



New Functions and Options in the current Release of SATlive

New Functions and Changes in the current Version

New Functionality and Changes in Version 1-40-32

Improved Delay Matrix

The **delay matrix** shows up to seven time values and the difference in time between each of them. You can also add a fixed delay to the values, in order compensate for a change in the reference delay after the measurement of the delay values.

Values used

The delay matrix always contains the current position of the cursor, which is labeled **C**.

Depending on how it has been invoked, the delay matrix contains six more entries, which are labeled with the numbers **1** to **6**.

	1	2	3	4	5	6	C
1		5.10ms 5.55ft	8.44ms 9.17ft	-2.00ms -2.17ft	-2.00ms -2.17ft	-2.00ms -2.17ft	221.77ms 241.05ft
2	-5.10ms -5.55ft		3.33ms 3.62ft	-7.10ms -7.72ft	-7.10ms -7.72ft	-7.10ms -7.72ft	216.67ms 235.50ft
3	-8.44ms -9.17ft	-3.33ms -3.62ft		-10.44ms -11.34ft	-10.44ms -11.34ft	-10.44ms -11.34ft	213.33ms 231.88ft
4	2.00ms 2.17ft	7.10ms 7.72ft	10.44ms 11.34ft		0.00ms 0.00ft	0.00ms 0.00ft	223.77ms 243.23ft
5	2.00ms 2.17ft	7.10ms 7.72ft	10.44ms 11.34ft	0.00ms 0.00ft		0.00ms 0.00ft	223.77ms 243.23ft
6	2.00ms 2.17ft	7.10ms 7.72ft	10.44ms 11.34ft	0.00ms 0.00ft	0.00ms 0.00ft		223.77ms 243.23ft
C	-221.77ms -241.05ft	-216.67ms -235.50ft	-213.33ms -231.88ft	-223.77ms -243.23ft	-223.77ms -243.23ft	-223.77ms -243.23ft	

Under balcony 1:	10.438ms	11.34ft	12.438ms	<input type="text" value="2.000"/>
Left:	2.000ms	2.17ft	4.000ms	
Difference:	-8.438ms	-9.17ft		

Time markers

If you invoke the delay matrix from the marker menu, either in

the IR module or in the impulse-response measurement in the MAT module, the six time markers are loaded into the delay matrix.

Delay presets

If you invoke the delay matrix from the menu Delay Preset in the MAT Module, than the values and labels of the six delay presets are loaded into the delay matrix.

In this case you can edit the label of a delay preset by clicking on its number using the *right* mouse button.

The Display

The upper Area

The upper area of the window contains a matrix that shows the difference in time and the distance calculated from the difference in time, related to the values assigned to the column and row.

You can select a cell by a mouse click.

The lower area

If a cell is selected, then the lower area shows more details about the entries assigned to the row and column.

If you select a cell in the left most column or in the topmost row, the lower area shows the information assigned to this entry. If you select an other cell, the information of both, column and row is shown in the lower area. The two upper lines contain:

- The label of the entry.
- The time value assigned to the entry
- The distance, calculated using the time value.
- The modified delay value, which is the sum of the time value and the offset value set by the time editor on the right.

The bottom line shows the difference, both in time and distance.

New Functions and Changes in the current Version

Delay Presets improved

The delay presets ease the handling of multiple delay values.

- There are six delay-presets available.
- Each delay-preset contains the delay – time value and a short label.

Assign a Time Value

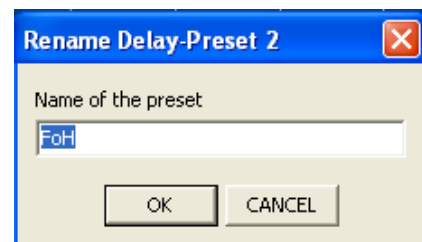
You can assign a time-value to a delay preset in three different ways:

- In the IR module use the *Save Delay to Preset* entry in the pop-up menu assigned to the trace-display area to assign the current position of the cursor to the preset.
- In the delay finder use *delay-preset buttons* on the upper right area in the window to assign the delay to a delay preset.
- In the MAT module you can use the entries of the *Delay Preset* sub menu to assign the currently used delay value to a delay preset.

During the assignment, a small window pops up, where you can edit the label of the delay preset.

Please note that if you choose CANCEL the new value is not assigned to the delay preset.

In order to assign the delay, you need to click on OK in this window, even if you did not change the label.



Where to use

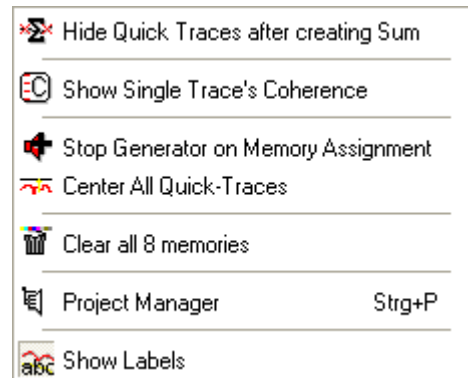
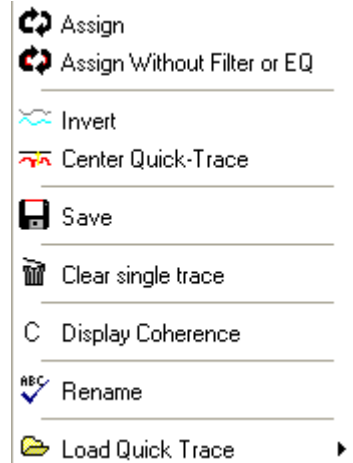
You can use the delay presets for different tasks:

- Recall a previous assigned delay value in the MAT module by the selection of a delay preset in the pop-up menu of the delay section.
- Use the *delay matrix* to calculate the difference in time between different delay presets.

New Options for Quick-Trace

The options Center Quick-Trace and Invert have been added to the pop-up menu of each Quick-Trace.

- *Invert* flips the display of the Quick-Trace on the 0 dB line. This might be helpful if you want to set an equalizer to compensate the response of the Quick-Trace.
- *Center Quick-Trace* changes the offset in a way that the averaged value of the Quick-Trace centers at the 0 dB line. If you click again on this entry, than the previous offset value is restored. To move a Quick-Trace vertically select the Quick-Trace as the selected trace and move it using the offset setting in the right menu-area.
- You can use the *Center all Quick-Traces* entry in the sub-menu Settings and Tools located in the pop-up menu of the Sum-Trace to change this setting for all eight Quick-Traces at once.

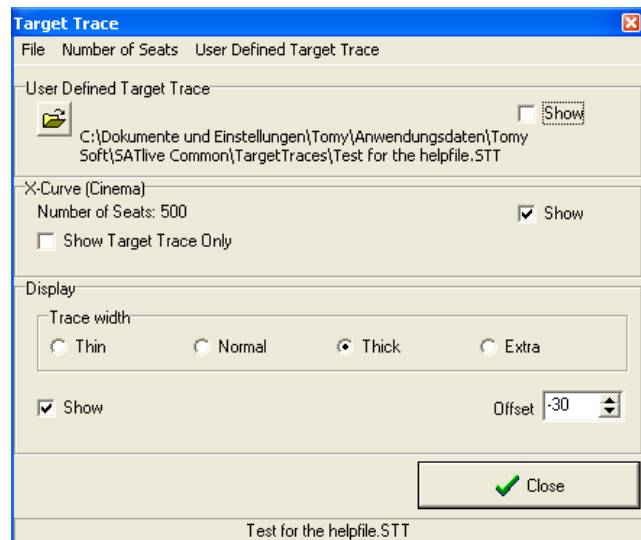


New Functions and Changes in the current Version

Target-Trace Editor changed

The editor-window used for the target-trace has been changed. The editor window contains settings to customize the display of the Target Trace.

The editor-window contains a menu area at the top, three areas in the main window, and a so called status-bar at the bottom of the window.



The menu area

The menu area is located at the top of the editor window of the target-trace.

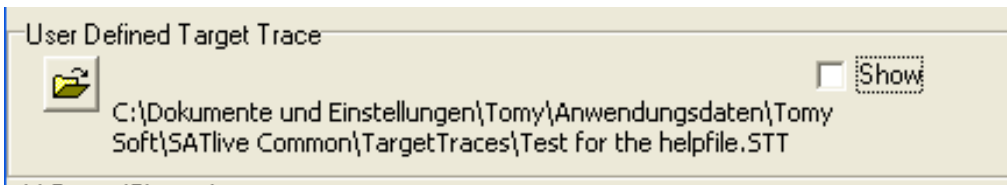
File Number of Seats User Defined Target Trace

- **File:** This section contains the entry *Close*. This entry closes the editor-window. You can also use the button *Close* in the lower are to close the editor-window.
- **Number of Seats:** This section contains a selection, where you can choose the room-size defined by the number of seats. The *X-Curve* target-trace uses this settings to adapt its shape to the room-size.
- **User Defined Target Trace:** This section contains two entries.
 - **Load Trace:** You can use this entry to load a target-trace into **SATlive**.
 - **Edit:** Use this setting to invoke the Target-Trace Builder to create or to change a target-trace.


The main window

The main area of the editor-window for the target-trace is divided into into three areas. Each is marked by frame and has its label on the upper right corner.

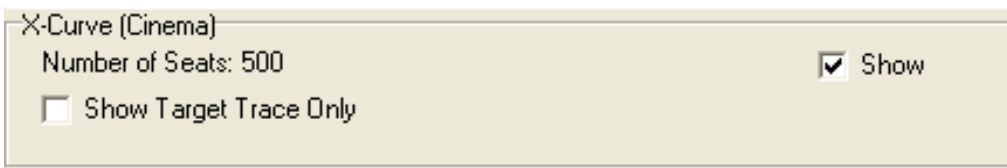
The upper Area: User defined Target Trace



This area contains information and settings assigned to the user defined target trace.

- The button *Folder*  opens a file selection where you can select the target-trace you want to load.
- The option *Show* on the right selects the user-defined target-trace as the target-trace to show. Selecting this option removes the selection from the *Show* option in the X-Curve area.
- On the bottom of the area you can see the full path to the currently loaded user-defined target-trace.

The middle Area: X-Curve

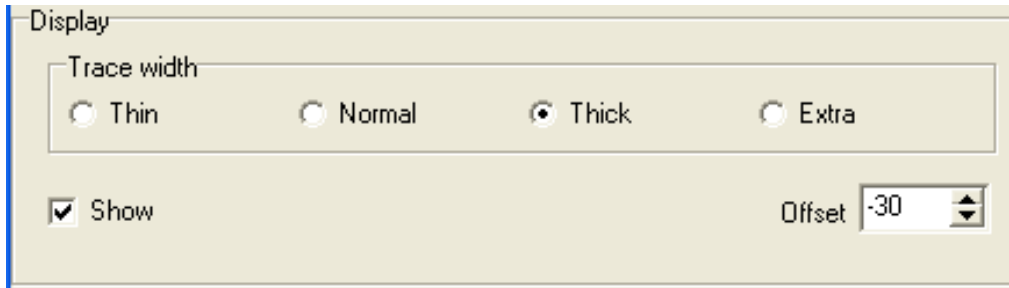


This area contains information and settings related to the *X-Curve*.

- On the left you see the setting selected in the *Number of Seats* section of the menu bar. This value is used to determine the size of the room.
- The *Show Target Trace Only* option hides the display of the range of tolerance. As the X-Curve itself the range of tolerance varies according to the size of the room, which is defined by the number of seats setting in the top menu area.
- The option *Show* on the right selects the X-Curve as the target-trace to show. Selecting this option removes the selection from the *Show* option in the User Defined Target Trace section of the window.

New Functions and Changes in the current Version

The bottom area: Display



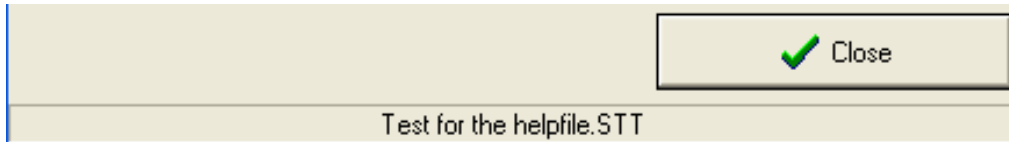
This section contains the settings which are used for the display of the current target-trace. Select the kind of target-trace using the *Show* options in the both sections assigned to each of the traces.

- Use the selection *Trace width* to choose the width of the line used to draw the target-trace. This setting does not affect the drawing of the area of tolerance.
- Use the *Show* option to display or to hide the target-trace. There are other ways to show or hide the target-trace as well.
- You can use the *Offset* setting to move the target-trace and the area of tolerance vertically.
- The status-bar at the bottom of the window shows the name of the user defined Target Trace currently loaded.

Hints:

- All changes are applied immediately
- You can change the colors used to draw the target-trace and the range of tolerance at *Setup* → *Display* → *Colors*.

The bottom of the Editor-Window



Use the *Close* button to close the editor-window. You can also find a *Close* option in the File section of the menu bar.

The status-bar at the bottom of the window shows the file-name of the user-defined target-trace currently loaded.

Bugfixes

There are a lot of bug-fixes and internal improvements. Some of them are mentioned below:

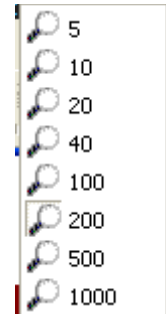
- Quick-Traces not working correctly with standard - FFT traces.
- Failure to initialize an ASIO driver blocks all ASIO drivers.
- Under some conditions the changed I/O settings have not been applied.
- RTA display goes crazy with certain menu-bar positions.
- Wrong position of the latched cursor in lower window of the IR-response measurement.
- -3/-6dB guide lines not shown correctly in MAT Transfer-function when shown full-size

New Functions and Changes in the current Version

New Functionality and Changes in Version 1-40-30

Added variable zoom to the Impulse – response measurement (MAT)

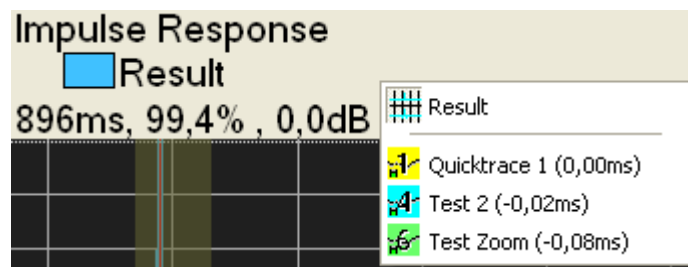
- The zoom factor used for the lower display area is now variable.
- Use the entry IR Zoom Factor in the menu Tools or click on the display of the current zoom factor located on the lower right area of the display to change the zoom factor.
- The zoom area is always centered at the time – value zero.
- The area shown in the lower trace is indicated by a color overlay in the full trace display area.



Added the Show Value Of functionality to the impulse – response measurement (MAT)

The *Show Value of* functionality has been added to the impulse – response measurement.

- You can read the value of each trace currently displayed.
- The function *Set on Peak* works for Quick Traces also, setting the cursor to the peak of the currently selected trace
- The name of the currently selected trace is shown in the area above the display.
- Use either the key T to select the next trace displayed or select the trace whose values you want to see from the Show Values of entry in the pop-up menu of the trace display area.
- You can access the show values of sub menu by clicking on the name of the trace in the area above the display.
- The names of the traces currently displayed are shown in the upper right area of the



display.

Two new shortcuts for Impulse – Response measurement (MAT)

- The shortcuts **shift + P** and the shortcut **ctrl + D** (to have the same shortcut both in transfer-function and impulse – response measurement). Both shortcuts first search for the peak of the currently selected impulse – response trace and after finding the peak use the peak's position as the new delay value.

Several Bugs fixed

The introduction of the web – based bug tracking system increases the number of bugs reported, so there are several fixes:

- Crash when you invoke the valid range tool in FFT Module
- Setting the virtual eq not working correctly when the eq display is inverted
- Cursor readout fails for virtual eq if inverted and gain applied.
- Average all values not working in impulse – response measurement (MAT)
- Some redraw issues in MAT module, especial when the live trace is frozen.
- Memory – leak if you start SATlive twice.
- Trying to load from a drive not ready crashes SATlive
- OK button not disabled if no valid language file is selected



New Functions and Changes in the current Version

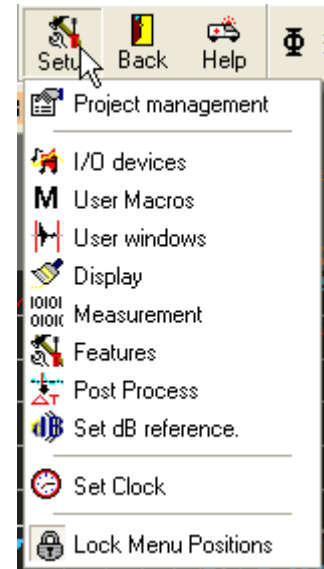
New Functionality in Version 1.40.28

Added Lock Menu Positions entry to setup-menu

The entry *Lock Menu Positions* enables you to fix the position of the menu sections in the menu areas.

The current state is indicated by the icon left to the menu entry.

-  *Lock open*: You can move the menu sections in the menu area and to other menu areas. To move a menu section grab the handle on the left of the section with the left mouse button. Hold down the button and move the section to the desired please. Release the mouse button now.
-  *Lock shut*: The menu sections could not be move.



To toggle the state, just click on the menu entry.

Description of frequency range selection using the mouse added to manual.

The possibility to select a frequency range of interest using the mouse is a feature which was there since the early days of SATlive. Unfortunately it has never been mentioned in the manual and the help file. The description has now been added to the topic Frequency Range in the manual and the help file.

Perform the following steps to zoom into a certain range of frequency:

- Position the mouse at one end of the desired range
- Press and hold down the right mouse button.
- Move the mouse to the other end of the desired range.
- A dashed rectangle shows your selection.
- If you release the right mouse button, the display changes to the desired frequency range.

Fixes

- Two entries in the setup-menu not shown after leaving a setup window
- MAT button not enabled in demo – mode
- Windowing not working correctly when invoked from the FFT-module
- Colors of Demo label do not change when you change *Full – User Configurable Layout* setting in Setup → Display.
- Freeze during entering the feedback-finder.

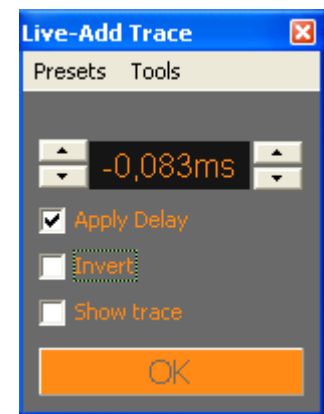
New Functions and Changes in the current Version

New functionality in version 1.40.26

Setup-window for Live-Add Trace added

You can open the setup window for the Live-Add Trace either using the entry *Settings for Live-Add Trace* in the Menu Addition of Signals or using the shortcut *shift + L* on your keyboard.

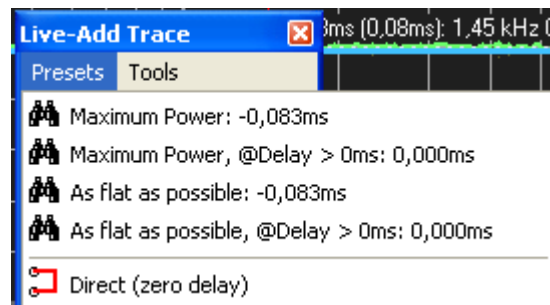
The window contains virtual delay and polarity inversion, both settings are applied to the live trace prior to the calculation of the Live-Add Trace. The setting *Show Trace* shows or hides the Live-Add Trace. You can use the shortcut *L* for that, too.



You can change the virtual delay by clicking on the arrows on both sides of the delay-time display. The arrows on the right allow changing of the delay in steps of 0.021 ms, the arrows on the left in steps of one millisecond. You need to check the *Apply Delay* setting to become the delay active. Check the *Invert* setting if you want polarity inversion of the live trace to take place before calculation of the *Live-Add Trace*.

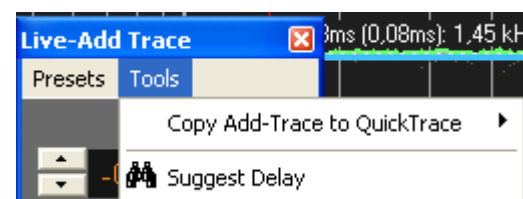
The menu Presets

The menu Presets shows the results of the *Delay-Suggestion Tool*. If you click on a menu entry, the settings will be applied to the *virtual delay* and to the setting of the *polarity inversion*. This enables you to check the results of the Delay-Suggestion Tool without the need of a new measurement. Use the entry *Direct (zero delay)* to reset the virtual delay to zero.



The menu Tools

This menu allows you to save the Live-Add Trace (if currently shown) to one of the eight Quick-Traces with just a click on the target position wanted. It also



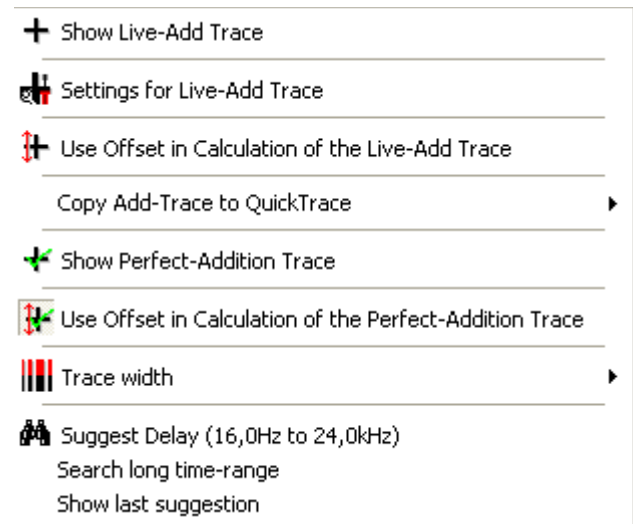
contains the possibility to invoke the *Delay-Suggestion Tool*.

New Functions and Changes in the current Version

Menu Addition of Signals adapted

Due to the introduction of the setup window for the *Live-Add Trace* the menu *Addition of Signals* has been changed.

The entry *Invert Polarity of Live Trace prior to Calculation* has been replaced with the *Settings for Live-Add Trace* entry, which invokes the setup window for the live-addition trace described on the page above.



Added two new shortcuts

The shortcut *L* was added to toggle the visibility of the *Live-Add Trace*.

The shortcut *shift+L* invokes the *setup window* for the *Live-Add Trace*.

Enable mult-software dongle use

Now it is possible to have the licence for the software LevelCheck

(<http://www.levelcheck.de>) and SATlive on the same dongle, and to run both programmes at the same time on the same machine.

Error-report tool uses web-bug database

The integrated error-report tool now directly connects to a web-based error tracking tool.

Internal Fixes

- Fixed a memory-leak in IR module
- Fixed some other minor bugs

New functionality in version 1-40-24

Latch cursor using the mouse buttons

You can set the latched cursor for the cursor-range tool using the mouse.

To set or clear the latched cursor perform this steps:

- Position the mouse to the frequency where you want to place the latched cursor.
- Click and hold down the left mouse button
- With the left mouse button held down, click on the right mouse button.
- Release the right button before you release the left button.

Fixes

- Problem with 24bit ASIO sampling: One channel lower volume then the other
- Cursor reads wrong values when a quick-trace is selected and the cursor is placed on a frequency where the trace is coherence-blanked.

New Functions and Changes in the current Version

New functionality in version 1.40.22

Measurements in MAT module can be changed in the menu bar

You can choose the measurement from the menu bar containing the icons for the measurements.



Added shortcut Ctrl – D to invoke the Adjust Delay function

This allows you to quickly (re-)adjust the delay setting for the current measurement without the need to either run the delay-finder nor to open the pop-up menu of the delay-display.

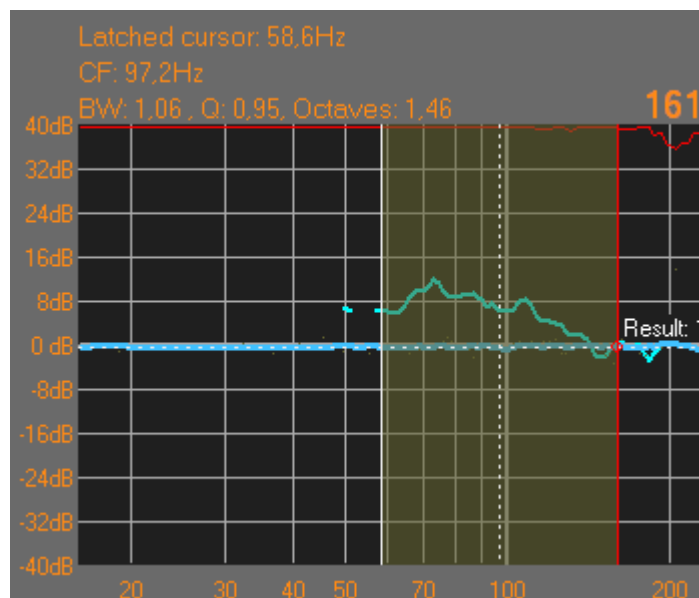
Shortcut D now toggles the latched cursor

If a latched cursor is set (using the shortcut **D**), you can release it by pressing the **D** key again. The shortcut **shift – D**, which is still supported, has the same effect.

A selected range is now marked with a transparent overlay

If you use the cursor-range tool to mark a certain range of the frequency response, then the range is indicated by a transparent overlay.

The color used for the overlay is the same color as used for the marking of the amplitude-threshold in the FFT display. It can be changed in the setup → display window.

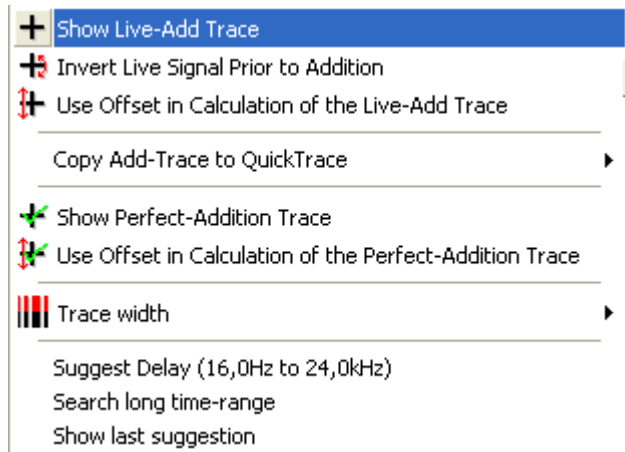


Added copy add-trace to quick-trace function

This function has been added to the *Addition of Signals* menu, which is a sub-menu of the pop-up menu assigned to the trace-display area.

Use this function to assign the currently displayed Live-Add trace to one of the eight quick-traces. To assign, simply select the target from the sub-menu.

This will delete the previous content of the quick-trace without any warning.

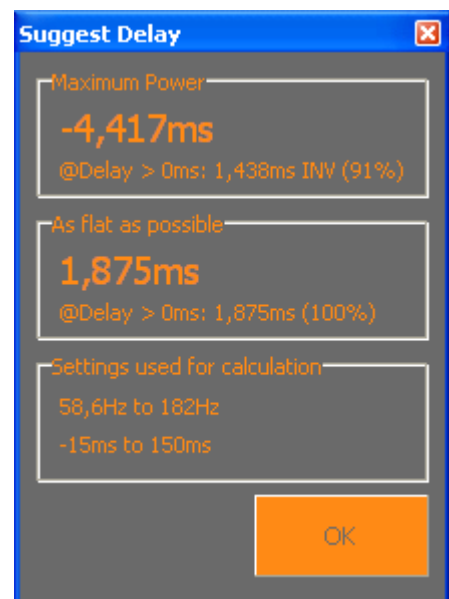


Added the Suggest Delay feature

This feature calculates the delay needed to align the live-trace to the currently selected quick-trace in a way that either maximizes the energy of the resulting frequency response or to create a frequency response, which is as flat¹ as possible. By default the time checked ranges from -25ms to 25ms related to the currently set delay. If you activate the Search long time-range option, then a range from -15ms to 150ms is examined.

If a range is marked, then this frequency range is used for calculation, otherwise the currently displayed frequency range is used. The frequency range used is shown right to the label in the menu and in the result window.

In addition to the best match possible a positive delay is displayed, which can be used if you're not able to delay the source which created the quick-trace used for calculation. A percentage is shown to give a hint about the quality of this alignment related to the best match result.



¹ The flatness is calculated using the standard derivation.

New Functions and Changes in the current Version

Fixes

- Cursor on peak not working properly in IR-FFT
- No access to the setup-menu of the cursor-range tool when there is no latched cursor.
- ASIO subsystem affected by motu firewire driver (with no device plugged in).
- Some internal improvements

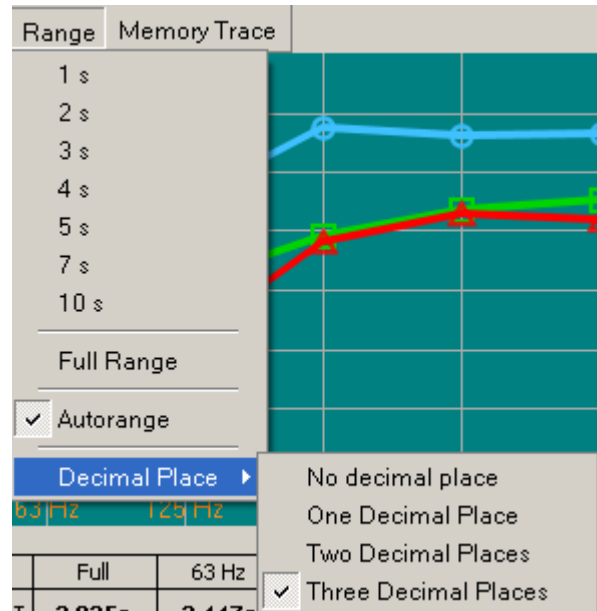
Changes in Version 1.40.14

Added a Decimal Places setting to the room-acoustic window

The sub-menu **Decimal Places** has been added to the menu **Range** in the room-acoustic window.

This setting enables you to adjust the display of the room-acoustic values in the lower half of the window according to your preferences. To change the setting, just select the desired configuration in the sub-menu.

- *No Decimal Place*: The values show as whole numbers: **8 sec**
- *One Decimal Place*: One decimal place is shown: **7.9 sec**
- *Two Decimal Places*: Two decimal places are shown: **7.92 sec**
- *Three Decimal Places*: The highest amount available: **7.921 sec**



This setting also affects the **Save as Text** option in the room-acoustic window.

Please see the manual document included in the installation for more information about the room-acoustic window.

Changed the values for the width of the trace displayed.

The values used for the width of the traces drawn have been changed from original 1-2-4-8 to 1-2-3-5. This has been requested by some users.

New Functions and Changes in the current Version

Changes in Version 1.40.12

Added the 'Allow Jitter' option to the delay pop-up menu.

The **Allow Jitter** option expands the auto-delay functionality, which has been introduced in the version 1.40.10.

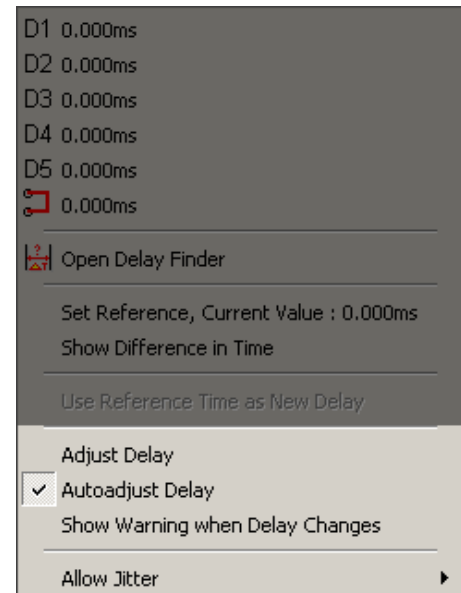
When the **Autoadjust-Delay** option is selected, the current delay is replaced with the calculated delay, if both values differ.

During a measurement a small change of the delay might occur due to movement of the air or caused by temperature changes.

The calculation of the delay value used in the **Autoadjust-Delay** option features a high resolution in time. Therefore even those slight changes might lead to a difference of the two delay values and cause a change of the current delay and a restart of the measurement.

You can add a threshold for the difference in time, to avoid the restart when only very small changes in time occur.

To set this threshold, simply select a value from the sub-menu of the **Allow Jitter** entry in the pop-up menu of the delay-time display.



See the page 23 for more details about the auto-delay functionality.

Changes in version 1.40.10

Added auto-adjustment to the delay-time setting

The new options have been added to the pop-up menu of the delay display in the lower menu bar.

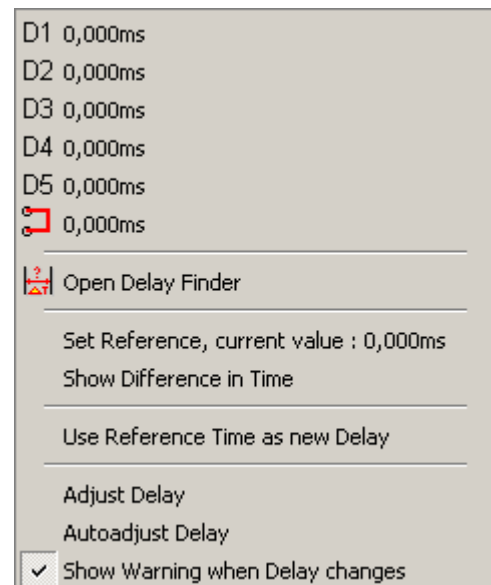
The new options are located at the bottom of the pop-up menu.

- **Adjust Delay:**
Adjusts the delay to the current delay.
- **Autoadjust Delay:**
Keeps adjusting the delay to the most current value. This option is helpful if you move your mic to measure on different locations, because you do not need to perform a delay-finder measurement each time the position changes.
When you're adjusting time related values using the phase trace, this setting must not be enabled, otherwise it will spoil the result!

When this option is selected a red square is shown left in the delay-time display.

The yellow triangle, which indicates that the option 'Show Difference in Time' is enabled is superimposed to the square.

- **Show Warning when Delay changes:**
When the delay measured differs from the delay currently set, the colors of the delay-time display are toggled to indicate that the delay has changed.



Hints:

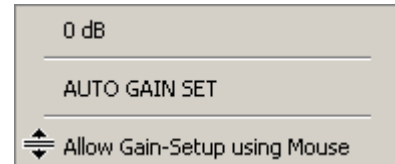
- The precision of the delay calculated is smaller as the precision you can archive using the delay-finder or the impulse-response display.
- The delay is calculated every 800ms, so a short delay may occur until the changed conditions are recognized by the software.
- The Autoadjust Delay setting is not stored. It will reset to off every time you exit the MAT module or the whole program.

New Functions and Changes in the current Version

Offset (Gain) of the amplitude trace can be changed using the mouse

You can activate this functionality in the pop-up menu of the offset-setting in the right menu area, or in the Tools menu in the pop-up menu of the trace-display area.

If you've activated this option then you can move the amplitude-Trace in the FFT and the Transfer-Function measurements in the following way:



- Move the cursor to the selected trace.
- Press the left mouse button and hold it down. The cursor changes to the move vertical symbol.
- Now you can move the trace up- or downwards by moving the mouse.
- When the trace has reached the desired position just release the mouse button.
- The cursor will change to normal cursor again.
- You will move the currently selected trace. See the documentation or the help-file for more details about how to select a trace.

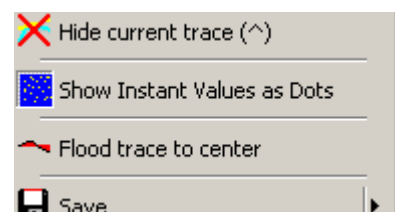
Added functionality for double click using the left mouse button

- If both amplitude and phase display in the transfer-function measurement, then a double-click on the upper half switches to the Amplitude Only display. A click on the lower half switches to the Phase Only display.
- If either Amplitude Only or Phase Only is currently selected, then the split display is restored by a double-click on the display area.
- You can zoom both traces in the impulse-response measurement in MAT module by a double-click with the left mouse-button. An other double-click brings back the split display.
- A double-click on the offset setting in the right menu area sets the offset of the currently selected trace to zero dB.

The Show Instant Values as Dots option is now available for the transfer-function measurement.

The option Show Instant Values as Dots, which has been available for the FFT measurement is now also available in the transfer-function measurement.

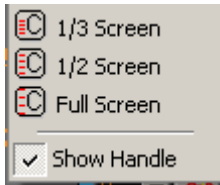
You can use different settings of this option for each measurement.



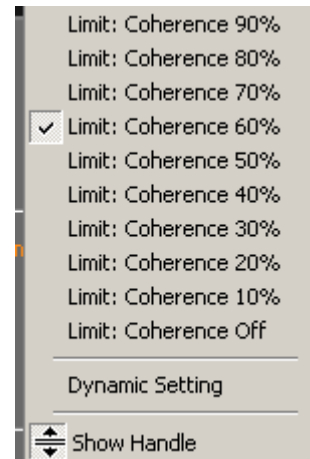
Added a Handle to change fixed Coherence Value using the mouse

Similar to the setting of the Amplitude-Threshold a handle has been added to set the coherence value using the mouse.

This option is available only if you select a fixed value for the coherence setting.

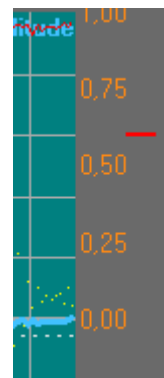


The option is disabled by default, so you need to activate it selecting, either in the pop-up menu of the coherence setting, or in the pop-up menu for the scaling of the coherence display.



If the option **Show Handle** is selected, and a fixed coherence limit is selected, then a handle is shown right to the coherence scale on the right of the trace-display area.

Use the left mouse-button to move the handle up or down to change the coherence limit.



New Functions and Changes in the current Version

Changes and News in Version 1.40.2

Room - Acoustic Calculation modified

Memory Trace for Comparison added

The room acoustic tool has been improved. The quality of the display has been improved and a second trace, which is called **memory trace**, has been added for comparison.



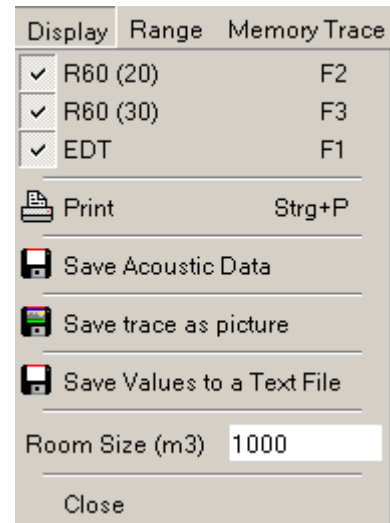
The data created by the impulse-response is drawn using thicker lines and the values are shown using a **bold** font. The memory trace is drawn using a thinner line and the values are written using a normal font.

New Functions and Changes in the current Version

The menus in the Acoustic – Calculation Window

The menu Display

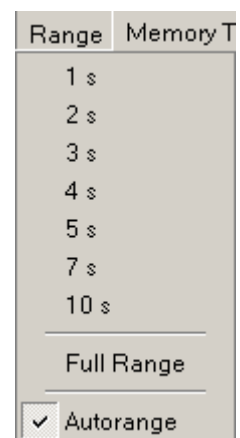
- RT60(20) show/hide the RT60(20) trace in the display.
Hotkey: **F2**
- RT60(30) show/hide the RT60(30) trace in the display.
Hotkey: **F3**
- EDT show/hide the EDT trace in the display.
Hotkey: **F1**
- Print prints the room acoustic parameter and the graph.
- Save Acoustic Data: Save the results of the calculation into a SATlive specific file format. You can use the entries of the Memory Trace menu to load this kind of file for comparison.
- **Save Trace as Picture:** save the graphic to a file. You can select the kind of picture you want to save it to, in the selection on the bottom of the save dialog.
- **Save values to a Text File** saves the numerical values of the room acoustic parameters into a text file.
- **Roomsize** enter the roomsize used for the calculation of the Schroeder's frequency. The units can be changed in the **setup -> options window**.
- **Close** close the window and return to the impulse - response section of **SATlive**.



The menu Range

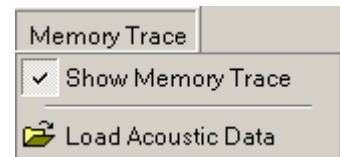
Use the entries of this menu to scale the vertical range of the display.

- The entry Full Range scales the vertical range to show all of the traces in the display.
- If the you check the entry **Autorange** then the display is scaled each time you show a trace or a memory trace.
- Choosing a fixed range setting deselects the **Autorange** option.



The menu Memory Trace

You can load a saved result of the acoustic calculation into a second trace, which is called memory trace.



Uses this trace to compare the acoustic values of different impulse-response measurements.

- **Show Memory Trace** show or hide the currently loaded memory trace. This option is available only if an valid set of acoustic data is loaded. Hotkey **F6**.
- **Load Acoustic Data** opens a dialog where you can select the set of acoustic data which you want to use as the memory trace data.
- The values of the memory trace are drawn as thin lines, and written using a normal font. The values of the main impulse response are drawn using thicker lines and the values are shown in a bold font.
- If valid acoustic data has been loaded then the file name is shown in the lower left area of the acoustic - calculation window.

Other changes in 1.40.2

- The selected display mode is saved and recalled in the impulse-response window.
- A watchdog was added to the start of the DirectSound ® drivers to avoid a freeze when you try to start a buggy device driver in the full duplex mode.
- A error in the ASIO section has been fixed.

New Functions and Changes in the current Version

Changes and new Functions in Version 1.40

Amplitude Threshold Setting modified

The setting of the Amplitude Threshold has been changed in order to make the adjustment quicker and to allow a more precise setting.

Setting the Amplitude Threshold in the FFT display of the MAT measurement area

In the FFT display there is a small handle right to the trace display, marking the currently set Amplitude Threshold.

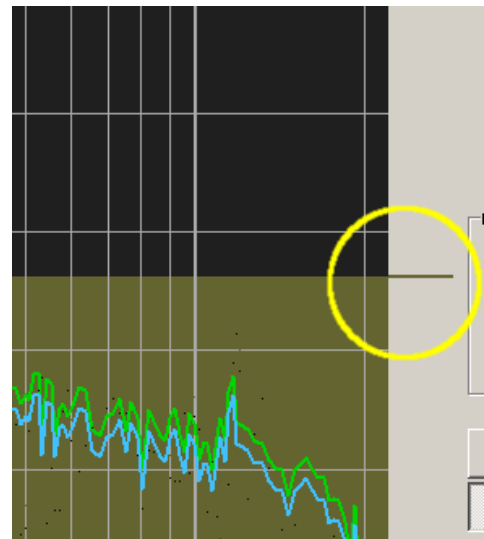
To change the Amplitude Threshold move the mouse.

While holding down the left mouse button you can now move the handle up or down in order to adjust the amplitude threshold.

Please note that the handle is visible only if the Amplitude Threshold value is in the currently displayed vertical range.

If the lower limit of the display is below -100dB then moving the handle below -100dB will switch the Amplitude Thresholding to OFF.

In this case the handle will be moved to the bottom of the display. To reactivate the Amplitude Thresholding move the handle upwards until it crosses the -100dB level.



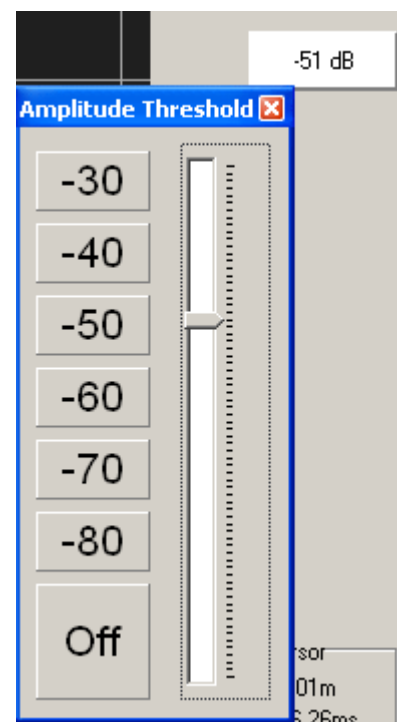
Amplitude Threshold Pop-up menu changed

The pop-up menu of the Amplitude Threshold, which you can invoke either using the button in the right menu bar or the Amplitude-Threshold entry in the Tools menu has been changed as well.

On the left side of the pop-up window there are some predefined settings for the Amplitude-Threshold value.

On the right there is a slider which allows you to adjust the Amplitude-Threshold value in steps of one dB. The current value is shown on the button in the right menu area.

Please note that the buttons on the left do not latch, except the OFF button, which disables the use of the Amplitude-Threshold feature. To turn the Amplitude-Threshold feature on again, just move the slider or select a preset value for the Amplitude-Threshold using one of the buttons on the left.

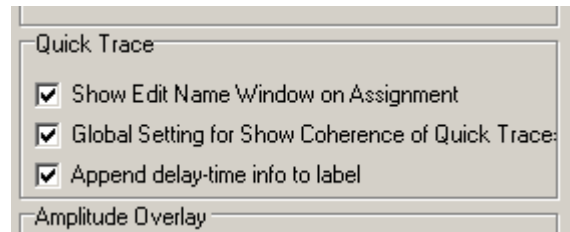


Delay values can be shown for Quick-Traces

A new setting was added to the Setup → Post Process section, which allows you to enable the display of the delay which was used to create a Quick-Trace.

This setting is called **Append delay-time info to label** and is located in the Quick-Traces section of the Setup → Post Process window.

If this option is selected the delay-time which was selected when the trace was created is shown right to the trace's name, both in the hint in the Quick-Trace menu bar in the top menu area and in the trace - info area at the upper right of the trace display.

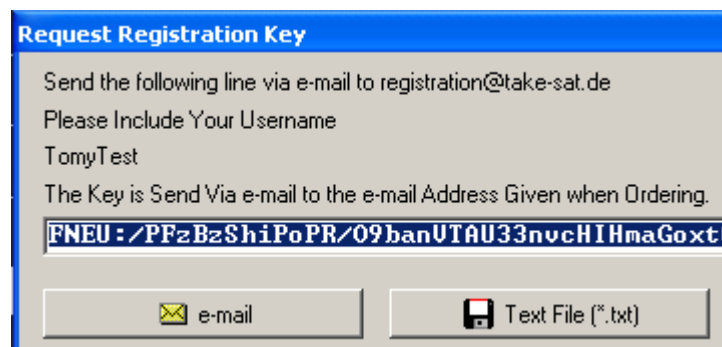


Key-request windows support save as text

In order to ease the request of a full-version key or of a demo key, the key-request windows now feature a **Text File** button.

If you click on this button, a file – selection dialog shows up, where you can enter the filename you want to use. Click on **OK** to save the request.

Now you can transfer the text file using an USB - drive and easily send it via e-mail.



The file contains all information needed for the request, including the e-mail address where the data need to be sent to.

Other changes and improvements

- The compiler version used to build this software has been updated.
- Some functions have been 'outsourced' into so called DLL files.
- The path to the current settings folder is shown in the internal configuration window
- The current settings folder can be explored using the shortcut **Ctrl + Alt + F**.

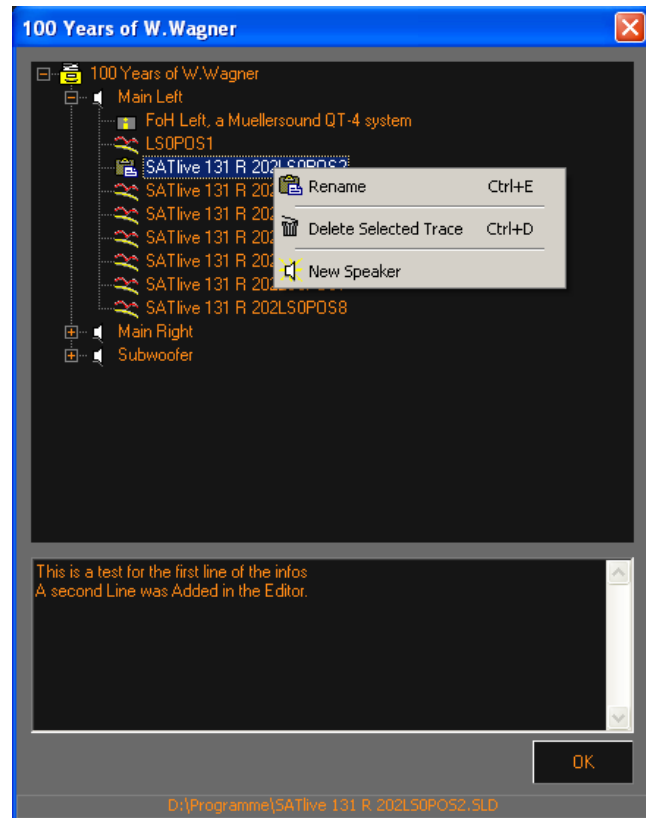
New Functions and Changes in the current Version

Changes in version 1.33.1.22

Info field added to the project management

An additional field has been added to the project file. This additional information is global for the whole project. It can be edited either in the setup of the project or in the project manager, which is available in the settings & tools sub-menu of the pop-up menu of the sum trace.

The information is also shown in the file-selection window when you select a project file to load.



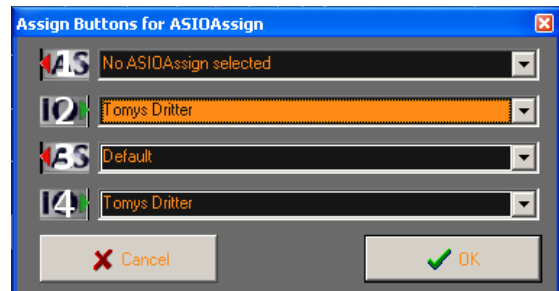
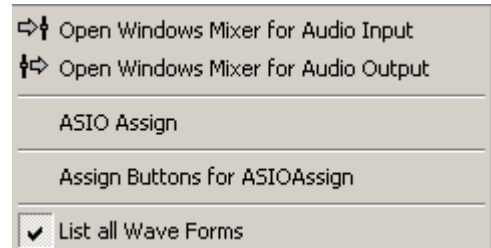
Other changes and fixes in version 1.33.1.22

- Fixed: some labeling issues in the IR display section
- Fixed: two gain settings activated at the same time (MAT – IR)
- Fixed: Starting SATlive without selecting a language file messes settings
- Fixed: Some internal issues

New functions and changes in version 1.33.1.19

Signal-generator

- The signal-generator pop-up menu has been expanded
 - The **windows mixer** invoke functions have been moved to the pop-up menu.
 - The **ASIO Assign** function invokes the selection for the ASIO Assign you want to use.
 - The new **Assign Buttons for ASIO Assign** function opens an editor, which allows you to select a ASIO Assign which can be invoked by the buttons on the bottom of the signal-generator window. Just select the assign you want to apply from the selection and confirm the selections with the **OK** button.

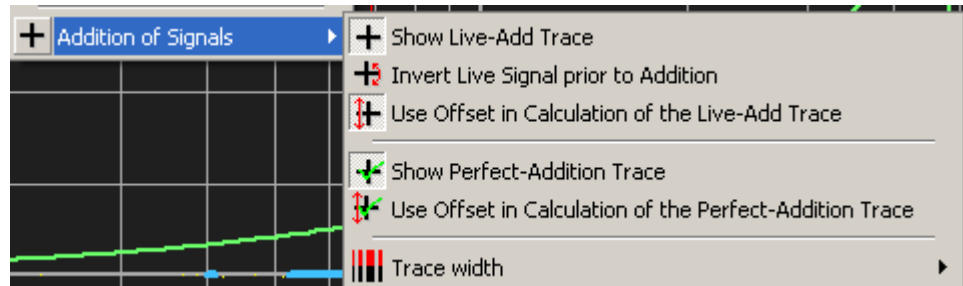


- The **List all Wave Forms** option enables the display of all available wave forms.
- On the bottom of the signal-generator window there are four buttons which allow the quick selection of the ASIO Assign which is assigned to this button. Assignment is done in the **Assign Buttons for ASIOAssign** window. You can define different Assigns in the **Setup → I/O Devices → ASIO Setup** section.
- All other functions of the Signal-generator are the same as in earlier versions.
- Use the right mouse button to open the pop-up menu.
- The button related to the currently selected assignment shows a red number. A button without number has no valid assignment. Move the cursor on a button to see the name of its assignment.



New Functions and Changes in the current Version

Live Add Trace and Perfect Add Trace pop-up changed

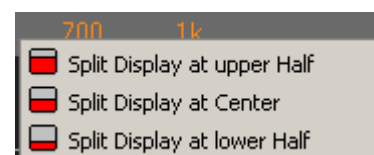


- The control menu for the Live Addition trace has been expanded with the **Invert Live Signal prior to Addition** option. This option inverts the polarity of the live trace prior to the calculation of the live add trace. This might be helpful for time alignment.
- The layout of the pop-up menu has been changed and the pop up has been attached to the main pop-up menu while it is still linked with the cursor info area in the right menu area.
- If the live add or the perfect add trace are shown, their names are displayed in the upper right area of the trace display. If the live trace has been polarity inverted before addition the label is expanded by (Inverted Signal).
- Please note that this menu is enabled only if at least one quick-trace is shown. Furthermore a quick-trace needs to be selected as the currently selected trace, either by using the shortcut **T** or the **show values of** selection of the main menu.



Variable split of the display in MAT

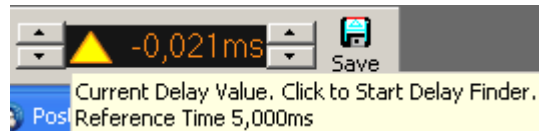
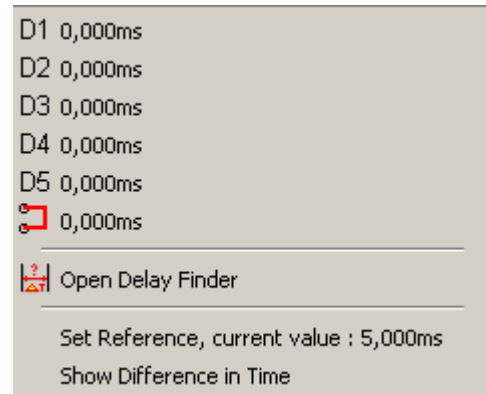
- You can move the border between the both display areas by holding down the left mouse button when the mouse is over the area between both displays. This area contains a pop-up menu which contains three default settings which can be recalled with a mouse click on the label.
- There are different splits possible for impulse response, transfer, impedance and mix mode.



Added time difference option to the delay setting

- The pop-up menu for the delay time, which is linked to the delay - finder button and to the delay time display has been extended by two items.

- **Set Reference, current value: XXXXX**
This setting sets the current delay as the reference time for the display, but does not change the display. The value shows the currently set value for the reference time.
- **Show Difference in Time**
activate this option to display the difference in time to the reference time.
If this option is activated, then a triangle is shown left of the delay time display to indicate that the display shows a relative time and not an absolute value.
- If a relative time is shown, then the hint (the text which is shown when you move the cursor over the display area of the delay time) shows the reference time currently used in a second line.

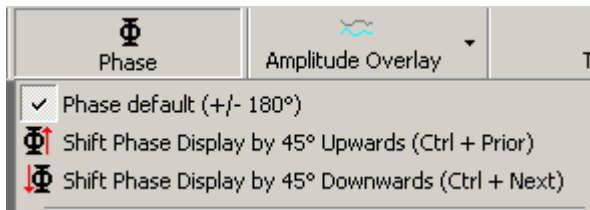


Purpose of the time difference and the use inverted signal options

- Both options are intended to speed the setting of time alignment.
- They allow you to time-align without having direct access to the parameters of the controller.
- They allow you to align the sub even when it needs less delay than the top without repeating the measurement for the top.
 - Set the delay used to capture the phase response of the top as reference
 - While measuring the phase response of the sub, adjust the delay in SATlive to match the phase slopes in the area of interest.
 - If the delay is negative, just add this value to the current delay of the top, otherwise use as delay value for the sub.
- Use the Invert Live Signal option for the live trace to either verify your alignment or to match the phases for test purposes without the need to change the setting for the inversion at the controller during the alignment process.

New Functions and Changes in the current Version

Changes in the Phase Display Menu



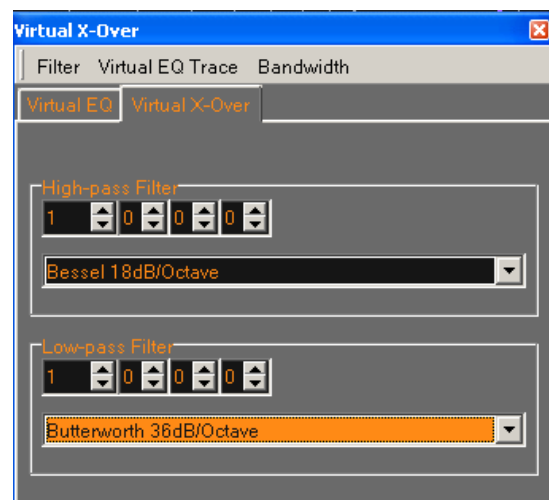
- The option **Shift Phase** has been removed from the phase display menu in MAT module.
- The option **Shift Phase Display by 45° upwards** was added to the menu.
- The option **Shift Phase Display by 45° downwards** was added to the menu.

The Virtual EQ expanded

The virtual EQ has been expanded with a virtual cross-over and shelving filters have been added to the eq settings.

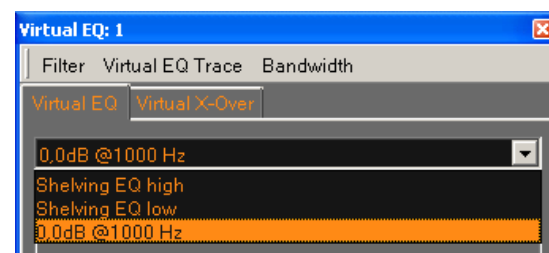
To access the virtual X-over:

- Select the Virtual X-Over page in the setup of the virtual - Eq.
- Select the type of filter you want to use from the selection.
- Adjust the frequency using the frequency adjustment for each filter.
- The settings for the virtual X-over are **not saved**, neither using the 'Save filter' function from the filter menu, nor when you exit SATlive.
- The Bessel type filter is adjusted to have the same corner frequency of -3dB as a Butterworth type filter.



To use the shelving filter:

- Both low and high shelving filters are in the filter selection box.
- Just select the filter you want to use and change its gain and frequency. Furthermore you can choose the slope to be either 6dB/octave or 12dB/octave.
- The settings of the shelving filters are stored and recalled when you use the Save Filter and Load Filter functions from the Filter menu.
- Shelving filters are not available in the Rope mode.



Other changes

- The values 20 and 50 are now available as factors for the impulse-response measurement in MAT module.
- If you do a click with the right mouse button on a Quick-trace button (not on the arrow, but on the button itself) then the rename Quick-trace window for this trace shows up.
- If you do a click with the right mouse button on the virtual - EQ button, then the setup window for the virtual EQ shows up.
- An entry for the setup of the virtual - EQ has been added to the pop-up menu of the trace display.

