

R E L E A S E N O T E S
V E R S I O N 1 . 6 . 5



arKaos

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TABLE OF CONTENTS

1	Introduction	1
2	Interface changes	2
2.1	Dark theme	2
2.2	Slider enhancement	3
2.3	Cell layer assignment	3
2.4	Master blackout	3
2.5	Presets for TripleHead2Go	3
2.6	Audio gain control	3
2.7	Master volume control	4
2.8	Show or hide Tooltips preference	4
2.9	Browser preview	4
3	ArKaos Connect	5
4	Sources, effects and visuals processing	6
4.1	Transitions	6
4.2	Color Pass Effect	6
4.3	Alternative Live Input service on Mac	7
4.4	Quartz Composer (Mac only)	7
4.4.1	Using compositions as sources	7
4.4.2	Using compositions as effects	8
5	Enhanced mixer mode	10
5.1.1	Independent preview	10
5.1.2	Mixer state saving	10
5.1.3	Mixer pause mode preference	10
6	Enhanced playback modes	11
6.1.1	Scratch control	11
6.1.2	Playback position control	11
6.1.3	Play once and freeze	11
7	Engine improvements	12
7.1	Frame blending and software genlock	12
7.2	Improved visual files support	13
7.2.1	Alpha channel support	13
7.2.2	Support for FFMpeg H.264 decoding	13
7.3	Improved support for sound from videos	13
7.4	Flash Action Script 3 support	14
8	Enhanced output options	15
8.1	Improved soft-edge algorithm	15
8.2	Syphon (Mac only)	15
8.3	Multi-Monitor support in Windows	15
9	Controller mapping	17
9.1	Mapping templates	17
9.1.1	Using custom templates	17
9.2	Mapping dialog	18
9.3	Bi-directional controllers & Generic MIDI feedback	18
9.4	Dedicated mapping templates for specific controllers	18
9.4.1	Akai APC20 and APC40	18
9.4.2	Elation Midicon	19
9.4.3	Korg Nano	19
9.4.4	Livid Instruments Ohm64 and OhmRGB	19
9.5	Numark NuVJ Video Controller	19
9.6	Dedicated mapping templates for DJ-style controllers	20
9.6.1	American Audio VMS2	20
9.6.2	American Audio VMS4.1	20
9.6.3	Hercules DJ controllers	20
9.7	Open sound control mapping	21
9.8	MIDI reference for template mapping	22
9.8.1	Introduction	22
9.8.2	GrandVJ Full Mixer Mode	22
9.8.3	GrandVJ Selected Mixer Mode	26
10	Tips	31
10.1	How to achieve best performances with the new engine	31
10.1.1	Monitor Rate Versus Movie Rate	31
10.1.2	Hardware dependencies	31
10.1.3	OS dependencies	31

10.2 Setting up soft-edge	32
11 Changelogs	33
11.1 GrandVJ 1.6.5	33
11.2 GrandVJ 1.6	33
11.3 GrandVJ 1.5	33

1 Introduction

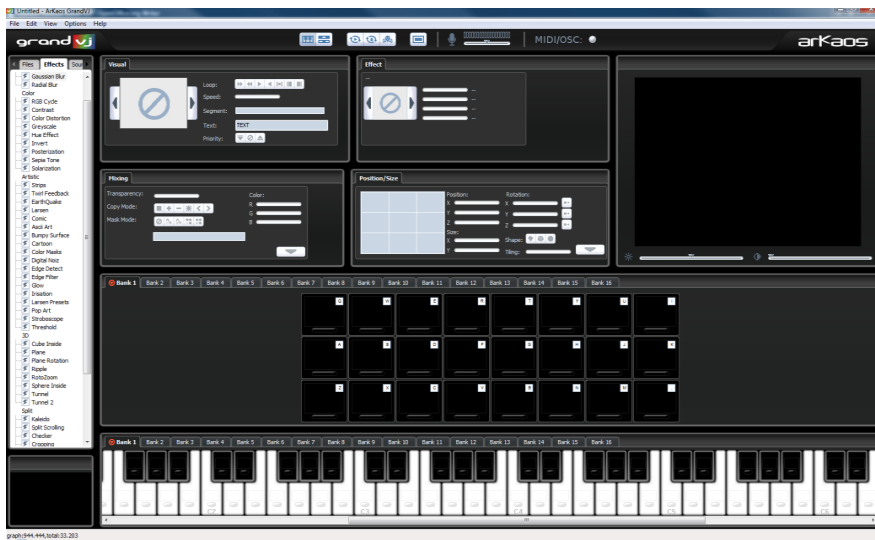
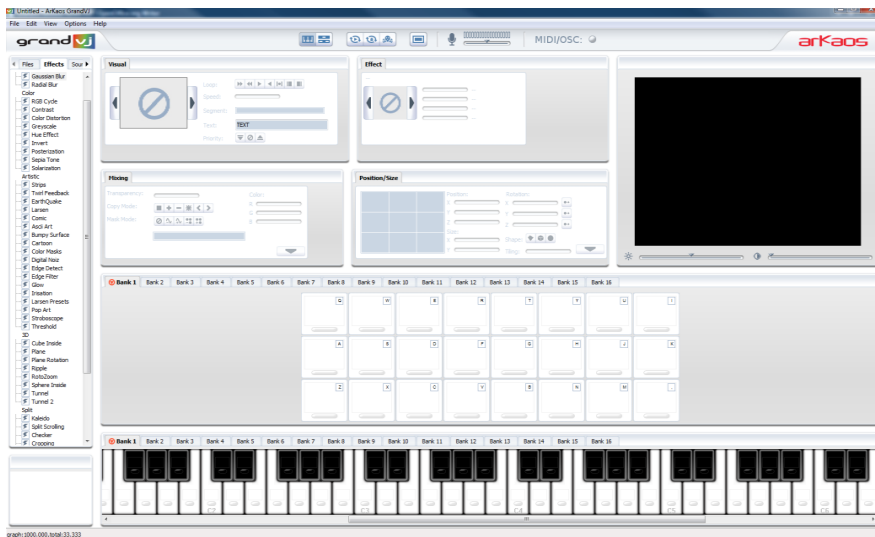
This Release Notes document explains the changes between the previous software version and the current software version that are not explained in the User Guide.

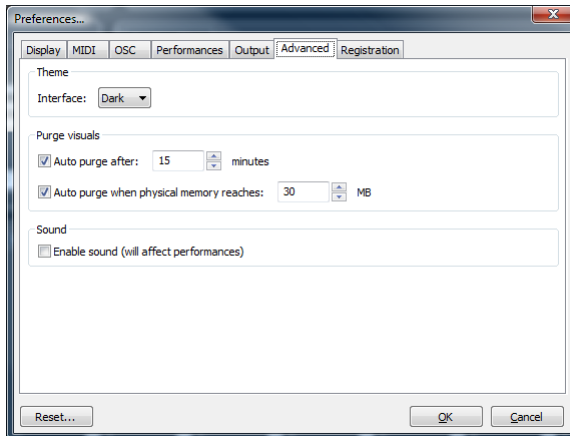
To get the best out of GrandVJ, please ensure that you are using the latest software version; you can download it from www.arkaos.net

2 Interface changes

2.1 Dark theme

GrandVJ can now be used either with the original “white” skin or with a darker skin to accommodate darker working conditions.





The interface theme can be switched by accessing the advanced tab in the Preferences dialog. Note that changing the interface theme will require restarting the application.

2.2 Slider enhancement

All sliders have been updated to provide better control:

- The tool tip is reflecting the value of the slider and stays on while modifying the slider's value
- Sliders can be modified using the mouse wheel (by 1% steps)
- Pressing Alt (Mac) or Shift (Windows) while using the mouse wheel will give change the value with 0.1% steps
- Pressing shift while moving the sliders rounds the value to 0.1% accuracy
- Alt + Click (Mac) or Ctrl + Click (Windows) resets the slider to its default value

2.3 Cell layer assignment

In mixer mode, you can set cells to be triggered directly to a specified layer rather than the one that is selected. This allows you to pre-configure movies, masks or effects to be sent directly to one layer (the topmost for example) without having to switch layers.

This setting is available in the visual tab and is only available for cells.



2.4 Master blackout

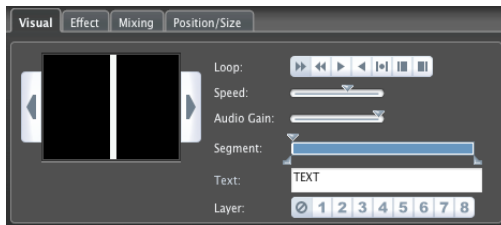
There's now a master blackout button located at in the status bar, next to the full screen button. When engaged, the master output will be toggled off but the preview will still be displayed.

2.5 Presets for TripleHead2Go

The position presets now contains preset to facilitate the use of TripleHead2Go. There's an entry for both horizontal and vertical setups.

2.6 Audio gain control

The audio gain of each video placed on a cell can be controlled using a dedicated slider that is in the Visual parameters panel when editing the corresponding cell.

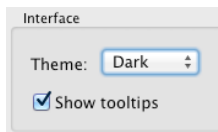


2.7 Master volume control



The main volume can now be adjusted with a cursor placed on the top of the screen.

2.8 Show or hide Tooltips preference



This new preference setting allows to enable / disable the tooltips showing above a graphical control when the mouse cursor stays above for more than one second. This makes GrandVJ more user friendly when controlled from a touchscreen.

2.9 Browser preview



The browser preview panel allows to preview files, effects, transitions, sources and visuals from the browser section.

It will help you to decide which visual, effect, transition, etc. you will use before applying it to a cell in GrandVJ.

By default “Auto Preview” is enabled, thus when an item is selected in the browser section it will automatically try to preview this item.

The following controls are available for the preview:

- Start/pause button
- Stop button
- Audio mute button
- Seek bar

The purpose of the browser preview is just to be able to get a quick view of a visual or an effect, etc. Therefore the preview will automatically stop when the browser section or the preview panel itself is out of focus. In this way, the preview runs a limited amount of time, which allows more performance to be dedicated to the full screen output of GrandVJ.

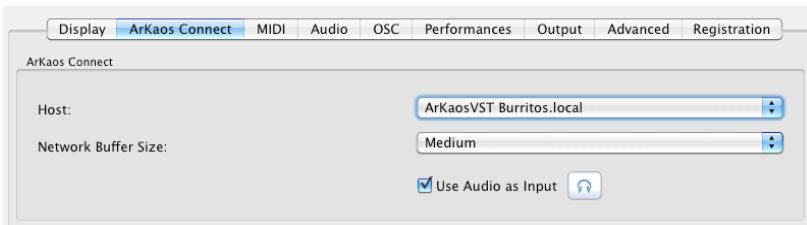
3 ArKaos Connect

ArKaos Connect allows GrandVJ to receive sound and MIDI from any audio sequencer that supports VST plug-ins. The audio host can run on the same machine as GrandVJ or a different one running on the same local network. The configuration of the connection in GrandVJ is straightforward: just select the sending VST plug-in in an auto-updated list and enjoy the new possibilities open by these interactions.



The interface of the VST plug-in is very simple. The top-right indicator shows the connection status - the led become green if the plug-in is connector to an instance of GrandVJ. The bottom-right led blink when midi messages are routed to the plug-in. A knob allows modifying the gain of the sound sent to GrandVJ.

A tab has been added to the preference menu, allowing configuring ArKaos Connect.



The host drop-down list can be used to choose a running plug-in to connect to. The parameter "Network Buffer Size" is a tradeoff between latency and sound quality. The lower is the buffer size, the lower is the latency between the audio sequencer and GrandVJ. The value "low" or "medium" can be chosen for a vast majority of network configurations (local machine or a fast LAN). Check the checkbox "Use Audio as Input" to use the sound of the audio sequencer as sound input (the selected audio input device in the audio preference is then automatically deactivated).

You can preview the sound coming from the connected VST plug-in by clicking on the "Test Audio Input" button.



The toolbar has been updated with an ArKaos Connect section containing a led that light-up when GrandVJ is connected to a VST plug-in, and a button allowing to preview the sound coming from the plug-in.

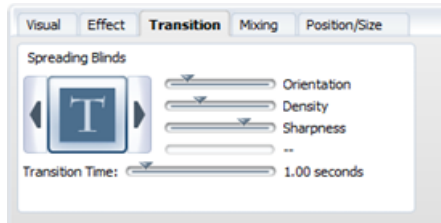
4 Sources, effects and visuals processing

4.1 Transitions

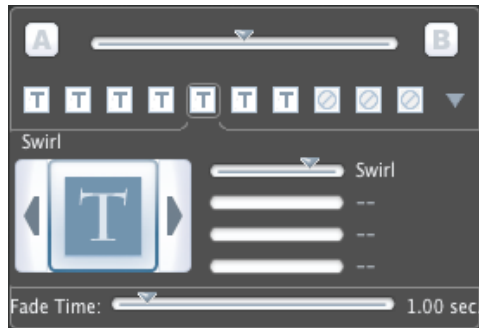
Transitions provide a smooth change between triggered cells or decks. The complete collection of available transitions can be found in the transition tab of the browser panel.

The transitions are similar to effects as they can have up to 4 controllable parameters.

In **Synth mode** a transition can be set per cell and can be controlled via the transition tab of the parameter panel. The transition is triggered when the cell is triggered and stopped.

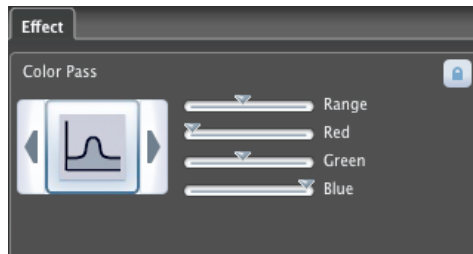


In **Mixer mode** transitions are used for changing between deck A and B. You can set up to 10 transition presets to be used in the mixer (c.f. 3.3 Enhanced Mixer mode).



4.2 Color Pass Effect

This effect simply acts as a band-pass color filter





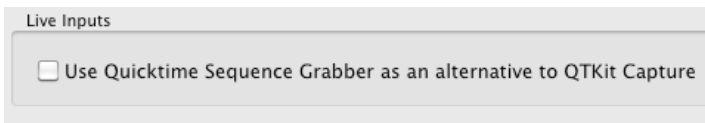
4.3 Alternative Live Input service on Mac

Originally, GrandVJ was relying on the *QuickTime Sequence Grabber* framework to acquire frames from live input devices.

Since version 1.1, *QTKit Capture* framework has replaced *QuickTime Sequence Grabber* in GrandVJ, in order for the software to support HDV devices.

The problem is that several live input devices still work a lot better when used through *QuickTime Sequence Grabber* than *QTKit Capture*, since the drivers are developed separately.

Therefore, it's now possible to switch back to *QuickTime Sequence grabber* by checking the corresponding option in Preferences:



4.4 Quartz Composer (Mac only)

Under Mac OS X, GrandVJ now allows to use Quartz Composer .qtz files directly, both as sources and effects. In older versions it was necessary to save them as QuickTime movies with the big drawbacks that it was slow and it did not allow to change compositions variables. Now the compositions are rendered natively through the fastest available interface.

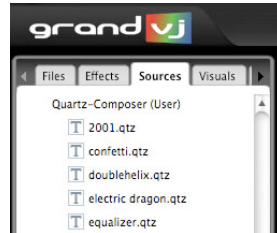
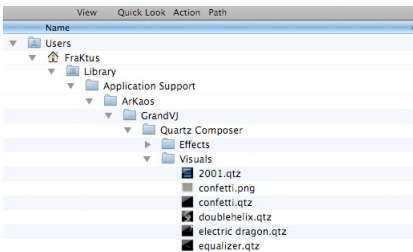
When using a composition as an effect the application will also scan the published inputs and map them as effect parameters, if their format is compatible with the engine. GrandVJ can automatically map parameters that are float values, indexes, colors and booleans and there's one visual input of the composition that receive the cell visual.

4.4.1 Using compositions as sources

The quick way to use a composition as source is to import it just like you do with any movie, by drag and dropping it on a cell or by reaching your .qtz through the file browser.

For your convenience, GrandVJ installs a set of source compositions in */Users/<username>/Library/Application Support/GrandVJ/Quartz Composer/Visuals*. These are listed in GrandVJ under the "Quartz-Composer (User)" section of the sources browser so that they are always available when you create a new project. The idea is that you can also add your favorite source compositions there so that you always have them ready when you work on your projects.

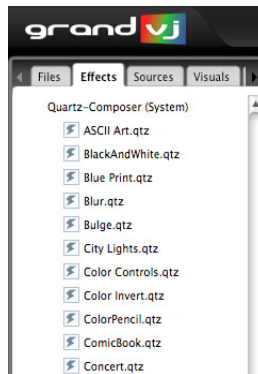
Playing compositions as source does not allow modifying the variables from within GrandVJ, but the audio input FFT parameters will be sent to the compositions just like for iTunes visualizers.



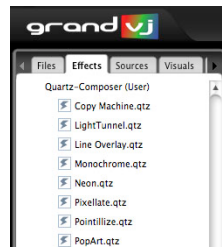
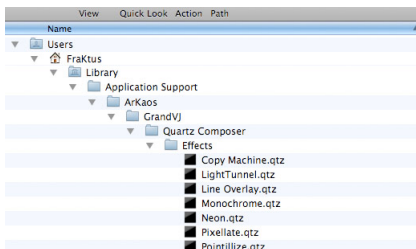
As you can see on the picture, if you want to have a specific icon for your qtz, create a png file that has the same name as the quartz composer file.

4.4.2 Using compositions as effects

For effects, GrandVJ will add all the compositions from your system that are supported. It does this by automatically scanning the system folder *"/System/Library/Compositions"*. These compositions will appear in the application under the "Quartz-Composer (System)" section of the effects browser. You can use them as starting point to develop new effects.

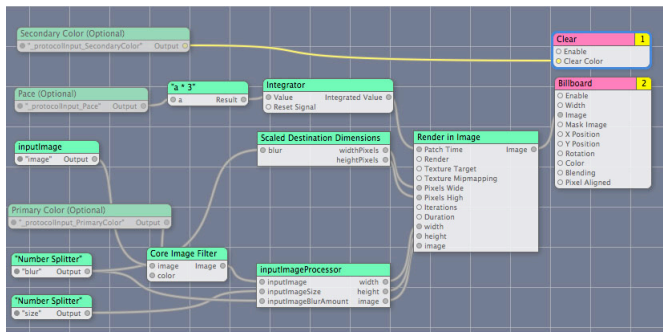


But you can also add your own compositions as effects: just drop them in the local directory *"/Users/<username>/Library/Application Support/GrandVJ/Quartz Composer/Effects"*. They will appear in the "Quartz-Composer (User)" section of the effect browser.



As a quick example, let's have a look at the effect parameters from the system composition

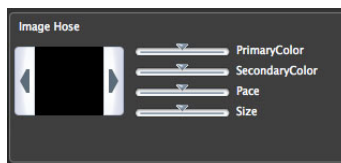
“Image Hose”. With the Quartz Composer application (found in Developer > Applications), open the file “/System/Library/Compositions/Image Hose.qtz” (a copy) here’s what you should see:



Open the inspector (Editor > Show Inspector) and from the menu, look at the Published Inputs & Outputs, here’s what you have:

Published Inputs & Outputs	
Published Inputs From Subpatches:	
Name	Key
image	image
_protocolInput_PrimaryColor	_protocolInput_PrimaryColor
_protocolInput_SecondaryColor	_protocolInput_SecondaryColor
_protocolInput_Pace	_protocolInput_Pace
size	size
blur	blur

When loaded in GrandVJ, the first 4 parameters that can be mapped automatically will be displayed. In this case it will be PrimaryColor, SecondaryColor, Pace and Size:



As you can see, GrandVJ will only display the meaningful part of the parameter name and remove all _ProtocolInput strings from parameter names – this allows to easily display the full parameter name in the panel – it will also make things a little nicer by capitalizing the first letter of the parameter if necessary.

5 Enhanced mixer mode



In mixer mode, GrandVJ has now the possibility of assigning each layer to either the 'A' or 'B' deck. This is done by pressing the 'A' or 'B' sign on each side from the layer preview.

Therefore, the software will run two separate scene renderings, one being the combination of A and unassigned layers, and the other the combination of B and unassigned layers.

The two separated renderings are finally mixed using the selected transition effect that's controlled using the cross-fader.

When the cross fader is all the way to the left (on the A side), layers assigned to 'A' will be fully visible while layers assigned to 'B' will be invisible. On the other hand, when the cross-fader is all the way to the right, all layer assigned to B will be fully visible while layers associated to A will be hidden.

You can also achieve an automatic transition between A and B scenes by using the A and B buttons that are located respectively on the left and on the right side of the cross-fader.

The automatic fade time, as well as parameter of the selected transition preset, can be configured by deploying the cross-fader control panel as shown on the image on the left.

5.1.1 Independent preview

When assigning layers to either A or B, you have the possibility to use the master preview to display the output (as before) but also to preview only the layers assigned to either deck A or B. Suppose you are outputting the content of deck A (by setting the cross fader all the way to the left). If you toggle the preview to deck B, you can now set it up without interrupting the main output. When you are satisfied by what is on deck B, flip back the preview to the main output (pressing B again) and use the cross fader to go smoothly from A to B.

5.1.2 Mixer state saving

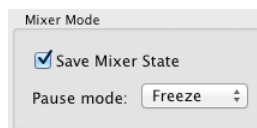
When quitting the application, the state of the mixer is now saved and restored when it is started again. Note that only the locked parameters are saved, since non-locked parameters will be overridden by any cell triggered, it doesn't make sense to include them.

You can activate/deactivate this feature from the Preferences Dialog, in the Advanced tab:

5.1.3 Mixer pause mode preference

This preference (in the Advanced tab) lets you chose between two different pause modes when in Mixer mode:

- "Cut" (default, for compatibility reasons): the layer stops displaying in the Mixer
- "Freeze": the layer keeps displaying in the Mixer



6 Enhanced playback modes

6.1.1 Scratch control

GrandVJ now support Scratch Control with DJ-style MIDI controllers featuring jog wheels, bringing DJs another step further into the VJ world. Two new slider widgets have been added in the Visual parameter panel to control the sensitivity of the scratch and the scratch itself.

The first slider should be mapped to a MIDI cc that sends circular values. You can also use one that is incremental but in this case you have to check the “circular” checkbox when editing the MIDI mapping on this widget (right-click → “Midi Mapping..”).



6.1.2 Playback position control

In the visual parameter panel, the playback widget gains a new mapping target that enables to control the movie playback position using a MIDI or OSC controller. When you stop manipulating the controls the software will resume to movie playback as defined for the layer.



6.1.3 Play once and freeze

Two playback modes have been added:

- “Play once forward and freeze”: the visual plays forward until it reaches the selected “out” frame and stops on that frame.
- “Play once backward and freeze”: the visual plays backward until it reaches the selected “in” frame and stops on that frame.



7 Engine improvements

7.1 Frame blending and software genlock

The graphical engine of GrandVJ has been highly optimized to allow two major features:

- Frame Blending
- Software GenLock to the monitor output frequency to guarantee no frame drop.

Frame Blending is a technique that allows the engine to interpolate between movie frames whenever it needs to. It's very useful when slowing down videos a lot, since instead of producing a steppy frame display, the engine will continuously mix from one frame to the other making the transition a lot smoother. It's also useful when you display movies that have a frame rate that is not 'coherent' with your output display.

For example, when using a 60hz monitor output, you should ideally use only 60/30 fps movies to avoid de-synchronization between the timestamps of the movie frames and when the monitor can display frames. MediaMaster won't prevent you to play a 25 fps movie, but you might end up with some jitter in the display. Activating Frame Blending will make the movies look a lot better in that case.

Software GenLocking is a technique we use to ensure as much as possible a constant throughput of the engine. Our multi-threaded engine now uses all the 'idle' time possible to pre-compute the frames that will be displayed in the future making sure that they are available when needed. Using this technique, we can display several HD movies with no frame drops, resulting in an image quality equivalent to hardware devices.

N.B.: It's important to note that in order to get the best results out of the synchronization process, you need to be very careful about your setup and the movies you use. We'll talk about this in a later paragraph (see tips)

To reflect these new engine capabilities, we've added a new option in the Preferences Dialog called "Engine Accuracy" in the display tab:



In order to get the best display possible, we also use the main display output as timing reference. This ensures that frames are delivered in timely fashion, synchronized to the monitor's vertical blank. However the timing of graphic cards is not always very accurate: they might advertise 60Hz while actually running slightly over/under that frequency. In most case it's not really an issue but if you need the movie playback to be perfectly in time (if you synchronize it with some external audio for example) you need to be able to use the more accurate time reference of the System clock instead. The selection of the time reference is done through the Combo box under the engine accuracy:



Choose "Display" for a smoother image when exact timing isn't mandatory or "System Clock" when the video playback speed is critical.

7.2 Improved visual files support

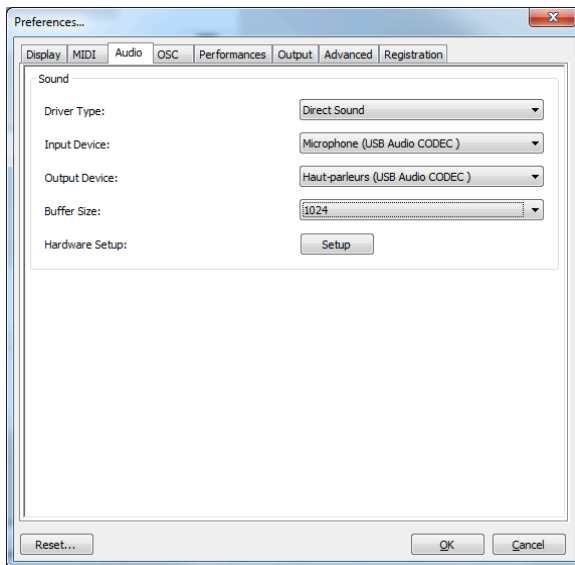
7.2.1 Alpha channel support

GrandVJ now provides support for Alpha channel in images and videos. This means that if you import videos that have transparency information, this information will be used in the graphical pipeline for blending and effects. GrandVJ fully supports QuickTime PNG & QuickTime Animation CODECs as well as transparent PNG & BMP files.

7.2.2 Support for FFMpeg H.264 decoding

GrandVJ is now integrating FFMpeg 0.5 which allows native support for H.264 & AVCHD. Please be aware that AVCHD is still in very early stages and some files might lead to memory leaks.

7.3 Improved support for sound from videos



GrandVJ uses FFMPEG to decode the audio from video files with extensive support for codecs (wav/mp3/aac/&c3). This means a lot more file type can be played back with audio and not only QuickTime's. For example, you can directly play mkv's & vobs into GrandVJ.

Note that for the audio and video to properly synchronize, it is very important that the timing reference (see "Improved engine supporting frame blending") is set to "System clock" as the inaccurate monitor frequency reported by the system might cause the audio to drift.

We also overhauled the preferences dialog to allow the selection of input/output devices and support ASIO under Windows.

- Driver Type selects the class of driver to use. Set to "no audio" to deactivate sound completely.
- Input Device selects the device to use for input (for the audio parameters and beat related functions). Set to "none" to deactivate the audio input
- Output Device selects the device to use for output (sound coming from the videos). Set to "none" to deactivate the audio input

- Buffer size expresses the size of the audio buffers. Bigger values will lead to more stable output but might lead to latency.
- Hardware setup is only available for ASIO and recalls the ASIO control panel.

7.4 Flash Action Script 3 support

GrandVJ now supports a method to transfer variables to/from Flash Action Script 3.

The issue that prevented previous versions to support Action Script 3 was that Adobe has upgraded their security mechanism preventing global variable declarations to be exposed to external.

However, in Action Script 3, you can declare functions to act as external interface, allowing communication with the Flash movie through a specified channel.

So, in order to retrieve/set variables in Action Script 3, you need to create two functions “arkSetVariable” & “arkGetVariable” and declare them as external interface:

```
import flash.external.ExternalInterface;

ExternalInterface.addCallback("arkSetVariable",arkSetVariable);
ExternalInterface.addCallback("arkGetVariable",arkGetVariable);

function arkSetVariable(varname:String, varval:String):void {
    ...
}

function arkGetVariable(varname:String):String {
}
```

The way you decide to implement these functions is pretty much up to you. Since ActionScript 3 supports named arrays, an easy implementation would be:

```
function arkSetVariable(varname:String, varval:String):void {
    arkVariable[varname]=varval ;
}

function arkGetVariable(varname:String):String {
    return arkVariable[varname] ;
}
```

As these functions use an array arkVariable using the variable name as index.

You also need to make sure the variables you need are initialized at startup. Failing to do this, they won't exist in the array and GrandVJ will think they don't exist and won't update them.

So, something like:

```
arkSetVariable("text","undefined") ;
```

will call our function to set the “text” variable to “undefined”, so that it is seen and updated by GrandVJ.

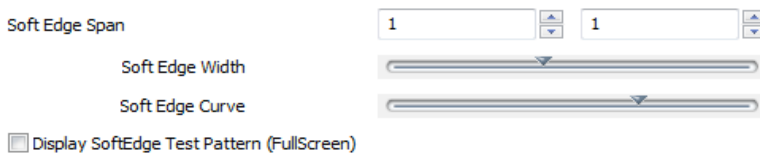
8 Enhanced output options

8.1 Improved soft-edge algorithm

We updated our soft-edge algorithm to allow a better blending when projecting across multiple projectors. The settings are unchanged but the edge blending is a lot smoother.

Additionally, all changes to the soft-edge settings are now directly reflected on the main output, making it a lot easier to configure you multiple projector output without having to leave the Preferences Dialog.

We also included a button in the interface that, when toggled, generates a visual adapted to the soft-edge setup. The button is located under to the width and curve settings, in the Display tab:



8.2 Syphon (Mac only)

Syphon is an open source Mac OS X technology that allows applications to share frames – full frame rate video or stills – with one another in real-time. Until now, Syphon could already be used in GrandVJ through Quartz Composer, the graphical modular language of Apple.

GrandVJ now natively supports Syphon as an additional (virtual) output. Through Syphon, you can send the output from GrandVJ to any other application that support Syphon as input, which makes it possible to use GrandVJ as video mixer module in some more complex setups!

As usual, we tried to make it as easy as possible: the Syphon output is automatically activated when a Syphon client is running, there is nothing to configure in GrandVJ.

If you want to use Syphon as input, you can still use Quartz Composer, please refer to the official Syphon website (<http://syphon.v002.info/>) for more information.

8.3 Multi-Monitor support in Windows

It is now possible to display the output of GrandVJ across all the monitors connected to a graphics card without using the "spanning" feature that was only available under windows XP.

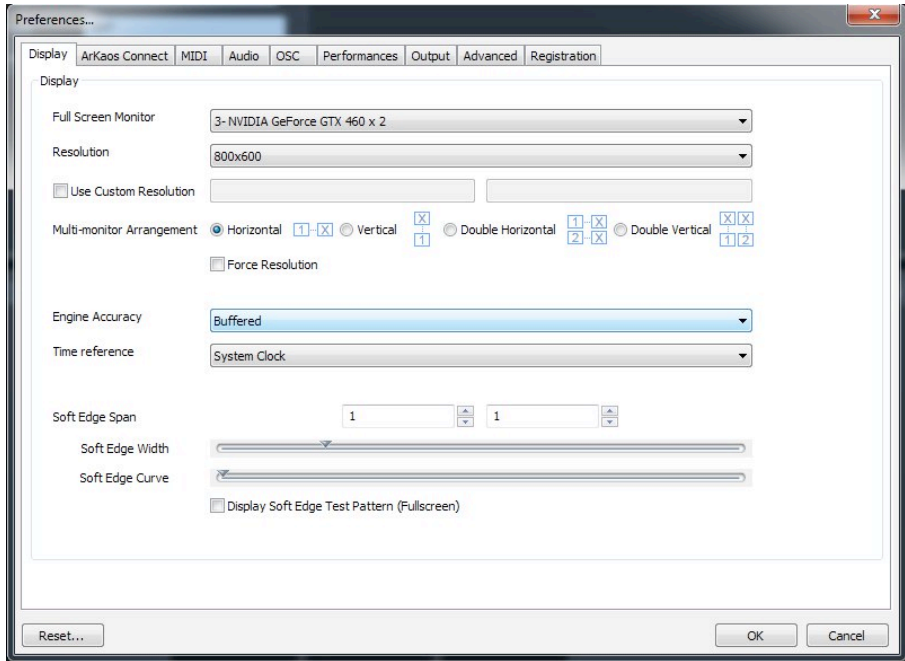
It can be used to avoid going through Matrox DualHead2Go or TrippleHead2Go interfaces if your video card has 2, 3 or more outputs.

This feature is available under Windows XP, Vista and Seven.

The "Resolution" pop-up menu now proposes multiple-monitor setups (i.e. "1024x768x2" for a 2048x768 horizontal setup or 1024x1536 vertical setup) in addition to the standard single-monitor resolutions.

The "Multi-monitor Arrangement" line has been added to the Display tab of the preference

dialog to choose the way you want to arrange your monitors. GrandVJ uses this information in combination with the actual Windows monitor arrangement to determine a correct output.



In addition to that, it is now possible to switch to another application while fullscreen is activated in "Force Resolution".

As a direct consequence, we've simplified the Display preferences panel by removing the "Fit to screen":

- When "Force Resolution" is checked, the output will be displayed fullscreen. This mode guaranties the best performances and screen synchronization.
- When "Force Resolution" is unchecked, the output will be displayed within a top-left aligned window.

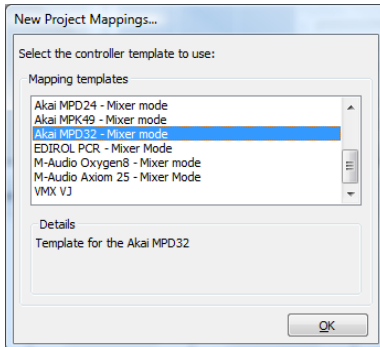
Remarks:

- Under Mac OS X it is also possible to span the output of GrandVJ over several monitors simply by selecting the monitor on the top-left and use a custom resolution that will cover the multi-screen setup area.

As for the previous versions, for performance reason, it's not possible to fullscreen across outputs that are not on the same graphic card.

9 Controller mapping

9.1 Mapping templates



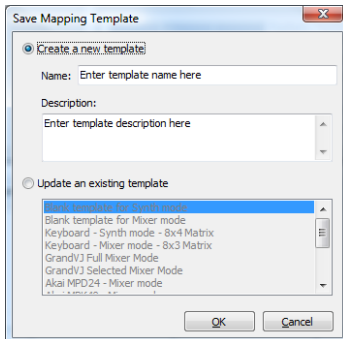
GrandVJ supports the ability to define and save mapping templates so that you can define various controller combinations and recall them on the fly. When starting the program, if you choose “New..” in the startup dialog, you will be presented with a dialog allowing you to choose which template to use.

GrandVJ comes with a handful of templates allowing working with several controllers from different vendors as well as various combinations of blank, keyboard controlled and GrandVJ specific mappings. For some keyboards and controllers, we provide files that will allow uploading the midi configuration corresponding to

the GrandVJ template.

See the 'Template' folder in the installation directory and refer to your MIDI controller documentation for information on how to upload the configuration to your keyboard.

9.1.1 Using custom templates

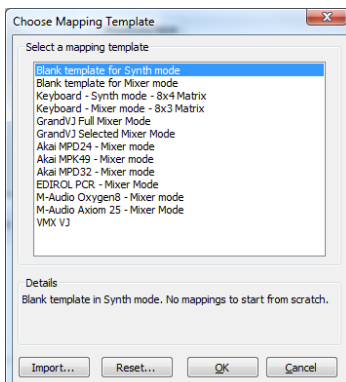


From within GrandVJ, it is easy to create new templates, modify existing ones or share templates with other people.

To create your own template, simply do all your midi and keyboard assignment and select the menu File > Save mapping template.

In the dialog, you can choose to either create a new template (in which case you will need to specify a template name and a description) or update an existing template.

All the saved templates will be available at startup.



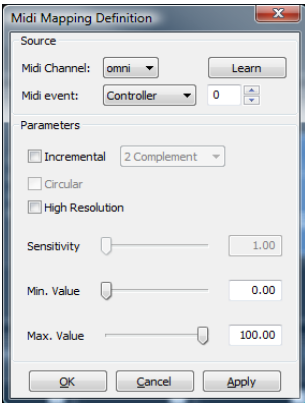
To load or manage your template set, choose the menu File > Load Mapping Template. This will open the “Choose mapping template” dialog.

To make a mapping active, simply select a template from the list and click the Ok button.

Alternatively, you can also reset all templates to the factory settings or import a template that has been given to you as .vjt file.

You can also right click on any entry to delete it, edit its name/description or export the template definition to a separate .vjt file.

9.2 Mapping dialog



The keyboard and MIDI mapping dialog now provide numeric feedback of the slider values. Values can also be entered directly using the text fields.

9.3 Bi-directional controllers & Generic MIDI feedback

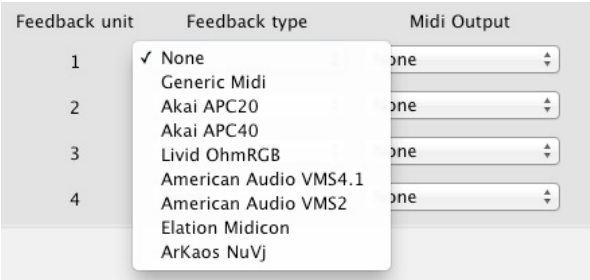
GrandVJ now supports controllers that allow MIDI feedback.

In the preferences/midi tab, you can specify devices that will receive midi feedback from the application. This means that bi-directional devices can be much better integrated since switching layer will reflect parameter changes to the units.

You can define up to four different feedback units in the Preferences Dialog / MIDI tab. Once selected, feedback devices will be restored each time GrandVJ is restarted.

Additionally, we also provide dedicated templates with pre-mapping for specific controllers (see further below).

To use GrandVJ with these predefined mappings, you first need to create a new project using the desired template, then go to the preferences/MIDI tab and choose the corresponding device as feedback unit (if the controller supports MIDI feedback) and MIDI output.



For other feedback devices that are not listed (i.e. Behringer's or Livid's), simply select "Generic MIDI" as feedback type.

9.4 Dedicated mapping templates for specific controllers

9.4.1 Akai APC20 and APC40

To use GrandVJ with the APC40, you first need to create a new project using one of the

APC40 templates, then go to the preferences/Midi tab and choose the APC40 device & APC40 MIDI output as feedback unit, do the same for the APC20.

9.4.2 Elation Midicon

Don't forget to load the Elation Midicon MIDI feedback in MIDI preferences to enable the feedback on the controller.

The two page selectors control the selection of the active bank and active layer. The 8 sliders on the left control the transparency of the layers. The buttons above each slider control the selection of the layer, the play/pause state of the layer and the kill function. When a layer is selected, the led above the corresponding slider light up.

The last slider is mapped on the GrandVJ's A/B cross-fader.

The buttons on the right block trigger the cells.

The touchpads select the transition preset. The touchpad corresponding to the active transition is lights up. Encoders can be mapped as general-purpose encoder.

9.4.3 Korg Nano

MIDI mapping templates for Korg Nano controllers (no feedback), the following controllers are supported:

- Nano PAD + Nano KONTROL
- Nano KEY + Nano KONTROL

9.4.4 Livid Instruments Ohm64 and OhmRGB

The OhmRGB mapping template is similar to the Ohm64 mapping template but don't forget to load the Livid OhmRGB MIDI feedback in GrandVJ's MIDI preferences to enable the specific nice colored keys.

9.5 Numark NuVJ Video Controller

Owners of a Numark NuVJ Video controller can now control GrandVJ in a NuVJ style. You need to load the NuVJ MIDI feedback in MIDI preferences to enable the feedback on the screen and on the pads.

- The template for this controller is defined as follows:
- The first jog wheel controls the GrandVJ scratch parameter on layer 1
- The second jog wheel controls the scratch parameter on layer 2
- The master FX knob selects an effect on the top layer.
- The other knobs in the center control the transparency of the effect layer (the Fx Level), the parameters of the effect, the contrast and the brightness.

Remarks:

In Grand VJ, to reproduce exactly the behavior of NuVj, assign the 9 pads on the left to the first layer, and the 9 pads on the right to the second layer.

If you want to use GrandVJ in a more complete mode, use the two top left knobs to control the bank and layer selection.

9.6 Dedicated mapping templates for DJ-style controllers

We have added or updated templates with feedback support for several controllers featuring jog wheels in order to support the scratch control feature, giving a DJ-style feeling when mixing video with them.

9.6.1 American Audio VMS2

Don't forget to load the American Audio VMS2 MIDI feedback in Midi preferences to enable the feedback on keys.

The template for this controller is defined as follows:

- Deck A basically controls GrandVJ's layer 1, and Deck B controls layer 2.
- The two jog wheels are mapped to the layers scratch parameters.
- The twelve keys on each deck have been mapped to the 24 cells in the matrix bank. However, on both decks, the "SHIFT" key doesn't send any Midi. The "KEYLOCK" doesn't send Midi either, but only on Deck A (hardware failure?).
- The two central faders are mapped to layers transparency.
- The two pitch faders on the sides control the layers pitch, central position being default pitch, and lowest value pitch 0.
- The cross-fader controls GrandVJ's A/B cross-fader.
- "TREBLE", "MID" and "BASS" respectively control layer's red, green and blue values.
- "TONE" controls the audio input level, and "CUE MIX" controls the audio output level.

9.6.2 American Audio VMS4.1

Don't forget to load the American Audio VMS4 MIDI feedback in Midi preferences to enable the feedback on keys.

The template for this controller is defined as follows:

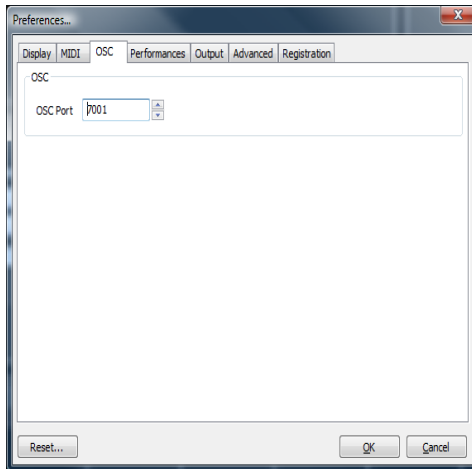
- Deck A basically controls GrandVJ's layer 1, and Deck B controls layer 2.
- The two jog wheels are mapped to the layers scratch parameters.
- The "Effect", "Sample", "Loop" and "Smart" pads on each deck have been mapped to the 24 cells in the matrix bank. However, on both decks, the "SHIFT" key doesn't send any Midi.
- The right and left column of pads have been mapped to the layer selection. The correspondent opposite knobs ("Gain", "Treble", "Mid" and "Bass") controls the transparency of the layer.
- The two faders next to the jog wheels control the layers pitch.
- The cross-fader controls GrandVJ's A/B cross-fader.

9.6.3 Hercules DJ controllers

MIDI mapping templates for Hercules DJ controller series (no feedback), the following controllers are supported:

- Hercules DJ Console MP3
- Hercules DJ Console MK2
- Hercules DJ Control STEEL
- Hercules DJ Control RMX

9.7 Open sound control mapping



In addition to MIDI and Keyboard control, GrandVJ can now also be controlled through Open Sound Control (or OSC). OSC is a new emerging protocol that is networked (so it works through regular wired or wireless tcp/ip) and a lot more precise than MIDI. There are more and more applications coming up that support this protocol, especially in the mobile field on devices like the iPhone.

The same way GrandVJ listens to MIDI, it can also listen to the network for OSC messages. Any control can be mapped to any OSC address for remote control.

Since it is a network protocol, you will have to define on which port GrandVJ needs to listen. This is done in the Preferences Dialog, in the OSC tab.

To assign a control to an OSC control, simply toggle the application in OSC mapping (Menu Options>Edit Osc Mapping), select with the mouse the control you would like to map and send OSC messages from the remote application.

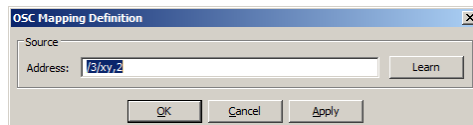
Once it is mapped, you will see the mapping address looking like a path on the key itself. for example:

/2/push1

All OSC communication is done using referring path-like addresses. Each address represents a node that can be controlled. GrandVJ expects the controlling application to supply values between 0.0 and 1.0.

If your controlling application sends more than one value per address (for example a X-Y touch pad could send one value for X and one for Y using a single address), you will need to enter the address by hand.

To do so, right click on the control you would like to map and select OSC Mapping...



You can there enter any address that you would like. If you want to specify the second value of the address (e.g. for the XY pad example we talked about) specify a comma followed by the number of the parameter after the address.

Note for iPhone users: if you use an iPhone (with for example mrmr, TouchOSC, ...), please deactivate the accelerometer during the "OSC learn" phase, otherwise the iPhone will send a lot of accelerometer values and you won't be able to assign messages other than the accelerometer controls.

9.8 MIDI reference for template mapping

9.8.1 Introduction

Additionally to custom-made templates for existing controllers, the template library contains two templates that expose all of the controllable parameters available in mixer mode.

The first one, GrandVJ Full Mixer Mode, maps all the layer parameters in full mode (i.e. You control all layers independently).

The second one, GrandVJ Selected Mixer Mode, maps all the layer parameters in 'selected mode', i.e. you always control the selected layer (see the Reference Manual for more information about the difference between the two modes).

The following tables list the MIDI assignment of those two templates

9.8.2 GrandVJ Full Mixer Mode

Layer Parameter	Midi CC	Channel
Visual Next	0	1-8
Visual Previous	1	1-8
Loop Mode	2	1-8
Movie Speed	3	1-8
Loop Start	4	1-8
Loop Length	5	1-8
Transparency	6	1-8
Copy Mode	7	1-8
Mask Mode	8	1-8
Mask Center	9	1-8
Mask Width	10	1-8
Mask Smooth	11	1-8
Red	12	1-8
Green	13	1-8
Blue	14	1-8
Mixing Preset	15	1-8
Effect Next	16	1-8
Effect Previous	17	1-8
Effect Parameter 1	18	1-8
Effect Parameter 2	19	1-8
Effect Parameter 3	20	1-8
Effect Parameter 4	21	1-8

Layer Parameter	Midi CC	Channel
Position X	22	1-8
Position Y	23	1-8
Position Z	24	1-8
Size X	25	1-8
Size Y	26	1-8
Rot X	27	1-8
Rot Y	28	1-8
Rot Z	29	1-8
Rotation Mode X	30	1-8
Rotation Mode Y	31	1-8
Rotation Mode Z	32	1-8
Shape	33	1-8
Tiling	34	1-8
Position Preset	35	1-8
Deck A Select	125	1-8
Deck B Select	126	1-8

Layer Control	Midi CC	Channel
Layer Next	36	1
Layer Previous	37	1
Layer Select (continuous)	38	1
Layer 1 Select	39	1
Layer 2 Select	40	1
Layer 3 Select	41	1
Layer 4 Select	42	1
Layer 5 Select	43	1
Layer 6 Select	44	1
Layer 7 Select	45	1
Layer 8 Select	46	1
Layer 1 Pause	48	1
Layer 2 Pause	49	1
Layer 3 Pause	50	1
Layer 4 Pause	51	1

Layer Control	Midi CC	Channel
Layer 5 Pause	52	1
Layer 6 Pause	53	1
Layer 7 Pause	54	1
Layer 8 Pause	55	1
Layer 1 Clear	57	1
Layer 2 Clear	58	1
Layer 3 Clear	59	1
Layer 4 Clear	60	1
Layer 5 Clear	61	1
Layer 6 Clear	62	1
Layer 7 Clear	63	1
Layer 8 Clear	64	1

Bank Control	Midi CC	Channel
Matrix Bank Next	65	1
Matrix Bank Previous	66	1
Matrix Bank Select (continuous)	67	1
Matrix Bank 1 Select	68	1
Matrix Bank 2 Select	69	1
Matrix Bank 3 Select	70	1
Matrix Bank 4 Select	71	1
Matrix Bank 5 Select	72	1
Matrix Bank 6 Select	73	1
Matrix Bank 7 Select	74	1
Matrix Bank 8 Select	75	1
Matrix Bank 9 Select	76	1
Matrix Bank 10 Select	77	1
Matrix Bank 11 Select	78	1
Matrix Bank 12 Select	79	1
Matrix Bank 13 Select	80	1
Matrix Bank 14 Select	81	1
Matrix Bank 15 Select	82	1
Matrix Bank 16 Select	83	1

Bank Control	Midi CC	Channel
Keyboard Bank Next	84	1
Keyboard Bank Previous	85	1
Keyboard Bank Select (continuous)	86	1
Keyboard Bank 1 Select	87	1
Keyboard Bank 2 Select	88	1
Keyboard Bank 3 Select	89	1
Keyboard Bank 4 Select	90	1
Keyboard Bank 5 Select	91	1
Keyboard Bank 6 Select	92	1
Keyboard Bank 7 Select	93	1
Keyboard Bank 8 Select	94	1
Keyboard Bank 9 Select	95	1
Keyboard Bank 10 Select	96	1
Keyboard Bank 11 Select	97	1
Keyboard Bank 12 Select	98	1
Keyboard Bank 13 Select	99	1
Keyboard Bank 14 Select	100	1
Keyboard Bank 15 Select	101	1
Keyboard Bank 16 Select	102	1

General Controls	Midi CC	Channel
Latch	103	1
Hold	104	1
Clear All Layers	105	1
Input Volume	106	1
Contrast	107	1
Brightness	108	1
Cross fader	120	1
Cross fader Full A	121	1
Cross fader Full B	122	1
Preview Deck A Assign	123	1
Preview Deck B Assign	124	1

9.8.3 GrandVJ Selected Mixer Mode

Layer Parameter	Midi CC	Channel
Visual Next	0	1
Visual Previous	1	1
Loop Mode	2	1
Movie Speed	3	1
Loop Start	4	1
Loop Length	5	1
Transparency	6	1
Copy Mode	7	1
Mask Mode	8	1
Mask Center	9	1
Mask Width	10	1
Mask Smooth	11	1
Red	12	1
Green	13	1
Blue	14	1
Mixing Preset	15	1
Effect Next	16	1
Effect Previous	17	1
Effect Parameter 1	18	1
Effect Parameter 2	19	1
Effect Parameter 3	20	1
Effect Parameter 4	21	1
Position X	22	1
Position Y	23	1
Position Z	24	1
Size X	25	1
Size Y	26	1
Rot X	27	1
Rot Y	28	1
Rot Z	29	1
Rotation Mode X	30	1
Rotation Mode Y	31	1

Layer Parameter	Midi CC	Channel
Rotation Mode Z	32	1
Shape	33	1
Tiling	34	1
Position Preset	35	1
Deck A Select	118	1
Deck B Select	119	1

Layer Control	Midi CC	Channel
Layer Next	36	1
Layer Previous 38	37	1
Layer Select (continuous)	38	1
Layer 1 Select	39	1
Layer 2 Select	40	1
Layer 3 Select	41	1
Layer 4 Select	42	1
Layer 5 Select	43	1
Layer 6 Select	44	1
Layer 7 Select	45	1
Layer 8 Select	46	1
Pause Selected Layer	47	1
Layer 1 Pause	48	1
Layer 2 Pause	49	1
Layer 3 Pause	50	1
Layer 4 Pause	51	1
Layer 5 Pause	52	1
Layer 6 Pause	53	1
Layer 7 Pause	54	1
Layer 8 Pause	55	1
Clear Selected Layer	56	1
Layer 1 Clear	57	1
Layer 2 Clear	58	1
Layer 3 Clear	59	1
Layer 4 Clear	60	1

Layer Control	Midi CC	Channel
Layer 5 Clear	61	1
Layer 6 Clear	62	1
Layer 7 Clear	63	1
Layer 8 Clear	64	1
Layer 1 Transparency	109	1
Layer 2 Transparency	110	1
Layer 3 Transparency	111	1
Layer 4 Transparency	112	1
Layer 5 Transparency	113	1
Layer 6 Transparency	114	1
Layer 7 Transparency	115	1
Layer 8 Transparency	116	1
Layer 1 Deck A Select	125	1
Layer 1 Deck B Select	126	1
Layer 2 Deck A Select	125	2
Layer 2 Deck B Select	126	2
Layer 3 Deck A Select	125	3
Layer 3 Deck B Select	126	3
Layer 4 Deck A Select	125	4
Layer 4 Deck B Select	126	4
Layer 5 Deck A Select	125	5
Layer 5 Deck B Select	126	5
Layer 6 Deck A Select	125	6
Layer 6 Deck B Select	126	6
Layer 7 Deck A Select	125	7
Layer 7 Deck B Select	126	7
Layer 8 Deck A Select	125	8
Layer 8 Deck B Select	126	8

Bank Control	Midi CC	Channel
Matrix Bank Next	65	1
Matrix Bank Previous	66	1
Matrix Bank Select (continuous)	67	1

Bank Control	Midi CC	Channel
Matrix Bank 1 Select	68	1
Matrix Bank 2 Select	69	1
Matrix Bank 3 Select	70	1
Matrix Bank 4 Select	71	1
Matrix Bank 5 Select	72	1
Matrix Bank 6 Select	73	1
Matrix Bank 7 Select	74	1
Matrix Bank 8 Select	75	1
Matrix Bank 9 Select	76	1
Matrix Bank 10 Select	77	1
Matrix Bank 11 Select	78	1
Matrix Bank 12 Select	79	1
Matrix Bank 13 Select	80	1
Matrix Bank 14 Select	81	1
Matrix Bank 15 Select	82	1
Matrix Bank 16 Select	83	1
Keyboard Bank Next	84	1
Keyboard Bank Previous	85	1
Keyboard Bank Select (continuous)	86	1
Keyboard Bank 1 Select	87	1
Keyboard Bank 2 Select	88	1
Keyboard Bank 3 Select	89	1
Keyboard Bank 4 Select	90	1
Keyboard Bank 5 Select	91	1
Keyboard Bank 6 Select	92	1
Keyboard Bank 7 Select	93	1
Keyboard Bank 8 Select	94	1
Keyboard Bank 9 Select	95	1
Keyboard Bank 10 Select	96	1
Keyboard Bank 11 Select	97	1
Keyboard Bank 12 Select	98	1
Keyboard Bank 13 Select	99	1
Keyboard Bank 14 Select	100	1
Keyboard Bank 15 Select	101	1

Bank Control	Midi CC	Channel
Keyboard Bank 16 Select	102	1

General Controls	Midi CC	Channel
Latch	103	1
Hold	104	1
Clear All Layers	105	1
Input Volume	106	1
Contrast	107	1
Brightness	108	1
Cross fader	120	1
Cross fader Full A	121	1
Cross fader Full B	122	1
Preview Deck A Assign	123	1
Preview Deck B Assign	124	1

10 Tips

10.1 How to achieve best performances with the new engine

In order to get the best out of our new engine, you need to be attentive to quite a bit of details. We're going to explain here what needs to be checked:

10.1.1 Monitor Rate Versus Movie Rate

If you want your movies to be really smooth, you need them to be in accordance with the monitor frequency to ensure that each time there is a frame to show, you have a monitor refresh.

So if your movies are 30 FPS, the monitor needs to be at 60 Hz and if they are at 25 FPS, you need to use either 50 Hz or 75 Hz.

Be also careful that depending on your chosen resolution, the choice of frequencies might change so it's important that once your setup is done, you put MediaMaster in Full Screen and get the monitor reading from the status panel.

10.1.2 Hardware dependencies

We've noticed that some Graphic Cards sometimes react differently depending on the output resolution. For example we have ATI's that don't provide a steady frame rate in 800x600 whilst completely stable under 1024x78.

Also, if you do spans across the two outputs of a graphic card, there's no guarantee the two outputs will run at the exact same frequency. This can also produce jitter. It is sometimes more efficient to make a wide output from one head using Matrox's doublehead2go / triplehead2go than to do a span across the two outputs.

10.1.3 OS dependencies

There are some performance issues that are only valid with respect to the operating system. We'll examine them separately here.

10.1.3.1 Windows

Windows is pretty ok. The only thing you need to make sure is that you run the software in Exclusive mode since it's the only mode that will ensure correct locking to vertical blanks.

To turn on Exclusive mode, make sure the option "Force Resolution" (in Preferences/Display) is active:



10.1.3.2 Mac OSX

Unfortunately, Mac OSX is a lot more sensitive platform. If you display the full screen on one Monitor, all system drawing on the other monitor can cause the full screen to glitch. No matter what application. We adapted the way we do our interface updates so that it won't be interfering with the output but any **other** program updating its GUI will most likely be a problem.

For this reason, in order to achieve the most fluid display under Mac OSX, we recommend to either quit or hide other visible window. To give you an idea, even the refresh of the clock in the menu bar can lead to one frame skipping.

10.2 Setting up soft-edge

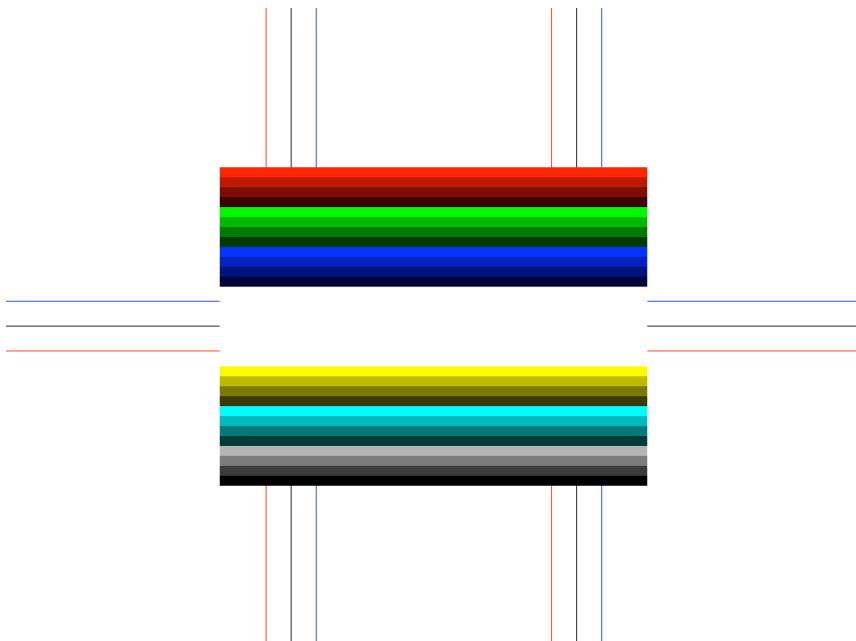
When setting up soft edge, you have to be absolutely sure that all gamma/exposure of the graphic card & beamers are off. Otherwise you might have an imbalance between the two outputs and not be able to connect the projectors.

GrandVJ has now an integrated pattern generator that will help you to set up your screens. Since it is generated internally, it is pixel accurate no matter what your choice of resolution you are using.

You can activate it by pressing the button “Display SoftEdge Test Pattern” under the soft-edge settings.

☒ Display SoftEdge Test Pattern (FullScreen)

The following pattern needs to be displayed correctly for the soft-edge to be correctly configured.



11 Changelogs

11.1 GrandVJ 1.6.5

- added Scratch control
- added Playback position control
- added “Play Once and Freeze” playback modes
- added new Mixer Pause mode
- added “Show Tooltips” preference
- added NuVJ Mapping template + feedback
- added Livid OhmRGB Mapping template + feedback
- added American Audio VMS2 Mapping template + feedback
- added American Audio VMS4 Mapping template + feedback
- added Elation Midicon Mapping template + feedback
- updated Hercules DJ Control Steel, DJ Control Rmx, DJ Control MP3, DJ Control MK2 Mapping templates
- fixed Syphon output in Mixer mode [Mac]
- fixed a crash when choosing an already bound OSC port

11.2 GrandVJ 1.6

- added Syphon output [Mac]
- added the ability to browse using arrow keys
- fixed a potential crash when loading files that are played by QuickTime
- fixed a audio/video synchronization problem in FFMpeg player
- fixed a problem when using a third party audio device [Mac]
- fixed PCM audio playback
- fixed a crash when triggering effects
- fixed a crash when switching fullscreen off
- fixed a crash when previewing a transition
- fixed bank rename save

11.3 GrandVJ 1.5

- added previewer feature
- added ArKaos Connect feature
- added transitions:
 - transition on a Cell [Synth mode]
 - transition on the cross-fader [Mixer mode]
- added main audio output control on main window
- added clip audio gain control
- added new multiple monitors support [Windows]
- added the possibility to rename a bank
- added 16 extra banks in matrix and keyboard bank views
- added “Color Pass” effect
- added support for Akai APC20 (MIDI templates + feedback)
- added the possibility to use QuickTime Sequence Grabber live input service [Mac]
- changed fullscreen behavior: “Force Resolution” mode doesn’t stop when switching to another application [Windows]
- updated the master preview so it has the same aspect ratio as the engine
- fixed major bug causing freeze and crash
- fixed crash using ASIO audio [Windows]
- fixed crash in FFMpeg audio decoding

- fixed crash when changing video input settings [Windows]
- fixed crash when quitting after using video input device [Windows]
- fixed possible user-interface redraw problem when using Display time-reference [Mac]
- fixed a problem that prevented the application to save Decklink setup filter settings properly [Windows]
- fixed a possible crash when quitting after using a Decklink card [Windows]
- fixed a bug in Machine ID / serial check at startup [Mac]
- fixed audio playback problem using latest MacBook Pro (6,2) on-board device [Mac]
- fixed problem using several identical video input devices [Windows]
- fixed OSC port preference that wasn't saved
- fixed a crash when changing audio buffer size

arKaos
www.arkaos.net