2V-P User Guide :

. Introduction:

. 2V-P stands as 2 channels mixer for Quartz Composer , GLSL though the ISF format (www.interactiveshaderformat.com) and AVFoundation supported files.

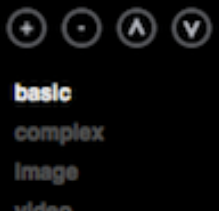
. On the first launch, 2V-P will pop up a dialog asking to choose a location for the 2V-P root directory.
Once created 2V-P will have read/write permissions on this root folder, which will contains upon creation 3 folders:

. 2V-P_Composition folder: this will contains a /demo folder (with a set of sample compositions).
This folder will be used as a search folder for compositions while loading projects.
. 2V-P_Fx folder: this will contains a /demo folder (with a set of sample effects).
This folder will be used as a search folder for compositions while loading projects.
. 2V-P_Presets folder: to be used as presets repository.
. 2V-P_Project folder to be used as projects repository.

. Once the application completely loaded 2V-P will present the application main window (by default named "Tabula rasa") , and an output window where to render the final scene. Both windows could be minimised from the Windows/Minimise menu tab but only the main window can be closed (and reopened by clicking on the application dock icon).

. 2V-P main window consists of 4 sections :
. Library : to drag&drop files, and manage pages .
. Mixer : contains 2 sections (Left/Right) to display loaded compositions parameters, as well as a rendering preview ; and a mixer section to control how the renderings are going to be mixed together.
. Control inspector : displays and manages informations (value, automations, behaviours) about any selected control.
. Preferences: gives access to 2V-P settings (mixer, interface, OSC, MIDI, output) .

. Library: consists of 2 sections , a media grid and a page manager.



. There are 8x4 cells available in each page , and a page manager (on the left side) allowing the creation of up to 64 pages:
. Use the [+] and [-] buttons to add / remove pages.
. Double click on a page text field to edit the its name.
. Drag the page text field up/down to reorder pages.
. Click on a page's name to select a page , or use the up/down buttons to cycle through pages.

. The grid allows to drag&drop compositions , and 2V-P presets files with a .2vpc extension
(see below how to create and use those presets files).
. Once dragged on a grid , the targeted cell will display the file thumbnail.
. Shift&drag a cell to move the targeted content around the grid .

. Right click on a cell will pop-up a menu with standard editing functions : Delete, Copy , Cut , Paste.
. Click on a cell to load the composition in the targeted player
(the grid's colour indicates the targeted player).

. Players: there are two players available to load compositions and each players consists of 3 major sections :

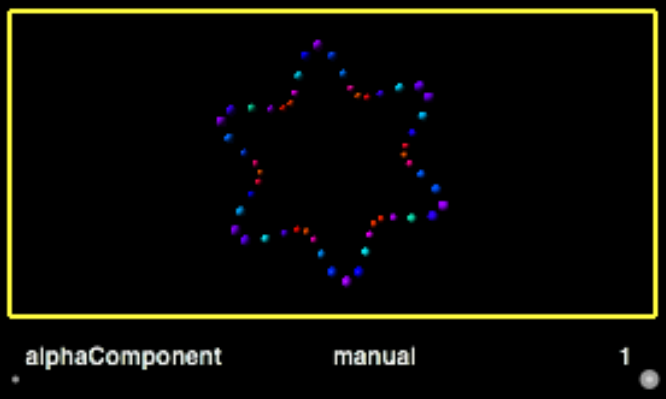
.Preview :

. Tools :

. Player selection : allows to select which player will be used as a target while loading a compositions from the grid.
(the grid will change its colour according to the selected player).
. Eject: removes a composition from the player .
. Pause: pauses the composition (the composition will still be rendered). In the cas of an ISF file , a published float attribute named @“renderTime” will be linked the the global timer.
. Composition text field: displays the composition's name.
. Reset: resets the composition to its default state.
. Inspector: displays the inspector view . The inspector view lists the composition's parameters, and for each 2 options :

. display : select whether or not a parameter will be displayed .
. interpol : select whether or not a parameter will be involved in presets interpolation calculations.
. Save: saves all the compositions settings in a file with a .2vpc extension (the file doesn't include the composition, but its path)
. (one can drag&drop a file with a .2vpc extension on the grid to recall the composition and its saved settings)

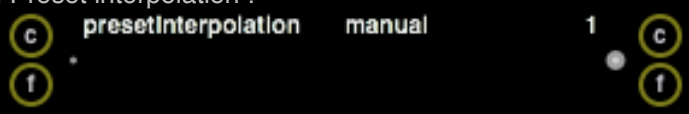
. Preview :



. Renders the composition's preview , before being sent to the mix .
. The alphaComponent slider, controls the composition rendering alpha channel before being sent to the mix.

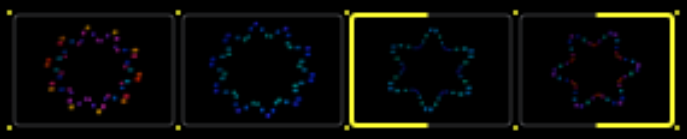
. Preset :

. Preset interpolation :



. Preset Interpolation slider : sets the interpolation value between 2 selected presets.
. Cut buttons : set the presetInterpolation slider's value to respectively 0. or 1.
. Fade buttons : tells the presetInterpolation slider to fade from its current value to respectively 0. or 1.
. Preset Interpolation modes : presetInterpolation mode : interpolation is evaluated between 2 selected presets . presetKeyFrame mode : interpolation is evaluated along all presets between 2 selected presets .

. Preset grid :

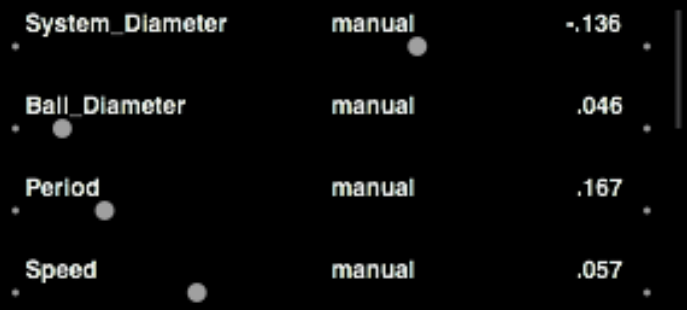


. Each grid presents 4 available cells to store a composition's settings .
. Shift&click on a cell to save the current composition parameters values. This will also create a preset thumbnail on the targeted cell.
. Right click on a cell will pop-up a menu with standard editing functions : Delete, Copy , Cut , Paste.
. Click on a cell to select a preset. A left or right oriented bracket will be displayed , according to the selected destination target (see bellow how to set the destination target) .

. Preset destination / Grid selection :

. Left/Right brackets : select the preset destination target
(this will affect which preset will be selected while clicking on the preset grid) .
. Grid selection row : there are 8 available grids. Use the dots to select which grid to be displayed.

. Parameter View : will list and enable all published parameters for a loaded composition. There a 3 types of parameters:



. Sliders :

. Parameter name text field: display the parameter's input name .
. Automation text field: display the slider's automation value (manual, OSC, MIDI) .
. Value field : displays the actual parameter value (not normalised) .
. Both min,value,max dots can be dragged to set their values.
. Shift&drag the value change temporally the parameter's value, and sets it back the previous value on mouse release.
. Sliders behaviours (when active) can be managed through the Control Inspector.

. Buttons :

. Parameter name text field: display the parameter's input name .
. Buttons behaviours (when active) can be managed through the Control Inspector.

. Text Fields :

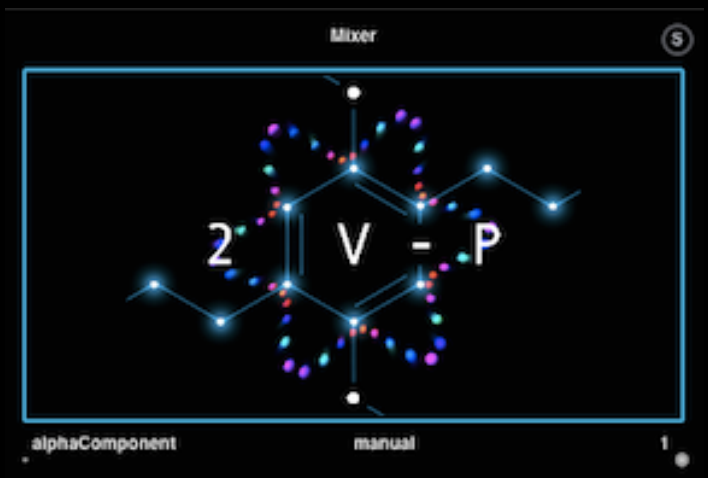
. Parameter name text field: display the parameter's input name.
. Text Fields behaviours can't be managed through the Control Inspector.

. Indexed Menu :

. Parameter name text field: display the parameter's input name
. Indexed Menu behaviours can't be managed through the Control Inspector.

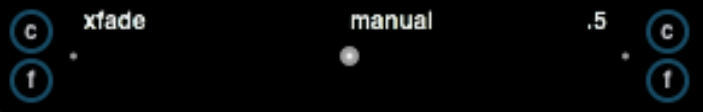
. Mixer: 2V-P renders a mixed image of its 2 players outputs.

. Preview:



. Save: saves all the mixer's effect chain settings in a file with a .2vpfx extension (the file doesn't include compositions , but their paths) .
(one can drag&drop a file with a .2vpfx extension on the preview to recall the mixer's effect chain and its saved settings) .
. Renders a preview of the output rendering context .
. The alphaComponent slider, controls the overall rendering alpha channel .

.Xfade :



. A crossfade slider .
. A compositing mode menu : supported modes are standard compositing modes .

. Post Fx :

. After the compositing between the 2 players been evaluated, post effects can be applied in chain .
. Drag&drop a Quartz Composer or ISF file on the preview to add an effect at the end of the mixer's effect chain.

. To be used as an effect in 2V-P a composition (Quartz composer or ISF) should :
. Have a published input image with a @"inputImage" key .
. A Quartz Compositions should render its process on objects like Billboards, Sprites etc .

. On/Off button : bypass or not the effect's process .
. Delete button : removes an effect from the chain
. Drag up/down the effect's title an effect to change its position in the rendering chain .

. Control Inspector: This section manage controls automations and behaviours and displays metering informations .

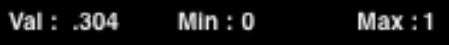
. Metering Informations :

. Fps : displays an average value of the rendering frame rate .
. MIDI : displays the MIDI In/Out activity
(green : incoming signal / red : outgoing signal) .
. OSC : displays the OSC In/Out activity
(green : incoming signal / red : outgoing signal) .
. Perform button: controls the output window (named 2V-P) full screen status .

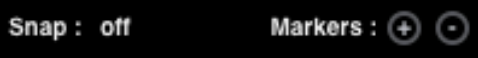
. Control Behaviours:

. Sliders :

. *Value/Min/Max* fields : displays and allows numerical entries.



. *Markers* :



. Snap mode : Controls how the slider's value is attracted by markers values :

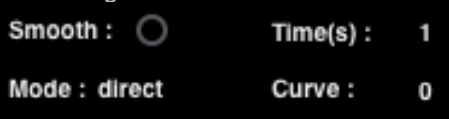
. Off: ignores markers.

. On: jumps to markers.

. Magnet : markers act like magnets .

. Markers buttons : [+] adds a marker at slider's value , [-] removes the marker.

. *Smoothing* : Creates a time based function from the initial to the destination values.



. Smooth button: turns the function on/off .

. Time: sets the ramp time in seconds.

. Mode:

. direct : the function is evaluated directly between extreme values.

. symmetric : the function is evaluated symmetrically between extreme values .

. Curve : Possible values are between -1 / +1 . Functions are exponential curves:

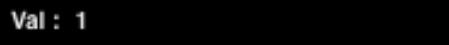
. > 0 : the ramp starts faster, ends slower.

. < 0 : the ramp starts slower, ends faster.

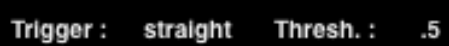
. = 0 the ramp is linear .

. Buttons :

. *Value* field : displays and allows numerical entries (0 or 1).



. *Trigger* :



. Trigger menu : manages how the button's state will be updated upon automations.

. straight : the button's state follows the received value.

. on rise : the button's state changes when the received value ascendantly crosses the threshold value.

. on fall : the button's state changes when the received value reversely crosses the threshold value.

. on fall : the button's state changes when the received value crosses the threshold value.

. Threshold : Sets the threshold value mentioned above (possible value are between 0 / 1).

. *Key Equivalent* :

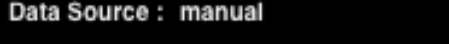
. Key Equivalent button : turns the keyboard's events recognition mode on/off .

. Assign button : turns on/off key equivalent.

. Assigned Key field : displays the assigned key character.

. Modifier field: displays the associated modifier : Alt / Shift / Cmd / Ctrl.

. Data Source : manages sliders and buttons automations . Possible inputs are : manual, MIDI, OSC.



. MIDI :

. *MIDI In* :

. MIDI detect button : turns MIDI events recognition mode on/off .

. MIDI event's type menu : possible values are ctrl: MIDI Control message / note : MIDI Note message.

. MIDI channel's field : displays / sets the MIDI Channel (possible values between 0 / 15).

. *MIDI Out* :

. MIDI out button : turns MIDI out mode on/off .
. MIDI event's type menu : possible values are ctrl: MIDI Control message / note : MIDI Note message.
. MIDI channel's field : displays / sets the MIDI Channel (possible values between 0 / 15).

.OSC :

. OSC *In* :

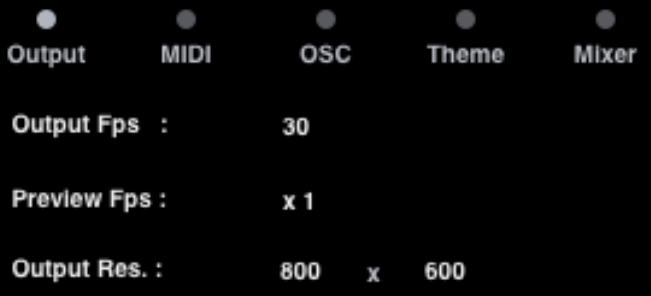
. OSC detect button : turns the OSC events recognition mode on/off .
. OSC address field : sets and displays OSC In address.

. OSC *Out* :

. OSC out button : turns OSC out mode on/off .
. OSC address field : sets and displays OSC out address.

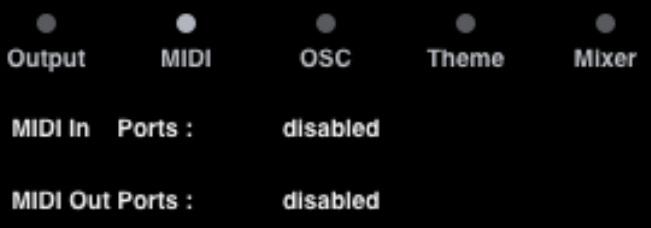
. Preferences : This section manages 2V-P preferences . Settings will be saved in a preferences file : tv.2v-p.tv.2V-P.plist located at : /Users/YourUserName/Library/Containers/tv.2v-p.tv.2V-P/Data/Library/Preferences/.

. Output Preferences :



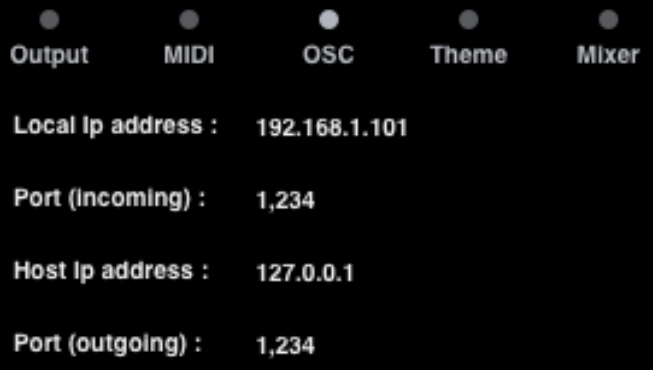
. Output Fps menu : manages the output rendering frame rate. Possible values are 25, 30, 45, 60, 75 fps and Overdrive . (when on Overdrive 2V-P renders frames at the maximum fps) .
. Preview Fps menu : manages previews rendering frame rates . Possible values are x1, x2, x4, x8 slower than the output rendering frame rate.
. Output Res. field: manages the output rendering width x height .

.MIDI Preferences :



. MIDI In Ports menu : lists all available MIDI In ports.
. MIDI Out Ports menu : lists all available MIDI Out ports.

.OSC Preferences :



. Local Ip Address field : displays the local machine Ip address.
. Port (Incoming) field: sets OSC incoming port (should be different from OSC outgoing port) .
. Host Ip Address field : sets the Ip address receiving OSC messages.
. Port (Outgoing) field: sets OSC outgoing port (should be different from OSC incoming port) .

.Theme Preferences :

. PlayerA Color : sets the PlayerA frame colour .
. PlayerB Color : sets the PlayerB frame colour.
. Mixer Color : sets the Mixer frame colour.
(click on the coloured bars to open colour pickers panels) .
. Updates button: validates changes.
. Cancel button: cancels changes.

.Mixer Preferences :

Manage how the mixer's xfade slider and the playerA/B presetInterpolation sliders behave while using the corresponding left/right fade buttons .
Behaviours and interpolations functions are described in the Control Inspector/Control Behaviours/Sliders/Smoothing section :

. Time (s): sets the ramp time in seconds.
. Mode:
    . straight : the function is evaluated directly between extreme values.
    . symmetric : the function is evaluated symmetrically between extreme values .
. Curve : Possible values are between -1 / +1 . Functions are exponential curves:
    . > 0 : the ramp starts faster, ends slower.
    . < 0 : the ramp starts slower, ends faster.
    . = 0 the ramp is linear .

.2V-P application menu bar :

The menu bar, besides standard options, presents 2V-P specificities:

. Projects :

. Default Project : resets to the default project : tabula rasa.2vp.
. Open Project : opens :
. Files with .2vp extensions : those are xml's files containing all necessary informations to recall a project. Only compositions paths are stored and if no compositions can be found 2V-P will look for it into the 2VP_Compositions directory.
. Files with .2vpck extensions : those are packages containing the corresponding .2vp project and all its related compositions .
. Save Project : saves the project with a .2vp extension (should be saved in the 2V-P_Projects folder).
. Export Project : exports the project as a package (as described above) with a .2vpck extension (should be exported in the 2V-P_Projects folder).
. Locate 2V-P : reseed 2V-P root directory.

.Window :

. Full Screen : toggles 2V-P interface full screen mode.
. Perform : toggles 2V-P output window full screen mode.

.Notes:

. 2V-P is a Mac application distributed exclusively from the Apple Store, and thereby conforms to the Sandboxing protocol.This induces specificities regarding the way 2V-P handles files, preferences and system resources.

. Once launched for the first time 2V-P creates a container directory tv.2v-p.tv.2V-P located at /Users/YourUsername/Library/Containers/tv.2v-p.tv.2V-P. This directory contains sandboxed versions of necessary system resources 2V-P needs to access. Within this container directory, important system resources are :

- Preferences: This folder located at /Users/YourUsername/Library/Containers/tv.2v-p.tv.2V-P/Data/Library/Preferences, is a sandboxed version of the standard Preferences folder and contains 2V-P preference file tv.2v-p.tv.2V-P.plist.

- Library: This folder located at /Users/YourUsername/Library/Containers/tv.2v-p.tv.2V-P/Data/Library, is a sandboxed version of the User's Library folder. Any system resources than 2V-P needs to access will have to be injected in this directory. For example, if a loaded Quartz Composer file refers to a QCPlugin, this plugin needs to be copied to the /Users/YourUsername/Library/Containers/tv.2v-p.tv.2V-P/Data/Library/Graphics/Quartz Composer Plug-Ins folder .

- 2V-P creates on the first launch 2 directories : Quartz Composer Plug-Ins and Quartz Composer Patches in the /Users/YourUsername/Library/Containers/tv.2v-p.tv.2V-P/Data/Library/Graphics/ folder .

- (Note : The /Users/YourUsername/Library/ directory is hidden by default . Running the command line chflags nohidden ~/Library from the Terminal will unhideUser's Library folder).

- Another resources directory 2V-P needs access to is the 2VP's root directory, users will be asked to locate on its first launch.
  Unlike the container sandboxed system resources, 2V-P's root directory is dedicated to user resources : compositions, projects and presets. (A recommended practice while working with 2V-P would be to keep all compositions (and any ressources they needs access to) , projects, presets, in this directory .

- To reinitialise 2V-P :
  Trash 2V-P's container and root directory and empty the Trash. Run command line sudo killall -SIGTERM cfprefsd .

. Visit our Quartz Composer I 2V-P and the Interactive Shader Format pages to lear more on Quartz Composer , and the ISF shader format