human ear can recognize frequencies up to about 15kHz. Even the most sensitive ears rarely sense anything over 20kHz which is why CDs recorded at 44.1kHz sound so clear.

Bear Harry's theorem in mind when you're recording. You may be able to use a lower resolution particularly if you're recording speech. However, if you record music at a lower resolution and it doesn't sound very good you'll know why!

### **Direct-to-disk recording**

One minute of CD-quality sound requires 10Mb of storage space. Clearly it's impractical, not to say expensive, to store this in RAM. So it's not, it's saved to disk. The saving has to be done on the fly, while the sound is being recorded, and you need a reasonably fast hard disk if the data is to be saved accurately and played back without a glitch.

Most modern disks are well up to the job but some older ones may cause a glitch, especially if they are running in a slow PC. Just something to bear in mind.

### **EVAP**

When you record digital audio using EVAP it saves it direct-to-disk xxx

### **Setting up your equipment**

Make sure the MIDI interface or sound card and EVAP are correctly installed. If you are using an external MIDI keyboard connect it's MIDI Out to the interface's MIDI In.

If you are also using the sounds on the keyboard, connect its MIDI In to the interface's MIDI Out. If you are using the sounds on a sound card this is not necessary.

If you want to use a keyboard for recording but a MIDI sound module for playback, connect the module's MIDI In to the interface's MIDI Out.

If you want to use EVAP's audio playback facility, make sure the sound card's audio output is connected to a pair of speakers.

### **Selecting the MIDI interface**

#### **VERY IMPORTANT**

You must tell EVAP which MIDI devices you want to use otherwise so after starting the program, before you do anything else, select **Devices...** from the **Options** menu. The window will show which Input and

Out MIDI devices EVAP has recognized.

If you cannot see your sound card or MIDI interface here it means the drivers have not been installed so check the card or interface's documentation and install the drivers. When the drivers are properly installed you will see them in the Drivers Control Panel and in this window.

You must select at least one **Input** and one **Output** device by clicking on them to highlight them. You can select any or all devices. If you select more than one Input device, EVAP will accept input from them all during recording.

If you select more than one Output device, you can assign any of them to any of the tracks during playback, allowing you to send music lines to different MIDI devices. There's more about this later in the manual.



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# Hard Disk Recording Software

Do you wish to record audio such as vocals or drum loops, play back some video footage and integrate it with your MIDI sequence? Then Samplitude is the obvious solution.

## Samplitude Hard Disk Recording Software

Samplitude is a hard disk recording software that runs on an PC for sampling, hard-disk recording and sample processing of the highest quality. It is user friendly, and has been written with special code so that it runs completely in sync with our Evolution Software. Evolution Audio Pro and Samplitude will share the same start/stop - fast forward/ rewind - record, zoom in/out commands.

This ensures complete integration of Audio and MIDI on the same PC screen.

There are 4 versions of Samplitude

- Samplitude-Lite (2 Tracks, Virtual Wave Editing, Sample manipulations)
- Samplitude-Multimedia (4 tracks, virtual editing, MIDI/AVI integration, Track Bouncing,...)
- Samplitude-Pro (8 tracks, Record while Play, Resampling/Time-Stretching, MIDI-Sample-Dump...)
- Samplitude-Studio ( up to 16 tracks, ext. Sync., digital filters, dynamic functions...)

:

Features of Samplitude:

**Samplitude-Lite/Multimedia** has the following features:

- real hard disk recording/playback with all Windows compatible 16 bit sound cards
- virtual projects with up to 4 tracks (2 tracks in Lite version).
- support of all 16 Bit sound cards with sampling rate up to 48 kHz
- support of mono/stereo projects in recording and playback
- support of Ram- or hard disk projects
- "Volume Rubberbands" for realtime mix of the virtual tracks
- Realtime cross fades in virtual tracks with various curves
- MIDI and AVI files can be linked to Samplitude, qualified for film music composition, MIDI/audio synchronization ...
- Direct synchronization with MIDI sequencers "Evolution MIDI", "Evolution Audio" and "Evolution Audio Pro"
- Realtime surround effect
- physical sample processing in high speed and high quality (e.g. cutting, normalization, fading, cross fading, echo, hall effect, filter...)
- virtual projects for non-destructive editing, sample objects can be placed, shifted (displaced) and manipulated (time-line)
- ranges of various projects (RAM and HD) can be combined into virtual projects, e.g. cuttings of various records
- fade-in, fade-out and volume of every object can be produced in real time (non-destructive) and easily manipulated by "handlers"
- sophisticated window techniques, unlimited number of projects
- several windows per project, e.g. for loop search
- special mode for automatic loop optimization
- ranges and cursors can be manipulated during playback
- auto scroll mode while playing



- all cursors and ranges can be saved.
- very long samples can be displayed quickly
- various snap functions, e.g. for objects, bars, ranges...
- wave file import and export

**Samplitude-Pro** has following extensions:

- virtual projects can have up to 8 tracks (8 Mono or 4 Stereo)
- Record while Playing if the sound card(s) supports this
- MIDI sample dump for sample transferring with MIDI samplers
- easy Resampling / time stretching / pitch-shifting
- track bouncing for converting virtual projects into a physical file (Samplitude project or wave file); more than 8 tracks can be combined.

**Samplitude-Studio** has following extensions:

- virtual projects can have up to 16 tracks (16 Mono or 8 Stereo)
- Support of up to 4 sound cards for real 8 outputs
- ext. Sync via SMPTE/MTC/MC (Slave) or MC/MTC (Master)
- Scrubbing and Varipitch while playback
- Runs in multitasking with MIDI-Sequencers, e.g. Evolution Audio Pro
- High quality digital filters (graph. EQ, param. EQ) with realtime preview
- Dynamics Compressor/Expander/Noise-Gate with realtime preview
- Convolution for enhanced effects like reverb, echo and filter...

#### Hardware needed

To use Samplitude you mainly need at least a PC with Windows 3.1 and 4 Mb RAM and a 386 processor. To record and playback audio data you will need a 16 bit sound card with Windows driver.

For "Record while Play" you need a sound card, which can be opened for input and output at the same time or two sound cards with two drivers, one for playback, one for recording. (also known as a Duplex Sound card)

For hard disk recording an adequate hard disk memory will be needed (one minute recording in CD quality requires about 10 Mb), together with a fast 386 processor or better, a 486 one.

For realtime filter-preview and volume rubber bands on more than 4 tracks you need a 486/66 or Pentium processor.

To use MIDI sample dump or a connection with MIDI devices you must have a Windows-compatible MIDI interface.

For external Sync via SMPTE you need a special SMPTE interface, for Sync via MIDI-Timecode or MIDI-Clock you can use any Windows compatible MIDI interface.

Typical number of tracks (Mono) in virtual projects:

386/40 with AT-harddrive: 4 tracks 32 KHz

486/66 with AT-harddrive: 4 tracks 44 KHz, 6-8 tracks 32 KHz

486/66 with SCSI-harddrive, PCI-Controller: 6-8 tracks 44 KHz

Pentium with PCI-SCSI-disks: 12 tracks 44KHz , 16 tracks 32 KHz

Using stereo tracks instead of 2 mono tracks increases the performance.

For maximum track number please raise the buffer size for VIPs in menu "Setup > System"

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# Help Menu

The Help Menu contains the following Menu Items:

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Windows

Keyboard Shortcuts

How to Use Help

About Evolution Audio Pro...

Memory Check...

## Hide Editors

Hides the Editors Window. When the Editors Window is hidden, it changes to [Show Editors](#).

## Hide Fast Menu

Hides the Fast Menu Window. When the Fast Menu Window is hidden, it changes to [Show Fast Menu](#).

## Hide Transport

Hides the Transport Window. When the Transport Window is hidden, it changes to [Show Transport](#).

## How to Use Help

Displays the built-in information on using the MS Windows Help system.



## Action

## Key(s)

Return to Zero	Home
Go to end of last pattern	End
Metronome On / Off	M
Cycle On / Off	C
Follow On / Off	F
Conductor On / Off	O
Edit Solo On / Off	E
Synchronization On / Off	S
Punch In and Out On / Off	P
Rewind	Left Arrow
Forward	Right Arrow
Stop (+ Enter a Rest in Step Time entry)	Space
Play	Return / Enter
Record	+
Jump to Left Locator	L
Jump to Right Locator	R
Quantize directly (using current settings)	Q
Next Page (Score Print Preview)	Pg Up
Previous Page (Score Print Preview)	Pg Dn
Change Note Len Setting (Score Window)	1 to 7, D, T, N
Play Drum Sounds (Drum Window)	All keys on the top row
Display Track Window	F2
Display Piano Roll Window	F3
Display Event Window	F4
Display Score Window	F5
Display Drum Window	F6
Display Conductor Window	F7
Display Notepad Window	F8
Display Mixer Window	F9
Activate Menu Bar	F10
Display Keyboard Window	F11
Display Lyrics Window	F12
Go to next event (Edit Windows)	Down Arrow
Go to previous event (Edit Windows)	Up Arrow
Insert Event (Event)	Insert



Delete / Clear	Delete
Undo	Alt + Backspace or Ctrl + Z
Redo	Shift + Alt + Backspace or Ctrl + A
Copy	Ctrl + Insert or Ctrl + C
Cut	Shift + Delete or Ctrl + X
Paste	Shift + Insert or Ctrl + V
Open	Ctrl + O
Save Song	Ctrl + S
Transpose	Ctrl + T
Change Velocity	Ctrl + H
Change Lengths	Ctrl + L
Quantize	Ctrl + U
Move Events	Ctrl + J
Change Timing	Ctrl + I
Delete Events	Ctrl + D
Thin Out Continuous Events	Ctrl + N
Delete Identical Events	Ctrl + Y
Reverse Notes	Ctrl + R
Cascade Windows	Shift + F5
Tile Windows	Shift + F4
Close a Window	Ctrl + F4
Next Window	Ctrl + F6
Show / Hide Transport Bar	Ctrl + F7
Show / Hide Editors Strip	Ctrl + F8
Show / Hide Fast Menu	Ctrl + F9
Play white notes on screen keyboard	Keys A- #
Play black notes on screen keyboard	Keys W-]
Transpose Down one octave (PC Keyboard Window)	Scroll Lock
Transpose Up one octave ( PC Keyboard window)	Hold Down Shift Key

# Keyboard Window

The **Keyboard** has three uses:

- a) By clicking on it you can play/record notes and styles
- b) It shows notes arriving at MIDI In.
- c) By enabling the PC Keyboard button you can use the PC QWERTY Keys to actually record your own songs without having to plug in an external keyboard.

By using keys (A - #) and (W-J) you can play one and a half octaves of the keyboard. Holding down the Shift Key whilst hitting a key will transpose the keys up an octave thus increasing the range of the screen-keyboard!

Hitting the "Scroll Lock" button will transpose the keyboard down one octave. This is useful for playing single fingered chords using the QWERTY keys.

To record your chord track in realtime using the screen keyboard take a look at the [chord track tutorial](#)

## Toggle Switches



**Single Finger Chord** - when the **Active** switch is on, the chords are taken from the notes you play in the bottom octave of the keyboard instead of the Chord Sequencer. When **Synchro** is on, Single Finger Chord play will start as soon as you press a key in the bottom octave. When **Hold** is on the accompaniments will continue to play after all keys have been released - when it is off only the drums will play.

When you are playing Single Finger Chord from the external keyboard, the highest note in the bottom octave determines the chord root note. If you don't play any notes below it, the chord type is major (Maj), but if you hold down a black note the chord type is minor. Holding down a white note generates a 7th (7), while holding both a black and a white note plays a minor 7th (m7).

If you play the screen keyboard, the note the mouse clicks on defines the chord root, with the chord type being taken from whichever chord button is selected.



**Play Mode Switches** - determines how the keyboard responds when you play or click the keys with the mouse. In **Free** Play mode the keyboard acts like a normal keyboard. In **Drum** Play mode the keyboard generates drum sounds. **Playright** mode is designed to be used in conjunction with the accompaniments (from either the Chord Track or Single Finger Chord) - in this mode you can never play a wrong note - you can only Play Right! **Chord** Play mode generates chords from single key presses. The type of chord depends on which of the **Chord Buttons** is selected.



**Sus Switch** - turns sustain on and off by sending a MIDI Sustain message.

The **Octave** setting can be used to raise or lower the pitch of the notes generated when you play the keyboard with the mouse or from the external keyboard.

See also:

[Track Window.](#) [Realtime Chord Recording](#)

# Keyboards

## Music Creator

A 49 note mini keyboard with standard MIDI output, PC sound card lead and Keywest Software



**Music Creator** transforms your PC into a Music workstation. Simply connect the MIDI Keyboard to your Sound Card via the cable supplied, load the Keywest Music Software and begin to create music instantly.

**Music Creator** is a PC compatible MIDI Controller that connects to all PC Sound cards with a MIDI Port (usually the same as the Joystick Port).

**Music Creator** uses General MIDI to access sounds on your PC sound card - you can access drums, guitars, horns, pianos and many more!

Never played a musical instrument before? Music Creator enables you to play complicated chords with just one finger.

Choose from 16 different musical styles and jam along with a six piece "virtual band": you can even choose which instrument each band member plays.

## Music Creator Pro

Full Size MIDI Keyboard and Sequencing Software

Music Creator Pro transforms your PC into a music Workstation. Simply connect the MIDI Keyboard to your sound card via the cable supplied, load the Evolution Audio Music Sequencer and begin to create music instantly.



Winner of the **PC PRO** Recommended and **PC PLUS Gold** Awards

Music Creator Pro consists of an MK-149 Keyboard and Evolution Audio Software.  
(click on the product names for the specifications)

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## Lyric Font...

Displays a Dialog where you can choose a font, whether it is bold or italic, and its size. This font is used in the Lyrics Window. Large text is useful if you want to sing the lyrics, while a smaller font is better for viewing the lyric sheet as a whole because more lines can fit in the window.

## Lyrics Window

This window displays any lyrics present in your song or MIDI file. You can change the font type and size in the Lyric Font Dialog, which is called from the Options Menu.

During play each lyric event is highlighted when it is time for it to be sung. Many files contain words split into syllables, which helps you scan the word correctly while singing. When the play position is moved, the highlighting changes to show the position in the lyric sheet at that point in the song.

If you want to edit the lyrics, or enter your own, select the pattern containing the lyric melody and open the Score Window. Note that the Score Settings dialog allows you to define the MIDI channel containing the lyric melody, to ensure the lyrics are shown in the right place.

See also:

[Score Window](#).

# Options Menu

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The Options Menu contains the following Menu Items:

- Preferences...
- MIDI Settings...
- Synchronization Settings...
- Metronome Settings...
- Mixer Settings...
- Devices...
- Patch Lists...
- Audio System Settings...
- Wave Files in Use...
- Score Settings...
- Lyric Font...
- Select Track Columns...
- Select Drum Columns...

## MIDI Settings...

**Timebase** defines how many ticks make up one beat. The larger the number, the shorter the time between each tick, and the more faithfully real time performances can be recorded and played back. However, the PC has to work harder at higher time bases, so if you don't need high precision, use a lower value.

Note that if all your patterns are quantized to 16ths, a timebase of 48 will still be 12 times finer than you're actually using (there are 6 MIDI clocks in a 16th note and the MIDI clock has a timebase of 24:  $6 \times (48/24) = 12$ ).

Evolution changes its timebase to suit that of any Standard MIDI File (.MID) it loads, so you can open the MIDI Settings Dialog to see what timebase the file is set to.

**Message Filters** are a set of switches which determine the MIDI message types allowed to enter at MIDI In. Remember though that if, for example, you turn on the Pitch Bend filter, you won't be able to record any pitch bend!

**Channel Filters** are another set of switches which allow you to keep out MIDI messages, but here you can keep out all message types on any number of the 16 MIDI channels.

**Thru Channel Messages** is a switch which determines whether channel-based messages, such as notes and pitch bend, received at MIDI In are echoed to MIDI Out.

**Thru Real Time Messages** is a switch which determines whether timing messages are echoed to MIDI Out.

**Reset Controllers on Stop** means that when you stop the sequencer, Evolution sends a number of messages on each MIDI channel which do such things as centre pitch bend wheels, zero modulation wheels and turn off hanging notes.

**Kill Notes on Cycle** tells Evolution to turn off any notes which are currently being played when the Right Locator is reached (assuming the Cycle switch is on). It prevents unwanted notes hanging on when play jumps to the Left Locator.

**Chase Events** tells Evolution to make sure that when you move the Play Position, external MIDI instruments are told what all their settings should be at that point in the song - program change, pitch bend, modulation wheel etc. - so the song sounds right when you restart play.

## Memory Check...

Tells you how many Kilobytes of free memory are available in the system.



## Menu Items

Each Menu contains a number of items used to access various functions. Each item may act directly or call up a Dialog Box. Menu Items which are followed by three dots (...) call up a Dialog Box. Others act directly.



All you need to know about menu options in EVAP

File  
Edit  
View  
Procedures  
Options  
Window  
Help

Help for each Menu Item can be accessed directly by pressing F1 when the menu item is highlighted.

## Merge MIDI File...

This allows you to load a MIDI file from disk and merge it into the song you are currently working on. The tracks of the MIDI file are placed at the bottom of the track list, so there's no danger of them overwriting the existing tracks.

The tempo and time signature of the original MIDI file are not affected, so again there's no danger of losing the settings of the piece you are working on.

## Merge Song...

This allows you to load a song from disk and merge it into the song you are currently working on. The tracks of the song being merged are placed at the bottom of the track list, so there's no danger of them overwriting the existing tracks.

The tempo and time signature of the original song are not affected, so again there's no danger of losing the settings of the piece you are working on.

## Metronome Settings...

The Metronome Settings Dialog allows you to tailor the Metronome to your requirements. You can have a beep from the PC speaker and / or a click played on an external MIDI instrument.

If you use the **MIDI** option you can determine separately the notes used by the first beat of the bar and by the other beats, plus their velocities.

If you turn on the **Record Only** switch the metronome operates during recording only. Turn this switch off if you want to hear the metronome during playback.

The **Count in Bars** setting defines how many bars of metronome clicks will be given before recording begins.

See also:

[Transport Window.](#)

## Mixer Settings...

The top two knobs (i.e. the red and blue ones) can have their use redefined. You can select from several message types and set the maximum and minimum values sent when you move the knobs.

The Dialog also contains the following switches:

**Text Under Faders** Three radio buttons are available:

**Volume** the word Volume itself is displayed.

**Track Names** the program checks the ports and MIDI channels of the tracks and displays the name of a track under the matching mixer channel for the appropriate port.

**Patch Names** the program checks the ports and MIDI channels of the tracks and displays the name of a patch under the matching mixer channel for the appropriate port. This is taken from the patch list associated with that port-channel assignment.

**MIDI Input to mixer** This allows you to decide whether messages arriving at MIDI In move the controls.

**Song to mixer** This lets you decide whether MIDI messages in the song are sent to the mixer controls - if it is turned on the knobs and faders move in real time as the song plays the corresponding MIDI messages. They also move when you relocate the Play Position - the Chase Events feature in the MIDI Settings Dialog which sends the current values of volume, pan etc. via MIDI also updates the positions of the mixer controls. If the Song to mixer switch is turned on part way through a song or MIDI File the controls update even if playback has been stopped.

**Record mixer movements** This switch enables recording of the movements of the knobs and faders. Other actions recorded are Flatten Mixer (flatten all the controls in the mixer), pressing a channel's Flat button (flatten all a channel's controls), and CONTROL clicking on an individual control to flatten it. When playing back a recording of mixer moves which contains more than one MIDI channel, it is best to set the track's channel to 0 (no rechannelization) so the same channels are played back. If only one MIDI channel was recorded the track's channel can be assigned to that channel or left at 0, whichever is preferred.

**Volumes Only** This switch causes the mixer to display the Volumes and meters only. It allows you to see more mixer channels on screen at once as the space used by each channel is much less.

See also:

[Mixer Window.](#)

## Mixer Window



The Mixer contains a set of 16 MIDI channels for each MIDI Output driver in your system. Each channel contains a Flat button, a Volume slider, 3 knobs, 2 switches and a meter. All except the meter can transmit MIDI data to your sound card or external synthesizer. Click on a control and move the mouse up or down (there's no need to move the mouse when you click on a button or switch).

Not all sound cards and synthesizers support Reverb and Chorus.

Pressing the **Flat** switch sets all controls on that channel to their default positions. You can flatten a single knob or slider by clicking on it while holding the CONTROL key.

In addition to sending data via MIDI Out, the mixer can also respond to data arriving at MIDI In and to data contained in a song. The controls move in response to the same messages they are capable of sending, so the Volume faders move in response to MIDI Volume data and so on. You can decide how the mixer responds with switches in the [Mixer Settings](#) Dialog.



If you press the Snapshot button the positions of all the knobs and faders are sent via MIDI. If you are recording and the 'Record mixer moves' switch is turned on, these settings will be recorded. It is a good way of storing the settings for a song once you have set them up.



If you press the Auto Size button the window is resized so it is the exact width and height of one set of 16 channels. If the Volumes only switch in the [Mixer Settings](#) Dialog is on, it is accounted for.



To flatten all channels, press the **Flatten Mixer** button.

The buttons across the top of the window allow you to go directly to a port without using the vertical scroll bar. The highlighted button shows which mixer is at the top of the window.

See also:

[General Window Information](#).

## Move Events...

Allows you to change the start positions of one or more events. It displays a Dialog where you set the number of ticks by which the events will be changed (either **Forward** or **Back**).



## **MK-149 Specifications**

49 Full Size Keys (Velocity Sensitive)

Pitch Bend Wheel

Modulation Wheel (assignable)

Transpose

Octave Shift

Program and Bank Change (MSB & LSB)

6 Program Memories

3 Digit LED Display

Standard MIDI Connection

Includes Connecting cable for Sound card

Standard sustain pedal socket

## New

This removes the current song from memory - use it when you want to start a new song.

## Notepad Window

This allows you to include textual information with each song. The contents of the Notepad are saved in the song file and displayed automatically when a song is loaded.

When you type, word wrapping happens automatically, and you can use the Copy, Cut, Paste, Clear, and Undo functions from the Edit Menu. If you use Copy or Cut to place text on the clipboard, you won't lose any patterns or events already there.

See also:

[General Window Information](#).

## Open

Loads a file from disk. The following file types are allowed:

- Song (.SNG)
- Pattern (.PAT)
- Drum Kit (.DRM)
- MIDI File (.MID)
- Definitions (.DEF)
- Window Layout (.WND)

Each file type has a corresponding radio button on the right side of the Dialog. If you click on one of these the directory will show files of that type.

# Procedures Menu

The Procedures Menu contains the following Menu Items:

- Transpose...
- Change Velocity...
- Change Lengths...
- Quantize...
- Move Events...
- Change Timing...
- Delete Events...
- Thin Out Continuous Events...
- Delete Identical Events
- Reverse Notes

When one of the above is called from the Track Window only the selected pattern(s) will be treated. If you have not selected any patterns, all patterns on the selected track will be treated.

# Ordering Information

For more information on any of our products, visit our web site, or e-mail us here at Evolution:  
sales@evolution.co.uk

You can order any of our products directly via the Internet. Simply send details of the product(s) that you wish to purchase and we will email you with details of the total cost including carriage.

We accept all major credit cards and can deliver worldwide.

Either E-mail your order to us at sales@evolution.co.uk or if you would prefer to order in the traditional way, see our Address and Telephone details.

Name:

Company: (if applicable)

Email Address:

Telephone:

Fax:

Payment by: Visa Mastercard Access Cheque

Product(s) :

Quantity:

Evolution Electronics  
8 Church Square,  
Leighton Buzzard,  
Bedfordshire,  
LU7 7AE.  
United Kingdom

Tel: +44 (0)1525) 372621

Fax: +44 (0)1525) 383228

**email: sales@evolution.co.uk**

International:

Tel: +44 (0) 1525 372621

Fax: +44 (0) 1525 383228

**email: sales@evolution.co.uk**

[Go to Products Page](#)

## Paste

Moves the data from the Clipboard to the song. The new items become the selected ones, which makes it easy to move them elsewhere if required.

See also:

Copy, Cut.

## Patch Lists...

Evolution's Patch List system allows each MIDI instrument connected to your system to have its own Patch List to describe the patches available in that instrument.

There are two ways to call up the Patch Lists Dialog.

1. Click in the Patch column in the Track Window. It is the track whose Patch entry is clicked on which will be changed.
2. Click on MIDI Menu and choose the Patch Lists... entry. In this case it is the selected track's setting which will be changed.

A Patch List file contains:

1. The name of the Instrument (up to 18 characters)
2. A prefix (up to 7 characters)
3. 128 patch names (each up to 18 characters)

The prefix is important because if the track's Patch column simply showed 'Organ', it would be impossible to tell which instrument's organ sound was being used, so if an MT-32 was receiving on that track's MIDI channel, 'MT32 Organ' would be displayed, as opposed to 'GM Organ' or 'U220 Organ'.

The **Patch Lists Dialog** contains the following:

**Current Instrument** This combo box contains the names of all patch lists in memory. You can choose which instrument's patch list is displayed. Up to 16 patch lists can be held in memory.

**Instrument Name** This edit control allows you to type in a new name for an instrument.

**Prefix** This edit control allows a new prefix to be entered.

**Copy** Click this button if you wish to make a copy of the current patch list. You will then be able to save it with a new filename.

**Add** This button lets you load a new patch list from disk.

**New** Pressing this button starts a new patch list and lets you save it.

**Remove** This button removes the current patch list from memory. It can be reinstated later by pressing the Add button.

**Update Files** Press this button to save the patch lists, thereby storing any changes permanently.

**Patch Name** This edit control allows you to type a new name for the currently selected patch.

**Number** This shows the number of the currently selected patch. You can type a new number here as one way of changing patch.

**List of Patches** This shows the names of all patches in the list. It shows 64 at a time and has a horizontal scroll bar which allows you to choose which 64 are visible. Clicking on a patch name selects it, copies its name to the Patch Name field and puts its number in the Number field. Double-clicking on a name selects it and exits the Dialog as though OK had been pressed.

**Bank** This value is the one shown in the Bank column of the Track Window. It is given here so you can change it at the same time you change patch.

**Bank Type** There are different types of bank message. This switch allows you to decide which type of



message is sent. GM has no bank messages, so the Bank value is disabled if you choose GM.

**GS Variations** These buttons give you easy access to the bank numbers of the most important GS variations. They are only available when Bank Type is GS.

**XG Variations** This button gives you easy access to the bank numbers of the XG variations.

**Set to OFF** Click on this button to exit the Dialog and change the Prog setting to OFF.

**Routings...** Displays the **Routings Dialog** (see below).

**OK** This button exits the Dialog and installs the selected patch in the track's Patch column and its number in the Prog column.

**Cancel** This button exits the Dialog without changing patch.

As is usual in Windows Dialog boxes, the Return / Enter key activates the default button. Initially this is the OK button, so pressing return closes the Dialog and installs the selected patch in the track's Patch column and its number in the Prog column. The Tab key exits the current field. This is the key to use if you have typed a new entry and want to keep it but not exit the Dialog.

### **Routings Dialog**

This provides an easy way of telling the program which instruments are connected to each Output Port. Often one Port can be sending MIDI to more than one instrument, so you can enter which instrument is in use on each channel. These connections are used by the Patch List system to decide which List to display when the Patch Lists Dialog is called up. For example, if Track 4 uses Port B, MIDI Channel 7, the system needs to know which instrument is connected to Port B and is receiving on Channel 7. The same knowledge is used when the text in the Track Window's Patch column is printed. These routings are changed when a new instrument is chosen from the Current Instrument combo box in the Patch Lists Dialog. For example, if you click on Track 4's Patch column to call up the Patch Lists Dialog and change the current instrument, this change is stored by the system and will also show up in the Routings Dialog. You do not have to use the Routings Dialog to set the Port-Channel-Patch List connections, but it is an easier way of looking at the information, and in ensuring that in future the correct Patch Lists are displayed whenever the Patch Lists Dialog is called up.

The Dialog contains the following:

**Port** A combo box containing all the MIDI Output Ports in use. Use this to choose which Port's connections are displayed.

**Channel** Instrument Combo boxes Allow each MIDI Channel in the current Port to be 'connected' to any of the Patch Lists.

**Drum** Switches Allow you to decide whether each MIDI Channel in the current Port is a drum channel. Patterns on a drum track can be edited in the Drum Window. Notes on drum tracks are not fed in to the Chord readout in the Transport Window. Not all sound cards will support playback of drums on MIDI channels other than 10.

**Set All Channels to** Button and Combo Box provide a quick way of 'connecting' all MIDI Channels on a Port to the same Patch List.

The Port-Channel-Patch List connections and the knowledge of which Patch Lists are in use is stored in .DEF files, so when DEFAULT.DEF is saved on Quit, everything is remembered ready for the next session. When you first use Evolution, there will be no DEFAULT.DEF file present: this will cause the program to load in 16 Patch Lists by default.

In the Track Window, when you change a track's Channel or Port setting the program also updates the Patch column to make sure the correct Patch List is used to show the patch name.

The Track Settings and Pattern Settings Dialogs each contain a Patch button. It contains the patch name which corresponds to the Program / Port / Channel settings. Pressing it calls up the Patch Lists Dialog. Changing the Program, Channel or Port values also updates the patch name.

See also:

[Track Window](#).

# Piano Roll Window



**Zoom In** - display fewer bars in the same space.



**Zoom Out** - display more bars in the same space.



**Vertical Zoom In** - display fewer notes in the same space.



**Vertical Zoom Out** - display more notes in the same space.

To get to the furthest extent of a zoom, hold down the Control key while clicking on a zoom button.

## Toggle Switches



**Speaker Switch** - enable sending of selected notes to MIDI Out.



**MIDI Edit Switch** - enable MIDI Input to edit selected note.



**Step Switch** - enable Step Time entry.

## Buttons



Close the window.

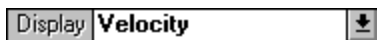


Restore the pattern's original contents.

## Selectors



Determines the resolution of the Note Display. This value is also used as the note length in Step Time entry.



Determines which events are shown in the Velocity Display.

## Displays

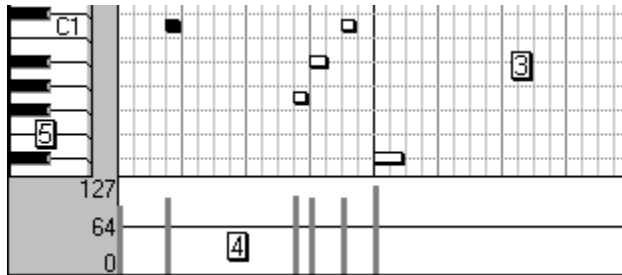


1. The **Timeline** shows the bars and beats currently being displayed. The number of beats per bar depends on the Time Signature - this can change if there are Time Signature changes defined in the Conductor Window. By clicking on the timeline while holding down the CONTROL key, the Play Position will jump to the mouse position.



2. The **Information Line** shows detailed information about a selected note. You can adjust these values

with the mouse.



3. The **Note Display** is a grid where notes are shown as rectangles. The horizontal position indicates start time. The width of the rectangle shows the note length.

4. The **Velocity Display** can contain note velocities, after touch, controllers, channel pressure and pitch bend. You can edit them with the mouse. Each type of event is shown in a different colour: the colours are the same as those used in the Event Window.

5. The **Screen Keyboard**, at the left edge of the window, has four uses:

- a) It indicates the pitch of notes in the Note Display.
- b) By clicking on it you can play MIDI notes.
- c) You can use it to enter notes in step time.
- d) It shows notes arriving at MIDI In.

## Selecting Notes

You can select notes with either of these two methods:

1. Click on a note - it turns black to indicate selection. Click on another one and that becomes the selected note. If you hold SHIFT and click on a note you can toggle its status between selected and normal. By using SHIFT clicking you can select several notes.

2. With the left mouse button click on a part of the Note Display where there isn't a note. Any selected notes become deselected. While still holding down the left mouse button, drag down and to the right, enclosing notes in the dotted 'drag rectangle' as you go. Release the mouse button. The notes inside the drag rectangle become selected. This method is called lassoing.

When one note is selected detailed information about it is given in the Information Line. You can use the Up and Down arrow keys to move selection to adjacent notes.

## Selecting Events in the Velocity Display

Either of the above methods can be used, and the events turn black. If note velocity is being displayed you can select notes by selecting their velocities.

## Using the Edit, Options & Procedures functions

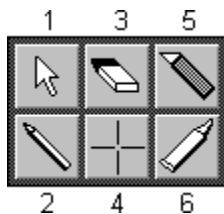
When using functions from the Edit and Options menus, whether events are affected depends on their selection states. If you have selected one or more events, **ONLY** those events will be affected. If no events are selected, **ALL** events will be affected. Remember though, that in the Options Menu functions the Scope setting may exclude some of them.

One method of copying one or more events is to select them and use the Copy function (Edit Menu) to place a copy of them on the clipboard. You can then Paste them into the pattern at the current Play Position.

## Moving and Copying Events

Selected events can be moved and copied. Click on any one of them and drag to a new position then let go of the mouse button. If you hold down the CONTROL key before you click, a copy of the events will be made at the new position, leaving the originals intact. The newly copied events then become the selected ones.

### Mouse Tools



To select a different mouse, hold down the right mouse button to bring up the **Mouse Tool Selector**. Move the mouse until the one you want is highlighted. Let go of the right mouse button - the selector disappears and the mouse cursor changes to the new shape.

1. The **Arrow** is at the top left so you can change back to it quickly - click the right button and release immediately - there's no need to drag.

2. The **Pencil** is used for drawing and sizing. In the Note Display you can draw in a new note or change the size of an existing note. To move the start position of a note click on the left half; to move the end of a note click on the right half. Drag the mouse to the required position and release the mouse button.

You can also draw in the Velocity Display. If any event type except Velocity is chosen as the display type, you can use the pencil to draw in new data, a pitch bend curve, for example.

3. The **Eraser** is used to delete events. It works in both the Note and Velocity Displays. Click on an event with the eraser and it disappears. If you click on one of a group of selected events, all the selected events are deleted.

4. The **Cross hairs** cursor is used for modifying existing data in the Velocity Display. Hold down the left button and drag the mouse around - if the cross hairs move across any data it will change to a new value proportional to the height of the cross hairs in the display. You can use a single click to change a single value or drag the mouse right and left to reshape a controller curve. If Velocity is the display type you can create a crescendo by dragging the cross hairs left to right across the velocities, moving up the screen as you go.

5. The **Knife** is used to slice a note in two. The position you click on the note determines the end position of the first note and the start of the second one.

6. The **Glue** is used to join two notes of the same pitch to create one new note which starts where the first note started and ends where the second one ended. Click anywhere on a note and it will be glued to the next note of the same pitch.

### Step Time Entry

The Step Switch must be in the ON position. Single notes and chords arriving at MIDI In are recorded at the current Play Position with a length determined by the Grid setting. When you release the notes on the MIDI keyboard the Play Position advances by the same amount. To advance the Play Position without entering a note, press the space bar.

You can also use the Screen Keyboard to enter notes -- click on one of the notes and a note of that pitch is recorded. The Play Position doesn't advance automatically, but stays in the same place to make it easy

to enter successive notes of a chord. Press the space bar to advance the Play Position.

### **Undo & Redo**

You can use the Undo function to reverse the effects of the last editing operation. You can then use the Redo function to reverse the effects of the Undo function.

See also:

General Window Information, Event Window, Conductor Window.

## Preferences...

The **Copy Patterns as Parents** switch determines the type of pattern created when a pattern is copied. If this switch is turned off, copying a pattern results in a Child Pattern being created, which is denoted by a dotted border. A Parent Pattern has a solid border.

The **Chord Track Conflict warning** switch determines whether a message is displayed when one or more MIDI Tracks is set to the same Port and Channel as the Chord Track. If the switch is turned on, this message is displayed each time you start playback or recording.

The **Conductor warning (Audio Timing)** switch determines whether a message is displayed when you change or insert a tempo point in the Conductor Window, in such a way as to affect the timing relationship between MIDI and audio data. Audio patterns play back at the same speed they were recorded at, whereas MIDI data plays back at a speed dictated by the current tempo setting.

The **Ask before extract type 0 MIDI file** switch determines whether you are asked about extracting single track MIDI files to multiple tracks when you load them. If this switch is off, no message is displayed, and the single track is automatically extracted. If it is turned on, you are given a choice each time you load a type 0 MIDI file.

The **Single Edit Window** switch allows only one edit window (Piano Roll, Event, Score and Drum) to be open at any one time. If, for example, you have a Piano Roll window and open the Event window, the Piano Roll closes first. Also, when you have an edit window open, clicking on a different pattern brings that pattern into the edit window (this isn't possible with multiple editing windows as you need to click on a pattern before opening a new edit window). Turn this switch on if you think it suits your way of working.

The **Timer Resolution** slider allow you to tell the Windows Multimedia Timer how to supply timing pulses to the program. It determines how many milliseconds will elapse between each timer pulse. The finest resolution is 1 ms.

On slower computers lower values will make the Windows Multimedia Timer use a lot of the PC's computing power, leaving little available for doing other things. Users with slower computers who experience unsteady playback will find it helpful to increase the Timer Resolution until playback is steady. The three buttons - 386, 486, and Pentium - provide useful settings for you to begin with.

See also:

[Track Window.](#)

Your printer is not recognized by the program. If it prints from other programs, then it is probably a colour printer and to be able to print from EVAP you need to install a **monochrome** driver for it. Please check with your printer manufacturers that you have the latest drivers for the printer as there are known problems with some colour printer drivers.

e.g. To use a HP Deskjet 550C printer you might have to install the HP Deskjet 500 driver from your Windows installation disks / CD-ROM.

Set the monochrome driver as the default printer when printing from EVAP.



# Print Troubleshooting

If you encounter problems when printing from the score editor please click and check the following list for any known problems before giving technical support a call.

1. Clicking on page preview displays only a blank page.
2. Program gives a General Protection Fault (GPF) when trying to print.

If you encounter a GPF (General Protection Fault) when trying to print from the score editor, it is probably down to the fact that your printer drivers are not compatible with the software. Please check with the printer manufacturers that you are using the latest drivers.

If you are using a colour printer, install a monochrome driver for it. e.g. To use a HP Deskjet 550C printer you might have to install the HP Deskjet 500 driver from your Windows installation disks / CD-ROM.

Check that the printer works from other applications such as Notepad or write. If not, then go to your control panel and reinstall the printer drivers.

## Quantize...

Allows you to change the start positions of one or more notes so they are more regularly placed. Notes move forward or backward depending on where the nearest beat or division of a beat is. A Dialog is displayed where you decide the **Quantize Setting** (16ths etc.), the **Percentage** by which the notes will be moved, and the Scope of the change.

The percentage setting allows notes to be lightly or heavily quantized. With a Quantize Setting of 16ths, a percentage of 50 will make notes move half way to the nearest 16th, while 100% will make them move all the way.

Quit

Choose this when you want to get out of the program.



## Redo

Reverses the effect of Undo.

## Reverse Notes

Allows you to change the start positions of a group of notes so they play in reverse order.

When this is called from the Track Window only the notes in the selected pattern(s) will be reversed. If you have not selected any patterns, the notes in all patterns on the selected track will be reversed.

If you call it from an editing window (e.g. Piano Roll or Event) you can define which notes are reversed. If you select a number of notes, only those notes which are selected will be reversed. If you have not selected any notes, all notes will be reversed.

## Save...

This is where you can save a file you are working on. When you enter the File Dialog, the name of the file last accessed is shown and the directory shows only files of that type. You can change the file type by clicking on one of the radio buttons at the right side of the Dialog.

If you are saving a song, you could use the Save Song function, which is quicker.

If you are saving a MIDI file, you can save either a Type 0 file (a single track) or a Type 1 file (two or more tracks). The program checks to see how many tracks contain patterns. If only one track contains patterns, it saves a Type 0 file, otherwise it saves a Type 1 file.

If you have several tracks containing patterns, but want to save a Type 0 file, choose Select All from the Edit Menu, then Merge Patterns from the Track Window's Functions Menu. Delete the old tracks so only the 'Merged' track remains. Choosing Save... will now save this as a Type 0 file.



## Save As...

When you want to save a new file for the first time this is the function to use. You need to specify which type of file you want to save, then type in the name in the filename entry at the top of the Dialog.

You can also use this to save a file you are working on with a different name, thereby copying it.

If you are saving an untitled song, you could use the Save Song function.

If you are saving a MIDI file, you can save either a Type 0 file (a single track) or a Type 1 file (two or more tracks). The program checks to see how many tracks contain patterns. If only one track contains patterns, it saves a Type 0 file, otherwise it saves a Type 1 file.

If you have several tracks containing patterns, but want to save a Type 0 file, choose Select All from the Edit Menu, then Merge Patterns from the Track Window's Functions Menu. Delete the old tracks so only the 'Merged' track remains. Choosing Save As... will now save this as a Type 0 file.

## Save Song

This is a quick way of saving the Song you are working on. The File Dialog is not displayed - the filename of the current song is used so you don't need to tell the program again.

If you try to use this to save an untitled song, the File Dialog will be displayed, but only the .SNG file type will be allowed.

## Scope

The Scope setting allows you to restrict the range of notes which will be treated. For example you may want to change only notes From G 2 To C 4. The values are inclusive, so in this example G 2 and C 4 would be treated as well as all notes between. Alternatively you can choose to treat All notes.

If you call the Options menu function (Transpose etc.) from an editing window (e.g. Piano Roll or Event) you can define scope more precisely. If you select one or more notes, only those notes which are selected will be treated. This overrides the Scope setting, and the Scope controls in the Dialog are disabled. However, if you have not selected any notes, the Scope setting acts just as if you had called it from the Track Window.

## Score Settings...

Displays a Dialog containing the settings which help determine the layout of the score display, both when editing and printing.

<b>Margins</b>	(points from the edge of the screen / page)
<b>Left, Right, Top, Bottom</b>	
<b>Spacing</b>	(points)
<b>Inter-note</b>	the horizontal distance between notes / rests.
<b>Inter-stave</b>	the vertical distance between staves.
<b>Text Sizes</b>	(points)
<b>Title</b>	size of the font used for the song title printed at the top of the page.
<b>Names + Bars</b>	size of the font used for the patch name and bar number.
<b>Clef</b>	can be Treble (normal, 8va above, 8va below), Bass (normal, 8va above, 8va below), Treble and Bass.
<b>T &amp; B Split Point</b>	the lowest note placed on the Treble Stave when using the Treble and Bass clef.
<b>Detect Automatically</b>	this switch turns Automatic Clef Detection off if required.
<b>Detect Now</b>	this button tells the program to detect the clef immediately. The Stave Display updates if a different clef is calculated.
<b>Printing</b>	
<b>Print Page Numbers</b>	the page number will be printed at the foot of each printed page if this is turned on.
<b>Maximum Staves</b>	this lets you limit the number of staves printed on each page.
<b>Sloping Beams</b>	these switches turn this feature on or off as required.
<b>Screen, Printer</b>	
<b>Display Bar Numbers</b>	this switch turns on the numbering of bars and applies to both screen and printer.
<b>Simplify Display</b>	this switch makes the display less exact but easier to read. It reduces the number of short rests by modifying note durations. This is only a visual change, the MIDI data is not affected.

**Lyrics on Channel**

type in the MIDI channel containing the lyric melody. The Score Window needs to know this so it can display the lyrics under the correct notes.

# Score Window

## Toggle Switches



**Speaker Switch** - enable sending of selected notes to MIDI Out.



**MIDI Edit Switch** - enable MIDI Input to edit selected note.



**Step Switch** - enable Step Time entry.

## Buttons



Close the window.



Restore the pattern's original contents.

Print Preview

Switches the Stave Display between Print Preview and Edit.

## Selectors

Resolution 16

Determines the shortest note and rest drawn in the Stave Display.



This value determines the shape of the Note cursor and is used in Step Time entry.

## Displays



1. The **Information Line** shows detailed information about a selected note. You can adjust these values with the mouse.

Mouse C 4 3:02:096

To the right is a display of the pitch and position (bars:beats:ticks) of the mouse.



2. The **Stave Display** is where notes are shown on a stave. The clef can be changed in the Score Settings Dialog. If you click on an empty part of the Stave Display while holding down the CONTROL key, the Play Position will jump to the mouse position.

## Single or Multi channel Staves

If you select a pattern containing notes on one MIDI channel and then open the Score Window, a single part display is created. If you open the window with a pattern containing notes on two or more MIDI channels, a multiple stave system display is generated, with each instrument having its own stave.

## Selecting Notes

You can select notes with either of these two methods:

1. Click on a note - it turns red to indicate selection. Click on another one and that becomes the selected note. If you hold SHIFT and click on a note you can toggle its status between selected and normal. By using SHIFT clicking you can select several notes.
2. With the left mouse button click on a part of the Stave Display where there isn't a note. Any selected notes become deselected. While still holding down the left mouse button, drag down and to the right, enclosing notes in the dotted 'drag rectangle' as you go. Release the mouse button. The notes inside the drag rectangle become selected. This method is called lassoing. To continue lassoing, notes in later bars, hold the mouse against the right edge of the window and the display will flow more notes into the lasso rectangle.

When one note is selected detailed information about it is given in the Information Line. You can use the Up and Down arrow keys to move selection to adjacent notes.

## Using the Edit, Options & Procedures functions

When using functions from the Edit and Options menus, whether events are affected depends on their selection states. If you have selected one or more events, ONLY those events will be affected. If no events are selected, ALL events will be affected. Remember though, that in the Options Menu functions the Scope setting may exclude some of them.

One method of copying one or more events is to select them and use the Copy function (Edit Menu) to place a copy of them on the clipboard. You can then Paste them into the pattern at the current Play Position.

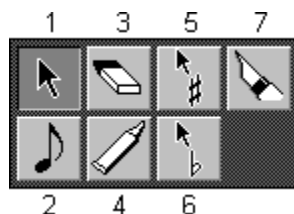
## Moving and Copying Notes

Selected notes can be moved and copied. Click on any one of them and drag to a new position then let go of the mouse button. If you hold down the CONTROL key before you click, a copy of the notes will be made at the new position, leaving the originals intact. The newly copied notes then become the selected ones.

## Functions Menu

<a href="#">Print...</a>	Displays a standard Windows Print Dialog.
<a href="#">Print Setup...</a>	Displays a standard Windows Print Setup Dialog.
<a href="#">Delete Lyrics...</a>	Deletes all the lyrics in the song.

## Mouse Tools



To select a different mouse, hold down the right mouse button to bring up the [Mouse Tool Selector](#).

Move the mouse until the one you want is highlighted. Let go of the right mouse button - the selector disappears and the mouse cursor changes to the new shape.

1. The **Arrow** is at the top left so you can change back to it quickly - click the right button and release immediately - there's no need to drag.

2. The **Note** cursor enters a note with a length specified by the Note Len combo box. The pitch and position are calculated from where the mouse button clicks on the staff. These values are shown in the Information Line. The Note cursor can also be used to change the length of an existing note - the note's length changes to that of the cursor.

3. The **Eraser** is used to delete notes. Click on a note with the eraser and it disappears. If you click on one of a group of selected notes, all the selected notes are deleted. The eraser can also be used to delete lyrics - just click on the lyric.

4. The **Glue** is used to join two notes of the same pitch to create one new note which starts where the first note started and ends where the second one ended. Click on a note and it will be glued to the next note of the same pitch. This can also be thought of as a means to tie two notes.

5, 6. The **Sharp and Flat** cursors are used for modifying existing notes. One sharpens a note, the other flattens it. If the SHIFT key is held down the note changes by an octave, otherwise it changes by a semitone.

7. The **Pen** is used to enter and edit lyrics. Click on an existing lyric and an edit control appears, into which text can be typed. TAB moves to the next lyric, RETURN terminates editing.

If you want to add lyrics, click on the head of the note under which the lyric is needed; a new lyric is created. When you have finished editing this lyric, press TAB to advance to the next note without a lyric and type again. When you have finished, press RETURN to stop editing.

When you make a change to the lyrics, they will immediately be reflected in the Lyric Window if it is open. You can cause a line feed by typing a lyric event containing a # sign only. This allows you determine the line breaks for when the lyrics are printed in the Lyric Window.

### **Step Time Entry**

The Step Switch must be in the ON position. Single notes and chords arriving at MIDI In are recorded at the current Play Position with a length determined by the Note Len setting. When you release the notes on the MIDI keyboard the Play Position advances by the same amount. To advance the Play Position without entering a note, press the space bar.

### **Time and Key Signatures**

Different time signatures can be displayed, allowing any changes in the Conductor Window to be acted upon when the score is displayed.

### **Automatic Clef Detection**

On entry to the Score Window the program scans the pitches and works out the best clef to display the notes on. It is not called at any other time, so it is still possible to change the clef in the Score Settings Dialog without the program changing it back. You can turn Automatic Clef Detection off.

### **Using the PC Keyboard**

The keys 1 to 7 on the top row of the PC keyboard can be used to change the value in the Note Len combo box. The 'D', 'N' and 'T' keys select the dotted, normal or triplet version. If the Note cursor is in



use, its shape changes.

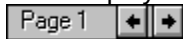
## Printing

The Print function can print anything which can be displayed on the screen. All settings in the Score Settings Dialog apply to printer output. Printing also obeys the settings in the Print Dialog - which pages to print, how many copies and whether copies are collated.

Printing can be aborted while the page is being sent to the printer. Press the Abort button to abort printing.  
[Print Troubleshooting](#)

## Print Preview

The Print Preview / Edit switch toggles between Print Preview and the normal Edit display. The Print Preview display is a scaled version of what will appear on the printed page. The scale depends on the window size - on an 800x600 display a better display is possible than on a 640x480 display thanks to the extra display area available.



The Page number is printed and two arrow buttons are displayed to allow the page to be changed - the PgUp and PgDn keys operate these buttons as well as the mouse.

## Undo & Redo

You can use the [Undo](#) function to reverse the effects of the last editing operation. You can then use the [Redo](#) function to reverse the effects of the Undo function.

See also:

[General Window Information](#), [Conductor Window](#).

## Select All

Selects all items in the current window. Selected items are black (except muted patterns which change from light grey to dark grey).

# Software Package

Sound Studio Pro Plus(Evolution Audio and Samplitude MM)

CD Quality sound is no longer confined to professional studios. Sound Studio Pro Plus combines Evolution Audio and Samplitude Multimedia giving 256 MIDI and 4 audio tracks running in sync. Sound Studio Pro Plus will transform your PC into a recording studio. You can make multitrack recordings on to your hard disk, manipulate them in a user friendly graphical format and integrate them with video clips in .AVI format.

[Return to Products Page](#)

## Synchronization Settings...

If you need to make Evolution play in time with an external device, the settings in this Dialog can be configured accordingly.

If you're using Evolution as the master clock, you'll need to **Send** either **MIDI Clock** or **MIDI Time Code**. If Evolution is to be slaved to an external clock source, you'll need to **Receive** timing information.

The Synchronization Settings Dialog contains separate controls for receiving and sending timing data. You simply click on the type of sync you need to use and choose the **Port** to which you've connected your MIDI cable. If you use MIDI Clock there's no need to change any of the frame rate settings or the Song Start time. These are only relevant when MIDI Time Code is being used.

If you're using MIDI Time Code, you must make sure **Frames per Second** is set to the same as the external device. The **Song Start** Time defines what time is considered to be the start of the song.

**Relocate Delay** is relevant to both MIDI Clock and MIDI Time Code, but only when Evolution is Sending. When you move the Play Position, Evolution tells the external device to get ready to start at that position. Relocate Delay gives the receiving device time to get ready. Different devices need different delays, so you'll need to experiment until the two machines are working smoothly together - a setting of 500ms is a good starting point. If you're not sending sync to an external device, set this value to zero.



Evolution Electronics offers free technical support for registered EVAP users.

email: [support@evolution.co.uk](mailto:support@evolution.co.uk)

If you have a problem, before contacting Technical Support, please read the relevant section of the manual. If telephoning for support please have the phone close to the PC which is running the software. Please remember that the lines are usually *very* busy, so E-mail would be the better option.

When asking for technical assistance, please have the following information to hand:

VERSION NUMBER e.g. 1.01... (To be found in "About Evolution Audio Pro" from Help menu.

OPERATING SYSTEM: e.g Win 3.11

HARDWARE PLATFORM: e.g. IBM PC

CPU: e.g. 486

CPU speed: e.g. 33 MHz

RAM: e.g. 8Mb

SOUND CARD:

Evolution Electronics

8 Church Square,

Leighton Buzzard,

Bedfordshire,

UK

LU7 7AE.

UK:

Tel: 01525 372621

Fax: 01525 383228

email: [support@evolution.co.uk](mailto:support@evolution.co.uk)

International:

Tel: +44 1525 372621

Fax: +44 1525 383228

# The Arranging Tutorial

What we are going to do is show how powerful the pattern-based approach to sequencing is, and how easily a song can be constructed using some of the features in EVAP. This will give you a good understanding of how EVAP works so you can use the same principles and techniques in your own music.

[Parent and Child Patterns](#)

[Adding Audio Files](#)

[The Toolbox](#)

[Moving and Erasing patterns](#)

[Loading Audio files](#)

[Saving your work](#)

[Mixing](#)

[Adding Reverb and Chorus](#)

[Recording the Mixer settings](#)

[Staggering the Mixer data](#)

[Quiet in the mix](#)

[Mixing the audio track](#)

Open the file called TECHDEMO.SNG. This contains several patterns spread across the tracks rather than the one-pattern-per-track arrangement of Sheba. We will use these patterns as our building blocks.

It's normal practice to have the Name column on view. It will help if you can also see the Patch, Transpose and Ch columns. Check them in the Select Track Columns dialogue box as described earlier.

The patterns are configured for General MIDI. If you are using a non-GM instrument, select sounds similar to those listed in the Patch column.

You might want to play the song as it is. You can tell it's a Coda short of a full Sonata but we'll soon fill in the missing pieces. Adjust the Zoom controls so you can see all the patterns in the Pattern Display area. You may want to zoom in and out as you

We're going to construct a piece of Techno music which is based on repeating riffs and we'll begin by constructing the bass line. Listen to the Bass pattern in the first couple of bars. It's a bit bland. Hold down the Control key and click and drag the pattern onto the same position in Track 2.

You'll see the new pattern has a dotted outline. If it doesn't you've probably changed the Preferences so open **Preferences...** in the **Options** menu and uncheck the **Copy Patterns as Parents** box.

## Parent and Child Patterns

By unchecking the box you tell the program you want to copy patterns as **Children** rather than as **Parents**. The difference is important and illustrates just one of the many flexible features of pattern-based recording. If you copy a pattern as a Parent then you simply create a completely new individual pattern the same as the original. The result is similar to copying and pasting a section of text in a word processor.

However, if you copy a pattern as a Child, it has no events of its own but uses those of its Parent. If you change the events in a Parent pattern then all the Children patterns automatically use the new events too. This is perfect for riff-based sequences because if you decide to change one of the riffs, all the others change as well. It saves an awful lot of work!

However, you can play the Children patterns back on any MIDI channel and apply processes such as Transpose to them which gives them a bit of independence of their own. Let's do this with the bass line.

Assuming you've copied a Child Bass pattern to Track 2 and set the Snap value to 8. The Snap setting

helps you line up patterns when you move them as they will automatically "snap" to the bar division set in the Snap box. Zoom in so you can see the first two bars clearly and then click and drag the Child pattern to the first 1/8th division of bar 1.

As this is on its own track you can assign it to any MIDI channel and give it any Program Change number you like. However, let's stick with the Syn Bass sound and either assign Track 2 to MIDI channel 1 or else leave Track 2 on MIDI channel 2 and select the Syn Bass sound. The first option conserves MIDI channels but the second gives you more flexibility, should you need it.

Now when you play the first couple of bars, each of the notes in the bass line will repeat creating a 1/8th note bass line.

Click in the Transpose column and take the Child pattern down by -12, an octave. Sounds a bit more interesting, doesn't it? Notice that the Child pattern is still playing the same notes as the Parent but we have simply transposed them.

The next step is to copy these two patterns to provide a longer bass line. Click and drag a box around the two Bass patterns. This is known as **lassoing** and to select a pattern in EVAP this way you have to capture the start of the pattern in the lasso. You don't have to drag a box completely around the pattern to take in the end of it. When a pattern has been captured or highlighted in this way it turns black.

We want to create seven copies of this dual Bass pattern. You can set the Snap value back to Bar for this. Put the mouse on a part of the highlighted patterns, hold down the Control key and click and drag the patterns to the right until the start of the top one is on Bar 3. Release the mouse button. You don't have to be terribly precise as the Snap function will place the patterns on the nearest bar.

Now, the patterns you have just placed will be highlighted so continue to hold down the Control key, click and drag the patterns onto bar 5 and release the mouse. Continue until you have made seven copies of the patterns. The last one will begin on bar 15.

The Pattern Display window will scroll automatically as you copy the patterns past the right hand edge so there's no need to release the mouse button to click on the scroll bar.

Play the song.

Just to illustrate the purpose and usefulness of the Parent/Child pattern relationship, highlight the first pattern, the original Parent, and click on the Event editor. We'll look at this more closely later but for now pick out the second F#2 in the list and click on it with the left mouse button three times. It will be transposed downwards to Eb2. Now when you play the piece that note will be played by all the Child patterns.

Put it back to F#2.

Next, we'll fill out the drum part. As you did before, while holding down the Control key click and drag the Hit Hats pattern to the right until the start is on Bar 5. Repeat this to create six copies in all, the last one starting at bar 15.

The Tambourine comes in at bar 5. Copy this six times so the last pattern starts at bar 17.

Now copy the Vibes pattern five times.

### **Adding Audio Files**

That's the first part done. The Strings and the Hit parts are in place and don't require any further editing. But what happens after the hit? Not a lot. Let's liven it up by adding some vocals.

The ability to add digital audio to MIDI tracks is one of EVAP's major features. With Samplitude Lite you can record your own digital audio but for now let's insert a few audio snippets we prepared earlier.

First we need to create an audio track. Click on the Function menu in the Track editor and select Add Audio Track. A track labeled AUDIO - surprise, surprise - appears at the top of the track list.

We will now insert a voice saying the letters of the word "TECHNO" into the audio track. There is more than one way of doing this but we'll plumb for the easy way. Zoom in until you can see each bar number in the Timeline. Set Snap to 4.

## The Toolbox

Right-click and hold in the Pattern Display area and the Toolbox appears.

Each editor has a Toolbox and some tools appear in more than one editor. There is a complete list of all the Tools in the Basic Operations chapter. At the moment we're just interested in the Pencil so move the pointer to it and release the Mouse button.

Scroll the window so you can see bar 11 and click the Pencil in the Audio track halfway between the numbers 11 and 12. an Audio pattern will appear 1/4 of a bar long.

These are markers or place-holders for the audio data and they tell the program when to play the audio in relation to the rest of the song. The audio is not held in the computer's memory but read directly from disk so you don't need a lot of RAM in order to use audio files.

## Moving and Erasing patterns

If you accidentally create a pattern where you don't want one you can click and drag it to the correct location or erase it. Right-click in the display area, select the Eraser and release the mouse button. Now click with the Eraser on the unwanted pattern and it will be deleted.

Another way to remove unwanted patterns is to highlight them and press the Delete key on the computer's keyboard.

If you delete a pattern accidentally, select **Undo** from the **Edit** menu or hold down the Alt key and press the Backspace key.

Now we have to tell the program which audio files we want it to play.

## Loading Audio files

Right-click briefly in the Pattern Display area and the mouse pointer will run into an Arrow again. Double-click on the first Audio pattern and the **Audio Pattern Settings** window opens.

Click on the Wave File button near the top of the window and a file dialogue box opens looking for a file with a .WAV extension. These are standard Windows audio files and you will see several in the EVAP directory including ones called T, E, C, H, N and O.

Double-click on T.WAV or click on it to highlight it and then click on the OK button. A representation of the waveform appears in the window.

Click on the Audition button and you you'll hear the audio file play along with the MIDI patterns which are



at the same place in the song. The name of the file will still be called AUDIO so highlight it and change it to T.

This window also shows the size and format of the file. We're using 8-bit mono files recorded at 22.05kHz, partly to save your disk space and partly so users with older sound cards can play them. If your sound card supports 16-bit stereo 44.1kHz files and you use files of this standard you will get a far superior sound quality.

Click the OK button and a box will appear asking if you want to **Resize the Pattern to match the Wave Length**. At the moment, each Audio pattern is exactly quarter of a bar long but if you click on OK here, the length of the pattern will be adjusted proportionally so you can see where the audio file will stop playing. Click OK.

Now open the other audio patterns, load the E, C, H, N and O WAV files and change their names accordingly.

Each file lasts for about a quarter of a bar but you will see that some patterns are slightly longer than others. If you are working with very short samples or zoom out of the display to get an overall view of the arrangement, the audio patterns may become little more than a line wide. By not Resizing the Pattern to match the Wave Length you keep the patterns at their original size which will make them easier to see and manipulate.

Now let's finish fill in the gap which leads to the Piano and Drum parts. We need half a Tambourine pattern so right-click in the Pattern Display area and select the Knife tool.

Zoom in so you can see the last Tambourine pattern clearly, set Snap to Bar and click the Knife in the middle of the pattern under bar 18 in the Timeline. With Snap set to Bar you don't have to be very accurate and the pattern will split in two.

You'll notice that it has also taken on a solid outline. In other words, it has ceased to be a Child pattern and has become a Parent pattern. This has happened because you edited it. As the two patterns no longer contain the event of the Parent pattern they have become Parents in their own right.

Right-click briefly to select the Arrow again. Hold down Control and click and drag the right-most pattern a bar along so it fills bar 19. Now Control click and drag the previous Child pattern, the one occupying bars 15 and 16, to bar 20. Create three more copies, extending the Tambourine line to the end of bar 28.

Let's have some more voice. Lasso the five Audio files and Control click and drag them to the right so the first audio part, the T, is at the start of bar 18. Click anywhere in the Display area to deselect the parts and set the Snap value to 4.

Drag the E to the middle of bar 18. We want the next four files to each occupy a beat in bar 19 so zoom right in and drag the files onto consecutive beats.

Now Control drag the Drums pattern three times and the Piano pattern. They should both come to the end of bar 28 in line with the Tambourine pattern. Now Control drag one copy of the SynBass pattern.

## **Saving your work**

Before you continue, save the song. Select **Save As...** in the File menu and the file dialogue box appears.

You want to save entire piece so make sure the **.SNG** box is selected, type a name into the Filename box and press Return or click on OK. You don't have to add the .SNG extension, EVAP will do that for you automatically.

If you want to compare it with the arrangement we prepared earlier, load the TECHNO.SNG file.

## Mixing

The final step is to mix the piece. The original patterns were recorded to sound pretty well "mixed" on our GM unit but they may not sound exactly the same on yours. In any event, there are still a few tweaks to perform.

Open the **Mixer** by clicking on its icon.

The MIDI Outputs available in your system will appear along the top of the window. These are the same as the Port settings in the Track window. Select the one you are using by clicking on it and then click on the Auto Size button.

This will automatically resize the window so it is the exact height and width of one set of 16 channels. If you have a small monitor or are running EVAP in a low resolution you may want to make the mixer smaller to hide the higher-numbered channels which you aren't using. You can do this by clicking and dragging on the borders of the window in the usual way.

To set the Mixer controls to a default setting, click on the **All Flat** button. This will set **Reverb** and **Chorus** to off, Pan to centre and Volume to maximum.

Select **Mixer Settings...** from the Options menu. This lets you determine how the Mixer works and what the mixer controls actually control.

The two boxes labeled **User 1** and **User 2** let you configure the top two rotary dials in the Mixer to control a range of Controllers. There's more about this in the Reference section but leave them set to Chorus Depth and Reverb Depth for now.

Select one of the items under **Text Under Faders** to decide what information you want to see under each Mixer channel. We prefer Patch Names so you can see what sound the Mixer is controlling but if you name your tracks you might prefer to set it to Track Names.

The following boxes let you decide how MIDI data and the Mixer interact. If you are only using one MIDI Out Port, we'd suggest keeping the first three boxes checked even though you don't need all the facilities at the moment. There's more about these settings in the Reference section.

Now play the song.

First of all, use the faders to set suitable volume levels for each of the tracks. Maximum volumes for all sound fine on our equipment but even General MIDI modules vary from one to the other.

Now, experiment with the Pan settings. Pan the first Bass track hard right and the "echo" hard left. Put the Vibes slightly right of centre and the strings slightly left of centre.

We usually leave the drums in the middle but you might like to pan the Piano slightly left and the Syn Saw slightly right. These are just suggestions, of course. Place the sounds wherever you like in the stereo image.

## Adding Reverb and Chorus

Next, add some Reverb. This can really fill out a sound. Strictly speaking, Reverb is not a feature of General MIDI although many GM units have a Reverb feature. You'll soon be able to tell if yours is one by turning up the reverb level and seeing if the sound takes on a "spacey" quality.

Try adding reverb to the original bass line or to the "echo". If you have the two bass parts on different MIDI channels you can put reverb on one and not the other.

See how it affects the other parts including the drums. Many beginners add reverb to everything and although this appears to "beef up" a song it can result in the "swamp" effect and make the parts blur into one another. Still, if that's the effect you're after...

You may like to add a little Chorus to some of the parts. If your sound source supports it, it will thicken a sound.

Use the Mute and Solo buttons in the Mixer to hear what the parts sound like in isolation.

## Recording the Mixer settings

Now, having fine tuned the song, you want it to sound like this every time it's played so we need to record the settings into the song itself. This is easy to do using the Mixer's **Snapshot** button.

Make sure the **Record mixer movements** box is checked in the Mixer Settings dialogue box. From the Functions menu in the Track editor select **Add MIDI Track** or simply click on the Add MIDI Track button.

A new track will appear at the bottom of the track list. Click on the button in the **Rec** column. If this column is not on screen, check it in the Select Track Columns box. Now, during recording, when you click on the Snapshot button the data will be recorded onto the track.

However, you'll notice that the song begins at the start of the very first bar so there's no room to insert this information. Click on **Select All** in the Edit menu and all the patterns will highlight. Zoom in and use the scroll bars so you can see the bar markings in the Timeline clearly. Set Snap to Bar. Click on the first Bass pattern in the song and drag it to bar 2. The whole song will move along a bar.

Now click somewhere on the Mixer window or on the Mixer icon to bring it to the front. Click on the Record button in the Transport window and, unless you've altered the **Metronome** settings, a one-bar count in window will appear counting down from four to one. If the Metronome icon is selected in the Transport window, you'll also hear a click.

As soon as the program starts recording, click on the Snapshot button and then on Stop. Let's just check what you've recorded.

Select the pattern in the Track window and click on the **Event Editor** icon. Make sure the Controller button in the **Display Filter** is on and you will see a list of Controller data similar to this:

Scroll through the list and you will see that each MIDI channel has an entry for Volume, Pan, Reverb and Chorus. If you've checked the **Song data to mixer** box in the Mixer Settings window, the Mixer controls will move in response to the data during playback. Try it. Flatten the Mixer controls and then start playback.

Not working? Check the MIDI channel the track is set to. It's probably set to channel 11 which means all the data is going to MIDI channel 11 and none to the other channels. Scroll this down to 0 with the left mouse button. Now the data will be transmitted on the MIDI channels which are used in the pattern rather than being forced onto a MIDI channel by the Ch setting.

## Staggering the Mixer data

A couple more points before we move on. If you hit the Snapshot button after the count in, the events will

be spread a few ticks apart. If you clicked on Snapshot before the count in had finished, the events will still have been recorded but they will all be on the very first bar and beat position.

MIDI is a serial protocol which means it can only transmit one item of data at a time. If events are at the same time position it sends them one after the other, albeit very quickly. However, if there are a lot of events, the last one could arrive significantly later than the first one, even though they have the same time position in the editor.

Now, most instruments respond to MIDI data very quickly but they do take a finite time to react to it and some may be swamped if they receive too much data at once. It may ignore some data or it may cause a glitch in the system. The Snapshot button staggers the events to minimize problems such as this.

Depending on your instrument, you may be able to stack all the set-up events on the first beat but it's usually best to play safe and spread them out a little, particularly if you are also using System Exclusive data to put an instrument into GM, GS or XG mode. There's more about this in the Appendix.

It's now common practice to use the first bar for set up data and to begin the song proper at bar 2.

### **Quiet in the mix**

Finally, you will have noticed that the Snapshot button records data for all MIDI channels, regardless of whether or not the song uses them. The extra data won't do any harm and hardly takes up any space in the file but you can turn this to your advantage.

Some instruments emit a little bit of background noise. This is usually caused by the sound generation circuitry. So, as well as adjusting the volume levels for the MIDI channels you are using, set the ones you aren't using to 0 to reduce any background noise.

Congratulations! You have learned some of the main principles of pattern-based arranging and know your way around EVAP's Track window and Mixer.

If you haven't done so already, look at the other files. Most were created using a pattern-based approach and you can see how Parent and Child patterns have been used to structure the pieces.

### **Mixing the audio track**

We have mixed the MIDI tracks but what about the audio track? Audio playback is through your sound card so you must use your sound card's software to set the balance. Most sound cards come with a set of utilities for playing MIDI and WAV files and virtually have a software mixer.

Sound Impression is a popular one and bundled with several sound cards:

The Creative range of Sound Blaster cards include the Creative Mixer:

Whichever mixer you have, use the Wave control to set a suitable balance for the audio track. You may also be able to pan the audio parts left and right. If you are also using the sound card to play the MIDI parts, you will be able to adjust their volume with the mixer, too

That's the end of the Arranging Tutorial.

What do you mean, the Techno song isn't finished? Well, it's served its purpose and if you like it, why not finish it yourself? - after completing the rest of the Tutorial, of course!

# The Chords Track Tutorial

[Arranging the Chords tracks](#)

[Realtime Style Playing](#)

[Realtime Chord Recording](#)

[Using the on-screen keyboard to record chords in realtime](#)

[Using your QWERTY keyboard to record chords in realtime.](#)

We'll now look at one of EVAP's most interesting features - the Chords Track. This lets you create a full six-part accompaniment very quickly in one of 16 styles.

Select New from the File menu and save whatever you've been working on. Let's create a Hooked On Classics piece using Liszt's Liebestraum. We've put the piece, originally in 3/4 time, into 4/4 and we'll give it a Disco rhythm.

First we'll create the chord track. The chord sequence is as follows:

```
F A7 D7 G Gm/C F /  
F A7 D7 G Gm/C F /  
Gm F Dm7 A7/C  
F A7 D7 G Gm/C F /
```

Note that the Gm/C and the A7/C symbols indicate two chords in one bar, each lasting two beats.

Set **Chord Snap** to Bar and Select the Pencil tool. Click in the Chords Track and drag from Bar 1 into bar 2. The Snap function will make the pattern fill the two bars. You'll see a new set of data appear in the Information bar which we'll get to in a moment.

Click another six patterns into bars 3 to 8. You don't have to click and drag, just click near the start of the bar and the pattern will automatically fill it. You'll have a row of patterns filled with the chord of C.

Select the Arrow tool and click on the first pattern. A set of parameters will appear in the Information line.

Click on the **Style** box and a list of Styles will pop up.

Select the Disco pattern. Now click on the **Chord** box and select F. This is the root of the chord.

We want the chord of F major and Maj is already selected in the **Type** box so we can leave that alone.

Click on the second chord pattern and set that to F in the same way. When you get to the next chord, A7, select 7 in the Type box.

Carry on entering chords until you reach bar 7. We need two chords in this bar so we have to split the pattern in two. Click on the Chord Snap box and set it to 4. Select the Knife tool and cut the pattern in two and then set the chords as before.

The second set of patterns in the same as the previous set - not including the very first pattern which is used for an intro - so select all the patterns, hold how Control and drag them to the start of bar 9.

Now click in another four pattern - set Chord Snap back to Bar - and change the chords in them. The final six bars are the same as the set you copied earlier so select them again and copy them to the start of bar

19.

Select an instrument such as String Ensemble on Track 1 and set it to record. Click on the Record button and record the melody as the accompaniment plays.

You may find that the Chords track is rather loud in comparison with the more gentle melody line you're trying to play. That's because the accompaniments have been created with high velocities - to give you the opportunity to turn them down if need be.

Open the Mixer and you'll see that the accompaniment is using MIDI channels 10 to 15. The accompaniments have built-in sets of sounds, reverb, chorus and pan settings, and volume levels and these will be reflected in the Mixer - providing the **Song data to mixer** box is checked in the Mixer Settings... window.

It's no use changing the settings in the Mixer as the settings in the track will override them. The easiest way to change them, certainly on a temporary basis, is to reduce the velocity in the Vel column.

Now that you've recorded the melody and chord line, try selecting different Styles. Because the chords are the same, the styles will still fit the melody line although some of them may sound a little strange! The Waltz, in particular, as it's in 3/4 will sound decidedly odd. The timing will seem to be out but the chords will still fit.

### Arranging the Chords tracks

Put the Style back to Disco and select the first chord pattern.

Each pattern contains six instruments which you can switch on and off by clicking on the LEDs in the Information Line.

The first two bars are an intro so let's remove the accompaniment parts leaving just the bass and drums. Click on the Acc1, 2, 3 and 4 LEDs to switch them off.

The next section is repeated so let's build up the accompaniment slowly. Select the first pattern in the section, bar 3, and deselect Acc3 and 4. Do the same with the patterns in bars 4 to 8.

### Realtime Style Playing

Before recording a style chord track you should rehearse your chord changes. To do this, click on the active button on the screen keyboard and when ready to play click on any of the notes in the active region. Unless loop mode is on the style will continue to play until the stop button is pressed. When in SFC mode, the lower octave of your external keyboard will be used to change the chords. To play a major chord, play the chord note on your keyboard. To play a 7th chord such as a C major 7th (this will add the seventh note above C which is a B flat), you need to hit the C note plus the first white note beneath it. This would be true for any chord. To play a minor chord you would need to play the first **black** note beneath the chord note. A minor Major 7th chord is possible by playing the white **and** the black notes beneath the chord note.

Major	Chord Note only
Minor	Chord note & first white note below
7th	Chord note & first black note below
Min Major 7th	Chord note plus first white & black notes below

## **Realtime Chord Track Recording**

If you'd prefer to lay down a chord track in real time rather than having to insert each pattern individually, then EVAP will allow you to do just that.

To record chords in realtime you will have to turn on the Hold, Synchro and Active buttons on the keyboard window. Then, just as you would with any MIDI channel, enable the chord track for recording by pressing the button in the record column.

Choose your style and then hit the record button on the transport bar. This will (if selected of course) start the metronome count-in. Play the single fingered chords on the first beat of the bar. You can play the Single Fingered Chords from either an external keyboard such as the Evolution MK-149, the PC Keyboard or from the on-screen keyboard.

Press stop to finish your recording. On playback, the chord track will play the chord patterns displayed in the chord track unless other chords are played "on top". The styles will always play the chord patterns displayed if "Active" is turned off.

When playing a chord using 2 or more keys of your external keyboard, hold down the keys for the duration of the chord before playing another chord. This is not necessary for Major chords.

### **Using the on-screen keyboard to record chords in realtime**

You can use the on-screen keyboard to record your chords in realtime. To do this, enable the Hold, Synchro and Active buttons and then click the mouse on any note in the bottom octave of the keyboard. The active region is coloured blue. To change the chord type you must select the type (e.g. aug or sus4) from the 12 boxes on the right hand side of the keyboard window.

### **Using your QWERTY keyboard to record chords in realtime.**

To do this you should enable the "PC keyboard" option on the screen keyboard and then record the chords as you would do using the mouse. See the [keyboard window](#) for more information on how to use the PC keyboard to input Single Fingered Chords. To access the lower octave by using the QWERTY keys you must hit the "Scroll Lock" key on your keyboard. (It is usually situated on the top row).

# The Conductor Tutorial

The Conductor window is where you set and change the Time Signature, Key Signature and the Tempo.

Load BRAHMS.SNG. This is one of Brahms' Hungarian dances. Play it through you'll notice that it slows down and speeds up a lot. That's where a lot of its excitement comes from. Open the Conductor window.

The squares with the red dots in them are **Conductor Points** and these indicate places where a tempo change occurs. The tempo is shown down the left of the window. The Conductor window is very friendly and automatically resizes its contents when you resize it.

Try it now. Grab the bottom right corner of the window and drag it up and down and you'll see that the tempo markings and the Conductor Points change size automatically in order to fit into the window. This is very useful if you want to see the Conductor as well as other windows which restrict the information you can see if you make them smaller.

Adjust the window until it's a comfortable size and play the piece. Keep an eye on the Play Position line in the Conductor. You'll see that as it passes over the Conductor Points the tempo speed up or slows down. If you can keep your other eye on the Tempo box in the Transport window you'll see the tempo change when the Play Position passes a Conductor Point.

Close the Conductor and click on the Conductor icon in the Transport window to deselect it. This deactivates the Conductor. Now when you play the piece you'll see how flat and lifeless - and boring! - it is. Switch the Conductor back on.

Note, you don't have to switch the Conductor icon on when you open the Conductor window as it is automatically activated when you open it.

Select all three tracks in the Tracks window and open the Score editor. You'll notice that there are a lot of sharps in the note display. That's because the piece is in the key of A and the Conductor is still in its default state and telling the program that it's in the key of C.

Open the Conductor and click on the **Key Signature Display** to highlight it.

Two entries will appear in the **Information Line**. The **Position** will show the time in the song that the Key Signature occurs - in this case it begins right at the start at 1:01:000. The **Key** box confirms the Key Signature as being C.

Click on the Key box with the right mouse button and the Key Signature will change. You'll see the changes taking place as you do so in the Score Editor. Set the key to A and most of the sharps will disappear. The piece is actually in F# minor which has the same key signature as A.

The Time Signature is not right either. It should be 2/4 but it appears as 4/4/. Select the **Time Signature Display** and the Position and **TimeSig** boxes will tell you the Time Signature and when it starts. Click in the TimeSig box with the left mouse button to reduce it to 2/4. You'll see the score display change as you make the adjustment.

Let's say that you'd like to speed up the piece. Click on the highest Conductor Point in the first group. It will turn black to show it's highlighted

Its timing position will appear in the Position box and its tempo in the Tempo box. You can alter the Point in several ways. If you click on the Position or Tempo values, they will scroll to new ones. You can also click and drag the Conductor Point to a new position. When you release the mouse button its new values will appear in the boxes.



Remember, you can undo the last value change by selecting **Undo** from the **Edit** menu or pressing **Ctrl+Z**.

You can change several Conductor Points at the same time by clicking and dragging a lasso around them or by Shift-clicking on them.

If you want to add new Conductor Points, right-click in the window, select the **Pencil** tool and click new Points into the window.

You can also create new Point by holding down Ctrl while you drag a point. This makes a copy of the Point and places it at the position where you release the mouse button.

You can insert new Key and Time Signatures, too, very easily by clicking in the Key Signature and Time Signature Displays with the Pencil.

You can select each entry individually and change it with the mouse buttons. To remove an entry or one of the Conductor Points, click on it with the Eraser.

# The Drum Editor Tutorial

[The Grid](#)

[The Information Line](#)

[Adjusting drum velocities](#)

[Hit colours](#)

[Creating a rock pattern](#)

[Building a drum track from patterns](#)

[Editing Child and Parent patterns](#)

They say that the musicians who write the best drum patterns are drummers. That may be true but EVAP's **Drum Editor** makes drum pattern programming easier for everyone and it can help you be more creative.

Load the TECHNO.SNG file, highlight the first HiHats pattern and click on the Drum Editor icon.

The Drum Editor uses a programming method similar to that used by most stand-alone drum machines. The **Drum Display** on the left lists the drums which are available in the current drum kit. Drum kits can be easily customized and loaded and saved. There's more about this in the Reference section.

The right of the window is the **Hit Display**. A grid divides the bars into subdivisions of the beat and drum hits - the LEDs - are placed on the grid. Like the Track window, the two sections are separated by a **Divider** which you can drag left and right.

## The Grid

You can adjust the resolution of the grid with the **Grid** selector. First of all, use the Zoom button so the two bars fill the display area. Set the Grid to 16. The hi hat hits fall exactly on the grid lines. Now set the Grid to 32 and the number of grid lines will double.

Now set it to 64. You probably won't see any change. That's because the display automatically adjusts itself to the current zoom setting. If the program were to draw 1/64th note lines in between the 1/32nd ones, the display would be incredibly difficult to read.

Click on the Zoom In button. You'll probably have to click on it twice and a single bar fills the display area you'll see the 1/64th beat divisions appear.

Zoom out again and set the Grid to 8. You'll see that the Closed HiHat hits are no longer on a grid line. Click and drag one of them and move it slightly left or right, just a little. When you release the mouse button, the hit will snap to one of the grid lines.

As well as displaying beat divisions, the Grid makes sure that the hits you enter fall squarely on the grid lines. The grid makes it easy to visualize the rhythm which helps when constructing drum patterns.

To put the pattern back to its original state, click on the **Recall** button and the pattern will revert to the way it was before you opened the Drum Editor.

Start playback. When the song reaches bar 3, the Play Position Line will appear in the editor window and move across the display. If you want to listen to the contents of the editor without the distraction of the rest of the song, click on the **Edit Solo** button.

## The Information Line

Click on one of the hits and look at the **Information Line**. This gives you exact information about the hit and you can alter any of the parameters by left and right clicking.

Close the window by clicking on the **Close** button, select the Tambourine pattern and open the editor again. EVAP allows you to have several editors open at the same time but we'll work with one at a time at the moment to avoid any possible confusion.

Adjust the window and the zoom setting so you can see the two bars of hits. Set the Left and Right Locators to the start and end of the pattern - if you're using the original TECHNO.SNG file this will be bars 5 to 6. Make sure the Edit Solo button is on and start playback.

You'll probably be able to hear that the hits are not all the same volume. If it isn't obvious, try the following. Select the first Tambourine Child pattern in the Track window and click on the Drum Editor icon. This will open a second Drum Editor window.

Set the Left and Right Locators to encompass both patterns - in TECHNO.SNG this will be from bars 5 to 8 - and switch on Cycle mode. Right-click in the Display area to open the Toolbox.

### Adjusting drum velocities

The **Velocity Modifiers** and the **Drumstick** tools are unique to the Drum Editor. The Velocity Modifiers increase or decrease the velocity of a hit by 10. The Drumsticks are used to enter hits onto the grid.

Select the Up Velocity Modifier and click on each of the hits in turn until they turn purple. If you click once too many times, the hit will turn red. No problem. Select the Down Velocity Modifier and knock it back down to purple.

If you want to hear the drums as you are entering them, click on the **Speaker Switch**:

When it's on it will transmit the hits and changes you make to the hits via MIDI. When it's off, it won't but the hits will still sound during playback.

Solo the track in the Track window and click on play. You'll hear the original pattern followed by a pattern whose velocities are all the same. The hits on the beat are louder than the others and the different velocities give the original pattern a rhythmic pulse. The second pattern has no velocity variations at all and is rather flat, lifeless and robotic. You should aim to build velocity variations into your drum patterns as this will make them sound more human and interesting.

### Hit colours

EVAP uses colours to represent velocity values. Each colour represents a change in velocity of 10. However, the colours don't represent absolute velocity values, rather they are relative to the initial velocity value set in the **Vel** column. Let's see how this works by constructing a drum pattern.

Select **New** from the File menu. The program will tell you that the song has changed and ask if you want to save it. You don't as that would overwrite the original file so click on No.

Select the Pencil tool and click a pattern onto track 10 at bar 1. If Snap is set to Bar, clicking close to the start of bar 1 will do the trick. The pattern will be highlighted so click on the Drum Editor icon to open it.

Select the Large Drumstick. This clicks hits onto the grid at a velocity determined by the value in the Vel column. It defaults to the maximum velocity of 127. Click a few hits onto the grid and they'll be red.

Add some hits with the Small Drumstick. This enters hits at a the default velocity minus 10 less and the

colour purple. Click on the hits with the Arrow and check their velocities in the Information Line.

Now select the Down Velocity Modifier. Click on a red hit and keep clicking until it turns light grey. The hit will cycle through the following colours and have the following velocity values:

<b>Red</b>	<b>127</b>
<b>Purple</b>	<b>117</b>
<b>Blue</b>	<b>107</b>
<b>Green</b>	<b>97</b>
<b>Dark Cyan</b>	<b>87</b>
<b>Dark Grey</b>	<b>77</b>
<b>Grey</b>	<b>67</b>
<b>Light Grey</b>	<b>57</b>

Further clicking will continue to reduce the velocity by 10 each time but the colour will stay the same.

Select a drum which doesn't contain any hits and reduce the value in the Vel column to 107. Now click a couple of hits in using the Large and Small Drumsticks. The colours will be red and purple respectively because they are relative to the Velocity setting. In other words the red hit is at the maximum default value and the purple hit is 10 below.

Now scroll the Vel value up to 108 and the colours change to purple and blue. You've increased the default value so the first hit is no longer in the top 10 so it drops down a colour. Scroll up and down through the Vel value and see how it changes the colours.

The system works with relative values rather than absolute values to enable you to balance the sounds in a drum kit. For example, a deep snare drum with reverb will probably be much louder than a triangle. You could, therefore, reduce the default velocity of the snare to a suitable level so when you click in hits they will be balanced with the rest of the kit.

If you're using a General MIDI sound source, the default values will be fine in most cases.

## **Creating a rock pattern**

We'll use the Drum Editor to create a rock pattern. Close the Drum Editor and delete the pattern you've been experimenting with from the Track window. Use the Pencil to draw in a two-bar pattern on track 10 and open the Drum Editor again.

Let's start by creating the bass and snare lines. Turn Cycle on and set the Left and Right Locators to cycle between bars 1 and 2. Adjust the zoom so these two bars fill the display area and set the Grid to 16.

Click on play and you will hear the pattern play as you build it up. You may prefer to switch the Speaker Switch off to prevent the sound of the hits you are entering from playing and disturbing the flow of the pattern.

Click bass and snare hits onto the grid with the Small Drumstick. You can make up your own pattern.

Add a 1/16th note hi hat line on Closed HiHat. Add an Open Hi Hat on the second last 1/16th on bar 2 to create a little lift. We need to add some accents to give the pattern a little feel so use the Up Velocity Modifier to increase the velocity of all the snare hits, the hits on beats 1 and 3 in both bars and the Open Hi Hat.

You may feel the difference between the two velocities is not great enough so use the Down Velocity Modifier to reduce the hits which aren't accented.

If you like what you've created, save it.

### **Building a drum track from patterns**

An easy way to build up a drum track is to construct a few patterns and copy them in the Track window. You probably won't want the same two-bar pattern to play throughout an entire song so you can modify it slightly.

Close the Drum Editor and in the Track window, Control-drag the pattern onto bars 4 and 5. Unless you've altered the Preferences settings it will be a Child pattern with a dotted outline. Select it and open the Drum Editor.

### **Editing Child and Parent patterns**

Add some extra hits to the pattern. At this stage it doesn't matter what you add. Now click on the Close button and a dialogue box will appear asking if you want to convert the pattern into a Parent pattern.

If you say Yes, it will become a Parent pattern in its own right. However, if you say No, the original Parent pattern will be changed and become the same as the Child pattern you've just edited, and all its Children will be altered accordingly to reflect the changes.

This is a logical consequence of the Parent/Child relationship. As a Child has the same notes and events as its Parent, you cannot change its contents because it would then cease to be a Child.

If you edit a Child, EVAP assumes you want to do one of two things - edit the Parent or create a new, original pattern. Perhaps you're working at the end of a song and the original Parent is near the beginning. Editing a Child saves you scrolling through to the start and if you select the No option, the program will helpfully edit the Parent for you.

Alternatively, you may want to modify the pattern at that position in the song but leave the Parent and its other Children alone so you would say Yes to convert the Child into an independent pattern.

# The Event Editor Tutorial

## The Display Filter

### Editing selected events

### Editing System Exclusive messages

The Event Editor shows data in a list. It's the nearest you want to get to viewing raw MIDI data - and it's some way off that! However, it gives you very precise control over every aspect of your music. In many ways it's the most powerful of EVAP's editors although you won't want to use it all the time.

Each editor has a range of functions it excels at and the Event Editor is ideal for:

- \* Viewing all events and seeing where they are in relation to each other.
- \* Adjusting events' values and timing with extreme precision.
- \* Entering and editing System Exclusive data.

Load EVENT.SNG which is the first few bars of the lead string part in Vivaldi's Spring from The Four Seasons. Select the pattern, open the Event Editor and play it. It probably sounds okay although there is a glitch at the beginning of the third bar.

## The Display Filter

Examine the part in the Event Editor. The main body of the display shows the MIDI events in the pattern. Above them is the

**Display Filter** which hides certain types of event from the display.

Switch all the filters on so they are black rather than grey and you will see all the MIDI events in the pattern. By switching the filters on and off you will see that there is Note, Controller and Bend data in the pattern.

You can select any event simply by clicking on its name. Note that the last three column heading change according to what event is currently selected. If you highlight a Note, for example, the last three columns tell you the Key (note name), Velocity and Length. Select a Controller and you'll see its number and value.

Let's sort the chaff from the wheat. We'll start by getting rid of the glitch. Switch the Controller display off so you can see just the Note and Pitch Bend data. Look at the two sets of Bend data. It appears that they should be the same but the first set has acquired a few extra instructions which boost the pitch causing the glitch.

Highlight the offending entries - the ones with 124 and 116 values. You can do this by clicking and holding on one then dragging the mouse to the other or by **Shift-clicking** on each event. This process allows you to select non-consecutive events.

Now click on the Delete button at the top of the window or press the Delete key on your PC's keyboard. The two events will be removed.

Does that sound better? If you're not sure, use the Undo and Redo functions to compare the pattern before and after. You could also click on the **Recall** button. This restores the pattern's original contents to the state they were in when the editor was opened. If you close the editor then any changes you made are stored.

Recall is a very useful function because if you make a complete pig's ear of an edit, you can easily go back to the original state. Likewise, if you have made an edit you're happy with, you can close the editor and open it again and the edit will be saved. There's a Recall button in all the editors.

### **Editing selected events**

We sorted out the Pitch Bend so click the Bend filter off and switch the Controller on. There are a lot of Volume instructions here. Are they really necessary? And what effect do the Modulation instructions have?

Let's try a quick and dirty test. Switch the Note filter off so you only see the Controllers. Choose Select All... from the Edit menu and delete the selection using one of the methods described above.

Now play the piece and use Undo and Redo to compare the two versions. Put the pattern into Cycle mode if you wish. You'll hear that the Volume instructions do make a difference by subtly changing the volume of the notes as they are sounding. Perhaps the programmer should have used Expression instead of Volume (see the Appendix for further information about these two Controllers) but otherwise a lot of thought has gone into making the piece expressive.

What of the Modulation instructions? Do these have a noticeable effect on the notes? You can use the same procedure to remove them from the pattern and find out.

### **Editing System Exclusive messages**

Open the GM\_REST.SNG file and look at the pattern in the Event Editor.

Not much to see, is there?

System Exclusive messages have a number of uses. One of the most common is to put a unit into a certain mode such as GM, GS or XG (there's more about Sys Ex messages and General MIDI in the Appendix). It's also used to edit synthesizer voices but that requires a dedicated editor and is beyond the scope of EVAP and this manual.

However, because of their flexibility, Sys Ex messages can contain any amount of data. Unlike a Controller message which has a Controller Number and a Value, a Sys Ex message could contain several dozen - or even a few hundred - bits of data.

Rather than try to show all this in the Event Editor, EVAP simply tells you that there is a Sysex event there and if you want to see it in more detail double-click on it.

This is EVAP's System Exclusive Editor where you can edit and create Sys Ex messages.

# The Fast Menu Tutorial

The Fast Menu is a very useful feature designed to save you time. You can program it with the ten functions you use most often and to call a function you simply click on its button in the Fast Menu.

If you can't see the Fast Menu on screen, select **Show Fast Menu** from the **Window** menu.

To customize the Menu with your top ten items, select **Configure Fast Menu...** from the Windows menu.

The items on the right are the ones which are currently in the Menu. To remove one, highlight it and click on the **Delete** button.

The list on the left shows the functions which can be placed in the Menu. To add one, highlight it and click on the **Add** button. If there are already ten items in the list, the Add button will be greyed out.

To change the order in which items appear in the Menu, highlight one and click the **Up** and **Down** buttons to move it through the list.

The default set of items may not be ones you use the most. You have now worked your way through most of EVAP's major functions and if you found yourself using certain commands a lot, put them in the Fast Menu.

You may find that when you are working on certain songs or certain styles of music, you tend to use some functions more than others. If that's the case, reconfigure the Fast Menu as you go. It only takes a few seconds and it will ensure that the commands you use most often are readily available.



# The Mixer Tutorial

## Recording Mixer movements

### Taking a Snapshot

EVAP's Mixer is the computer equivalent of a studio mixing desk. It lets you balance the volume levels of the instruments in your music, adjust their pan positions, and set reverb and chorus levels. You can also use it to record a live mix so the changes you make are recorded into your music.

The Mixer has 16 channels for each MIDI output in your system. These are listed just below the Title bar and you select one by clicking on it. The name will highlight by turning blue to show that it is the currently-selected mixer.

If the Output has not been selected in the **Devices...** menu, the mixer will be grey and you will not be able to move any controls. If the device is an active one, the mixer will be coloured.

The mixers are all part of one long window and you can scroll through them to reach the one you want. However, a much easier method is to select the Output and then click on the Auto Size button. This resizes the window so the one set of 16 channels fits the window exactly.

Each channel is exactly the same

Working from the bottom up, first there is a **Volume** fader. The text beneath can show the Track or Patch names or simply the word "Volume". These options are set from the **Mixer Settings...** window which is described in detail in the Reference section.

To the right of the slider is a meter which shows when notes on that MIDI channel are being transmitted. It responds to the velocity data of the notes, not volume data, so you can see which channels music is being transmitted on. This can also help with troubleshooting. If a particular music line is not sounding, you can confirm that it is actually being transmitted. If you Mute the channel, the meter will be muted, too.

Next up are **Mute** and **Solo** buttons. These work exactly like the Mute and Solo buttons in the Track window.

The **Pan** pot places the sound in the stereo image. Obviously, you need a stereo output in order to hear this.

The next two pots are user-definable and can be set to control Pitch Bend, Modulation, Expression or a number of other MIDI controllers. The settings are made in the Mixer Settings... window. When you first start using EVAP they will probably be set to **Reverb** and **Chorus** levels.

To adjust one of the rotary pots, click and hold on it and drag the mouse up and down.

Above the pots is a **Flat** button which sets all the controls on that channel to maximum or to centre positions. You can flatten any individual control by holding down **Ctrl** and clicking on it. This is useful if you want to make sure a Pan pot is centered, for example.

The numbers at the top indicate the MIDI channel and cannot be altered.

There's just two more buttons to look at.

The **All Flat** button flattens all the controls in all of the channels.

When you click on the **Snapshot** button, it transmits the values of all the knobs and faders via MIDI. If you are recording and the **Record mixer movements** box in the Mixer Settings... window is checked, the

values will be recorded. This is a good way of storing settings into a song.

### Recording Mixer movements

Let's have a bit of fun and do some practical mixing in the process. Load the BUMB\_B1.SNG file which is The Flight of the Bumble Bee. Open the Mixer Settings... window from the Options menu and make sure the **Song data to mixer** and **Record mixer movements** are checked.

The first makes the Mixer respond to Volume and Controller data which is in the song. The second records changes you make in the Mixer, providing you're recording at the time.

Play the file and watch the Mixer. You won't see anything exciting happening because there's no Controller data in the files. Let's make the bee buzz around a bit.

Click on the **Add MIDI Track** icon in the Track window.

Activate the Record button in the Rec column. If there's no Rec column, select it from the Select Track Columns window as described earlier. Set the Track's MIDI Channel to 0. Click on the All Flat button in the Mixer and then on the Record button in the Transport window.

Now, any Mixer movements you perform will be recorded into the track. Click and hold on the Pan pot in channel 1. This contains the melody so move the "bee" around from one side of the stereo image to the other. You can be as wild and erratic as you like but for a more artistic interpretation you might like to try smooth movements from one side to the other to imitate a "flight" rather than a jump!

Play it back and you'll see the Pan pot move in response to the Pan data.

Create another MIDI track, click its Rec button, set its MIDI channel to 0 and use it to record movements for the second violin part. As this is not so busy, you may like to be a little more restrained with it.

Save the song. Use a different name such as MYBEE. If you want to see one we prepared earlier, load at BUMB\_B2. Select the first track and open the Piano Roll Editor. Select Pan in the drop-down Display menu and you'll see the pan data in the Velocity Display section of the window.

There is probably a lot less of it than in your piece. That's because it has been thinned using the **Thin Out Continuous Events...** function. You might like to thin out the data in your Bumble Bee song. This procedure was explained in the Piano Roll Tutorial.

While you're in the Piano Roll Editor you might like to try another way of recording the Pan data and that's to draw it in to the Velocity Display.

### Taking a Snapshot

After creating a piece of music, you may decide you only need to use one set of parameters for the whole piece. Instead of entering this data into the Event Editor, you can create the settings in the Mixer and save them directly to a track by taking a Snapshot.

Load the GAUDETE.SNG which is an old Christmassy choral work. Flatten the Mixer and play it. If you have better voice and choral sounds than those in the standard GM set then by all means use them.

However, you can improve the GM sounds by adding reverb and chorus and you can make the piece more interesting by spreading the voices around the stereo image. Make sure the top two user-definable pots are set to Reverb and Chorus. If they aren't, use the Mixer Settings... window to make them so.

Play the piece and adjust the Reverb and Chorus settings. Adding reverb will make the voice appear to be in a large hall - it can add considerably to the Cathedral effect. Adding Chorus thickens the sound.

Give each voice its own position in the stereo image. You may like to pan the highest one to the right and place the lower ones further to the left or you could pan the two highest voices fairly well left and right and place the two lowest ones in between them.

When you have a mix you like, add new track as you did before, click on its record button and set it to MIDI channel 0. With EVAP recording, when you click on the Snapshot button, all the Mixer settings will be recorded into the track.

Obviously, you want these to occur before the first note so you have to click on Record in the Transport window and then on the Snapshot button after the count-in has finished but before the first note has sounded. That's pretty difficult because the first note actually occurs on the very first beat of the bar. In fact, it's impossible!

It's common practice among those who create MIDI files to leave the first bar free for setting-up data. It's not just a question of squeezing all the data in before the first note. Some instruments take a short while to initialize after receiving certain types of information so you want to make sure they are correctly prepared for the music to avoid a glitch.

That's easily done in EVAP. Select all the tracks in the Track Editor, either by lassoing them all or by selecting Select All from the Edit menu. Make sure Snap is set to Bar and drag them en mass slightly to the right where they will snap to the second bar. If this isn't easy to see, zoom in until the bar lines in the Timeline are clear.

Now you have a full bar in which to click on the Snapshot button. But don't take too long - do it as soon after the count in as possible.

Switch on the metronome in the Transport window to help you. Are you only getting a two-beat count in? Check the **Metronome Settings...** window and look at the **Count in Bars** section. Does the count in say 1 bar? And you're still only getting two beats count in. That's because the piece is in 2/2 time which only has two beats to the bar. Check it out in the Score Editor or the Conductor.

Change the Count in Bars to 2 and you'll get four clicks count in. The Metronome Settings... window is described in detail in the Reference section.

Here's a sort of negative tip. If you click on the Snapshot button during the last two beats of the count in, the data will still be recorded but it will be moved to the first beat of the bar - all of it! Try it.

Now, if you absolutely must start the music on the first beat, this is a good way to get your setting up data in there, too. You would need to move any notes which actually occurred at position 1:01:000 to a slightly later time position to avoid any glitches.

MIDI is a serial transmission protocol (there's more about this in the Appendix) which means it can only transmit one item of data at a time. If there is lots of data on the same time positions, they are still sent out in a queue. If there is a lot of data, this could cause a time delay or a glitch. The moral of the story is to avoid these situations as much as possible if you can.

It's a good idea to delete any data which was not required. With this piece that would be all the data on channels 5 to 16. In fact, purely in the interests of tidiness, economy and clarity it's a good idea remove all surplus data from your sequences.

This is easy to do in the Event Editor - just click and hold on the first event on channel 5, drag downwards to select all following events and then delete them.

However, if you want the piece to play correctly on any instrument you would also want to include a GM, GS or XG Reset message along with other Controller messages to set the Pitch Bend range, centre the Modulation wheel and so on. Some instruments can take a while to respond to a Reset message - a "while" in MIDI terms may only be several milliseconds but if the instrument receives a Note On message during that time it may not play correctly - so you need to give an instrument time to set itself up.

Now, assuming you have recorded the data after the first beat, take a look at it in the Event Editor.

You'll notice that the data for each channel has been separated by six or seven **ticks** (ticks and timing positions are fully explained in the Reference section). This ensures that the sequencer does not try to transmit all the data at once which is a "good thing" as we discussed earlier.

# The Piano Roll Editor Tutorial

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[Partial Quantisation](#)

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[The Velocity Display area](#)

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The Piano Roll Editor is the note equivalent of the Drum Editor. The **Note Display** area shows notes as rectangular bars on a grid against a keyboard on the left which indicates pitch. It takes its name from the Pianolo rolls of yesteryear which consisted of rolls of paper with punched holes which triggered the keys on an specially-adapted acoustic piano.

Load the PIANOROL.SNG file, select the pattern and open the Piano Roll Editor. Adjust the window so you can see all four bars in the display. Use the Vertical Zoom In and Out buttons to set the display to a comfortable size.

Most editing takes place on the horizontal plane rather than the vertical one so it's not necessary to have a really deep display.

Like the Drum Editor, you can change the grid resolution with the **Grid Selector** and if you set too fine a resolution it won't show in the display until you zoom in. The shortest notes in this pattern are 1/16th notes so set the grid to 16.

Activate Cycle mode and set the Left and Right Locators to cycle through the pattern. Listen to it closely. You can probably hear that the timing is a little less than perfect. Look closely at the notes. To be in perfect time, the beginning of each note should sit squarely on one of the grid lines. Very few do and some are as much as 1/32nd out. You may want to zoom in a little to see this better.

You can put this right in two ways - you can adjust the notes manually or you can apply some quantisation.

## Quantisation

Quantisation is the process of pushing and pulling notes onto certain divisions of the beat, basically to correct sloppy timing. It's one of the great functions you can perform with a sequencer but it has been much overused - and still is.

Quantisation can produce note-perfect timing but the trouble is, even the greatest musicians in the world don't play with such precision. The fact is, it's the small timing differences in a performance which make it sound interesting. So, use quantisation by all means but don't regard it as a universal panacea for poor playing and timing or your songs will turn out mechanical.

Lecture over. Let's see what we can do to tidy up this bass line.

Look at the grid and you can probably see that the lowest notes are supposed to occur on the beat, the highest notes in between the main beats and the middle notes on the beat a sixteenth before the main beats.

The lowest notes are fairly accurate so we'll leave them alone for the moment. The highest notes aren't too bad, either although a few are a little late. Some of the middle notes, however, particularly in bars 2

and 3 are almost a thirty-second late. Let's try to sort those out first.

We'll quantize the whole set of middle notes en mass. Drag a lasso around them so they are all highlighted. Select **Quantize...** from the **Procedures** menu and set the **Quantize Setting** to 16.

## Partial Quantisation

The Quantize routine usefully allows you to perform a partial quantize which is expressed as a **Percentage Change**. A full quantize will move a note onto the nearest specified division of the beat, in this case to the nearest sixteenth division. However, a Percentage Change of 50, say, would only move it half way towards the division. This improves the timing but doesn't make it perfect so there is still some "human feel" left.

We'll go the whole hog and use a setting of 100 percent!

Click on OK and watch the notes - they'll jump to the nearest grid division. But see what's happened - some of them have moved the wrong way! Play the pattern now and it'll sound worse than before. That's because some notes were so far out of time they were moved onto the wrong division.

However, it's easy to see where the notes should be. The culprits are on the first beat of bar 2 and the first beat of bar 3. Deselect the notes by clicking on an empty part of the Display area and, with the Arrow tool, drag the two notes back a sixteenth.

Whoops! There's still a note in the middle of bar 2 on the wrong beat. Drag that back a sixteenth, too. No, there's still another one. Can you spot it? You'll certainly be able to hear it. Put that right, too. Now what does it sound like?

Well, there's still some poor timing in bars 2 and 3. Let's try quantizing the highest notes in these two bars only. Drag a lasso around them, select Quantize... and set the Percentage Change to 50.

No, we've got the same problem. One of the notes is so far out it's being pulling onto the wrong beat. Drag it onto the right division.

The timing is better but it still sounds a little raggy. That's because even though the timing of the original recording was pretty poor, the performer (who shall remain nameless!) was still playing with a sense of rhythm. By quantizing selected sections we have destroyed that rhythmic relationship between consecutive notes.

But we can fix it. Choose **Select All** from the **Edit** menu. All the notes will highlight. Now quantize them all with a Percentage Change of 50.

There!

Zoom in and examine the notes. They have been pulled nearer to the beat they are supposed to be on but, because we used partial quantisation, they are not "note perfect" and still retain a little human feel.

Now try applying 100 percent quantisation to all the notes. You'll see them move on the grid but can you hear the difference? Use **Undo** and **Redo** in the **Edit** menu to flip between the two versions. There's not much in it, is there? Without getting into the realms of psychoacoustics, the small variations in the partially quantized piece will sound slightly more interesting to the listener, especially if an entire piece of music is partially quantized rather than fully quantized.

## Changing note lengths

We can experiment further with this bass line. Save the partially quantized pattern so you can retrieve it again if you change it beyond recognition through editing.

Start Cycle playback as before, select all the notes and select **Change Lengths...** from the **Procedures** menu. The pattern consists of 1/8th and 1/16th notes. Let's see what happens if we change them all to 1/16th notes.

Click on the **Fixed Length** button, set it to 16 and click on OK. The timing has not changed but the 1/8th notes are now shorter and the pattern will sound staccato.

Undo that and apply a Fixed Length of 8. The line will now have many overlapping notes and will have a sustained effect.

Undo this and then try **Remove Overlaps**. You'll see the top set of notes in particular shorten. The line will sound smoother, not as clipped as the staccato change, but we have lost the sustain effect of the overlapped notes.

### Music for monophonic instruments

Which do you prefer? Because of the overlap, the original has more depth, especially when played using a piano sound. However, removing overlaps can be useful if you are trying to create an authentic sound using a monophonic instrument, that is one which can only play one note at a time such as a trumpet or violin.

You can see how effective this is by playing the line using different sounds. You don't have to stop playback, simply select **Patch Lists...** from the **Options** menu and single click on various instruments.

### The Velocity Display area

Below the Note Display is the Velocity Display area. At the moment it contains vertical lines which represent the velocities of the notes above them. When you highlight a note its velocity highlights, too, and vice versa. You can highlight a velocity by clicking on it or by lassoing it. The lasso must completely encompass the velocity bar.

You can move a note by dragging its velocity left or right. This method does not allow you to move a note up or down and so change its pitch and it's useful if you want to adjust the position of a note and you're working on a grid which is zoomed out vertically.

You can edit the Velocity with the Cross hairs cursor. Right-click in the editor window to call up the **Mouse Tools Selector** and select the Crosshairs.

Moving this across a velocity bar will change the value according to the vertical position of the Crosshairs. This is a very easy way to adjust the velocity of a note.

You can also drag the Crosshairs across a number of velocities to create a gradual increase or decrease in volume - not withstanding the information given earlier regarding the difference between Velocity and Volume data!

### Viewing MIDI Controller data

The Velocity Display can show other types of MIDI controller data - all 128 types, in fact, plus a few specialized controllers such as Pitch Bend and Aftertouch. There's a complete list in the Appendix.

They are selected by clicking on the arrow to the right of the Display box and then selecting the required controller from the drop-down menu.

You can try selecting other controllers but you won't see anything in the Display area because the pattern does not contain any other type of controllers.

## Editing Pitch Bend

Load the PITCHBND.SNG file and look at the pattern in the Piano Roll Editor. Select Pitch Bend in the Display box. Set the program to Cycle between the three bars and start playback.

As the Play Position moves across the Piano Roll window you'll hear the sound of the guitar bending downwards as it reaches the **Pitch Bend** data in the display. The second note begins after the pitch has been lowered and so is affected by the Pitch Bend, too. Instead of playing its own pitch which is E, it sounds with a pitch of D.

Look carefully and you'll see a small red dot in the Display just after the second note ends. This is a Pitch Bend value of 64 which is the central position of a Pitch Bend wheel and effectively turns Pitch Bend off. If this small piece of data was not there, subsequent notes would sound a tone lower than they should which could cause all sort of problems.

You can edit the Pitch Bend data simply by dragging the Crosshairs across the Pitch bend data.

You can create new Pitch Bend data with the Pencil tool. Try drawing some curves into the display. Note that the Crosshairs only edits or shapes existing data while the Pencil creates new data.

You'll notice that the data you draw in appears in solid red as opposed to the lines of the existing Pitch bend data. This is because the original data has been thinned.

## Thinning Controller data

Draw some Pitch Bend data into the display and activate playback. Now select **Thin Out Continuous Events...** from the **Procedures** menu. You can select the type of event you want to thin but as the only type in this pattern is Pitch Bend there's no need to select it specifically.

You do need to enter a value in the **Delete one event in every** box which determines how many events will be removed. Leave the setting at 2 which removes every other event, effectively halving the number. You'll see the solid block change to lines. Listen to the playback and it's unlikely that you'll notice any difference.

You can apply additional "Thins" to the data, each time halving the amount, and you may be surprised at just how much data you can remove without it effecting your perception of the sound.

There are three reasons why you may want to thin out Controller data:

\* As you have seen, there can often be more Controller data in a piece than is required. MIDI is a serial protocol which means notes and events are transmitted one after the other. Even events which are supposed to occur at the same time are transmitted sequentially.

It follows, therefore, that if there is a lot of Controller data, some events could be delayed considerably. In mild cases you may notice slight irregularities in timing. In extreme cases there may be a most noticeably hiccup. So, reducing the amount of Controller data can help preserve timing and ease the transmission load.



\* Controller data uses memory and takes up space in a file when it's saved to disk so reducing it conserves both. In these days when 4Mb and 8Mb of RAM is commonplace, this is not so important as it once was but if a piece contains a lot of Controller data the saving could be significant.

\* Reducing Controller data to its essentials makes it easier to see and easier to edit.

With a little practise you'll find it's not too difficult to draw in a smooth Pitch Bend curve by hand although most musicians find using a Pitch Bend wheel more intuitive.

# The Recording Tutorial

We've now looked at EVAP's main Editors so it's time to put everything together and record some music. This is the longest of the Tutorials but it brings together all the features you have already explored and it shows how to use them in a variety of ways which you'll do when creating your own music.

[Rechannelising with MIDI Thru](#)

[Using Local Control](#)

[Metronome Settings](#)

[Setting the Tempo and Time Signature](#)

[Recording in real-time](#)

[Recording in step-time](#)

We'll start from scratch. Select **New** from the **File** menu.

EVAP will give you the option of saving whatever you were previously working on and then give you a full compliment of 254 MIDI tracks with a **Chords Track** and an **Audio Track** at the top of the list. All the track parameters will be set to their default values which will be OFF or 0.

We'll record a bass line in real-time. Make sure the Rec button for Track 1 is on and you can see the MIDI and Patch Columns. If any of these is not showing, select it in the Select Track Columns box as described earlier.

Make sure your keyboard is properly connected and play some notes. If everything is working as it should, a red LED will flash in the MIDI column indicating that MIDI data is present on that channel. The indicator flashes for both incoming and outgoing data.

## Rechannelising with MIDI Thru

A good way to set up your equipment is to rechannel the incoming MIDI data through the sequencer. This was described under the Record heading in the Select Track Columns section of the manual but here's some more information.

If you are using a keyboard for recording but playing through a sound card or sound module, you obviously don't want to hear the sound the keyboard is producing. The solution is simple - turn down the keyboard volume!

However, if you are using a keyboard for both recording and playback, you will have another adjustment to make. You want to be able to hear the keyboard, but not necessarily the current sound you are playing.

The solution is to put the keyboard into **Multi-timbral** or **Combi mode**. This allows it to play different music lines on different MIDI channels via MIDI. The manual will tell you how to do this - it's usually just a matter of pressing a button or selecting an option from a menu.

## Using Local Control

You also want to switch **Local Control** off. This effectively disconnects the physical keyboard from the sound-generating section. The keyboard will still play sounds but only those arriving at the MIDI In socket. Most keyboards have Local Control and, again, you'll have to look in the manual to see exactly how to switch it off.

When you've done this, you will be able to play different sounds on the keyboard through EVAP without having to change the instrument or the MIDI transmission channel on the keyboard. You can select sounds from EVAP's Patch List window.

There's one other thing you have to check. Open the **MIDI Settings...** window in the **Options** menu and make sure the **Thru Channel Messages** box is checked. Also, make sure that none of the **Message Filters** or **Channel Filters** are checked. The MIDI Settings... window is fully described in the Reference section.

Once you have set up EVAP, your keyboard and sound card or module, you can begin.

## Metronome Settings

You'll need a timing reference to play against when recording. Select Metronome Settings... from the Options menu and check that its settings suit you. It uses a Side Stick, MIDI note C#1, for the click but you can change this if you wish.

You can also select different sounds and velocities for the main beat and the sub-beats in the bar. The default setting is to play the sub-beats with a lower velocity which we think is fine but do change it if you don't.

You can use the PC's speaker instead of MIDI for the Metronome output. You might want to do this while recording the drum tracks, for example. However, on some PCs the speaker may be rather quiet.

We also prefer to hear the Metronome only during recording so the **Record Only** box is checked. Finally, set the number of count in bars you require. Remember, if a piece is in 2/4, for example, a one-bar count in is only two clicks.

Now we're ready to begin. There may seem a lot of setting up to do but once it's done, EVAP will remember the settings.

## Setting the Tempo and Time Signature

These default to 120bpm and 4/4. This piece is going to be a little faster so open the Conductor, click on the Conductor Point and change the Tempo to 132. 4/4 is fine.

You could have set the Tempo to 132 in the Transport window and deactivated the Conductor but it's good practise to use the Conductor as it means any tempo changes you make are automatically stored.

## Recording in real-time

Click in the Patch column of Track 1 and select a bass sound. We've used Syn Saw Wave to produce a thick, analogue-type sound. We're going to record a bass line:

The riff is in 1/8th notes so there are eight in a bar and each note is followed by the same one an octave higher which we'll indicate by the ^ sign. Start on a low D and play: (See page 101 of the help manual for the score view).

D	^D	D	^D	D	^D	D	^D	Bar 1
D	^D	D	^D	D	^D	C	^C	Bar 2
D	^D	D	^D	D	^D	D	^D	Bar 3
D	^D	D	^D	Eb	^Eb	F	^F	Bar 4

Practise it a few times until you're comfortable with it. Click on the Record button in the Transport window, tap along to the tempo with the count in and then play the line.

If the tempo is too fast, deactivate the Conductor and slow it down in the Transport window. After the recording, as soon as you activate the Conductor again, the 132 tempo will appear again.

Now play it back and listen to it. Does it sound okay? Does it need quantizing to tidy it up? Would you do a better job if you recorded it again?

If you answered Yes to the last question, select the Eraser in the Track window, click on the pattern to remove it and record it again.

If it's pretty good but you want to tighten the timing a little, Select the pattern and then select **Quantize...** from the **Procedures** menu.

You've recorded 1/8th notes so select 8 in the Quantize Setting box. We'd recommend a Percentage Change of 70 or 80 percent but we'll leave that decision up to you. If it's still not tight enough for you, you can increase the percentage.

Now we'll record an Orchestral Hit line. Select Track 2, click on its Rec button, open the Patch Lists window and select Orchestra Hit. (see page 103 of the help manual for the score view).

The lower notes are the same as the notes in the bass line but played two octaves higher. The top notes are a fifth higher. In this line the notes occur on the beat, that is on quarter divisions of the bar. The notes to play are as follows:

D/A	/	/	/	Bar 1
D/A	/	D/A	C/G	Bar 2
D/A	/	/	/	Bar 3
D/A	/	Eb/Bb	F/A	Bar 4

Practise the line and when you're ready, record it.

You may want to quantize this a little, too. We want the bass line and the Hits to be pretty tight.

### Recording in step-time

We're now going to record the following string line:



If it looks complicated, don't worry - we're going to do it the easy way, in step-time.

Select Track 3, click on its Rec button and use the Patch Lists to select String Ensemble 1. In the Track window, select the Pencil tool and click and drag a new pattern onto Track 3 running from bar 1 to 4.

Highlight the pattern and open the Score Editor. Make sure the Play Position is at 1:01:000. If it isn't, click on the Return To Zero button in the Transport window.

To enter notes in step-time, click on the Step-time icon and it will turn red,

Note lengths are determined by the Note Len setting. We're going to enter 1/16th notes so set this to 16. You also want to be able to see the notes correctly so set the Resolution to 16, too.

The first note doesn't occur until the second beat of the bar. You can advance the Play Position by the current note duration by pressing the Space Bar so press it four times to move on 4 x 1/16 notes. You'll see the Play Position line move and the Position indicator in the Transport window will advance to 1:02:000.

Now play the notes on your keyboard. The first 20 are simply a chromatic or semitone scale, starting on the third D above Middle C. Make sure you take your finger off each key before you press another one. If you don't, both notes will appear at the same position - this makes it easy to record chords but we don't want any in this part.

The next eight notes are:

F E F F# G A Bb C

That brings us to the end of the second bar.

Press the Space Bar eight times to move the Position to 3:02:000. The next 20 notes are the same as the first 20 and the final eight notes are:

Eb F F# G A Bb C D

Now play your recording and see what it sounds like. If the sounds in your module are like ours, you may find that the Orchestral Hit part is overpowering the others. Open the Mixer, flatten all the settings and adjust the volumes of the parts with the faders.

You might like to do this in **Cycle** mode. Click on the Cycle button and set the **Left Locator** to 1:01:000 and the **Right Locator** to 5:01:000.

As we've recorded it, all the patterns play at the same time. It would be more effective to build up to this state gradually by introducing the parts one at a time.

Hold down Control and drag Track 1 to the end of itself and then drag it again so it occurs three times. Move Track 2 to the start of bar 5 and then Control drag a copy to the end of itself. Finally, drag track 3 to the start of bar 9.

Deselect Cycle mode and click on Play. That sounds better. What it needs now is a drum track. This has been covered in the Drum Editor Tutorial so if you want to expand the piece, please carry on and do so.

# The Score and Lyrics Editors Tutorial

[Selecting patterns to edit](#)  
[Improving the score display](#)  
[Information Line](#)  
[Selecting notes](#)  
[Remove Overlaps](#)  
[Mouse Tools](#)  
[Kicking a note into pitch](#)  
[Adjusting the Resolution](#)  
[Score Settings](#)  
[Entering Lyrics](#)  
[Changing the Lyrics display](#)  
[Triplets](#)

If you read music, like working with "the dots" or want to create a score for printing, the Score Editor is the place to be. It shows your song in traditional music notation on the stave.

Converting a recording into notation is a tricky business because we never play music exactly as it is written. Even world famous concert musicians "interpret" the music by introducing small timing differences into their performance. It is these differences which make it interesting and which give it "feel".

So immediately we have a conflict between a real-time performance and printed notation. We don't want to lose the feel of a real-time recording but we need to remove the timing differences to convert it into good notation.

Fortunately, EVAP has several facilities which can help. The first thing to realise is that none of the Score settings and adjustments change any of the MIDI data so there is no need to worry about it changing your original recording. All the Score settings do is alter the way the score looks, not the way it sounds. However, you can also edit the notes on the stave and this does change the MIDI data.

## Selecting patterns to edit

To see a pattern in the Score editor, you simply select it and open the Score window. However, there are several factors to take into consideration such as the number of patterns selected and the MIDI channels they use.

EVAP tries to display the selected patterns in a musically sensible way. If no pattern is selected, the first pattern on the currently-selected track is used. If there are no patterns on the currently-selected track, EVAP creates one, assuming that you want one to write notes into.

If several patterns are selected, they are displayed in ascending order of MIDI channel. If, like most users, you assign MIDI channel 1 to track 1, channel 2 to track 2 and so on, then the stave layout will follow the order of the tracks in the Track window.

The MIDI channels are taken from the **Ch** column in the Track window. In other words, the Score editor uses the same logic as the Track window.

If **Ch** is set to 0, EVAP uses the MIDI channel or channels the pattern was recorded on. If a pattern contains notes which were recorded on more than one MIDI channel, the program puts each channel on a separate stave. If you don't want it to do this, simply assign the track a channel in the Ch column.

## Improving the score display

Load the CUCKOO.SNG which is an extract from Daquin's The Cuckoo. You'll notice that the piece contains two tracks assigned to MIDI channels 1 and 2. Select both patterns and open the Score editor. Make sure the Resolution combo box is set to 16.

If you have changed the score settings and want to get back to some default values, quit the program, delete the DEFAULT.DEF file and restart the program.

We aren't going to pretend that this is a definitive performance but it was recorded in real-time and created to demonstrate how the Score editor works. The timing is a little rough in places and you can see that the score contains lots of little inter-note rests. They were definitely not in the original score.

EVAP has a simple cure for these. Open the Score Settings... dialog, check the **Simplify Display** box and close it.

The lower stave is immediately brought into line, and most of the upper stave, too.

### Information Line

The problem with the dotted quavers is, quite simply, that they are too long but EVAP has no way of knowing whether it is those notes which are too long or the notes after them.

This can easily be fixed by adjusting the length, but note that you are physically about to change to the data and not just the score display. In some circumstances this may not be desirable but in many cases, including this one, the notes are clearly much longer than artistic interpretation calls for and a correction should even aid the performance.

Select the first problem note which is the sixth note in bar 1 by clicking on it. It will turn red to indicate it has been highlighted. You will see some data appear in the Information Line.

This is exactly the same as the Information Line in the Piano Roll Editor and shows the note's Position, MIDI Channel, Pitch, Velocity and Length. Left-click on the Length parameter to take it down to 110 or a little lower and the note will turn into a quaver!

That's one note fixed, three to go. But is there an easier way? Quantisation, perhaps?

Quantisation pushes and pulls notes onto certain divisions of the beat. It does not change their length. However, you may think that the recording would benefit from a little quantisation (yes, we agree!) so feel free to quantize it.

Note, however, that this will not change the display - try it! And remember you'll have to quantize to 1/16th notes so as not to disturb the two notes at the end of bar 10. Alternatively, you could select all the notes except those two and quantize to 1/8th.

### Selecting notes

You can select notes individually by clicking on them and collectively by lassoing them as you have done in the other editors. You can also select and deselect notes by holding down **Shift** when you click on them.

### Remove Overlaps

Open the **Change Lengths...** dialog in the **Procedures** dialog. We used this function in the Piano Roll Tutorial for a different purpose and although it's not a part of the Score setup, it's very useful for correcting

scores.

Check the Remove Overlaps box, click on OK and you'll find that the score is now note perfect.

With the exception of an errant note which you can probably hear when you play the piece. It's the F natural in bar eight. It should be F sharp to let's put it right.

## Mouse Tools

Like the other editors, the score editor has its own set of Mouse Tools. Activate the Mouse Tools selector by pressing and holding the right mouse button. Select the tool you want and release the button.

These are described in detail in the Reference section but most functions are self-explanatory. The **Arrow** is the default tool and is used for selecting and dragging notes, and changing items in the Information Line.

You can click notes onto the stave with the **Note** cursor and remove them with the **Eraser**.

The **Glue** tool joins two notes of the same pitch together. It's a little like a tie but instead of drawing a tie sign between the notes it will physically turn the first one into a long note. A tie sign will be used if the note is extended over a bar line or if the niceties of music notation layout demand it.

The **Sharp** and **Flat** tools raise (sharpening) and lower (flattening) notes and the **Pen** is used for entering and editing lyrics.

## Kicking a note into pitch

We want to change the F natural into an F sharp. You could select it with the Arrow and then adjust its pitch in the Information Line. However, an easier way is simply to kick it up a semitone with the Sharp cursor.

Select the Sharp tool, click on the note and it will rise a semitone to F sharp.

The score is now, literally, note perfect. Let's see in what other ways we can adjust the format and layout.

## Adjusting the Resolution

The Resolution setting is the equivalent of the Grid Resolution in the Piano Roll Editor. However, it has a rather different effect on the display. It determines the shortest note duration which will appear in the editor.

If there is a 1/16th note in the piece and you select a Resolution of 8, the 1/16th note will be forced onto a 1/8th beat. The Resolution is also proportional and the lower the Resolution, the more notes the editor will display in a given space.

Try this with the Cuckoo piece. The notes will move closer together and the score will appear more compact although the last two 1/16th notes in bar 10 will have been squashed onto a 1/8th note so this resolution is not suitable for this piece.

Going the other way, select a resolution of 32. This will space the notes out more - far too much for this piece - but you may also see that a few 1/32nd notes have appeared. This is because you are now allowing the program to display 1/32nd notes and if the timing is out by that amount these notes will show up.



Of course, if you quantized the recording - or if you want to quantize it now - using a quantize setting of 16, the 1/32nd notes will be moved towards 1/16th divisions of the beat and there will be no 1/32nd note hangers-on.

## Score Settings

Put the Resolution back to 16 and open the Score Settings... window.

Most of the parameters which affect the score layout are set in this dialog. Most of the options are self-explanatory but they are all explained in detail anyway in the Reference section. Let's see what differences they make to the score.

First of all try switching off the **Sloping Beams**. Some people think this looks neater and in this piece you may agree but if you were scoring a scale of notes you'd probably find that sloping beams look better.

If you are printing to a dot matrix printer, sloping beams can look very stepped and you'll get better results switching off Sloping beams in the Printer box.

If you liked the compact display when you set the Resolution to 8, reduce the **Inter-note** value to 7 or 8. This, as you will see, determines the space between the notes. Experiment with the **Inter-stave Spacing**, too. Both these settings are extremely useful if you want to fit a certain number of bars onto a page.

## Entering Lyrics

EVAP's Lyrics Windows displays lyrics which are present in the song. Many commercial "Karaoke" MIDI files contained embedded lyrics and you can easily enter your own.

Load SCARBORO.SNG which is the first part of the folk song, Scarborough Fair. It's been arranged using the Chords track and the Waltz accompaniment. There's more about this in the Chords Track Tutorial.

Open the Lyrics window which will be empty and place it at the lower right corner of the screen. Select the Melody track and open the Score Editor. Resize the window and put it in the upper left corner of the screen. Ideally, you want to see the Lyrics window, too, although this is not essential.

Select the **Pen** tool and click on the first note. A text box opens ready for you to enter in a word. Type "Are" followed by a space then press Tab. The word will appear under the note and the text box will move on to the next note. You will also see the word in the Lyrics window.

Now enter "you" followed by a space and press Tab again. The next word is sung across two notes and this is shown by splitting the word with a dash. Type "go-" (no space), press Tab and type "ing", press space and then Tab.

"Scarborough" is split into three. Type: "Scar-", Tab, "bor-", Tab, "ough", space, "Fair". Now we want to start a new line so type a hash (#) which forces a new line. It appears in the Score window but not the Lyrics window.

Now finish off the line:

Pars-ley, Sage, Rose-mar-y and Thyme.

You don't have to worry about the rest at the start of bar 6 because you can only attach lyrics to notes and the editor automatically moves onto the first note in bar 6.

When you're finish, press Return which signifies the end of lyric entry.

If you make a mistake you can use **Undo** to remove the last entry. You can delete lyrics with the eraser and you can start entering lyrics again by clicking on a note with the Pen.

Now select the Lyrics window and start playback. The lyrics will highlight in turn as the Play Position passes the notes they are attached to.

### **Changing the Lyrics display**

Select **Lyric Font...** from the Options menu

This is a standard Windows Font selector where you can choose the Font, the Font Style and the Font Size that you want the Lyrics window to use.

Although EVAP's Score Editor does not include music symbols, you can use the Lyric facility to add commands such as pp, ff and other written instructions. Set the Lyrics channel in the **Score Settings...** dialog to the part where you want to place the instructions and enter the instructions as Lyrics.

## Thin Out Continuous Events...

Allows you to reduce the density of events such as Modulation, Pitch Bend, MIDI Volume. It displays a Dialog where you set the degree of thinning.

If you are thinning Controllers, there are 128 of them to choose from, including Volume, Pan, Data Entry etc. Set the **Controller Scope** to be **All** or **Specific**. If thinning a specific Controller, use the combo box to choose the one you want to thin out.

Special treatment is given to minimum and maximum values, and centre values for Pan and Pitch Bend. These are not removed, ensuring controllers can return to their default positions.

## Tile Windows

Places all open windows side by side but does not disturb the Transport, Editors or Fast Menu Windows.

## Toggle Editors Caption

If the Editors Window's caption bar is visible, it is removed. When it is not visible, it is replaced. Turning off the caption bar frees up a little screen space.

## Toggle Fast Menu Caption

If the Fast Menu Window's caption bar is visible, it is removed. When it is not visible, it is replaced. Turning off the caption bar frees up a little screen space.

## Toggle Transport Caption

If the Transport Window's caption bar is visible, it is removed. When it is not visible, it is replaced. Turning off the caption bar frees up a little screen space.

## Select Track Columns...

Displays a Dialog where you can choose which of the columns are displayed in the Track Window. For example, if you prefer to see Patch Names instead of Program numbers, turn on the **Patch** switch and turn off the **Program** switch.



# Track Window



**Zoom In** - display fewer bars in the same space.



**Zoom Out** - display more bars in the same space.



**Vertical Zoom In** - reduce the height of tracks.



**Vertical Zoom Out** - increase the height of tracks.



**Add a MIDI Track** - add a MIDI track if any are free.



**Add a Chord Track** - add a Chord Track if one does not already exist.



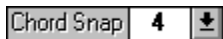
**Add an Audio Track** - add an Audio Track if one does not already exist.

To get to the furthest extent of a zoom, hold down the Control key while clicking on a zoom button.

## Selectors



This affects how MIDI and Audio patterns line up when you move them. For example, if it is set to 'Bar', they will 'snap' to the nearest bar.



This affects how chord patterns line up when you move them. For example, if it is set to '4', they will 'snap' to the nearest quarter note.

If you drag a group of patterns which includes a mixture of pattern types, the snap setting is determined by which pattern in the group you click on to start dragging.

## Displays

Name	Prog	Ch	P	Vol	Rec	Midi
Drums	8	10	C	115		

1. The **Track Display** shows the name of each track and various settings associated with it. You can choose which settings are visible by changing which Columns are visible. Click on any of the column headings and the Select Track Columns Dialog will be displayed. Here you can turn columns on and off as required.

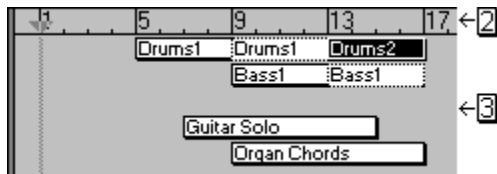
To the right of the columns is the **Divider**. You can drag this left and right so that some or all of the columns are obscured by the Pattern Display.

Track settings can be changed directly with the mouse or in the Track Settings Dialog.

If you want to give a track a different name, double click on the name and the Track Settings Dialog is displayed. Here you can type the new name and change any of the settings which appear in the Track Columns.

If you click once on a track's name, you can move it up or down to a new position in the track list by

dragging it with the mouse.



2. The **Timeline** shows the bars currently being displayed. The width of each bar depends on the Time Signature - this can change if there are Time Signature changes defined in the Conductor Window. If you click on the timeline with the left mouse button the left locator moves to the mouse position: use the right button to reposition the right locator. By clicking on the timeline while holding down the CONTROL key, the Play Position will jump to the mouse position.

3. The **Pattern Display** is where the patterns containing your recorded MIDI and audio data are displayed. They can be moved, copied, deleted or muted in order to change the structure of the composition. Double click on a pattern and the Pattern Settings Dialog is displayed. Here you can change the Pattern name and any other settings.

### Chord Track Editing Controls

When the current song contains a chord track, the settings can be edited with the following controls:

The **Style Button** shows the name of the current style. Click on it to display a menu containing the names of all the styles.

When a Chord pattern is highlighted, the following controls are available:

Clicking on the **Chord** setting displays a menu of the 12 possible chord root notes.

Clicking on the **Type** setting displays a menu of the available chord types.



The **Mute Switches** control which parts of the accompaniment play in the highlighted chord.

### Entering a Chord Sequence

To change the chord in an existing chord pattern, you first need to click on it. This highlights the bar and shows all settings associated with it in the Chord, Type and Mute Switch displays. To change the Chord (i.e. the root note), click on the Chord display and choose one of the 12 possible notes from the pop up menu. Similarly, the chord type can be changed by clicking on the Type display and choosing one of the 12 available types from the menu. If you double-click on a chord pattern, the Chord and Type menus are displayed automatically. To modify the arrangement in the pattern, use the 6 mute switches to enable playback of the required parts of the accompaniment.

Chord patterns can be added and copied just like any other patterns.

### MIDI Patterns

There are two types of MIDI pattern: **Parent** and **Child**. A parent has a solid border, a child has a dotted border. A child pattern has no events of its own - it plays the events of its parent. It also has the same name so you can see which parent it belongs to - all other settings can be different from the parent, however. A child pattern is created when you copy a parent pattern (unless the 'Copy Patterns as Parents' option is selected).

switch is turned on in the Preferences Dialog). A child can be placed on the same or a different track from the parent. The illustration above shows a parent pattern, 'Drums1', which is followed by a child, so the same four bar drum pattern will play twice. If you were to change the parent in some way - transpose it for example - the child would be affected too as it shares the same events. If you were to delete the parent, the child would become a parent.

## Chord Patterns

There are two types of Chord pattern: **Parent** and **Child**. A parent has a solid border, a child has a dotted border. A child pattern has no settings - it plays the settings of its parent. A child pattern is created when you copy a parent pattern (unless the 'Copy Patterns as Parents' switch is turned on in the Preferences Dialog).

## Audio Patterns

There are two types of audio pattern: **Parent** and **Child**. A parent has a solid border, a child has a dotted border. A child pattern uses the same .WAV file as its parent. It also has the same name so you can see which parent it belongs to - all other settings can be different from the parent, however. A child pattern is created when you copy a parent pattern (unless the 'Copy Patterns as Parents' switch is turned on in the Preferences Dialog). If you delete the parent, the child becomes a parent. The audio pattern settings are made in the Audio Pattern Settings Dialog.

## Audio Pattern Settings Dialog

<b>Name</b>	The Pattern Name can contain up to 20 characters.
<b>Wave File</b>	This button contains the name and full path of the .WAV file. Pressing it calls up the file selector, where you can locate a wave file anywhere on the system.
<b>Time</b>	A timing offset which adds the specified number of clock ticks to the start of the pattern. A negative value will make the pattern start early, a positive one will make it start late.
<b>Start and End</b>	The relative positions the file starts and stops playing (out of 1000). You can type the numbers or move the sliders above and below the Wave Display. If, for example, you are using a wave file which contains 4 bars of percussion, and only want to use the second bar, you need to set these values to 250 and 500.
<b>Audition</b>	Press this button to hear the wave file and any effects you have assigned. You will also hear the MIDI tracks to help you get the timing right.
<b>Stop</b>	Stops the audition playback.
<b>Size and Format</b>	Information about the wave file is displayed here. Use this information to set the Playback Format in the <u>Audio System Settings</u> Dialog.
<b>Volume</b>	This allows you to set a volume for the wave file, along with Fade In and Fade Out rates. The rates are tempo related.
<b>LFO</b>	A volume effect which causes rhythmic beating. A value of 30 produces a 16th note rhythm, a value of 60 produces an 8th note rhythm, and so on. This is true whatever tempo you are using as the LFO rate is tempo related.
<b>Distortion</b>	Switches on a distortion effect.

<b>OK</b>	This button exits the Dialog and keeps the changes you have made.
<b>Cancel</b>	Exits the Dialog and discards any changes you have made.

## Track Settings

<b>Name</b>	Can contain up to 20 characters.
<b>Prog</b>	The MIDI Program Number.
<b>Patch</b>	Displays the name of the <u>Patch</u> corresponding to the current MIDI Program Number.
<b>Bank</b>	The MIDI Bank controller value, works in conjunction with the Program Number to select variations on a sound.
<b>Ch</b>	MIDI Channel. Values of 1 - 16 force all patterns on the track to play on the specified channel. A value of 0 will play the patterns on the channel(s) on which they were recorded.
<b>P</b>	Port - one of the MIDI Out ports installed in the PC. If you hold down the Control key and click on the port setting, all tracks are assigned to the same port. A normal click on this setting displays a list of the open ports.
<b>Vol</b>	MIDI Volume controller.
<b>Pan</b>	MIDI Pan controller.
<b>Rev</b>	MIDI Reverb Depth controller.
<b>Chor</b>	MIDI Chorus Depth controller.
<b>Vel</b>	Velocity modifier - added to all velocities on the track as they are played. A negative value reduces velocity. Does not affect the contents of the patterns.
<b>Tran</b>	Transpose offset - added to all notes on the track as they are played. A negative value lowers the pitch. Does not affect the contents of the patterns.
<b>Time</b>	A timing offset. Adds the specified number of clock ticks to the events as they are played back. A negative value will make the events play early, a positive one will make them play late.

## Track Buttons

<b>Mute</b>	Prevents any MIDI data from being sent by a track.
<b>Solo</b>	MIDI data will be sent from the soloed track ONLY. All other tracks are muted. You can still click on the mute buttons to turn muting off if you want to hear other tracks as well as the soloed one. When you click on a solo button, the statuses of all the mute buttons are stored, so that when solo is turned off the mute buttons return to their previous settings. If you then solo the SAME track the statuses of the mute buttons return to what they were when the track was soloed. If you solo a DIFFERENT track to last time, all mute buttons are turned on.
<b>Rec</b>	Enables recording on a track. Incoming MIDI messages are rechannelized so they are sent from MIDI Out on the channel of the track whose Record button is turned on. If the channel is set to zero, the MIDI data is passed through unchanged.

## Selecting Patterns

You can select patterns with either of these two methods:

1. Click on a pattern - it turns black to indicate selection. Click on another one and that becomes the selected pattern. If you hold SHIFT and click on a pattern you can toggle its status between selected and normal. By using SHIFT clicking you can select several patterns.
2. With the left mouse button click on a part of the Pattern Display where there isn't a pattern. Any selected patterns become deselected. While still holding down the left mouse button, drag down and to the right, enclosing patterns in the dotted 'drag rectangle' as you go. Release the mouse button. The patterns inside the drag rectangle become selected. This method is called lassoing.

## Using the Edit, Options & Procedures functions

When using functions from the Edit and Options menus, whether patterns are affected depends on their selection states. If you have selected one or more patterns, ONLY those patterns will be affected. If no

patterns are selected, ALL patterns on the selected TRACK will be affected.

One method of copying one or more patterns is to select them and use the Copy function (Edit Menu) to place a copy of them on the clipboard. You can then Paste them into the Pattern Display at the current Play Position.

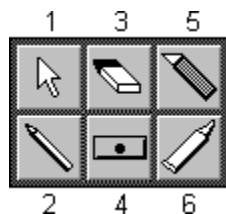
## Moving and Copying Patterns

Selected patterns can be moved and copied. Click on any one of them and drag to a new position then let go the mouse button. If you hold down the CONTROL key before you click, a copy of the patterns will be made at the new position, leaving the originals intact. The newly copied patterns then become the selected ones.

## Functions Menu

<b>Copy Track</b>	Makes a copy of the selected track including the patterns - the child / parent status is determined by the setting in the Preferences Dialog.
<b>Delete Track</b>	Deletes the selected track and all the patterns on it.
<b>Delete All Tracks</b>	Deletes all tracks and patterns.
<b>Delete Unused Tracks</b>	Deletes all tracks which do not contain any patterns.
<b>Pattern Dimensions...</b>	Displays a Dialog where you can type in new start and end positions for the selected pattern.
<b>Insert Between Locators</b>	Inserts space between the Left and Right Locators.
<b>Delete Between Locators</b>	Deletes everything between the Left and Right Locators.
<b>Slice at Locators</b>	Slices all patterns at both the Left and Right Locator positions.
<b>Chords to MIDI Track</b>	If a Chord track exists, a MIDI track is created containing all parts of the chord track in the current Style.
<b>Extract Pattern</b>	If you have a pattern containing events on more than one MIDI channel, this function allows you to separate the events into individual patterns, each containing a single MIDI channel. The new patterns are allocated their own specially created tracks. The original pattern is not changed.
<b>Merge Patterns</b>	This function allows you to merge a number of selected patterns into one new pattern, which is given its own track. The original patterns are not changed.
<b>Add MIDI Track</b>	Add a MIDI track if any are free.
<b>Add Chord Track</b>	Add a Chord Track if one does not already exist.
<b>Add Audio Track</b>	Add an Audio Track if one does not already exist.

## Mouse Tools



To select a different mouse, hold down the right mouse button to bring up the **Mouse Tool Selector**. Move the mouse until the one you want is highlighted. Let go of the right mouse button - the selector disappears and the mouse cursor changes to the new shape.

1. The **Arrow** is at the top left so you can change back to it quickly - click the right button and release immediately - there's no need to drag.

2. The **Pencil** is used for drawing and sizing. You can draw in a new pattern or change the size of an existing one. To move the start position of a pattern click on the left half; to move the end of a pattern click on the right half. Drag the mouse to the required position and release the mouse button.

3. The **Eraser** is used to delete patterns. Click on a pattern with the eraser and it disappears. If you click on one of a group of selected patterns, all the selected patterns are deleted.
4. The **Mute** cursor is used to silence a pattern. Click on a pattern with the mute cursor and it turns grey to show it is muted. Click again and it changes back to normal.
5. The **Knife** is used to slice a pattern in two. The position you click on the pattern determines the end position of the first pattern and the start of the second one.
6. The **Glue** is used to join two patterns on the same track to create one new one which starts where the first pattern started and ends where the second one ended. Click anywhere on a pattern and it will be glued to the next pattern on the same track.

## **Multitrack Recording**

When the switch is On, you can turn on as many track record (Rec) switches as you wish. When the switch is turned Off, the program checks to see if more than one Rec switch is on, and makes sure only one is left on (the top one). The Rec switches then behave as usual - only one can be turned on. When you turn Rec switches on and off while MIDI notes are passing thru, the program monitors your actions and makes sure no stuck notes occur. MIDI data is not rechannelized when Multitrack Recording is turned on. It is passed thru unchanged, to enable you to correctly hear what is being recorded. The MIDI Indicators show the MIDI data on the track which matches the MIDI channel of the incoming data, so several Indicators may be flashing at the same time. This is useful to see which channels contain MIDI data. The Rec switches are also useful to keep out MIDI channels which you do not wish to hear or record - only data arriving on channels enabled by a Rec switch are passed thru or recorded. Overdub and Replace recording modes are both supported during Multitrack Recording. Several new patterns may be created by Multitrack Recording. All patterns which are newly recorded or were overdubbed into are selected to make them easy to see.

## **Undo & Redo**

You can use the Undo function to reverse the effects of the last editing operation. You can then use the Redo function to reverse the effects of the Undo function.

See also:

[General Window Information](#), [Transport Window](#), [Conductor Window](#), [Audio System Settings](#), [Preferences](#).

# Transport Window

## 'Tape Recorder' Controls



**Rewind** is used to move the Play Position to an earlier one. If used during play, the new position will take effect when Rewind is released. If the right mouse button is used to press Rewind, the winding speed is three times as fast. If you are working in an editing window (e.g. Piano Roll, Event) winding speed is slower in order to give you finer control over the Play Position.



Similarly, **Fast Forward** is used to move to a later position.



**Stop** does just that - it stops playback or recording.



**Play** has two functions:

1. It starts playback when the sequencer is not running.
2. It punches out when recording is in progress - the sequencer keeps running but the record button returns to the off position and any recorded material is displayed.



**Record** has two functions:

1. It starts recording when the sequencer is not running. Recording is preceded by a count in (unless the number of count in bars is set to zero in the Metronome Settings Dialog).
2. It punches in when playback is in progress - the sequencer keeps running but the play button returns to the off position. No count in is given in this instance - recording begins immediately.

## Auto Return

This tells the program where to send the Play Position when the sequencer stops. There are three possible settings:

1. Off - the Play Position stays where it is.
2. Zero - the Play Position goes to the start of the song.
3. Last Start - the Play Position goes to the position from where playback last started.

## Record Mode

Click to choose either Replace or Overdub.

## Toggle Switches



**Metronome** - turns on the metronome click, as defined in the Metronome Settings dialog.



**Cycle** - makes playback and recording cycle between the locators.



**Follow Position** - makes each window display the current song position.



**Conductor** - makes playback obey the contents of the Conductor Window.



**Edit Solo** - plays only the contents of the current edit window.



**Synchronization** - enables external sync, as defined in the Synchronization Settings... dialog.



**Punch** - enables automatic Punch In & Out.

## Relocate Buttons



**Return To Zero.**



**Go To End.**

## Display Formats

<b>Position</b>	bars:beats:ticks.
<b>Time</b>	hours:minutes:seconds:frames.
<b>Left Locator</b>	bars:beats:ticks. Click on the text 'Left Locator' to jump to its position.
<b>Right Locator</b>	bars:beats:ticks. Click on the text 'Right Locator' to jump to its position.
<b>Tempo</b>	beats per minute.
<b>Time Signature</b>	beats per bar / beat time.

## Chord Detection

The Chord box works out the name of the chord currently being played on the external MIDI keyboard and the MIDI tracks.

Each time you press or release a new note on the external keyboard, the program recalculates the chord name. For example, if you hold down C, Eb and G it will show Cm. If you add a Bb it will change to Cm7. If you then release the Bb, the display again shows Cm.

During song playback all notes except drums are fed into the chord detector. Use the Mute and Solo buttons to control which notes are detected - chord detection considers only audible notes.

## Automatic Punch In and Out

This feature is available when the Punch Switch is turned on. During playback, when the Play Position reaches the Left Locator, the program will punch into Record - the Record button is 'pressed' and the Play button is 'released'. When the Play Position reaches the Right Locator the program punches out - the Record button is 'released' and the Play button is 'pressed' once again.

See also:



General Window Information, Track Window, Conductor Window.

## Transpose...

Allows you to change the pitch of one or more notes. It displays a Dialog where you set the number of **Semitones**, whether the notes will be transposed **Up** or **Down**, and the Scope of the change.

# Triplets

To insert triplets - First of all, choose which editor you are going to use. Piano roll, drum editor or score window? Click on the corresponding icon on the editors' strip. You will be presented with 4 empty bars. Click on the step icon. From the Note Length box, select your desired triplet length. 4T would insert crotchet triplets. 8T would insert crotchet quavers etc...

Click on your external keyboard (or on screen keyboard) to insert your notes. The notes will be assigned a triplet bar as soon as three notes are detected.

If using the toolbox "note" tool to insert notes on the appropriate leger line, you can use the mouse position values to help with the positioning of the triplets. For example, if inserting 3 crotchet triplets from bar 1 beat 1 , you would insert the first note on mouse position

1:01:000 the second note would be in position 1:01:128 and the final triplet would be in position 1:02:064. As soon as the third triplet note was inserted, the triplet sign would be included.

## Undo

Reverses the effect of the last editing operation. For example, if you just used the Transpose function (called from any window), Undo will restore the notes to their original pitches.

See also:

Redo.

## View Menu

The View Menu contains the following Menu Items:

- Track
- Piano Roll
- Event
- Score
- Drum
- Conductor
- Notepad
- Mixer
- Keyboard
- Lyrics

## Wave Files in use...

Displays a list of the .WAV files in use in the current song.

# Window Menu

The Window Menu contains the following Menu Items:

- Cascade Windows
- Tile Windows
- Arrange Icons
- Close All
- Configure Fast Menu...
- Hide Transport...
- Hide Editors...
- Hide Fast Menu...
- Toggle Transport Caption...
- Toggle Editors...
- Toggle Fast Menu...



Detailed explanation of the contents of each editing window.

Transport

Editors

Fast Menu

Keyboard

Track

Piano Roll

Event

Score

Drum

Conductor

Notepad

Mixer

Lyrics

General Window Information



# XG

If you select XG mode in the Patch list dialog, a new panel appears containing 5 radio buttons:

- XG Normal
- XG User
- XG SFX Voices
- XG SFX Kits
- XG Drum Kits

If you have a bank other than OFF, this will cause a bank message to be sent which puts that port/channel into the XG mode you selected.

Clicking on GM or GS removes the new XG panel.

If you select XG SFX Kit or XG Drum Kit the drum flag is set, so if you go into the Routings dialog the drum switch for that port/channel is on, and the drum editor can be opened for patterns on the related track.

When you choose an XG mode, the patch list for the mode is automatically selected (if it is currently in memory). By default the program loads the 5 XG patch lists.

Make sure your XG device is selected in the Devices dialog, and turn on XG in the Patch Lists Dialog, then load a .MID designed for XG and the program decodes the bank messages into XG modes which it stores with each track - you will see the Patch column shows XG names. The program also recognizes the XG reset message and sends it before the set up data, ensuring the program changes, bank messages etc are correctly set up.



