Release Notes for Synclavier Release 4.03 dated September 1, 1997

Release 4.03 is now available!

What's added:

- Track grouping from the VK button panel
- Accessing all 200 Sequencer Tracks from the VK button panel
- More options for the VK ERASE button
- Recording of sequencer transpositions
- Cue sheet printouts (by output) in EditView
- Longer event captions in EditView
- Editing event captions in EditView
- PowerPC Native Termulator
- Eve-key-less EditView, MidiNet, AutoConform, TransferMation
- Removable media support for the DTD
- Removable hard disk for DTD backup
- Format of DTD hard drives from the O-page

What's been accomplished:

- Lots of small but important improvements and fixes to Termulator
- Locating good sources for EditView, AutoConform, MidiNET
- MPW Development environment completed for ABLE software

Highlights

Direct-to-Disk

- The source for the Direct-to-Disk operating software (.LOD-7) was converted to our modern development environment. This both allows us to add features to that module, and assures us that we have the correct working source as a platform for future releases and software development efforts.

- The Direct-to-Disk Cue Directory software was reorganized in memory to speed up certain screen updates in the Audio Event Editor and Editview. This was done to address delays and slow-downs that occur when the system is loaded with many cues.

- The Direct-to-Disk software was enhanced to support removable-media-hard-drives as both an operating medium and as an alternative to DAT tape backup. Backup-up-to-Jaz can be added to many systems without disturbing the existing tape backup configuration.

- A feature was added to the O-page to quickly format all DTD hard drives in one simple operation.

- The O-page was modified to allow the entry of longer project start and end times. 6-character values (e.g. 100:30) may now be entered. A space character may be used in place of the ":".

- The "Skip All" command was restored to the O-page. The "Verify All" command reads through each project on the backup tape and verifies the checksum for each project. The "Skip All" offers the fastest way to position the backup tapes at the end of the media.

Real Time Software

- A previously unused button ("TRACK PAN") was implemented to provide for simplified and speedy access to all 200 tracks of the Digital Memory Recorder. All 200 tracks of the sequencer can be easily accessed directly from the button panel without resorting to the screen software.

- The operation of the ERASE button was enhanced in several ways. Firstly, more informative VK Window displays are provided while erasing. Secondly, a new capability was added to erase just the *HELD* track buttons. This feature allows you to erase just one track without disturbing a complex solo setup.

- An entirely new capability to create "grouped" tracks was implemented in Release 4.03. This feature allows you to create a hierarchy of "grouped" tracks that can be accessed from a single Track Select button. This feature is particularly convenient for soloing and unsoloing a group of tracks, for sliding a group of tracks, and so forth.

- A bug with track sliding has been fixed in 4.03. In earlier releases the time relationship between tracks could be changed when sliding more than one track at once at the same time. In 4.03, when multiple tracks are slipped at the same time, the tracks being slid will remain in sync.

- The sequence transpose capability of the Real Time Software was enhanced for this release. Sequencer transpositions can now be recorded by recording actual notes on a sequencer track. The first note on the track becomes a 'reference pitch' that defines the pitch around which notes are transposed. When this feature is combined with the track grouping feature, multiple transpositions affecting different tracks can occur at the same time.

Macintosh Software - Termulator

- Termulator68k (for 68k Macintoshes) and TermulatorPPC (for PowerPC Macintoshes) are now available.

- Numerous display problems in the Termulator VK Panel Window were fixed. These problems showed up in various ways such as mysterious "green" buttons flashing on the panel, buttons stuck "on", and buttons staying green instead of red.

- Termulator now detects and reports if the chosen Serial Port is in use when Termulator is started up. Earlier versions of Termulator would frequently crash your Macintosh in that situation. The new version detects the port in use, reports that to the user, and allows the user to select a different serial port. Alternatively, the same serial port can be reselected from the Terminal menu once the offending application is halted.

- Numerous "low memory" crashing problems were identified and fixed.

- The VK panel portion of Termulator should update much faster and in a more consistent way, especially when button presses are being processed.

- A new streamlined mechanism for "pressing and holding" a Synclavier button from Termulator was implemented. The existing method (e.g. holding shift while clicking a button) is unchanged. In the new software, a button can also be held simply by pressing the button with the Macintosh mouse and holding the Macintosh mouse button down. This

mechanism is particularly convenient for functions that become active after holding a button for a certain period of time. The Synclavier button is automatically released when the Macintosh button is released.

- Termulator can now better handle small screens such as those on a portable PowerBook computer. That is, the windows are sizes so that the scroll bars are always accessible even on computers with small screens.

- It is now easier to select a group of Parameter buttons from Termulator by simply wiping the mouse over a range of buttons.

- Several "mouse reporting" bugs were fixed in Termulator. These bugs showed up as erratic delays when using the mouse in the Terminal window, or the mouse was often dragged to a location further than intended. The S-page in particular should more responsive to mouse clicks and dragging.

- Zooming of the VK button panel is now more consistent and should do what you want a greater percentage of the time. That is, the window position and size are saved independently for both the 'zoomed' and 'current' state.

- The current button panel layout is saved and automatically restored when Termulator is restarted.

- Numerous drawing bugs that were particularly apparent on the Sound File Recall Screen and the Audio Event Editor screens were fixed. In particular the scrolling through the Sound File directory no longer fills the screen with drawing errors when using the small and medium display sizes.

- The current sizes of the Terminal window are saved for each of the 3 display sizes (half, medium, full). When the display size is changed from the menu, the size of the window and the scroll-bar position of the Able screen is restored.

Macintosh Software - EditView, AutoConform, MidiNet, TransferMation

- An entirely new feature was added to EditView: the ability to print *cue sheet* style printed output showing events by output. This feature is described in detail in separate release notes.

- A PowerPC Native EditView is available upon request. Please help us test this version if you have the necessary Macintosh.

- EditView, AutoConform, MidiNet, and TransferMation now are available in versions that do not require Eve-key protection.

- TransferMation requires a Software Floating Point emulator to run on PowerPC processors. A PowerPC Native version of SoftFPU is available from John Neil Associates (email: johnneil@netcom.com) (PO Box 2156, Cupertino CA 95015) (800-663-2943) @$25.00.

Please let me know how these features work for you. And thanks again for joining our software update program!

Cameron Jones

September, 1997

Direct-to-Disk

Support of Removable Media Hard drives as DTD Backup Devices

This release adds the capability to use removable media hard drives as both an operating media and a backup media for the Direct-to-Disk. The Iomega JAZ drive, for example, can be used to replace the 4 mm DAT tapes that are currently used for data backup on most DTD installations. The JAZ drive offers 1.0 gig of storage and is significantly faster than DAT, although it's media is more expensive than DAT. This feature was most requested by and will be most useful for quickly distributing DTD projects amongst multiple machines within a large production facility.

Two configurations for backup are supported in the software. The 'Single Drive' configuration allows all the tracks of a project to be backed up to a single removable-media-hard-drive. The 'Multiple Drive' configuration requires a removable-media-hard-drive connected to each DTD SCSI port.

The software supports two variations of both the 'Single Drive' and 'Multiple Drive' configurations. Thus a total of 4 different backup configurations are possible. For example, a single JAZ drive could be added to a system with 4 DAT tapes. The software chooses which device to used based upon its media being present. In other words, removable-media-hard-drive backup capability could likely be added to a system without disconnecting the DAT tape installation.

There are no specific changes to the user interface software to support removable media hard drives as backup devices. The software automatically senses what kind of device is connected and issues the appropriate commands to that device.

Please contact DEMAS if you are interested in adding this capability to your system.

Support of Removable Media Hard drives as DTD Operating Drives

Removable-media-hard-drives such as the Iomega JAZ drives can now be used as operating media for the Direct-to-Disk. Commands were improved and added to the O-page to manage the spinning up, spinning down, and ejecting of removable media hard drives. Additionally, some improvements were made in the real-time and DTD software to better handle drives which automatically 'spin down' after a period of inactivity.

Earlier versions of the DTD software included a DISMOUNT and MOUNT command on the O-page to facilitate the use of hard drives in removable mounting bays (e.g. RourkeData mounting bays). The operation of the DISMOUNT commands has been improved to actually eject the DTD media if a removable drive is used, or to spin down the disk drive if its media is not removable. This will provide positive feedback to the operator that the DISMOUNT was successful.

An additional change is that removable media are now locked in place while the DTD is operating to prevent possible data loss by removing the media at the wrong time. The DISMOUNT command is then used to spin down and eject the operating media.

The MOUNT command is used to reset the DTD when the operating media has been changed.

SPIN and SLEEP commands were added to the O-page and are used to control the motors of the DTD hard drives. These two commands can be used with all hard drives, not just removable hard drives, if desired. Spinning down the hard drives overnight might increase the longevity of the drives in facilities where the systems are normally left powered on. The SPIN command might also be used to manually 'wake up' the DTD hard drives if they have automatically spun down after a period of inactivity.

Format of DTD hard drives directly from real time software

In response to a long-standing request for simplified formatting of DTD drives, a command was added to the O page that formats all of the DTD hard drives in one (relatively painless) operation. This command is selected from the O-page. Periodic formatting of the DTD hard drives is recommended to reduce the occurrence of disk errors.

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Real-Time-Software

Accessing all 200 sequencer tracks from the VK Button Panel

The "TRACK PAN" button was implemented in this software release to provide for simplified and speedy access to all 200 sequencer tracks directly from the clavier. This powerful implementation provides four distinct functions from this one button:

- you can quickly see the current button assignment settings in the VK Window Display
- you can assign one of the rows of 8 track buttons to a "bank" of 8 sequencer tracks
- you can quickly reset all of the track buttons to correspond to sequencer tracks 1-32 (the default startup setting)
- you can recall the button assignments associated with a particular "grouped" track (described later).

The TRACK PAN button was chosen both because it was an unused button, and also because I felt the concept of "panning" the track buttons across the sequence space made some sort of sense in terms of this feature.

Track Pan Window Display

The first function available from the TRACK PAN button is to see the current track button assignment settings. When the TRACK PAN button is first

pressed, the VK window display shows the current track button assignments. The display shows the Sequencer track numbers that are assigned to the first button of each row, as in:

Note: Pressing the TRACK PAN button a second time is used to recall the button assignments associated with a "grouped" track. This feature is explained later.

Pressing the TRACK PAN button a third time (or pressing STOP) cancels the Track Pan Window Display without changing any button assignments.

The current track button assignment settings are saved with the Sequence and will be restored when a Sequence is recalled.

Recalling a "Bank" of Tracks to the Button Panel

The second function that can be performed with the TRACK PAN button is to quickly assign a "bank" of 8 sequencer tracks to one of the rows of 8 track buttons. This is accomplished as follows:

1) Press and release the TRACK PAN button once (release it before 2 seconds are up; see below). You will see the track buttons labeled 1, 9, 17 and 25 start to blink.

2) Press one of the blinking track buttons (e.g. 1, 9, 17, or 25). This selects which row of track buttons will be affected. After pressing one of these blinking buttons you will see the all of the track buttons labeled 1-27 start to blink.

3) Press one of the blinking track buttons (e.g. 1 through 27). This will assign one of the 27 "banks" of tracks to the row of track buttons selected in step 2.

Here is a chart that relates "track banks" 1-27 to actual sequencer track buttons:

"track bank"	1	equals tracks:	1	2	3	4	5	6	7	8
"track bank"	2	equals tracks:	9	10	11	12	13	14	15	16
"track bank"	3	equals tracks:	17	18	19	20	21	22	23	24
"track bank"	4	equals tracks:	25	26	27	28	29	30	31	32
"track bank"	5	equals tracks:	33	34	35	36	37	38	39	40
"track bank"	6	equals tracks:	41	42	43	44	45	46	47	48
"track bank"	7	equals tracks:	49	50	51	52	53	54	55	56
"track bank"	8	equals tracks:	57	58	59	60	61	62	63	64
"track bank"	9	equals tracks:	65	66	67	68	69	70	71	72
"track bank"	10	equals tracks:	73	74	75	76	77	78	79	80
"track bank"	11	equals tracks:	81	82	83	84	85	86	87	88
"track bank"	12	equals tracks:	89	90	91	92	93	94	95	96

"track bank"	13	equals tracks:	97 98 99 100 101 102 103 104
"track bank"	14	equals tracks:	105 106 107 108 109 110 111 112
"track bank"	15	equals tracks:	113 114 115 116 117 118 119 120
"track bank"	16	equals tracks:	121 122 123 124 125 126 127 128
"track bank"	17	equals tracks:	129 130 131 132 133 134 135 136
"track bank"	18	equals tracks:	137 138 139 140 141 142 143 144
"track bank"	19	equals tracks:	145 146 147 148 149 150 151 152
"track bank"	20	equals tracks:	153 154 155 156 157 158 159 160
"track bank"	21	equals tracks:	161 162 163 164 165 166 167 168
"track bank"	22	equals tracks:	169 170 171 172 173 174 175 176
"track bank"	23	equals tracks:	177 178 179 180 181 182 183 184
"track bank"	24	equals tracks:	185 186 187 188 189 190 191 192
"track bank"	25	equals tracks:	193 194 195 196 197 198 199 200
"track bank"	26	equals tracks:	L1 L2 L3 L4 L5 L6 L7 L8
"track bank"	27	equals tracks:	L9 L10 L11 L12 L13 L14 L15 L16

Note: Changes to the button assignments made from the button panel appear immediately on the J and K screens if either screen is showing.

Resetting the Track Select buttons to Tracks 1-32

The third function that can be done with the TRACK PAN button is to quickly reset the 32 Track Select buttons to correspond to tracks 1 through 32. This is accomplished by pressing and holding the TRACK PAN button for two seconds. This feature was provided to allow quickly returning to a known button state. You will see the following window display:

Recalling the button assignments associated with a Track Group

The fourth function that can be done with the TRACK PAN button is to recall the settings for all 4 rows of Track Select buttons that are associated with a particular Track Group. This function is activated by pressing the TRACK PAN button twice and is explained later under "Track Groups".

Improved Operation of the ERASE button

The operation of the ERASE button was enhanced for this software release. It now provides the following operations:

1) Erase ALL tracks

2) Erase SOLOED tracks

3) Erase the HELD tracks buttons

4) Erase just the RECORDING track

5) Erase the temp meter map

The logic for determining which ERASE operation is called for is determined in the following order:

1 - If the SPEED and CLICK RATE buttons are held, then the tempo and meter maps are erased. Soloed, held and recording tracks are ignored.

2 - If the system is RECORDING, then just the recording track is erased (regardless of buttons held or tracks soloed)

3 - If any track buttons are HELD, then just the held track buttons are erased without regard to track soloing

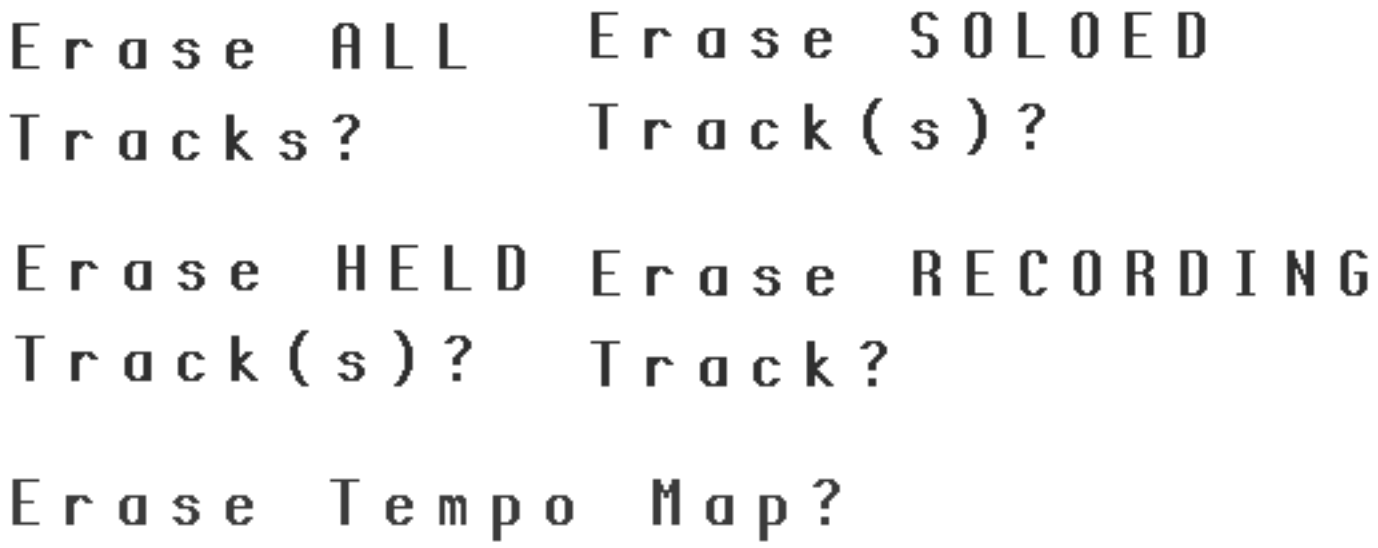
4 - If any tracks are soloed, just the SOLOED tracks are erased.

5 - If none of the above conditions apply, then the entire sequence is erased.

Operation of the ERASE button while the STOP button is held

Holding the STOP button while erasing provides for just erasing the notes on a track without erasing any of the settings associated with the track. The settings which are preserved in this way include virtually all settings for a particular track, including routing, volume, output, and independent loops.

Here are some of the displays you will see in the VK window when the ERASE button is pressed for the first time:



Erasing Track Groups

The erase feature operates slightly differently when tracks are grouped. These differences are describe later in the section on track grouping.

Working with Track Groups

A feature for creating and manipulating "Track Groups" was implemented in release 4.03. This feature allows you to assign a list of Sequencer Tracks to one "master track", and then access all of the tracks in the group from the one button associated with the master track. Up to 200 such track groups can be created.

This implementation of Track Grouping is an important (and long-awaited!) step forward for the Synclavier. I hope it will streamline and simplify the operation of your machine on a daily basis.

Track Groups

The concept behind a Track Group is straightforward: a Track Group is a list of tracks which may include any or all of the 200 Sequencer tracks plus any or all of the 16 Direct-to-Disk tracks. This list may also include other Track Groups.

A particular Sequencer Track may be part of any number of Track Groups.

When a Track Group is created, one of the 200 Sequencer Tracks is chosen to be the "master track" for that Track Group. The master track may contain notes and a timbre itself, or it may be an otherwise empty track. Notes on the master track will be played normally. Each of the 200 Sequencer Tracks may be a master track; therefore, 200 Track Groups are possible in a sequence.

Hierarchies of Track Groups can be created to any level. That is, one Track Group may contain other Track Groups within it, and so forth.

Track groups are saved and recalled with the sequence in entirety.

Most operations with Track Groups are straightforward. For example, soloing or un-soloing a Track Group is accomplished by pressing the Track Select button for the master track. All members of the Group are soloed or unsoloed as a group. Sliding the master track in time slides all of the tracks of the group.

Other functions operate somewhat differently with track groups. For example, selectively recalling sequencer tracks will only read in the tracks associated with the track buttons being held; it will not read in other tracks that may be part of a track group. The group information, however, *is* read in if the track on disk is a master track. The member tracks of the track group would each have to be recalled if desired.

Creating a Track Group

Track Groups are easily created from the VK button panel. You must begin by deciding which one of the 200 Sequencer Tracks is going to be the master track for the group. Secondly, you must decide which other sequencer tracks are to be included in the Track Group.

The first actual step in creating a Track Group is to make sure the master track and one or more member tracks are accessible from the button panel. Use the TRACK PAN button (or the J or K Screens) to assign rows of the button panel to banks of sequencer tracks as needed.

Press the Track Button corresponding to the master track and hold that button for 2 seconds. You will see the VK Window display change to:

Create Track
Group...

When the "Create Track Group..." display appears, you will see the button for the master track start to blink, and all of the other Track Select buttons will be off.

Tracks may now be added to the Track Group by pressing any of the other track buttons; the button for the member tracks will turn on as they are added to the group. Lit buttons can be pressed at this time to remove a track from a group.

The step of creating a Track Group is normally terminated by pressing the button for the master track again; this reverts the Track Select buttons to their normal solo/unsolo operation. Alternatively, pressing the STOP button (or most any other button) will end the group creation session and save the group thus created.

Modifying the tracks that are members of a Track Group is equally straightforward. Press and hold the button for the master track for two seconds. The display will change to:

Modify Track
Group...

When the "Modify Track Group..." display appears, you can use the Track Select buttons to add or remove members of the track group at will.

Note: Whenever the contents of a Track Group is modified (that is, the list of member tracks in the Track Group is changed) a "snapshot" of the current Track Select button assignments is stored in memory. This snapshot can be recalled to the button panel at a later time by pressing the Track Pan button twice. This feature is described in detail later.

Practical Considerations

Track Groups are most practical when the corresponding track button is readily available from the button panel. For example, a good set up might be to use tracks 1 through 24 as master tracks for 24 track groups, with each Track Group containing the master track plus 8 other tracks chosen from higher track numbers. Tracks 1 through 24 (e.g. the Track Groups) could always be kept accessible from the first 3 rows of Track Select buttons, while the lower row of track buttons could be assigned to a particular track group as needed.

Using TRACK PAN to access the members of a Track Group

Press the TRACK PAN button twice. If there are no master tracks accessible from the button panel (either there are no Track Groups in the sequence, or those Track Groups that do exist are not accessible from the button panel at the current time), you will see a message:

If there are 1 or more Track Groups accessible from the button panel, you will see those buttons start to blink.

Pressing one of the blinking track buttons will recall the button assignments for all 4 rows of Track Select buttons to what they were when the Track Group was last modified. Normally, these assignments might be expected to contain the tracks that are members of the Track Group, but more bizarre settings can be imagined. For example, a chain of track button assignments could be created for moving that track buttons through the sequence in a pre-determined order. Enjoy!

Note: If all the members of a track group are removed, the master track reverts to a normal sequencer track and the button assignment list for that master track is deleted.

Soloing a Track Group

Track Groups are brought in and out of the mix by pressing the Track Select button associated with the master track. The master track and all member tracks will be brought into or out of the mix depending on the state of the master track button when it is pressed.

This logic is hopefully as straightforward as it is powerful. For example, double-pressing a lit master track button will bring all member tracks into the mix if only some had been brought into the mix individually before. Similarly, pressing a lit master track button once will mute the master track and all member tracks from the mix even if some member tracks had been brought into the mix previously.

Track groups are soloed from EditView and the various screen in the same manner. Bringing in the master track will bring in all the tracks in the group.

Recursive Track Groups

It is possible to construct several Track Groups which each include each other. For example, Track 1 could be the master track for tracks 9-17, and Track 9 could be the master track for tracks 1-8. In this case, pressing either the track button for Track 1 or the track button for Track 9 would solo or unsolo all 16 tracks as a group. Enjoy!

Erasing a track group

The ERASE function operates slightly differently with master tracks. If a track group is soloed when the erase is performed, all notes are deleted from the tracks but the group information is preserved. For example, to erase all the tracks in the track group, first solo the entire group (e.g. by pressing the master track button). Then press ERASE twice to erase all of the soloed tracks. The group information on the master track will be preserved in this case.

To erase, the group information for a master track *press and hold* the master track button and then press ERASE twice (e.g. perform a normal erase-held-tracks operation). Any notes on the master track will be erased, as will the track grouping information.

Special operations with track groups

1) Changing the track volume or track routing of the master track will assign the new value to all members of the group.

2) When a master track is bounced to an empty track, the group information associated with the master track is moved to the new track as well. That is, master tracks can be moved at will without losing the track grouping information. However, the group information for two master tracks cannot be combined by bouncing them together; the new tracks will have to be manually added to the destination track group.

3) All of the tracks in a track group can be slid in time by holding the button for the master track and turning the knob. All of the tracks in the group will be moved in time together. When sliding back in time (e.g. towards 0:00), the slide distance is limited by the first track that would reach 0:00.

Recording Sequence Transpositions

A new feature was added to the Real Time Software whereby sequence transpositions can be recorded. In earlier versions of the Real Time Software, transpositions could be performed live, but could not be recorded.

Any track may be used to record sequence transpositions. The first note on the track defines the reference pitch. Additional notes on that track define a keyboard interval with respect to the first note that becomes the transposition amount.

To create a transposition track, press and hold the appropriate track button and then press the TRANSPOSE button. This marks the track as being a transpose track.

Any number of transpose tracks can be created in this way.

To see if a track is a transpose track, press and hold it's track button. The TRANSPOSE button will light up if the track is a transpose track.

The notes recorded on a transpose track are never heard themselves. That is, transpose tracks are always "muted".

When recording onto a transposition track, they keyboard note is heard while recording, but is not heard during playback. You may wish to use a "null" timbre when recording onto a transposition track if you do not want to hear any keyboard notes while recording.

If a transposition track is a master track, the transposition will only effect those tracks that are members of the track group.

If multiple transpose tracks affect a single sequencer track, the 'most recent' transposition is the one that is effective for that track. That is, multiple transpositions for the same track do not add together in any way.