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• **TH-S v2.0 Manual Addendum**

Version 2.0 allows to work in exactly the same way as already used to from TH-S v1.5. When launching TH-S, the outputs of the Audio-Matrix are routed identically to version 1.5. This allows the easy exchange of whole shows without any changes for the performance.

All Show Files and Snapshots are forwards and backwards compatible to TH-S v1.5

Note: The installation and usage of the TH-S v2.0 Update requires a basic knowledge in using Mac OS 9.x and TH-S v1.0 - v1.5.

• **Soft- and Hardware Requirements**

Macintosh Computer with G3 or G4 CPU

128 Mbyte RAM, better 256 Mbyte

Mac OS 9.2.x

Apple Quick Time 5.0 or higher

Opcode Midi System OMS 2.3.8

AppleScript v1.6 or higher

MIDI Interface (optional)

"Motor Mix" from CM Automation (optional)

"PowerMates" from Griffin Technology (optional)

"PC DASH2" from Saitek (optional)

Monitor with at least 1024x768 resolution

Tested hardware:

Pro Tools III , PT|24, Mix-, Mix Plus- or DIGI 001 System with at least DAE 5.0.1

MotU PCI 324, 828, 896 with driver 2.1 or higher

Supports any ASIO compatible Audio Interface

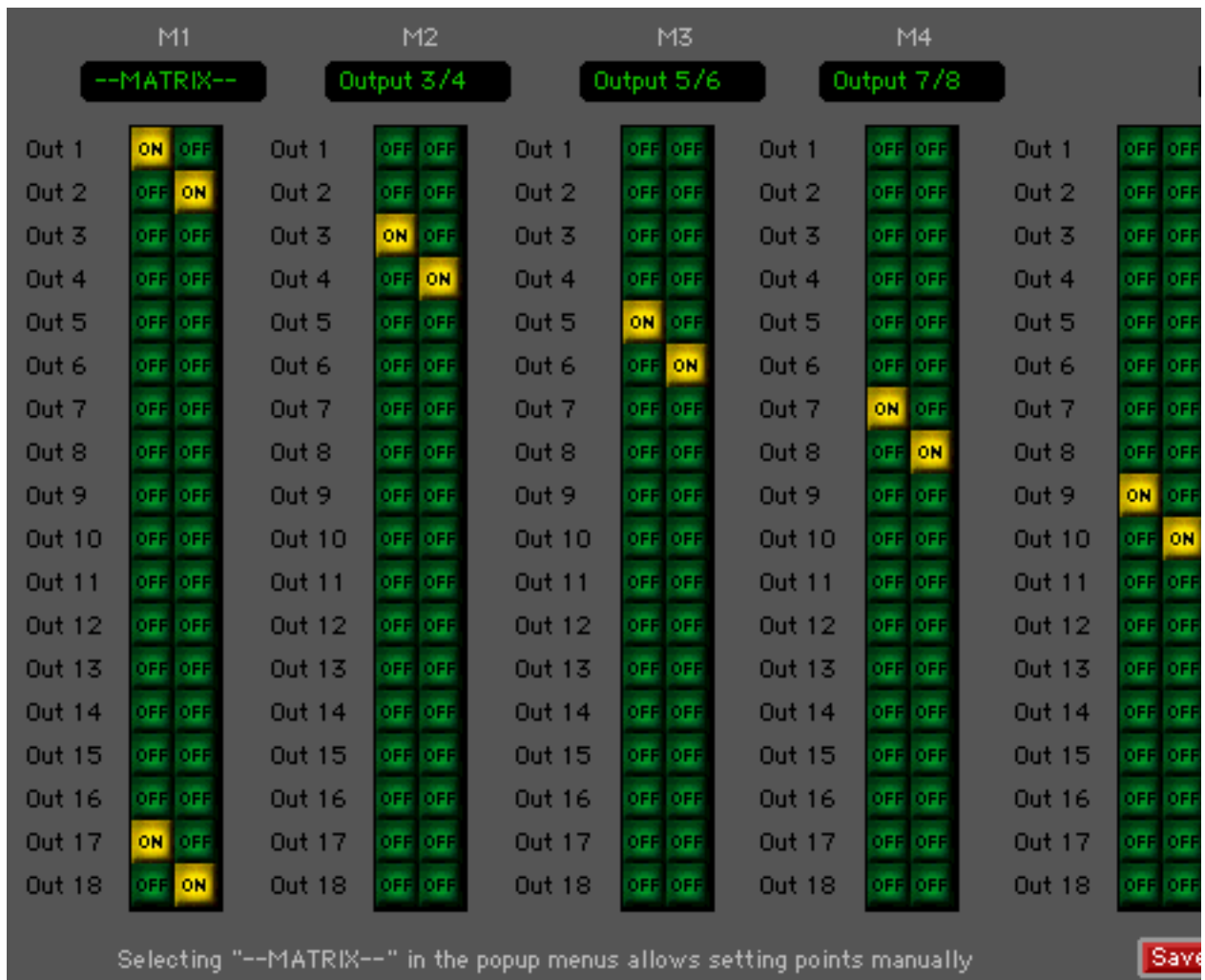
• New Player Features



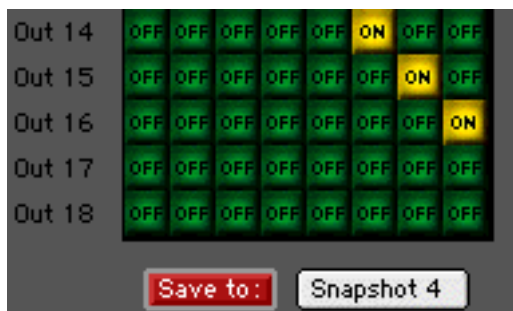
Output Routing/Output Matrix:

Each player and the internal CD-Player can be easily routed to any output of the ASIO compatible audio interface. Clicking inside the "Output x/y" display shows the predefined output possibilities. The 4 stereo players and the internal CD-Player are routable to 9 stereo destinations and to the output matrix. The 8-track players are routable to output 1-8, 9-16, a downmix on output 1/2 and to the output matrix. Also a --MUTE-- "destination" is provided for each player.

The default routing when launching TH-S is M1 -> 1/2, M2 -> 3/4, M3 -> 5/6, M4 -> 7/8, M8a -> 9-16, M8b -> 9-16, CD -> --MUTE--. Selecting the --MATRIX-- destination opens the Audio-Matrix window without changing the current routing. It then allows setting manually any desired output combination for each player. For quick access the output pop-up is also mirrored inside the Audio-Matrix window.



The output configurations (predefined or --MATRIX--) of all players can be saved to any snapshot (selectable with the pop-up) by clicking the "Save to:" button.



These matrix snapshots are added to the Player snapshots, thus providing a complete independent output routing for each player per snapshot.

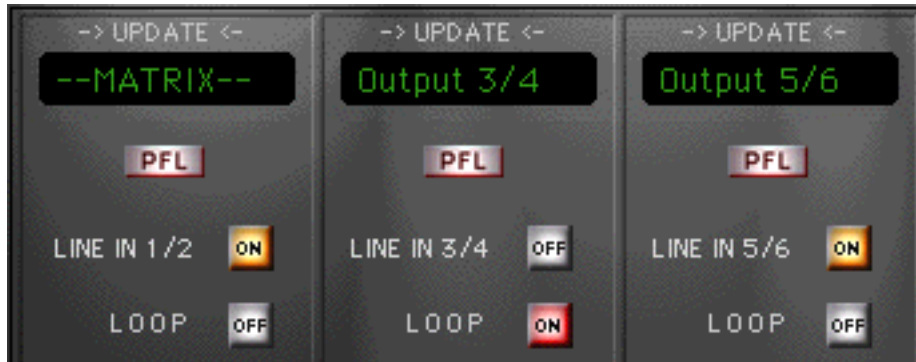
Note: Using only the "Save to:" button without having previously defined a snapshot by hitting <shift><enter>, allows creating "Matrix-Only" snapshots which do not activate any other automateable function of the players when recalled.

Realtime Samplerate Conversion:

Each Player has an integrated Realtime Samplerate Conversion Routine which automatically converts the soundfiles to the system samplerate during playback.

This allows a very convenient way of working with e.g. 44.1 kHz Archive-CDs in digital 48 kHz environments without any soundfile conversion. The realtime Conversion to 96 kHz is supported too(!) and needs at least a G4 CPU in the Gigahertz domain.

Line In:



The 4 stereo players and the CD-Player now have additional automateable stereo inputs. The 8-track players have automateable 8 channel inputs. The level of the inputs is controlled by the individual player faders. The signal is added post fader to the player signal, thus allowing adding external Live, CD, DVD or multitrack devices to the automation.

MIDI Note On/Velocity Trigger:

For triggering cues via MIDI Note On one has to switch "On" the Note On switch in the lower window.

This allows triggering the first 127 cues in each player via MIDI Note On 0-127 as well as the volume via MIDI Velocity 0-127:

M1:	MIDI CH 11	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB
M2:	MIDI CH 12	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB
M3:	MIDI CH 13	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB
M4:	MIDI CH 14	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB
M8a:	MIDI CH 15	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB
M8b:	MIDI CH 16	NoteON 1-127 -->	Cue 1 - 127	Velocity 0-127 -->	-144dB - 0dB

This trigger option can be used in parallel to MotorMix, Faderstart or USB options.

The velocity values are represented on the screen faders and the MotorMix faders.

When switched on, the first 127 cues of each player are scanned and preloaded into the cue list. This is shown by the blinking green LEDs in the respective players.

Afterwards all cues can be triggered like used to from a sampler (Play until end). Smart naming of the MUTE take (e.g. 000-MUTE) allows stopping all cues by e.g. MIDI Note 0.

Inside the Utilities Folder there is a Example Template which shows how to easily map soundfiles via Alias files to MIDI Note Ons.

Mono->L/R and Channel MUX:

When the "Mono->L/R" check marks are switched "On", automatic playback of Mono soundfiles over both player outputs is achieved. These switchpositions are saveable in the automation snapshots. Default value is "On".

The "Channel MUX" switches in the multichannel players allow the mirroring of audio tracks at the player outputs.

E.g. a mono file played back in the multichannel player with Channel MUX "On" will be played out on all 8 player outputs. Using a stereo soundfile the stereo pairs will be played out on channel 1/2, 3/4, 5/6, 7/8 respectively.

Also using e.g. 4 channel soundfiles they will be doubled on player output 5-8. This allows easy setups for timedelay- or pseudo surround applications without explicitly using multichannel soundfiles. These switchpositions are saveable in the automation snapshots. Default value is "Off".

MMC Play/Stop and Locate on Player 8 (open loop):

When clicking on the Play/Stop buttons Player 8 now sends additional MIDI Machine Control (MMC) Play/Stop commands after the PGM Change commands to the MIDI port .

Clicking inside "ID# 127" allows to select which MMC aware machine is been adressed.

Default is ID 127 which broadcasts to all devices. The ID is saveable in the Snapshot Automation.

The Play command is a "Deferred Play" which allows external tape based devices to play back automatically after a locate time has been reached.

This is helpful because the time display and the time slider also send out MMC locate commands now !

Clickdragging or clicking the slider allows a coarse adjustment of the locate start time. Fine adjusting is done by clickdragging inside the timedisplay (Shift x10 / Cmd x0.1).

The locate time is rounded to the displayed 100ms of the timedisplay, using a 25fps timecode format. This locate time is sent out then as a "Full Frame MMC Locate". The maximum Locate Start Time is at around 4.5 hours.

Using other timecode formats in the controlled external device doesn't matter because the positioning error is always bigger than the differences between the timecodes (the maximum possible positioning difference within 1 sec using 25fps for a 30fps equipped external machine is $5 \times 40\text{ms} = 200\text{ms}$).

Note: The MMC Play command is always sent out after the PGM Change command to allow e.g. SIGMA1 equipped systems to locate first by PGM Change and then play back from that timepoint.

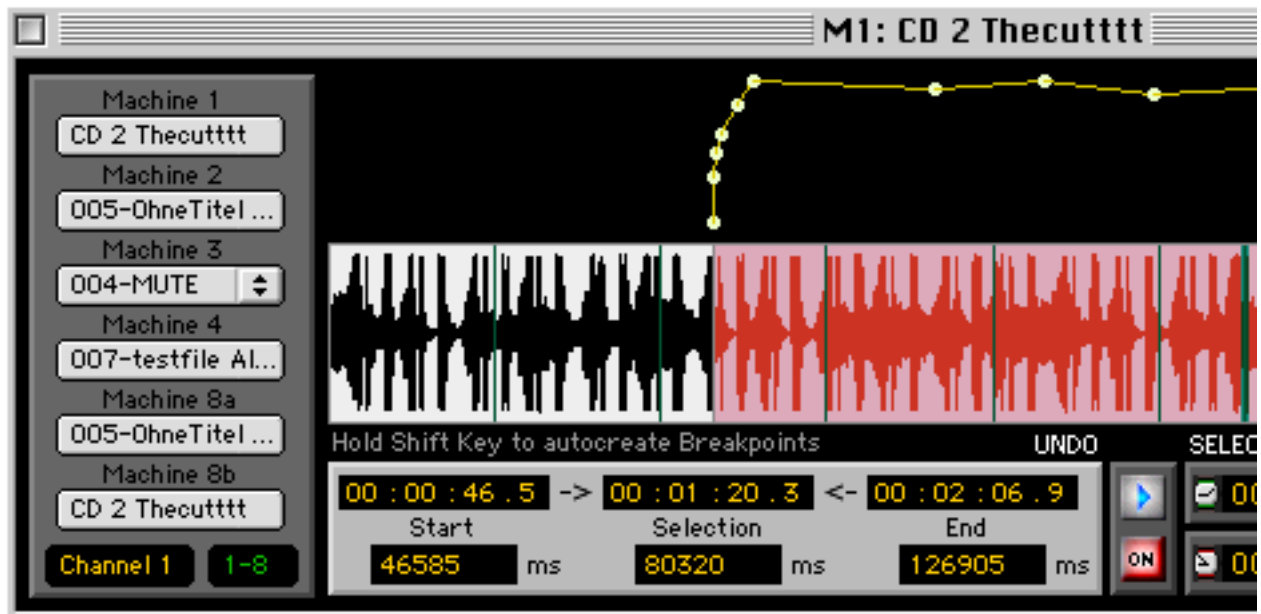
Auto-Update/TOC:

When copying files by dragging them onto player surfaces, the cue lists are updated automatically. Only when renaming a soundfile in the Finder the ->Update<- button has to be clicked once to reflect the new list. Also when changing or inserting a CD while TH-S is running, the ->TOC<- button has to be clicked once. The pop-up list then automatically shows the correct number of tracks on the inserted CD.

LogWindow:

In the function menu one can select the LogWindow, which displays time stamped error messages. This is a convenient tool for finding any problems (e.g. missing files, missing hardware etc.). When having persisting problems which cannot be solved by the user, the window is editable. This allows typing in questions/observations to the current problem. The whole text including the error messages can then be copy/pasted to an e-mail client and be sent to <support@apbtools.com>.

- **Editor** <cmd>E



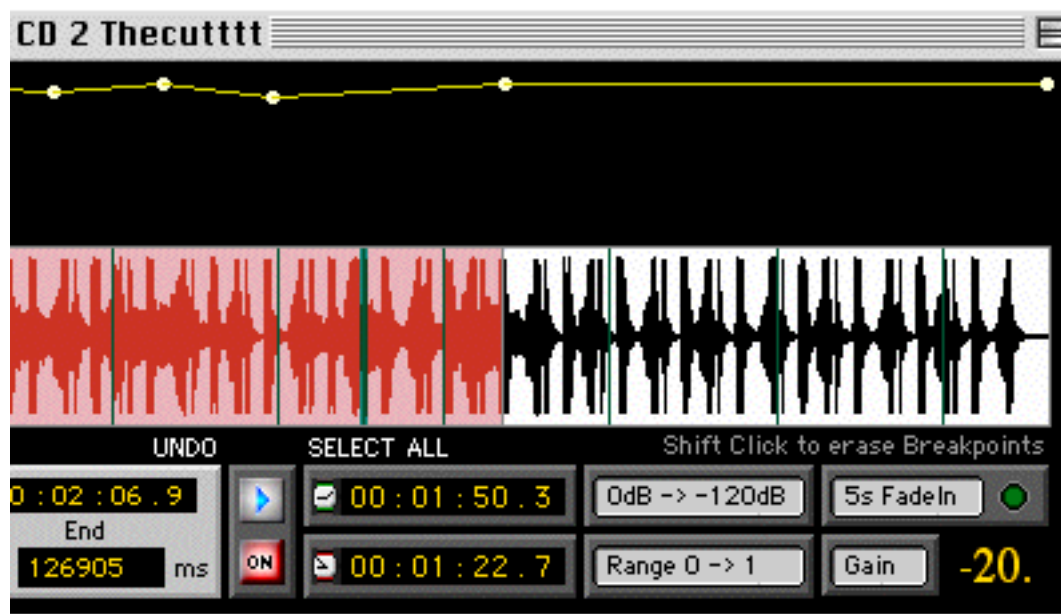
The editor is intended as a fast and efficient tool for extending, shortening, looping and dynamic level controlling multichannel soundfiles from 1 up to 8 channels with 1 ms display resolution. The insert points are set automatically to zero-crossings inside the frequency cycles. The <ctrl> key changes the usermode from "selecting" to "move-and-zoom". While holding down click dragging inside the selection towards the top of the screen zooms into the soundfile. Clickdragging towards the bottom of the screen zooms out. Further by moving the mouse left or right, the soundfile can be moved in time forward and backward inside the waveform display. As long as the <ctrl> key is hold down, all volume breakpoints above the soundfile display are temporarily bypassed, thus allowing an easy comparison between the original and the enveloped sound.

Cuelist popups:

On the left hand side the cue list pop up menus of the 6 Hard Disk players are doubled. Selecting a title from one of the pop up menus instantly loads it into the editor. This means that you can instantly select and playback any point inside the soundfile. The wave form display is loaded in independently from the playback routine at 8x Realtime. The name of the selected soundfile is displayed in the window title of the editor window. The wave form display shows the channel which is selected in the "Channel 1" pop up menu. Selecting another channel in this menu reloads the view of the appropriate audio channel into the wave form display. By default ("Mix") the audio signal is played out on output 1/2. Multichannel files are also downmixed to channel 1/2 for playing out. For multichannel playout you can select output "1-8" or "9-16". Also a MUTE menu point is provided.

- Click dragging inside the wave form display defines the start and end points of the soundfile selection which is automatically played and looped.
- Holding the <shift> key autocreates breakpoints at the start and stop location of the selection.
- Clicking on "select all" selects the whole file from start to end, clicking "undo" allows switching between the current and the previous selection for easy comparing of e.g. loop points.
- Playback can be stopped or started with the <space> key or by clicking on the start/stop button. Also the loop function can be switched on/off by clicking on the loop button.
- The selection start and end time can be extended or shortened by click dragging either inside the time displays (resolution 1 sec, <cmd> clickdrag 0,1 sec., shift clickdrag equals 10 sec. steps) or inside the ms displays for fine adjustment. Everytime a start or end time is changed the playback starts automatically with the new boundaries.

The elapsed/remaining time of the current selection is displayed simultaneously in the time displays on the right hand side of the start/stop and loop buttons.



Gain parameter:

Allows adjusting the overall volume of the editor (default -20 dB)

- Click dragging inside the place position allows fine adjusting of the gain value
 - Click dragging inside the digit position allows coarse adjusting of the gain value
- Also one can type in the exact value (e.g. -2.5) by using the keyboard while the number is selected.

- Selecting a new soundfile resets the gain/speed parameters to their default values (-20dB/1.0).

Speed parameter:

Allows adjusting the playback speed of the editor between factor 8 (+3 octaves) and -4 (backwards +2 octaves, default 1). The speed value can also be dynamically adjusted during a "•export" bounce.

- Click dragging inside the place position allows fine adjusting of the speed value
- Click dragging inside the digit position allows coarse adjusting of the speed value

Also one can type the exact value (e.g. 2.3758) by using the keyboard while the number is selected.

Reaching the start of a selection while playing back backwards stops the playback in loop mode too.

Volume graph:

The volume graph above the wave form display allows setting arbitrary breakpoints for dynamic volume changes. Clicking on the volume graph creates a new breakpoint which can be positioned arbitrarily between the previous and the next point. Shift clicking on breakpoints erases them.

Clearing all points can be achieved with the " Clear All" menu point in the "Keep All" pop up menu or by selecting a new soundfile. This menu also allows to create a 5 sec. fade in at the selection start point and a 9 sec. fade out at the end point. Also this menu houses the export (bounce) function for the audio files.

The displayed resolution of the volume function can be adjusted with the " 0dB->-120dB" and the range "0->1" pop up menus.

Exporting edited soundfiles:

Step 1: Select "•export" in the "Keep All" pop up menu

Step 2: Name the new file, select file type (AIFF,SD2, WAVE, etc.) if necessary. Navigate to the appropriate folder and click "Save".

Step 3: The green LED of the pop up menu is highlighted and shows that the playback of the current selection will now be recorded. Also the loop button is switched off by default (When switching "on" the exported soundfile will contain

as many loops of the selection until you hit the start/stop button or the space key)

Step 4: Hitting the start/stop or the space key bounces the resulting soundfile to disc. Any volume changes in the breakpoint function as well as changes in the overall volume and the speed are recorded to the new file. The volume graph thereby calculates the volumes globally for ALL audio channels in the soundfile.

Step 5: When the end of the selection playback is reached the bounce is stopped automatically (loop see above). The editor recognizes how many channels a soundfile contains and keeps the appropriate number of channels in the soundfile.

Note: The overall volume of the editor is set to -20dB by default. When exporting a soundfile, one has to set the gain to 0dB to preserve the original overall volume (This is when the "mute" menu point in the output selection sometimes comes in handy).

Closing the editor window stops a currently playing selection, also the <cmd>O (Stop All) command will stop playback.

Further one can use the editor as an additional independent multichannel player in the background by using the <space> key.

- Depending on the size of the loaded soundfile a time grid of 10 or 20 sec. is provided for easier navigation inside the soundfile.

Editor window shortcuts:

- Click dragging inside the wave form display defines the start and end points of the soundfile selection which is automatically played and looped.

- Holding the <shift> key autocreates breakpoints at the start and stop location of the selection.

- Clicking on "select all" selects the whole file from start to end, clicking "undo" allows switching between the current and the previous selection for easy comparing of e.g. loop points

- <alt> 1 -> Reset overall volume or speed to their default values (depending which one is currently selected)

- <alt> C -> Clear all breakpoints in the display

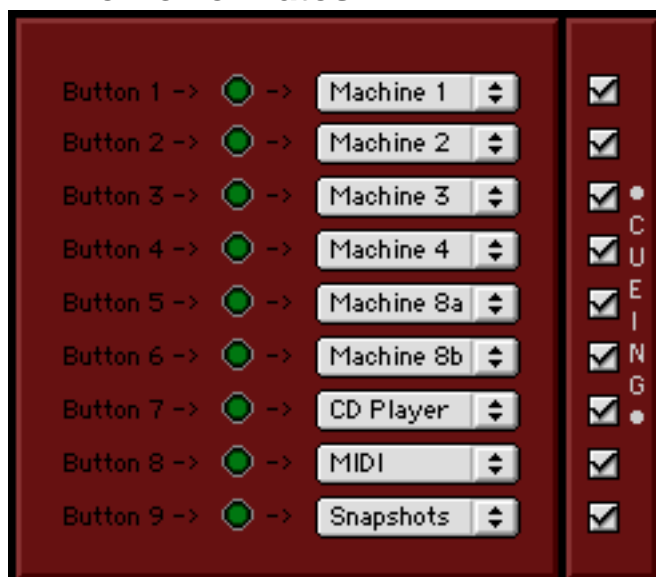
- <alt> F -> 5 seconds fade in at selection start

- <shift> <alt> F -> 9 seconds fade out at selection end

As long as the <ctrl> key is hold down, all volume breakpoints above the soundfile display are temporarily bypassed, thus allowing an easy comparison between the original and the enveloped sound.

• **USB MAPPING** <cmd> U

1. The Powermates



NOTE: IT IS IMPORTANT TO DEACTIVATE ANY DRIVERS THAT ARE SHIPPED WITH THE POWERMATES !

For working with the Powermates or the Saitek PC Dash 2 one has to switch "On" the USB switch in the lower window.

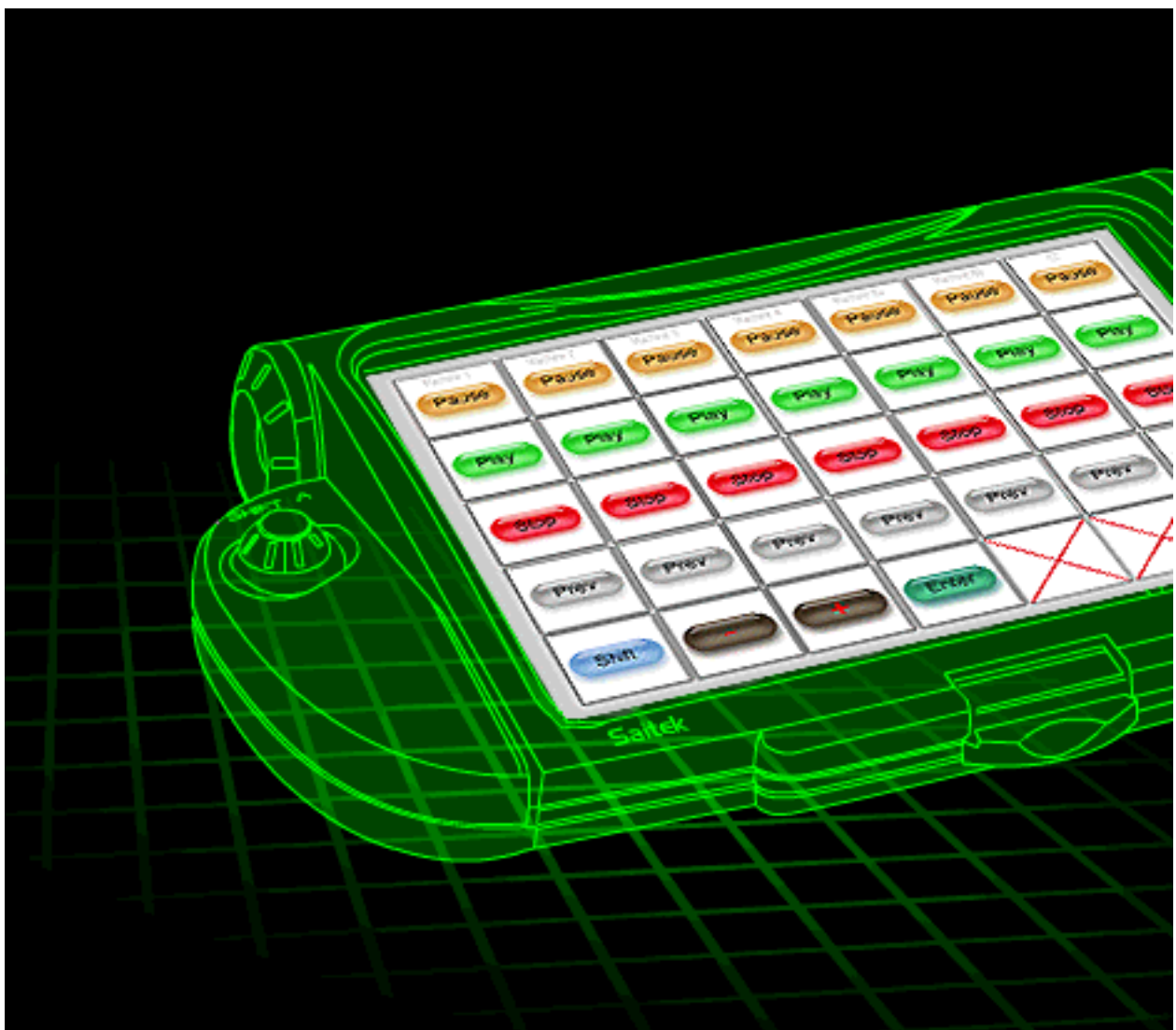
This window allows the mapping of up to 9 "Powermate" USB Buttons to arbitrary players. The first time the programm is launched the numbering of buttons is defined by the loading mechanism of the USB Interface. To know the order of the Buttons, you can press the "Powermates" and a green LED will show which button has been assigned to which number. By default button No. 1 is assigned to machine 1, button No. 2 to machine 2 etc. With the pop up menu you can redirect the USB commands to different machines.

Having e.g. 4 Buttons allows easy control of machine 1 and 2, CD-Player and

snapshot automation. This mapping can be changed arbitrarily at any point during the show. The cueing check marks are enabled by default. This means by turning the wheel of a "Powermate" to the right, the cuelist steps forward, by turning the wheel to the left, the cuelist is stepping backward on the appropriate machine. Unchecking the cueing check marks disables the cue selection abilities. This e.g. is very handy as a safety measure working in autocue mode for just firing cues. Note: For safety reasons the USB connections have to be made always before launching TH-S. Also unplugging any USB device causes a renumbering of the USB IDs, which may lead to undesired results.

Rule of Thumb: Always plug in your USB device before launching TH-S. TH-S with USB is not hot pluggable!

2. The Saitek PC Dash 2



The Saitek PC Dash 2 is intended as an inexpensive remote device without any visual feedback. It allows to control the 6 Harddisk Players, the CD-Player and to store and recall automation snapshots.

The most efficient way of working with the PC Dash 2 is in autocue mode as it provides 7 buttons to step to a previous cue. This allows easy navigating through the cuelist with the "Prev" and "Play/Stop" buttons. Also a Pause function is provided.

3. Using an USB HUB

When using USB HUBs to connect more than 1 device to an USB Port, you have to care to not overdraw the maximum current of the USB interface of your computer. When connecting to a keyboard or monitor USB Port you should always power your HUB with an external power adapter. Currently we recommend up to 4 "Powermates" on a 4 Port HUB at the USB Port on the computer itself. Using more than 4 "Powermates" therefore needs two 4 Port HUBs.

4. Using other USB devices than the currently supported ones

1. Make sure that the USB switch in TH-S is in the "OFF" position. This is necessary because TH-S otherwise would interpret the incoming data in a not foreseeable manner (this is especially true for USB track balls and mice).
2. Go to the control window of your USB device and map the key equivalents or functions of TH-S to your USB device.

5. MIDI and USB

When using a MIDI -> USB interface (for e.g. the motormix etc.) always try to have it working on a single USB Port if possible.

6. IMPORTANT

All supported USB devices work also in the background. This means, when working e.g. in the Finder one still has control over the players with the "Powermate" buttons. Mapping other USB devices to TH-S functions with device specific controls this is not the case.

• Integrated "Sherlock Find" Function <cmd>F

The integrated Sherlock engine allows easy searching through any attached harddisc volume. All features of Sherlock, like sorting, internet search, hotpicks etc. are available. When having found the desired item just drag it to the appropriate player surface and it will be copied to the playlist which is updated automatically. Holding the <shift> key while dragging creates an Alias of that file inside the playlist.

• Hide/Show Finder Contents <cmd>K

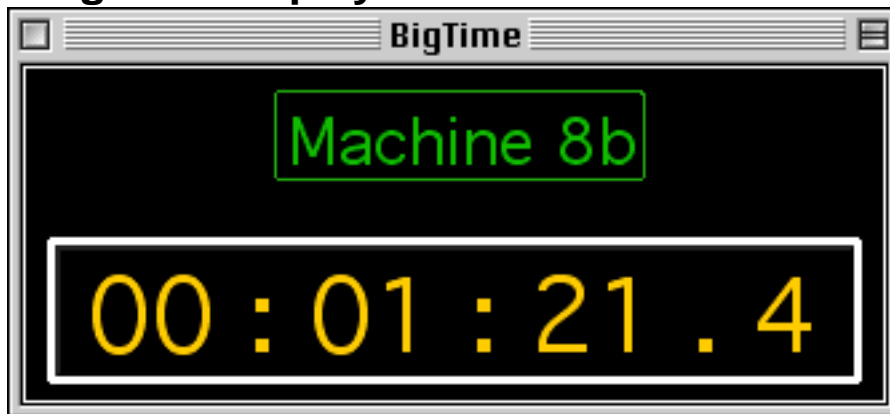
Hitting <Cmd>K or unchecking the menu point in the "Function" menu initially displays the playlist of the player M1 in a Finder window on the right hand side of the screen. Clicking on any other player surface switches the window display to that player. Also when another cue in any player is selected the window

display changes to that player.

The current selected cue is always displayed in the viewable area of the window. The Finder windows are always displayed in listform, sorted by name. Any sorting features can be used to display the content in a different order. The Finder windows are automatically closed when the "NoteOn" button is switched to "On". This happens because TH-S is scanning at that moment through all cues in all players. Also when TH-S is loaded the Finder windows are closed by default.

NOTE: The displayed windows are real Finder windows. By clicking inside, one switches to the Finder and TH-S goes to the background. The supported remote controls (USB, MIDI) still work in background, but e.g. the function keys F1-F8 now work with their Finder meanings. Click dragging from these windows to player surfaces is of course supported.

- **BigTime Display** <cmd> B



The BigTime display allows to choose a zoomed clock display of each player by clicking onto the playername inside the window.

- **Other v2.0 News**

- 2nd ASIO: switching between different ASIO drivers is now possible during running TH-S (e.g. Soundmanager ASIO driver may be used as second driver in the ASIO Folder !)
- Uses G4 velocity engine, if available
- Pause function via Faderstart remote (MIDI Note On 45 - 52 Velocity 0, CH1)
- Creation of an Alias via Shift-Drag now correctly displays the name with Alias suffix
- Loop All toggle via shortcut <cmd> L
- Input All toggle via shortcut <cmd> I

- Autocue toggle via shortcut <cmd> A
- Open/Close the Interleaver window via shortcut <cmd> J
- Open/Close the Editor window via shortcut <cmd> E
- Content of the players visible in Finder window via <cmd> K
- Integrated Sherlock Search function via shortcut <cmd> F
- <cmd> O also stops the editor playback
- <cmd> B opens the BigTime display window, the appropriate player can be selected by clicking onto the playername
- Bigger Display for Player cues (11 or 12 characters wide)
- Now max 999 cues per player
- TH-S DC Plug in 5.3: compatible with Protools 5.3 respectively Protools HD Systems
- The Snapshot "DELETE" button deletes only the Player snapshot informations while keeping the Audio-Matrix informations

• **Known Bugs in v2.0**

- While playing back from harddisk, ejecting a CD sometimes interrupts playback of the active player. This behaviour depends mainly on which CD ROM/DVD drive is built into the Macintosh computer and is beyond our influence.
- When inserting a CD-ROM, the CD player displays erroneously a pop up menu with one CD-track in list. Trying to play back this track results mostly in a short click.
- Ejecting a CD with the Eject key while playing it back leaves the CD player in a undefined state. Always stop it before ejecting a CD.
- Currently when preloading a different starttime in a track while this track is playing back, results in jumping to and playing back at this location. This will be changed to a similar behaviour as the harddisk players in a next revision.