SAWStudioBasic Latest Release Info

Introduction

Welcome to SAWStudioBasic. This environment offers an exciting new vision from Bob Lentini. The interface is built around the idea of a virtual console and multitrack recorder intimately interwoven together to offer an entirely new way of manipulating audio and building entire audio projects in the virtual world.

Please take some time to explore the built-in HelpFile and also download the .pdf version of the manual, available at *www.SAWStudio.com*. The navigation capabilities are powerful and complex and will require some getting used to. Reading, exploring and practicing inside the environment will greatly enhance your experience of the interface. We feel the rewards gained for the time invested, will be great. Have fun!

Version History Follows:

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Version 2.8
Enhancements
*   The helpfile now includes specific Win 10 tweaks.

Bug Fixes
*   Fixed code that could overrun a few array variables when Max Count input and output devices are used.

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Version 2.7
Enhancements
*   Corrects HtmlHelp issues on some systems which will fail on the first attempt after a system reboot.

Bug Fixes
*   Fixed Edit Dialog box sizing to not cut off text on Win 7, 8 and 10.

*   Fixed an issue with VST Plugin initialization that could cause certain VST Plugins to crash when patched.

*   Fixed code that could cause a crash when displaying the Record Setup window under certain conditions.

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Version 2.6
Enhancements
* All window views are now "Border Padding" aware for better Win 7, 8 and 10 compatibility.

* Re-compiled the helpfile into the newer html help .chm format. This allows for better searching and indexing as well as allows the helpfile to open correctly in Win 7 and 8 and 10.

* Added code to keep Helpfile ontop and keep from loading multiple instances.

* Added code modifications for better Win 8 and 10 compatibility.

Bug Fixes
* Fixed code for the Blend Session function to only affect mix data for blended tracks with active entries. All other chan mix data is untouched.

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Version 2.5
Enhancements
* Modified code to extend VST Plugin compatibility to the 2.4 version changes which should help with newer plugin compatibility issues. Not all new options are yet supported but this should allow many newer plugins to be used that otherwise would not load.

* Enhanced the code to help recognize more wav file formats that could not be opened previously.

Bug Fixes
* Fixed code to stop SRP playback across a marked area from muting armed record track data when Record is not actively engaged and one of the Tape Style Monitoring modes is active.

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Version 2.4
Enhancements
* Included new MotorMix Midi Controller Template that adds the Next and Last switches to jump console sections.

Bug Fixes
* Fixed code that corrects the FBCenter XYPan adjustment for tracks greater than 1. This previously only

worked correctly on track 1.

* Fixed code that allows modal message dialog boxes to respond correctly to pen and touch commands in Windows 8.

* Fixed code to stop the MultiTrack Cursor from disappearing in close zooms in Windows 8.

* Adjusted code to help window views draw correctly under different conditions when switching between apps using various methods. This should help keep views from disappearing off the screen and ontop windows correctly ordered.

* Fixed code in the midi controller 14 bit resolution conversion routines which result in much more accuracy and smoothness of hi resolution fader controllers like the Behringer BCF and Mackie MCU controllers. All Hi-Res templates have been adjusted. Make sure to test and adjust any custom templates you may have created.

Eq Plugin Version 3.3
* Fixed code that traps max/min crashes when adjusting controls in Win 8 with a pen or touch. Forces you to be close to the knob when grabbing a control with a pen or touch so the value does not jump far to the current cursor position.

Echo Plugin Version 3.3
* Fixed code that traps max/min crashes when adjusting controls in Win 8 with a pen or touch. Forces you to be close to the knob when grabbing a control with a pen or touch so the value does not jump far to the current cursor position.

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Version 2.3
Enhancements

* When the program is started for the first time or after the default F-key file has been cleared, F-Keys will now be automatically generated to fit the screen resolution. You can save these as the default F-Keys, or use them as a starting template to be modified and then saved as your own. I recommend you look at each one and consider using them as a guide to creating useful ones of your own.

Eq Plugin Version 3.2
* Added a new option to the Options menu called Clear Preferences, which clears the preference file and resets the plugin to its default behavior.

Echo Plugin Version 3.2
* Added a new option to the Options menu called Clear Preferences, which clears the preference file and resets the plugin to its default behavior.

Bug Fixes

*   Fixed code when using the Fx Bypass switch with multiple channels selected to only update the switch bypass condition on channels with patched plugins.

*   Fixed code to trap for false value jumps on popup fader activation by accident when mouse-click release is held long enough to release just as the popup fader is beginning to display.

*   Fixed code to trap for possible divide by zero errors in the fader display scaling routines.

*   Fixed code to properly update the DirX and VST window views after a shade change.

*   Fixed code to trap for the X key softedge function on Return and Output tracks.

*   Fixed code to eliminate meter and monitor delay on SF record with any input device higher than device 1.

*   Fixed code to properly jump the HotChan when using the *Ctrl-Left-Arrow* and *Ctr-Right-Arrow* commands in the Full Mixer.

*   Fixed code to lock automation entries on the end boundary when stretching or shrinking an automation marked area.

*   Fixed code to allow Midi Control Templates that include a Master Fader to properly follow re-ordered Out channels and stay locked to Out Chan 1.

*   Fixed code to toggle the VSTTimeInfo play flag correctly with the engine status.

*   Fixed the mismatched format version for the demo sample session.

Eq Plugin Version 3.2
*   Fixed code to stabilize patching the plugin from SAC remotes and scene changes. Also made changes to keep the processing thread from being blocked during preset and paramset loads.

*   Fixed code to stop host paramset corruption when canceling a load preset operation on a remote.

Echo Plugin Version 3.2
*   Fixed code to stabilize patching the plugin from SAC remotes and scene changes. Also made changes to keep the processing thread from being blocked during preset and paramset loads.

*   Fixed code to stop host paramset corruption when canceling a load preset operation on a remote.

*   Fixed code to properly dissolve FeedBack delays as they near -infinity db.

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Version 2.2
Enhancements

Bug Fixes
*   Fixed code to trap Output Chan Solo switches from writing as automation entries under certain conditions.

*   Modified code for loading VST Presets and forcing a screen update of the new settings for certain plugins that would not update properly on their own.

*   Modified code to force a MT Cursor redraw when switching back from other applications.

Eq Plugin Version 2.8
*   When SAW was in Realtime Priority mode, certain system configurations could cause the left-click up/dn parameter adjustment feature to fail. This code fixes that issue.

*   Fixed code to properly initialize all parameters when loading presets while the engine is live.

*   Code modified to stabilize sending and receiving parameter set data for preset saves and loads while the processing engine is live.

Echo Plugin Version 2.9
*   When SAC was in Realtime Priority mode, certain system configurations could cause the left-click up/dn parameter adjustment feature to fail. This code fixes that issue.

*   Fixed code to properly initialize all parameters when loading presets while the engine is live.

*   Code modified to stabilize sending and receiving parameter set data for preset saves and loads while the processing engine is live.

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Version 2.1
Enhancements
*   Enhanced the Aux Send processing to allow for a Pst Fader – Pre Pan send scenario by disengaging the Aux Send Pst FX switch.

Bug Fixes
*   More work done on saving VST settings and presets. This new code should fix compatibility issues with Voxengo plugins and UAD plugins (and others) that were having trouble saving presets and session settings.

*   More Work done on VST Multi-In/Out plugins like some of the newer Voxengo plugs to stop the possibility of a hard crash once playback is initiated.

*   Fixed code to stop SRP playback across a marked area from muting armed record track data when Record is

not actively engaged.

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Version 2.0
Enhancements
* Modified the SRP auto-punch function. When SRP is engaged with a marked area on the MT, an auto-punch operation is ready to engage at the marked area. The auto-punch will not activate unless the REC button has also been pressed sometime before the auto-punch area. When the REC button has been armed, it will flash until the actual auto-punch area is reached, at which point it will engage record and display solid red. This helps eliminate accidental record operations when using SRP to playback after an auto-punch. If the REC is armed, you will see the REC light flashing, giving you ample warning that you are about to overwrite the punch area with a new recording. The Shift-SRP can also be used to engage SRP and arm the REC at the same time. The auto SRP/REC latch option can also be used. You can also override the flashing REC button by pressing the REC again before reaching the auto-punch area and recording will start immediately.

* Added a warning prompt if you attempt to clear the marked area while Offset Mode is active. This can help prevent offset changes from being applied to the entire track by accident. Also added the creation of an undo file when exiting Offset Mode and applying changes.

* Added modifications to allow compatibility with new Waves 6 VST plugins. The plugins need to first be extracted from the Wave Shell using the Shell2VST utility.

* Enhanced the SRC resolution in the Lowest Quality setting to retain better accuracy of the samplerate during a conversion.

* BuildMix will now automatically ignore live device inputs. VST synths will still be included in the build.

* The Export Region function now defaults to the current Session folder. It will retain any path change you make until you open a new session at which point it will now reset and default to that session folder.

* The MT and SF play cursor freeze action has been extended down 2 more zoom levels from 256 to 64.

Bug Fixes
* Fixed code in the Export Tracks routine to parse track labels for illegal filename characters as those track labels get used in the exported soundfile names.

* Fixed code to properly redraw the Multitrack display during live playback minimize/restore switching.

* Fixed code that could corrupt the E-Mixer meter display if playback is started with the module offset to the FX position.

* Fixed code to display the Export Region progress bar window without cutting off the word "Cancel".

* Fixed code to initialize the timeline mode when opening a saved preference file.

* Fixed code to stop MT Cursor from jumping back to starting play position if playback is stopped when zoomed in past the cursor freeze zoom ratio.

* Fixed code to break the MT-SF cursor link when jumping to a Control Track marker position after transferring data from the MT to the SF view.

* Fixed code to ignore Label Selected tracks when using the Remove Silence function. This eliminates a possible crash that could otherwise occur.

* Fixed the Frontier AlphaTrack Midi Controller Template to stop fader chattering when playing thru fader automation and the readout display was not set to Fader.

* Fixed the SampleRate Conversion algorithms to output more accurate final filesizes based on the rate conversion predicted size.

* Fixed code to allow midi controllers to properly follow track re-ordering for Rec Meter engaging and Section jumps.

* Fixed code to correct loading of the various Recent File List data when any one of the .ini files does not exist.

* Fixed a misspelling in a File View file relocation message box.

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Version 1.9
Enhancements
* Enhanced the Record Loopback Latency Adjustment to now accept a max value of 999,999 samples…. This option counteracts record latency due to hardware in the loop by adjusting the record data within the region, effectively sliding the recorded data earlier in the timeline.

* Activated all of the Shift, Ctrl, or Alt key MT region manipulation functions on the first click, even when changing hottracks.

* The View Filter (V-Key) and View Filter popup Menu (Right-Click on Aut Switch) can now both be operated during playback, or any other live engine mode.

* The File View window repath options now display all files in destination browse folders.

Echo Plugin Ver 2.6
* Enhanced the Delay ms popup menu to display a reference distance in Feet or Meters (selected in the Pyramid Logo Options menu) based on the speed of sound through dry air at 68 degrees F (20 degrees C).

* A new Tap Mode feature is available by clicking on one or both of the Tap Lights (Pressing the Ctrl-Key while clicking on either will activate both channels). When this mode is activated, you can click the Left Mouse button in the Tap zone between the Tap lights twice in succession, or tap the Left, Right, Up or Down Arrow keys twice in succession or the SpaceBar twice in succession or any combination of those keys once each for quicker response times and the delay time will be calculated between taps. You can leave this mode active and tap a new delay at any time. If the time between taps is longer than the max delay time for your specific samplerate, then the taps will be ignored.

* Enhanced the DelayTime, FeedBack and Strength controls to stereo latch when using the Ctrl-Key and any of the control adjustment methods.

* The Pyramid Logo Options menu may now be used while the engine is active.

Bug Fixes
* Fixed code to keep the Control Track listbox in the same scroll position and re-select the same entry when done editing that entry.

* Fixed code to trap for using the Shift-Right-Drag mouse command to slip region data on a blank track area.

* Fixed code to trap for illegal softedge problems when adjusting regions that incorrectly extend past the soundfile length.

* Fixed code in the FX Eq and Echo plugins to trap mouse-click control adjustments from crashing looped playback under certain conditions.

* Fixed code to properly update the FX SampleRate shared variable every time the MT Rate is changed.

* Fixed code to properly display the Record Setup window with the proper amount of available meters and to correctly handle the up/dwn arrow flipping of the meter filename data.

* Fixed code that could cause Automation Gallery inserts to jump down the timeline from the cursor position when certain VST plugins are patched anywhere in the MultiTrack.

* Fixed code to correct for possible display corruption when the engine is active on multiple cpu systems.

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Version 1.8
Enhancements

Bug Fixes
* Code modified to fix possible crash issues with ASIO drivers and more than 16 channels of soundcard devices when opening the Sync Devices Setup window.

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Version 1.7
Enhancements
* Record Retake will now function while RecRdy mode is active.

* Added a new Midi Control Template for the Behringer BCF2000 unit. There is a sysex preset dump included in the SAC Configuration folder that must be sent down to the BCF2000 unit first and assigned to a preset. You can dump this file with any midi sysex dump utility program like Midi-Ox, or something similar.

  The BCF2000 template gives you control of the 8 faders, in high resolution mode, as well as mutes, solos and pans. The top 2 buttons in the bottom right corner of the unit can be used to bank switch up or down, and the bottom 2 buttons of that group can be used to jump forward to the next console section (I, R, O).

Bug Fixes
* Fixed the illegal softedge correction routine to trap for region entries with bad file links. This solves the mysterious appearance of giant softedges that keep coming back even after they have been removed.

* Fixed the ASIO menu text display to properly display the 16 bit integer format.

* Fixed code to handle right-click options in the MultiTrack Label area even if the mouse button is held down for a time instead of released in a normal quick click operation.

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Version 1.6
Enhancements
* The Solo Bus Device option has been enhanced to automatically internally assign and keep properly updated even if no active track assignment is setup, whenever one of the Solo Bus options has been activated. It will properly output whatever data is assigned to it or blank buffers if no data is assigned to it and swap to the solo data when a solo is activated. You will no longer be flagged with an assignment error message if no active track assignment has been setup.

* Enhanced the Record Mode keyboard shortcut *Ctrl-Spacebar* to force a stop condition from any REC, SRP, or REC/RDY mode, thereby stopping the engine immediately.

* Enhanced the Midi Controller API functions to handle the Frontier AlphaTrack special functions. The AlphaTrack Midi Template is included in this update.

  The LCD display is used to show parameter and channel labels in the various selection modes.

Make sure your controller is set to Native Mode (TaskBar Icon) to ensure compatibility with this template.

Using the **Shift Mode** does not require you to hold down the **Shift** Button. Just press it once and it will engage and light up to show that **Shift Mode** is active. You can cancel **Shift Mode** by pressing the button again. Most commands that use *Shift Mode* will automatically disengage it after the command is executed.

Fader: Control mixer channel faders. Can operate Input, Return, and Output channels based on track / channel select switches. If the *Mixer Views to Hardware Controller* navigation link is active, the surface will chase *SAWStudio's Hot Track* selection. Touching and adjusting the fader will automatically switch the LCD to **Fader Mode** and display the fader data.

Shift Button: Toggles **Shift Mode** on / off. Using the **Shift Mode** does not require you to hold down the Shift Button. Just press it once and it will engage and light up to show that **Shift Mode** is active. You can cancel **Shift Mode** by pressing the button again. Most commands that use **Shift Mode** will automatically disengage it aftter the command is executed

Rec Button: Toggles the record meter open/close for the current track.
Shift Mode: Operates the record meters as a record template, allowing multiple channels to be armed or disarmed at once.

Solo Button: Toggles Solo on and off for the current channel.
Shift Mode: Toggles all active solos off.

Mute Button: Toggles Mute on and off for the current channel.

Left or Right Parameter Knob: Either of these knobs act as a function selector, scanning through different control types. Use the left or right knob, depending on whether you are left or right handed so you do not cover up the display as you turn the knob.

The current selectable control types are: Layer; Fader; Pan; Aux 1 In; Aux 1 Pst Fdr; Aux 1 Lvl; Aux 1 Pan; Aux 2 In; Aux 2 Pst Fdr; Aux 2 Lvl; Aux 2 Pan; Aux 3 In; Aux 3 Pst Fdr; Aux 3 Lvl; Aux 3 Pan; Aux 4 In; Aux 4 Pst Fdr; Aux 4 Lvl; Aux 4 Pan; Aux 5 In; Aux 5 Pst Fdr; Aux 5 Lvl; Aux 5 Pan; Aux 6 In; Aux 6 Pst Fdr; Aux 6 Lvl; Aux 6 Pan; Comp In; Comp Gn; Comp Thr; Comp Ratio; Comp Rel; Comp Att; Gate In; Gate Rvs; Gate Thr; Gate Flr; Gate Rel; Gate Att; Dyn Key Listen; Dyn Eq Lo; Dyn Eq Hi; Dyn Key; Eq In; Eq LoCut In; Eq LoCut Frq; Eq HiCut In; Eq HiCut Frq; Eq Gn 1; Eq Frq 1; Eq Q 1; Eq Gn 2; Eq Frq 2; Eq Q 2; Eq Gn 3; Eq Frq 3; Eq Q 3; Eq Gn 4; Eq Frq 4; Eq Q 4; Eq Gn 5; Eq Frq 5; Eq Q 5; Mono; Swap LR; Phase Rvs; Attenuator; MultiTrack Position

The LCD dislays the currently selected type and value.

Center Parameter Knob: This knob adjusts the value for the currently selected control type. If the current type is the MultiTrack Position display, this knob has no effect and the position is adjusted by the various transport controls and touch strip.

Pressing the knob as a switch sets the control to the default value.
Shift Mode: For **Aux_Lvl** control types sets the control to -inf.

Pan Button: Switches the Control Type to **Pan** for the current channel. The Pan LED lights when in **Pan Mode**.

Send Button: Switches the Control Type to **Aux_Lvl_1** for the current channel. Repeated pressings switch to **Aux_Lvl_2**, **Aux_Lvl_3**, **Aux_Lvl_4**, **Aux_Lvl_5**, **Aux_Lvl_6**, and then back around to the beginning. The Send LED lights when in **Aux Mode**.

EQ Button: Switches the Control Type to **Eq_In** for the current channel. Repeated pressings switch to **Eq_Lo_In**, **Eq_Hi_In**, **Eq_Gain_1**, **Eq_Gain_2**, **Eq_Gain_3**, **Eq_Gain_4**, **Eq_Gain_5**, and then back around to the beginning. The EQ LED Lights when in **Eq Mode**.

Plug In Button: Activates and opens (if needed) the *FX_Pre* and *FX_Pst* views. If the current *Hot Track* is an *Output* track, it also activates the *Final Res* patch view.
Shift Mode: Closes all FX patch views.

F1 Button: Jumps to Locate Point 1.
Shift Mode: Sets Locate Point 1.

F2 Button: Jumps to Locate Point 2.
Shift Mode: Sets Locate Point 2.

F3 Button: Jumps to Locate Point 3.
Shift Mode: Sets Locate Point 3.

F4 Button: Jumps to Locate Point 4.
Shift Mode: Sets Locate Point 4.

Track < Button: Decrements the Track / Channel.
Shift Mode: Marks the begin position. When any marked area is active, the LCD displays a small mark in the top right corner.
Ctrl Mode: Set by pushing the left or right parameter knob. Lights both track button LEDs and jumps down one section from Output to Return to Input channels.

Track > Button: Increments the Track / Channel.
Shift Mode: Marks the end position. When any marked area is active, the LCD displays a small mark in the top right corner.
Ctrl Mode: Set by pushing the left or right parameter knob. Lights both track button LEDs and jumps up one section from Input to Return to Output channels.

Loop Button: Toggles AutoRewind on and off. When active, regular MT playback will jump back to the starting point when playback is stopped. If there is an active marked area, MultiTrack playback will continue to loop the marked area.
Record Mode: Toggles AutoRecord Loop Mode on and off. SRP recordings will continue to create new takes of the marked area, looping back to the cursor position pre-roll starting point.
Record-Shift Mode: Toggles AutoRecord Layer Loop Mode on and off, which fills layers with new takes on the Lite and Full SAWStudio versions.

Flip Button: Switches the Control Type to **MultiTrack Position**. The LCD now displays Timeline position information in the current Timeline display mode. Pressing the button again switches the Control Type back to the previous type selection.

Transport Rewind Button: Moves the current cursor position back 10 seconds on the timeline. This function will auto-locate the playback if active.
Shift Mode: Jumps to the session home position.

Transport Fast Forward Button: Moves the current cursor position forward 10 seconds on the timeline. This function will auto-locate the playback if active.
Shift Mode: Jumps to the session end position.

Transport Stop Button: Stops playback, record and live input operations.
Shift Mode: Saves and updates the session edl.
Msg / Dialog Mode: When a message dialog box is active, acts as a cancel or "no" response. The LCD will display many important messages directly.

Transport Play Button: Starts MultiTrack play or SRP play operations.
Shift Mode: Activates Live Mode.
Msg / Dialog Mode: Acts an Okay, Yes, or Enter response.

Transport Record Button: Starts a multitrack record operation or punches in during SRP play mode.
Shift Mode: Starts a RecRdy operation.

Touch Strip: Acts as a position shuttle which adjusts the MultiTrack cursor position. When first touched, the Flip button is activated and the LCD will display the cursor position.

FootSwitch Jack: Toggles Playback on and off.
Record Mode: Toggles Punch-In and Punch-Out during an SRP operation. Does a Punch-In on a straight Record operation.

*   Modified the Trigger Sync record behavior to always trigger an SRP operation, allowing for a manual punch-in operation, or an auto-punch-in operation based on a marked area, or an instant auto-punch-in based on the auto SRP/REC option setting.

*   Modified the record behavior when stopped to snap the cursor position back to the newly recorded region end position. This will happen only when record mode is active at the time of the stop command. If you have punched out during an SRP record operation prior to executing the stop command, the cursor will stay at the current stop position. If using the Midi WorkShop add-on, this feature requires version 1.7 or higher to function correctly.

*   Sample Edit Mode in the SoundFile View has been modified to switch samples at the mid-point between samples instead of the start of each sample. This makes Sample Edit control much easier when modifying sample values.

*   The program will now boot into a machine with 64 megs of ram and run, even though 128 megs or more is

still recommended. This allows you to use remote mode on older machines with small memory footprints.

* Replaced repeating audio device missing and changed warnings with a single warning message if current devices no longer match your preferences.

* A new option has been added to the Mixer Menu called *Mixer Chan Record-Tap Routed Before Eq / Dyn*. This option allows you to force the Mixer Chan Record tapoff point in front of the Eq/Dyn section without re-routing the Pre-Patch point. The normal default behavior when recording from a Mixer Chan source is to tap the record signal after the Pre-Fx-Patch point, which is normally after the Eq/Dyn section. You can re-route the Pre-Fx-Patch point before the Eq/Dyn section and the record tap will follow along, however, so will the Pre-Aux Send point. When using the virtual console as a PA mixer, this would force all Pre-Aux monitor sends to remain flat without the benefit of any Eq or Dynamics. Many times this is not the desired method of sending monitor mixes to stage performers, so this new option allows you to break the link between the record tap point and the Pre-Fx-Patch point, allowing you to record flat signals while still processing front of house and monitor mix signals.

This setting saves with the Mixer Templates and also with each session edl file. This setting clears when sessions are closed. If you use a default Mixer Template, you can arrange the default console signal routing any way you like and those settings will be used each time the console is reset.

* The record meter displays will now actively chase MultiTrack tracks and keep the hottrack meter (if active) visible within the Record Meter window. If mixer navigation links to the MT are active, the record meter displays will also chase mixer hotchan changes. *Right-Clicking* the Record Meter window *Close* zone will toggle a lock option to freeze the meter displays from chasing. You are still free to scroll the meters within the window with the wheel mouse or arrow keys.

* The manual adjustment resolution of Vari-Speed has been increased to .0001%.

* The Default EDL Undo Path option in the *File Path Setup* in the *Options Menu* has been enhanced. You may now enter a sub-folder of the EDL project folder by starting the folder name with a backslash character. For example, entering **Undo** will force all undo files for each session to be saved in a sub-folder named Undo under the session folder. This helps keep the session folder better organized and easier to maintain. If you decide to use this feature, you must manually create the same folder under existing session folders and copy all existing undo files for current sessions into this folder in order for them to be automatically available. New sessions will automatically create this folder when the first undo file is created.

* A new item has been added to the *File / Mix Template* menu called *Open Without Labels*. This option opens a mix template without disturbing labels in the current session.

* Added code to trap and adjust for invalid softedge entries as entry boundaries are altered, moved and copied, and as new entries are inserted. Invalid softedges will now be corrected on the fly as editing operations create them.

* Enhanced MT Entry deletion to now include automation enclosed by entry softedges.

Studio Fx Eq 2.4
* Changes added to correct possible display corruption on dual processors.

Studio Fx Echo 2.4
* Changes added to correct possible display corruption on dual processors.

Bug Fixes
* Fixed Priority Class overrides to work properly when loading new preference files from the File menu.

* Fixed the Sweep To Vari-Speed and Vari-Pitch Destination option to trap for very small destination changes and also added a much higher degree of accuracy across the marked area.

* Fixed Undo History Window positioning to trap for F-Key views that could cause the window to be positioned off-screen when first opened.

* Adjusted FX Buff Chng message window to a larger size to accommodate plugins with longer names.

* Trapped F-Key View changes while actively grabbing Mixer Controls.

* Fixed the Alt-I, R and O jumps to work correctly when tracks are re-ordered.

* Shift-Right-Dragging operations in the MT now lock the cursor into the MT wave display area and eliminate possible crashes which could occur under certain circumstances when moving the mouse outside the MT boundaries.

* Toggling *Automation Mode* On/Off when *Offset Mode* is active will now cleanly cancel *Offset Mode* and any offset changes in progress.

* Fixed code to allow regions to be moved to the last tracks even when Return and Output tracks have been re-ordered to the top of the MT.

* Adjusted code to fix display corruption above the MT ruler when scrolling the MT up or down.

* Fixed code to reset an active marked area started during playback with the <u>*B-Key*</u> that never received the <u>*E-Key*</u> command to end the mark when playback is stopped.

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Version 1.5c
Enhancements
* New *Message And Dialog Box* routines that allow complete control over placement on dual screen monitors. The *Options Menu* now contains a new option called *Message/Dialog Box Position* which opens up a submenu of possible choices. The choices are: *Top Left*, *Top Center*, *Top Right*, *Center Left*, *Center*, *Center Right*, *Bottom Left*, *Bottom Center*, *Bottom Right* and *Follow Mouse*. This choice can be saved with the

preferences.

* A new option on the *Options Menu* called *Monitor Configuration* opens up a sub menu with choices for *Single*, *Dual Left To Right* or *Dual Top To Bottom* monitor configurations. This setting allows the program to keep popup messages and dialogs that follow mouse positions from splitting across the gap between monitors. This choice can be saved with the preferences.

* Added a new function to the FX API to allow plugins to link to the dual monitor configuration info from the main program.

* Updated the Echo and Eq plugins to utilize the new API function to be dual monitor aware.

* A new enhancement has been added to Live Mode Automation chasing with Locate Points or Cue Location commands in the Control Track. Snapping down the timeline to a new position with automation written in, will now follow mute, pan and fader slopes, allowing for automatic fades and pan sweeps based on long slope values to be executed at the new Cue. This can be used for live show automation to auto fade out and in various mixer channels.

* Added some extra keyboard functionality for operating the Record Remote panel:

  * {Enter} activates Record Mode or punches in and out when SRP Mode is active.

  * {Shift-Enter} activates Rec/Rdy Mode.

  * {SpaceBar} toggles between SRP Mode and the last active state of Stop, Rec/Rdy or Live Mode.
  * {Shift-SpaceBar} toggles between SRP/Rec Mode (forcing a record punch) and the last active state of Stop, Rec/Rdy or Live Mode.

  * {Ctrl-SpaceBar} forces Stop Mode breaking any links to Rec/Rdy or Live Mode toggling.

Bug Fixes
* Fixed the ZLM Monitor Switching protocol to work correctly for odd and even mono channel record meter assignments in any combination.

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Version 1.5b
Enhancements
* Modified the SoundFile View recording engine to now allow the same low latency live monitoring of input signals as the 1.5 MT engine whenever either of the Tape-Style monitoring options are selected.

* The SoundFile View Lock zone will now also lock the SF Out Device and keep it from changing when transferring regions from the MultiTrack or Regions view.

* The code has been enhanced for handling display screen resolutions of multiple monitor configurations. The code now attempts to determine the full virtual screen resolution across all monitors. This will not work on all systems or video card drivers, so the reported resolution can now be overridden and new values can be manually entered and saved with the preferences. The *Max Screen Resolution Override* option on the Options menu allows you to set a new max screen resolution which will control the limits of all window positions. The main window size no longer sets the limits.

Bug Fixes
* Fixed code to stop a crash that could occur when using a marked area auto-punch record operation with the Region Memory Caching option activated.

* Fixed code for SoundFile View recording while Tape-Style Monitoring is selected.

* Fixed code that could cause MT-Entries to misbehave during Select Mode move operations, resulting in disappearing entries or entry positions being offset incorrectly.

* Fixed error trapping code for Selected entry track conflicts of moves and copies in the MultiTrack.

* Fixed disappearing automation moves and copies in all directions.

* Modified code to help with allowing the taskbar to popup ontop of SAWStudio on certain Windows installations that may have trouble doing so.

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Version 1.5a
Enhancements
* Two new options have been added to the Options menu to allow adjustment of the base Priority Class of the program. I have adjusted code to allow for safely increasing the Process priority internally to High or RealTime priority. You may force the priority of the program to be raised above Normal for a possibly more robust performance level. Be careful with the RealTime option, however, because you will force SAWStudio above other system processes and if the program locks for some reason, you may not be able to escape, even from the Task manager. This can be useful, however, for stopping interference from other background services and processes and may allow smooth audio operation at very low latency settings.

* A new option has been added to the Command Line processing when the program first starts.

  SAWStudio will now accept multiple FKY filenames on the command line when starting up. The first .fky filename found will load as the default F-Keys. The next one found will load as the default Alt-F-Keys. The third one found will load as the Midi WorkShop default F-Keys (requires MWS Version 1.6f or higher). You do not need path information for the Fky files, only the filenames. The SAWStudio files must be stored in the Configuration folder under the SAWStudio folder. The Midi WorkShop file must be stored in the MidiWorkShop_Configuration folder under the SAWStudio Native_PlugIns folder.

Example: C:\SAWStudio\SAWStudio.exe Test.fky TestAlt.fky TestMws.fky

Bug Fixes

* The new Slide MT-Entry data function undo creation has been fixed.

* Both new Export Tracks to SoundFiles options have been fixed to properly handle automation and Fx buffer size changes with no glitches.

* Fixed the loss of window focus when using *Ctrl-S* and other menu commands with message and dialog boxes.

* Fixed code to keep Solo Bus options from interfering with the performance of BuildMix operations.

* Fixed Solo Bus mode solos to be active in Rec and Rec/Rdy modes.

* Fixed MTLoad readout to be active in Rec and Rec/Rdy modes and for the MTLoad and SrcLoad windows to be properly cleared when the engine is stopped.

* Code modifications have been extended to the SoundFile View to enhance stability and eliminate corruption of screen displays with multi-processors, multi-core processors and hyperthreading processors.

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Version 1.5

Enhancements

* Added a new feature called *Roll-Over Context Help* to the Info Menu. You may activate this feature from the menu or by pressing the *Alt-H* key in any window. When this feature is active, each active zone, switch and control is outlined in red as you roll the mouse over the screen, while a text display window chases the mouse position. By *Left-Clicking* in one of the active areas, information about how to use that zone is displayed in the text window which freezes in position. You can scroll the text in the display window by using the *MouseWheel* or *Up* and *Dn* arrow keys or the *PgUp* and *PgDn* keys. Pressing the *H* key while the text is displayed will jump you directly to the related section of the Help File. Pressing the *Esc* key or *Right-Clicking* the mouse will unlock the freeze and allow you to scan for more screen zones. Pressing the *Esc* key or *Right-Clicking* again de-activates the Context Help Feature.

* Added engine modifications to support Tape-Style Record Monitor Switching. This new feature now allows full live input monitoring direct from device inputs during recording. This does require low latency operation capabilities of your system. Buffer settings of 3 x 128 or less are generally very good. There are two new choices available on the *Options Menu* in the *Auto Audio-Monitor Switching Protocol* option.

   One is called *Tape Style – Playback / Input Switching*. This option will switch between the Stereo or Mono Device input and the MT playback automatically when you punch-in record. In Rec/Rdy or Rec mode, the device input will be routed through the record channel console module. When SRP is engaged, the MT

playback will be the monitor source and when you engage the Rec button to punch-in, the monitor source will switch to the device input, exactly like most professional multitrack tape decks.

The second option is called *Tape Style – Input Always On*. In Rec/Rdy or Rec mode, the device input will be routed through the record channel console module. When SRP is engaged, the MT playback will be mixed with the device input allowing you to monitor both sources together. When you engage the Rec button to punch-in, the monitor source will switch to the device input only, muting the MT Playback signal.

These new engine features make virtual recording and monitoring possible completely in the virtual environment. It's now very easy to setup headphone mixes using the pre-aux sends and even blend reverb into the phones mixes without the need for any external mixing hardware.

These features do not require you to use Live Mode console inputs, and therefore keep the recording process much easier to setup and manipulate. Each console input source is kept as MultiTrack and the monitoring now comes direct from the device inputs selected in the record meter input source zone.

You can also use this type of monitoring when using Live Input mode console inputs. In this case, all live input channel assignments will automatically switch to MT playback for all tracks that have region data on them. Those tracks with live input assignments which are armed for record will mute the playback when record is punched in. If the *Tape Style – Input Always On* option is active, the live input channels will stay active and blend with the MT track playback until record is punched in.

The Pre Patch Signal Flow routing will be handled correctly in that, if your recording point is post Eq and Dynamics, the monitor playback will be post of the processing also, so you will not double process the playback data. If you record the data pre Eq and Dynamics, the monitor playback will route pre processing so it sounds the same as when monitoring the input source.

* New Solo Mode options have been added to the Mixer Menu:

 The *Solo In Place (Mutes Other Channels)* mode is the original standard default SAWStudio mode. This mode internally mutes channels that are not soloed, giving a true exact *In Place Solo* for critical mix decision making. This allows full use of the engine buffer size changing and auto-latency VST compensation capabilities with no problems.

The *Solo Bus – Pre Fader* mode functions as a true console PFL Solo. This mode leaves all other channels alone and feeds the pre-fader signal of soloed channels into a separate mix bus which can be assigned with the *Solo Bus Out Device* option. If this device is your main mix bus, the solo signal will interrupt the main mix output, but not disturb any other channel signals, leaving *Aux Send* headphone feeds intact on other devices. This option also allows you to monitor the output of different devices on any other device, so it makes it possible to send multiple headphone mixes to different hardware outputs and still be able to solo each mix into the main control room device, without the use of external switchers or mixers. The solo level may also be adjusted with the *Solo Bus Level* option. It is generally recommended that certain latency producing plugins, like Time Compressors, not be used with this option. Strange behavior may result when combining signals from different routing paths that each run in a different time frame.

The *Solo Bus – Post Fader* mode functions as a true console bus Solo. This mode leaves all other channels alone and feeds the post-fader signal of soloed channels into a separate mix bus which can be assigned with

the *Solo Bus Out Device* option. If this device is your main mix bus, the solo signal will interrupt the main mix output, but not disturb any other channel signals, leaving *Aux Send* headphone feeds intact on other devices. This option also allows you to monitor the output of different devices on any other device, so it makes it possible to send multiple headphone mixes to different hardware outputs and still be able to solo each mix into the main control room device, without the use of external switchers or mixers. The solo level may also be adjusted with the *Solo Bus Level* option. It is generally recommended that certain latency producing plugins, like Time Compressors, not be used with this option. Strange behavior may result when combining signals from different routing paths that each run in a different time frame.

A special feature has been added to the Aux Master Sends. If an Aux Master is assigned to a device out, to be used for a headphone mix, for instance, and the corresponding Output track is assigned to itself as a device out, then the Output track solo button also acts as the Aux Master solo and blends the Aux Master data into the solo bus. This allows you to solo and hear the aux mix in the main output device or whichever device is assigned to the solo bus output.

The *Solo Bus Out Device* option can be used to route the solo signal to a separate device output to monitors or headphones, leaving the main mix bus intact when using SAWStudio's virtual console as a Live Mode Front Of House replacement. Some signal routing must be active on the Solo Bus device. You can duplicate the main mix assignments if you like, or assign an empty Aux Send to it. You can also assign an empty muted track set in Live Mode to supply the needed routing signal.
The *Solo Bus Level* option can be used to adjust the Solo level feeding the Solo Device.

* The popup Aux Send Menu has been enhanced with new features. Clicking on the Aux Send section label or any of the individual Aux Send number labels on the E, Z or W mixer views opens up a popup menu. This menu shows the list of Aux Send Master labels and now also includes some quick Aux Send setup options. When using one of the Solo-Bus modes, you can Solo this Aux Mix Device-Out if it is linked to a hardware assigned Out-Track, as when used for a headphone mix. You can duplicate a mix into the current Aux Send, across all channels, from the main mix settings or from any other Aux Mix settings. This only duplicates Input Channel settings. You should adjust Aux Send Master Fader settings manually to make sure the mix is not clipping. You also have choices to Engage and Disengage the Aux Mix, or to set the mix to Pre Fader or Pst Fader, and to also Clear the Aux Mix.

* A new feature has been added to the Driver Protocol Menu for the Asio Protocol option. Now, whenever the Asio Protocol mode is selected, the ASIO Data Format Type will be displayed on the Asio Protocol Menu option line. This information will display the Integer or Floating Point data format type that the driver uses.

* Starting playback when Live Mode is active from the MWS version 1.6d or higher will now auto toggle back to Live Mode when playback is stopped.

* Many functions have now been enhanced to work while Live Input Mode or Rec/Rdy Mode are engaged. This makes it much easier to keep these modes active during a recording session with live monitoring and still manipulate the MultiTrack. The functions now active in Live Input Mode and Rec/Rdy Mode are:

Cursor positioning with mouse.
Position display.
Marking MT areas.
Changing MT layers.

The RTZ zone.
The Home-Key.
The End-Key.
The Tab-Key.
The D-Key.
The G-Key.
The K-Key.
The M-Key.
The R-Key.
The S-Key.
The U-Key.
The *-Key.
The Select Mode button.
The Grid zone.
Locate Points.
Disabling MT tracks.
Clearing all track entries.
Entering track labels.
Moving MT-Entries.
Alt-Grab adjustment of MT-Entries.
Changing record tracks with the record meter Track zone.

Undo files are created the same as when the engine is stopped.

* Changed the _Left-Right-Click_ _Set To Default_ value to zero db for aux send level controls. This makes it much easier to snap the levels to a starting mix value for aux send mixes.

* Automation changes In Live Input Mode are now processed if you jump the cursor down the timeline. This allows Cue Location Markers to be used for Live Mixer automation within songs.

* The Select Mode nudge feature has been enhanced. In Select Mode, the _Left and Right Arrow_ keys can be used to snap and then nudge the selected entries one cursor step at a time, keyed from the front of the key entry. Pressing the _Shift_ key at the same time will key from the end of the key entry. Pressing the _Shift-Alt_ modifiers at the same time will key from the key entry offset position, if one has been set.

* Double-Clicking the F Mixer view label area now opens the E Mixer offset to the main fader position for quick level adjustment.

* Live Input Device source assignments to mixer channels are now displayed in the F Mixer as small patch bars in the I/A zone. L-Only sources display as a bar on the left side of the zone. R-Only sources display as a bar on the right side of the zone. Stereo and other combined mono sources display as a bar in the center of the zone.

* Increased the maximum buffer size for VST preset settings saves to compensate for more and more VST plugins that are taking huge amounts of data space to save their presets.

* The FX API has been enhanced to allow plugins to request track label information.

* The BuildMix To Current HotTrack function has been enhanced to allow the HotTrack to be one of the tracks that carries mix source data. This option now creates an undo file, since it can destroy current edl data, and will force an insert and overwrite existing data on the destination HotTrack(s). This allows you to replace a track's data with the new processed buildmix data in one operation. Pay attention to warnings of existing mix files. Make sure to append the data if you are performing multiple separate mix operations to the same file, or existing regions connected to the mix file may be corrupted.

* A new option has been added to the Mixer menu called *Clear Selected Mixer Labels*. This option clears only selected mixer channel labels, leaving other labels alone.

* FX Buffer Size Changing plugins will now cause a notice to appear on the Main Window TitleBar when the engine is activated. Clicking in the displayed msg zone will display the plugin's name and the channel it's patched into. This warning msg picks up and displays the first plugin to alter the buffer size only. Be aware that when you are depending on any live input monitoring during Live Mode, playback or recording, buffer size altering will most likely cause latency drift due to the engine attempting to loop multiple times to fill the buffer in a look-ahead mode and live device inputs have no look-ahead data available so blank buffers are inserted. You should find and bypass all plugins causing this warning while attempting to monitor live device inputs.

* The Record Meter Input Zone is now sensitive to Channel Input Device Mono L-Only and R-Only assignments and correctly enables unassigned Mono Devices in the popup menu.

* A new feature allows you to copy an MT marked area directly to a Region by pressing *Ctrl-C*. The region is automatically selected in the Regions View allowing you to instantly follow up with an *Insert* or *Shift-Insert* keystroke to paste the data to a new location.

* All On-Top windows will now drop beneath overlapping application windows when SAWStudio looses the application focus and be restored to On-Top status when SAWStudio again gains focus.

* MultiTrack Waveform scaling with the Mouse-Wheel or the Ctrl-Numeric-Keypad now responds to number selected tracks and adjusts all selected tracks at the same time.

* Altered buildmix base or device filenames are now cleared in the new edl file created when using the Save-As or Save Copy-As functions. This helps accidental buildmix overwrites of the original mix files when later working in the newly created edls.

* Marking areas in the SoundFile and MultiTrack Views has been enhanced to allow you to slide a fixed marked area to a different position while maintaining the marked area size. The *Shift-B* key will adjust the begin position to the current cursor location and automatically shift the end position to maintain the same marked area size. The *Shift-E* key will adjust the end position to the current cursor location and automatically shift the begin position to maintain the same marked area size. *Shift-Dragging* either the begin or end position in the Timeline Ruler area will drag the marked area to a new location while maintaining the marked area size.

* A new option has been added to the Mixer menu called *Snapshot Chan Settings To MT Automation*. This option allows you to snapshot all basic mixer channel settings and write them as MultiTrack automation data

at the current cursor position. This function responds to and will write data for all selected Mixer Channels simultaneously. You do not need to be in Automation Mode to use this function. This function will not write non-automatable items such as solos and device assignments, or FX patches.

* The Numpad functions for MT-Zoom, WaveForm Scaling and Locate are now active in all Mixer Windows.

* The EQ and Echo plugins have been enhanced for faster overlapped redraws when activated. The new versions are also now sensitive to offscreen positioning saved with edls from higher resolution displays and will automatically correct themselves to fit on the current screen resolution.

* Two new options have been added to the Process/Mixdown menu called *Export Track(s) To SoundFile(s) – [No Mixer Processing]* and *Export Track(s) To SoundFile(s) – [With Mixer Processing]*. These options make it simple to export solid track wav files from SAWStudio to be easily used in any other DAW system. The first option bypasses all mixer channel processing and automation and outputs the source file region data, neatly assembled into a solid wav file. All edits and SoftEdges are processed for smooth transitions. The second option processes the data through the mixer channel controls, patched plugins and automation. Both options will translate the source files to the current MT SampleRate and Resolution settings.

  If there are selected tracks, these options process all selected tracks only, otherwise all tracks are processed.

  You are asked to select a location for the exported files as well as a base filename. The base name (usually the edl name) will be appended with the track label. I recommend creating a folder called *Export* in the project folder to separate all exported files for easy transfer to another system. A separate folder also helps to eliminate problems due to filenames matching existing source files in the current project folder. Duplicate filenames in the same folder will be overwritten.

* Selecting MT Track Labels for special playback functions has been enhanced with the addition of two new commands. *Alt-Ctrl-Clicking* will now label-select all tracks between the last selected track and the current one. *Alt-Shift-Clicking* any label-selected track will transfer and add all the selections to the track numbers for a quick way to group editing functions on the fly.

* A new MT-Entry editing feature has been added to allow you to slide the Region data within an existing MT-Entry without repositioning the entry. *Shift-Right-Dragging* within an MT-Entry will slide the data within the entry boundaries without affecting the entry size or position. This can be very helpful when making slight adjustments on various tracks to align horn or vocal parts.

* Startup Command Line processing has been added with the following options:

  SAWStudio will accept a WAV or EDL filename on the command line when starting up. WAV files will automatically open into the SoundFile View. EDL files will automatically open into the MultiTrack View. With EDL filenames, you may also include a /P command option to immediately begin playback of the EDL. Make sure to include the entire path and filename and leave a space after an EDL name before adding the /P.

  For example, to have SAWStudio load and begin playback of an EDL upon startup from a shortcut icon on the desktop:

1. From the Windows desktop, right-click the SAWStudio shortcut icon.

2. Select Properties from the shortcut menu.

3. Click the Shortcut tab.

4. In the Target textbox, click at the end of the command line.

5. Add a space, then type the pathname for the EDL followed by another space then add a /P.

Example: C:\SAWStudio\SAWStudio.exe D:\Audio\Test\Test.edl /P

6. Click OK.

7. Double-click the icon to start the program.

A WAV file example might look like this:
Example: C:\SAWStudio\SAWStudio.exe D:\Audio\Test\Test.wav

SAWStudio will also accept a PRF filename on the command line when starting up. In this manner, multiple preference files (including different shades) can be maintained and loaded automatically. You do not need path information for the prf file, only the filename. It must be stored in the Configuration folder under the SAWStudio folder.

Example: C:\SAWStudio\SAWStudio.exe Test.prf

Note that if any of the target line paths or names contain spaces, be sure to enclose the full pathname in quotes, with the /p option (if used) placed outside of the quotes.

Example: "C:\SAWStudio\SAWStudio.exe D:\Audio\Test 2\New Test.edl" /P

Bug Fixes

* Fixed automation copies of overlapped automation data when using the V Filter.

* Live Input Mode now handles automation changes correctly and no longer chases the automation moves while sitting idle on the timeline.

* Code modifications done to enhance stability and eliminate corruption of screen displays with multi-processors, multi-core processors and hyperthreading processors.

* Alt-Drag MT-Entry boundary adjustments now correctly ignore the Auto-Zero Cross setting and allow exact boundary adjustment in both directions on selected or non selected tracks.

* The active mixer window now stays active after using a popup fader from any of the controls.

* Locate points and Control Track View tempo entries now correctly display measure count offsets if used.

* Setting a new MT sample rate now correctly updates the MT Timeline.

* Changing Smpte Sync Devices while a Smpte mode is active, now correctly switches to the new device settings without having to toggle Smpte Mode on and off.

* Adjusted code to fix SRP startup from sometimes failing when initiating directly from Rec/Rdy mode.

* Fixed code to properly display the Dynamics GR Meter on the E-Mixer when switching between F-Keys.

* Fixed code that could cause buffer crashes with certain VST Synth plugins when passing data streams between SAWStudio and the MidiWorkShop.

* Offset Mode now correctly offsets default mixer values when you stop and restart playback without ever exiting and committing Offset adjustments.

* Opening a Mix Template will now correctly disengage any active solo mode.

* Using any of the commands to mark the entire SoundFile in the SoundFile View now first correctly clears any existing marked areas and then properly marks the entire file.

* Modified VST initialization code to compensate for certain plugins that seem to require the audio engine to be running in order to initialize their interface properly.

* Control Track View long name entries are now truncated in the display window and no longer push the tabbed columns out of alignment. The internal name length is preserved.

* The Control Track Listbox correctly updates back to the beginning now after the execution of the *Cue Beginning / Play* command.

* Fixed link between Dynamics Hi and Lo Eq when using the popup fader with the Shift Key.

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Version 1.4n
Enhancements

Bug Fixes
* Adjusted the Tempo display format to allow display of tick resolution numbers up to 4 digits. The Measure display was reduced from 5 to 4 digits to compensate. When measure counts beyond 4 digits are needed, the measure and beat separator is reversed and the measure count wraps around at each 10,000 value. For example, tempo display at position 9999>01>0000 will display as shown and when it wraps around past measure 10,000 to 10,002 for example, the display will be shown as 0002<01>0000. This compromise was

done to salvage all existing shades and the current pixel layout of the MultiTrack Top Client area. The MT and SF timeline ruler display will still show the 5 digit measure value.

* The SoundFile View will now correctly display the timeline ruler values in Sample Edit magnified zoom mode.

* The Phase Reverse code has been fixed to properly handle the L Only and R Only options.

* The MT and Mixer windows will now correctly display the window sizing cursor when the mouse is placed over the window borders even in Live Mode and when a Trk or Chn cursor is selected.

* Changing the Base Record Filename or any Track Record Filename in the Record Setup dialog now checks and corrects for duplicate filenames.

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Version 1.4m
Enhancements
* The engine has been enhanced for tighter Live Mode operation with lower actual latency at the same buffer settings than before and perfect record sync positioning in all combinations of recording modes, using the Auto Loopback adjustment as well as automatic compensation for monitoring from Aux Sends assigned to devices and Aux-Send-Return device loops for using hardware processing gear. The engine now senses and adjusts in the following manner:

Normal recording direct from device- ins, while monitoring from an external mixer source, adjusts the record region sync position using the Auto Latency Adjust value only. Sync is not dependent on buffer latency size settings and therefore makes perfect recordings even on slow audio drivers and hardware. Overdubbing will be in perfect sync when monitoring playback from any bus out directly or from Aux-Send-Masters assigned to device outs. This mode uses an external mixer (or soundcard driver hardware mixer) to split the source signal and blend it with the playback signal from SAWStudio for headphone monitoring during recording.

Recording from mixer channels assigned to live device-ins, while monitoring direct from the SAWStudio virtual mixer source, adjusts the record region sync position using a combination of the Auto Latency Adjust value as well as the exact internal buffer latency present in the monitor chain. Recording from mixer channels with VST synths patched into the Pre Patch point, while monitoring direct from the SAWStudio virtual mixer source, adjusts the record region sync position using the exact internal buffer latency present in the monitor chain only. These modes require low latency buffer settings of 4 x 128 or lower to be useful for monitoring without distracting delays. The Out and In buffer sizes should be set the same. The In-buffer-count should be set to 4 or higher and will not add to the monitor latency. The Out-buffer-count does add to the monitor latency and should set as low as possible while still maintaining stable system operation. This does require good audio drivers and hardware. Only a few soundcards can do this in MME mode… many cards can do this using ASIO mode. Overdubbing will be in perfect sync, regardless of the monitor latency, when monitoring playback from any bus out directly or from Aux-Send-Masters assigned to device outs. The record signal is taken from the Pre Patch point when recording from mixer channel sources. The record

signal will include the EQ and Dynamics section of the virtual mixer unless the Pre Patch point routing has been changed in the Mixer Menu Pre-Fx Patch Signal Flow option. You may monitor the Control Room signal from the main faders and freely use the Mute and Solo buttons without disturbing the recording. You may also use Pre or Pst Aux Sends to send monitor mixes to performers through headphones. Temporary playback override of the mixer channel device-in source assignments can be done by pressing the Shift-Key when you start playback. This will force all mixer channels to MT source for the duration of this playback so you can easily listen back to the recording without having to change your input assignments. When you are finished recording, you should then change all mixer channel source assignments to MT for normal editing and mixing operations.

A special Live Aux-Send-Return processing loop feature is designed into the engine to allow the use of hardware processing gear to be blended into the mix in perfect sync regardless of the latency buffer settings. This mode is automatically engaged when an Aux-Send-Master is assigned to an out-device and its corresponding Return is assigned to an in-device. This mode splits the engine and delays the out buffers while leaving the Aux-Send signals in original time, thereby allowing the normally delayed hardware processing data to arrive and mix into the playback in perfect time. This does not require low latency buffer settings, but it does however delay the normal playback signal, and therefore will add latency to Live Mode virtual monitoring. Only the Aux-Send-Return device pairs will be affected, therefore you may still use other aux sends as headphone monitors, as well as any other bus out. The record signals will all be properly adjusted to drop in perfect sync regardless of the added monitor delay. This mode is best suited for mix operations where hardware processing gear is desired in realtime. It is recommended that you do not assign Return channels to in-devices when using Live input channels for virtual monitoring, in order to obtain the lowest possible monitor latency.

Bug Fixes
*   Fixed the ontop status of the overwrite/append msg box for the BuildMix dialog.

*   Adjusted code for the MT, SF Record and F-Mixer views to properly re-display memory images when resizing with the Windows "Show Window Contents While Dragging" option ON.

*   Added code to use an alternate query method needed for certain VST plugins to register themselves as a synth.

*   Adjusted code to compensate for LoopBack Latency only on active Mixer Channel Device recording tracks. The engine now auto-senses the correct amount of adjustment required for each type of recording source on a track per track basis regardless of the combinations of Live, VST, MT or direct sources being used at the same time.

*   The Live Aux-Send-Return slip devices delay adjustment feature has been fixed to allow for using hardware reverb or other processing gear in the Aux-Send-Return loop assigned to audio device ins and outs.

*   The engine modifications have taken away the DWave option of using a 1 buffer latency setting, although the actual latency performance at 2 buffers is now the same as it was in the earlier engine at 1 buffer. If you have been using a 1 buffer DWave setting, change it to 2 buffers…latency should remain the same.

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Version 1.4l

Enhancements

* DirectX and VST Plugin positions will now save with the edl whether the plugin window is open or not at the time of the edl save. Native plugins have their own control over this feature.

* The Aux Send mini faders have been enhanced to use the large popup faders by clicking and holding in the Aux Send readout displays above the mini fader.

Bug Fixes

* Fixed VST code that could cause some plugins to open with only the SAWStudio VST titlebar and no window display. This was caused by some of the VST crash code adjustments from 1.4k.

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Version 1.4k

Enhancements

* Two new options have been added to the VST popup Options menu called *Override Auto Latency Compensation* and *Override Auto Latency Compensation Value.* The first option will display the reported latency delay in samples that the plugin returns to SAWStudio when asked. This option can also be used to override that value. If overridden, the new compensation value used will be taken from the second option setting, which can also be set to zero to bypass all automatic latency compensation. Some plugins report latency differently than expected or not at all. These options allow you to correct for VST latency or bypass it altogether. These options save with the edl and with individual saved presets to allow for the same plugin to have different latency values dependent on the actual plugin parameter settings.

Bug Fixes

* Adjusted the VST auto compensation routines to fix some problems associated with odd sample latency sizes interacting with buffer boundaries dependent on SAWStudio buffer size settings. This should solve issues with pops and clicks in certain VST latent plugins.

* More VST code adjustments to help with compatibility issues concerning certain plugins that cause a crash when patched into SAWStudio. This one takes care of the Applied Acoustics product line and also some other plugins including the Ivory piano plugin.

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Version 1.4j

Enhancements

* VST Plugin hosting has been enhanced to allow VST Plugins to reside in any folder on any drive. If the VST Plugin dll is not installed into the VST_Plugins folder under the SAWStudio main folder, then you can now

place an ini file substitute in the VST_Plugins folder pointing to the full path of the dll file itself. Create an ascii text ini file in the Notepad and name it the same as the original dll file. Inside the file type the full drive and path and original dll filename on the first line of the file. Make sure to finish the line with a carriage return. For example… if a VST Plugin called *TestPlug.dll* is installed to *D:\VST\Work*, then create an ini file called *TestPlug.ini* and inside the file type the line *D:\VST\Work\TestPlug.dll* followed by a carriage return. This ini file, placed in the VST_PlugIns folder under SAWStudio, will now link SAWStudio to find the VST plugin in its originally installed path. This can help solve compatibility issues with certain hardwired path plugins and their various copy protection schemes.

* VST Plugin hosting has been enhanced to automatically compensate for plugin latency as reported by the plugins themselves. Using any external latency compensator or otherwise adjusting the track data to compensate is no longer necessary. Realize that previous edls which include such adjustments must be altered to remove the manual compensation, otherwise the data will now be incorrectly positioned on the timeline. Note that the bypass switch is backward compensated to allow bypassing during live playback without loosing sync. Unpatching the plugin during live playback is not backward compensated however, and will cause data sync to be incorrect. You must stop and restart playback to correct the track sync. Also, realize that plugins that have latency will add the latency to live inputs creating delays and in some cases may force the engine to shutdown.

* *Hot Track Solo Mode* may now be used with the *Shift-Key* to keep the Return Channels active so you can hear the Return effects. Each time you switch to a new HotTrack it will react to the *Shift-Key*, so you can switch the Returns On and Off at will as you jump around by pressing the *Shift-Key* or not.

* The Full Mixer colored section icons can now be used to vertical scroll E-Mixer sections, exactly like the section zones on the MT left edge. The dead zones just above the Full Mixer faders are also active zones for jumping to the fader sections.

* The E-Mixer popup Aux Label Display zones have been altered to only be active on the individual Aux Number text (1, 2, 3, etc.) and the main Aux Asgn text. This helps to keep the display from popping up when mouse aim slightly misses a switch or other active aux control zone.

* All MT Entry moves and copies have been enhanced to now include Automation and Control entries within any SoftEdge boundaries.

Bug Fixes
* Modified the BuildMix code to solve a crash that could occur when doing long mix builds (over an hour) using the Hi Resolution SRC options.

* Fixed the Load Preference function to properly load new Midi Controller Templates when changing preferences from within the program.

* Fixed code that could cause a crash when naming tracks under certain specific conditions.

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Version 1.4i

Enhancements
*   The Exploded Mixer View has been enhanced to accept the *Left* and *Right Arrow* keys and the *Mouse Wheel* to scroll through the mixer channels while keeping the E Mixer view active.

Bug Fixes
*   Modifications to the VST process routines to handle buffer size changes that come from other plugins patched in front of VST plugins that might otherwise crash.

*   Fixed live playback marked area updating in the MT to display correctly when zooming in and out.

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Version 1.4h

Enhancements
*   The Record Meter window scrolling has been enhanced. When the Record Meter window is smaller than the current number of active meters, you can now use the Shift-Key with the mouse wheel or left/right arrow keys to scroll an entire page of meters at a time.

*   Extended API functions for Midi WorkShop enhanced features. MWS Virtual Port Names are now passed back to SAWStudioBasic when using MWS version 1.5d or higher.

*   HotTrack Solo Mode has been enhanced to stay active through undo recalls.

*   The I, R and O zone functions have been enhanced to retain the last vertical offset for each module type when jumping to different types and jumping back.

Bug Fixes
*   The Clear Current Mixer Channel option on the Mixer Menu now correctly clears the current Mixer Hot Channel, rather than the last mixer channel clicked on. The clear operation uses the built-in default mixer settings and does not react to any saved default mixer template.

*   Adjusted code that stops automation entries at marked boundaries from disengaging when doing stretch/shrink automation operations.

*   Fixed code to stop MWS from playing back data when the SAWStudioBasic RecRdy and Record modes are activated with live inputs and no SRP playback engaged.

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Version 1.4g

Enhancements

Bug Fixes
* Adjusted message and dialog box code to free the cpu during the modal loop.

* Fixed Custom SampleRate entries to correctly accept values over 100,000.

* Fixed Goto Time Dialog keyboard function.

* Fixed EDL Undo Levels Dialog to correctly accept levels up to 99.

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Version 1.4f

Enhancements
* The Replace MT Entry (*Shift-R*) function has been enhanced to preserve automation entries if Automation Mode is active when you engage the operation.

* The BuildMix function has been modified to maintain the increased performance and no longer depend on the Windows Program/Application priority setting. The Windows Performance Optimize for Programs/Applications setting is still recommended for best overall SAWStudio performance, but you may now use the Background Application setting without destroying the BuildMix performance.

Bug Fixes
* Fixed Midi Controller Template routines to properly recognize the new Midi Templates.

* Adjusted Relative Tempo position calculating routines to correct for display problems and add more accuracy.

* Fixed the Marked Time to display correctly even when the MultiTrack is not the active window on an F-Key change.

* Fixed waveform display problems using .aiff files.

* Adjusted floating point accuracies for grid calculations.

* Hooked Mono settings for a Key Channel so keyed Dynamics and Fx are now properly following mono settings.

* Fixed Dynamics GR Meter to properly handle L/R Rvs Gate data.

* Fixed full zoom out on large displays from crashing.

* Fixed Region split functions from causing crashes when region names are near the max length of 127

characters.

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Version 1.4e
Enhancements
* A new option has been added to the MT Menu called *Disable Retake-All Function*. This option will allow you to disable the use of the Retake-All function helping you from damaging a session by its accidental use. When this option is active, the Retake-All command will be blocked. You must toggle this option OFF in order to re-use the Retake-All function. This option saves with the preferences.

* The Record Setup window will now respond to the <u>*Enter-Key*</u> for OK and the <u>*Escape-Key*</u> for Cancel as well as the mouse clicks.

* The Cue functions (*Q*, <u>*Shift-Q,*</u> <u>*Ctrl-Q*</u>) are now active from the Record Remote and Meter windows as well as the MultiTrack.

* The Regions View Insert button can now be used with the Alt-Key to force an insert and overwrite function, which inserts the currently selected Region View region to the current HotTrack at the MT cursor position and overwrites any existing data. If Automation Mode is active, then existing automation data is preserved.

* A new option has been added to the Select Mode popup menu called *Associate Selected In Regions View*. This option will select and hilite all Regions in the Regions View associated with all MT Selected Entries in Select Mode. A very easy way to visually select groups of regions for an export or rename operation.

* The Regions View Rename option now creates an undo file.

* Two new options have been added to the Regions menu called *Sequential Append Format " {001}"* and *Sequential Append Format " – 001"*. These two options work with the ReName Regions function and control what the sequential appended number format looks like. These options save with the preferences.

* The Native Plugins are now listed in the FX Choices View as {SAW}.

* The Shift-Insert command for adding Time Stamped Regions to the MT has been enhanced to force an insert, if necessary, overwriting underlying MT-Entries. This guarantees that the entry will be placed at the original Time Stamp.

* A new option has been added to the Mixer Menu called *Clear Current Channel*. This option clears the current mixer channel settings to default. If the current channel is part of a selected mixer group, all of the group channels are affected.

* The Control Track Midi Global Play function has been enhanced to control the SRP button when armed record meters are active. This means you can now remote trigger SRP/Rec mode from a midi keyboard assigned note, or Midi Controller Footswitch. This option will press the SRP button when record meters are

active (instead of the Play button) and can trigger record in two ways. A marked area auto punch section or by using the SRP/Rec latch option in the options menu.

* A new record feature has been added called *Multi-Take Loop Record*. This feature along with 2 other options can be found on the Retake Popup Menu on the Record Remote Panel. Activating Multi-Take Loop Record mode allows you to mark a punch-in/out area on the MT… place the start cursor position in front of the marked section to allow for some pre-roll time and then start SRP playback. When the punch-in area is reached, recording is engaged automatically and dis-engaged at the punch-out position. The region (or regions for multi tracks at once) will be stamped with the starting date and time and take number as well as the normal file or track label name. The system then automatically stops and restarts the process again at the original pre-roll start position and continues to loop, each time dropping new takes in the recording area. You can set a loop counter to stop after a certain number of loops up to 100, using the *Multi-Take Loop Record Count* option. When you stop the process or when the loop counter runs out, you will be left with the last complete take onscreen. The other takes are grouped together by the date and time stamp and it becomes an extremely easy process to lay any take group back onto the MT. Simply select the take number region of interest (or multiple regions for multi track recordings) and use the *Shift* key when you click the Insert To MT button, or press *Shift-Insert* on the keyboard. The region or group of regions will instantly insert themselves and overwrite the current set of regions at the original record position… nothing could be simpler… you can instantly lay down multiple takes of multiple tracks and even mix and match takes on different tracks. The insert of multiple regions lays down the tracks from the current HotTrack in order to the next track. Make sure to have the MT track order in a normal sequential order when using this insert feature to lay all take regions to their proper tracks at one time.

* The *B* and *E* keys are now active during MT Play mode. Pressing the *B-Key* starts a live marking update on the HotTrack, and pressing the *E-Key* stops the growing marked area. You may continue to press the *E-Key* to expand the area to the current cursor position. Pressing the *B-Key* again, starts the live update of a new area.

* Right-Clicking on the MT Play button will now toggle Live Input Mode.

* Opened up more functions in Live Input Mode like Marking Areas, Home, End, Tab, etc.

* Live Input Mode will now automatically be restored when play and record modes are stopped if Live Input Mode was active at the time the other modes were started. Rec- Rdy will now behave the same… If Rec-Rdy is active when you start SRP or Rec mode, Rec-Rdy will automatically restore when you stop the SRP or Rec operation.

* VST plugins now save their OnTop window status with the edls.

* VST Synth Plugs now have a new option in the VST Popup Options Menu called *Disable SoftSynth*. This option allows you to completely bypass the internal routing of a VST Synth plug and pass underlying audio track data through. This allows you to keep a patched synth on the track, but still record the data as audio on the same track and ignore the patched synth, while still keeping it in the edl with all its settings in case you need to make changes and re-record again. When this option is active a large Red X displays across the Blue Pyramid Options Icon. This option saves with the edl.

* Native support has been added for Frontier Design's TranzPort wireless remote controller. A lot of control

has been packed into this very small control box. The controls with this Midi Controller Template operate as follows:

The Track (Channel) buttons increment and decrement the track/channel. Used with the Shift key, they increment and decrement by 8 tracks/channels.

The Rec button toggles the record meter open/close for the current track. Used with the Shift key, it operates the record meters as a record template, allowing multiple channels to be armed or disarmed at once.

The Mute button toggles the mute on/off for the current channel.

The Solo button toggles the solo on/off for the current channel. Used with the Shift key, it toggles all active solos off.

When Record Meters are active, The Undo button will Retake To The Last Record Position. Used with the Shift key, it will Retake To The Cur Cursor Position.

The In and Out buttons will Mark Beg and End. Used with the Shift key, they will jump to the Mark Beg and End positions. When any marked area is active, the LCD displays a small hatch mark just after the time readout display.

The Punch button is used as a special Function button. When active, it causes the Scrub Wheel to act as a function selector scanning through different control types within the program. Used with the Shift key, it resets the current selected control type to its default value. The current selectable control types are: Layers; Fader; Pan; Aux 1 In; Aux 1 Pst Fdr; Aux 1 Lvl; Aux 1 Pan; Aux 2 In; Aux 2 Pst Fdr; Aux 2 Lvl; Aux 2 Pan; Aux 3 In; Aux 3 Pst Fdr; Aux 3 Lvl; Aux 3 Pan; Aux 4 In; Aux 4 Pst Fdr; Aux 4 Lvl; Aux 4 Pan; Aux 5 In; Aux 5 Pst Fdr; Aux 5 Lvl; Aux 5 Pan; Aux 6 In; Aux 6 Pst Fdr; Aux 6 Lvl; Aux 6 Pan; Comp In; Comp Gn; Comp Thr; Comp Ratio; Comp Rel; Comp Att; Gate In; Gate Rvs; Gate Thr; Gate Flr; Gate Rel; Gate Att; Dyn Key Listen; Dyn Eq Lo; Dyn Eq Hi; Dyn Key; Eq In; Eq LoCut In; Eq LoCut Frq; Eq HiCut In; Eq HiCut Frq; Eq Gn 1; Eq Frq 1; Eq Q 1; Eq Gn 2; Eq Frq 2; Eq Q 2; Eq Gn 3; Eq Frq 3; Eq Q 3; Eq Gn 4; Eq Frq 4; Eq Q 4; Eq Gn 5; Eq Frq 5; Eq Q 5; Mono; Swap LR; Phase Rvs; Attenuator;

When Record Meters are not active, the Loop button toggles Auto Rewind on/off. When active, regular MT Play will now jump back to the starting point when play is stopped. If there is a marked area, MT Play will continue to loop the marked area.

When Record Meters are active, the Loop button toggles Auto Record Loop mode on/off. SRP recordings will continue to create new takes of the marked area, looping back to the cursor position pre-roll starting point. Used with the Shift key, Auto Record Layer Loop mode is engaged, which will fill the layers with new takes on Lite and Full SAWStudio versions.

The Shift button is used as a momentary modifier key.

The Markers Prev button will jump to the previous Cue marker.

The Markers Next button will jump to the next Cue marker. Used with the Shift key it will toggle Live Input Mode on/off. Live Input Mode is displayed on the LCD display as a small single character level meter.

The Markers Add button will add a new Cue Location marker at the current cursor position. Used with the Shift key, it will delete any Cue Location markers at the current cursor position.

When the Selector Mode is not active, the Scrub Wheel will scrub the MT cursor position forward and backward on the timeline. The LCD displays the current time position in all timeline display modes. When the Selector Mode is active (the Punch button), it will select various control types for display and adjustment. Used with the Shift key, it will actually adjust the current control type.

The transport Rewind button will move the cursor position back 10 secs on the timeline. This function will auto locate the playback if active. Used with the Shift key, it will jump to the session Home position.

The transport Fast Forward button will move the cursor forward 10 secs on the timeline. This function will auto locate the playback if active. Used with the Shift key, it will jump to the session End position.

The transport Stop button stops playback, record and Live Input operations. Used with the Shift key, it will Save and Update the session edl. When a message dialog box is active, this key acts as a Cancel or No answer.

The transport Play button starts MT Play or SRP play operations. Used with the Shift key, it starts an MT Play PreLoad operation. When a message dialog box is active, this key acts as an OK, YES or Enter answer. The FootSwitch Jack emulates this button.

The transport Record button starts an MT Record operation. Used with the Shift key, it starts a RecRdy operation.

* Modified the older Midi Controller templates to control Return and Output channels when using the Navigation Link *Mixer Views To Hardware Controller* option under the Mixer Menu.

* Enhanced the DWave engine to handle 1 buffer at 64 samples with much more stablity than before and even be able to do 1 buffer settings on systems that could not do it before.

* Updated the Native Plugin API with a new function that allows a plugin to request the current TempoMap information.

* Patch Views will now remain on their current tracks when switching to the Video or Control Track in the MultiTrack.

* A new option has been added to the Library View File popup menu called *Insert Selected To MultiTrack*. This option inserts the current Library Entry to the MultiTrack at the cursor position and overwrites any underlying regions. This function can be activated by pressing *Shift-Insert* also when the Library View is the active window.

Bug Fixes
* Fixed Undo File partial loads which stops Fx plugins from reloading when undoing region and other edits that do not affect Plugins.

* Canceling an ASIO Preload and then restarting playback will no longer playback at the wrong speed.

* In the SoundFile View, the Ctrl-Up-Arrow or Ctrl-Dn-Arrow now correctly resets any display vertical offset, even if the offset is maxed to its limit.

* Fixed the SF View from following the MT Zero Locate setting.

* Fixed a problem with the Hi-Cut and Lo-Cut EQ filters which could cause them to change values internally when starting playback in Offset Mode, thereby changing the mix between the two modes.

* System crashes caused by linking and inserting Library view file entries with extremely long filenames has been fixed.

* Trapped for accidental Retake corruption. Anytime record settings that affect record files are altered, the Retake flag is now cleared to block accidental retakes that may affect the wrong files.

* The Smpte/Midi Menu, *Midi Control-In Active* and *Midi Control-Out Active* options now correctly remain off when an attempt to open the midi ports fails.

* Modified the VST TimeInfo code to help solve some problems with certain Tempo driven VST synth plugins.

* Fixed issues with multiple out assigns and input tracks containing region data that would cause buffer underrun errors when trying to initiate Live, Rec Rdy or Rec Mode, but would be fine in SRP or Play Mode.

* Fixed FX API Solo control to allow plugins to set solos on all Channel types. This now fixes the Levelizer Key Listen switch for Return and Output Tracks.

* Fixed the Tab function on the Control Track.

* Fixed SF waveform drawing which would cause zero data value pixels to remain behind on the display when using the vertical centerline shift feature.

* Code has been modified to leave the MT Cursor position untouched when aborting from certain Region Insert operations that warn of a conflict.

* Fixed the SF Rec button display to update correctly when views change and the SF Record Meters are active.

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Version 1.4d
Enhancements
* Added a new feature to the MultiTrack Insert Key command. Using the Alt-Insert Key in the MT now

inserts the currently selected Region View region to the current HotTrack at the MT cursor position and overwrites any existing data. If Automation Mode is active, then existing automation data is preserved.

* Added a new WheelMouse function to the MultiTrack and SoundFile View. Pressing the Ctrl Key with the WheelMouse will now operate the waveform vertical scaling function.

* The I, R and O Jump To Channel zones have been enhanced to eliminate jumping to blank module sections on the Return and Output channels. Whenever you jump to a different module type, the vertical offset is now adjusted to display the fader section of the module.

* Changed these info files to .rtf format for compatibility with the newer XP Service Pack 2 WordPad installs. The .rtf format is still compatible with older WordPad versions even back to NT.

* Pressing the T-Key in the SoundFile View will now transfer focus back to the MultiTrack window. If a region transfer from the MT was active, then the cursor position in the MT will be updated to match the current SF cursor position.

Bug Fixes
* Modified the Asio engine to correct for compatibility issues with some newer soundcard drivers. (M-Audio and DigiDesign products).

* Fixed Live Insert Fx patches from causing following Fx plugs to stop functioning.

* In Select Mode, the Left/Right Arrow snap/nudge function now creates an undo.

* Fixed DirX and VST Plugin FX Bypass switches so they now correctly display the current status when first opening the plugin window when automation entries have been written that alter the bypass settings.

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Version 1.4c
Enhancements
* The Exploded Mixer View is now dual monitor aware. When popped up from within the Full Mixer View it will maintain its position within the Full Mixer View even when that view is on the second monitor of a dual monitor configuration.

* The Record Meters are now dual monitor aware and will look to the right edge of the Main Window for its right-edge detection. If you stretch the Main Window background across both monitors, the record meters will now operate correctly on the second monitor or can be stretched across both monitors.

* DirectX and VST windows are now dual monitor aware and will look to the right edge of the Main Window for its right-edge detection. If you stretch the Main Window background across both monitors, DirectX and

VST plugin windows can be placed on the second monitor and will retain their positions correctly when the session edl is re-opened.

* Popup mixer control faders are now dual monitor aware and will look to the right edge of the Main Window for its right-edge detection. If you stretch the Main Window background across both monitors, these faders will retain their positions correctly even in mixer views placed on the second monitor.

* The build mix routine performance has been enhanced to speed up the process by about 10% – 15%.

* The *Ctrl-Tab* and *Ctrl-Shift-Tab* keys are now active in the Wave Automation Display mode as well as full Automation Mode.

Bug Fixes
* Adjusted code to fix inversed MT Track Labels from randomly not clearing correctly.

* Fixed Record Template code to maintain track offsets and source assigns in record templates where individual tracks are removed from an existing record template and a new one created.

* Fixed the Exploded Mixer View Compressor Gain Reduction Meter to now display properly at all E-Mixer positions and offsets.

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Version 1.4b
Enhancements
* A new enhancement has been added to the MT display. *Right-Clicking* on the **Wv** button or pressing the *Alt-W-Key* now toggles a display mode that shows automation entries dimmed overtop of the waveform normal display. This allows you to see automation entries while still being free to make control adjustments without actually writing automation data. A red outline around the **Wv** button indicates that this special view mode is active. When the normal Automation mode is engaged, the automation entries will display in full color over the dimmed waveform display and automation writing will be engaged as normal.

* Relative Time display is now active while dragging in the Timeline Ruler area when in Select Mode.

* The Library Import feature has been enhanced to allow marked boundary SoundFile adjustments to override the original Region boundary marks. If you double-click a Library EDL Region into the SoundFile View and then adjust the marks to a smaller or larger segment, the new marked area will be the area used when using the import function to bring the data into the current session.

* Two new options have been added to the File View Options Menu called *RePath Selected Entries Only* and *ReName Selected Entries Only*. These options allow you to modify the paths or names of the EDL file entires without modifying or altering any of the actual files on disk. This option then requires that you move or modify the files in question yourself. This option will warn you of any missing files directly after you alter the paths or names, if you have not already moved or renamed the proper files before changing the links

in the session EDL. These options only change the links in the EDL.

* A new enhancement has been added for MT playback of selected tracks. You may now select playback tracks by *Alt-Left-Clicking* on the Track Label. The label will inverse. You may *Alt-Drag* the mouse to continue selecting and the MT will scroll up or down. *Alt-Left-Clicking* a selected Label will un-select it. *Alt-Right-Clicking* any Label will un-select them all. This works the same as the selected Track Number function without causing group MT edits. The cpu load is reduced during these special playback modes because only the selected tracks are loaded into the engine loop, all other track data is completely ignored. The BuildMix function will respond to this track selection also as it does with selected Track Numbers.

* A small enhancement has been added to the Library Link option when in soundfile directory mode. The filename now ignores the file extension and uses just the name portion of the filename as the region name base.

Bug Fixes
* Increased the internal work buffers size to accommodate for the ever increasing parameter storage requirements of newer VST and DirectX plugins.

* The Aux Master Pans have been fixed when adjusting live.

* The Hi-Res SampleRate Conversion routines have been fixed to maintain proper sync in sessions which use multiple vari-pitched regions along the timeline.

* *Alt-Drag* to create and drop a new region from existing data on the MT now correctly responds to both SampleRate and Vari-Pitch when displaying the new region ghosted drop length.

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Version 1.4a
Enhancements
* Enhanced the Locate Point feature by adding the use of the NumPad keys to jump to the first 10 Locate Points. Pressing Alt-NumPad-Key 1-9 will jump to Locate Points 1-9. Pressing Alt-NumPad-Key 0 will jump to Locate Point 10. The use of the NumPad keys for zoom are still intact and the use of the Ctrl-NumPad keys to adjust waveform vertical scaling are also still intact.

* Increased the accuracy of the meter data collection routines to check every data sample for clipping. This now guarantees that peak display lights will catch even a single clipped sample rather than a previously required 4 sample overage. This does increase cpu load slightly, but hopefully will not cause any problems. The increased display accuracy should be worth the trade-off.

* Moving and copying MT-entries has been enhanced to allow a forced insert mode. When grabbing and moving MT-Entries, you can force an insert and overwrite condition for conflicting entries at the destination

by pressing the Alt-Key as you release the mouse to finish the move. Normally the entry conflict will cause the moved entry to snap and butt-splice to the front or back of the conflicting entry, depending on the overlap condition.

Bug Fixes
* Fixed a possible crash bug in the new eq code introduced in 3.9.

* Extended work buffer sizes even larger to correct for some of the new VST plugins that extremely large buffer storage requirements for their parameter settings.

* Fixed marked area display from disappearing after changing to a new Shade.

* Adjusted code to properly maintain compressor release values when dynamically raising compression threshold during playback.

* Fixed the Recent SoundFile List to loop back around after removing an item using the Shift-Left-Click option.

* Fixed crashes that could occur with grid cursor snapping across time signature changes less than quarter note denominators.

Eq PlugIn Module Version 1.9
* Corrected code that could cause track changing commands (arrow keys, wheel mouse etc) in the MT to stop working when the plugin is displayed with multiple plugins patched.

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Version 1.4
Enhancements
* Added VST Time Info support for tempo syncing VST synth plugins to the TimeLine.

* The File View has been enhanced. The RePath and ReName File Entry features now actually re-locate and/or rename the actual files also, and automatically saves and updates the session when closing the File View window.

* A slight change has been made to import and auto-drag-and-drop region names. The brackets and file extension are no longer included when default region names are created from existing filenames.

* Extended the *A-Key* (Automation Mode Toggle) and the *O-Key* (Offset Mode Toggle) to all mixer views.

* The popup Locate Menu has been enhanced. You can now Set, Clear and Rename Locate Points from the popup menu. You can also use Shift-Click to set a point directly or Ctrl-Click to clear a point directly. When setting a point, the Name Dialog now automatically pops up to facilitate setting and naming in one quick operation. You may set and name live during playback. Locate points now display the position in the current

timeline format.

* Enhanced the Cue Location feature. The Cue Location dialogs will now popup even when playback is active. The dialog has been enhanced to accept keystrokes for the Name (N-Key), Parameter Data (P-Key), Midi Trigger (T-Key), and Midi Note On/Off (O-Key). This will help speed up live-on-the-fly Cue Location entries.

* New code has been added to activate a complete forced Engine Shutdown to hopefully allow you to recover from most driver or audio engine lockup conditions. Pressing the _Break-Key_ (labeled _Pause_ on many keyboards) will force all engine threads to shutdown in sequence to break the engine out of a locked play loop. A _Forced Engine Shutdown_ message will display on the screen while the program attempts to reset the threads to a stable condition. If the engine is in a locked play condition and you attempt to stop multiple times back to back, it will force this Shutdown routine into action also.

* Default settings for the Aux Sends and the XY Center and XY Sub have been altered to drop to inf.

* Active Control ReadOut Zones have been enhanced for quicker control operation. Many controls that required the push/pull scrolling operation for adjusting the control settings will now popup a variable sized fader for instant and direct adjustment with a fader knob. The fader will adjust its length to fit the exact number of parameter values available for the control. When you release the mouse, the fader will disappear. The fader will popup to the right of the control zone to allow the readout to be used as a visible reference while you adjust the value. The mouse will automatically jump to the current fader position and return back to its original position when the fader disappears. Control zones that already have an associated built-in fader will continue to operate in the original push/pull fashion if grabbed in the ReadOut zone area.

* MultiTrack Tab will now function in Live Input Mode.

* A new option has been added to the Mixer Menu called _Mixer Hot Channel Color_. This option allows you to set the Mixer Hot Chan display color by designating an RGB color. Use your favorite Windows graphics program color picker chart and find the RGB values for your color choice. Enter these three values, separated by commas into this option to change the color of the highlite bars that display the Mixer Hot Channel. This value saves with the preferences.

* Enhanced some of the device assignment error messages to designate the troubled device or track, which should help when chasing down assignment problems.

* A new enhancement has been added to _Automation Mode_. Right-Clicking the _Aut_ button displays a popup filter menu of every automation data type. Selecting one of these options sets the _View Filter_ On for that data type. If the _View Filter_ is active when displaying this menu, the current filter data type will be checked. A special feature allows all Fx PlugIn automation data types to be shown at once if the cursor position is not directly behind an Fx automation data type when selecting this option. If the last tracked data type is an Fx automation type, only that specific type will be displayed.

* A new option has been added to the Automation Menu called _Disable Automation_. This option allows you to disable all automation and reset all channel controls back to the starting default condition. This can be used live during playback for comparison purposes also. You can also activate this option by pressing the _Shift-A-Key_ or by holding the _Shift-Key_ down while _Left-Clicking_ the _Aut_ button.

* The _L-Key_ Live Mode Toggle has been extended to work in the MultiTrack View also.

* A new option has been added to the Driver Model submenu called *Record LoopBack Latency Adjust*. This option can be used to compensate for latency values resulting from a loopback recording through your soundcard and converter chain. You can test and set this option by playing back a single track of transient audio material, like a drum track, and looping the playback signal around and back to the soundcard inputs and recording the same signal on the adjacent track. In an ideal situation, the two signals should line up perfectly when looked at in a zoomed in display. In reality you will probably see the recorded signal is late by a certain number of samples. You can zoom in and mark the difference between two identical transients, set the timeline to sample mode and notice the value in the Marked Area readout display. Set this value into this Latency Adjust option and then try the test again. Adjust this value so that the resulting recordings are perfectly lined up. You should then be able to change buffer sizes and not affect the accuracy of the recordings. If you change external converters or soundcards or even driver models, you should reset this value, or set it back to zero. If set incorrectly, you could actually cause the resulting recordings to be placed in front of the original source material and mess up recording sync. It is arguable whether this test is an acurate representation of real recording sync for live overdubbing, but the option is here if you are so inclined to use it. If not interested in using it, make sure to set the value to zero.

* The Phase Switch has been enhanced to now include phase reversal on both channels of a stereo track or just the Left or Right channels only. Left-Clicking to the left of the switch itself will display a popup menu of choices. This can be real useful when a stereo file contains left and right signals that are out of phase. Playing such a file in mono will cause the signal to cancel badly. Using the Left Only or Right Only phase reverse can instantly solve this problem.

Bug Fixes
* Trapped Plugin param data buffers that are larger than the internal max buffer size from crashing edls and Mix Templates.

* Modified routines to allow patching plugins live during playback that are slow to initialize without causing buffer overruns or crashes.

* Modified code to help popup ASIO control panels for certain ASIO drivers that would not react to SAWStudio's ASIO Driver Setup function.

* Corrected code that could cause sustained waveforms to cut off prematurely under certain buffering conditions and certain eq settings. This fixes pops and clicks that could be caused by that condition.

* Adjusted code to handle auto stopping at the end of the session even if there are channels that are unassigned to a valid output.

* Fixed MT Cursor from disappearing after moving the MultiTrack window.

* Eliminated crashes that could occur when grabbing knob controls when the top range of knob motion is off the top of the channel view by trapping the ability to grab the knob under these conditions.

* Saving and recalling Record Meter Templates will now work correctly even with re-ordered tracks in the MultiTrack.

* The Automation display is now correctly updated when using the R command to split and remove MT entry data that may have contained automation entries.

Eq PlugIn Module Version 1.8
* Corrected code that could cause sustained waveforms to cut off prematurely under certain buffering conditions and certain eq settings. This fixes pops and clicks that could be caused by that condition.

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Version 1.3a
Enhancements
* The Dynamics Gate Threshold, Gate Floor and Compressor Threshold waveform display reference lines have been enhanced to track the Input Attenuator control for the channel that is keying the dynamics data. Even though the waveform display itself does not change in regards to the Attenuator control, the reference lines are now properly offset to display the an accurate reference to the full scale waveform data.

* A new option has been added to the FX Choices View Group menu called *Set Cur Group As Default*. This option displays the current default group and will change it to the currently active group when selected. The default group will be the active group when the program first starts.

Bug Fixes
* Trapped record activation with open record meters not assigned to legitimate input devices.

* Stopped the SnapShot Undo command from clearing the EDL Modify flag, so the prompt to save modified sessions would work correctly when changing sessions or exiting the program with un-saved session changes.

* Closing a session now correctly resets the Midi WorkShop default tempo.

* The Control Track Cue Location / PreLoad and Cue Location / Play commands are now correctly accepted as plain Cue Location commands when used following any of the Stop / Cue Next commands.

* The Clr button in the Pre and Pst FX patch views now correctly responds to selected Mixer Channels instead of selected MT Tracks. This is considered a mixer function rather than a MT function. The mouse cursor will now display CHN as the cursor is moved over the Pre and Pst Client top area to reflect the fact that mixer channels are selected.

* Adjustments made to keep the SoundFile view from popping up on top of other windows when using the *BuildMix To HotTrack* function and there is an active soundfile already opened.

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Version 1.3
Enhancements

* A new option has been added to the MultiTrack Menu called *Record-Mark Display*. When this option is active and MultiTrack Record is engaged, each record track will display a growing red mark area designating the actual record region areas. These areas will be replaced by the recorded regions when record is disengaged.

* The File Read routines have been enhanced to accept a full DWORD position rather than the half Signed DWORD position. Max file lengths that can be correctly handled have now been doubled.

* The MT Load display has been increased in resolution for a more accurate result at very small buffer sizes. The readout display flickering has been smoothed to remain a little more stable between large value shifts.

* A new enhancement has been added to *Select Mode* moves and copies. If the Control Track is selected, any audio or video selected entry moves or copies will now include all Control Track entries within the range of selected entries from the earliest start position to the latest end position.

* A new enhancement has been added to adjusting MT-Entry boundaries. When using the Alt-Drag or the U-Key methods, adjusting MT-Entry boundaries will now function on all selected tracks, for a quick multiple track manipulation of splice points. Be careful that all selected tracks have associated entry boundaries at the adjustment point, or you may obtain unexpected results on certain tracks.

* A new enhancement has been added to the X-Key softedge crossfade feature. This function will now operate on all selected tracks. Be careful that all selected tracks have associated entry boundaries at the cursor point, or you may obtain unexpected results on certain tracks.

* The Drag And Drop Region and Library entries function has been enhanced to properly handle horizontal and vertical scrolling in the MT by using the *Right-Hold* Horz/Vert Scroll Modes, and zooms.

* The Drag And Drop Region and Library entries function has been enhanced to allow the entry to cut into and insert itself over the top of existing entries at the drop position by *Shift-Left-Clicking* to drop the entry. If *Automation Display Mode* is active, current automation entries at the insert position will not be disturbed, otherwise, automation entries at the insert position will be cleared.

* The Build Mix dialog window now responds to the *Enter-Key* for *OK* and the *Escape-Key* for *Cancel*.

* A new enhancement has been added to the Compressor and Gate Threshold Display Lines. If the channel has a Key set to another channel, the Threshold Display Lines will display on the Key Channel for accurate reference to what is actually keying the dynamics.

* The Blend Session function has been enhanced to now include Control Track data.

* The *Shift-BackSpace* key may now be used in *Automation Mode* to snap the back end of marked automation entries to the cursor position.

* A new option has been added to the Control Track Built-In Commands list called <u>Cue Beginning / Play</u>. This command loops back to the beginning and initiates playback immediately.

Bug Fixes

* Fixed Record Device lock-outs from clearing in-devices that are assigned to multiple channel modules when changing the assignment on one of those multiple channel modules.

* Fixed Mix Template to properly open DirectX PlugIns from earlier template files.

* Auto Punch record length is now correctly adjusted when Live Inputs are active.

* Stopped XYPan Mute nodes from interfering with XY positioning information.

* MT PreLoad operations now correctly maintain the current window focus.

* The SoundFile View is no longer forced ontop after a Build Mix To Current HotTrack operation if it was not already visible.

* Window focus is now maintained correctly after a SnapShot Session command.

* Refreshing or deleting entries in the File View Window will no longer clear the warning flag from re-pathing or re-naming entries.

* The Red OutLine of the Aut button is now correctly redrawn after minimizing the program or when the screen area is covered and re-exposed for any reason.

* Adjusted code to correct a possible ClipCursor function call failure in Windows 2K and XP on certain machines which could cause crashes when grabbing a knob in a window that is not currently the active window.

* Fixed a sync issue that could occur for following entries when starting playback in an entry's End-SoftEdge tail, that happens to extend beyond the end of file for that entry, which is also being vari-pitched or samplerate converted.

* Fixed code that could cause a flash of the hand cursor at the top of the E Mixer View before locking the hand in the control zone, when grabbing any horizontal knob.

* SRP Punch-ins with live inputs now correctly maintain sync between mono and stereo sources.

* Device Ins are cleared correctly now when using the *Right-Click Set To Default* method for Input Channel Sources and Return Channel Sources.

* Corrupt regions with Memory Region Caching that could be caused with SRP Punch-Outs and live inputs have been fixed.

* Fixed code to correctly set patched plugins starting automation when playing back using the Automation

View Filter.

* Trapped the Automation View Filter toggle during playback.

* Moving marked automation entries now correctly holds the mark when the screen is scrolled horizontally.

* Moving marked Control Track entries now correctly holds the mark when the screen is scrolled horizontally.

* Slipping a marked track area now correctly holds the mark when the screen is scrolled horizontally.

* Adjusted code in the Echo plugin to correct a possible ClipCursor function call failure in Windows 2K and XP on certain machines which could cause crashes when grabbing a control.

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Version 1.2b
Enhancements

Bug Fixes
* Fixed Dynamics Compressor problem that could cause distortion at certain combinations of threshold and ratio settings when using low latency buffer sizes. This fix also delivers more consistency at low latency buffer sizes.

* Fixed output subgroups from being delayed when live inputs are assigned.

* Fixed Live Returns from loosing sync when preload buffers have been set to 4 or more.

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Version 1.2a
Enhancements
* A new option has been added to the File View window popup Options menu called *Delete Selected Entries*. This option will delete file links from the session. If there are any connected Regions and MTEntries, you will be prompted to continue or not.

* The File View window now places a'#' character next to Audio File listings to denote an orphan file in the session. This is a file link that is not connected to any regions and therefore safe to delete with the above option.

* The *R-Key Split/Remove Left Entry* feature has been enhanced with the addition of the *Alt-R-Key Split/Remove Right Entry* feature. This splits at the cursor and removes the entry to the right of the cursor position.

*   The D-*Key Split/Delete Left Entry* feature has been enhanced with the addition of the *Alt-D-Key Split/Delete Right Entry* feature. This splits at the cursor and deletes the entry to the right of the cursor position, pulling all following butt-spliced entries forward.

Bug Fixes

*   Fixes memory allocation buildup problem as undos are recalled, created by the parsing undo routine introduced in 1.2.

*   Adjusted the extended delay before shutdown when playback reaches the end of the session in the MT or the end of the SoundFile in SF caused by the new threading technique changes in version 1.2.

*   Fixes SoundFile View file corruption that could occur when re-building mixes to HotTracks with the destination file open in the SoundFile View.

*   Trapped range marking functions in *Select Mode* that were not supposed to be active when *Select Mode* was engaged.

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Version 1.2

Enhancements

*   A new breakthrough in the engine threading technique now allows incredible latency perfromance gains. MME performance with RME Hammerfall cards can now accept 2 x 64 sample buffer settings for awesome latency results. This modification should also benefit most other soundcard MME performance depending on driver capabilities. RME ASIO settings will now also function at 1 x 64 on good machines.

*   Enhanced the F-Key restore routines to bypass certain Windows functions that were blocking some of my High Level threads. This results in drastically better performance with less interference at very low latency settings.

*   The undo function has been enhanced to now parse for File, Fx, and Midi changes and skip these sections if possible. This enhances the recall undo performance considerably when VST synths are part of the session.

*   The Return Track Solos have been enhanced to maintain the in-place solo feature while still allowing pre and pst aux send channel information to reach the return bus. Now you may solo Return tracks and hear the blend of all aux send information coming through that track.

*   A new option has been added to the *File View* popup menu called *ReFresh Selected Entries PeakData Files*. This option will force a peakdata refresh on all selected files. Use this option after first opening an edl file created outside the SAWStudio environment such as one created from the Edl Convert Pro program. In most cases, PeakData files are not created by external SAWStudio edl manipulation programs and will need to be created in SAWStudio in order to see waveform data in the MultiTrack under most zoom conditions.

*   A new feature has been added to the Exploded Mixer view. *Left-Clicking* in any of the non-active areas of the *Aux Send* section of the modules will popup a list of the *Aux Send Labels* for reference. You may *Left-Click* anywhere in the menu to close it. No action will be taken, the list is for reference only.

*   A new option has been added to the *Mixer* menu called *Link Mixer V-Offset To F-Keys*. When this option is ON, the *Exploded Mixer* response to F-Keys remains as it has always defaulted in past versions. The vertical offset position along the module is linked and restored with the F-Keys. When this new option is OFF, the vertical offset is ignored when F-Keys are restored and the modules will remain in their current section position, for example, if you are scrolled to the EQ section, now jumping to other F-Key views will leave the *Exploded Mixer* still at the EQ section. The vertical offset position will always be saved with new F-Keys, but ignored during the restore when this option is OFF.

*   Removed the ONTOP status of the Exploded Mixer view so it would not interfere with the Midi Workhop and other displays.

*   Added Asio support for Smpte Generate.

*   Re-activated and corrected Waveform Threshold display lines for Dynamics in Automation Mode.

*   Record Meter Peaks may now be cleared by *Left-Clicking* anywhere in the meter LED display area.

*   *Control Track* Cue switching is now active during *Live Input Mode*. This allows preset automation entries to be set along the timeline and jumped to when using the virtual console as a live PA console. Cue entries can set for each song or song segments and you now have the ability for unlimited snapshop automation recall.

Bug Fixes

*   Fixed crash that could occurr when *Right-Clicking* a region from the Regions View which had no peakdata file. The peakdata file is now correctly built before the region playback begins.

*   SoundFile View Recording Level is now correctly defaulted to zero db.

*   Fixed code that could cause a playback crash under certain conditions when all Input, Return, or Output tracks were assigned in a mix.

*   Trapped illegal assignment and XYPan switches from getting placed into the automation database when using the Blend Session function.

*   Edl sessions are now automatically scanned when opened to strip illegal automation data and also reorder the position information properly.

*   Fixed a problem which caused all TopMost windows to change to Non TopMost when canceling one VST window's TopMost flag.

*   Modified code to allow a hidden Non TopMost VST window to be brought to the top by *Double-Clicking*

it's entry in the Fx Patch views.

* Fixed code to send TempoMap Sequential Measure Change info correctly to Fx plugins and the Midi WorkShop.

* Current tempo information is now correctly updated in the Midi WorkShop every time Tempo TimeLine Mode is engaged.

* HotTrack Solo mode is now switching correctly when using the I, R, and O zones.

* HotTrack Solo mode now correctly clears when closing a session or opening a new session.

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Version 1.1b
Enhancements
* Modified the buffer flush routine for VST plug-ins to improve engine stop time for certain VST plug-ins. Also included the cursor change to the waiting icon while the buffers are flushed.

Bug Fixes
* Fixed code for buildmix operations which use the hi-res SampleRate Conversion routines to stop compatibility interactions with certain patched plug-ins that use the floating point processor. This fixes buildmix operations that would cause maxed-out results in the mix file.

* Blocked Threshold lines from displaying in the MultiTrack View when Automation Mode is active.

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Version 1.1a
Enhancements
* Slowed down the mixer settings scrolling adjustment mode to be less sensitive to small mouse changes resulting in an overall feeling of more control.

* The SRP/Rec latch operation has been enhanced to automatically detect a marked area and override the latch function for auto punch-in at the marked area.

Bug Fixes
* Adjusted SRP punch-in code to help eliminate Record Buffer Overruns under certain conditions on certain systems.

* Fixed crashes that could occur when importing SAWPro sessions under certain conditions.

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Version 1.1

Enhancements

*   The *Input* zone on the *Record Meters* has been enhanced with two new options. *Adjust Input Level* and *Reset Input Level*. These options can be used to adjust the actual signal level of the recorded data on the way to the harddrive. Even the level of digital input sources can be adjusted here. Both of these options are available while recording is active or inactive. If you change a record meter to another track by using the popup *Track* zone, the current input level will be transferred to the new track. If you *Shift-Left-Click* any record button to clear input assignments back to default, all input levels will be reset also.

*   Track and Mixer Chan Labels may be entered now even while playback is active. If Record Meters are open, the engine must be stopped to enter labels due to the already opened and linked record files.

*   Pressing the *Alt-B-Key* or the **Alt-E-Key** will mark an entire MT Entry including its softedges.

*   MT Automation Entries will now maintain their relative positions within a Vari-Pitched entry if the VP Factor is later changed.

*   A new option has been added to the *Options Menu* called *Auto Record/SRP Latch*. When this option is activated, clicking the SRP button will also latch and engage the Rec button. Pressing the *Shift-Key* when engaging the SRP button will overrdie this option. When this option is not engaged, the SRP button works independently UNLESS the *Shift-Key* is also pressed. This option saves with the preferences.

*   The *BuildMix To Current HotTrack* has been enhanced to add the destination track label or track number to the default output files.

*   Added Soft Clipping Detection into the Hi-Res SRC algorithm to eliminate wrap-around clipping problems when using the Levelizer near max percentages with the Hi-Res SampleRate conversion.

*   A new option has been added to the *Control Track Options* Menu called *Output Bypass*. When this option is selected, all Control Track output data is suppressed and. the listbox will display as dark gray. The listbox will still chase current entries and can be still be used for Cue Location points.

*   Opening a session with an attached Library edl that has pathing problems will now notify you in the warning dialog that the problem is in the Library session as opposed to the main edl session.

Bug Fixes

*   Fixed the code to trap certain problems that could occur when opening complex SAWStudio and StudioLite sessions into Basic.

*   Library Views will no longer clear open Libraries when selecting the *Open Edl Library* or *Open Diectory Of*

Wav Files prompt if you cancel the operation from the Open File Diaolg.

*   Placed a trap into the Control Track Handler that should help eliminate crash problems under certain conditions when stopping directly on a Control Track entry.

*   Modified punch-in routine to maintain track sync when recording multiple tracks from virtual console channels as inputs.

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Version 1.0 Initial Release

Enhancements
*   This represents the first public release of the product. Most of the basic elements and operation details are covered in the built-in HelpFile... PLEASE READ IT.... it will greatly enhance your experience. This is a complex environment, but one which is extremely rewarding once learned.

Bug Fixes
*   This release includes all known bug fixes up through the SAWStudio version 3.5 release.

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