

Getting Started

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Installation and Set-up

If you have a registration code for Making Waves, you might want to register your software before completing the following introduction. Simply select the Registration Codes option from the [Help menu](#) and enter your code.

If you're running the Network version of Making Waves, you should refer to the section on [Network Installation](#) for more information about installing your software.

Track Numbers

The numbers down the left-hand side of the main screen refer to individual tracks. Each track can be used as a sound or effect in your song.



The browser window at the bottom of the screen is used to select sounds and effects, which can then be added to individual tracks in your song.

The track window at the left of the main screen is used to edit the settings for these tracks, and the panel at the right of the screen to arrange them into a song.

Selecting Sounds

The browser window at the bottom of the main screen is used to select sounds or effects and will be opened automatically whenever you start a new song. It can also be opened or closed at any time by clicking on the open icon at the bottom centre of the main screen.

If you open the browser window and locate the EXAMPLES folder by double clicking on the folder name in the browser window, you should see a list of audio files appear.

Click with the mouse on one of these files, and you should hear the audio file played. If you don't hear anything at this point, you may need to configure the Audio Output device by selecting the option from the [Audio Playback Settings](#) menu.

The preview and initial playback level of files can be set using the volume slider at the bottom of the screen.

You'll find out later how to use a [midi keyboard](#) to preview sounds and record new tracks. In the meantime, you can use the top 2 alphanumeric rows on your PC keyboard to preview sounds over a 2 octave range. The '1' key on your PC keyboard will preview audio sounds at the original pitch.

The Preview Toolbox at the top centre of the window can be used to change the default note pitch and length when previewing with the mouse, and also to automatically preview files using the AutoCue option.

Percussion Tracks

If you've already tried adding some sounds to the track window, you should select the New option from the File menu before continuing with this section.

The type of track added to your song when using the mouse can be selected by clicking on the box at the bottom of the browser window. This will cycle between Percussion, Single Play and Notes. We're going to start by adding some percussion tracks to a song, so make sure the Percussion option is displayed and then double click on the kickdrum sample in the browser window. You should now see the kickdrum appear in the track window.

Double clicking on a file will always add it to an unused track at the bottom of your song. You can also add sounds to any track in your song by dragging a sample onto the required track number. Try holding down the mouse button on the bongo sample in the browser window and dragging this onto track 3.

Try entering a sequence for the kickdrum by clicking on the white sequence boxes in track 1, then press the Play button at the top of screen to hear what it sounds like.



Clicking on the Loop button to the left of the Play button will swap between single and looped playback. Press the Stop button at any time to stop the song playing.

If you don't hear anything, you may need to set the first bar in the bar grid for track 1; this should be done automatically but may not be if you've changed some of the default settings.

You can also press the Space bar on your PC keyboard to start or stop song playback.

Leave the song in looped playback and try entering a sequence for the bongo. Any changes you make can be carried out while the song is playing allowing you to easily hear the results. You may need to wait for a short time while changes are mixed in with the song. You should see the small status indicator near the top of the screen changing to yellow while any changes are being updated.

If the status indicator turns red during playback this means the audio output levels are being clipped. You can reduce the level of the volume slider at the top of the main window to avoid this.

The default length for percussion sounds is 1/8 bar, which is why you can see 8 boxes in the sequence grid. Left click with the mouse on the Length value for the bongo in track 3 and you should see the Play Length window appear.



Change the bongo length to 1/16th bar and you should find there are now 16 boxes available to create your percussion sequence.

The small check box to the right of the sequence pattern lets you switch **sustain** on or off. With sustain switched off, each sound will be played for the selected length. With sustain switched on, each sound will be played until the start of the next one. *Depending on the current colour scheme you're using, check boxes may appear as indicator lights or switches.*

To create a percussion sequence that is more than one bar long, right click on the sequence pattern and this will open the [percussion sequencer](#) which will enable you to enter additional bars.

Note Tracks

We're now going to add a note track, which will be played along with the two percussion tracks. Make sure Notes is displayed in the mouse selection box at the bottom of the screen and double click on synth or drag it onto track 5.

Click on the Notes button which should have appeared in the Sequence column of track 5, and you'll see the [Note Sequencer](#) window. Each row on the grid represents a semitone, with the lowest pitch at the bottom. Each column represents 1/32nd of a bar with marker points every 1/8th of a bar.

We'll find out later what the various buttons do, but for the moment you can just enter some notes on the grid using the mouse, and you should hear a note sequence playing along with your previous percussion tracks.

You can preview notes at any time by clicking on the keyboard at the left of the sequencer window.

You can change the length of individual notes by right clicking on the required end position of the note.

The checkbox to the right of the sequencer button in the main track window is used to set Mono/Polyphonic note mode when using note sequences. Try switching this on and off and you should see the note lengths on the note sequencer grid updated accordingly.

Close the note sequencer window when you've finished by clicking on the close box, or right clicking anywhere on the title bar. You can close most windows by right clicking on the title bar; this is often easier than moving your mouse cursor to the close box.

You can change note tracks to percussion tracks and vice versa, using the Play Mode button, just to the left of the length field. Try clicking on the play mode button for the bongo track and selecting

Notes. You can now try entering some different pitches for the bongo using the Note Sequencer window.

Sample Loops

The main difference when using sample loops compared to the single hit files you've used so far is that they have a particular tempo, which you'll usually want to keep in time with the rest of your song.

Make sure that the Single Play option is selected at the bottom of the screen, and that the Timestretch option is enabled, then double click on drumloop in the EXAMPLES folder. You should see the length of the sample displayed in the Bars column as 1 bar, and the BPM column displaying the original beats per minute of the sample loop, which in this case is 132.

You should also see the indicator to the right of the bpm setting enabled to indicate that Timestretching is active. This means that the tempo of the sample loop will be adjusted without affecting the pitch of the sound. Try switching off Timestretching by clicking on the indicator and you should hear the sample is now being pitch shifted to keep it at the correct tempo.

If you can't hear any changes, it may be because the song tempo is currently set to the same as the sample loop. You can change this by updating the Song BPM setting at the top of the main window.

You can switch the track bpm setting on or off at any time by clicking twice on the bpm value.

The tempo is calculated by assuming that sample loops will be a whole number of bars. If you're using a loop which isn't an exact number of bars, you can manually adjust the start and end points using the [File Editor](#).

You can check the calculated tempo and number of bars for a file selected in the browser window by holding the mouse cursor over the Timestretch option at the bottom of the window.

To preview sample loops in time with a song that's playing, make sure the timestretch option is enabled. If you're using the AutoCue option to play sample loops in time with your song, you can adjust the number of bars each sample is played for by changing the Auto option in the AutoCue window to a fixed number of bars.

Audio Effects

The simplest way to add audio effects to your song is to drag them onto the sounds you want them applied to. First locate the Audio Effects folder, either by going back to the main folder using the browser window and double clicking on the audio effects folder, or by selecting the Audio Effects folder from the favourites list at the top right of the browser window.

Click on the Flanger effect then drag it onto the drumloop track and you should see an effects track appear directly below the drumloop track (you could also add the effect by double clicking in this case, as it's being added to the bottom of your song).



If you now click and hold down the mouse button on the bar grid for track 8, then start moving the mouse while holding down the button, you should see a green level indicator appear in the bar. This can be moved up and down by dragging it with the mouse to change the level of the effect.

Clicking on a bar then releasing the button without moving the mouse will display an edit keypad window, allowing you to adjust the level more precisely. You can change the level by moving the horizontal slider in the keypad window to the required position, clicking on the up or down arrows, or typing in a new value using the numeric keypad and clicking on the enter key to update the setting. Clicking on the X button in the keypad window will clear the current bar level, clicking on the stop sign will switch off the effect.



Any effects settings on the bar grid will apply until they are next changed or cancelled, so if you want to set an effect for the whole song, just set the value in the first bar. If you want to cancel an effect at a certain bar, click the right mouse button on the bar grid and you should see a stop sign appear. Right clicking on a bar with a value set will reset the value for that bar, and then right clicking again will cancel the effect.

You can switch on the Auto Fader for any effects track by clicking on the checkbox in the sustain column. This will cause any changes in bar levels to be applied gradually and is useful for fading effects in and out. You'll see grey lines appearing on the bar grid for any intermediate levels.

Adding an effect above any audio tracks at the top of the Track Window lets you apply an effect to the whole song, rather than individual tracks. You can do this by dragging the effect onto an empty track at the top of your song or the space immediately above the first track, or simply by dragging the effect onto the output meter at the top of the main window.

You can also add an effect to a selected group of tracks by adding [section tracks](#) to your song.

Song Layout

Once you've got some basic sounds and effects together, you can start to create the layout of your song using the bar grid on the right of the screen. All you need to do is enter the required bars for each track. For example, you might want the kick drum sequence to play for 4 bars and then the bongo to start playing in bar 5. Dragging the cursor along consecutive bars for a track will allow you to easily switch a group of bars on or off.



The grey markers that appear every 8 bars on the grid will help you line up tracks when creating your song.

If you try clicking on the area between the bar numbers and the grid, you can drag the cursor to the right by holding the mouse button down and select a number of bars:



The [Edit menu](#) or right mouse button can now be used to cut, copy or clear these bars. Selecting a single bar by clicking on this area will allow you to paste any previously cut or copied bars at the selected position.

Selecting bars also allows you to play a certain section of the song, which can either be played once or looped depending on what the loop button at the top of the screen is set to. You can use the Fast Forward and Rewind buttons at any time while your song is playing

to move forwards or back in your song by the selected number of bars.

The Playback Position Indicator (the white right facing arrowhead) is used to monitor the playback position when playing songs and to select the required start position before playback begins. Selecting the Start Position is accomplished by clicking at the same level as the playback indicator, above the bar you wish to start playback from. The playback position indicator will automatically move to the selected location.

When using sequences that are played for more than one bar, a horizontal line in a square indicates a continuation of a sequence started in a previous bar. Clicking on a square before the end of the sample will cause it to restart at that bar. Right clicking on a square before the end of a sequence will cause a stop sign to be displayed and the remainder of the sequence will not be played.



Note or percussion sequences may contain sounds or use effects which continue into an additional bar. Using a stop sign by right clicking immediately after a sequence will stop any additional sounds being played.

Use the File menu or toolbar options at any time to save the song you are working on. You can create a wav or mp3 file of your song at any time using the **Export to Audio File** option on the [File menu](#).

Tracks can be selected for editing at any time by clicking on the required track numbers. The selected tracks can then be cut, copied or cleared by using the edit menu or right mouse button. Tracks can be copied and pasted between different songs as well as within the same song.

Track Details can be switched on or off by clicking on the vertical separator bar between the track window and bar grid. This lets you choose whether to see additional track information or more song

bars and is most useful when using a low screen resolution. You can increase the total number of tracks and bars you can see on the screen at once by changing the display resolution used by your system.

Where to Go from Here

You should now be able to start putting together some complete songs in Making Waves using audio samples and effects. The remaining sections in the manual will explain how to use audio plugins and midi tracks in your song, and also describe additional features and some advanced techniques for the features you've already come across.

You should try and look at the following sections on track and song settings to find out about the basic controls used in Making Waves. The remaining sections can be looked at whenever you want to start trying out the additional features.

Playback Controls

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Playback Buttons

This group of buttons is used to control the playback of the song.



Play starts song playback

Stop stops song playback

Rewind rewinds to start of song, selection or previous bookmark


Fast Forward forward to end of song or next bookmark The Play and Stop buttons have additional functions that you may find useful in certain situations.

Pressing the **Stop** button without a song playing will unload any sample files from memory and close the files. This is useful if you want to access files from other applications or make more memory available for other applications to use.

Usually when you're playing a song, the main bar grid will keep up with the play position. If you scroll or make changes to the bar grid while a song is playing, it will no longer keep up with the play position enabling you to edit bars more easily. When you've finished editing, pressing the **Play** button while the song is still playing will cause the bar grid to start following the play position again.

Loop Button



This button is used to set the song playback mode to either continuous (looped) or single play. When the button is clicked it toggles between the two modes. Single play is indicated by the arrow symbol, as shown above, and a looped arrow, as below indicates continuous play: 

Selecting bars in your song will default playback to looped mode. Clearing the bar selection will default to single play.

Song Position

The current song position is displayed to the right of the Loop button. This will default to displaying the current bar and beat and can be changed to minutes and seconds by clicking on the position display.

Metronome



The **metronome** can be switched on or off at any time by clicking on the box to the right of the main playback buttons. The sound used for the metronome, along with various other metronome settings, can be changed by selecting Metronome Options from the [Settings menu](#).

Playback Volume



This is the main volume control which sets the overall loudness of audio and midi playback, ranging from 0 (silent) to 127 (maximum volume).

Playback Level Meters



The two right hand led panels are level meters and indicate the levels of the left and right audio outputs during playback.

CPU Meter

The led panel below the volume control indicates the level of load on the processor during playback. When the meter is at its maximum you may hear gaps in the sound or tracks not mixed.

You can monitor the CPU usage of individual tracks using the CPU Monitor option, available from the [Song Mixer](#).

Playback Status Indicator

If you're amending tracks while playing a song, the status indicator to the left of the CPU meter will stay yellow until the amended track has been reloaded.

If the indicator turns red during song playback this means the audio output level is being clipped which will cause a slight loss in sound quality. You can stop the output level being clipped by reducing the main output level using the volume control, or selecting the Set Maximum Level option from the [Utilities menu](#).

Undo/Redo Buttons

Whenever you change a setting in Making Waves, you can undo this by clicking on the undo button at the top of the main window. Holding the mouse cursor over the undo button will display the action that will be undone.

Whenever you undo an action, you can then select the redo button to reapply the change.

Solo/Mute Buttons

The Solo and Mute buttons are located at the top left of the main track window.

The Solo Button is used to play selected tracks from your song. Whenever the Solo Button is active (yellow) and there are some tracks selected by clicking on the track numbers, you will hear only the tracks which are selected. Any remaining tracks will be greyed out on the screen.

The Mute Button works in the opposite way, so you won't hear any tracks that have been selected.

You can also use the Solo button for editing bars of selected tracks. Try selecting some bars and tracks with the solo button highlighted, then right clicking on the bar selection or opening the [Edit Menu](#) to view the additional options available.

½ Speed Playback

This option can be activated by clicking on the clock symbol, located on the mixer panel at the bottom of the main screen. It will slow down the tempo of your song to ½ the normal speed, making it easier to adjust settings and record sequences in time when using a keyboard.

Song Settings

[BPM](#)

[Song Key](#)

Song BPM



This control is used to set the playback tempo for the song. There are four beats per bar, so a BPM of 120 would result in each bar lasting two seconds. Click on the arrows to increase or decrease the value, and on the bpm value directly to edit the value using the edit keypad or cursor.

The arrow keys will change the value by 1 beat per minute. If you want to use fractional values, this can be done by entering values with the keypad.

Any songs you create will initially default to a fixed tempo. To use different tempos within a song, you should switch off the 'fixed song tempo' option in the [Song_Options](#) menu. Any changes you make to the song tempo will then be applied from the bar at the current playback position.

Try loading a song, then switching off the fixed tempo option. If you click above one of the bars to move the playback position, then adjust the bpm setting at the top of the screen, you should see a blue marker appearing above the selected bar to indicate a tempo change.

You can remove a tempo change at any time by entering a value of 0 for the selected bar.

Song Key



This control affects the way notes are annotated in the Note Sequencer and lets you adjust the centre note on your midi keyboard.

The key you use will not affect any of the audio samples that are played, so you can choose the key you feel most comfortable using without needing to change the pitch of the samples. Most of the Making Waves samples are in 'C', which is most suited to keyboard players. If you play an instrument such as a guitar, which uses a different key, then the value can be changed as required.

If you're using midi or plug-in instruments in your song, changing the song key will transpose the note used as the centre note. This will affect the default pitch used when adding midi or plugin notes as percussion tracks.

Track Settings

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Editing Track Settings

Track Settings can be edited by clicking on the main track window. Clicking on a field will open the keypad window or display the edit cursor depending on the Edit Options settings.

To view and edit all the available track settings, you should switch on track details by clicking on the vertical separator bar between the track window and bar grid.

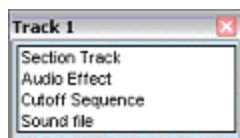
Some additional settings are accessed by clicking on the two sunken headers at the top of the track window. One header lets you change between Offset, Delay, Intro and Quantise settings, and the other lets you change between Volume, Pan, Note Velocity, Bass, Treble, Attack, Release and Meters.

Some columns have different uses depending on the type of track being used. For example the sustain column is used to set Mono/Polyphonic mode when using the note sequencer, and the Auto Fader when using effects tracks.

Track Type

This is the small button located between the track number and on/off checkbox.

If you click on the button for an empty track you should see a list of the different track types available.



This is an alternative method of adding new tracks to your song, without opening the browser window.

The following default track types are available:

Sound File lets you select a new sound to be played in the track. Clicking on the button for an existing audio track will open the [File Editor](#). Clicking on the button for an plugin instrument track will open the settings window for the plugin.

DSP Audio Effect allows you to add audio effects to your song. Clicking on the button for an existing track will open the Bar Level window.

Cutoff Sequence allows you to add a Cutoff Sequence. Clicking on the button for an existing track has no effect. Cutoff Sequences can also be added to your song using the [Track Tools](#) folder.

Section Track allows you to add Sections to your song. Clicking on the button for an existing track lets you change the default colour of the section. Section Tracks can also be added to your song using the Track Tools folder.

Track On/Off

This column of check boxes is used to switch tracks off and on. If a track is switched off, it won't be heard during playback and will be greyed out on the track window and bar grid. Also, it won't be displayed in the song and track mixer windows.

If you have a number of tracks in your song which have been switched off and that you no longer want to use, you can remove them using the Tidy Up option on the [Utilities menu](#).

Track Name

The Name field displays the name of the sound or effect file currently allocated to the track. To select or change the file for an existing track, simply click on the name of the file to open the browser window.

Clicking on an empty track will let you select a new sound file for a track and has the same affect as clicking on the Track Type button and selecting the Sound File option.

Track Bars Setting

The number shown in this box is the size of the sample, measured in bars. The figure displayed takes into account any selections made with the file editor, the current BPM settings, and any pitch adjustment.

This value is linked to the bpm for the track, and changing this value will recalculate the bpm to try and produce the requested size in bars.

This can be an easy way of setting the correct tempo for a loop. For example, if you know a particular sample loop is 3.5 bars long, you can enter this as the number of bars to set the correct tempo.

You can also use this option to stretch or compress sample playback; for example a 2 bar loop could be played back over 1 bar to compress the sound, or 4 bars to stretch out the sound. The bpm field will always indicate the current tempo based on the number of bars you've entered.

Track BPM

The BPM control is typically used for sample loops, to let you specify the original tempo in beats per minute of the sample.

Selecting a file from the browser window with the Timestretch option enabled will automatically calculate the bpm or tempo for the file, based on it being a whole number of bars. The bpm setting or length in bars can then be adjusted manually if the loop is not a whole number of bars. If you know the original bpm for the sample, you can enter the value directly in the bpm column, otherwise you can preview the sample to hear how many bars it contains and enter the value in the Bars column.

You can also use the Loop option in the [File Editor](#) to calculate the bpm for the current selection after using the editor to select a whole number of bars. The Beat Tapper option in the File Editor can be used for working out the bpm and start position of longer audio samples. This can be useful if you're mixing tracks you've recorded from an audio CD.

The tempo for the audio track will not be set if the file is too short to be adjusted to at least 1 bar.

If you set the bpm for a track without activating the timestretch option, the pitch column will be updated to display in red the amount that the sample will be pitch shifted.

Clicking on an empty bpm setting for an existing track will calculate the bpm based on it being a whole number of bars and you can simply click again to set the new value. Clicking on an existing bpm setting twice without changing the value will switch it off.

Track Timestretch

Without using timestretching, changing the pitch of a track will cause it to be played at a different tempo, and changing the tempo will cause it to be played at a different pitch. This works in a similar manner to a tape recording, where speeding up the playback will cause it to be played at a higher pitch.

When you switch on timestretching for a track, changes in pitch or tempo can be made independently, so you could change the tempo (or bpm) for a track without affecting the pitch, or change the pitch for a track without affecting the tempo.

Timestretching will affect the quality of audio samples you're playing back, so if you're using a drum loop which is fairly close to the required tempo, you might find it better to switch off timestretching in this case and use pitch shifting instead.

You can adjust additional timestretching parameters by right clicking on the timestretch indicator to open an options window.

The **Rhythm** setting can be changed to a tighter setting to improve the precision when using drum loops by sacrificing some of the pitch quality. Change the rhythm to a looser setting for melodic samples to improve the pitch by sacrificing some of the rhythmic precision.

The **Fade Time** can be increased to produce a more sustained sound when using melodic samples, but may cause some echoing when playing drum loops. Decrease the fade time with drum loops to produce a more clipped sound.

The effect of the rhythm and fade settings will depend on the change in tempo. If the tempo is only being changed by a small amount, these settings may not have much effect.

There may be situations where you want to use the Timestretch option without setting the tempo. This will cause the original sound to

remain the same, but any pitch changes to be timestretched. This would apply timestretching to notes of different pitches when used with a note sequence, or to effects tracks which use pitch changes.

Right clicking on the Timestretch indicator in the browser window will let you try out the additional settings before adding a track to your song. This can also be useful for changing the settings when recording a new track.

Track Midi Channel

This option is only available when using midi or plug-in instruments, and allows you to select the midi channel you want to use for playback.

If you're using a midi instrument, the available channels will depend on the note and drum channels specified in the [Midi Instrument](#) settings.

Track Pitch

The Pitch control is used to adjust the pitch of a sample. This can be changed to the nearest 1 semitone for midi and plugin tracks, or 0.1 semitones for audio tracks.

If an audio track is being pitch shifted due to the bpm setting, the pitch value will be displayed in red and will include the combined value of the pitch control and the bpm pitch adjustment.

This field is also used by various effects tracks.

Track Offset

The Offset value lets you adjust the exact starting point of each sound within a sequence. This is normally used to synchronise different samples so that the beats coincide.

Entering a positive value will cause the playback of the sound to be delayed by the specified number of milliseconds.

Entering a negative value will skip the specified amount at the start of the sample, causing the remaining sound to be played back earlier.

The maximum value is +/- 999 milliseconds.

If you find the audio and midi sounds in your song are not synchronised, you can adjust the offset for a single midi track then select the Midi Timing Offset option from the [Track menu](#) to set a default offset for all your midi tracks.

You may find also this option useful to avoid sample peaks coinciding when playing multiple audio tracks. If you're using a small number of audio tracks and the output level is being clipped, try adjusting the offset of some tracks by a few milliseconds to avoid this.

Delay

The Delay setting lets you start playing a sound or sequence anywhere within a bar. The value can be set to the nearest $1/16$ th of a bar (or $1/12$ th if using triplets). This is a simple way of varying the sound of different tracks to try out different rhythms.

This field can also be used with various effects to specify a delay value. This will either be in milliseconds or fractions of a bar, depending on the effect being used.

Intro

This option is used to play the end of a sequence as an intro, whenever the sequence is started following an empty bar. This will leave the timing of the main sequence the same, and will only affect the bar preceding the sequence.

Enabling the Skip End option from the length box will cause the intro part of the sequence to be missed at the end of the sequence, whenever followed by an empty bar.

The main purpose of this option is to let you bring a new sequence into your song before the start of a bar. Try adding a 4/4 kickdrum to your song and adding a $\frac{1}{4}$ bar intro to get more idea of how this works.

Track Quantise

The Quantise option is used with note or percussion sequences to adjust the start position of each note.

This can be used to correct timing after recording a sequence with the keyboard, or used to vary the rhythm of a sequence you've added with the mouse.

The quantise level for the track will initially default to 100% of the selected interval. This can be adjusted to create more subtle effects, or varied to create different styles for the track using the Quantise Levels option on the Track Mixer.

You can permanently apply any current settings by selecting the Apply Quantise option from the [Track menu](#).

Track Play Mode

Play mode can be set to either:

Single Play, which will play a sound once for each entry on the bar grid.

Percussion, which will play a percussion sequence for each entry on the bar grid, **Notes**, which will play a note sequence for each entry on the grid, or

Beat Splicer, which lets you play selected parts of an audio file using the Note Sequencer.

Usually when you create a multiple bar note or percussion sequence, you'll want to play the whole sequence in order and clicking on the bar grid will add each bar of the sequence automatically.

There may be times when you want to play individual bars of the sequence in a different order, or use the same track to play different bars of a sequence at different points in the song.

To try this out, click on the play mode button for an existing note or percussion sequence and enable the **Single Bar Edit** option.

Track Length

The displayed value represents the maximum length in bars that each sequence note is played for and also the pattern resolution when using percussion or cutoff sequences. The number of bars can be edited directly if you select Single Play as the play mode, or selected from a list when using note or percussion sequences.

If you enable the Triplets option for a sequence, the length can be set to 1/3, 1/6, 1/12 or 1/24 allowing you to use $\frac{3}{4}$ timing in a song.

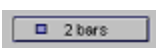
If you're using a note sequence and set the length to 'Off', you'll be prompted to select the length of each note as you add it to the note sequencer window.

You can change the length of individual notes at any time by right clicking on the required end position of the note in the note sequencer grid.

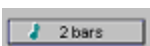
Track Sequence

The use of this column will depend on the type of track, and also the play mode used.

For percussion tracks, this column is used to enter single bar percussion sequences directly onto a grid. Right clicking on the grid allows you to create multiple bar sequences, in which case a sequence button will be displayed in place of the grid. If you prefer to always use a button, you can change the 1 Bar Pattern option available in the Edit Options.



For note tracks, a button is displayed which shows the number of bars in the current note sequence. Click on the button to change the note sequence.



If an effects sequence has been created for the track, the button will display the number of bars in the [effects sequence](#).



Tracks using [MultiSample Files](#) or Midi Drum Kits display a yellow rectangle along with the number of bars in the sequence, and [cutoff sequences](#) display a red rectangle.

Track Sustain

Sustain is used with percussion sequences. With sustain turned off, each sound will be played for the specified play length. With sustain turned on, each sound will be played until the start of the next one up to a maximum of 1 bar.

When using audio samples, the Always On option will continue to play each sound even after another one has started. This can give a more realistic sound when using drum or bass samples with a fast fade time.

Track Mono / Polyphonic

When playing note sequences with this option switched off, each note that starts playing will stop all previous notes. With this option on, notes of different pitches will continue to play.

Track Auto Fader

This option is used with audio effects to set the Auto Fader on or off. This will cause changes in effects levels on the main bar grid to be applied gradually rather than changing instantly.

This can be particularly useful with a volume effect when fading your song in or out.

You'll see grey lines appearing on the bar grid for any intermediate levels.

The fader resolution will default to 1/32 bar, but can be changed using the option available from the [Bar Level window](#) (accessed by clicking on the Track Type button)

Track Volume

The Volume control is used to adjust the volume of each track. The level can range from 0 (silent) to 127 (maximum).

If you're using midi tracks in your song, changing this value will affect the midi volume (controller 7) for each channel and may affect other tracks which are using the same midi channel and instrument.

This column is also used with a number of audio effects to set the output mix level for the effect. A maximum value of 127 will play only the effected output, a minimum value of 0 will play only the unaffected output.

It is also used with the Delay effect to specify the number of times that a sound will be repeated.

Track Pan

The Stereo control is used to adjust the balance between left and right speakers. The value can range from -127 (all left, no right) to +127 (all right, no left).

If you're using midi tracks in your song, changing this value will affect the midi pan (controller 10) for each channel and may affect other tracks which are using the same midi channel and instrument.

It is also used with the Delay effect to specify whether a stereo crossover is being used.

Note Velocity

This option will affect the velocity or loudness of each note in a sequence.

With audio tracks, this will have a similar effect to the volume control by adjusting the volume of each note.

If you're using midi or plug-in tracks, this will affect the timbre of individual notes rather than just the output level.

When you record a note sequence using a velocity sensitive midi keyboard, each note has a velocity of 0-127 based on the original keyboard input (this is fixed at 64 if you're using the PC keyboard or non velocity sensitive midi keyboard).

The note velocity track setting will adjust the original velocity by the specified amount. This means that you can record a note sequence with individual note velocities, and adjust the velocity for the track at a later date without affecting the relative note velocities. A zero or off setting will play back each note at the original velocity.

Track Bass/Treble

These options will increase or decrease the lower or higher frequencies in the audio or plugin sound.

Track Attack

The attack value specifies how long it takes the sound to reach its full level. This can range from 0 (no attack) to 127 (fade in over the whole sample).

Track Release

The release value will cause the end of the sound to be faded out. This can range from 0 (no fade) to 127 (fade out over the whole sample).

If you're not playing sustained sounds to their full length, reducing the level at the end of the note can create a more realistic sound.

Track Meters

Selecting this option will display the output meters for each plugin or audio track. These let you monitor the audio output levels for individual tracks.

Using a Keyboard

[On-screen Keyboard](#)

[PC Keyboard](#)

[Midi Keyboard](#)

[Track Recording](#)

On-screen Keyboard

An on-screen keyboard can be used for previewing sounds at different pitches using the mouse. This can be opened at any time by clicking on the keyboard symbol at the bottom of the screen.



The on-screen keyboard is context sensitive and additional options may appear depending on the situation. For example, selecting a file from the browser window with the keyboard open will activate the track recording options.

Using a Keyboard - PC Keyboard

You can also preview sounds using your computer keyboard. Press the '1' key at the top left of your computer keyboard and you should hear the currently selected sound played and see the note highlighted in the on-screen keyboard. You can preview sounds at different pitches using the top 2 alphanumeric rows of your computer keyboard. The notes for each key on the computer keyboard will initially default to semitones. You can change this by selecting the 'PC Keyboard' option from the [Song Options](#).

You can play notes over a 4 octave range using your PC keyboard by holding down the shift key. This will cause the top row to be played an octave higher, and the bottom row an octave lower.

You should remember when using your PC keyboard that only a limited number of simultaneous key presses are usually available, and this may cause problems when trying to play chords.

Midi Keyboard

If you're using a midi keyboard, you should select the correct midi device from the [Input Options](#) menu.

You can also specify here whether you're using a velocity sensitive keyboard and change the centre note of your keyboard. This is the note on your keyboard that will play back sounds at the original pitch, and should be set to the most convenient position.

The Midi Input Monitor on the [Utilities menu](#) can be used to check that your keyboard is connected correctly.

Please see the Midi [Input Options](#) for more information about configuring a midi keyboard and midi controller inputs.

Track Recording

Try opening the on-screen keyboard with a sound file selected in the browser window, and you should see record buttons and a transpose option appearing at the top of the on-screen keyboard window.



You can record over an existing track by clicking on an existing track name to open the browser window, or select a file directly from the browser window to record a new track.

When recording over an existing track, you can right click on the track name to automatically open the on-screen keyboard and select the track for recording.

If you're recording over an existing track, you'll also see a realtime preview button available. This will automatically disable any existing track sequence and let you play along using your keyboard. If you're recording over an existing plug-in instrument track, this option will switch between track output and keyboard input while the song is playing. Using the Preview button will also add any VST effects used by the track to the preview playback.

There are two basic types of recording, step and real-time.

To use **Step Recording**, press the red square button. Before playing any notes, select the step size you want to use. This will initially default to 1/8 bar.

You can now record notes to a new track by playing your midi or PC keyboard, or by clicking on the on-screen keyboard.

Each note you play will be added to the current position and advance the position by the specified step size. You should see the number of

notes you've recorded updated on the keyboard title bar.

Click on the right arrow button, or use the right arrow key on your computer keyboard to leave gaps between notes.

The 'X' button is used to clear any existing notes you've played and restart your recording. You can also clear any notes you've already played by pressing the 'Delete' key on your PC keyboard.

Press the red square button again or the 'Escape' key on your PC keyboard to finish recording. The sequence you've recorded will now be added to your song as a new track.

If you've only played a single note pitch while recording, the track will be added as a percussion track. Otherwise it will be added as a note sequence. You can change a percussion track to a note sequence (or vice versa) at any time by clicking on the play mode button for the track.

To stop recording without saving any notes you've played, press the 'Delete' key followed by the 'Escape' key on your keyboard (or click on the equivalent buttons). Alternatively, you can use the Undo button after adding the new track.

You can't enter chords while step recording a new track to avoid accidentally overlapping keys, however you can do this when step recording with the note sequencer by pressing the individual notes one at a time while holding down a single note.

Real-time recording lets you record in time with the song that's playing.

Select a single bar of the song for now, and press the red circle button to select the Loop Recording option.

When using Loop Recording, any notes that you've played will be cleared whenever you play a note during a later loop of the song. If

the song playback loops and you don't play any more notes, then the previous ones can be added at any time.

Try playing along and then press the red circle button again or the 'Escape' key on your PC keyboard to finish recording. The last bar of the notes you played will now be added to your song as a new track.

By default when real-time recording, any notes you play are added to the grid at the nearest 1/32nd bar of the sequence. If you only want to record to the nearest 1/16th, for example, you can use the Quantise option to set a lower note resolution. Switching off the Quantise option will store the notes exactly as you play them using an offset setting for each note.

The final recording button (the right facing arrow) is also used for real-time recording, but lets you record longer sequences rather than looping in time with the song. The sequence position will initially loop in time with the song playback as before. Once you start playing, notes will be added to additional bars in the sequence. This option also lets you record sequences by playing along to your whole song, rather than selecting a number of bars as with Loop Recording.

To get the best results when recording or previewing samples, you should run the Auto Set latency option from the [Audio Performance](#) menu and follow the on-screen instructions.

Percussion Sequencer

[Editing Percussion Sequences](#)

[Envelope Settings](#)

[Note Settings](#)

[Pattern Toolbox](#)

[Pattern Menu](#)

Editing Percussion Sequences

The Percussion Sequencer lets you enter notes at a single pitch using a 16 bar grid. You can enter a single bar percussion sequence directly onto the main track window, or right click on the pattern in the track window to open the percussion sequencer.

Once you've opened the percussion sequencer, you'll see a number of buttons available at the top of the window, with a 16 bar grid available to enter a sequence. Click on the arrows at the bottom of the sequencer window to enter a sequence that is more than 16 bars.

You can **Reset** the whole sequence at any time by using the button at the top left of the window.

The **Play** button can be used to preview or solo the current sequence, and the next three buttons are used to edit the Envelope and Note Settings and open the Pattern Toolbox.

The Rotate buttons, located towards the top right of the window can be used to change the position of the whole sequence or selected notes. Simply click on the left and right arrows to change the position of the sequence.

You can change the active track in the percussion sequencer at any time by using the <Tab> and <Shift><Tab> keys.

Percussion Sequencer - Envelope Settings

Click on the envelope symbol at the top of the percussion sequencer window for an audio track and you should see the envelope window appear. Changing the slider levels lets you adjust the Attack, Decay, Sustain and Release for the sound. You'll see the shape of the sound updated in the lower part of the window as you change the slider settings.

Percussion Sequencer Note Settings

You can access the note settings by clicking on the Note Settings button, or right clicking on an existing sequence note. You should see the active note turn red, and a window appear with the current settings for that note. Left clicking on the active note again will close the settings window; left or right clicking on a different note will display the settings for that note.

The available note settings are as follows:

Offset Adjusts the start position of each note by +/- 1/64th bar
Length Adjusts the length of each note **Velocity** Adjusts the level of each note **Stereo** Adjusts the stereo position of each note
Attack Fades in the start of notes

Detune Adjusts the pitch of each note by +/- 1/4 tone Only the first three options will be available when using midi or plugin tracks.

The Length setting for percussion tracks is based on a % of the total available length. This will be measured in whole bars if the sustain option for the percussion track is switched on.

Select the Beats option in the note settings window to change groups of notes at certain beats in a bar.

You can adjust the settings for all the notes in a sequence by using a Note Settings effects track. If you use a Note Settings effects track, and also add settings for individual notes, the effects track will only change the notes which use that setting.

Pattern Toolbox

The Pattern Toolbox lets you add various fixed and random patterns to selected bars in a sequence. Click on the toolbox button at the top of the percussion sequencer window to open the pattern toolbox.

If you're wondering why it's called the 'Pattern' toolbox rather than the 'Percussion' toolbox, it's because it can also be used with effects patterns and cutoff sequences, rather than just with notes.

Select the pattern you want to use, then click on the enter button or press the enter key on your keyboard to update the selected bars of the sequence.

Percussion Sequencer - Pattern Menu

The Pattern Menu can be accessed by right clicking on selected Bars in the sequencer window. In addition to the [default edit options](#), some or all of the following options will be displayed: The **Double Playback Speed** option will move all the notes in the selected range to the first half of the selection, and repeat them in the second half. This has the effect of doubling the playback speed for the selected range.

The **Half Playback Speed** option will move all the notes in the first half of the selected range to fill the whole selection. This has the effect of halving the playback speed for the selected range. Any notes in the second half of the selected range will be lost, so you should select additional bars to avoid this (e.g. if you're expanding a 4 bar sequence, you should select 8 bars to include all the notes in the resulting sequence) The **Export to Midi File** option lets you save the selected part of your percussion sequence to a standard midi file which can then be reloaded into different tracks. If you select midi channel 10, you'll be able to select a midi drum note for your saved sequence.

Note Sequencer

[Editing Note Sequences](#)

[Recording](#)

[Using the Notes Toolbox](#)

[Envelope Settings](#)

[Note Settings](#)

[Beat Splicer](#)

[Notes Menu](#)

Editing Note Sequences

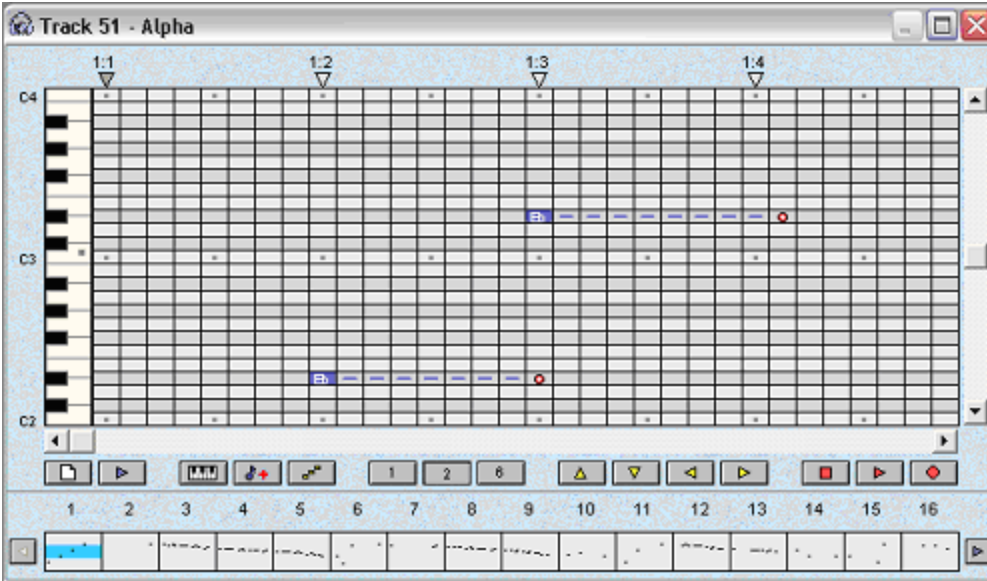
The Note Sequencer lets you enter notes over a range of up to 6 octaves.

You can maximise the sequencer window to edit notes over the whole 6 octave range at once. Maximising the window will also let you view additional bars by clicking on the 1, 2 or 4 bar buttons.

Without the sequencer window maximised, you can choose to view 1, 2 or 6 octaves in the window by selecting the octave buttons near the centre of the window. The vertical scroll bar can be used to move up and down over the 6 octave range.

When using the 6 octave view without the sequencer window maximised, clicking on the grid will zoom to the nearest 1 or 2 octave view. Clicking near one of the octave indicator bars will zoom to 2 octaves, and clicking between 2 of the bars will zoom to a single octave.

The horizontal scroll bar can be used to move through the first 16 bars, otherwise you can click on any of the 16 boxes at the bottom of the window to move directly to that bar. The yellow box at the bottom of the screen shows the current position of the main grid. To create or edit a sequence which is longer than 16 bars, click on the arrow buttons to the left and right of the 16 bar display.



If you click the mouse just above the 1st bar at the bottom of the window, you should see a selection bar appear. This can be dragged to select more than one bar. The [edit menu](#) or right mouse click on the current selection will now allow you to copy the selected notes. After copying the first bar, right click above the second bar then select paste and you should see a copy of the 1st bar appear.

Selecting groups of notes which are not whole bars can be done by clicking and dragging in the area just above the main grid.

Selecting a single note position at the top of the grid will enter chord entry mode, and any notes you enter using the keyboard will be toggled on or off at the current position.

Notes of certain pitches can be selected for editing by clicking just to the left of the grid. This will allow you to edit notes for just the selected pitch range after selecting the required number of bars.

You can **Reset** the whole note sequence at any time by using the button at the centre left of the window.

The **Play** button lets you preview or solo the current sequence, and the next three buttons are used to edit the **Envelope** and **Note Settings** and open the **Notes Toolbox**.

If you're using a plugin instrument, the Envelope button will be replaced by a realtime preview button. This lets you play along to the existing sequence using your keyboard while the song is playing.

The **Transpose buttons**, located towards the centre right of the window can be used to change the pitch or position of the whole sequence or selected notes. Simply click on the up and down arrows to move the pitch up and down, or the left and right arrows to change the position of the sequence.

You can change the active track in the note sequencer at any time by using the <Tab> and <Shift><Tab> keys.

Note Sequencer - Recording

If you're recording a new sequence, you might find it easier to use the Track Recording options mentioned earlier in the [Keyboard](#) section of the manual. The note sequencer recording options work in a similar way, but let you record additional notes into an existing sequence. This can be useful for creating a long sequence in small parts, or for recording individual drum parts into an existing sequence.

The current view in the note sequencer window will affect the note range when recording. If you're using a 2 octave midi keyboard, you can select a 2 octave view and move up and down using the vertical scroll bar to record different note ranges.

As with Track Recording, there are two basic types of recording, step and real-time. The three recording buttons in the sequencer window have the following functions.

To use **Step Recording**, press the red square button. Before starting step recording, select the step size you want to use. This will initially default to 1/8 bar.

Each note you play will be added to the current position and advance the position by the specified step size. You can enter chords by pressing the individual notes one at a time while holding down a single note. You should see the notes appearing in the sequencer window as you play them.

Click on the right arrow button, or use the right arrow key on your computer keyboard to leave gaps between notes.

The 'X' button is used to clear any existing notes you've played which haven't yet been added to the sequence. You can also clear any notes you've already played by pressing the 'Delete' key on your PC keyboard.

Press the red square button again or the 'Escape' key on your PC keyboard to finish recording. The note sequence will now be updated and you can hear the results by playing the song. If you don't hear anything, you may need to add the sequence to the bar grid at the current playback position.

To finish recording without saving any notes you've played, press the 'Delete' key followed by the 'Escape' key on your keyboard (or click on the equivalent buttons).

Any recording you do will be added to any existing notes in the sequence, rather than overwriting them. This means you can record a single sequence in as many stages as you want. Use the Reset Sequence button before recording if you want to clear any existing notes.

Real-time recording lets you record in time with the song that's playing.

You can select up to 16 bars of the song to play along to. Try selecting a single bar of the song for now, and press the red circle in the Note Sequencer window to select the Loop Recording option.

Now you can play along to the song and press the '+' button or the 'Insert' key on your PC keyboard when you've played something you like. This will then be added to the note sequence at the current position and you can continue playing along and adding further notes. Any notes that you've played and haven't yet added to the sequence will be displayed in red.

Notes displayed in red will be cleared whenever you play a note during a later loop of the song. If the song playback loops and you don't play any more notes, then the previous ones can be added at any time. For example if you're looping one bar of the song, then the add button will add the last one bar sequence you played, even if you wait a number of bars before deciding to add it.

By default when real-time recording, any notes you play are added to the grid at the nearest 1/32nd bar of the sequence. If you only want to record to the nearest 1/16th, for example, you can use the Quantise option to set a lower note resolution. Switching off the Quantise option will store the notes exactly as you play them using an offset setting for each note.

The final recording button (the right facing arrow) is also used for real-time recording, but lets you record longer sequences rather than looping in time with the song. The sequence position will initially loop in time with the song playback as before. Once you start playing, notes will be added to the following bars in the sequence.

If you're using a single sequence to record different bars throughout your song, you should normally add the sequence only to bar 1 of the bar grid. This will position the note sequencer window at the correct place when selecting bars for recording, and also when updating the play position.

Using the Notes Toolbox

The Notes Toolbox lets you select various combinations of patterns and pitches and can be opened at any time by selecting the toolbox button from the note sequencer window.



At the top left of the window you can select the rhythm you want to use. Selecting 'Locked' will leave the rhythm of any updated sequence bars the same. This can be useful if you want to vary note pitches without changing the rhythm of the sequence. Otherwise, select the type of rhythm and duration you want to use.

In the centre of the window, you'll see the chord selection boxes. These will display the key and type of any chords which have been entered by selecting individual notes. They can also be used to select the notes for a particular key and chord. Try selecting C Major 3rd and you should see the selected notes change to C, E, and G. Try change the E to Eb on the keyboard and you should see the chord display updated to C minor 3rd.

Once you've decided on the note pitches you want to use, the remaining box lets you select the type of sequence to add.

Click on the **Update** button or press the enter key on your PC keyboard at any time to try out the current settings. If you're using a keyboard to enter chords, the changes will be applied automatically as you play them.

The Add button lets you add notes to an existing sequence. This will only change the note pitches that are currently selected. Any other note pitches used in the sequence are left unchanged. This option

can be useful for adding separate drum parts to a multisample sequence or midi drum kit.

Note Sequencer - Envelope Settings

Click on the envelope symbol at the centre left of the note sequencer window and you should see the envelope window appear. Changing the slider levels lets you adjust the Attack, Decay, Sustain and Release for the sound. You'll see the shape of the sound updated in the lower part of the window as you change the slider settings.

Note Sequencer - Note Settings

You can access the note settings by clicking on the Note Settings button, or right clicking on an existing note. You should see the active note turn red, and a window appear with the current settings for that note. Left clicking on the active note again will close the settings window; left or right clicking on a different note will display the settings for that note.

The available note settings are as follows:

Offset -Adjusts the start position of each note by +/- 1/64th bar
Length -Adjusts the length of each note **Velocity** -Adjusts the level of each note **Stereo** -Adjusts the stereo position of each note **Attack** -Fades in the start of notes

Detune -Adjusts the pitch of each note by +/- 1/4 tone **Slide** -Slides pitch from previous note These are similar to the settings available in the percussion sequencer, with the addition of the slide option.

Note Lengths in the note sequencer are adjusted by right clicking on the main grid, and the note settings option lets you set a fine adjustment to the nearest 1/32 bar.

Select the Beats option to change settings for notes at certain beats in a bar, and the Pitch option to change settings for notes at certain pitches.

You can adjust the settings for all the notes in a sequence by using a Note Settings effects track. If you use a Note Settings effects track, and also add settings for individual notes, the effects track will only change the notes which use that setting.

Beat Splicer

As well as playing notes at different pitches, the note sequencer can also be used to play different parts of a sound for each pitch. The most common use of this feature is to separate a sample loop into individual sounds and create your own sequences from the sounds.

To try out the Beat Splicer, load a sample loop into a new track and change the Play Mode to Beat Splicer.

Open the Note Sequencer window for the track, and you should see the various pitches down the left of the screen have been replaced by a bar and beat display. The number of notes displayed will depend on the length of the original sample.

Sequence notes outside the available range will repeat the available notes, with those below the centre note being repeated in reverse order.

You can change the interval between each note using the selection box at the bottom left of the sequencer window. This can be used in combination with the play length and mono/poly mode for the track to create different uses for the beat splicer.

You can simply sequence the bars of the sample loop in a different order by using whole bar notes for the track length and interval length.

Using whole bar notes for the track length, and switching off poly mode, lets you use whole bars in the sequence and then change part of any bar by adding in combinations of beats. Try setting the interval to $1/8^{\text{th}}$ or $1/16^{\text{th}}$ when adding additional beats to a bar to create some drum and bass style rhythms.

Alternatively, you can create your own sequences by selecting individual sounds from the loop. In this case set the track play length to the same as the interval length to play separate sounds.

The **Notes Toolbox** can be used to produce a variety of interesting sounds when using the Beat Splicer. The 'Arpeggio Up' option will sequence adjacent sounds in the correct order, and other options can be used to break up your loops in many different ways.

You can apply a pitch adjustment to notes in the sequence by selecting the **Note Pitches** option at the top left of the sequencer window. This is the default setting when changing the play mode for an existing note sequence.

Selecting the **Full Range** option at the top left of the window will start the selected file at the bottom of the note sequencer window and give you double the range of notes to use.

Note Sequencer - Notes Menu

The Notes Menu can be accessed by right clicking on selected Bars in the sequencer window. In addition to the [default edit options](#), some or all of the following options will be displayed:

The **Double Playback Speed** option will move all the notes in the selected range to the first half of the selection, and repeat them in the second half. This has the effect of doubling the playback speed for the selected range.

The **Half Playback Speed** option will move all the notes in the first half of the selected range to fill the whole selection. This has the effect of halving the playback speed for the selected range. Any notes in the second half of the selected range will be lost, so you should select additional bars to avoid this (e.g. if you're expanding a 4 bar sequence, you should select 8 bars to include all the notes in the resulting sequence)

The Reverse option will reverse the melody or note pitches of the current selection while leaving the rhythm the same. This can be useful for creating variations of an existing sequence.

The **Export to Midi File** option lets you save the selected part of your note sequence to a standard midi file which can then be reloaded into different tracks.

Track Tools

[Cutoff Sequences](#)

[Section Tracks](#)

[Application Track Tools](#)

Cutoff Sequences

Cutoff sequences let you switch off the volume or disable notes for selected parts of a bar. This can be useful for varying note sequences or other sounds at different points in your songs.

You can add a cutoff sequence by dragging the icon in the Track Tools folder onto the required track, or by clicking on track type button for an empty track.

Once you've added a Cutoff Sequence, click on the pattern to add red boxes in the positions where you want the cutoff to be used within each bar. Cutoff sequences longer than one bar can be created by right clicking on the track window to open the pattern sequencer window.

The **Level Cutoff** can be used on any type of sound track and simply reduces the output volume for the track to zero at the selected positions.

The **Note Cutoff** should be used with percussion or note sequences and this will disable any notes which start at the selected positions. This can create a more natural sound than simply reducing the output volume. When you're using the Note Cutoff, the sustain button can be used to decide whether to fill in the gaps created by removing notes.

The **Always On** option will disable the effect of any other active cutoff sequences. This is mainly useful when adding a cutoff to your whole song, and lets you solo tracks for certain beats in your song.

You can also select different play modes for cutoff sequences by clicking on the Play Mode button for the track. Selecting Note mode lets you specify individual note pitches to be disabled. Selecting 'Whole Bars' will apply a fixed cutoff over a number of bars. You can also use single bar edit mode with cutoff sequences to add different cutoffs at different points in your song.

Section Tracks

Sections can be used in your songs to group different tracks together. You can change the volume, stereo, bass and treble settings of a group of tracks simultaneously, and also add effects tracks to the section as a whole.

This can be particularly useful for adding plugin effects to a number of different tracks, as some plugins can use a lot of CPU time when added to tracks separately.

You can add a section track by dragging the icon in the Track Tools folder onto the required track, or by clicking on track type button for an empty track.

Add another section track just below the sounds you want included in the section, and adding an effects track directly below the start of the new section will now apply the effect to all the tracks within the section.

You can add or change a name for the section at any time by clicking on the horizontal grey bar in the track window. You can change the colour of a section track at any time by clicking on the track type button.



If you choose not to add a name for a section, you can still add effects to the section, but won't be able to adjust the track settings for the section.

You can add a new effect or sound to a section at any time by dragging the file onto the section track from the browser window.

If you're using [multiple audio outputs](#), section tracks are also used to assign the audio output used by tracks in the section. Click on the

bar grid for the section to select the audio output used by the section in each bar of your song.

Sections in your song will normally default to using audio effects, however if you're using a section which only contains sounds for a single midi instrument, you'll be able to apply midi effects to the section. You can hold the mouse cursor over a section track to find whether it's currently using audio or midi effects.

Application Track Tools

The Track Tools folder can also be used to access any 3rd party applications that you want to run from within Making Waves.

The software will automatically add an entry for the Windows Media Player (when available), and you can add any additional applications you want to use by selecting the New Track Tools option from the Utilities menu.

Select the application you want to add, and you should see an additional entry appear in the Track Tools folder.

Enabling the Wave Editor option when creating a track tool means you can drag the new track tool onto existing audio tracks or load tracks from the [File Editor](#) application toolbar.

Using Effects

[Audio Processing Effects](#)

[Delay and Pitch Shift Effects](#)

[Track Effects](#)

[Note Effects](#)

[Bar Level Window](#)

[Effects Patterns](#)

[Effects Sequences](#)

[Effects Toolbox](#)

[Wave Modulator](#)

[Using Multiple Audio Outputs](#)

[Effects Parameter Tracks](#)

Audio Processing Effects

The DSP Audio Effects available in Making Waves can be broadly separated into 4 different types. **Audio Processing** effects are used to change the way a track sounds. **Delay and Pitch Shift** effects are used to repeat or vary the pitch of a sound. **Note** effects are used to change individual notes in a sequence, and **Track** effects are used to vary the track settings during a song.

Compressor - This will compress the dynamic range of the sound, and has the effect of making the quiet parts sound louder.

Distortion - This will distort the sound. Changing the setting will change the amount of distortion.

Expander - This will expand the dynamic range of the sound, and has the effect of making the quiet parts sound even quieter. This can be useful for reducing background noise.

Filter - This will cut out higher or lower frequency sounds. The effect level relates to the frequency cutoff, so a maximum setting when using the high filter will have the least effect and reducing the setting will cause more of the sound to be filtered.

Flanger - This is a short delay which can be varied to create different harmonics.

Modulator - This will modulate the amplitude of the sound at different frequencies. Changing the level will change the frequency of the modulator. Selecting 'Bar Sync' will modulate the sound at 1/16th bar at the maximum level.

Reverse - This allows you to reverse sounds. A minimum setting will play the sound as normal, a maximum setting will play the sound reversed. Any setting between these will combine the sound in both directions. The length you select will change the buffer size used when reversing up to a maximum of 1 bar. Reversing the output from

plugin tracks requires them to be mixed in advance and could cause delays in playback when using longer buffer settings.

When using the Reverse effect with audio note or percussion sequences, select Notes mode rather than Audio mode to reverse each note individually, rather than using a fixed block size.

Many of the Audio Processing effects let you adjust the Wet/Dry Mix level. A maximum value of 127 will play only the effected output, a minimum value of 0 will play only the unaffected output. If available, this setting will appear as the volume control in the track window.

Delay and Pitch Shift Effects

Delay - This will repeat a sound a number of times and also let you change the pitch of the repeated sounds. The Repeat setting determines the number of times the sound is repeated. The Delay Time determines the delay in bars between each repeat. The level of the effect will determine the volume of the repeated sounds. A maximum setting will repeat at the same volume as the original sound.

The pitch setting can be used to offset the pitch of each repeated sound. When using note or percussion sequences, the delay will be applied to individual notes, rather than the audio output.

A Stereo Delay option is also available with the delay effect. This will cause each repeated sound to be played in the opposite stereo channel.

Harmoniser – This will add a harmony to the sound at the specified pitch.

Pitch Shift - This adjusts the pitch of a track by up to the selected pitch range (defaults to 1 octave).

The length you select when pitch shifting audio tracks will change the buffer size used up to a maximum of 1 bar. When using the effect with audio note or percussion sequences, select Notes mode rather than Audio mode to pitch shift each note individually, rather than using a fixed block size.

Echo – This is a fixed length delay and is applied to the audio output. Unlike the Delay effect, which repeats a set number of times, the echo effect will continue until the output levels fade.

Reverb - This is a fixed length delay and can be used for creating a more ambient sound than the echo effect with short delays and low levels.

Timestretching can be switched on or off when using Pitch Shift effects with audio tracks.

The Delay and Pitch Shift effects can also be used with midi sequences and will update the midi note settings.

Track Effects

Stereo - This works in a similar way to the track pan setting but allows you to vary the stereo position of a track during a song.

Volume - This works in a similar way to the track volume setting but allows you to vary the level of a track during a song. The volume range can be changed to 0-200% if you want to increase the original track level.

Equaliser – This allows you to adjust a range of frequencies in the sound. You can select the number of frequency bands you want to use, ranging from Bass/Treble adjustment up to 16 bands. The processing required for this effect will depend on the number of frequency bands you adjust, rather than the initial number of bands you select.

Track Effects can be applied to the whole song, and the Volume effect can be useful when used with the Auto Fader to fade your whole song in or out. Track effects can also be used with midi sequences and will update the midi volume and pan controller settings.

Note Effects

The Note Effects are all available from the [Note](#) and [Percussion](#) Sequencers as Note Settings, although they can still be used in the same way as other effects, allowing you to apply the effect to all the notes in a sequence. To add them as effects, select Note Settings as the effect type and select the type of setting you want to use.

The midi based Note effects (length, offset and velocity) can also be used with midi and plugin sequences, as they're applied to individual notes rather than the audio output.

Note Attack - This will cause the sound to be faded in rather than starting at the full volume. A maximum setting will cause a fade over the whole sound, a minimum setting will have no effect.

Note Length - When you create a note sequence, the maximum length of each note is determined by the track length. Using the Note Length effect will allow you to vary the length of the note by reducing it. A maximum setting will play the full note, other settings will be proportional to the maximum note length.

Note Offset - This will adjust the starting point of any notes up to a maximum of 1/64th bar. This is useful as an effects sequence for creating rhythms which are slightly off beat.

Note Velocity - This has a similar effect to changing the track level, but is applied at the start of each note and will not change while the note is playing. This would normally be used to simulate notes being played at different volumes, whereas the volume effect would be used to vary the whole track.

Note Stereo - This has a similar effect to changing the track stereo, but is applied at the start of each note and will not change while the note is playing.

Note Slide - This will cause a slide or portamento effect if a previous note is still playing when the next note starts. Increasing the level will increase the slide time.

Effects Bar Level Window

The Bar Level Window for an existing effects track can be opened at any time by clicking on the track type button (between the track number and on/off checkbox). This window lets you adjust bar levels on the main grid and also provides some additional options.

You can set the **bar level scaling** to Linear, Log+ or Log-. This can be used for more precise adjustment at higher or lower levels, and also to vary the change when using the auto fader. You can see the effect of changing this setting by looking at the 32, 64 and 96 level indicators at the left of the window.

The default **Auto Fader** resolution can also be changed. Selecting the Auto Fader button on the main track window will default the auto fader to 1/96th bar. You can change this to a lower setting to create step effects with the auto fader.

The **Effects toolbox** is described in a later section, and can be used to apply various patterns or other changes to a range of bars.

Effects Patterns

Effects Patterns let you switch an effect on or off for selected parts of a bar. This is useful for creating rhythmic effects patterns.

Click on the Play Mode button for the effects track to change to pattern mode, then add a pattern to the grid on the main track window, or right click on the grid to open the pattern sequencer.

A green box will cause the effect to be applied at the current level. A white box will switch off the effect or use the default setting.

Once you've created an effects pattern, you can still vary the level of the effect in each bar of your song by adjusting the levels on the main bar grid.

The **Retrigger mode** for the sequence will initially default to **Continuous Loop**. This will restart the sequence whenever it gets to the end, so if you have an effects sequence of say 4 bars, then the position of the sequence will be restarted every 4 bars in your song.

If this isn't what you want, then the Retriggering method can be changed as follows:

Off will play each bar in your effects sequence in the matching song bar, so adding a pattern in bar 4 of the sequence will play this only in bar 4 of your song.

Bar Level will cause the sequence to be restarted whenever the level is set on the main bar grid. This will work even if the level stays the same, so setting the bar grid value to the maximum level in bar 1 and bar 3 would still cause the sequence to restart in bar 3.

Note Sequence will cause the sequence to be restarted whenever a note or percussion sequence is started for the track. This would be used if you wanted to keep the effects sequence synchronised with the note or percussion sequence.

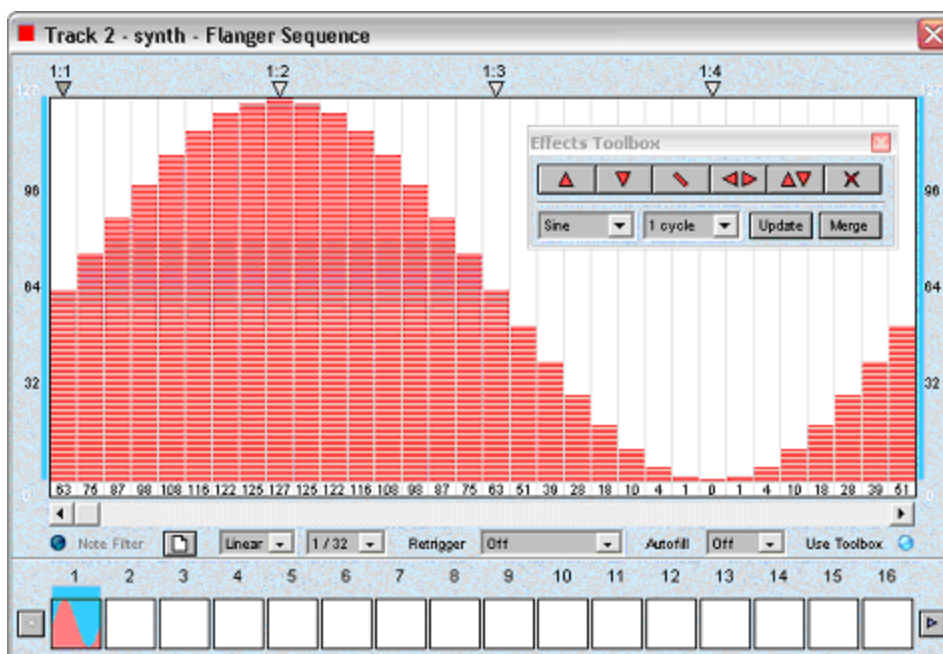
Sequence Note will restart the sequence each time a note is triggered.

If retriggering is switched on and the end of the sequence is reached without it being retriggered by one of the above methods, the effect will continue at the last level used in the sequence.

Effects Sequences

Effects Sequences let you vary the level for any effect to the nearest $1/384^{\text{th}}$ of a bar.

Click on the Play Mode button for the effects track to change to sequence mode, then click on the Sequence button and you'll see the effects sequencer window appear.



The total length of the sequence displayed in the sequencer window is 16 bars when using a resolution of $1/24^{\text{th}}$ or $1/32^{\text{nd}}$ bar, 4 bars when using a resolution of $1/96^{\text{th}}$ and 1 bar when using a resolution of $1/384^{\text{th}}$.

The main edit window will display one bar when using $1/24^{\text{th}}$ or $1/32^{\text{nd}}$ resolution, 1 beat when using $1/96^{\text{th}}$ resolution and $1/4$ beat when using $1/384^{\text{th}}$ resolution.

The editing facilities work in the same way as for bar levels. Clicking with the right button will display a stop sign. This will disable the effect until the next level change in the sequence.

Once you've defined an effects sequence, setting bar levels in the main bar grid will control the level of the sequence in each bar. The entries on the bar grid are displayed in red to indicate this.

Setting the bar level on the main grid to maximum will play the sequence as it is displayed in the window. Reducing the bar level on the main grid will gradually reduce the levels in the sequence.

If you're applying an effect to a single note or percussion sequence, you can enable the **Note Filter** button at the bottom left of the sequence window to set the levels only at the start of each note. This is useful when you want to vary the effect between different notes, but use a fixed level during each note.

You can set the level scaling for the sequence to Linear, Log+ or Log-. You can see the effect of this by looking at the 32/64/96 level indicators at the left of the window. This can be used for more precise adjustment at higher or lower levels, and also to vary the change when creating effects patterns.

The Retrigger options work in a similar way to when using effects patterns, but also contain some additional options.

Single Bar Edit works in the same way as note tracks, so you can add a different pattern to each bar of the effects sequence and trigger these individually from the main grid.

Selecting **midi recording** lets you update a sequence directly when using midi controllers or plugin automation in real-time, rather than changing the sequence levels for each bar. This can be done by assigning a midi controller to the track using the [song mixer](#), or updating automation controls from a [plugin](#) window.

The AutoFill option can be used to smooth out steps when using a lower resolution.

Effects Toolbox

To make it easy to enter and try out different effects sequences, various predefined patterns can be applied to a selected range of an effects sequence.

Enabling the Use toolbox option will cause the effects toolbox to appear whenever you select part of the effects sequence.



The Pattern options in the lower half of the window let you add or merge various waveform patterns to the selected levels.

If you want to generate a rhythmic effect, select a short wave length. Selecting a square wave set to the minimum cycle length will alternate the values between the selected maximum and minimum. If you want a more sweeping sound, try a sine wave over a number of bars.

You should set the bar level for the track to the maximum before trying out some patterns. Try using the Modulator effect on a track to hear the differences easily as you change the effects sequence.

Using the Note Filter button when applying effects to a note or percussion sequence will only update the sequence pattern at the start of each note, so you can vary the effect level between notes while using a fixed level for each note.

Additional buttons on the top row of the toolbox allow you to increase, decrease, flip, reverse or clear the current selection.

The Line button will join up the start and end of the selected area. Select the area you want change and make sure the first and last

values of the selected area are set to the required start and end levels.

You can adjust the minimum and maximum values used for the pattern, flip and clear options by clicking at either end of the window and adjusting the range bars. Click near the top of the window to adjust the maximum level or the bottom to adjust the minimum level.

Adjusting the maximum and minimum levels at the left of the screen will also update the end levels, making it easy to keep these matched. If you want the end levels to be different, then change these after setting the start levels. Right clicking on either level indicator will reset the levels to the default maximum and minimum values.

Wave Modulator

The **Wave Modulator** function lets you load the audio levels from a sample file into an effects sequence.

To do this, simply open the browser window and drag an audio file onto the effects sequencer window. Checking the timestretch option in the browser window when adding a file will adjust the sequence levels to a whole number of bars.

The resolution of the sequence will affect the amount of audio data imported, so you should normally set the sequence resolution to $1/384^{\text{th}}$ to get the best quality results.

Try adding an effect to a sample loop and then loading the same loop into the effects sequencer. You should be able to hear the effect changing in time with the loop.

You can create various effects with this; try adding a vocal sample or drum loop to an effect applied to a pad sound, or use with plugin parameter tracks for some interesting results.

Multiple Audio Outputs

As well as using section tracks to apply effects to groups of tracks in your song, you can also configure additional audio output channels and apply effects to individual outputs.

If you're using the Audio version of Making Waves, the outputs will all be mixed to a single audio device. If you're using the Audio Pro or Studio version, you can route each output to a separate audio device on your system.

The first thing you need to do is decide which output devices you want to use. Select the Audio Output option from the Audio menu and you can select up to 4 stereo output devices. If you're using the Audio version of Making Waves, you'll only be able to select the <Shared> option for additional audio devices.

As you select additional devices, you should see the number of meters at the top of the main screen being updated to match the devices you selected.

You should select only the number of devices you're going to use, so as to avoid using unnecessary CPU time. The first device you choose will be used as the default output.

You can route tracks to separate audio outputs by adding the sounds to different [sections](#). You can then click on the bar grid for the section track to select the output channel for each bar of the song.

If you add an audio effect to the whole song, you should see a channel number appear next to the effect name. Simply click on the channel number to select the audio channel for each effect. A '+' symbol means the effect is being applied to all the output channels.

If you're using plugin effects, applying a single plugin to all the outputs may cause problems with the audio output quality, as the

same plugin will be shared between the different outputs. Add separate plugin tracks for each output to avoid this problem.

Parameter Tracks

Changing the effects levels on the bar grid will adjust the wet/dry mix level for most of the effects you use in Making Waves. Some effects (e.g. modulator, filters and flanger) will change a different parameter when using the bar grid, and the wet/dry mix level for these effects can be changed using the level setting which appears in the Volume column of the main track window.

You can add additional parameter tracks to vary the mix level for these effects during a song. Try adding a modulator effect to your song then clicking on the track type button for the track immediately below the modulator effect.

You should now see an option to add a mix level track. Select this and you can vary the mix level of the effect during a song.

You can also adjust any of the parameters made available by **VST plugins** for automation by adding additional [VST parameter tracks](#).

Studio Version users can also adjust individual **XG effects** parameters during a song by adding XG parameter tracks to an existing XG effect.

Plug-ins

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[Setup](#)

[Effects](#)

[Instruments](#)

[VSTi Sequence Tracks](#)

[Automation](#)

[VST Effects Routing](#)

[VST Audio Channels](#)

Installation

If you're using DirectX plug-ins these should be registered with Windows by running the installation program supplied with the plug-in. If you've already installed DirectX plug-ins for use with another application, you don't need to reinstall them for use with Making Waves.

If you've already installed VST plugin files for use with another application, then you can simply select this as an additional VST folder when running the plug-ins setup option.

If you haven't already installed your VST plug-in files, or want to make a separate copy of your existing plugins for use with Making Waves, you can use the default VSTPlugins folder created in your installation folder. If you still prefer to use a different folder (possibly due to limited disk space on the installation drive), you can create a new folder for your plugin files. Once you've decided on the folder you want to use, you should copy your plugin DLL files into this folder, or run the separate installation software for each plug-in. You can install your individual plugins into different folders under the selected folder.

The default VSTPlugins folder is used to install the default plug-ins supplied with the software and will still be searched even if you specify a separate folder.

Plug-in Setup

Once you've installed your plug-ins, you should select the plug-ins option from the Settings menu to configure your plug-ins for use with Making Waves.

You'll first be asked whether to reload your DirectX and VST plugins. This will cause the software to check for any updated plug-ins and you should answer yes to both of these when first running this option.

When reloading your VST plug-ins, you'll first be prompted to select the folder containing your VST plug-in DLL files. If you're not using any additional VST plug-ins then you can leave this set to the default path, otherwise select the folder containing your plug-in DLL files.

Once you've done this, press OK and the software will start analysing the plug-ins available on your system.

Please note that this may take a while when you first select a new folder for your VST plug-ins.

Due to the unpredictable nature of some plug-ins when used with Making Waves, it's possible that you may get an application error when first running the plug-in setup option. If so, then you should restart the software and rerun the plug-in setup option. You should then be asked whether you want to load any plug-ins which previously caused an error. Answer no to this until your remaining plug-ins are initially configured, then you can retry loading the problem plug-ins at a later date.

Once your plug-ins have been initialised correctly, you should then see the plug-in setup window displayed.

The plug-in setup window will display all the detected plug-ins on your system, and give you the choice of disabling any plug-ins you

don't want to use by clearing the **Enabled** option for individual plug-ins.

If you're using the Audio version of Making Waves you will only be able to select a limited number of VST Plug-ins. These will all be initially disabled, allowing you to enable the ones you want to use.

The **Default Browser Presets** checkbox lets you decide whether to create separate browser entries for the default programs included with each plugin. If you prefer to access plugin programs directly from the file browser window this should be left switched on. If you'd prefer to add plugins to your song and then change programs from within the plugin settings window, this can be switched off.

Once you've finished changing any selections, simply close the window to complete the setup process.

Plug-in Effects

Once you've configured some effects plug-ins, the available presets will be stored in separate folders under the Audio Effects folder.

If you locate the Audio Effects folder using the browser window, you should see separate folders containing your VST and DirectX plug-ins. Each of these will contain a separate folder for each plug-in, which contains all the default presets for the plug-in.

If your plug-in doesn't support default presets, or if you've switched off the default browser presets option from the plugin setup window, there will simply be a single entry, which defaults to the name of the plug-in.

Plug-in effects are selected and used in exactly the same way as the on-board audio effects, simply drag a plug-in preset onto an existing track, or double click to add it to the bottom of your song.

Once you've added the track, click on the <Settings> option for the track to access the plug-in settings.

The drop-down list at the top of the window can be used select different programs for the plugin. The number of available programs will depend on the plugin you're using.

You can save or load your own additional presets, programs or banks at any time by clicking on the Menu button at the top left of the settings window.

Instruments

Once you've configured some VSTi plug-ins, the available presets will be stored in the VST Instruments folder, created under your main installation folder. This will contain a separate folder for each plug-in, which contains all the default presets for the plug-in.

Plug-in instruments are selected and used in exactly the same way as audio samples or midi notes, simply drag a plug-in preset onto an empty track, or double click to add it to the bottom of your song.

Once you added the track, click on the Track Type button for the track to access the plug-in settings.

Additional presets, programs or banks can be loaded or saved in the same way as when using [effects plug-ins](#).

You can select the midi channel you want to use by selecting the option from the main screen.

Selecting midi channel 10 for a plug-in will treat the track as a midi drum kit. This will not be transposed when changing the song key, and will also display names for individual drums when using the note sequencer or on-screen keyboard. The Export option can be used from the note sequencer to create separate percussion tracks for the different drum sounds.

VSTi Sequence Tracks

You can add additional note sequences to a VST instrument by clicking on the Track Type button on an empty track immediately below the plug-in, or right clicking on the plug-in track number, then selecting New VSTi Sequence.

This can be useful for playing multiple sequences through the plug-in at different points in your song, or for playing sequences using different midi channels if the plug-in supports this.

Plug-in Automation

Most VST plug-ins let you change various settings during a song. This is done using **VST parameters**, and Making Waves lets you create VST parameter tracks to change any of the parameters that are supported by the plugin.

You can manually add a parameter track by right clicking on the plug-in track number then selecting New VST Parameter.

Once you've done this, you should see a list of available parameters displayed. Select the one you want to use, and it can then be adjusted during your song in the same way as other effects.

You can add a parameter track automatically by selecting the **Automation** option from the plugin settings window. After doing this, any parameters you change using the plugin interface will be automatically updated as parameter tracks in the software. Once you've added some parameter tracks to the plug-in, the Automation option will be selected by default whenever you open the plugin settings window.

You'll only be able to change a limited number of parameters at a time when adding parameter tracks automatically. You can change additional settings for parts of your song by using a **VST Program** or **Preset Track**.

If the plugin you're using lets you change programs from within its editor window, simply change programs with the automation option active to automatically add a **VST Program Track** to your song. Otherwise you can right click on the plug-in track number then select New VST Programs. Clicking on individual song bars for the program track will display a list of the available programs for the current plugin. Right clicking on a song bar for the track will revert to the original program as specified in the plugin Track Settings.

If your plugin supports a number of different programs, this is normally the best way to change settings. You can load or save presets, programs or banks using the plugin menu button to change the programs available. Some plugins only support a single program; in this case you can use a VST Preset Track to change to any of the available presets in the browser folder. The disadvantage when using preset tracks is that you need to add a separate track for each preset you want to use.

You can add a **VST Preset Track** by right clicking on the plug-in track number then selecting New VST Preset. You should then see a list of all the presets available in the main folder for the plug-in. Once you've selected a preset, select the bars in the song where you want the preset to be applied. *Some plugins may cause a delay in playback when changing presets. You can avoid this by changing the [Audio Mix Buffer](#) to a slower setting.*

Some plug-ins will also let you change settings using **VST Midi Controllers**. You can add a midi controller track by right clicking on the plug-in track number then selecting New VST Midi Controller.

VST Effects Routing

As well as using VST effects in your song, they can also be applied in real-time when previewing sounds from your keyboard or recording note sequences.

You can change the routing of a VST effect by adding it to your song at the top of the track window, then right clicking on the track number and selecting **Direct VST Connection** from the Track Menu.

This will re-route the effect to the preview output and you should see a 'P' appear next to the effect name.

Now you can set the level of the effect in the bar at the current playback position, and it will be applied while previewing any audio sounds or plugin instruments from the browser window.

Once you've recorded a new sequence, you can simply cut and paste the effects track to apply it to the sequence in the normal way.

Re-recording an existing track at any time with the note sequencer or on-screen keyboard will automatically route the preview output through any VST effects used by the track.

If you're using an **ASIO** device, you can click on the 'P' to switch to any available ASIO inputs/outputs. A green number indicates an output device, and a red number an input device. This will let you apply vst effects in realtime when audio recording, or apply them directly to the soundcard output for better response times when mixing.

See the section on [ASIO recording options](#) for further information about audio recording using ASIO devices.

VST Audio Channels

Some VST plugin instruments let you route the output from the plugin to more than one stereo audio output.

If this is the case, you'll see an additional option list appearing which lets you select the number of mono or stereo outputs you want to use.

Any audio effects you add to the plugin can now be applied to individual outputs from the plugin.

All the separate outputs will be mixed to a single stereo output after processing the effects and before adding the plugin output to your song.

Even if you're not using more than one stereo output for the plugin, you may find some of your plugins use a single mono channel for separate outputs. If you notice the output from your plugin appearing in only one stereo channel, you can select one of the mono output options to centre the output of each channel.

Midi Playback

[Getting Started](#)

[Playback Device Settings](#)

[Configuring Effects](#)

Midi Playback - Getting Started

Midi Sounds are stored in a **midi/general midi** folder under your application directory. If you open this folder using the file browser window, you should see some folders containing midi note and drum sounds. Open one of the note folders and you should see some midi sound files appear.

Select a file and you should hear the sound being previewed. If you don't hear anything at this point, check that the correct midi device is being used, by selecting the **Midi Instruments** option from the Settings Menu.

Simply double click on a midi sound file, and the midi sound will be automatically loaded into an empty track. After this, the sound can be used in pretty much the same way as an audio sample.

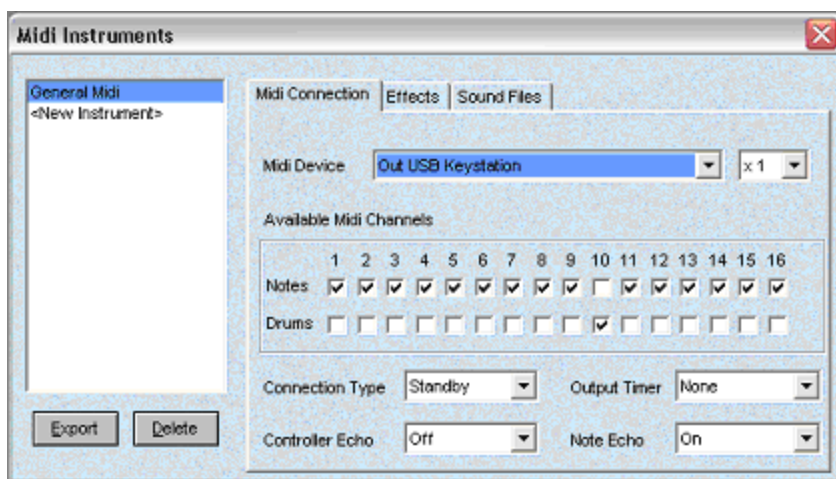
The midi channel used by each track is assigned automatically when you add a new track, although you can change this by clicking on the channel value. The default General Midi device uses midi channel 10 for drum sounds and the remaining channels for note sounds.

The default effects available for midi tracks are based on standard General Midi effects, and can be selected in the same way as audio effects. The available effects for each midi instrument are stored in the Effects folder for the instrument.

Midi Device Settings

You can change the device settings for midi playback by selecting the Midi Instruments option from the Settings menu.

You should now see the default general midi instrument listed at the left of the Instrument window. Studio Version users can create additional midi instruments at any time by selecting the <new instrument> option from the bottom of the instrument list.



The right hand side of the window contains the settings pages which let you configure each instrument. The first of these pages lets you set up the way your instrument is connected to the system, in other words the midi device and channels the instrument will use.

If your soundcard uses multiple midi devices to support more than 16 midi channels, you can access these additional channels from a single instrument in making waves. Simply select the first available midi device in the instrument settings option, then select 'x2' or 'x3' to specify the number of additional midi devices your soundcard supports.

Further down the window, you'll see a list of check boxes for note and drum channels. These specify which midi channels for the selected device are available for the instrument to use when you

load a note or drum sound. Usually a soundcard would use all 16 channels, an external synth may only use a single midi channel. Different synths or other external midi equipment can share the same midi device, as long as they use different midi channels.

The **Connection Type** lets you decide whether to initialise the instrument each time you start a song playing, or to only initialise the instrument when it's being used in the song you're playing. If you use midi tracks in most of your songs you should set the to Active to avoid pauses when first adding a midi track to a song. If you don't use midi very often, you can set this to Standby to avoid any delays when starting song playback.

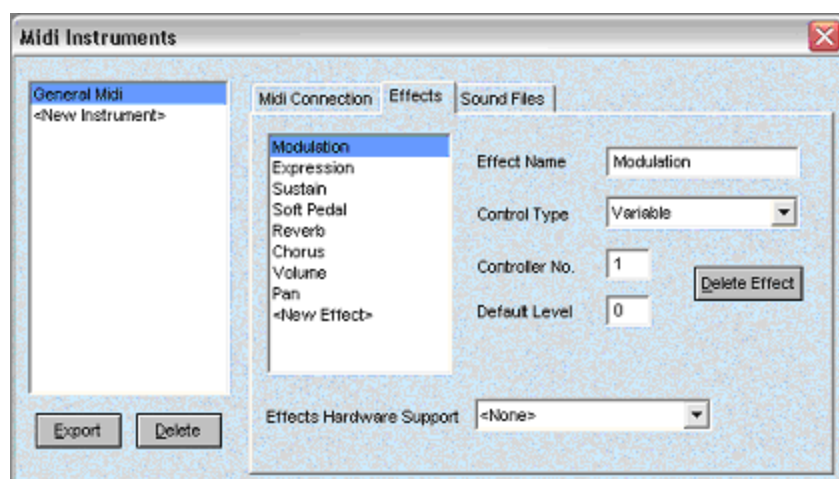
The **Output Timer** option lets you send a midi sync signal to the selected device. This is normally used to synchronise external drum machines and effects units. Check the midi implementation for your equipment to see if the midi system clock or MTC are supported. You should set the connection type to 'Active' to ensure the sync signal will be transmitted even when you're not using any midi tracks for the selected device in your current song.

The **Controller Echo** option lets you decide whether to send any external midi controller inputs to the instrument. This should normally be set to Off if the instrument is the source of your external midi controllers, or On otherwise.

The **Note Echo** option lets you decide whether to send any external midi keyboard input to the instrument. This should be set to Off if the instrument is the source of your midi keyboard and supports local echo, or On otherwise. The easiest way to decide is usually to switch the option off and then switch it back on if you have any problems playing notes from your keyboard.

Configuring Midi Effects

Click on the effects tab, and you should see a list of effects for the default general midi instrument. You can add effects at any time by selecting the <new effect> option from the list.



You should see the Modulation effect is currently highlighted. At the right of the screen you should see the effect name followed by the controller type and number.

The **Controller Number** refers to the midi controller that the software will use to activate the effect. A list of controller numbers which your midi equipment supports is usually included in the midi implementation chart for your equipment.

The **Controller Type** can be set to Variable, Variable + On/Off, or Initialise Only:

Variable means the level can be adjusted to any level between 0 and 127 and the effect will change gradually over this range. This is normally referred to as (0-127) in the Midi Implementation chart for your equipment and is the usual setting for most controllers.

Variable + On/Off uses a separate controller to switch an effect on or off, rather than using a default value to reset the effect. This

should be described in the controller section of your midi implementation if this is supported by your equipment.

Initialise Only lets you send a specified controller value whenever playback begins. The controller will not be available as an entry in the Effects folder.

If you're using a variable controller, the **Default Level** setting is important in deciding how the effect works.

If the default level is set to 0 (or any other numeric value), the controller will be set to the specified level whenever you play a song, even if you're not using the effect. It will also be reset to this level if you remove an effect from your song. This means that the level will always default to a predetermined value so your songs will sound the same each time you play them.

If you leave the default value blank, the controller will only be updated when you're using an effect and won't be changed if you cancel an effect. This is mainly useful if you're using a synth which initialises controller levels itself depending on what sound you're playing. You can also improve midi performance by changing the default level to blank for effects that you don't normally use.

Finally, the **Effects Hardware Support** options lets Studio Version users select additional features which have been included for XG midi hardware. The options available are described in the section on **XG Support**.

Any changes you make to midi effects settings will be updated in the Effects folder when you finish making changes, and can then be accessed from the Browser window.

Midi Playback (Studio Version)

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Midi Instruments

Each piece of midi equipment you use with Making Waves is referred to as an Instrument. This could be a soundcard on your PC, an external midi synth or drum machine, or even an effects unit.

Each instrument uses its own sounds folder on your hard disk to store midi sounds, and the available effects can be configured for each instrument using the set-up options. If you're familiar with midi terminology, the midi sounds are played using midi program and bank numbers, and the effects use midi controller messages.

Importing/Exporting Instruments

When you're adding new instruments to your system, you can use the **Import** option to load a predefined instrument file, rather than creating the instrument yourself. You can enter a new name for the instrument before clicking the Import button, or leave this blank to use the same name as the instrument file.

The import file type will initially default to a Making Waves instrument file. This can be changed using the file type list to import files from 3rd party sequencers.

The **Export** option lets you export an existing instrument to a file. This can be useful if you want to use any external midi equipment on someone else's copy of Making Waves. Simply export the instrument to a floppy disk, import it into your friend's copy and you should be ready to go.

Exporting can also be useful for backup purposes, or for storing occasionally used instruments offline then importing them when you want to use them.

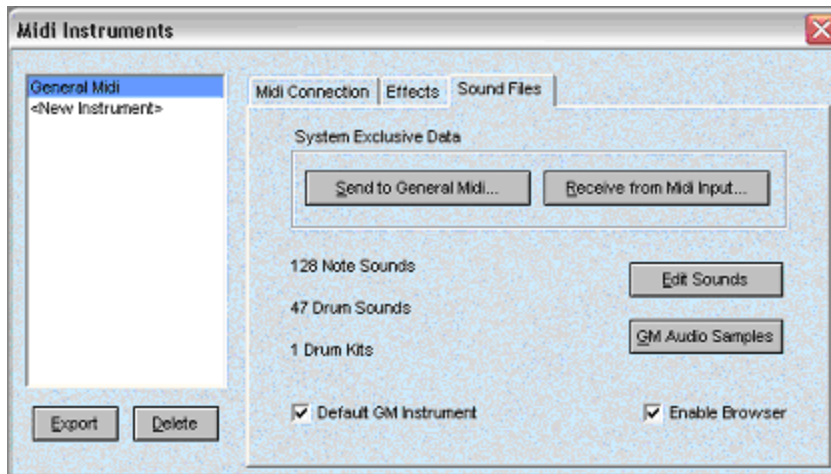
If you're setting up a non-gm synth, you can choose whether to start with a general midi set-up and adapt it, or click on the Create button to start from scratch and create the individual sounds and effects. There are predefined instruments included in your install folder which include program numbers for midi sounds and note numbers for drums. These can be imported to easily configure your non-gm midi equipment. After importing, simply delete any program numbers and drum notes that your synth doesn't use and change the names of the others as required. You can use the standard Windows editing functions to do this by right clicking on sound files in the file browser window.

Instrument files are stored in text format so they can easily be changed using a text editor. You can try changing a copy of one of

the predefined instrument files to experiment with this.

Midi Sound Files

Click on the sound files tab, and you should see details of the midi note and drum sounds for the currently selected instrument.

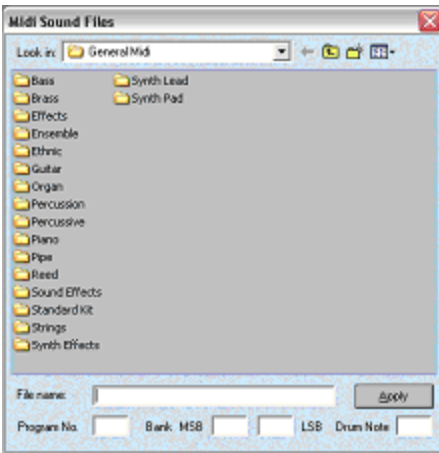


Enabling the **Default GM Instrument** option lets you select the current instrument as the one that will be used when loading midi files or songs by other users which are likely to use different instruments. This should normally be enabled for your default soundcard.

The **Enable Browser** option can be set for any General Midi compatible instrument. This will cause the sounds for the instrument to be included when using the **General Midi Browser**.

The **System Exclusive** buttons let you receive or transmit system exclusive data using the selected instrument. These files are stored in text format, so you can also create your own files using an editor.

Click on the **Edit Sounds** button to open the sound editor which lets you edit or create new midi sounds.



Try clicking on an existing sound file from the Sound Editor and you should see the existing program number, bank and note number for the sound. To create a sound for an additional sound bank, simply type in the new bank numbers and a new name, then the apply button. Any new sounds you create should be saved within the midi folder for the instrument.

You can also use the standard Windows editing functions to copy, paste, rename or delete sounds. You can rename a sound by simply clicking on the name in the file window. Right clicking on the file will let you access the additional editing functions provided by Windows. This can also be done from the file browser window if you want to change the sounds for an existing instrument.

You can update individual settings for a complete folder by selecting the required folder name in the browser window and entering the settings you want to update. Clicking the Apply button should then prompt you to confirm the selected changes to the folder. This can be useful for creating new drum kits that use different midi program or bank numbers. Simply copy and paste the folder containing the drum sounds and then update the settings for the new folder.

Midi drum kits are updated automatically whenever you add a new instrument or use the sound editor. These can be used in the same way as multisample files to record or sequence different drum sounds in a single track.

General Midi Browser

The general midi browser lets you select similar sounds for different instruments, using the midi program number to match the sounds.

Whenever there's a midi sound selected in the sound files window, you should see a browse button appear to the left of the filename. Click on the button and you'll see a list of all the available sounds on your system which use the same midi program number as the currently selected sound. This option will only be available if you've enabled the browser option on the **instrument settings** screen.

When you're selecting drum kits, you'll see a list of all available midi drum kits, rather than just ones which use the same midi program number.

General Midi Sample CDs

If you've tried out the **general midi browser** to select sounds for different instruments, it may have occurred to you that it would be useful to be able to do the same thing with your audio samples.

It isn't usually possible to do this, as audio samples don't include any information about midi program numbers. General midi sample CDs store information about the CD samples in a file which Making Waves uses to find out which audio sounds are equivalent to which midi program numbers.

If you received a copy of the XG Waves sample CD with your copy of Making Waves, simply select the XG Waves (.gms) file from the root directory on the CD. If you're installing the samples onto your hard drive, you should copy all the files from the CD and then select the gms file from the copied folder. If you now select an audio sample from the CD folder, you should see the midi browser icon appear, allowing to you try out the different audio and midi sounds.

For further information about gm sample CDs, check out our website. If you're interested in creating your own gm sample CDs, contact support@spacehead.co.uk for details of file formats.

XG Midi Support

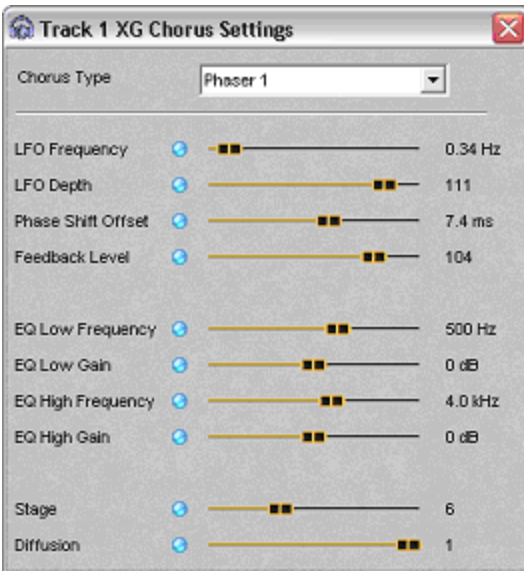
If you're using an XG Midi soundcard, you can **import** the 'xg midi' instrument file which is preconfigured to access all the standard XG sounds.

There is also support for the built in XG system effects, and if you own an SW1000XG, you'll be able to apply midi effects to the audio input or output using the AD mixing features.

If you look on the effects page of the **instrument settings** window, you'll see a effects hardware option which lets you select to use XG midi and/or audio effects.

Selecting **XG System Effects** will let you access the XG Reverb, Chorus, Variation and Insertion effects when using midi effects for the XG device. These will appear in the effects list, and after selecting one you can click on the effects type to change the parameters for the current effect. If you add the same effect to more than one track, the second effect type will initially be set to <default>, and will use the same type as the existing track.

Selecting **XG System + AD Effects** will also allow you to apply the XG Reverb, Chorus and Variation effects to any of the audio outputs or the recording input on your soundcard.



If you're using the AD audio effects mixing; you should configure the audio output devices you want to use in the correct order from 1 - 4 to ensure the AD Effects are applied to the correct audio output. If you now try adding an audio effect to the whole song or one of the audio outputs, you should see the XG options appearing at the bottom of the available effects list. Clicking on the audio output device for an XG effects track will display "In" as one of the available device options. This lets you apply the effect to the recording input and can be useful if you're playing midi equipment through the input on your soundcard.

You can use [effects parameter tracks](#) to change any of the XG effects parameters during your song.

Midi Files

[Loading Midi Files](#)

[Saving Sequences](#)

[Saving your Song](#)

Loading Midi Files

To load a standard midi file, use the file browser window to locate the folder containing the file. You can select the file in the browser window to preview it.

You can add a complete midi file to your song by simply double clicking on the file in the browser window or by dragging it onto an empty track. This will configure the midi file to use your default midi instrument for the new tracks.

You can add a single channel or part from a midi file to any existing sound track in your song by dragging the midi file onto the track in the main window. You should then see a list of available midi parts to select, and selecting one of these will load the midi part into the sequence for the track. This will continue to use the existing sound for the track, rather than changing to the default midi instrument.

Finally, you can add a complete midi file to any plug-in instrument in your song by dragging the midi file onto the plug-in settings window. This will create additional midi tracks for the plug-in if the midi file uses more than one channel.

Any existing plug-in midi tracks will be removed by default when adding a new midi file to a plug-in. If you want to retain any existing midi tracks, switch these off before importing the midi file.

Midi Files - Saving Sequences

You can save a percussion or note sequence to a midi file at any time by selecting the bars you want to save from the note or percussion sequencer, then right clicking on the track menu and selecting Export to Midi File.

This will save the selected bars from the sequence to a midi file. You'll be able to select which default midi channel and program to use for the saved file.

If you're saving a percussion sequence as midi channel 10, you'll be able to select the name of the drum note you want to use for the saved file, rather than the midi program.

Saving your Song

If you're using the Studio version of Making Waves, you can save a complete song to a standard midi file.

To do this, select the [export to file](#) menu option as you would when creating a wav file, and change the file type at the bottom of the window to midi. This will save the midi tracks in your song to a standard format midi file.

File Editor

[Changing the Play Length](#)

[Repeat Points](#)

[Saving Files](#)

[Beat Tapper](#)

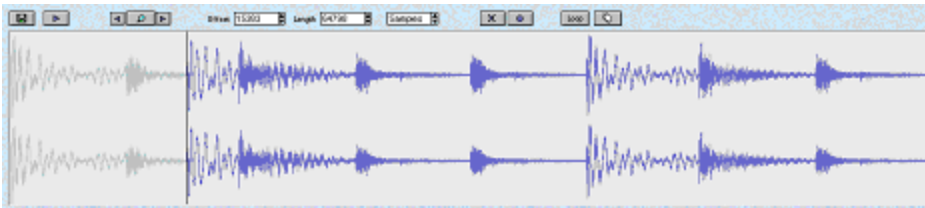
[Application Toolbar](#)

File Editor - Changing the Play Length

The File Editor lets you change the way sample files are loaded into a Making Waves track. You can select a certain part of the sound to be played, repeat or sustain a sound by looping part of it, or adjust the sound levels using the Input Gain Control.

The File Editor window also provides access to other file related functions, allowing you to save sounds in different file formats or copy selected parts of a sound to different files.

To open the file editor, click on the track button to the left of the filename for an existing sample track. You should now see a graphical representation of the file, with the number of samples in the file displayed near the top of the editor window.



If you click and drag near the start of the file display, you should see the start offset and length of the selection being displayed in samples. The current selection can also be updated using the keyboard by editing the offset and length values displayed in the boxes.

Clicking and dragging near the end of the file display will adjust the end position of the file.

Click on the box displaying 'Samples' and you can also view and edit the current selection in seconds, bars, or 1/16th bars. The bar based options are most useful when working with sample loops. You can increase the start of the selection in 1/16ths for example, to try out the individual sounds in a sample loop, or select individual bars from a multiple bar loop.

The two buttons at the top left of the editor window let you save or preview the current selection.

The next three buttons are the **Zoom** buttons. These let you make more precise changes to the selected points by zooming in to the selected part of a file. The selected area will fill the middle of the screen allowing you to easily adjust the end points. Click on the zoom button again to return to a full view.

The **Reset** button lets you cancel any existing selection.

The **Zero End Points** button will scan from each end of the current selection to try and locate a zero level in the file. This is used to avoid clicks at the start or end of the selected sound.

The **BPM** button lets you adjust the current file selection to a whole number of bars by automatically changing the bpm setting for the track. This is useful for creating sample loops as you can adjust the start and end of a loop using the file editor and hear the selected range as a loop. Clicking on the button will adjust the current sample, then remain active and adjust any changes until you switch it off by clicking on the button again.

You can change the size of the file editor window at any time by clicking and dragging above the window title bar.

Repeat Points

As well as selecting which parts of a sound to play using the Play Length, you can also repeat part of a sound. This can be used to extend a sound by sustaining it, or to repeat the main section of a sample loop with an intro section.

To change the repeat settings, click on the Edit Mode button and you should see the button text change to **Repeat Points**. If you've selected part of the file in the Play Length window, you will only see the selected part when viewing repeat points.

You should see a plus sign appear next to the bar length for the track on the main window whenever repeat points are being used. The looped part of the sample will only play if the play length in bars for the track is set to more than the length in bars of the sound.

Saving Files

While it's easy to make changes to sounds in real-time using the File Editor, there may be situations when you want to save sounds into new files.

Simply click on the Save button and you will be prompted to save the current selection to a new sample file. The various options available are similar to the Copy to Sound File menu option.

The initial values displayed will default to the settings for the current file.

File Editor - Beat Tapper

When you're adding short sample loops to your songs, the software can usually work out the tempo of loops by calculating the number of whole bars.

This isn't the case when using longer samples, such as tracks you've recorded from an audio CD, as the software doesn't know how many bars long the sample is.

If you know the original tempo of the sample, you can enter this value directly and then adjust the start position using the file editor.

Otherwise, if you're using samples which are more than 4 bars long, the Beat Tapper can be used to easily work out the tempo and start offset of sample files.

Click on the Beat Tapper button at the top right of the file editor, and then just play along to each beat in the file using your keyboard or by clicking with the mouse on the beat tapper window.

After entering a couple of bars, you should see the calculated tempo displayed. This will be updated as you continue to play.

The calculated settings for the file will be updated when you stop playing or when the end of the file is reached.

If you're using long sample files, such as audio CD tracks, you might still need to fine tune the bpm setting to stop the files getting out of sync after a number of bars. The easiest way to do this is by checking that the first bar of the sample is in time, then looping a bar part way through the sample and adjusting the bpm setting for the track until it sounds in time.

Application Toolbar

You may find it useful to use a separate wave editor or other applications with Making Waves, for applying any audio processing that your other applications support.

To specify the applications you want to use, just add them to your Track Tools folder using the New Track Tools option from the [Utilities menu](#).

Make sure that the Wave Editor option is enabled when creating the track tool, and you should then see an icon for the track tool appearing at the bottom right of the file editor window.

Simply click on the required icon to load the current audio file into the application.

If you've been playing a song in Making Waves, some of the sample files may still be open and this may cause problems when saving files with an editor. To make sure all the sample files in Making Waves are closed at any time, click on the main [Stop button](#) twice.

Mixer Windows

[Track Mixer](#)

[Song Mixer](#)

[Midi Learn](#)

[CPU Monitor](#)

[Mixer Inputs](#)

Track Mixer

The Track Mixer lets you adjust the Volume, Pan, Bass or Treble for all the sound tracks in your song. You can choose whether to edit the default track settings, or adjust the automation values to change the values at the current position in the song.

To open the Track Mixer, click on the button at the bottom left of the main screen.

Select Track Settings from the drop down list at the top left of the Track Mixer window to display and update the default values for the track. Try changing one of the values using the slider controls and you should see the field being updated in the main track window.

The Increase/Decrease Level buttons will be displayed when you're editing the Volume Track Settings. These allow you to proportionally increase or decrease the levels for all the tracks in your song at once.

Now try selecting **Automation** and changing one of the values. This time you should see a mix effect track automatically added to your song, with the effect level set to the required value at the current playback position.

Switch off the track automation again using the track mixer checkbox, and you should see the mix effects track automatically removed from your song. Switching off an automation track which has already been used elsewhere in the song, will switch off the level of the mix effect at the current bar rather than removing the track.

An easy way to try out the track mixer automation is to simply start a song playing and then adjust the automation settings while the song is playing to create a new mix of your song in real-time.

You can resize the Track Mixer by clicking and dragging at the top or bottom of the window. You will only be able to increase the size

when there are additional tracks available to be edited and the vertical scroll bar is displayed. You can decrease the vertical size at any time to a minimum of one track.

You can also change the window to use vertical sliders by clicking on the button at the top left of the window. In this case, the window can be adjusted by dragging at the left or right to change the horizontal size.

You can drag files from the browser window onto the Track Mixer, in the same way as dragging files onto the main track window. Also you can navigate through your song by clicking on any of the names in the Track Mixer. This will position the selected track or section at the top of the main window.

You can also update the automation levels directly on the bar grid without using the mixer window. Right clicking on the volume, pan bass or treble settings in the main track window will automatically add a new automation track without opening the mixer window.

Finally, you can also adjust the quantise levels for tracks in your song using the Track Mixer. This option will only be available for a track if you've set a quantise value for the track in the main window. The level for each track will default to 100%, and can be adjusted to vary the amount of quantising applied.

Right clicking on a quantise setting in the main track window will automatically access the quantise level for the track in the Track Mixer.

You can permanently apply the selected quantise levels by right clicking on the track number in the main window and selecting Apply Track Quantise from the Track Menu.

Song Mixer

The Song Mixer lets you adjust effects levels or switch sound tracks on or off for a selected range of bars by automatically updating the values on the main bar grid.

When editing sound tracks, a checkbox will indicate whether the track is active in the selected bar range. Switching the checkbox off will cause all the currently selected bars for that track on the main grid to be cleared, switching it on will set the bars. If you've entered any previous bars for a track, the same pattern of bars will be used when you add new bars.

The drop down list at the top left of the Song Mixer lets you choose which types of tracks to view and edit.

The **Left** and **Right** arrow buttons at the top of the window allow you to move backwards and forwards through your song by the selected number of bars. This can be useful if you create your song in 8 bar sections for example, allowing you to easily move between sections.

The **Insert Bars** button will insert a copy of the current selection and move forward to the new selection. This allows you to add multiple bars to your song on a step by step basis.

The **Record Mix** button lets you add bars to the song in real-time as you make changes to a selected recording loop. Try selecting some bars from a song and pressing the Record button. Each time the playback position gets to the end of the recording loop you should see the currently selected bars added to the current position in your song.

You can change values directly on the bar grid while recording, or use the Track and Effects Mixers to create your song in real-time.

Because the song is only updated at the end of each loop, the number of bars you select will affect the way the song is recorded. If

you select a longer loop, such as 4 or 8 bars, you'll have more time to update the bar values for sound tracks during each loop but the recorded section will change less often. Using a short loop, such as 1 bar, will add more real-time changes but give you less time to adjust these before they're added to the song. Effects tracks will always be updated to the nearest bar when recording a song.

You can change between the Song Mixer and Effects Mixer by using the <Tab> and <Shift><Tab> keys.

Midi Learn

If you're using a [midi input device](#), this option lets you configure the midi controllers you want to use for individual tracks in your song.

Select this option from the dropdown list in the Song Mixer window, and you should see a list of effects tracks for the current song. To define a midi controller, simply click on the button for a track and then move the controller you want to use. You should then see the controller number added to the required track.

If the controller number of the effect you're setting is the same as the external midi controller number, you can simply click on the button again to select the default controller.

You can switch off an active controller for a track by simply clicking on the button twice.

Some midi devices may transmit certain controller messages continuously; in this case you may need to move the required controller knob between the minimum and maximum levels a few times for it to be activated. You can use the Midi Input Monitor on the [Utilities menu](#) to check what controllers your midi equipment uses.

Right clicking on any audio effect name or plugin parameter name in the main track window will automatically access the midi controller setting for the required track. This is usually the easiest way to assign individual midi controllers to tracks. Simply right click on the effect or parameter name in the main track window, move the controller you want to use, then right click again on the effect or parameter name to close the window.

Once you've added a midi controller to a track, you'll see the controller number displayed next to the track name in the main window, and the controller can then be used at any time to update the effect levels at the current playback position.

If you're using a midi controller with an [effects sequence](#), the default behaviour will be to adjust the bar levels for the sequence. If you want to use the midi controller to record the levels in the sequence, you can set the Retrigger mode of the effects sequence to 'Midi recording' and this will then update the sequence directly.

See the section on Midi Input Devices for more information about setting up and configuring midi input devices.

CPU Monitor

This option is available from the dropdown list in the song mixer window, and lets you monitor the amount of CPU time being used by individual tracks.

Mixer Inputs

As well as using the mouse to update values in the Song and Track mixers, you can also adjust effects levels and trigger sounds in your song by using the PC keyboard or a midi input device.

To do this, select the Mixer Inputs option from the Settings menu.

The Mixer Input should be initially set to Mouse Only; try changing this to PC Keyboard and then closing the Settings window.

If you now try opening the Track or Song mixer, you should see the track numbers displayed in the window have been replaced by keyboard characters, starting at the bottom left of your PC keyboard (i.e. Z, X, C etc).

Make sure that the mixer window has the current input focus (by clicking on the window to activate it), then try pressing one of the displayed keys on your keyboard. You should see the entry in the mixer window displayed in bold while the key is held down.

If you're editing a sound track, the bars for the track will be switched on or off (similar to clicking on the check box for the track).

If you're editing an effects track, the left and right arrow keys can be used to adjust the level of the effect, as long as the track key is held down.

While the track key is held down, changing any external midi controller will also update the level for the track. This lets you use a single midi controller for updating a number of tracks, rather than assigning a separate midi controller to each track.

You can set the mixer midi controller type to **Absolute** or **Relative** using the Input Settings option. The relative setting will adjust the current setting by the amount the controller changes, and can be useful for tweaking existing settings.

You can choose the number of keys you want to use by resizing the mixer windows. The up and down arrows can then be used to scroll through the tracks in your song. You can try this out by resizing the mixer window to a single track, then using the up and down arrow keys to move between tracks and pressing down the 'Z' key to change settings for the individual tracks.

If you change the Mixer Input type in the Settings window to Midi Keyboard, you'll be able to choose the start note you want to use, and then use notes on your midi keyboard to activate tracks, rather than using the PC Keyboard.

Zoom Window

[Song Layout](#)

[Sections](#)

[Bookmarks](#)

[Tempo Map](#)

Zoom Window - Song Layout

The Zoom window lets you view the layout of your current song, and move the track window to any position in your song.

The highlighted rectangle in the zoom window indicates the current position of the track window. Simply click on the zoom window to move the highlighted rectangle to the required position.

You can change the size of the zoom window at any time by clicking and dragging above the window title bar.

The level of zoom can be adjusted by clicking on the button at the bottom of the window.

Zoom Window - Sections

The Sections button will display a list of any available sections in your song, and move the track window to the start of any section you select.

Zoom Window - Bookmarks

The Bookmarks button will display a list of any available bookmarks in your song, and move the track window to any bookmark you select.

You can add a bookmark to any bar in your song by right clicking on a selected bar and selecting the bookmark option from the bar menu, or by right clicking on the required bar above the bar number.

Type in the text you want to use for the bookmark, and you should see a red indicator appearing above the selected bar. You can simply hold the mouse cursor over this indicator to display the name of the bookmark.

Zoom Window - Tempo Map

The Tempo Map button will display a list of any available tempo changes in your song, and move the track window to the start of any tempo changes that you select.

You can add tempo changes to your song by switching off the 'Fixed Song Tempo' option on the [settings menu](#) and then updating the song bpm at the required playback position.

Audio Recording

[Getting Started](#)

[Selecting Files](#)

[Song Sync](#)

[AutoCue](#)

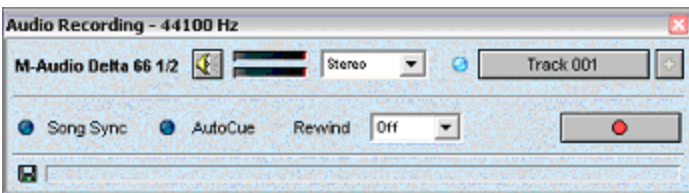
[Rewind](#)

[ASIO Recording Options](#)

[Multi-track Recording](#)

Audio Recording - Getting Started

Audio Recording lets you record new sample files from the input to your soundcard. This can be used to record any type of sound; either single hit notes or sounds which can be used in note sequences, or longer sounds, which could be vocal tracks recorded from a microphone or tracks from an audio CD.



After opening the Audio Recording window, try playing a sound that you wish to record and you should see the level meters change after a few seconds. You may need to adjust the recording levels if the meters don't show an input signal. Refer to the [Troubleshooting](#) section if this is the case.

Audio Recording - Selecting Files

Before starting recording, you can select a file to record into by clicking on the button, otherwise a default filename will be used. You can include a number at the end of the filename to specify the name of additional files to record, so if the original file is loop01, the next file will be loop02 etc. If the filename doesn't include a number, additional filenames will be recorded as filename(001),(002) etc.

The **Overwrite** check box to the left of the filename lets you decide whether to record over the current file or create the next file in sequence. This will be automatically switched on when you select a new file, and switched off after you've recorded a file, ready to record the next file.

If you want to use sequential files without having to enter an initial number, simply enter the required filename, then switch off the Overwrite option before recording. This will skip the initial filename you entered and record the first file as filename(001).

The button to the right of the filename lets you add recorded files as tracks in your song, without needing to open the main browser window. This option will not be available for a file if the Overwrite checkbox is enabled or if you're about to record a new file.

Once you've added a new track, you can use the [file editor](#) to adjust or resave the file if necessary.

Audio Recording - Song Sync

The **Song Sync** button lets you decide whether to accompany a song while recording. If this is enabled, the current song will be played while you record, and any files you record will be adjusted to whole bars to match the song playback.

Audio Recording AutoCue

Enabling the **AutoCue** button will record multiple files automatically by monitoring the audio input level. When you press the button to start recording, you'll see a 'Detecting Level' message displayed and this will detect the background level with no input. After this you should see the message 'Waiting to record'. The file will now start recording as soon as an input level is recognised. When the input stops, the file will be saved and the system will wait to record the next file. Press Stop Recording at any time to finish.

When using the AutoCue option, you should make sure there is no audio input while the 'Detecting Level' message is displayed for this option to function correctly.

If Song Sync is enabled when using AutoCue, a gap of at least one bar will be needed to signal the end of each file. Without Song Sync enabled, any gap in the sound will cause the file to end.

Audio Recording - Rewind

If you're using the Audio Pro or Studio version of Making Waves, the Rewind option lets you buffer up to 30 seconds of the most recent input data using the memory on your PC. This means you can start recording at any time and automatically store the previously buffered data at the beginning of your recording. This is useful if you're playing live and want to record something you've just played. Alternatively if you're recording from a CD or video, you can listen to the CD or video and press the record button when you've just heard something you want to save.

ASIO Recording Options

See the section on [Audio Playback Settings](#) for information about configuring ASIO devices.

If you've selected the same ASIO device for playback and recording, an **Input Monitor** button for ASIO devices will be displayed to the left of the device name in the recording window. This will route any input from your soundcard to the first available output device on the same soundcard.

If your soundcard is already configured to mix any inputs to the wave output, you should switch these off before using the input monitor to avoid feedback.

The level of the input monitor signal can be adjusted using the preview slider in the browser window. This means that clicking on the + button to add a track to your song will add it at the same level as it was recorded.

The Input Monitor will also let you hear any input effects being used while recording. Any of your VST plug-in effects can be configured as input effects. See the section on [VST Effects Routing](#) for more information about this.

To the right of the device name is a button to set the **file mode**. This will affect what's saved to any audio files that you record, but won't have any effect on the Input Monitor.

Selecting **Src** will only save the original input source.

Selecting **FX** will save the original source plus any input effects.

Selecting **Mix** will also save the output from the matching playback device.

If you're using external midi equipment, you can plug this into the inputs on your soundcard, add any input plugins you want, then record your song (including midi and audio) directly to a file using the Mix option with no loss of sound quality.

If you're recording an audio track to use in your songs, selecting the SRC option lets you record a dry signal which can then be used in your song, along with the effects track. This means, for example, that you can sing along to your song while adjusting the effects parameters in real-time then tweak the effects settings after adding the track to your song.

Multi-track Recording

If you're using the Audio Pro or Studio version of Making Waves, the use of multiple inputs means you can use Making Waves as a multi-track recording studio. Simply connect the various inputs to your soundcard and select the audio recording option to record up to 8 tracks at once.

The first thing you need to do is decide which input devices you want to use. Select the Audio Recording option from the [Settings menu](#) and you can select up to 4 stereo input devices.

If your soundcard uses mono inputs, you should check the **Mono Inputs** option at the bottom of the window then select the stereo devices you want to use. If your soundcard uses 4 mono inputs for example, these should appear as 2 stereo inputs in Device 1 and Device 2 of the selection screen.

If your soundcard supports a recording resolution higher than 16 bits, you can select 24 or 32 bit recording. You shouldn't select this unless you know your soundcard supports a higher than 16 bit resolution.

If you've selected more than one device or mono inputs, you should see a separate row in the Audio Recording window for each input device. You can now select a filename for each track you want to record. The stereo/mono dropdown list now also contains an option to switch off individual inputs.

Click on the Start Recording button to start recording on all the active inputs.

MultiSample Editor

[Getting Started](#)

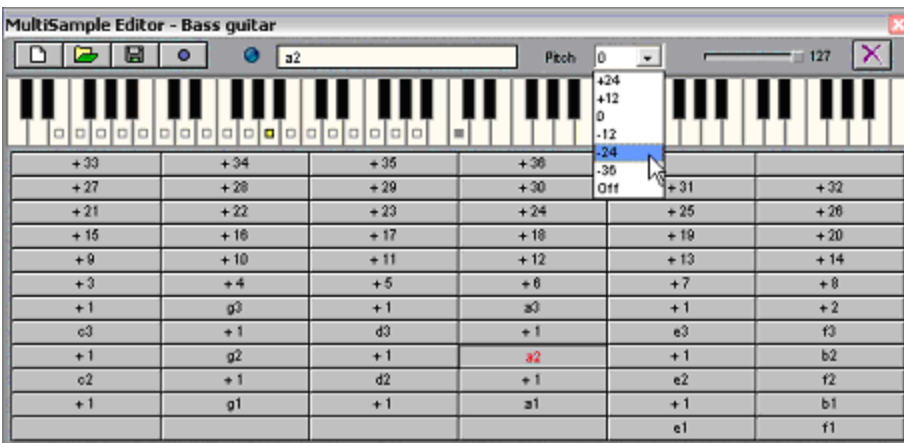
[Folder Options](#)

[Note Settings](#)

MultiSample Editor - Getting Started

MultiSample files in Making Waves contain different audio files which can then be used in a single **note sequence**, rather than using a separate track for each file.

You can create your own multisample files using the MultiSample Editor which is available from the Mixer Panel.



The contents of the editor when first loaded will depend on whether there are any multisample files selected in your song. If you're using a multisample file in the **Note Sequencer** or have one selected in the file browser window, it will automatically be loaded into the editor, otherwise you will start with a new file.

The individual notes on the keyboard let you select a sound file for each available pitch in the Note Sequencer. At the bottom of the main screen, the browser window lets you select the sample files you want to use.

There are various ways of adding files from the browser window. The easiest is to double click on a filename and this will add it to the next available space in the multisample editor.

To add a file to a specific note, simply drag it from the browser window onto the keyboard note you want to use.

Alternatively you can select a note and then click on the required file, or vice versa. Files can be changed at any time by clicking on the filename and selecting a different file from the Sound Files window. You can reset a note at any time by selecting the note and clicking on the Clear button at the top right of the editor window.

You can use your PC or midi keyboard to preview and select any of the notes in the editor. This is an easy way to match certain notes on your keyboard with certain sounds, e.g. using the black notes for different hi hats and cymbals. Simply play the required note to select it, click on the required file and play the next note you want to add, or play the same note again to deselect it.

The **GM Drum Names** option will display the general midi name for each note. This can be useful if you're creating drum kits to use with midi files. Simply drag the audio sounds you want to use for each drum note onto the matching drum name.

You can save a multisample file at any time by selecting the disk icon or closing the editor window. Enabling the **Copy Samples** option in the save window will copy all the samples used by the multisample file into the same folder as that used to save the file.

MultiSample Editor - Folder Options

As well as adding individual samples to note positions, there are a couple of additional options available which let you load in a number of files from the browser window.

The '+' button is always available and will load all the samples from the current folder into empty notes in the editor. This is an easy way of adding a number of files at once, if you don't mind which note pitches the files will be stored at.

The Note Insert button at the top right of the editor will only be available when there are no files added to the editor. This will scan the current folder for any 'multisample' samples containing note names, and add these at the correct position. This option is useful for automatically adding a folder of samples of the same sound at different pitches. An example of suitable filenames would be bass_c1.wav, bass_d2.wav etc.

MultiSample Editor Note Settings

Once you've added a sound to a note, setting the pitch for the note to 'off' will play the sound only for the one note and any remaining notes at higher pitches will be blank. This is the default option and is normally used for individual drum sounds.

Setting the note pitch to a numeric value will also play the sound at different pitches, up to the next sound file which is used.

A few examples should make things clearer:

You can split the keyboard into three, two octave parts by adding a sound to C0 at a pitch of -12, adding a sound at C2 at a pitch of -12, and a sound at C4 at a pitch of -12. This will play each of the three notes over the same 2 octave range.

You can use a 6 octave range with different sounds by adding a sound to C0 at -36, a sound to C1 at -24, a sound to C2 at -12 etc.

You can use 'multisample' samples (i.e. different samples of the same sound at different pitches) by adding each sound at the correct position with a 0 pitch. With correctly named samples, you can also use the note insert button to do this.

Clicking on the timestretch button will automatically adjust the original loop to a whole number of bars. This means you can select sounds from a loop, or even whole loops at different tempos, and have them all adjusted to the correct playback speed.

Using Playlists

[The Window Menu](#)

[Playlists](#)

[Creating an Audio CD](#)

Using Playlists - The Window Menu

The Window Menu lets you access a number of open songs in a single Making Waves session. This can be useful if you're putting together some new songs and don't want to decide whether to save each one before starting the next.

It can also be useful if you're working on a group of songs and want access to all the songs at once without having to keep resaving.

You can activate the Window Menu by enabling 'Multiple Windows + Playlist' in the [Song Options](#).

Once you've done this, you should see an additional Window menu appear in the main window menu, and also a close icon appear on the file toolbar at the top left of the main window.

Opening a new song will now add the song to the current list and any of the currently open songs can be accessed by selecting the required song from the window menu. You can also move between the currently open songs by using the <Tab> and <Shift><Tab> keys.

Selecting the Close option from the [File menu](#) will close the current song; select the Close All option to close all the currently open songs.

Using Playlists

If you have a group of songs that you want to reload on a regular basis, you can save these as a playlist.

This will save details such as playtime and running order of the currently open songs in a playlist file which can then be reloaded at any time.

To open the playlist window, select the Playlist option from the [File menu](#) after activating the Multiple Windows + Playlist option from the [display options](#).

You should now see a list of all the currently open songs. The running time of each song is displayed with the name, and a total running time is displayed at the bottom right of the playlist window.

The new button at the top left of the playlist window will close all the currently open songs. The save and load buttons let you save the current playlist and reload it at a later date.

The play button will play all the songs in the current playlist. This can be useful if you want to listen to all the songs in your playlist before creating an audio CD.

You can change the running order of the songs by clicking on the arrows at the bottom of the playlist window. Clicking on the Close button will close the currently selected song.

Creating an Audio CD

Once you've put some songs together and you're ready to create an audio CD, you can export your current playlist to a standard **Media Playlist** file. This will let you load any audio files you've created from your playlist songs into the Windows Media player, ready for writing to CD.

If you're using the Studio Version of Making Waves, you'll also be able to export midi files you've created from your songs to a Media Playlist file.

You should remember when using this option that the files used to create the CD will be the files you've exported from your songs, rather than the original song files.

If you select the Export option from the playlist window, you should see a list of all the songs in your current playlist and whether they can currently be exported.

Files will only be available for export if you've created an audio or midi file from your song since the song was last changed. If the song cannot currently be exported, you should resave the song if it's been modified and then select the [export to audio/midi file](#) option to update the exported file.

Once the export option displays all the songs you want to include as being ok to export, click on the Ok button to create a media playlist file. You'll be prompted to automatically load this into the Windows Media Player if this is available on your system.

To create an audio CD, click on the 'Copy to Device' or 'Copy to CD' tab in the Windows Media Player.

Once you've created a media playlist file, this can be loaded directly into the Media Player at a later date by running the media player from the [Track Tools](#) folder and loading the file directly.

File Menu

[New](#)

[Open](#)

[Save](#)

[Save As](#)

[Close](#)

[Export to Audio/Midi File](#)

[PlayList](#)

[Close All](#)

[Exit](#)

File Menu - New

The **New** option opens a new untitled song and sets all song parameters to their default settings.

If you've enabled [Multiple Window](#) support, the new song will be added to the Window Menu, otherwise you'll be prompted to save any currently active songs.

File Menu - Open

The **Open** option allows you to locate and open previously saved song files. You can preview songs in the Open window by enabling the **Preview Songs** check box and highlighting the names of the songs you want to listen to.

If you've enabled [Multiple Window](#) support, any songs you open will be added to the Window Menu and Playlist, otherwise you'll be prompted to save any currently active songs. You'll also be able to open multiple songs from the file window using the standard Windows keys (hold down the Ctrl key to select multiple individual files, or the <Shift> key to select the start and end of a list).

File Menu - Save

Save lets you save the currently open song. For an untitled song this will have the same effect as selecting Save As. For a previously saved Song File, the song will be saved to the file of that name, without any prompts.

If you've enabled the **Write Protect** option when previously saving the song, the save option will not be available and you should use the Save As option to resave the song.

Save As

Save As allows you to select the drive, folder and filename where the current song will be saved.

When you save songs that you've created with Making Waves the trk file does not contain all the individual sounds, only a reference to the location of the sample files. This means that you can use large sample files in different songs without taking up additional space on your hard drive. The **Copy Samples** check box will copy all the sample files used by a song into the same folder as the song itself. This can be used to move all the files to a single folder for transferring between systems, or for making backup copies of the files and song. The sample references in your song when using the Copy Samples option will be saved without a folder path, meaning you can zip up the files and restore them to a different folder at a later date.

Enabling the **Write Protect** option will disable the Save option for the current song. This means it won't be possible to resave the song without selecting Save As and specifying a new filename. You can still choose to resave the song as the same file after selecting Save As, but you won't be able to unintentionally overwrite the file by clicking the Save button. You can tell if a file has been write protected by seeing whether the Save button is disabled on the main window file toolbar.

Close

This option will close the currently active song, after asking you whether to save any changes.

Export to Audio/Midi File

This option is used to create new wave audio or mp3 files from your songs.

If you're using the Studio version of Making Waves, you'll also be able to save any midi tracks in your song as a standard midi file (.mid).

Using this option when you have one or more bars selected will copy the selected bars, otherwise the whole song will be copied.

If you're saving sample loops, enable the **Whole Bars** option to make sure the file is saved as a whole number of bars, otherwise any blank space at the end of the file will be removed. When creating sample loops, any delay effects would normally not be heard at the start of the loop.

Enable the **Save Mix** option to save a Mix File with the sample. Mix Files are copies of the song information used to create a sample file. This means you can load a sample loop you've created into one of your songs at a later date, then use the Mix File to edit and resave the sample if you want to change the sound.

Mix Files can be reloaded by selecting Mix Files as the file type from the File Open window. You can also reload a Mix File by selecting Load Mix from the track menu for a sample file in your song which has been created with the save mix option enabled.

Mix Files are also used when reloading sample files to obtain the original tempo of the sample. This can be useful when reloading any long samples that you've created.

PlayList

This option will only appear if you've enabled Multiple Window and Playlist support, and can be used to load, save or edit playlists.

See the separate section on using [Playlists](#) to find out more.

Close All

This option will only appear if you've enabled Multiple Window and Playlist support, and will close all the currently open songs, after asking you whether to save any changes.

File Menu - Exit

The **Exit** option closes down Making Waves. You will be prompted to save any currently open, modified songs.

Edit Menus

[Default Options](#)

[Track Menu](#)

[Bar Menu](#)

Edit Menu - Default Options

The Edit menu provides access to various editing functions. The options available will depend on whether you have any tracks, bars, notes, effects or percussion sequences currently selected.

The main edit menu provides a number of default editing functions which are always available, whichever type of data is selected.

Additional menus for each type of data can be accessed by right clicking on the selected area. This may display additional options, depending on the type of data selected.

The default options available from all the edit menus are as follows:
Cut stores a copy of the selection, and removes it from the editing screen.

Delete will remove the selection without storing a copy.

Copy stores a copy but does not remove the selection.

Paste inserts previously cut or copied information into the currently selected position. The paste option will only be available if you have selected a single track or bar to indicate the required position.

Clear clears the current selection without storing the data.

Insert will insert empty values at the current selection.

Undo will allow you to undo the last action.

Select All will select all of the currently available tracks, bars, notes or effects. This can be useful for selecting a complete note or effect sequence without having to manually select a large number of bars.

Track Menu

The Track Menu can be accessed by right clicking on selected [Track Numbers](#). In addition to the [default edit options](#), some of the following options may also be displayed depending on which tracks are selected:

Apply Track Quantise lets you permanently apply the effects of any quantise settings you're using for the current tracks. This can be useful if you've finished applying a track quantise and want to view or edit notes at their quantised playback position in the sequencer.

The **Track Name** option lets you specify a new name for any audio or plugin automation tracks. This can be useful when using sample files with long names, to make it easier referencing tracks in your song.

The **Track Colour** option lets you change the bar grid and note colour for the selected track.

The **Load Mix** option lets you reload a Mix File which has previously been saved with a sample. You can create Mix files by enabling the [Save Mix](#) option when you create a sample file from your song.

The **New VST Parameter** option lets you add a [plugin parameter track](#) to the currently selected plugin.

The **New VST Midi Controller** option lets you add a [midi controller track](#) to the currently selected plugin.

The **New VST Preset** option lets you add a [VST preset track](#) to the currently selected plugin.

The **New VSTi Sequence** option lets you add an additional [VSTi sequence](#) to the currently selected plugin.

The **New XG Parameter** option lets Studio Version users add an [XG parameter track](#) to the currently selected XG Midi track.

The **Change To..** options let you change the currently selected track to a different type. This is mostly used for changing between audio effects and plugin parameter tracks. The available options will depend on the type of track selected.

The **Mix Level** option lets you add a mix level track to the currently selected audio effect track.

Show/Hide Effects lets you show or hide effects tracks on the main track window. If you start adding a large number of effects to a single track or section, you might find it easier to hide these tracks in the main window, making it easier to navigate through your song.

To do this, simply right click on the sound or section track whose effects you want to hide and select Hide Effects. The Track Number will be displayed in bold, making it easier to see which tracks are using hidden effects. Selecting the track number for these tracks will also select any hidden effects tracks for copying, pasting etc.

Copy/Move Samples to Folder lets you copy or move the selected sample tracks to a specified folder. This can be useful if you're using samples on a CD and want to copy them onto your hard drive. References to the copied samples will be updated in your song (if you copy the samples outside Making Waves or using the Browser window, you'll need to update your song to point to the new location).

You can copy all the samples in the song to the current folder by enabling the Copy Samples option when saving a song. Copying all the samples in the song works slightly differently to individual samples and will store the sample references in your song without a folder path, meaning you can zip up the files and restore them to a different folder at a later date.

If you find the midi and audio in your songs are out of sync, the **Show/Update Midi Timing Offset** options let you view or update a

default timing offset for midi output. You can set the offset you want to use by adjusting the Offset setting for a midi track until the timing sounds correct. An easy way to do this is to add a midi and audio percussion track to a new song, then add alternate beats to each track. Now adjust the offset for the midi track until the beats sound in time.

Once you're happy with the result, select the **Update Midi Timing Offset** option to set the new value. You should see the Offset for the existing midi track set to 0 and the timing should still sound correct. You can check the existing setting by selecting this option for a midi track with the Offset set to 0.

Bar Menu

The **Bar Menu** can be accessed by right clicking on selected bars in the main track window. In addition to the [default edit options](#), some of the following options may also be displayed: The **Insert Copy** option is only available while a song's playing, and lets you insert a copy of the current playback selection. This is similar to using the Insert Bars option from the Song Mixer.

The **Bookmark** option lets you add a bookmark at the currently selected bar position.

Settings Menu

[Audio Playback](#)

[Audio Recording](#)

[Audio Performance](#)

[System](#)

[Midi Instruments](#)

[Plug-ins](#)

[Song Options](#)

[Display Options](#)

[Edit Options](#)

[Browser Options](#)

[Metronome Options](#)

[Input Options](#)

Settings Menu - Audio Playback

The **Audio Output** option lets you specify the device used for the main audio playback. This will default to the standard Windows device, but can be changed if your system supports more than one audio output device.

You can also select any shared or additional audio devices you want to use from this screen. See the section on using **Multiple Audio Outputs** to find out more about this.

The button which appears to the right of any selected devices can be used to load the **windows mixer** for the device. This option may not work correctly if your soundcard uses separate application software to adjust output levels. In this case you can add the separate application to your Track Tools folder and adjust the levels from there.

The controls at the bottom of the window set the playback frequency in samples per second and bit rate of the audio output. The higher the frequency and bit rate, the higher the quality of playback.

Unless you experience any performance problems, this can normally be left at the maximum available setting. The setting you use should match as many of your sample files as possible, so if most of your sample files are 44.1kHz, or if you're creating CD audio files, you should use 44.1kHz rather than 48kHz.

If your soundcard supports the use of ASIO drivers, you can click on the **ASIO Devices** checkbox to search for any available ASIO devices on your system. Once you've selected this option you should see a list of available ASIO devices along with the preferred bitrate and number of input/output channels for each one.

Once any available ASIO Devices have been added to your system, they can be selected from the audio device list in the same way as the standard audio drivers. The windows mixer button will now be

displayed as 'ASIO' and will load the ASIO control panel if there's one available for the selected device.

Selecting an ASIO playback device will let you assign VST effects directly to the soundcard output. See the section on [VST Effects Routing](#) for more information about this.

Audio Recording

The **Audio Recording** option lets you specify the device used for [audio recording](#). This will default to the standard Windows device, but can be changed if your system supports more than one audio input device.

If you're using the Audio Pro or Studio version of Making Waves, you can also select any additional audio devices you want to use from this screen. See the section on [Multi-track Recording](#) to find out more about this. You can also enable the **Mono Inputs** option to record left and right stereo inputs to separate files.

Selecting an ASIO recording device will let you assign VST effects directly to the soundcard input. See the section on [VST Effects Routing](#) for more information about this.

You'll also be able to use additional ASIO recording features such as input monitoring. See the section on [ASIO Recording Options](#) for more information about this.

If you're using an ASIO Recording device, the recording frequency and bitrate will be automatically set to the same as those used for playback.

Settings Menu - Audio Performance

The **Playback Mix Buffer** option lets you specify the amount of buffering done on the main audio output. Selecting a faster setting will mean you'll hear changes more quickly while editing a song, but may cause gaps in audio playback when changing track settings. Select the fastest setting for your system that doesn't cause any gaps in playback.

The **Preview Mix Buffer** option lets you specify the buffer size used when previewing samples. Selecting the fast setting will improve response times when previewing notes from a keyboard, but may cause gaps in audio playback. If you're mostly using a mouse for previewing samples, selecting the slow setting will reduce the chance of any gaps in audio playback.

The **Preview Timestretch** option lets you specify the amount of buffering done when timestretching previewed samples. Selecting a faster setting will improve response times when previewing timestretched samples, but may cause a loss in sound quality. The slowest setting will produce the same quality as when playing the sound in your song. The best quality will be used automatically when using the mouse for previewing samples. If you use a keyboard for playing back samples, set this to the fastest setting that gives good enough response times.

The **Preview Latency** setting lets you compensate for any output buffering done by your soundcard. This should be left at the lowest setting which lets you preview sounds correctly using your PC or midi keyboard.

The **Auto Set** option will help you configure this setting to get the best results when previewing audio samples. The **Test** option can be used at any time to try out the current setting.

The **Leave preview output active** option will leave the default audio output device active when previewing audio samples or plugin

instruments and changing between sounds. This should normally be left on to improve performance, but can be switched off in the event of any problems when previewing audio samples.

The **Fast MP3 Reload** option will improve seek times when looping individual bars of long mp3 files. This can occasionally leave slight gaps between bars during looped playback of mp3 files but should significantly improve performance on slower systems.

The **Reload Plugins with each song** option will reload any active plugins when changing songs using the window menu, or opening a new song which uses the same plugins. This can normally be left switched off if you're not having any problems with plugin settings.

Enabling the **Whole Bar Playback** option will play the song to the end of the current bar before changing the current playback position when editing a song in realtime.

System Settings

This option lets you configure how the software interacts with the rest of your system.

The **When Active** option lets you specify the System Priority Class of the software during normal use. If you're running any other applications or activities in the background, this can be set to a higher setting to avoid any occasional dropouts during playback.

Using the High setting may cause problems with some audio drivers, so if you get any crackling or regular dropouts playing audio samples after changing this option, try a lower setting.

The **In Background** option lets you specify the System Priority Class of the software when minimised or running in the background.

If you want to play back songs with the software minimised you should select a higher setting to avoid dropouts during playback. If you want to use other applications while the software's minimised, select a lower setting to run your other applications more efficiently.

The **Sample Cache** option lets you specify the maximum amount of system memory available to cache any samples used in your current song. If the cache size is exceeded during playback, samples will be reloaded from disk as required.

If you're running other applications in the background, or using any memory hungry plugins in your songs, you may want to use a smaller setting to avoid any system memory paging during playback. An indication of this happening is occasional heavy disk activity causing dropouts during playback.

If you're using mp3 files which can be slow to reload, or want to minimise CPU usage during playback, you should use a larger setting to avoid samples being reloaded from disk during playback.

The **Cache Preload** option lets you specify how much of the Sample Cache is filled at the start of playback.

Using a higher setting will minimise CPU usage and disk activity during playback but may cause a delay when first starting playback.

Settings Menu - Midi Instruments

This option lets you configure the midi instruments used by your system and is described in more detail in the [Midi Playback](#) section.

Settings Menu - Plug-ins

This option lets you configure the plug-ins used by your system and is described in more detail in the [Plug-ins](#) section.

Settings Menu - Song Options

The **PC Keyboard** option lets you change which note pitches are played when you use your PC keyboard for previewing or recording sounds. This defaults to semitones but can be change to use a major, minor or blues based scale for easier playback.

The **Key Type** option determines whether black notes are shown as sharps or flats. In numeric mode, the centre note is represented by the digit 0, higher notes by positive numbers and lower notes by negative numbers.

When you're entering note sequences, you can choose whether to use a default note length for the sequence or select the length of each individual note as you enter it. The **Default Note Lengths** option lets you specify the default setting when adding new tracks.

The **Show Track Details** option is used to switch track details on or off in the main track window. You can also click on the vertical separator on the main window to change this setting.

The **Fixed Song Tempo** option can be switched off to enable tempo changes during the current song. See the Song Settings section for more information about changing the tempo during your song.

If you're recording songs to an external device, the **Cue on Song Start** option can be used to pause playback after mixing the start of the song. This can be useful to avoid any delays between pressing the Play Button and song playback starting.

The song playback position is displayed in the main title bar and defaults to a display of the current bar and beat. This can be changed to display minutes and seconds by clicking on the position display. You can also display the song position in the main title bar using the **Title Playback Display** options

The **Multiple Windows + Playlist** option lets you enable Multiple Window support and use [Playlists](#). Enabling this option will also affect what happens when loading additional songs from Windows Explorer or your desktop. With this option enabled, additional songs will be added to the existing copy of the software, otherwise a new copy will be loaded for each additional song.

The **Reload at Startup** option lets you specify whether to reload any currently open songs the next time you run Making Waves.

Settings Menu - Display Options

The **Grid Size** will be set automatically to use a large grid at 1024x768 resolution or higher and a small grid at lower resolutions. You can override the default behaviour by selecting the Small or Large option.

The **Note Bars** option lets you decide on the display style to use in the main bar grid.

The **Menu Font** and **Message Font** options let you decide whether to use a Normal or Bold font when displaying menus or message windows.

The **Keyboard** option lets you decide the size of the [on-screen keyboard](#). If you're using a mouse to play notes on the on-screen keyboard you can set this to large. If you mostly use a midi keyboard and want to save screen space when using the on-screen keyboard, set this to small.

The **Note Shading** option lets you specify the type of shading used for the [Note Sequencer](#) grid display. Selecting **Pitches** will highlight the white notes on the keyboard. Selecting **Beats** will highlight every 1/8th beat in the sequence. The **Auto** option will use the Pitch setting for note sequences and the Beat setting for drum tracks.

The **Slider Bars** option lets you switch the coloured background on or off when using slider controls. If you're using bitmap slider controls, this option may not have any effect.

The **Slider Buttons** option lets you switch the slider buttons on or off when using slider controls. If you're using bitmap slider controls, this option may not have any effect.

The **Show Function Keys** option will display any available function keys while you're using the software.

The **Show ToolTips** option lets you switch off the help prompts which appear when you hold the mouse cursor over a toolbar button.

Edit Settings

The **1 Bar Pattern** option lets you decide whether to display a single bar percussion sequence as a pattern on the main track window, or use a button in the same way as multiple bar sequences.

The **Track Settings** option lets you decide whether to use the edit keypad for editing settings on the main track window. The Auto setting will use the keypad whenever a slider is available (e.g. volume control), and use the cursor otherwise (e.g. BPM control). If you're not using the Auto mode, you can use the <Alt> key when clicking on an edit field to swap between cursor and keypad mode.

The **Effects Levels** option lets you decide whether to use the edit keypad for editing effects levels on the main bar grid. The Auto setting will use the keypad when updating an existing bar level. If you're not using the Auto mode, you can use the <Alt> key when clicking on the bar grid to swap between cursor and keypad mode.

The **Single Bar Edit** option lets you decide whether to use the keypad when editing single bar sequences on the bar grid.

The **Mouse Preview** option lets you decide whether to preview sounds whenever you make a selection with the mouse. If you prefer to use the PC or midi keyboard to preview sounds, you can switch this to off. Selecting 'File Change Only' will preview sounds with the mouse when changing files in the browser window, but won't preview sounds when updating track settings with the mouse.

The **VST Knob Mode** can be set to suit your personal preference. This option isn't supported by all VST plugins.

Browser Options

The **File Extensions** option lets you decide whether to display file extensions in the file browser window. This can be useful if you're running a version of Windows which uses the same icon for all media files, and will help you distinguish between wav, mp3 and midi files.

The **File Info Tips** option lets you decide whether to display a popup description of selected files in the browser window when you hold the cursor over the file.

The **File Highlight** option lets you decide how to select files for previewing in the Browser window. Selecting Hover will select the file if you hold the mouse cursor over it, selecting Click means you will need to click on the file to select it. This option may not be supported by earlier versions of Windows.

The **File Select** option lets you decide how to select files for adding to your song. Selecting Single Click will add the currently selected file to your song using a single mouse click, selecting Double Click means you will always need to double click on a file to select it. This option may not be supported by earlier versions of Windows.

Metronome Settings

The **Metronome Sound** option lets you select the audio sample to use for the metronome sound when recording.

The **Metronome Level** option lets you set the playback level of the metronome to Low, Medium or High. The best setting to use will depend on the level of the original audio sample.

The **Metronome Pitch** option lets you decide on the pitch of the first beat of each bar and the remaining beats. Selecting High, Low will play the first beat at a higher pitch.

The **Recording Intro** option lets you specify a 1 or 2 bar intro when recording. This will count in the selected number of bars when you're recording.

Settings Menu - Input Options

The **Midi Device** option lets you select the required input device if you're using an external midi keyboard or controllers.

The **Centre Note** you specify for your keyboard is the note that will play back audio samples at the original pitch. You'll be able to select a note to the nearest octave, with the exact note used depending on the song key you're using.

If you're using a **Velocity Sensitive** midi keyboard and enable this option, any notes you record or preview will use the velocity played from your keyboard. You can adjust the overall velocity range by changing the note velocity setting in the browser window.

You can find out if your keyboard is velocity sensitive by opening the Midi Monitor and checking the velocity values displayed when playing a note on your keyboard.

The **Controller Drift** option is intended for use with analogue midi devices which may produce slightly different controller values, even when you're not updating the controller knob or slider. To test this out, open the Midi Monitor and adjust your controller a number of times. If you notice any adjacent values being sent when you're not changing the controller, set the controller drift option to the minimum value necessary to stop this happening.

The **Mixer Input** and **Mixer Midi Controls** options are described in detail in the section on [Mixer Inputs](#).

Utilities Menu

[Tidy Up](#)

[Set Maximum Level](#)

[Show Bar Times](#)

[Export Audio Tracks](#)

[Colour Scheme Editor](#)

[New Track Tool](#)

[Midi Input Monitor](#)

[MP3 Emulator](#)

Tidy Up

As you copy and paste bars in your songs, you may find there are a number of duplicate and unnecessary effects bar levels, and various tracks which you've switched off and no longer want to use. The **Tidy Up** option will remove any unnecessary effects levels, and give you the option to remove any unused tracks from your song. You can also choose whether to automatically remove any spaces between tracks.

Level Detect

Whenever you are copying bars to a sample file or recording a song to tape or disk, it is useful to have the main output level set to the maximum possible without clipping the sound in order to achieve the best sound quality. Select the **Level Detect** option from the Utilities menu after selecting the required bars and the main output level will be updated automatically.

Show Bar Times

The **Show Bar Times** option displays all the common bar fractions in milliseconds. If you're changing tempo during your song, the values shown will depend on the current playback position.

Export Audio Tracks

If you're using the Audio Pro or Studio version of Making Waves, this option lets you easily export all the individual audio tracks in your song to separate files. This is mainly useful if you're intending to do some post production or mixing on your song using external software or hardware.

Colour Scheme Editor

The **Colour Scheme** option lets you change many of the default colours used by Making Waves, and also specify a bitmap file for window backgrounds. The Default Colours in the top row will affect all of the windows in each column which are listed as <Default>. After choosing your default colours, you can then change the colours or bitmaps for any of the individual windows. Colour Schemes can be reset, saved or loaded at any time by clicking on the buttons at the top of the screen.

You can also create bitmap controls or 'skins' for Making Waves. See the section on [Creating Bitmap Controls](#) for more information.

New Track Tool

This option lets you add additional applications to your [Track Tools](#) folder. Select the application you want to add, and you should see an additional entry appear in the Track Tools folder.

Enabling the Wave Editor option when creating a track tool means you can drag the new track tool onto existing audio tracks or load tracks from the [File Editor](#) application toolbar.

Midi Input Monitor

The **Midi Input Monitor** can be useful for checking that your midi equipment is connected properly, in the event of any problems. It can also be useful for checking which controller messages your equipment uses.

MP3 Emulator

The MP3 Emulator can be used to try out different mp3 bit rates before saving your complete song to an mp3 file. This works by encoding and decoding the audio output in real-time.

Due to the block based nature of mp3 files, this may produce some gaps or level changes when playing your song, however it can be useful for tweaking settings in your song while hearing what the changes will sound like when saved as an mp3 file.

Help Menu

Contents and Index takes you to the main contents screen of the Help File.

Most of the windows in Making Waves are context sensitive, so you can press the F1 key with a window active to view the help information for that window.

On-line Registration lets you register or upgrade the software using on-line ordering.

Registration Codes lets you enter a registration code to enable various features in Making Waves.

Frequently Asked Questions

What's the easiest way to fade out the end of my song?

You can add a Volume effect to the whole song, by inserting an empty track at the top of the track window and adding a 0-100% Volume effect.

Make sure the auto fader option box is checked and then click on the bar grid and drag the bar at the start of the fade to the maximum level and the bar at the end of the fade to zero.

You can reverse this process for fading in, or fade individual tracks in and out by adding the Volume effect to a single track or section.

How can I make an audio CD from my making waves midi songs?

If you're not using any midi tracks in your song, you can simply select the 'Export to Audio File' option from the [File menu](#). You can then copy your song directly to a wav file.

If you're using midi sounds, you need to record the output from your midi device to a wav file and then mix it with the audio tracks, or record all the output including the audio directly to a new wav file.

If your midi device is a soundcard, you can often mix midi and audio by using the Windows Mixer Recording Settings. If you don't see a midi or synth option on the mixer, or if you're using an external midi device, you'll need to connect the line out from your midi device to the line in on your soundcard.

For the best possible sound quality when using midi and audio, you should record your midi sounds to a separate audio track, then add this to your song and use the Copy to Sound file option to create a wav file from your song. Using this method will digitally master the

audio tracks and you won't lose any sound quality by re-recording the audio tracks in your song.

Will the quality of my soundcard affect the quality of the songs I create using Making Waves?

If you use the Export to Audio file option to create an audio file of your song, the song will be digitally mastered directly to file, and the quality of your soundcard will have no effect at all.

If you're using the [Audio Recording](#) option to record your song (only necessary when recording midi sounds as well as audio), the quality of the file will depend on the playback and recording quality of your soundcard.

What's the easiest way to use Making Waves with multiple sample CDs?

If you have enough disk space, then you can copy the whole sample CD across to your hard drive and access the samples from there.

If you don't have enough space to copy all your sample CDs, you can automatically copy samples from each CD as you add samples to your song.

Create a new folder to save your song into, and then simply save your song as you finish with each CD, making sure that the copy samples option is checked in the save window. This will copy the new files across from each CD as you use them

You can also Copy samples for individual tracks at any time by right clicking on the track number and selecting the Copy Samples option from the [Track menu](#).

Why do my loops sound out of time when I transpose a delay effect?

You can set Timestretching on or off for each delay effect. You should switch this on by clicking on the timestretch button for the effect.

What's the most efficient way to use plugins to minimise CPU time?

Each effects track that appears in your song is processed separately, so the best way to use plugins is to try and organise your song to make the best use of the minimum number of plugin tracks.

Usually this can be done by adding a [section](#) to your song, then including a plugin effect at the top of the section and add the sound tracks to the rest of the section.

You can also use shared [multiple audio outputs](#) to route a number of different sections to a single plugin.

Does it matter in what order I add effects to my song?

The effects are usually processed in the track order that they appear in your song. This lets you control the order that effects are applied to vary the final output.

You can also multilayer individual effects by adding more than one effect track of the same type to your song.

Should I always use Timestretching with my sample loops?

Timestretching will always result in a slight loss of sound quality due to the changes being made to the sample. The benefit of Timestretching is that it keeps everything in time without adjusting the pitch.

If you're not worried about a track being slightly pitch shifted then you should switch off time stretching for a better quality sound.

This normally works best with drum loops which have a tempo that's fairly close to the song tempo.

I'm using a single note sequence to add breaks at different parts of my song. What's the easiest way to do this?

Usually, the software will assume that a sequence can be restarted at any position in your song. This affects which bar of the note sequencer is displayed when you open the sequencer window. If you add a sequence only to bar 1 of the bar grid, the sequencer window will always open at the correct position in the song.

One of my plugins uses different stereo channels for each input. Can I still use this with Making Waves?

This is common with Vocoder, which treat a stereo input as two separate mono sound sources. You can use these in Making Waves by adding a new section to your song and setting the pan position of the required tracks to the far left or right. If you now add the plugin effect to the whole section, the individual sounds will be mixed to the required stereo position, before applying the plugin effect.

Troubleshooting

No sound is heard during playback

This is usually caused by the incorrect Audio or Midi output device being selected. Check the device settings on the Audio or Midi menu to ensure these are set correctly.

Double click on the small speaker at the bottom right of the screen to load the Windows mixer and make sure the output levels are set correctly for the device that you're using.

Check the cables connecting the sound card to the amplifier/speaker, and if an external amplifier is present, that it is switched on and the volume turned up.

Midi and Audio playback are not synchronised

Depending on your system configuration, you may find the midi and audio playback are slightly out of sync with each other. This can be fixed by setting a midi timing offset.

First you should load a midi and audio track into a new song, then click on the 'Delay' button at the top of the screen so 'Offset' is displayed. Now adjust the offset for the midi track until it sounds in time with the audio.

Now select the midi track number and right click to bring up the edit menu. Select **Update midi timing offset** and your midi tracks should now sound in time. You can repeat this process with a zero track offset to view the current setting.

The Message 'Specified Device ID is out of range' is displayed when you press Play

If this message is displayed, it is most likely that the audio output or recording device is not configured correctly to work with Windows.

Check the settings on the Audio menu if your system supports more than one device.

Audio output pauses during playback

The first thing you should try is selecting Audio Performance from the [Settings menu](#) and changing the Mix Buffer to a slower speed.

If this doesn't help, it's possible that the CPU cannot keep up with the amount of processing required to play the song. This is usually indicated by the [CPU meter](#) being at its maximum setting.

You can reduce the CPU's workload by lowering the playback frequency, however this will reduce the sound quality. If you're exporting songs to audio files, the frequency can be increased whenever you're exporting files. Another way of reducing the CPU's workload during playback, without degrading quality, is to combine a number of tracks into a single sample file.

Another possible cause of problems is reading samples from a slow device (such as CD ROM drive). You should copy samples to your hard disk, and access them from there.

Virus checking software can also be a cause of problems if left running in the background. Try switching off any active virus checking if you encounter any problems.

No input to Level Meter during Audio Recording

Before doing any audio recording, you may need to adjust the recording levels and inputs for your system. These should be adjusted using the Windows Mixer which can be accessed using the button on the [Audio Recording](#) window or by double clicking on the small speaker on your windows desktop toolbar.

Sound quality of samples you have recorded yourself is poor

If you are recording with a microphone, check that it is suitable for use with the sound card. The sound card documentation should specify the recommended type and impedance of microphone to use.

Most sound cards can record sound signals from a number of input sources (e.g. microphone, line in), and have an input mixer to combine these signals. If you are not using an input, make sure that you set the recording level of that input to zero. Failure to do this could result in noise signals being picked up from unused inputs. Refer to the section on [Audio Recording](#) for more details.

Network Installation

[Server Installation](#)

[Workstation Installation](#)

[User Access](#)

[Sounds Folder](#)

Network Server Installation

If you're running the network version of Making Waves, the software should be installed in a folder on your network which can be accessed by all the required workstations.

Once you've installed the software, you should follow the usual procedure for registering.

The shared installation folder should be set to Read Only for all the workstations accessing the system. This can be done using the security facilities on your network, or simply by right clicking on the folder name and setting the properties to Read Only.

If you're setting the folder properties to Read Only, you should install any plugins and midi instruments you want to use before doing this.

Network Workstation Installation

Once the server software has been installed, it can be accessed from any of your workstations by creating a shortcut to the application from each workstation.

The workstation will check the latest server registration code each time the software is run, so you only need to register the software during the initial server installation.

Network User Access

Access to various options in the software will only be available when the user has write access to the application folder.

This enables you to configure various settings during the initial installation which can't then be accessed by individual users.

If access to the application folder is read only the Plugin Settings, Midi Instruments, New Track Tool, Colour Scheme Editor and various Registration options will not be available.

Network Sounds Folder

If you want individual users to be able to configure midi settings and install additional plugins, you can configure a separate sounds folder for each workstation.

Run the software from a workstation with write access to the install folder and you should see a Sounds Folder option appear in the settings menu.

Change this to point to a separate folder and this will then be used to store any midi or plugin sounds for the workstation.

Creating Bitmap Controls

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Bitmap Controls - Getting Started

Version 5 of Making Waves supports the use of user defined bitmaps for various on-screen controls.

You can create your own bitmaps, adapt the supplied default bitmaps, or screengrab the controls from your favourite plugin.

Any bitmaps you create can be saved in a colour scheme file, which can then be loaded by other making waves users.

When you load or save a colour scheme, any bitmaps are stored in a 'Colour Schemes\Controls' folder below your making waves installation folder.

You'll be using this folder to do most of your bitmap editing, so the first thing you should do is create a desktop shortcut to this folder.

To do this, run Explorer or click on My Computer, locate the controls folder and then right click on the folder name and select copy. Now right click on the desktop and select Paste Shortcut. You should now be able to access the folder at any time by double clicking on the desktop shortcut. (If you can't find the controls folder this may be because you haven't yet loaded in a colour scheme. Load in one of the colour schemes from the examples folder and this should automatically create the controls folder) Whenever you load a colour scheme, the bitmap files will be stored in this folder. You can now edit the files and run making waves at any time to try out the results. Once you're happy with the files, open the colour scheme editor and save the current settings. This will save all the bitmaps in the controls folder.

Please note that if you load in a new colour scheme without saving the previous one, the previous bitmap files will be automatically deleted. Save your new colour scheme at any time while you're working on it to back up your files.

Default Bitmaps

The default_controls colour scheme contains a default copy of all the currently supported control bitmaps.

You can access this by opening the 'bitmap controls' compressed file in your installation folder. Try loading the default controls as a colour scheme, and then look in the controls folder. You should see a list of bitmap files have appeared.

Now run making waves, and you'll see a similar appearance to the default settings. If you load in a song, notice how the check boxes all appear as a single tick box, rather than the different symbols used with the default settings.

You can now edit any of the bitmaps by opening the controls folder, right clicking on the required bitmap then selecting open with. You can now choose to use the standard windows paint software, or your own preferred bitmap editor.

If you're using Paint, you should select the maximum Zoom setting (800%) and switch on the edit grid. This will let you edit individual pixels more easily.

Try changing the check_on and check_off files to alter the appearance of the checkbox. You can leave a bitmap file open in Paint while you're making changes, select save then rerun making waves to try out any changes. Changes won't be updated in Making Waves unless you restart the software after resaving your bitmap.

You can get back to the original bitmaps at any time by reloading the default_controls colour scheme.

Any of the default bitmaps which you've not changed can be deleted before saving your new colour scheme. This will cause making waves to revert to the original settings for these files. For example, if you've updated the meters and want to use the original check box

symbols, simply delete the check_on and check_off files before saving your colour scheme.

You can reset all the current bitmaps at any time by selecting the 'new' button from the colour scheme editor.

Transparent Bitmaps

Making Waves will treat any light grey colours (RGB(192,192,192)) in your bitmaps as transparent.

This is useful if you want to merge the window background colour or bitmap as part of your controls.

If you want to use a light grey colour, rather than transparent, simply adjust the colour value up or down by 1 bit.

Displaying controls will be slower when using transparent backgrounds, even if it's only a couple of pixels, as the image will still need to be merged with the background. This will mainly affect the slider controls and meters which can be continuously updated.

For performance reasons, the track meters will load a single copy of the background and use this for all the meters. This can cause some window bitmap backgrounds behind the meters to look offset.

Currently Supported Bitmap Files

Here's a list of the currently supported controls, along with the maximum size allowed for each: Note that with most of the on/off controls, you need to create each type of control (on and off) for these to be loaded.

check_on, check_off (16 x 16)

main_meter_off, main_meter_on (128 x 10) track_meter_off,
track_meter_on (58 x 14) slider_on, slider_off (160 x 24)

slider_button (24 x 24)

loop_button_on, loop_button_off (20 x 16) play_button_up,
play_button_down, play_button_active (24 x 24) stop_button_up,
stop_button_down (24 x 24) forward_button_up,
forward_button_down (24 x 24) rewind_button_up,
rewind_button_down (24 x 24) metronome_on, metronome_off (24 x
26) The play button also lets you define an optional active bitmap
which is displayed whenever playback is active. A typical use of this
would be to copy the play_button_down bitmap to the
play_button_active bitmap.

Slider Controls

Most of the bitmap controls used are simple on/off controls where you create two bitmaps of the same size to represent the on and off values.

The slider controls are different, and let you create a background along with a level bar and/or button.

You should always include a background, and also include either or both of the level bar and button. If you include both a button and level bar, the user will be able to select which to use by changing the slider display options from the settings menu in making waves.

The size of the slider bitmaps is adjusted by making waves at load time. This allows you to create a pattern and button for the slider, without having to work out the exact sizes of each.

The size is worked out as follows:

There is assumed to be a 3 pixel border at the left and right of the slider. The first 1/4 of the remainder is included at the beginning, the last quarter at the end, and the remainder expanded to the correct size to include the slider button.

An example should make things clearer. If you want a repeating 4 pixel pattern, then the first 3 pixels will be the left hand border, the 4 pixel pattern is then repeated 4 times, then 3 pixels for the right hand border, giving a total of 22 bits wide. Check out the slider included with the default controls to see how this works.

Once you've done this, then you can add a slider button of any size without having to adjust the slider width.

For efficient display times, the height of the slider bitmaps should be the minimum required for the slider bar you're using, so you should

remove any transparent rows at the top or bottom of the slider bitmaps.

Screen Grabbing

One of the benefits of using the above method for the slider control is that it means you can grab images of your favourite plugin sliders and switches to use in making waves. You should screen grab a slider with the button in the centre, then cut out the button to a separate image, and match the remaining ends of the slider to create the slider background.

Background Colours

If you're using a screengrabbed bitmap, you may find it difficult to match up the window colour in making waves with the bitmaps you're using.

All you need to do is save a bitmap file called 'window_colour' in the controls folder. The top left pixel in this file will be used for the default window colour. This also means that if the user selects the reset defaults button in the colour scheme editor, the window will revert to the bitmap colour, rather than the default system colour.

Often, you can simply resave one of your existing bitmap files with the correct colour in the top left corner.

Background Bitmaps

You can add background bitmaps to various windows by opening the colour scheme editor and selecting the bitmap files you want to use. If you're using a single bitmap for all the windows, you should add this to the default setting. If you're using more than one bitmap, you should add these to the individual window settings.

Copies of any bitmaps you use will be saved in your colour scheme file.

Default System Colours

When you save a colour scheme, you'll have the option to save the default system colours with your colour scheme. This will set all the default colours to your current system settings, and means that the same colours will be used if someone reloads your file using different system colours.

Acknowledgements

Any demo songs and associated samples supplied with this software may be copyrighted by their respective authors. Further details of the authors and up to date contact information can be found on the Contacts section of our web site.

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