

MYRIAD Waveform Viewer

User's Guide

Rev. 1.0.1 - September 16, 2016



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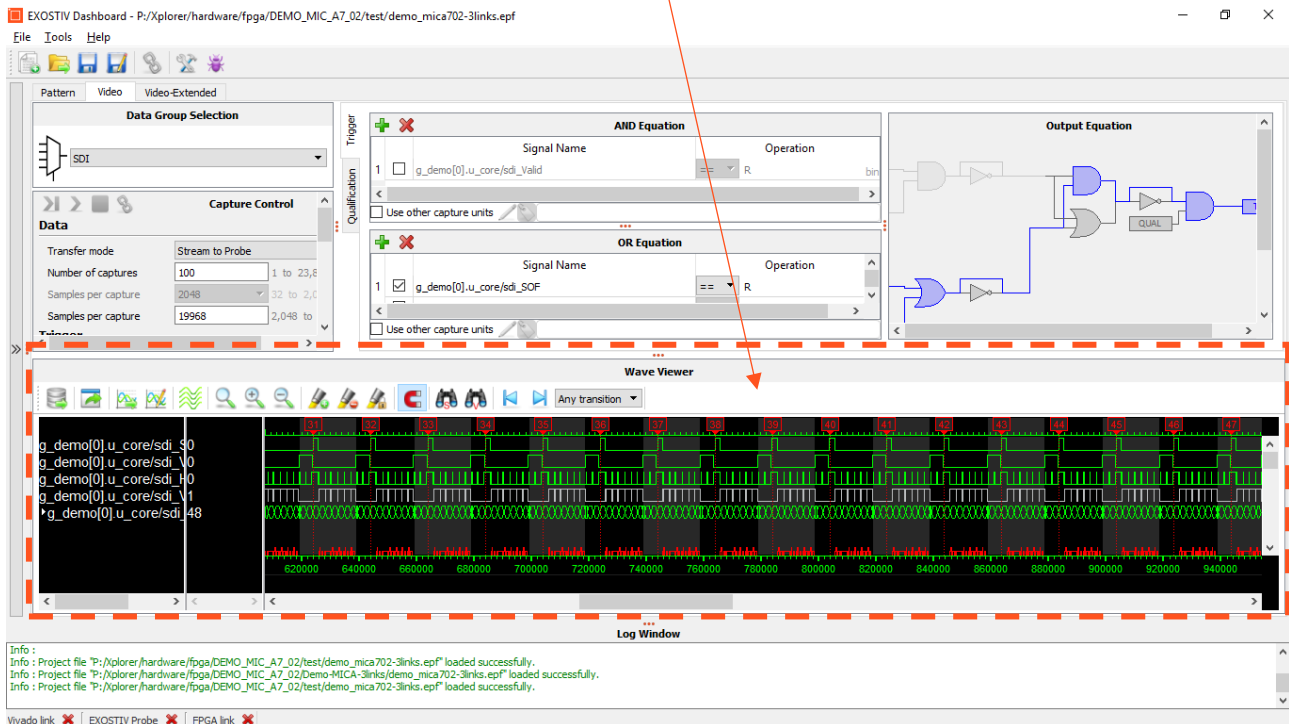
Revision History

Revision	Modifications
1.0.1	<ul style="list-style-type: none"> <li data-bbox="531 891 703 913">• Initial revision

MYRIAD Waveform viewer – user’s guide

MYRIAD in EXOSTIV Dashboard

MYRIAD is a waveform viewer integrated into the EXOSTIV Dashboard and is used for data visualization and analysis. MYRIAD is specifically a dockable/undockable panel of EXOSTIV Dashboard Analyzer (see EXOSTIV Dashboard Analyzer window below).



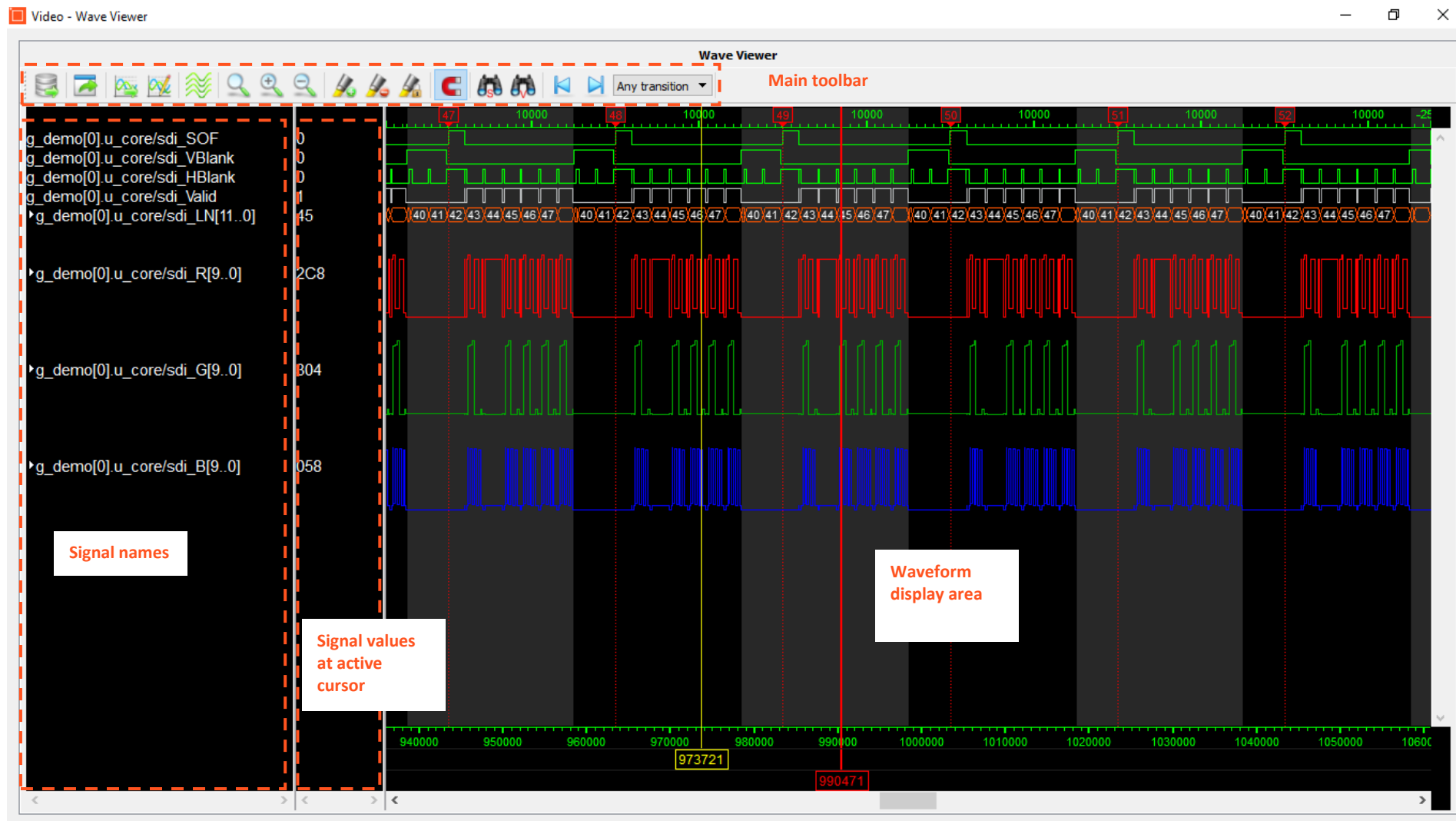
It can also be invoked independently¹.
 This guide describes MYRIAD Waveform Viewer’s controls and features.

Main features

- Capable of processing very large waveform database (> 10 GB) based on proprietary .wdf format
- Wave radix, size, color formatting
- Analog wave display support
- Database save, export and import in multiple formats
- Fast database zoom-in and zoom-out, scroll and search
- Multi-cursor support with specific marking for trigger markers










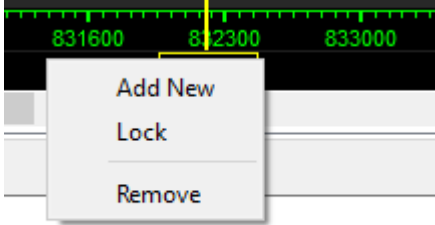

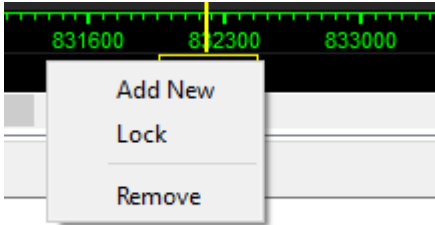
¹ Please contact Exostiv Labs at info@exostivlabs.com for more information about licensing options.


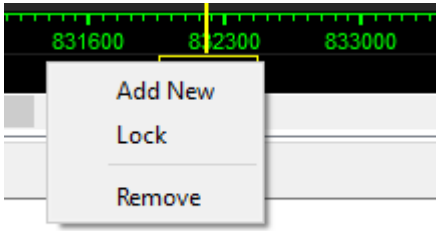





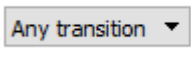
Main window - Overview



Main toolbar



	Load Wdf file	Opens a previously saved / exported database
	Export Waves	Exports the waveform database
	Load configuration file	Loads waveform window configuration
	Save configuration file	Saves the waveform window configuration
	Open all signals dialog	Opens the list of signals in the database to add to the display
	Zoom full	Zooms at maximum level, displaying the full database into the waveform window. Alternate control: Hit the 'f' key.
	Zoom in	Alternative controls: 1) Zoom to area: CTRL + mouse drag on the waves. 2) Zoom in : CTRL + mouse wheel forward. 3) Hit the 'I' key.
	Zoom out	Zooms out. 1) Alternative: CTRL + mouse wheel backwards. 2) Hit the 'o' key
	Add marker	Adds a marker to the waveform window Alternate control: right-click on cursor area and select 'Add New' 
	Remove current marker	Removes the currently selected marker Alternate contrl: right-click on cursor and select 'Remove' 

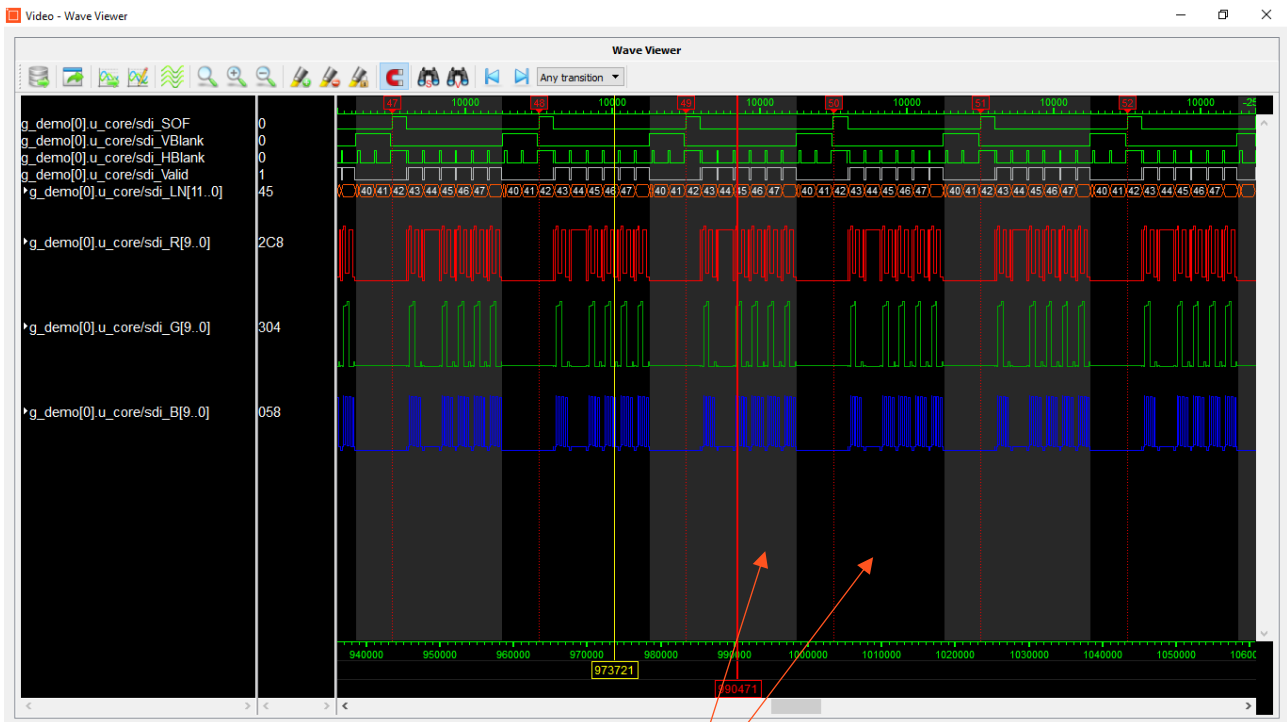
	Lock/unlock current marker	Locks/unlocks the currently selected marker to/from its current position. Alternate control: right-click on cursor area and select 'lock'. 
	Snap to transition	Snaps to the nearest transition when clicking in the waveform window to define a new marker position
	Find signal	Find a signal in the displayed list of signals
	Find value	Find a specific value for the selected signal
	Find previous event	Finds the nearest event before the position of the main cursor Alternate control: CTRL + SHIFT + 'P'
	Find next event	Finds the nearest event after the position of the main cursor Alternate control: CTRL + 'P'
	Event type	Defines the type of event to search for. Available types: <ul style="list-style-type: none"> - Any transition: any change of value on the selected signal - Rising edge: for single bit signals: rising edge; for busses: any transition. - Falling edge: for single bit signals: falling edge; for busses: any transition. - Trigger: location of a trigger - Marker: location of a marker.

Shortcuts – summary

Control / Shortcut	Effect
CTRL + mouse wheel	Zoom in & Zoom out
CTRL + drag area	Zoom to area
'P'	Zoom full
'I'	Zoom in
'O'	Zoom out
Mouse wheel	Scroll up & down
Shift + mouse wheel	Scroll left & right
CTRL + 'P'	Find next event
CTRL+ SHIFT + 'P'	Find previous event

Functions by type

Wave display window details



- 1) **Background color toggling for successive bursts:** to mark successive bursts, the background color of the main window is changed from black to grey and back.
- 2) **Triggers** are represented with a **dotted red marker**. If multiple captures were ran, there will be multiple triggers. They are numbered.
When the waves are displayed with a low zoom level, only the number of captures is displayed on the top of the main window, and the triggers are not displayed.

Zooming & Scrolling: Useful controls (Keyboard + mouse):

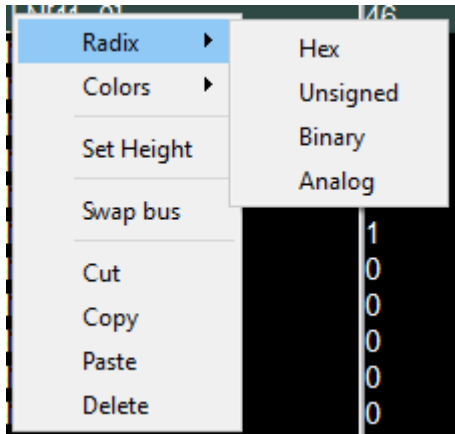
- 1) Holding the CTRL key + dragging an area on the waves zooms to the selected area.
- 2) Holding the CTRL key + using the mouse wheel: zooms in and out.
- 3) Holding the SHIFT key + using the mouse wheel: scroll left and right
- 4) Mouse wheel: scroll up and down.

Adding, removing & formatting waves

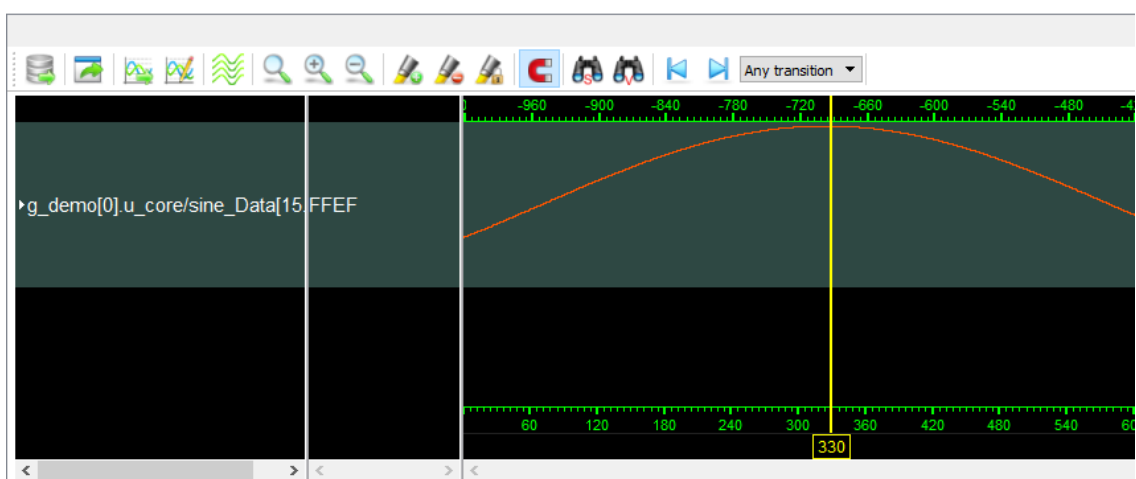
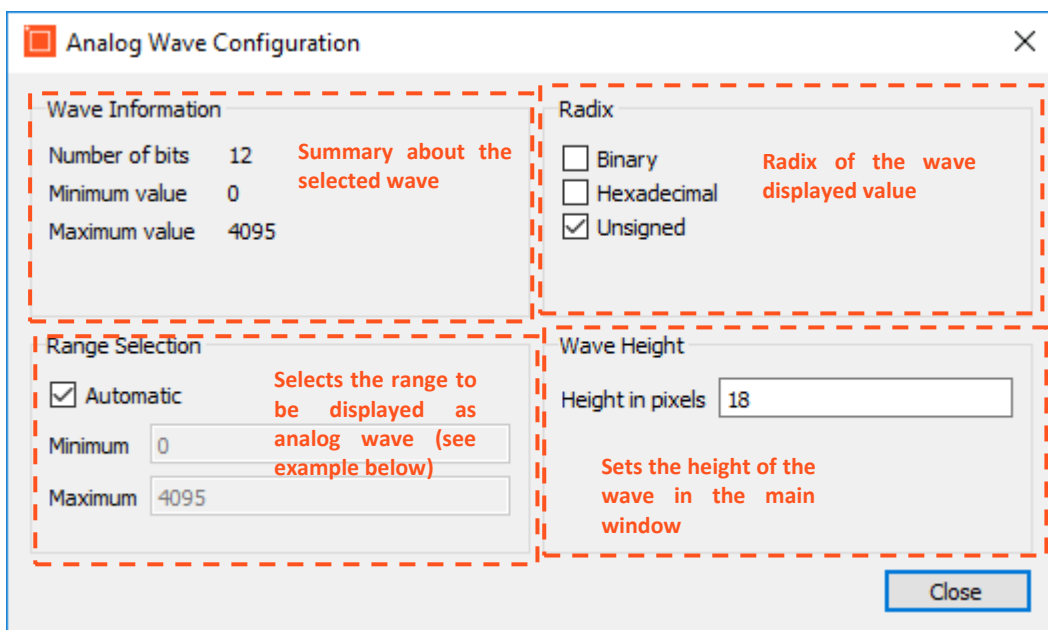
Radix

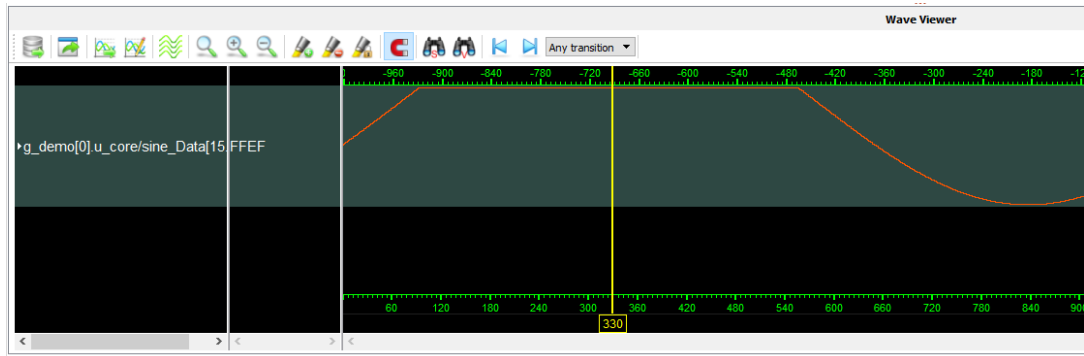
The signal value radix can be changed.
Right-click on the signal to be changed to open the contextual menu.
Select 'Radix', and the format type:

- 'Hex' for Hexadecimal;
- 'Unsigned' for unsigned integer
- 'Binary' for displaying as a binary bit or a vector
- Analog : to display the value as an analog evolution.



If 'analog' is selected, more formatting options must be defined with the window that pops up:





Effect of changing the analog wave range: the wave is clipped.

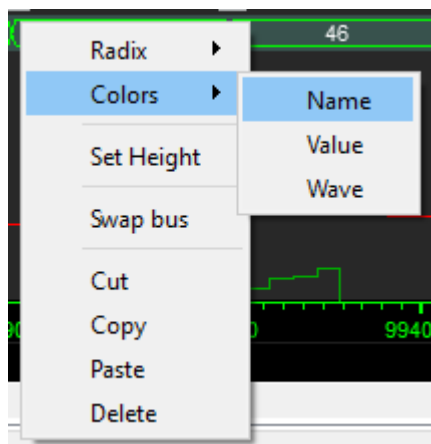
Colors

The color of the following items can be selected:

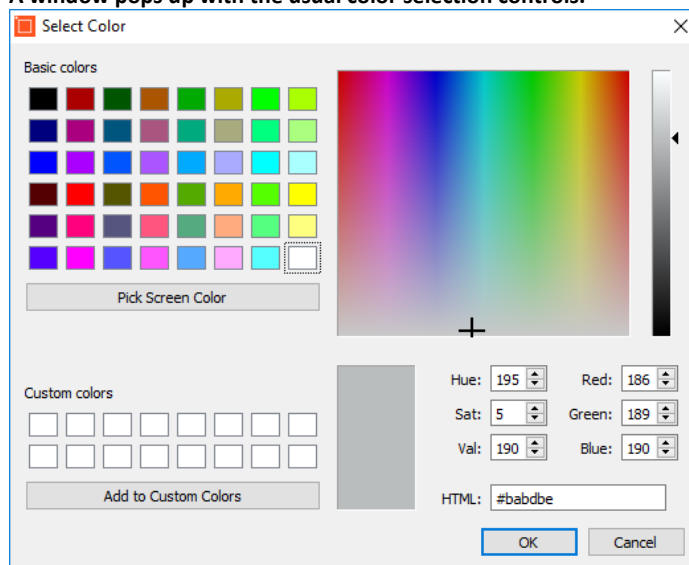
- Signal name: the text of the signal name in the signal names panel
- Signal value: the text of the value of the signal in the signal values panel
- Wave: the color of the wave displayed in the main window.

To change any of the above colors: select the signal / wave you'd like to change the color of and click with the right button. A contextual menu appears:

- Select 'Color' > and the item that you'd like to change.

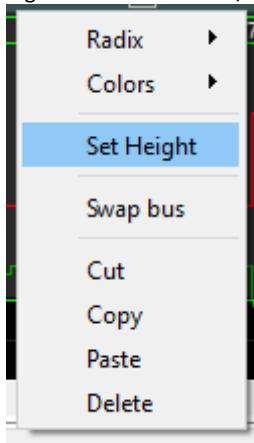


- A window pops up with the usual color selection controls.

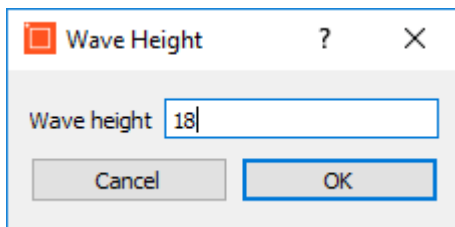


Signal height

The height reserved for each signal in the waveform window can be defined:
 Right-click on the wave / signal you'd like to modify and select 'Set Height'



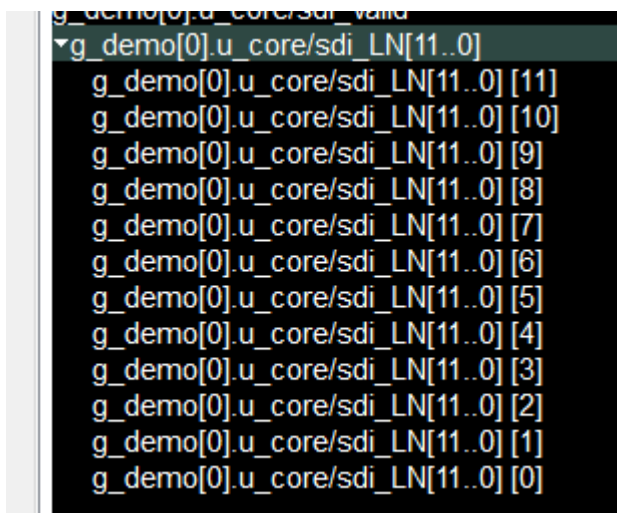
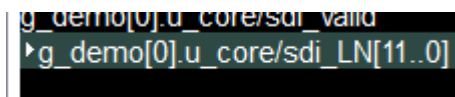
In the window that opens, specify the wave height in pixels:



Bus swapping

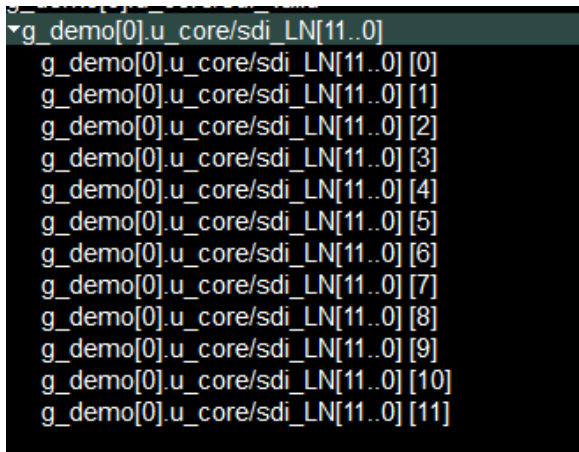
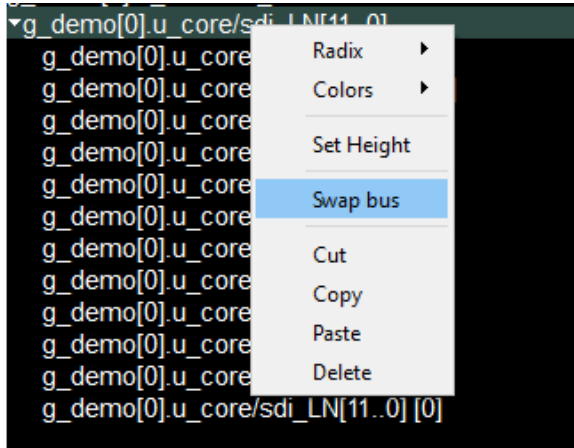
The bit ordering in a bus can be swapped.

Select the bus you'd like to swap and expand it by clicking on the small triangular arrow on the left of the signal name:



The bus is now expanded.

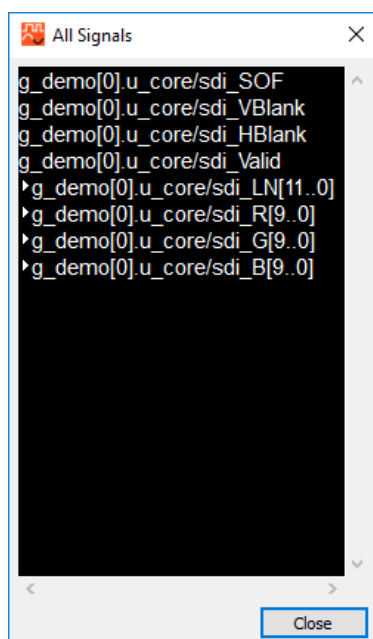
Right-click on the bus you'd like to swap and select 'Swap bus' in the contextual menu.



The bus is now swapped;

Adding signals with the ‘Signals dialog’

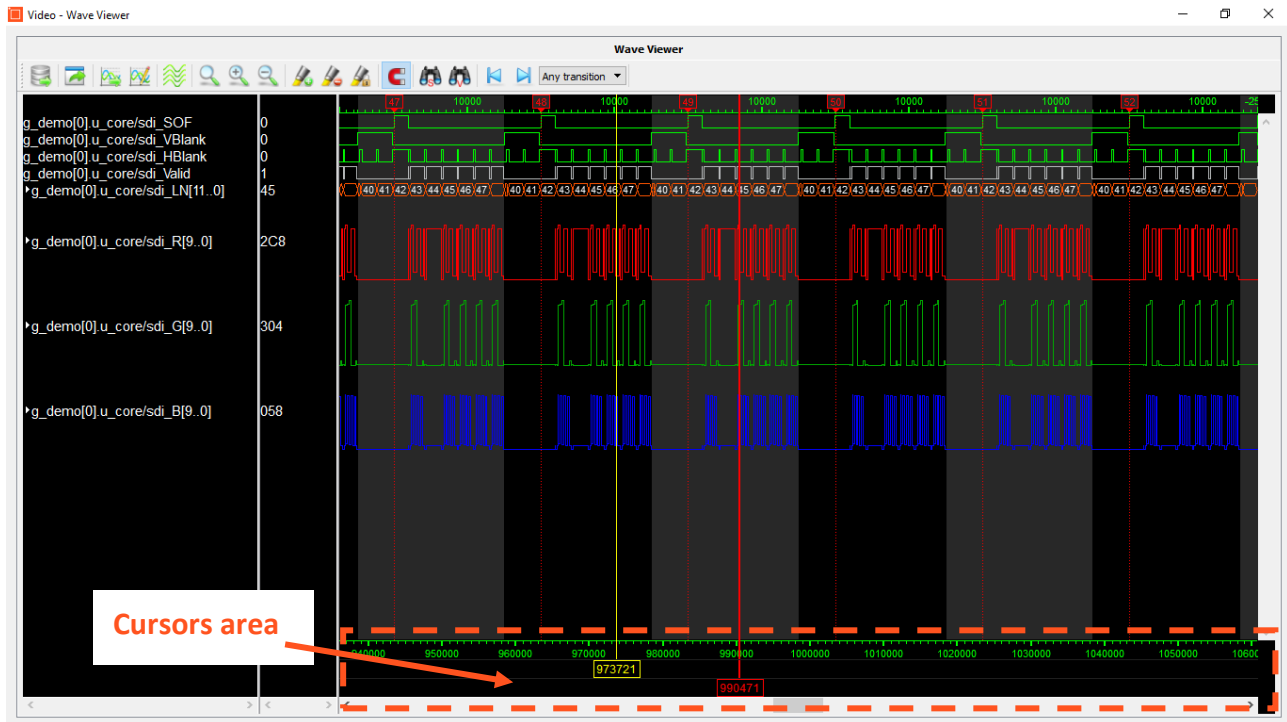
- Hit on the ‘signal dialogs’ icon
- The ‘All Signals’ dialog opens, with the list of the signals present in the captured waves set.
- Signals can be added to the main window by selecting and dragging them to the main window.
- Holding SHIFT or CTRL + select allows selecting multiple signals



Cursors and markers

Cursors are added, removed and locked with the corresponding toolbar button.

Right-clicking in the 'cursors area' (see below) opens a contextual menu with the same commands.



Waveform databases and formatting files

Waveform databases are saved in 'native format' in a specific directory for each capture unit.

The 'native database format' is .wdf. Each database is made of multiple wdf files.

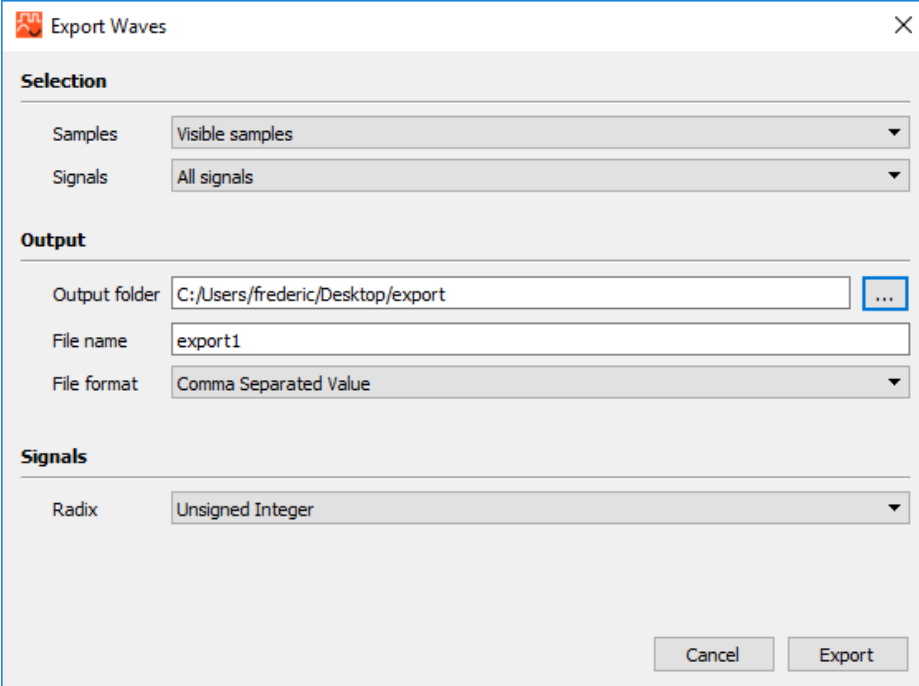
The formatting of the waves (color, radix, ...) can be saved as 'formatting file' in XML format.

Databases can be exported to other formats, such as binary or csv.

In future releases of the waveform viewer, VCD format import and export will be supported as well (please contact support@exostivlabs.com) for more information about future releases.

Please refer to section 'Main toolbar' to check about the toolbar buttons used for loading and saving/ exporting wave databases and formatting files.

Exporting waves window (accessed when clicking on the 'export waves'  button)



Export Waves

Selection

Samples: Visible samples

Signals: All signals

Output

Output folder: C:/Users/frederic/Desktop/export

File name: export1

File format: Comma Separated Value

Signals

Radix: Unsigned Integer

Cancel Export

Export waves window. Allows selecting the samples range and signals to export, the output folder and the file format. Radix for the exported data can be selected too.

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