MaWe by Marcin Wierzbicki and Marek Chołoniewski

(stands for Multipurpose AudioWave Environment)

Version 33d

MaWe is a donationware and is available for free download from http://www.cyf-kr.edu.pl/~zbcholon/mch/mainframes.html
To use MaWe you have first to download and install MaxMSP (min. ver. 4.5) from http://www.cycling74.com
You can also run MaWe under MaxMSP Runtime version, which can be downloaded for free from website pointed above.

This software is posted for both **Mac** and **Windows XP**.
Version **OS 9** is obsolete and probably will not be developed in the future.
Version **OS X** is always the latest and most extended version of MaWe.
Version for **Windows XP** is consequently updated each time after the new version OS X has been issued.

MaWe is designed to be an electronic software instrument for various musical purposes. It can be used for live performances as well as for recording and preparing sound material for off-stage creations (i.e. music for tape, soundtrack for the movies and so on). Thanks to its "Movie Module" it can be also used as a "all-in-one" software for playing back electronic music background to the still movies by means of only one computer. Considering various capabilities of the computers and bearing in mind on how much different ways MaWe could be used, I decided to build MaWe in five versions, each of whose represent different set of possibilities (refer comparision below). Three of them can also operate with 8-channel surround, however this will significantly raise CPU Load.

Clicking on the text in the upper part of MaWe Launcher, you make them highlighted. It also means, that since now, Launcher will remember all your choices concerning MaWe variants, and load them autmatically on next Launcher start.

Full version contains all capabilities of MaWe. All its procedures are build as to be rather advanced and precise than cheap, so MaWe Heavy Duty (called also MaWe Full) needs really powerful computer to spread its wings. Recommended CPU for this MaWe would be PowerMac G5 2,0 GHz or higher. Its PC-version will run on Pentium IV 2 GHz or similar. MaWe Full is set up from: 26 mp3 engines, 7 rec engines, 10 CD engines, each of whose contains Envelope Generator and provides support for multichannel soundcards. This assumes possibility of 43 soundsources played back at the same time.

MaWe Lite has 12 keys in its Mp3 Module and same amount of rec and CD engines as Full version (so it can play up to 29 sounds at once). Each module has its own Envelope Generator, however it can play only in stereo, even if in multichannel environment. Lite could run on Mac with the strongest G3 processors (i.e. 800 Mhz), but will work much effectively on G4 above 1 Ghz. Also Pentiums over 1.5 Ghz will suit to its needs.

Version **Tiny** includes same set of "players" as Lite, but has no Envelope Generator in it, which makes it more cheaper for the CPU. You can try to load all of the 29 sounds into Tiny and play them all at once on G4 over 800 Mhz (Pentium IV 1 GHz or strongest Celerons). If not loaded in full – Tiny can also be useful on G3 under 800 MHz.

MaWe **MulTINY** has the same 12 entries for mp3 as in Tiny, and 10 entries in rec+CD Module which combines capabilities of rec and CD modules from highest versions. It can spread 22 sounds in multichannel space if the sound card provides multichannel support. Less amount of players balances its extended capabilities, so MulTINY needs same CPU to work as Tiny.

MINI with its cheapest construction can function on most of the older machines, such as G3 500 MHz and Pentium III under 1 GHz. It has 8 mp3 engines + 8 rec/CD engines without Envelope Generator. Also some procedures inside are built to be cheaper, but it allows to work this MaWe on unbeliveable lazy machines.

Plug-ins Manager allow to add up to 16 plug-ins to each version of MaWe. There are presently 11 different plug-ins at the disposal and I am working on the next ones. Also compatibility for external VST plug-ins will be added in the future. Note that each launched plug-in increases **CPU Load**, so MaWe with some plug-ins will need more power as mentioned above.

To make your choice just click one of these buttons, turn this page and wait…

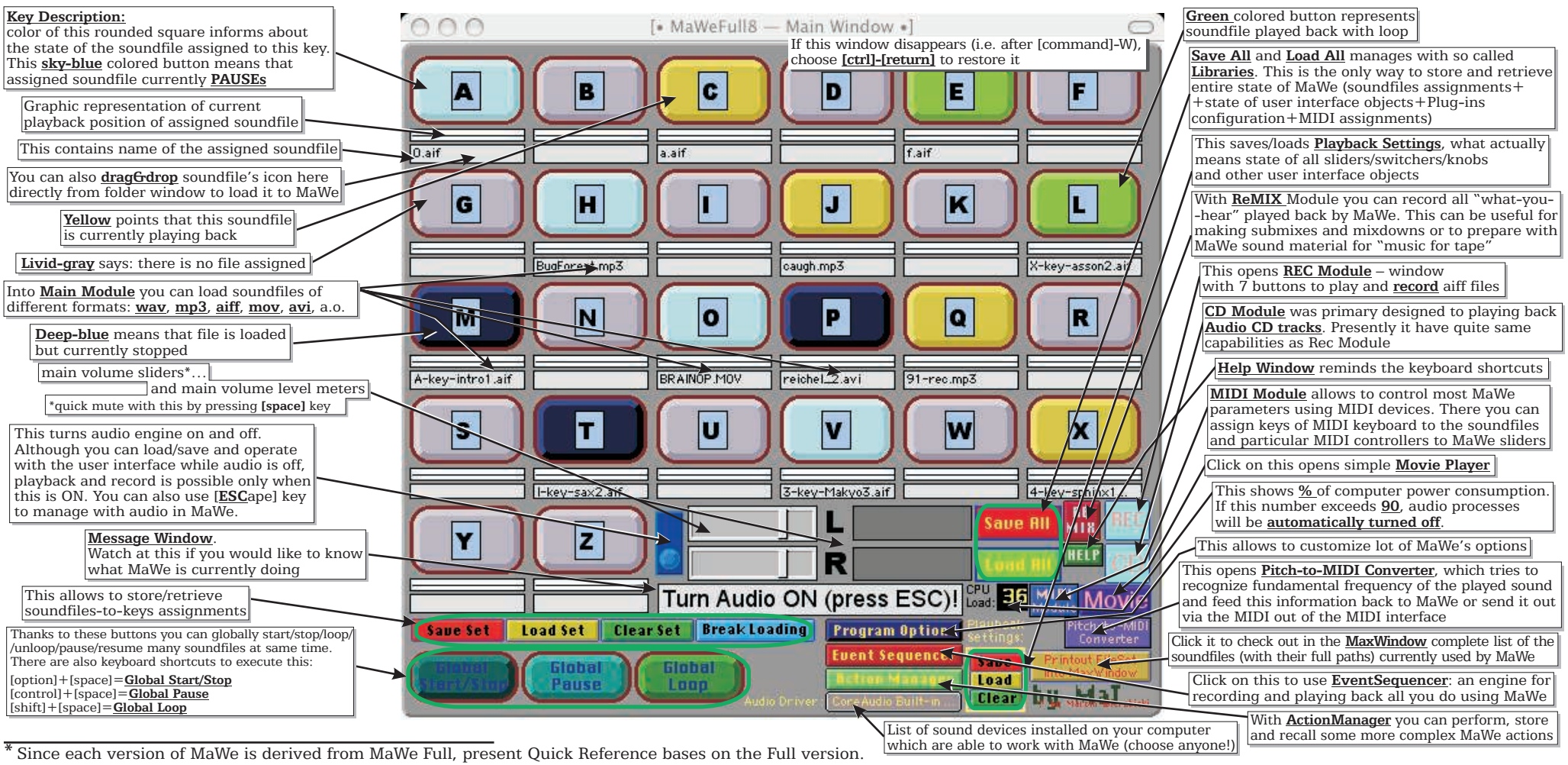
MaWe Main Window — keys and description*

Main task of MaWe is to play back (and/or record) different kind of soundfiles. However MaWe offers lots of various possibilities in that domain, several modules differs one from another in its destination and properties. Using MaWe Main Window (which is to see below) one can load and play back on different ways almost all types of soundfiles – a. o.: **wav**, **aiff**, **snd**, **mp3, Audio CD tracks,** soundtracks from QuickTime Movies (**mov**) as well as other movie formats (**avi**, **mpeg**), unless they have any non-standard compression. Note that all the soundfiles used in Main Window are entirely loaded **into RAM**. It takes more time while loading, but offers much more possibilities while performance.

Basically you can control MaWe by computer keyboard. Keyboard shortcuts are as follows:

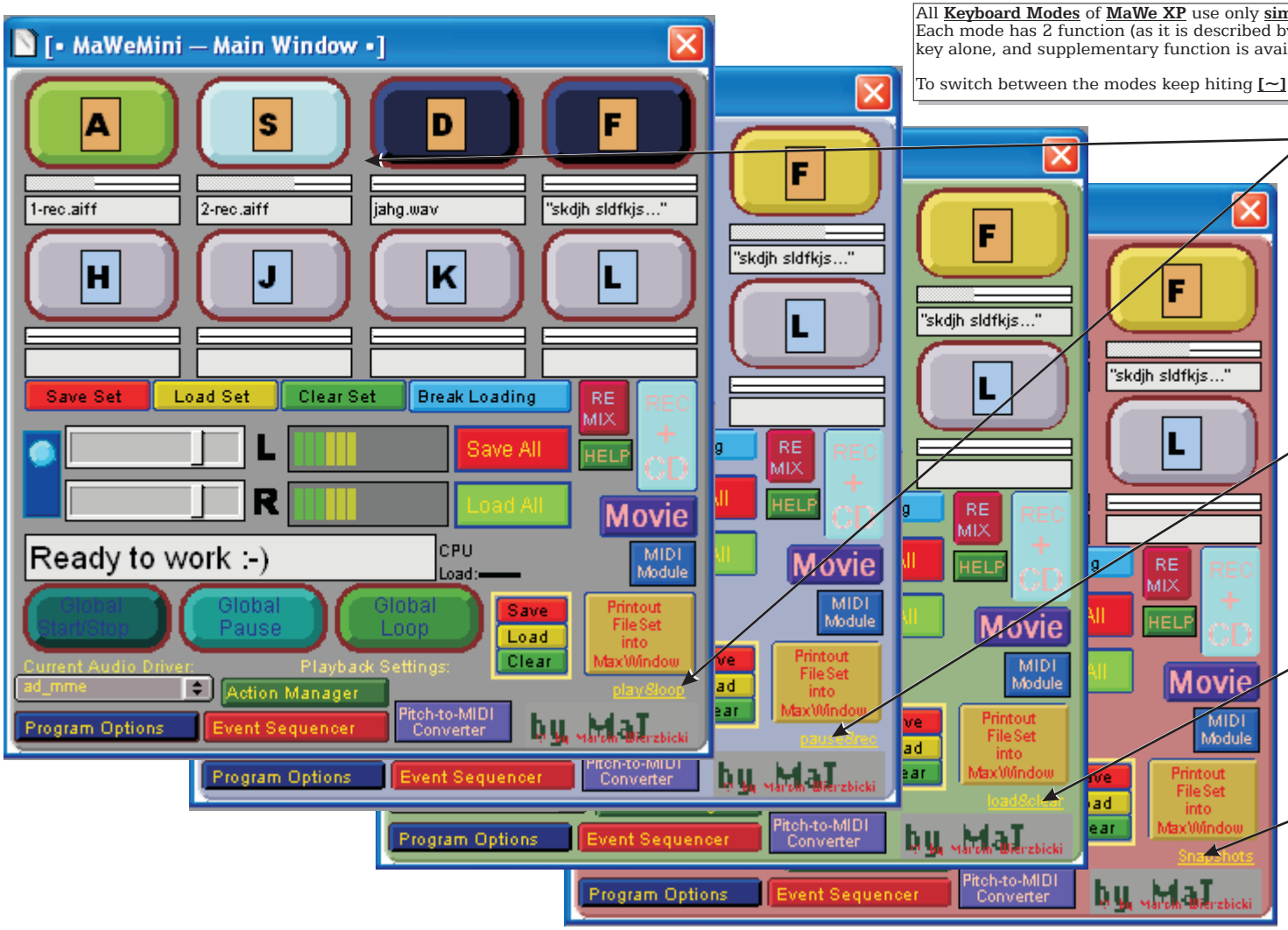
OS 9 and OS X Version:

key: starts/stops playback
[shift]–key: turns loop on/off
[option]–key: loads sound file
[ctrl]–key: record soundfile (not in Main Window)
[ctrl]+[shift]–key: switches pause on/off
[ctrl]+[option]+[shift]–key: unload soundfile
[ctrl]+[option]–key: force reload file from fileset



* Since each version of MaWe is derived from MaWe Full, present Quick Reference bases on the Full version. Possible differences between versions are pointed where apropriate.

MaWe Main Window — keyboard assignments under **Windows XP**



All **Keyboard Modes** of **MaWe XP** use only **simple key** or **[shift]-key** combination.
Each mode has 2 function (as it is described by its name). Primary function can be executed by pressing key alone, and supplementary function is available with combination of [shift]-key.

To switch between the modes keep hiting **[~]** (tilda) key until apropriate mode appears.

Play&Loop Mode is the starting mode of MaWe.
You can see, that MaWe works in the Play&Loop Mode, since the background of MainModule is **colored gray**, and a **small inscription** in the lower part of Main Window says it. Note, that you can also switch between modes **just by clicking** on that inscription!
In **Play&Loop Mode** there are two applications of the computer keyboard:

[key-alone] – play/stop
[shift]-key – loop on/of

You can also **swap** the meaning of the shift/no-shift combination of keys, by switching on **{CapsLock}**, so while {CapsLock} is on, simple pressing the key starts playback already in loop, and vice-versa.

The **livid-gray** color of the background says, that we are about to the **Pause&Rec Mode** of MaWeXP.
The keyboard in this mode function as follows:

[key-alone] – pause on/off
[shift]-key – record on/off

Note, that the recording of soundfiles is only possible in **CD** and **Record Module**, so combinations of letters and [shift] in this mode remains useless.

In **Load&Clear Mode** background appears as **green** one.
The combinations in this mode are:

[key-alone] – loads the soundfile and assigns it to this key for further use.
[shift]-key – clears file-to-key association and wipes the memory.

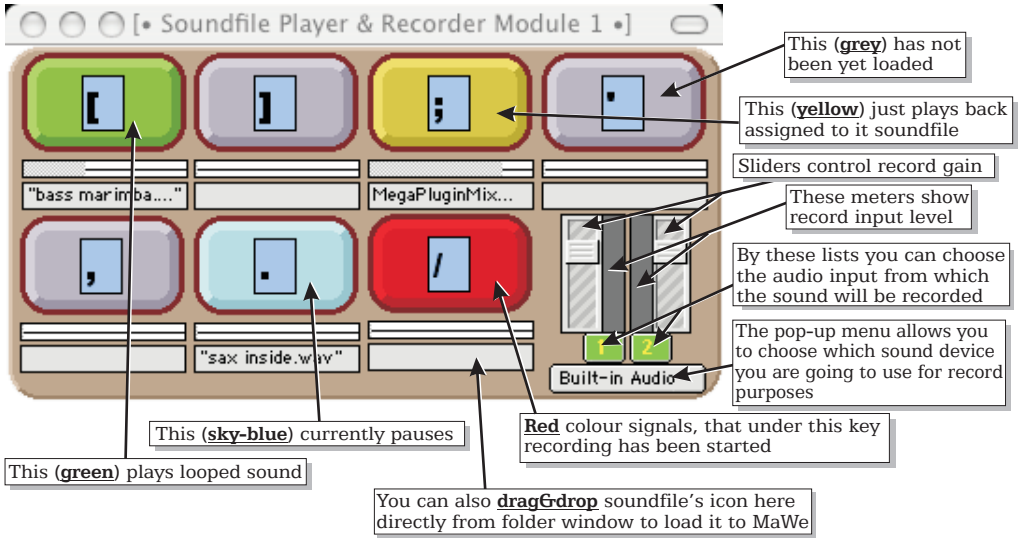
While in **Snapshot Mode** (colored **red**), keyboard is involved in special kind of use, defined by the user in **ActionManager**. All the informations about this you can find on one of the next pages, in the description of the ActionManager.

Regardless of the Keyboard Mode of MaWe, **MIDI Keyboard** is always ready to control over playing or looping loaded into MaWe soundfiles. Detailed information you can find in the description of the MIDI Module.

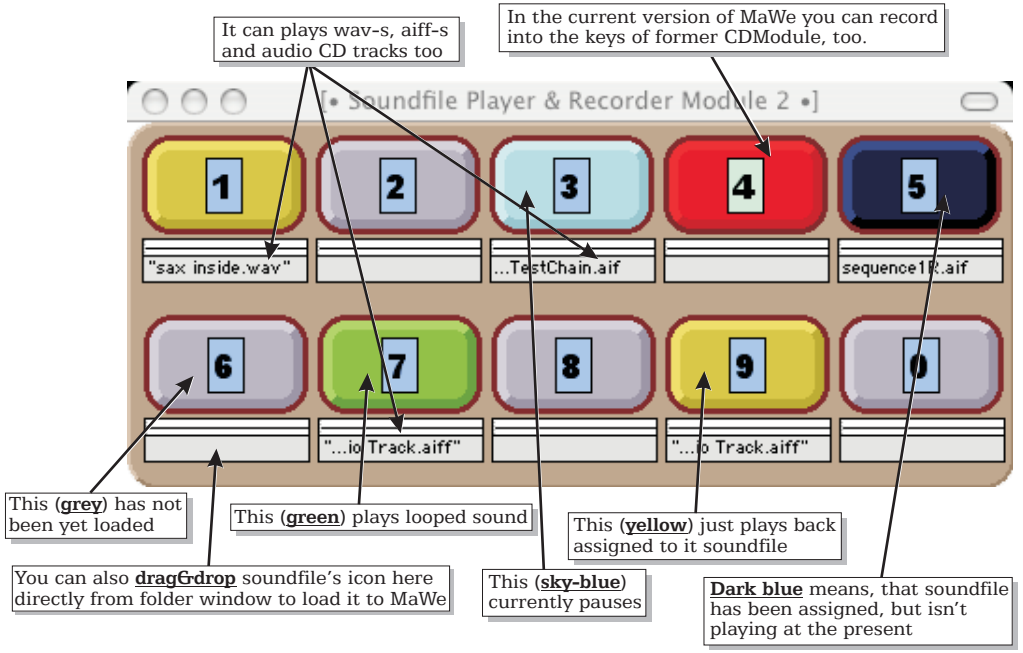
One of the general problems existing in all MaxMSP applications designed for **WindowsXP** is, that MaxMSP doesn't allow to use most combinations of function keys or special keys of the keyboard. Access to the combinations with **[Ctrl]** key is entirely disabled. In addition, most of the combinations with **[Alt]** key is reserved for the internal shortcuts of either MaxMSP or OS functions, and cannot be overrided.

Bearing this in mind, I decided to build an user interface, which probably isn't extremely comfortable, but offers an access to almost all functions of MaWe with one simple computer keyboard. My idea bases on the set of the **"Keyboard Modes"**, switched one to another by pressing **[~]** (tilda) key. So, MaWe for **WindowsXP** will always start with **"Play&Loop Mode"**, which can be turned into **"Pause&Rec Mode"** with one hit in **[~]** key, and then, by subsequent hits of that key, will switch into **"Load&Clear Mode"**, **"Snapshots Mode"**, and finally back into **"Play&Loop Mode"**. Detailed description of several modes you can find above.

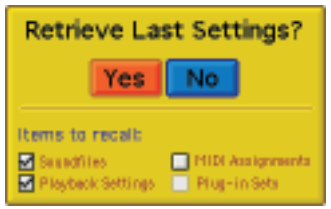
Rec Module – plays uncompressed audio files (**aiff**, **wav**) directly from disk. It also can play **audio CD tracks** (not applied in OS 9 version). Additionally it is able to record sound from any external source and, once recording has been stopped, it is ready to play it back in same ways as the preloaded files. Recorded files are automatically named according the following rule: **[ASCII-number-of-the-key]-rec.aif** (exemple: **47-rec.aif** for recorded under **slash "/"** key) and stored in MaWe folder.



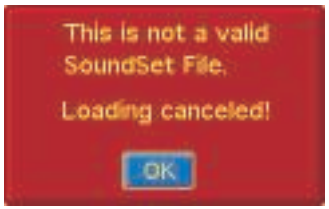
CD Module – its primary destination was to play soundtracks of CD Audio. Although in OS 9 version it still can only fulfill this task, in both OS X and Windows XP, CD Module has similar application as Rec Module – it also plays back **wav**, **aiff**, **snd** files as well as **audio CD tracks**. All of them are played **directly** from hard disk (or CD).



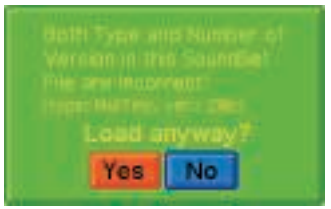
Few troublesome messages MaWe can show on startup



MaWe can recall the state of all parameters from the last session (also if you ain't made any savings during that session). This could be done ONLY at startup, so think twice before you respond negative to this question! Additionally you can choose whether you want to load only soundfiles or playback settings (user interface state) or MIDI settings or all of them at once. "Plug-in Sets" option is currently disabled, however almost all plug-in's parameters are stored in "Playback Settings". If you don't wish to see this window on next start of MaWe – you can uncheck apropriate option in **Program Options** window.



While loading **SoundSet** (file with list of soundfile's names assigned to keys) MaWe check format and syntax of this file. If this appears completely improper, MaWe doesn't allow to load such file and message window as above is displayed. Similar message you can meet while loading wrong **Playback Settings** file.

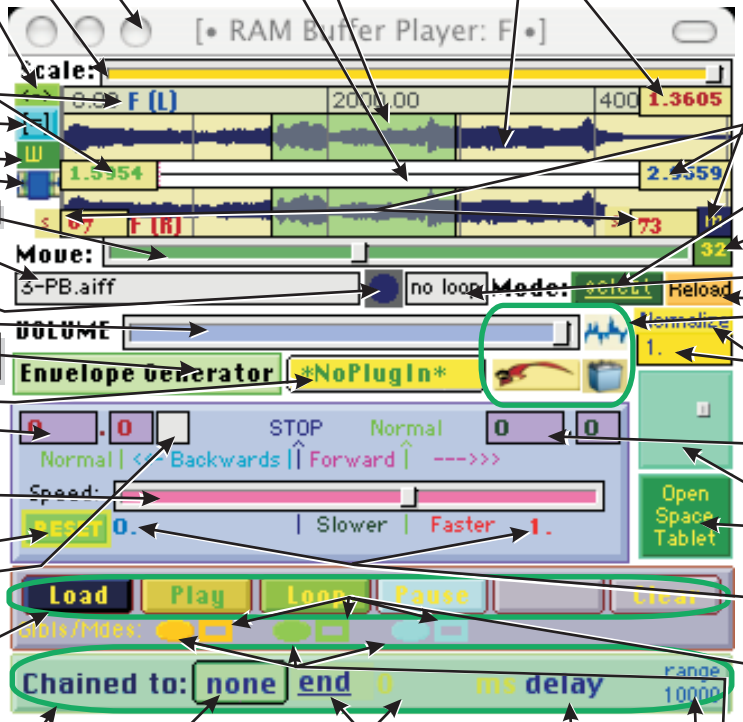


MaWe can load SoundSet from its older version too (if version is older than 28b, you have to convert it first using **Converter**). Also you can try to open SoundSet generated by another type of MaWe (i.e. SoundSet from **Tiny** into **Lite**). When MaWe checks, that file contains older or dissimilar version of SoundSet, it will inform you with this message, pointing also properties of the file currently has been loaded and asking, if you agree to load it anyway. Mainly such operation can be completed, but some errors could appear. While loading, MaWe is trying to repair errors and adapt the content of the set to the properties of the current version, so after saving this under new name it could be read without any troubles and messages.

If **Playback Settings** file, which is to be load, contains parameters of any plug-ins, it is very important for MaWe to have these plug-ins launched before its parameters will have been applied. Considering this MaWe asks, if it should load all of required plug-ins prior to interprete Playback Settings. Negative answer could cause lot of error messages while reading Playback Settings and after that all information about plug-in are vanished from loaded set.

mp3info window – numerous ways to control playback of soundfile completely loaded into RAM

Mp3info window appears when you click on one of the key buttons in **Main Window** of MaWe. It contains all informations and user interface objects that allow wide access to various parameters of played back sound. Some of its buttons have a keyboard shortcuts, and almost all buttons, sliders, knobs and arrays can be joined with MIDI controllers (see: **MIDI Module** for details). Also entire state of **mp3info** can be stored in **"Playback Settings"** file.



Click on this and that window jumps out of the box!

Slider to scale waveform display

Click on this enlarges selection to whole window

Selection startpoint (in secs). It is also possible to change current selection by changing the value of the start-point number box (either by mouse or by the keyboard).

Click on this selects entire soundfile and resizes this selection to display it in full window

Keyname and channel

This decides if **"Move"** slider will either operate on whole soundfile (**W**) or on presently displayed cutout (**S**)

*) see Chapter "New features"

Slider to move the selection

This box shows name of loaded soundfile

This led lights while playback

Volume slider for this soundfile

Envelope Generator for this soundfile (not available in **Tiny**, **MulTiny** and **Lite**)

Plug-ins menu. Available only when any set of plug-ins has been loaded into **Plug-in Manager**

Relative playback position (in secs) – counted from start of the selection

Speed slider. Using this you can speed up playback of soundfile as well as slow it down or play it backwards at various speed

This automatically set up speed at normal level (1.)

This toggle switches between 2 modes of time representation in both relative and absolute playback counters. When **disabled** – it shows soundfile time, which means, the counter will go faster if sound is playing back at higher speed and slower when slacken. Otherwise (**switched on**) it will display realtime progress of playback, where second always equals second independently of the speed of the playback

Control Buttons. Allow to manage with soundfiles in this window with one mouse click. All these operations can be also made on **keyboard shortcuts** (see page 2)

Chaining Engine. Estabilishes chain between this sound and another. Here you can set, which one sound will be played after start (or end) of playback of this soundfile. Also "feedback" chains are allowed, which means that you can chain soundfile with itself making endless loop (very useful for long repetitive sequences)

Choose key with soundfile which will follow after this one

Set **time** (in ms) and **point** (**start** or **end** of this soundfile) from where this time will be counted until chained soundfile will start. Positive numbers mean **"delay"**, negative **"advance"**.

This displays mode of time counting, where **"delay"** means, that time will be counter after start or end of this soundfile and **"advance"** calculates where is the chaining point before end of this soundfile (in "advance" mode "start" option is obviously not allowed)

Selection which will be played back or looped

This shows current position of playback

Waveform Display contains graphical preview of loaded soundfile. Here you can easily set (using mouse) a part of soundfile to be played.

Selection length (in secs)

This switch is to choose which parameter of selection will be joined with MIDI controller: **m** – selection move, **s** – selection start, **e** – selection end

Mode of mouse edit in waveform display. **"select"** – mouse sets selection **"loop"** – mouse moves selection **"move"** – mouse moves content of the window

Selection endpoint (in secs). It is also possible to change current selection by changing the value of the endpoint number box (either by mouse or by the keyboard).

Fade In and Fade Out. The letter designes type of the fade (s for sine-like, e for exponent-like). The number shows fade time in milisecs. You can set different time for fade in and out using mouse or keyboard

Length of fade between loop repetitions (ms). This should equal to at least doubled size of current Signal Vector (which is to see in DSP Status). Otherwise this will result in clicks while selection is repeated. All details you can find in the Chapter "New features"

Loop indicator

Click on this reloads soundfile. It could be useful if sound was not properly loaded or you can clear changes after normalization

*) see Chapter "New features"

With this number box you can set level of normalization (1 = 0 dB, 0 = no changes will made). To execute normalization you have to click on button above

Absolute playback position (in secs) (counted from start of the soundfile)

*) see Chapter "New features"

Speed indicator. **Forward** – red numbers on the right side, **backwards** – blue numbers on the left

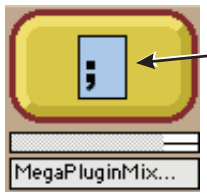
Keyboard Mode Switches. When filled with **red** – set the **"switch"** mode of that key, which means, that one key pressing starts, loops or pauses the soundfile, and another one stops it. Clicking on it turns the key mode into **"button"** mode (no red lights), where once key is pressed – sound file is played back/looped/paused. Leaving key off stops the action. This also could be set globally in **ProgramOptions**.

Global Inclusion Switches. If enabled – makes this soundfile "sensible" for adequate Global Commands (like **Global Play/Stop**, **Global Loop** and **Global Pause**). When switched off – doesn't allow to play/loop/pause of this file on Globals request. Also compare **"Globals"** on page 2

Maximum amount of delay (or advance). Also determines scale of this parameter in case of apply MIDI controller to it. It can be changed with mouse or keyboard

aiff1info and CDX1info – how to play it back directly from the disk or to record the soundfile ready to play it after

aiff1info as well as **CDX1info's** post is to play uncompressed soundfiles (like **aiff** or **wav**) **directly from hard disk**. Since OS X and Windows XP can treat **Audio CD tracks** as a regular soundfiles, there is also possibility to play with these tracks in both aiff- and CDinfo. Only in version for OS 9, where Max uses different procedures to play with Audio CD's, the **CD Module** was especially designed to play (only) Audio CD tracks. Additionally, both aiff1info and CD1info are able to record the sound from a computer's or soundcard's input. Just after recording (press record button or [ctrl]–key shortcut again!) recorded soundfile is automatically assigned with the proper key and lasts ready to play at once.



Click on this and that window appears to be ready for your wishes!

Length of fade between loop repetitions (ms). This should equal to at least doubled size of current Signal Vector (which is to see in DSP Status). Otherwise this will result in clicks while selection is repeated. All details you can find in the Chapter "New features"

Selection which will be played back or looped

Selection length (in secs)

Selection startpoint (in secs). It is also possible to change current selection by changing the value of the start-point number box (either by mouse or by the keyboard).

Relative playback position (in secs) – counted from start of the selection

Selection endpoint (in secs). It is also possible to change current selection by changing the value of the endpoint number box (either by mouse or by the keyboard).

Absolute playback position (in secs) (counted from start of the soundfile)

Total length of the soundfile (in secs)

This shows current position of playback

REC appears **red** while sound is recorded into this key

Loop indicator

This led lights while playback

This box shows name of loaded soundfile

Volume slider for this soundfile

*) see Chapter "New features"

Speed slider. Using this you can speed up playback of soundfile as well as slow it down or play it backwards at various speed

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backwards – blue numbers on the left

Keyboard Mode Switches. When filled with **red** – set the **"switch"** mode of that key, which means, that one key pressing starts, loops or pauses the soundfile, and another one stops it. Clicking on it turns the key mode into **"button"** mode (no red lights), where once key is pressed – sound file is played back/looped/paused. Leaving key off stops the action. This also could be set globally in **ProgramOptions**.

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Envelope Generator for this soundfile (not available in **Tiny**, **MulTiny** and **Lite**)

Plug-ins menu. Available only when any set of plug-ins has been loaded into **Plug-in Manager**

This automatically set up speed at normal level (1.)

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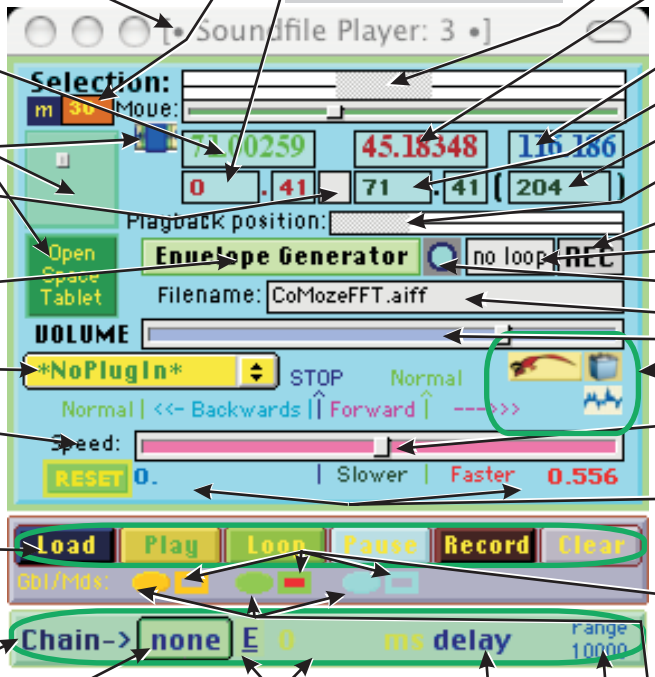


Various representations of panning control

Ordinary Stereo Panning at first 2 outputs of the current audio driver:

This is available in the variants of MaWe called: **LITE** and **TINY**

Stereo Panning with possibility of choice 2 from any of the available outputs of the current soundcard:

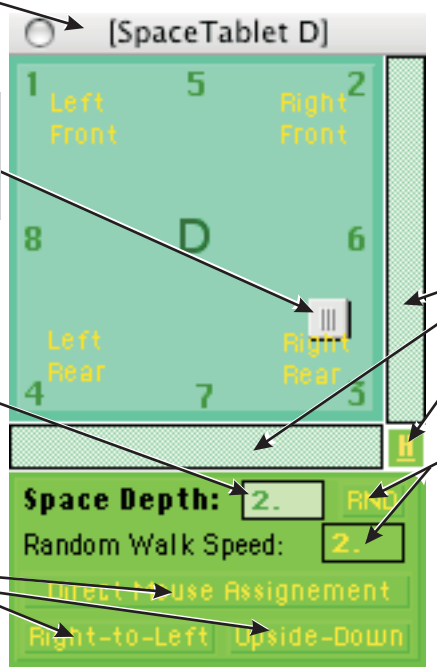
This you can find in: **Heavy Duty**, **MulTiny** and **MINI**

Precise positioning of the sound in the space of max. 8 loudspeakers:

This is to use with: **Heavy Duty [8-ch]**, **MulTiny [8-ch]** and **MINI [8-ch]**

Once you click on this button, that window appears

That point can be moved with the mouse, and designs the way and position of the sound in the space



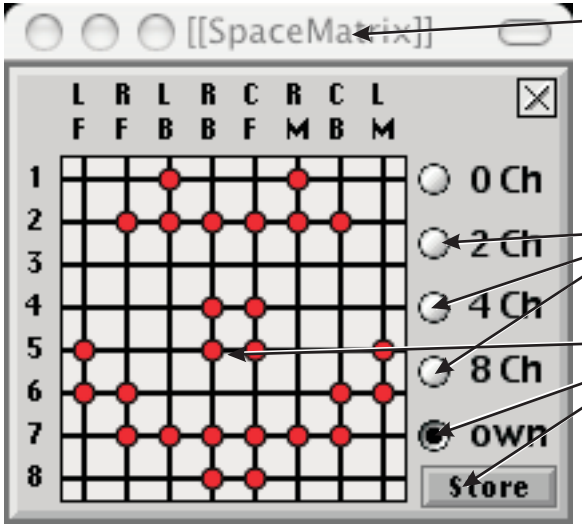
It is also possible to assign the two MIDI controllers to respectively – horizontal and vertical sound movement. To do this (in **MIDI Module**) you should to set **H** to request horizontal assign and **V** for vertical, and determine the range of the space in which the MIDI controller will operate. Ranges limits the space for random sound walking generator, too.

This factor determines accoustic separation of several loudspeakers. Any value higher than 2, causes sound "runs away" from the center much more significantly than usual.

This switches on and off random generator of the position of the sound, and determines how fast sound will walk around the space

With these three buttons you can set the relations between movement of the mouse cursor (within entire computer screen – inside this tablet) and the movement of the sound in the space. **"Direct Mouse Assignement"** switches this function on and off, **"Right-to-Left"** causes a horizontal mirror of sound movement to mouse tracking, and **"Upside-Down"** does the same vertically.

To provide complete control over different models of sound space, the **8-ch** variants of MaWe are equipped with **"Space Matrix"**, which allowes to make any assignements between **logical** channels of MaWe and **physical** audio outputs of the soundcard. To make this option editable, you should to click on the **gray button** under the letters **"L"/"R"** in the **Main Window** of MaWe



Presets for 2-, 4- and 8-channel space. Note that more channels available, results in higher loading of the CPU, so there is no reason (and no sense) to use the model with more channels than you need.

You can also set and store your own space model. To do this you have to switch preset button to "own", than click on as many points combining ogical channel of MaWe with the physical output of the soundcard as you wish. More than one horizontal and vertical assignements are possible. Than you should click "Store" button if you would like to recall your own setting anytime in the future.

New small but useful tools in some MaWe windows

If you are advanced MaWe user, you might be suprized with a few new graphic items in some MaWe windows (and particularly in so called "players"). Beneath you can find short explanation to these icons.

MaWe windows can presently be resizable. If you see the icon such a strange green two-eyed arrow, you can click on that arrow and once it becomes red, the window expands its size showing some more features that normally remains hidden and unused.

This opens a bus to send the sound of this player to the Pitch-to-MIDI Converter (detailed explanation on the next pages). **8 keys** are equipped with this bus: **A**, **S**, **D** and **F** from RAM-Players, and **1**, **2**, **3**, **4** of the Hard Disk Players

MaWe can also remember the position of its windows and causes that some windows remain opened after starting MaWe and some others not. Although position of numerous MaWe windows is stored automatically, if you would like to see them opened at the next start of MaWe, you need to click the icon of the blue recycle bin,to change it into a pin. So pinned-up windows will appear automatically while MaWe starts again.

This button determines, what MaWe should do in this special case, when new selection of the part of the sound is made. If this mode is switched on (an icon consist of yellow triangle), just after new selection MaWe automatically starts to play it back. When the new selection is made while playing an old one – after end of playback, this new selection will be then performed. All that behaviorus doesn't occur, when the icon looks as a blue colored rectangle.

Pitch-to-MIDI Converter

Note:
prior to use MaWe's Pitch-to-MIDI Converter you have to download and install [fiddle~] object by Miller Puckette/Ted Appel available for free at:
http://www-crca.ucsd.edu/~tapel/fiddle1.2.sit (for Max OS X) and http://www.akustische-kunst.org/maxmsp/download/fiddle~1.2.zip
for WinXP version of MaxMSP

There are two ways to send the sound to the Pitch-to-MIDI Converter:

1) enabling the bus by clicking on the icon: in the info--window of the one from 8 following players: **A**, **S**, **D**, **F**, **1**, **2**, **3**, **4**.

2) redirecting audio signal from the audio inputs of the soundcard by clicking on the **[Ext. Audio]** button inside the Converter window.

This Pitch-to-MIDI Converter is designed generally for analyzing single-voice sounds, preferably without any accompaniment. Polyphony can be also captured, but result of that might be more than chaotic.
Also sounds with inharmonic spectrum can be recognized improperly.

To run Pitch-to-MIDI Converter first you should to set this **[On]**. Why it is not working automatically? Because this module needs something like 4–8 % of CPU, so if you don't want to use it anymore, there is no sense to waste the power of the processor

Input Level – slider and meter.
For setting and controlling level of the sound from MaWe Players

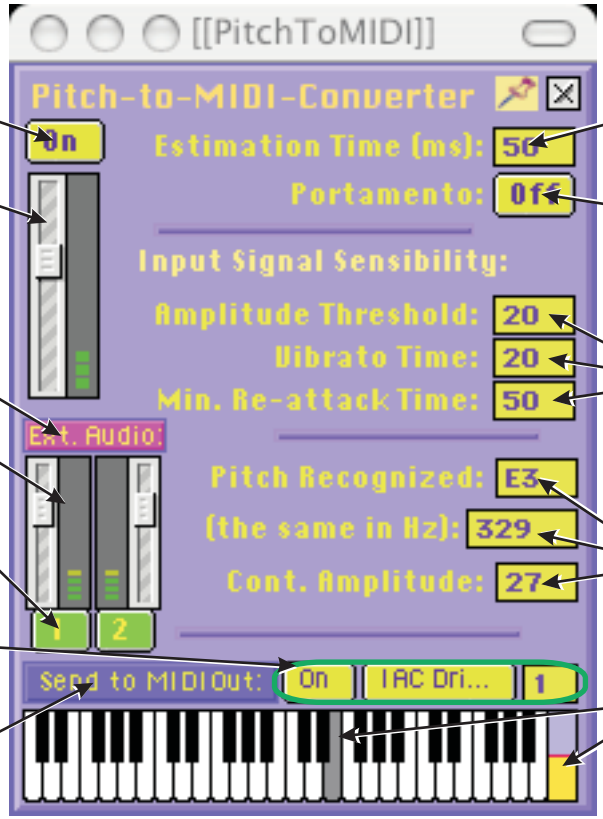
Click on this to switch on/off capturing sound from audio input

External Input Level – sliders and meters.
For setting and controlling level of the sound from audio card input

Audio channel numbers from which sound will arrive to the Converter

Results of the activity of the Converter in form of recognized pitch and its velocity, can be send to any external MIDI device. In this part of the window you can decide whether you want it (changing [Off] to [On]), and if yes, to which MIDI device and what MIDI channel the messages will be send.

If any of played by Converter notes "hang up", and won't automatically stop you can "flush" them away by clicking on this button



Usually converter samples received sound and tries to find its fundamental. Very often fundamental looses its strength momentarily or changes its frequency smoothly (what doesn't affect to the overall pitch of the sound).
To diminish the results of the fundamental instability you can set longer **Estimation Time** (in **ms**). This parameter determines the period of the time within whose only one, most weighted fundamental will be searched.

The pitch recognized by the Converter may jump between two consequent values, or – if this is **[On]** – slide or glide, producing kind of portamento.

Amplitude Threshold – recognized pitch will be send out of the MIDI outlet only if its volume is higher than this value.
Vibrato Time – Converter ignores small changes of the pitc if they are faster than this (in ms)
Min. Re-attack Time – shortest time, after which repetition of the same pitch is recognized as a new, independent note

Those three number boxes show direct result of the Conversion: pitch as MIDI-Note names, than in Hertz and last one – amplitue expressed as a MIDI value (0–127)

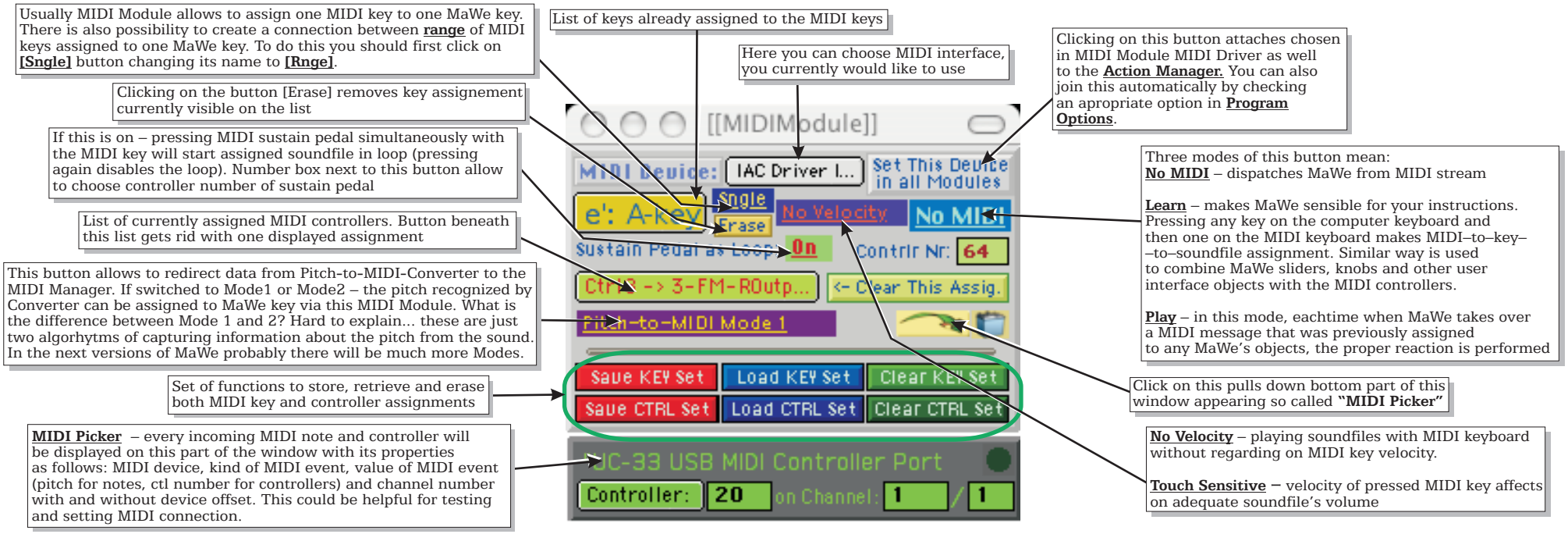
This keyboard shows currently recognized pitch. The yellow, vertical value meter determines velocity of this pitch.
Please note, that **you can also play on this keyboard** using mouse. To do this you need to click on any key of this keyboard. Clicking in higher part of any key causes [Note-On] MIDI message with higher velocity goes out of the MIDI output pointed above. If you click on lower part of the keyboard – produces quieter MIDI note

Note:

the Converter may not work properly in mode 3. (A Compromise between Latency...) and 4. (Higher Latency...) of "CPU Task Time Sharing".

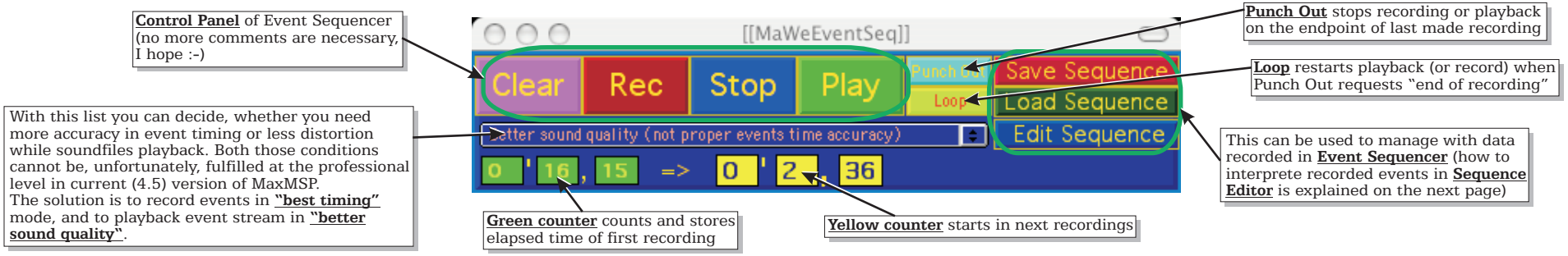
The lowest note, that Pitch-to-MIDI--Converter can recognize is about 108 Hz (around MIDI note 45 or A2)

Extended control: **MIDI Module** to manage with MaWe using MIDI devices and **Event Sequencer** to record and playback almost all performed actions

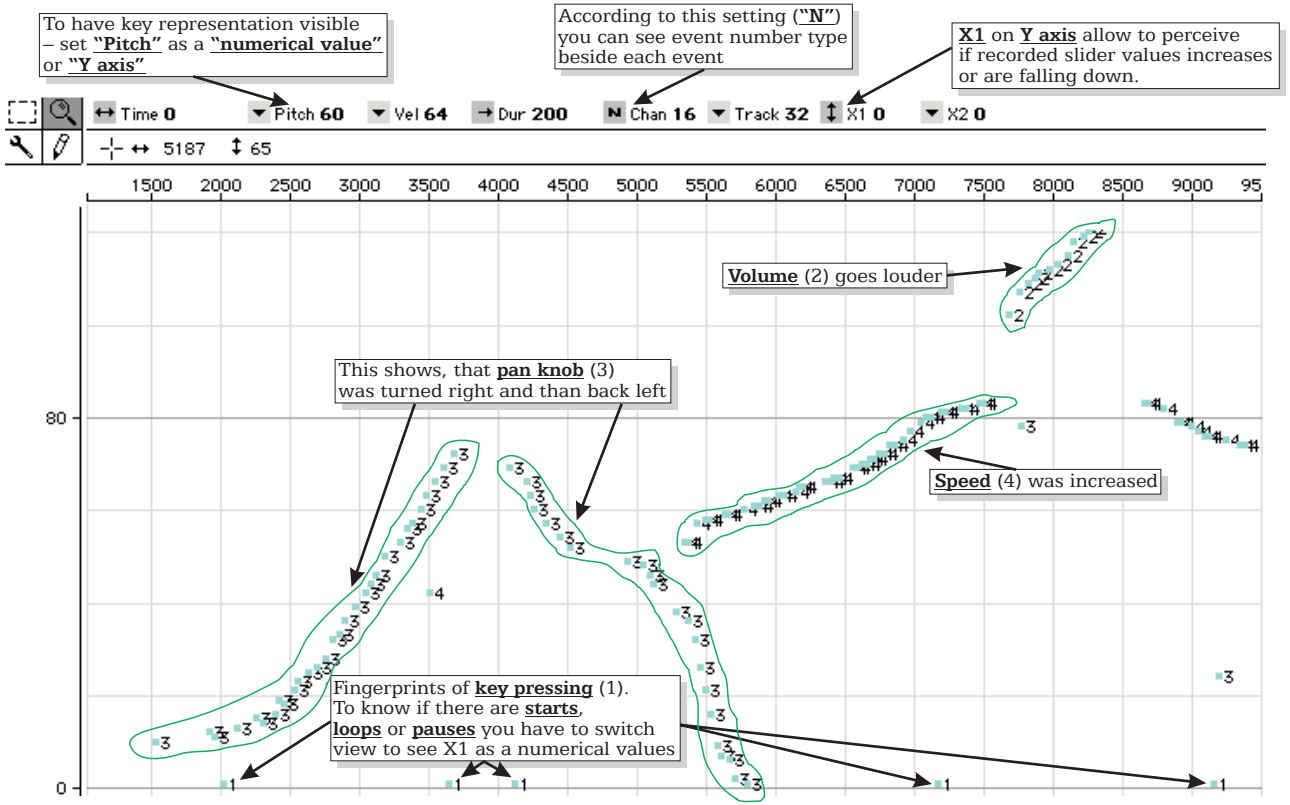


Event Sequencer can record and play all you are doing with MaWe keys, buttons, sliders, knobs, arrays and so on. It can also work in **overdub** mode, therefore to the first recording you can always add next events just by record it in **loop**. To do this, first you should make basic recording, which will determine time range for record loop. This time range will display on the **green counter**. What you have to do next, is to switch on **"Punch Out"** button, which preserves to stop the second recording just at the endpoint of the first recording. If you want to record more turns at once it could be helpful to enable also **"Loop"**. Then you need to push **"Rec"** button. If you want to stop recording immediately just press **"Stop"**. Unchecking **"Loop"** (and leaving **"Punch Out"** on) stops recording on the endpoint of the first recording.

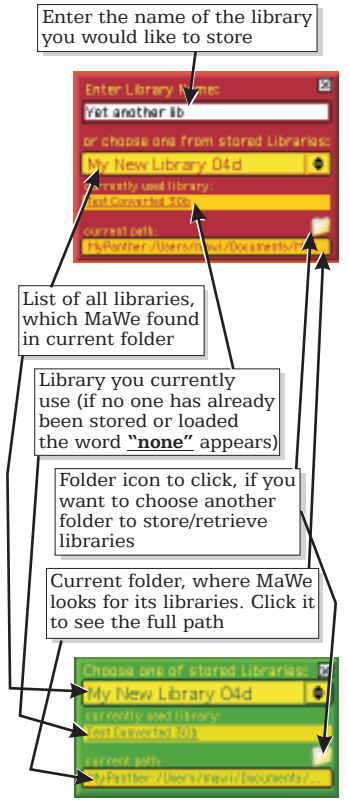
Warning! In MaxMSP 4.5 audio processes are prioritized over other events (such as MIDI messages or user interface response), so it is very problematic for **Event Sequencer** to keep **precise timing** while lot of audio funcions are called. Such situation could cause a **perceptible delay** and augmentation between recorded original and its played back repetitions. To (only partially!) solve this problem there are menu in the middle part of the Event Sequencer, that allows you to choose between good quality of performed sound and more (but, unfortunately, still not exact) precise event timing. In any case – **Event Sequencer isn't a proffesional tool for recording many segences at once**. It is only a substitute of that!



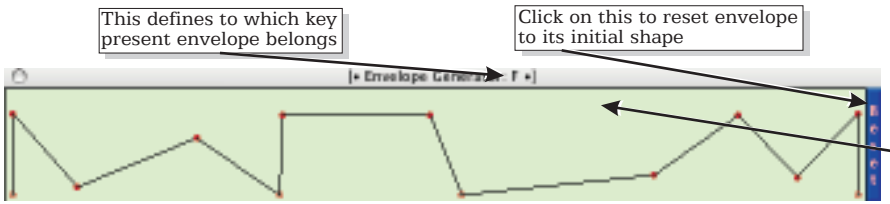
Clikcking on **"Edit Sequence"** in **Event Sequencer** gives you an access to recorded sequence. After roll-type editor opens, you have to make some arrangements to better view of the events. First is to switch vertical view to represent **X1** parameter on **Y axis**. Next, you should set **channel numbers** to be visible **beneath the events**. You can do this using **"Chan"** menu. Last thing is to resize editor's window to see lower part of the roll, where most of MaWe events are situated. This way you can see event numbers (i.e.: 1 means key event such start/stop, loop or pause, 2 – volume of the soundfile, 3 – its panning, 4 – its speed) which is represented by channel and event value as a X1 parameter value on Y axis. If you wish to see to which keys belongs event, you have to switch "Chan" or "X1" view to **"Pitch"** view, since particular keys are figured in Event Sequencer as a pitch value of the event. Because operating methods and tools are similar to these ones used in most sequencers I'm not going to explain it here. If you want to know how it works in Max – please refer to the [detonate] object instructions in both Max Manual and Reference.



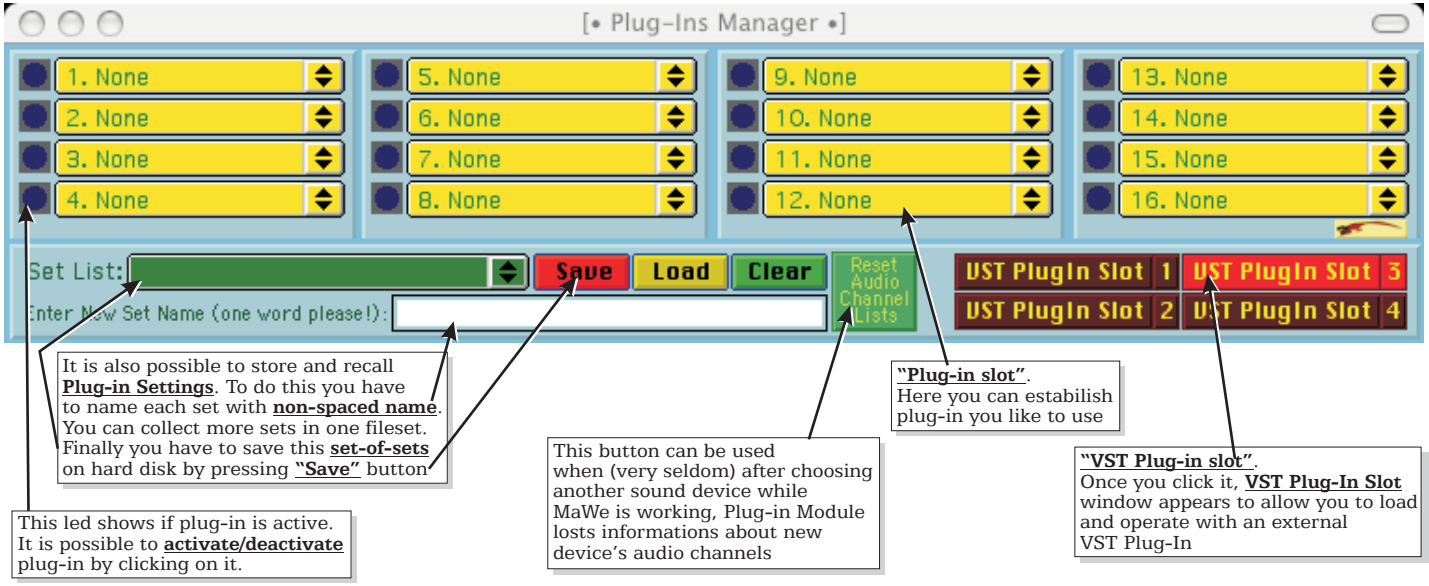
Instead of saving individual parameters of MaWe in separate files, you can store them together under one common name. In fact **"library"** is the set of several files with the same name and dif-ferent **"extension"**. Libraries are stored in the **"_sets"** (and not "sets") folder of particular type of MaWe, however you can choose another folder to store it by clicking on folder icon in the right top corner of either [Load All] or [Save All] window. This folder name will be saved in MaWe properties and will always appear beneath the folder icon on [Load All] and [Save All] window.
Of course you can easily make library from one file (i.e. SoundSet file or playback settings file) by reading it separately (with adequate **[Load]** command) and then saving it as a library using **[Save All]**. Opposite to this you can also **"extract"** any type of data by loading library with **[Load All]** and then save only one type of sets by means of proper **[Save]** button.



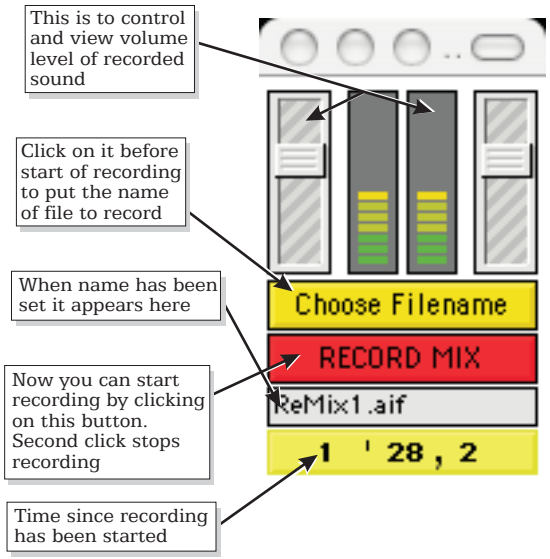
In both MaWe **Full** and **Lite** you can find **[Envelope Generator]** button inside **mp3info**, **aiff1info** and **CDX1info** windows. Clicking on it opens graphic editor, which allow you to set a **multipoint envelope** to control overall amplitude of the played back soundfile. This envelope is rescaled each time when selection has been made, so always start and end of the envelope is synchronized with start and end of played back sound.



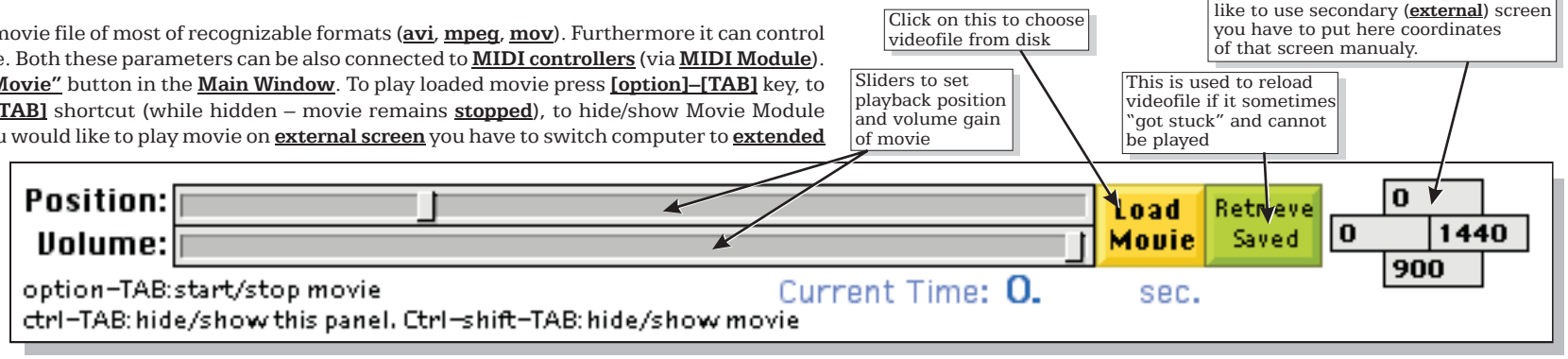
Plug-ins Module allows to launch up to 16 plug-ins at the same time. There are 11 different plug-ins dedicated to MaWe at the present and number of the plug-ins in the next versions of MaWe will be probably increased.To insert plug-in into a playback stream you have first to launch plug-in, you need and then, using **"Plug-in Menu"** available in each **"info window"** combine soundfile's playback output with plug-in input. You can also **insert** one plugin into another (proper menu you can find on the bottom of each plug-in window) or feed it back to its input (be aware: in particular cases this can make dangerous feedback loop!). Whats more could be important to know, when plug-in is launched or removed from Plug-in Module, it **resets** all "Plug-in Menus" in "info" windows, therefore better way is first to choose ALL plug-ins you need and then attach it to sounds with the "Plug-in Menus".



ReMIX Module records all sounds produced by MaWe. This could be a convenient way to make **mixdown** of your work with MaWe for either load it back to MaWe and play as one of many soundfiles or treat it as a sound material for work on it with another software.



Movie Module can load and play one movie file of most of recognizable formats (**avi**, **mpeg**, **mov**). Furthermore it can control its playback position and audio volume. Both these parameters can be also connected to **MIDI controllers** (via **MIDI Module**). To open Movie Module just click on **"Movie"** button in the **Main Window**. To play loaded movie press **[option]–[TAB]** key, to hide/show movie use **[ctrl]+[shift]–[TAB]** shortcut (while hidden – movie remains **stopped**), to hide/show Movie Module Control Panel press **[ctrl]–[TAB]**. If you would like to play movie on **external screen** you have to switch computer to **extended desktop mode** and input coordinates of external screen into number boxes on the right side of the **Movie Module Control Panel**.This module is sufficiently obsolete and in the future I rather plan to build a new, independent application for advanced video transformations.



11 different MaWe plug-ins are as follows:

1. None
1. Stereo Delay
1. Flange Chorus
1. Stereo Granulator
1. Mono Granulator
1. Pitch Shifter
1. Convolution
1. Modulated FFT Filter
1. Amplitude Modulation
1. Frequency Modulation
1. Spectral Shifter
1. Mutli Comb Filter

In this Quick Reference there is no place to explain in full, how these modules works, but lot of similar things you can find in the lots of audio software, so I hope it should be easy to discover possibilities of particular plug-ins.

What is interesting, that plug-in inputs are always plugged **before** sound player **output fader** (**"Volume"**), so you can easily control balance between transformed and "dry" sound by proper setting of **plug-in input** and sound output in **"info"** window.

You can also apply plug-ins to **audio input** of the **computer**. Each plug-in has **"audio input" checkbox** as well as possibility of choosing input channel to be affected by plug-in. To perform this you haven't read any soundfile into MaWe before – just use Plug-in Manager.

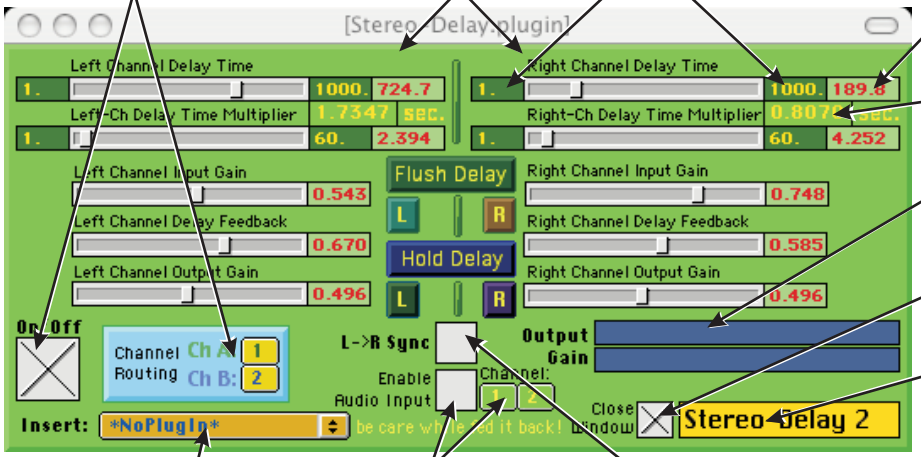
Here you can find basic information about making use of MaWe Plugins and VST Plugins nested into MaWe. There i s no space to explain how each particular plugin work, but most of the rules to use plugins are always similar. I hope that these instructions will clarify the methods of working with plugins in MaWe.

Most of MaWe Plugins have the same set of sliders for the left channel and for the right

This box shows the result of scaling position of slider within its range. In fact – this number sets one of the plugins parameter.

This toggle switches plugin on and off. Each launched plugin is automatically "on". Beneath this switch you can find items to control the panning. They acts in the same way as similar objects in "Players".

With these boxes you can set the range of the slider. Left number box sets the minimum, right is for max.



Sometimes the resolution of the parameter should exceed capacity of one slider. In this case there are two sliders combined with each other. One from its is the base and other is the multiplier. To show the final result of the use of both sliders to set one plugin parameter, there is one more number box between the sliders.

Output gain meters are plugged after output volume sliders, so you will see if the sound is coming out of the plugin when the sliders are set higher than on "0".

This toggle closes the plugin window, but doesn't disable the plugin itself. This allow plugin to work "in background". If you want to see plugin window again, you should click on the plugin's blue led in the Plugin Manager Window.

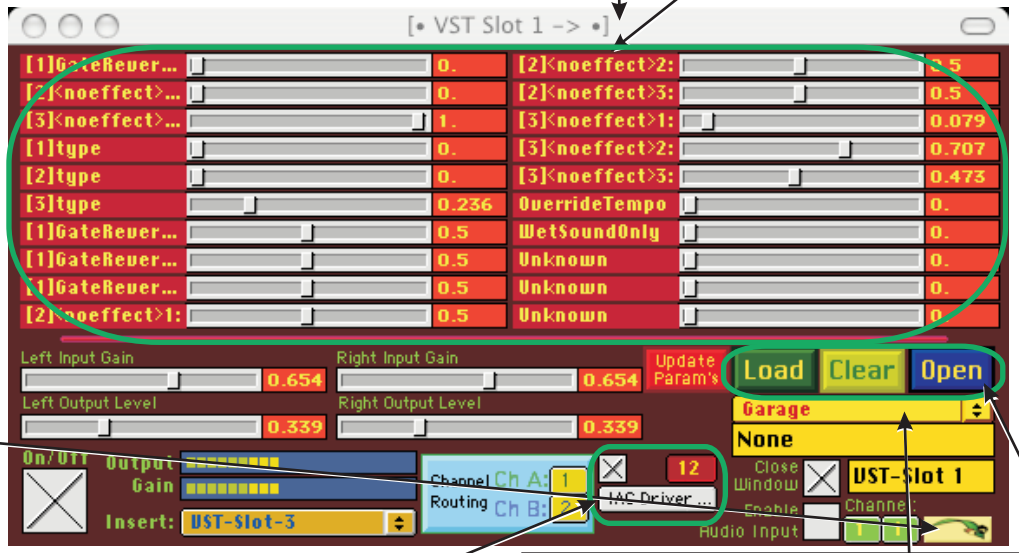
The name of the plugin with its number (Plugins are numbered in the order as they appeares in the Plugin Manager)

Important informations about hosting VST plugins in MaWe

To load common VST plugin into MaWe you can use one of 4 VST-slots available when you resize Plugin Manager by clicking on apropriate resizing-arrow. This opens **VST-Plugin-Dock**, what is to see below. This dock can capture and control up to 40 parameters of loaded VST-Plugin. Also program names – if defined in the plugin can be managed with this Dock. The advantage of that is, than you can, for example, assign, using MaWe's MIDI Module, any parameter of VST Plugin to any MIDI Controller.

Note, that not all the VST Plugins are fully compatible with hosting engine of MaxMSP. This may cause problems with capturing some parameters names or values, and also program names. Eventually the strongly incompatible Plugin won't work with this Dock.

First 20 parameters of currently loaded VST Plugin: its names provided by plugin, values as the position of the slider and as the number. You can handle with the sliders to change parameter values.



In this list you can find all currently loaded plugin's outputs. By choosing one of them in this list, you insert the output of choosen plugin into input of this plugin.

L->R Sync, if enabled causes, that right slider of the same parameter automatically follows when the left is moving. But even if Sync is on, the left slider still remains independent from right slider

It is also possible to transform, with the plugin, the sound coming directly to the input of the computer's soundcard. To allow this you should switch on "Enable Audio Input" for the plugin you want to use, and choose audio input channels, from whose you want to send the sound to the plugin.

Clicking the resize-arrow in the right-down corner of the Dock opens a lower part of the Dock with the next 20 parameters of VST Plugin.
So, the Dock window appears as shown beneath

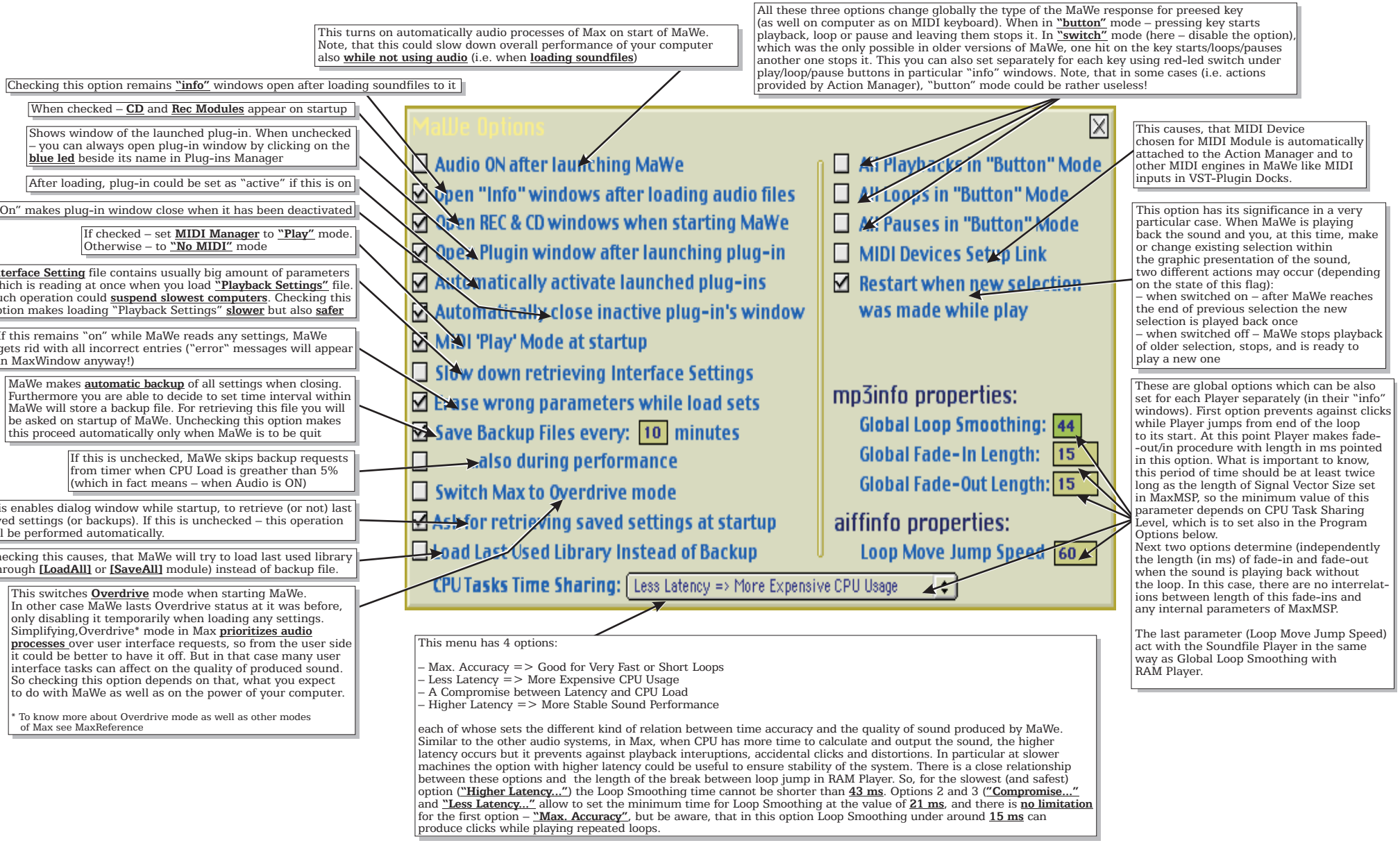
If the VST Plugin is an instrument or can be steered by MIDI controllers, you can enable to control this plugin over MIDI by switching this toggle "on", and choosing apropriate MIDI device and/or MIDI Channel

Here you can see and choose programs from VST-Plugin.

[Load] – open the dialog window to choose and load the plugin itself. **[Clear]** – removes VST Plugin from the Dock. **[Open]** – opens original window of the plugin

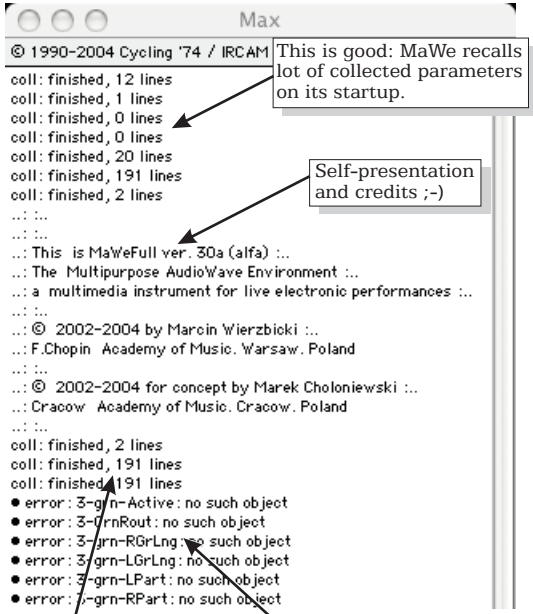
Program Options to customize your MaWe

Program Options is the place you should visit if you found in your MaWe anything that you don't like or that make you always cross. It is possible, that here you find remedium for your sufferings, since here you can customize many parameters of MaWe. Some of these affect on initially state of MaWe and decide what actions MaWe will perform always at startup. Others could speed-up some tasks or prevent from suspension of slower computers while performing some problematic actions. Another ones makes globally the same things you can also set locally in several windows.



Messages, errors and hints...

While starting, MaWe generates several messages into Max Window (always visible after pressing [command]-M and [ctrl]-M in Windows. Some of these messages confirms its proper activity and some others may contain information about problems, that MaWe met while loading its modules, soundfiles or files with stored parameters. The figure below presents typical situation when MaWe requests errors.



This is good: MaWe recalls lot of collected parameters on its startup.

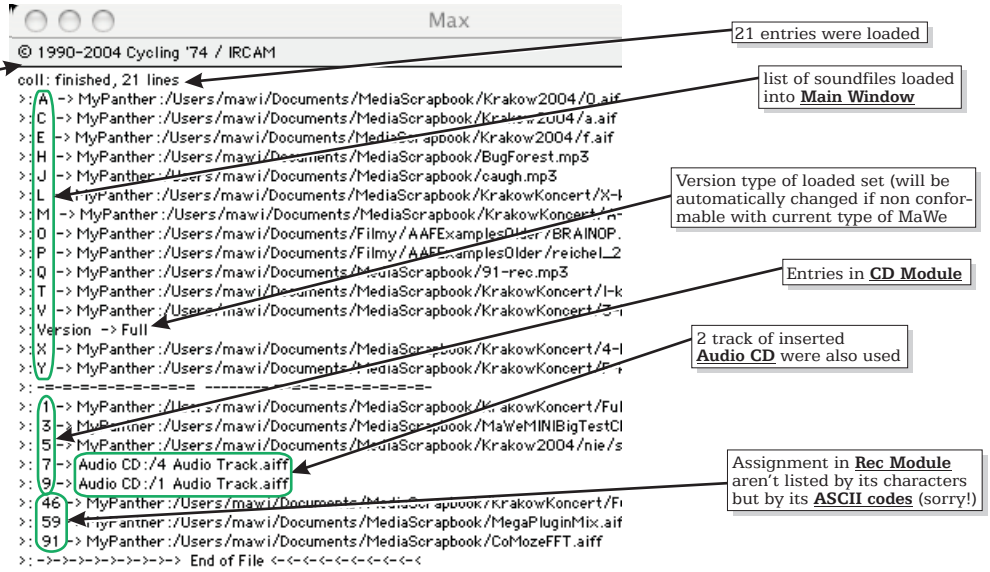
Self-presentation and credits ;-)

Such lines are printed while MaWe loads setting file requested by user

And this is bad. These errors mean, that setting file being retrieved, contains data not suitable to current state of MaWe (i.e. you try to load settings from another type of MaWe as you use at this moment or you ask to load Playback Settings file and rejected to launching Plug-ins.

Such incorrect entries MaWe erases from set while saving it to disk, so after save, setting file will probably loaded without any errors.

By clicking on this, you ask for displaying that in the **MaxWindow**. This is list of soundfiles, MaWe assigned to its keys. If MaWe has problem reading any file – it is possible, that reason of this you can find learning this list. What is important to know, MaWe doesn't like some characters in filenames, which are accepted by the system. Basically there are **semicolon** (;), **comma** (,) and **quotation mark** ("), but some special charakters as a specyfic laguage diacritic characters could be also not allowed. Soundfiles' names with such characters can't be correctly stored in the fileset, and these names (as well as names of their paths) could appear derived or shortened in MaxWindow. The only way to repair this is to **change name** of problematic file and try to **load it again** to MaWe.



21 entries were loaded

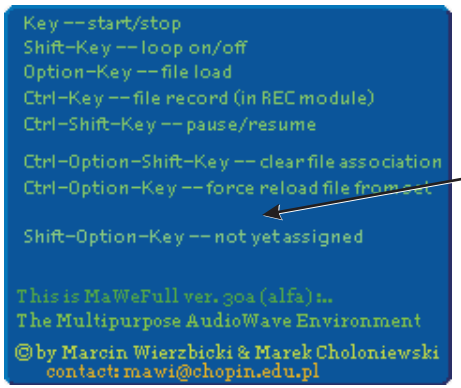
list of soundfiles loaded into **Main Window**

Version type of loaded set (will be automatically changed if non conformable with current type of MaWe

Entries in **CD Module**

2 track of inserted **Audio CD** were also used

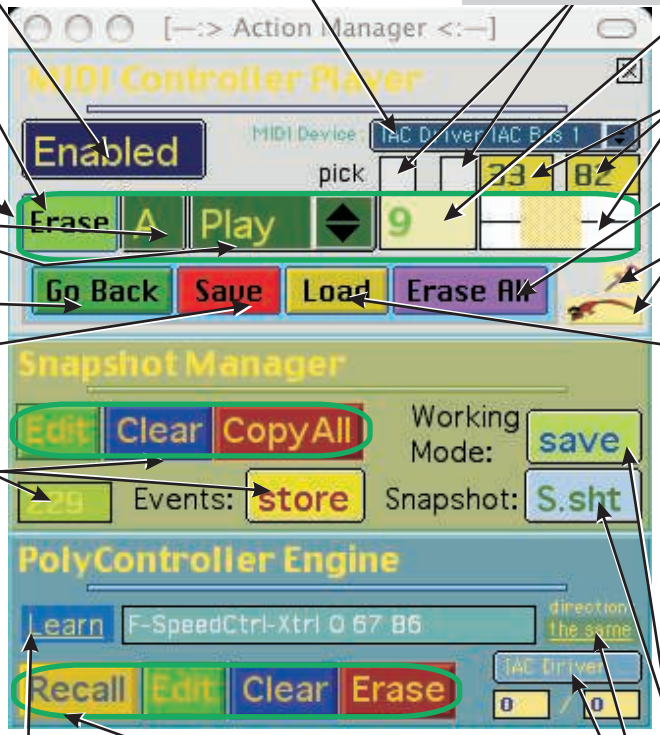
Assignment in **Rec Module** aren't listed by its characters but by its **ASCII codes** (sorry!)



This window you can recall each time when you forgot keyboard shortcuts used in MaWe. It also contains e-mail address to where you can send any remarks or complaints about MaWe

The next step – Action Manager

Action Manager realizes a new idea of use MaWe as a complex application to make more operations (so called "actions") at once. To do this, Action Manager allows to define relations between user interface events (such as pressing computer's or MIDI keyboard or using any MIDI controller) and the different reactions from the MaWe side. At the present Action Manager has three independent modules: MIDI Controller Player, what assigns ranges of particular controller values to certain actions (like play, loop or pause) of any MaWe Player, Snapshot Manager, where you can store any subset of any MaWe parameters , and recall them very quick with one simple combination of the computer keyboard key, and PolyControllerEngine which extend possibility of MIDI Module, allowing to combine many MaWe sliders with one MIDI Controller, also fixing the different range and direction for each MaWe slider.



"Enable" makes MIDI Controller Player sensible for the user interface events. "Disable" is an apropriate state of this module to set it up before use

With this list you can choose which MIDI device will control over Action Manager

By checking left "pick" box you can set controller number just by sending it via MIDI to MaWe. Additional checking right box makes ActionManager sensible for choosing also controller range via MIDI

This is to erase one particular definition

Here is to set the MIDI controller number

This line of objects is used to define a single relation between MIDI controller state and the reaction of MaWe

You can check also the range of the values of chosen controller, which will causes defined reaction. To do this you can use both – number boxes or range field

This list allow to choose with which key of MaWe the MIDI controller event will be joined

Erase All – resets all definitions to its initial state, which is to make "nothing" on controller number 0 in range between 0 and 0

In this menu you can choose, whether a particular MIDI event will cause playback, loop, pause or just nothing on the joined key of MaWe

The resize-arrow makes the lower part of ActionManager window with Snapshot Manager and PolyController Player visible. Clicking on blue recycle bin turns it into a pin, what means that Action Manager Window appears on the screen on next start of MaWe.

Go Back revert all action definitions to the last saved state. If any savings were made, it just erases all the definitions

Load – loads your definition set from the hard disk. Note, that these definitions can be also loaded while retrieving "library" of sets

Save – saves your definition set to the hard disk. Note, that these definitions are also saved while creating "library" of sets

Snapshot Manager shares computer keyboard with the other functions of MaWe. Since all possible combination of keys are already reserved, to use keyboard for Snapshot Manager, you should **switch** keyboard mode using **[~]-key**. In MaWe for OS X, there are 2 keyboard modes: **Normal** and **Snapshot**, while MaWe for Windows XP has 4 keyboard modes (1. **play&loop**, 2. **pause&rec**, 3. **load&clear**, 4. **snapshot**). You can easily recognize in which mode MaWe works at the moment, since each mode changes the background of the Main Window of MaWe. To see how it works – please refer to page 3 (Main MaWe Window...).

If MaWe is already in Snapshot mode, you can choose proper action in Snapshot Manager section of Action Manager. To do this you should use popup menus on the way explained below

Menu **Events** has 3 options. **"Off"**, naturally, disables it. **"Store"** allows to put the value of any touched or moved slider, number box, knob etc. of MaWe into the Snapshot buffer. You can store with that method as much values of MaWe parameters as you need. At any time you can **erase** any of previously stored parameters, switching menu "Events" to **"erase"** mode and then touching the slider, whose value you want to remove from the snapshot. You can also **edit** (as a text file) the content of the snapshot buffer, **clear** them all or – otherwise – fill it up with the current state of **ALL** MaWe parameters. To do this use apropriate buttons in the upper part of Snapshot Manager section. You can also store in the snapshot a **request for playback** the file stored under MaWe key. To do this, you should press **[option]-key** while menu Events is in **"store"** mode. If you press **[shift]--[option]-key** the request for **playback-in-loop** is stored in the snapshot. Using **green number box** in the left corner of Snapshot Manager you can additionaly define an **initial delay** (ms) of to start playback after snapshot will be recalled. This parameter should be set **before** you press key short-cut for playback or loop request

Working Mode – when **"off"** – Snapshot Manager doesn't respond to any key pressing. When in **"save"** mode – pressing a key stores previously designed combination of MaWe parameters under a certain key. At this moment a file with the name **[key].sht** is created in "snapshots" subfolder of MaWe folder, and the item of the same name appears on the list called "Snapshot". In **"recall"** mode – if you press any key of the keyboard, and there is a snapshot assigned with this key, all the parameters are recalled to its stored under this snapshot values.

[Recall] –loads last stored assignment list from the disk.
[Edit] – opens text editor with the list of the assignments.
[Clear] – wipes all the assignments
[Erase] – removes this one assigment, what appears on the PolyController monitor.

Poly Controller Engine extends possibilities of MIDI Module in domain of assigning MaWe sliders to MIDI controllers. In this module of Action Manager you can not only make a direct connection between state of certain MIDI controller and value of MaWe slider, but also combine **more MaWe sliders** with **one MIDI controller**, where full range of MIDI controller could be assigned to only part of MaWe slider's range (and the ranges of each assigned to one controller sliders can differ one from another).
Also the direction of the slider movement can be opposite to the direction of MIDI controller.

This button you can be switched between "off", "learn" and "play". The meaning of these modes are the same like in MIDI Module. Beside you can find **monitor line** of the PolyController Engine. Here you can see which **MaWe slider** (**the name** appearing in this box) is currently assigning with which **MIDI controller** (**first number** after the name) and **within which range** of the MaWe slider (**2nd and 3rd number**)

Clicking on the button under word "direction" you can change the interpretation of assigned slider range. In "the same" mode – if the value of the MIDI controller grows up, the assigned MaWe slider rises. In "opposite" mode this works in contrary.
Beneath this button you can find the popup menu with possibility of choosing proper MIDI Device, and the simple MIDI monitor, that shows which controller send currently what value.