HIPPOTIZER v3.0.11 User Manual

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Contents

Welcome to Hippotizer V3

This handbook contains important information about your Hippotizer Media Server. It will help you get up and running with your unit swiftly and ensure you get the most from the system. Please take time to read the following pages, as it will help you understand the unit's functionality and assist in achieving the best possible results during operation.
This Manual is based on Software version 3.0.10. For updates and addendums see www.green-hippo.com

Disclaimer

Media

All video libraries pre-installed on your system are supplied by us at Green Hippo. Any queries regarding the use of these should be directed to us. Copyright laws may apply.

Uploading Own Media

It is your responsibility to handle all copyright issues relating to the media you create and upload. Green Hippo Ltd will not accept responsibility for any breach of copyright incurred in these processes.

Software

All Hippotizer software remains the sole property of Green Hippo Ltd and its suppliers. Any attempt to alter or replicate the contents of The Hippotizer is prohibited. Any attempt to copy or alter the software will render any warranties void. Green Hippo Ltd will initiate legal proceedings against anyone attempting to copy or replicate the software in any fashion.
NOTE: Installing additional software on your system other than that supplied by Green Hippo Ltd is strongly discouraged. Your Hippotizer has a specific task, which is to play back video reliably. Any third party software may compromise this. If you wish to install 3rd party software we recommend you contact us first. We will also endeavour to post information regarding known issues on our website. Any repairs relating to 3rd party software are not covered under warranty.
Additional hardware installation other than USB or external devices will invalidate warranties. Similarly, any removal of external casings should not be undertaken without consultation.
Under no circumstances install a second network device, either internal or external, as this may stop the Hippotizer program from running. For advice on this issue email support@green-hippo.com

Warranty

Green Hippo Ltd will warranty the Hippotizer for one year from date of purchase. This is a full return to base warranty.
Please contact Green Hippo if you experience a hardware fault. You will receive a RMA number and form to send the unit back to our manufacturing partner.
NB: Any attempt to open the casing will invalidate your warranty. Any attempt to load any software onto the unit in any way other than that described in the manual will invalidate the warranty.

Introduction to Media Servers

A real-time media server is designed to control different forms of media and output them simultaneously with manipulation. Manipulation can be made via ZooKeeper, Hippotizer's built in control centre, or externally via DMX, midi, RS232 and other industry standard protocols.

Dual output image/video processor

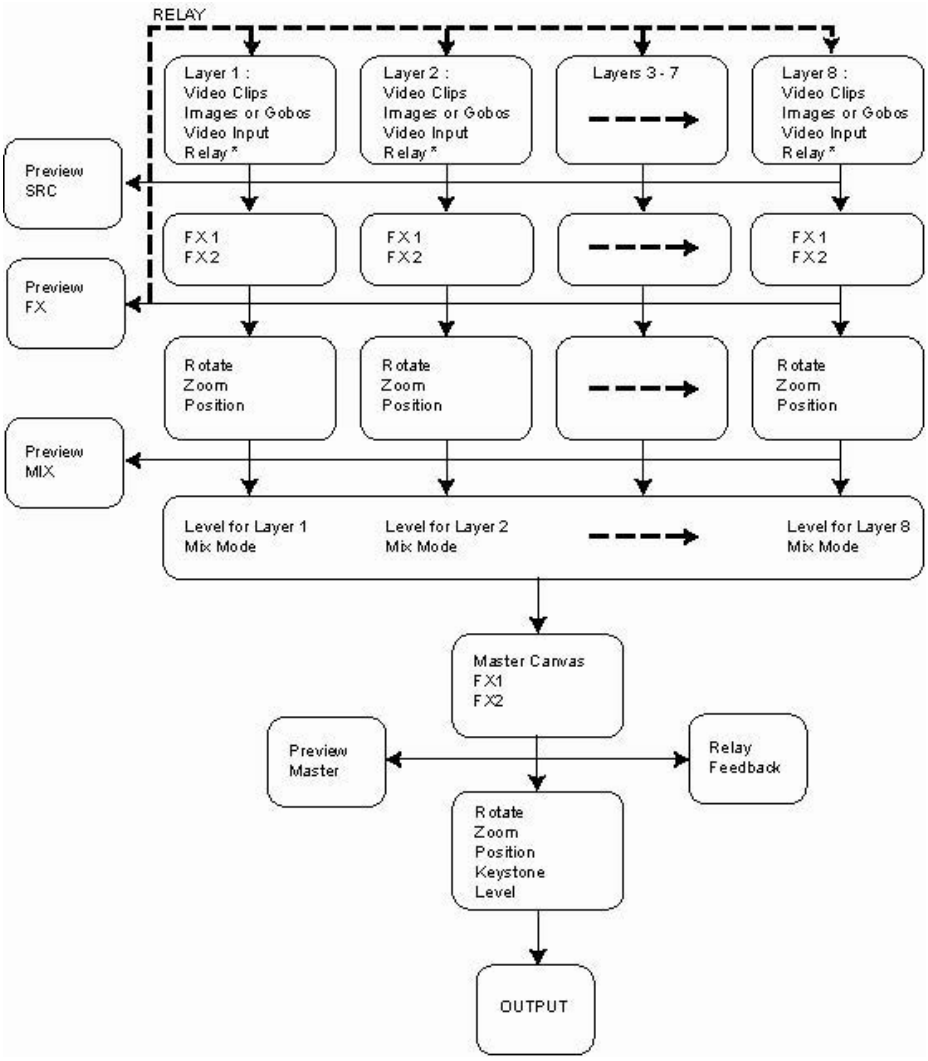
Hippotizer consists of 8 media layers. Hippotizer can run in several different display configurations such as single, dual, or pan mode and display the results using VGA, DVI or composite/s-video standards. Hippotizer is also capable of controlling LED fixtures via DMX over Ethernet (ArtNet).

Real time effects manipulation

Hippotizer allows you to apply FX to images; video and live sources in real time and the effect will be rendered immediately. The ability to mix between layers and apply FX in real time makes the Hippotizer ideal for live situations where the content may need to be continually changed in realtime.

Processing flowchart

The Hippotizer Media Server is, in principle 8 video players, a mixer and a selection of effects all in one box. You have instant access to over 250 parameters at any one time. It is possible to manipulate multiple parameters instantly and at random for any media or live camera feed. Any changes to these parameters are executed instantly, which is why we call the Hippotizer a "real time" media server.
The above is true if running in either single screen mode or pan mode. When running in dual output mode the Hippotizer will operate as two separate 8 layer machines (total number of layers depends on Hippotizer version).
But before we look at the functions and features of the unit it will prove useful if we familiarize ourselves with the basic flow of information through the Hippotizer Engine. To help us we'll use the following diagram.



The process begins with the media player of each layer, where we select the source material. This can be a video clip, a static image a live video feed or the output of another layer (Relay). On each layer you can then add effects to the chosen media. There are 2 effects engines per layer. Also at this stage, each layer can be scaled, zoomed, rotated and positioned in the x and y plane of the final output. The mix mode for each layer decides how that particular layer interacts with the layers underneath. Check out the section 'Mix modes' to find out more about how these work.
Once all 8 layers are mixed together this mix is then presented to the Master Layer. This is the final layer and comprises a combination of effects, positioning and media created on all 8 layers. Any changes made in the Master Layer affect the composition as a whole. The Master Layer is ideally suited to the setup of parameters such as master colour balance or keystone correction for a specific projection setup.

Introduction to Hippotizer V3

Version 3 Hippotizer software is designed to build upon the success of its predecessor V2 which was known for its ease of use, high quality video output and comprehensive set of features. This new version continues this but adds a whole new level of Media Server functionality. However, as with all software which takes a quantum leap, there is a somewhat steeper learning curve with V3 so we recommend you study this document in full and use it as a companion to the product.
NOTE: If you are upgrading a V2 Hippotizer to V3 Hippotizer software you must read carefully the notes supplied with the upgrade package. There are procedures which must be adhered to for the upgrade to be performed smoothly. Details are also available at www.green-hippo.com . Also, Version 2 Hippotizers upgraded to Version 3 may have different hardware to that shown in this manual. If in doubt contact Green Hippo.

Physical Installation

The location of the unit is important. Like any computer it should be kept in a cool dry environment.

Ventilation

The unit is cooled by the flow of fresh air via fans in the unit. Therefore the unit must have a clear air-gap with no obstructions to the front and rear. The unit can run to high temperatures safely if well ventilated but damage to components will most likely occur if any of the vents are obstructed. Air flows through the front doors and out of the back of the unit. If installed in a rack ensure that there is a free flow of fresh air front and back. Never run the unit in an enclosure with a sealed back such as a rack mount case with the rear door still in place.

Rack Mounting

The Hippotizer comes in an industry standard 19" rack mount case. The 'ears' on either side allow you to install it into a standard flight case or any environment employing the 19" standard.
It is recommended that slide rails are fitted as this will allow you access to the inside of the Hippotizer should you need to.

Flight Casing

The Hippotizer can be mounted in a flight case, it requires 4U and must have the front and back panel removed for operation as this is where the fans operate.
Some examples of suitable flight cases are listed below, please visit www.green-hippo.com for more details of suitable mounting and cases.

4U Sleeved Rack case from www.tmb.com

Precautions

Do not place drinks, or heavy objects on top of the unit. Any failure caused by fluid, shocks or misuse is not covered under warranty.
NB: Take care not to push the unit too far back against a wall to prevent damage to the connectors positioned at the rear or restrict airflow through the unit.
Periodically (once a month) clean the filters situated in the doors, it is advised to keep the doors closed whenever possible this will ensure the air is drawn through the filters and the fan doesn't become blocked with debris.

Hippotizer Variants

Hippotizer V3 is available in 3 versions:
Hippotizer Express
Hippotizer Stage
Hippotizer HD
Hippotizer versions differ in number of available layers, number of outputs and maximum resolution of applied media. Please look at the Product Comparison Table on the back page of this manual for detailed specification regarding each version.
The procedures and techniques discussed in this manual and any associated diagrams/photos are based on a Version 3 Hippotizer Stage. In some instances hardware may differ slightly from that shown. When working with a Hippotizer Express, you will see only one graphics card. This is normal.

Hippotizer Server – Hardware and Connections

Front view of Hippotizer V3 Stage

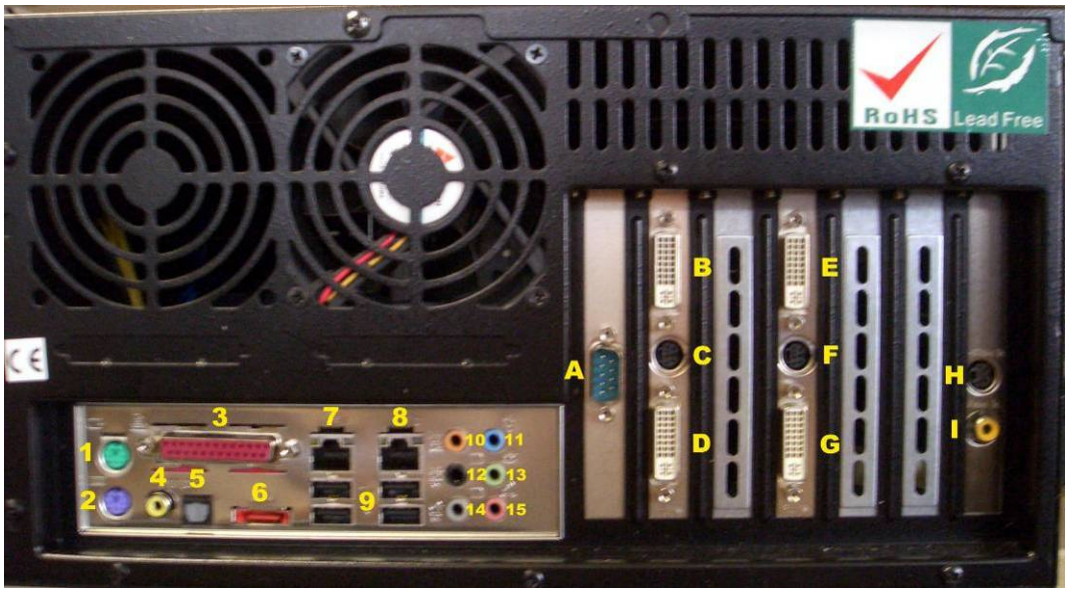
Rear view of Hippotizer V3

The Hippotizer has many similar features and connections found on other computers. The front of the unit has two doors and houses the DVD drive and power and reset switches. The rear of the unit has all of the connections.

Power

To connect power to the Hippotizer plug the IEC cable into the back of the unit (AA) and connect to a suitable power supply. The Power supply auto senses voltage and can operate between 110-240v AC. Once the power has been connected press the rear power switch (AB) to the on position.

Display Connection



The Hippotizer has two graphics cards one displays the output to your chosen display device(s). The second card shows ZooKeeper, which allows the user to directly monitor all functions and access them via mouse and keyboard. Both graphics cards have two DVI outputs allowing you to connect more than one monitor/output device to each graphics card depending on which mode you are running your Hippotizer in (see Display Modes). If you are using a VGA monitor you will need to use a DVI-VGA adapter. There is also an S-Video connection to allow connection to a Plasma/LCD output device.
To connect a monitor or output device to act as your control centre (ZooKeeper) display connect it to the DVI socket (G) on the graphics card furthest from the power supply. Connect the output monitor or device to DVI socket (D) this will display the rendered main output from the unit. Depending how you intend to run your Hippotizer you may wish connect more than one output display device, this is covered in the Display Modes section.

Control Connection

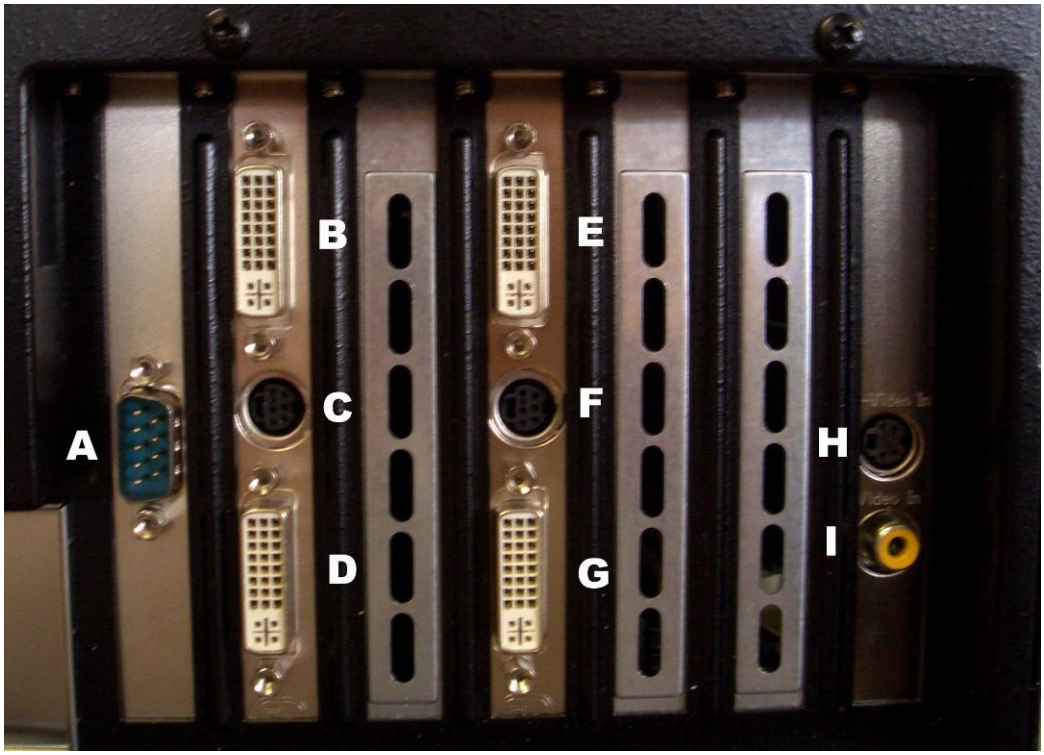
The Hippotizer has six USB sockets; these are useful for connecting a range of devices including mice, keyboards and external drives. It is recommended that the front two USB sockets are kept free to allow easy connection to an external drive for loading media.
To work with ZooKeeper it is recommended to connect a mouse either to the PS2 (1) or USB socket (9). A keyboard may also be needed. This again should be connected to PS2 (2) or USB (9) socket.
You now have now made the basic connections required to start using the Hippotizer.

Network Connection

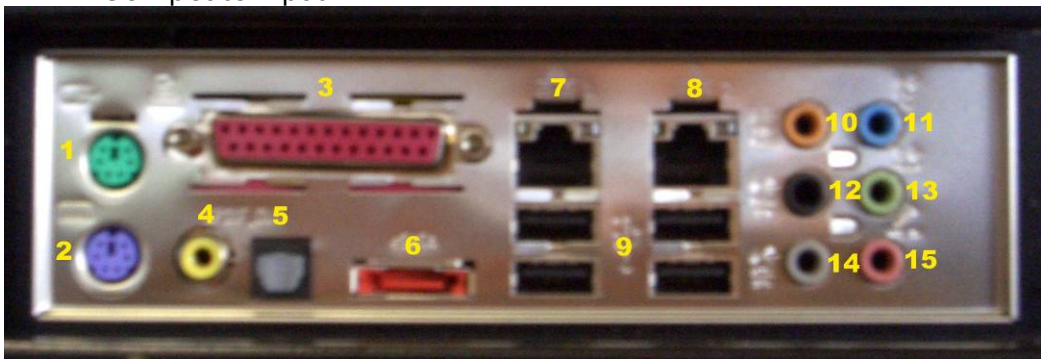
The Hippotizer has two Gigabit Network ports, this provides high speed data transfer and allows the unit to be networked via a hub to other Hippotizers and control via ArtNet or similar. Due to the high speed data transfer CAT6 cable should be used. Connect using one of the two RJ45 sockets on the back (7+8)
Multiple Hippotizers can be networked together using a gigabit switch. This should be done by connecting CAT6 cable between the RJ45 socket (7) to a Hub. Hippotizers communicate using HippoNet enabling the control of multiple units from one ZooKeeper (remote controller) and allowing media to be shared between multiple units (see HippoNet section).

The second network port (8) allows control of the Hippotizer via Ethernet based protocols such as ArtNet from a Lighting Desk or similar controller. If you are connecting directly between a Lighting desk and Hippotizer a cross over cable is required this should be CAT6 to enable fast data transfer. Alternatively a gigabit switch can be used to connect between the Hippotizer and Lighting desk.

Detailed Connections



A. Serial Port (RS232)
B. S Video – Output (If you wish to display ZooKeeper or desktop on a video display)
C. DVI - Control Output 1 (main display output)
D. DVI - Output 2 (for extended control Centre – ZooKeeper – operation)
E. S Video – Output
F. DVI - Output 1 (for main control Centre – ZooKeeper – operation)
G. DVI - Control Output 2 (for secondary or extended modes of output to displays such as Pan, clone or dual modes)
H. S Video Input
I. Composite Input



1. PS2 Mouse Port
2. PS2 Keyboard Port
3. Printer Port
4. Digital Audio out SPDIF

5. Digital Audio Out optical
6. SATA Port (not used)
7. LAN RJ45 Port - HippoNet
8. LAN RJ45 Port – ArtNet
9. USB 2.0 Ports
10. Centre Speaker/Subwoofer Connection (Orange)
11. Line In Connection (Blue)
12. Side Speaker Out Connection (Black)
13. Line Out Connection (Green)
14. Rear Speaker Out Connection (Grey)
15. Microphone In Connection (Pink)

Front Panel

System serial number can be found inside the right hand door.

The front of the unit has two further USB sockets; and a panel display with LEDs to show the unit is running and any hard drive activity. Open the right hand door on the front panel by turning the black key lock in the centre of the unit. Inside here you will find the DVD drive, this can be used to load media or software updates onto the Hippotizer. There is also a red reset switch which should only be used to hard reset Hippotizer in emergencies. The final button is the power switch, this will start the Hippotizer and if pressed during operation will perform a soft shutdown of the system.

Starting to work with Hippotizer V3 Software

Hippotizer V3 software consists of 2 distinct components, the **HippotizerV3 Engine** and **ZooKeeper**.

HippotizerV3 Engine

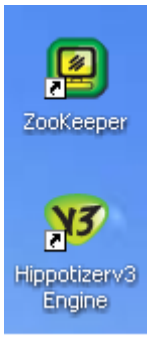
The Hippotizer engine is the software element which generates the output(s) of the system. When running, the Engine can be controlled by either a local control centre called ZooKeeper or an instance of ZooKeeper running on any other machine connected via HippoNet (a system of connecting multiple Hippotizers over a standard Gigabit LAN).
Hippotizer can be run in **Engine-only** mode hence the separation of the Engine from ZooKeeper. However in the majority of this manual, we are going to control Hippotizer with ZooKeeper running on the same machine. (For details of how to control Hippotizer from other machines see Advanced Control Options later in this document).

ZooKeeper

ZooKeeper is the software element dedicated to controlling the engine of your Hippotizer V3. From this user interface you can have real time control of all elements of your media including timeline and preset creation along with all settings for the engine such as screen configurations, display options and so on.
ZooKeeper must be started separately from the Engine component and should ideally be started once the Hippotizer V3 engine is running.
So let's look at working with Hippotizer V3 on a single machine.

Getting Started

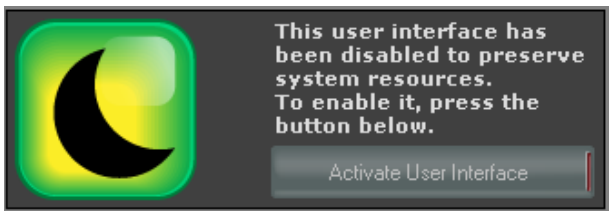
To get started please connect 2 monitors to the bottom connector of each graphics Once you have powered up your Hippotizer and Windows is running, you will be presented with a standard Microsoft Windows desktop. On this desktop you will see icons labelled HippotizerV3 Engine and ZooKeeper.



To start the Engine double-click the **HippotizerV3 engine** icon. You will see some screen adjustments take place over a 20 second period but there will be no visible change in your desktop. However if you look on the taskbar at the bottom of your main control screen you will see an icon for the engine and 4 or 8 icons (version/settings dependant) side by side which represent the Mpeg2 decoders for each layer.

Your Hippotizer V3 Engine is now running and ready to receive control commands from either a local instance of ZooKeeper or ZooKeeper running on another machine. For the purposes of this section we want to run ZooKeeper locally so locate the icon for ZooKeeper on your desktop and double click it.

You will see the program start up with a welcome logo and once running you should be presented with a screen similar to the one shown here.



In this state ZooKeeper is not running to save system resources but is ready to opened quickly if needed. This state is only useful when the system is being controlled remotely so click **'Activate User Interface'.**
By default the system will open in the last screen layout used. However, if your Hippotizer is new then you should be greeted with the following layout.

If you are using a monitor which supports 1280 x 1024 resolution you can resize the layout for optimal viewing using the button labelled '**1280 8layerdefault'** on the top task bar area**.** This will give you a more suitable layout. If you don't see the above layout click either **1024 8layer default** or **1280 8layer default** depending on your monitor's resolution. Before we dive into controlling the Hippotizer, let's just take a little time to see how we can work efficiently with the screen layouts and ergonomic features in Hippotizer V3.

Screen Layouts and Ergonomics

ZooKeeper has a selection of views designed to help users optimize viewing and layout. Firstly, you will notice that all windows are drag-able. This means you can move key elements of the User Interface into locations which suit your current work mode. Also you will notice that in the top right hand corner of each element there are a series of clickable size options like these:  . These go beyond the usual Windows maximise and minimise options and give up to 3 different views of the selected element to suit different needs. For now we suggest you leave the default view in place to help you to begin working with Hippotizer but later experiment with these to see how you can best view the layout. And bear in mind that once you have a view you are happy with you can use the '**save desktop'** button on the top task bar to save a layout and then switch between different views.

You can also spread your ZooKeeper interface across two monitors if desired. We recommend using a high resolution monitor but in the absence of this, 2 XVGA monitors can be a good second best, particularly in more advanced situations where you might employ the timeline.

Clicking and double clicking

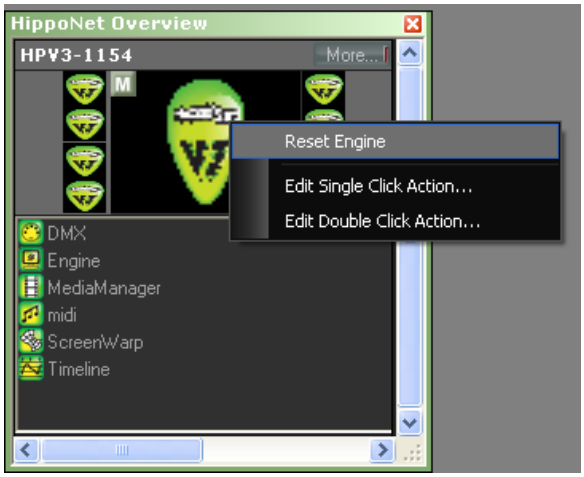
In Hippotizer V3, many sections are capable of being opened or displaying different views by either single-clicking or double-clicking. Also many functions can be dragged to other locations to copy or apply settings. We will cover this in subsequent sections. If you hold your mouse over various parts of the screen areas you will see combinations of the following functions:

Arrow Head: This means that the area you are hovering over is **drag-able** to other locations.
Single Dot: This element has a function activated by a **single click**.
2 dots: This element has a function activated by a **double click**.
Vertical Line: This element can be **increased or decreased** using, for example, a fader.
Arrow: This control can be dragged as a reference to other areas (i.e. onto the timeline)

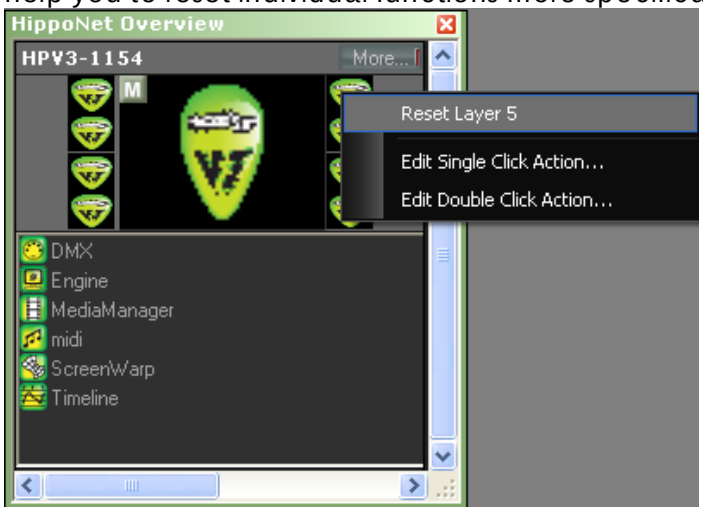
You may see combinations of any or all of the above functions depending on which point in ZooKeeper your mouse is.

Reset Functions and procedures

Reset Entire system: To reset an entire Hippotizer to default values, right click in the centre of the large window in the HippoNet Overview window and select Reset Engine. This restores all values to default throughout the system.



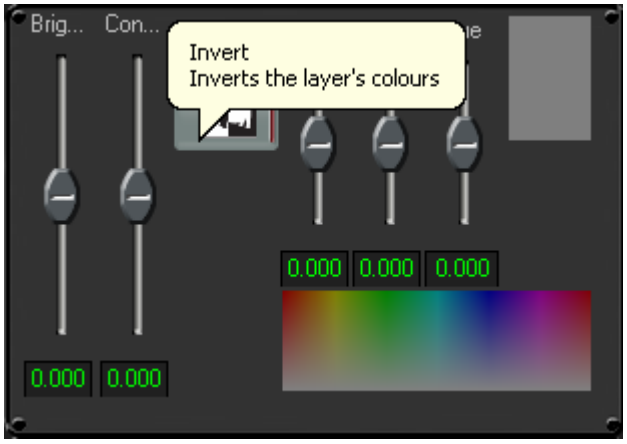
Reset a Layer: In the layer control box there is a reset button to restore all functions on that layer to the default values. However, there are some guidelines which if learnt will help you to reset individual functions more specifically.



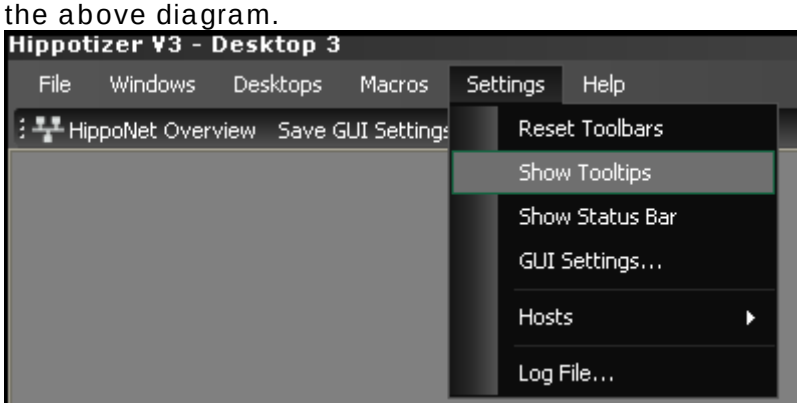
Reset Specific functions or groups of functions: As a general rule in ZooKeeper you can reset any single value by double clicking on its relevant control. Furthermore, a group of functions can be reset by double-clicking anywhere in the box which bounds them.
To test this function, go to the colour correction box as shown below in fig (?) and adjust the brightness, contrast and red values to a value other than default by dragging the relevant fader up or down with your mouse.
Now place your mouse over the brightness control fader and double click it. You will see its value reset to 0.000. Now place your mouse over the open grey area just to the right of the contrast fader and double click. You will see **all** the values you changed in the red and contrast sections snap back to their defaults.
So the simple rules are:-

- Double-click a specific fader or function to reset only that function.
- Double-click in the grey area to reset any group of functions contained within a bounding box.

ToolTips



If you require more information **tooltips** are available. Activating this function will give more in-depth information about the function your mouse is currently over as shown in the above diagram.

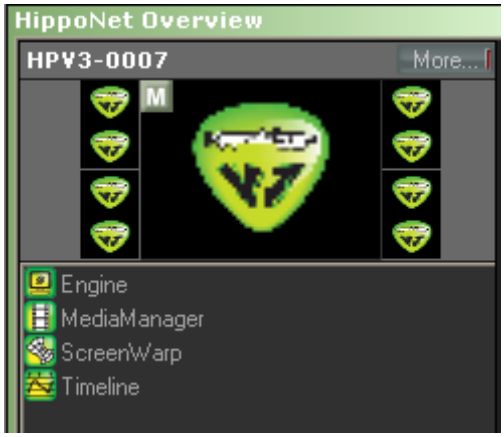


You can switch this function on and off by accessing the settings menu on the top tool bar and selecting '**show tooltips'.**

ZooKeeper – an overview

The layout of ZooKeeper is divided in such a way that similar functions are grouped together into boxes. The following will give an overview of all key areas to get you started.

HippoNet Overview



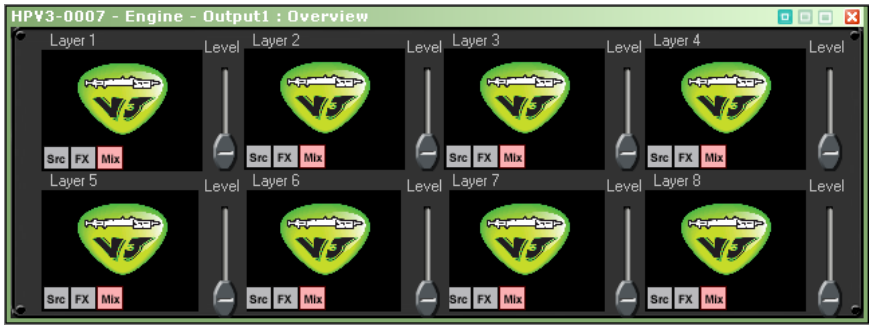
This is the heart of your ZooKeeper control centre. In this instance you will see a view similar to that above but in future projects where you have more than one Hippotizer on the network you will see a view like this for **every** system present, allowing you to control multiple machines simultaneously.
Each system has a name at the top to identify it. Below this is a representation of the main output and all layers. The large area in the centre (shown below with the large Green Hippo logo and above with Hippotizer V3 logo) is the main output. The smaller icons around the edges represent the 8 layers present on the machine (you may have only 4 layers depending on configuration and hardware version).

Below this you will see a list of the key **components** present on the system. Later we will show you how to add more of these 'building blocks'.
At this time most of the controls you need have been opened as part of the **1024 8layer default** view settings. However, in the future you may need to reopen some sections. Here are some of the key approaches to doing so.
Double clicking any layer area opens the relevant **layer control window** and **media selector** window.
Double clicking the large area to the centre will open the **Layer Overview Window**.
Single clicking the letter **M** at the top right will open the **master output controls**.
Right clicking in the large central window will give options which will be covered later but at this time the **reset engine** function will be the most useful to you since it resets all layers and master canvas to the default settings.

The Layer Overview window

The layer overview window gives a general representation of the layers and basic controls for previewing and adjusting levels. In the view above you have basic information. However, you will note there are several resizing options accessed from the controls in the top right hand corner.  . In larger scale views there are more controls to be accessed according to your needs.

Horizontal orientation:



Detailed View:

In this view a much more comprehensive set of controls appears. However, many of the functions are accessible from other zones in ZooKeeper so this version might be a useful view to select once your composition is complete and you need one place to do the majority of changes quickly and easily.
When not already open you can access the layer overview by clicking on the centre video preview (Hippotizer Output) on the HippoNet Overview window.
In the final view you will have access to many controls such as layer level, mix modes, source selection and so on which we will cover in subsequent sections.

The Layer Control Window

Double clicking any layer in the Layer Overview Window will open the Layer control Window. Only one instance of the layer Control Window can be open at one time. You can make it active for any layer by clicking the desired one in the Layer Overview window.

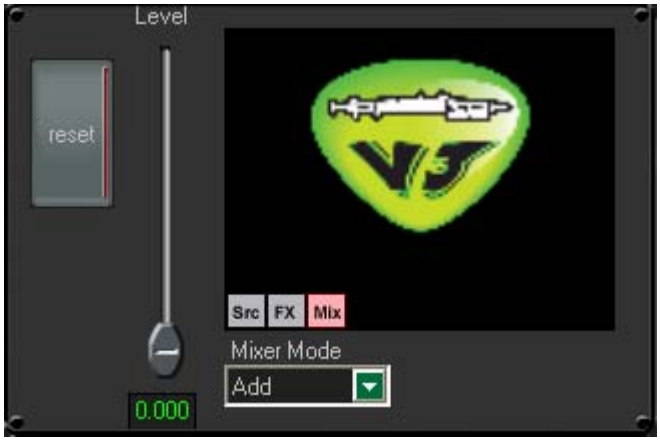
The layer control window provides advanced controls for adjusting the parameters of any layer and is divided up into sections, each grouped according to its function.
The above view is the basic horizontal version. By default the layer window will open in this view. However you still have access to all controls, they are just not as comprehensive. Click on the leftmost icon to get the view above. You can switch between views depending on the degree of control you need.

Above is the basic detail view in portrait version and gives the same information in a different view. This view is selected by clicking the centre view selector.

The above view is the comprehensive or full view activated via the rightmost view selector. Here all the controls are expanded to give more detailed parameters and more options to manipulate settings.

By default the layer window will open in a compact mode however you still have access to all controls, they are just not as comprehensive. You can switch between views depending on the degree of control you need.
The Layer Control is divided into different panes, each grouped by the type of controls they contain, such as geometry or Effects and so on. The default values can be reset by double clicking in the grey area of the pane for that group of controls or by double clicking on a fader.
So let's look at the elements contained with the Layer Control Window:

Reset Button



This is an overall reset of the layer and will reset the attributes of the layer. It sets the Media Player back to bank 000 clip 000 (the first media in the first bank of the Hippotizer library).

(2) Level and Mix-Mode

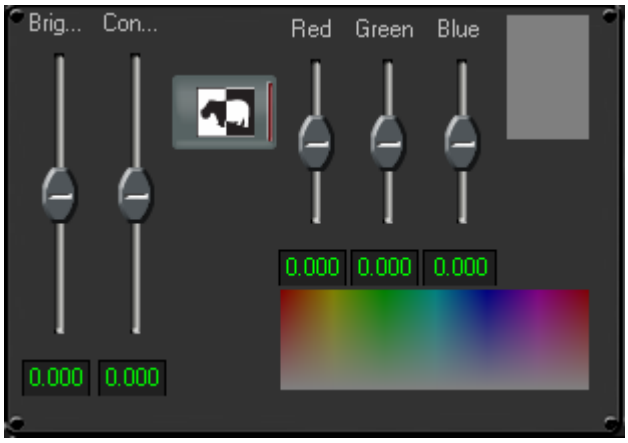
The level control allows you to set the level for the individual layer by dragging the fader up and down or by typing a value in the box below. For example, typing 0.5 sets the level to 50%. Moving this fader up and down adjusts the level of that layer in the overall composition.
The Mix-Modes dictate how the layers interact between each other. As a general understanding of this function layer 1 can be seen as the background layer (as found in other photo and video editing software). The mix mode dictates the type of transparency or mix that any layer will have with those underneath it. As this is hugely important and can get quite complex there is a separate section explaining their functions in greater detail.
However, we recommend you experiment with these settings to view their effect. To do so, select a video clip or image on layer 1 as a background. (Remember to bring the Level up to full to see the layer on the Output) Then go to layer 2 and select another image or video clip. Select different Mix-Modes and play with the Level of layer 2 and you'll quickly get a grasp on the basic principles.

(3) Layer Preview

This box provides a representation of the media playing on the layer and any geometry, colour, effect and level settings applied to it.
You will also see 3 buttons labelled **Src FX** and **Mix**.
Src: This button allows you to view the source media without any effects or setting applied to it.

FX: This button allows you to view any media and the effects applied to it but without any geometry or other functions. So if, for example, a piece of media is heavily zoomed to be almost un-viewable you can still adjust the effects on it without un-zooming it. You can select media by dragging and dropping media thumbnails from the media selector into this area. Alternatively you can just click the media in the media selection window. Note that the layer you have active in the window will be the one changed. To switch to another layer click it's relevant icon in the Overview Window. This will mean you don't have to have multiple instances of the layer preview or any other layer controls, only the layer you are working on. The text at the top of the window indicates which layer you are working on.

Colour Controls



Here you will find adjustments for the layer's Brightness, Contrast and RGB colour values. There is also an invert button for the colour. The colour controls can be set manually using the faders or by typing the percentage in the black box below.

The black and white hippo button inverts the colours of the media.

If you do not wish to set the colours individually using the respective levels of the RGB faders, you can select colour by clicking anywhere on the colour picker and dragging the mouse around while previewing on the output screen. The box to the right (shown in red in this diagram) is a representation of the current colour selected by the colour picker of combination of fader adjustments.

Layer Source

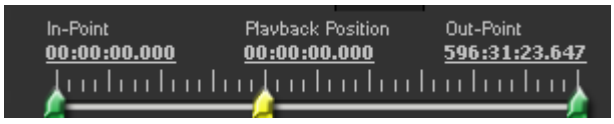
Hippotizer can display a variety of inputs and sources by selecting one from this area. On each layer you can switch between 4 different types of Sources:

- Media Player – plays videos or stills stored on the Hippotizer Hard Disc Drives
- Live Video input – Live action or external sources fed in via standard or optional cards
- Generators – Algorithmic patterns generated internally
- Relays – Using the output of any other layer as the source for this layer

Use these buttons to switch between the 4 different modes listed above.

Media Player

The Media Player on each layer allows you to play back video clips and still images stored on the Hippotizer's Hard Disc Drives. To change a clip either click on it in the Media Selector or drag the thumbnail from the media selector window here. On the left hand side you can see important information like the file name, resolution, and default frame rate etc.



The In-Point and Out-point of video clips can be altered by dragging the green pointers located on the left and right of the Playback scale. These can also be set to precise numbers by clicking on the white numerical values labelled in-point, out-point and playback position. To reset the default in and out points, double click anywhere on the pointer scale or drag the icons back to the ends of the progress bar.

Next to the preview screen is a speed control. Drag up and down to vary the speed of a clip. Double click it to reset to normal playback speed. The speed can also be entered as a value in the box. Note that because the system can play media of differing frames per second values the speed is always shown as a percentage of the normal playback speed. So a 25 frames per second clip set to 50.00 will play back at 12.5 frames per second and so on.
The buttons below act like those on a VCR but with some additional functions.

 Play Once Forward

 Loop Forward

 Pause

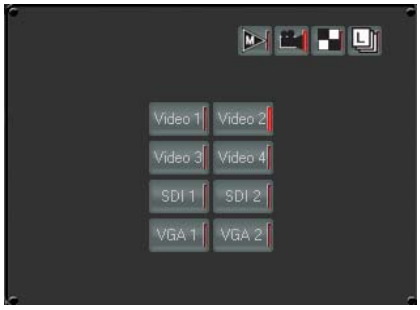
 Play Once Backwards

 Loop Backwards

 Ping Pong – plays forward to the end-point marker then reverses play to the in-point marker and repeats creating a ping-pong effect. (Note that the efficiency of reverse playback is dependent on the I-frame structure of the clip. For more information see the 'Encoding Media' section).

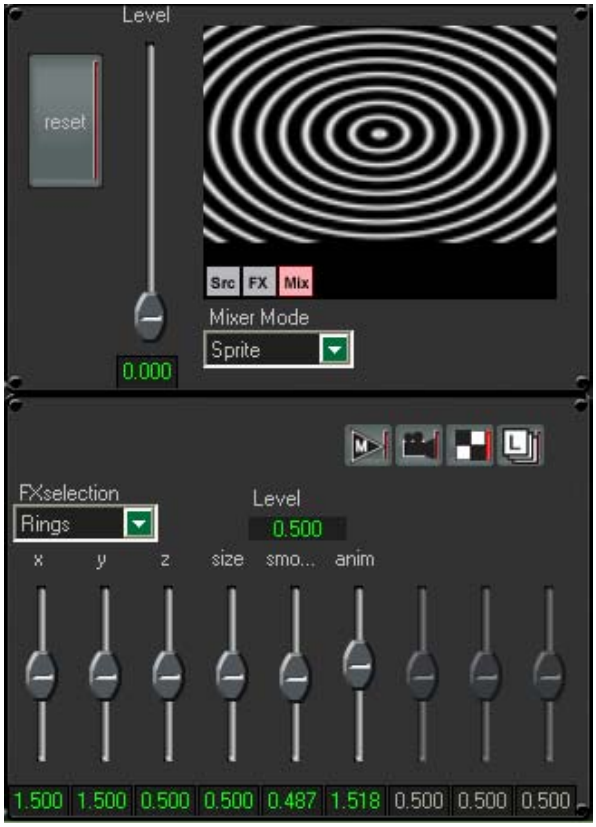
 Random Frame. This rapidly selects random frames within the clip to jump to and generates some interesting effects. If the speed control is reduced simultaneously some interesting frame grabbing and blending effects can be achieved.

Live Video Input



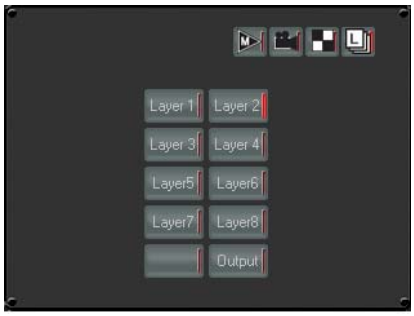
This selector allows the source of the layer as that entering the system by either the default S-video/Composite capture card or any of the optional SDI, VGA or 4-input capture cards. Select one of the inputs to view the live source. The items listed and the functionality of these buttons will be limited by the capture devices present in your system. You will also have to pre-configure your various input card settings. These settings can be found by right clicking the 'Engine' Icon in the HippoNet overview and selecting settings -> live video settings.

Generators



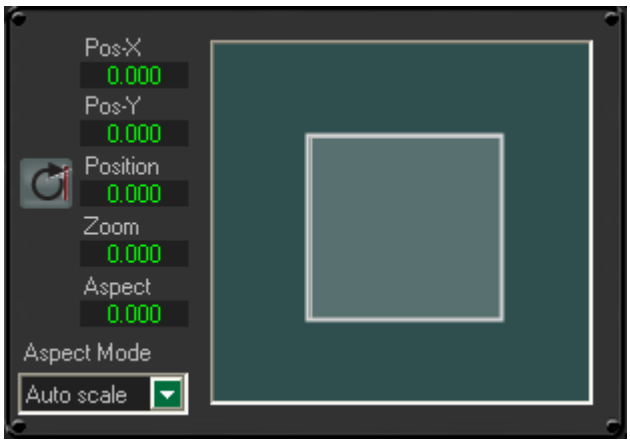
The Generator is new to version 3. Generators do not play back media files, but generate images on the basis of algorithms. These algorithms generate patterns and textures using mathematics without the need to source media. Currently only a handful of examples are included like a simple colour matte and some geometric shapes, but this is an expandable feature and we will be adding many useful presets in the future. Select a Generator from the drop down box and then modify the parameters below. The Colour can also be changed as described above in the colour controls. Users of LED fixtures will find these especially useful.

Relays



Relays allow you to feed the result of one layer into another layer. This allows you to run multiple instances of the same clip whilst keeping system resources to a minimum. Also, Say you need 4 FX engines to achieve a particular composition then you can feed the result of Layer 1 into layer 2 and use the FX of layer 2 on top of the FX from layer 1. Alternatively you can also create feedback by feeding the Master Output back into a layer. This can create interesting effects, but requires some experimentation.

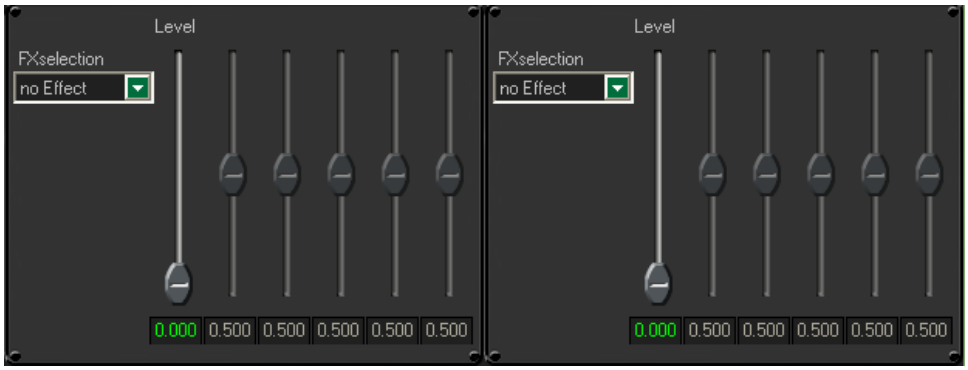
(6) Geometry Control



These are the controls for the position of the media on the output. This can easily be manipulated by dragging the light blue screen around with the mouse. By simultaneously holding down shift on the keyboard you will get fine control. Similarly, Ctrl + mouse movement rotates the image and Alt + mouse movement will zoom the image. The position of the screen can also be manipulated by dragging the relevant numbers from left to right. This is useful if you only want to adjust, say the X-axis position.
The Aspect Mode drop down menu allows you to choose Pixel 1:1 to maintain the true size of the media, or choose Auto Scale to allow Hippotizer to expand the media to fill the screen whilst maintaining the aspect ratio.

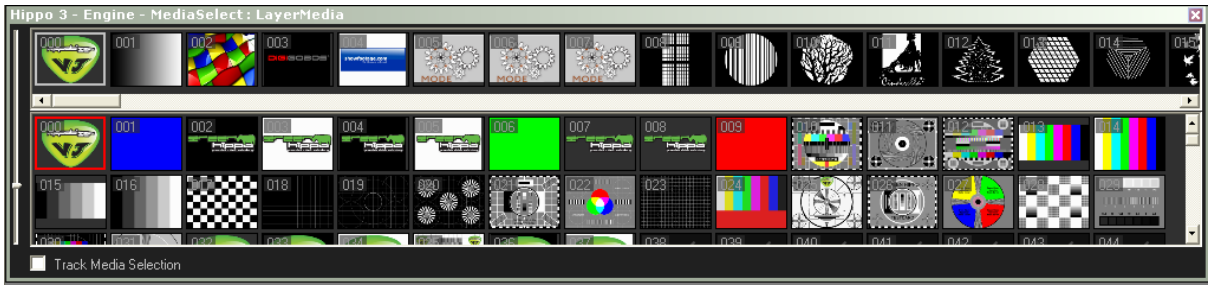
Clicking the circular arrow button  will allow you to set the continuous rotation speed of the media. When this button is pressed, the position value will change to the speed value. By dragging the cursor to the left it will rotate the media to the left and vice versa.

(7) + (8) FX Controls



The two bottom windows are two FX engines which can be applied simultaneously to the layer. The drop down menu shows all available FX and by selecting one of them, the controllable parameters will become active and be labelled with their function for that effect.
The results of the Effects are covered later in this manual, but you can experiment with these effects quickly by selecting an effect and adjusting its value accordingly. Remember that you can reset any value by clicking its fader or reset the whole effect to no effect by double clicking in the grey area around the controls.

Media Selector Window



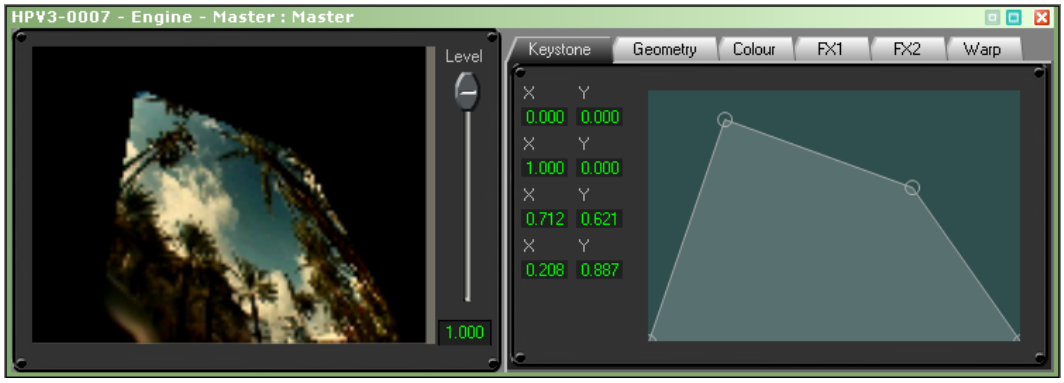
Hippotizer ships from the factory with a collection of default shapes, masks, and a bank of 100 media clips pre-installed. You can access these clips from the media selector window. In the Media Selector Window you will see a row of thumbnails in the uppermost row, where you can select from one of the 255 media banks. A bank is a 'virtual folder' containing clips and stills selected by the user during the process of importing media. Clicking on a bank icon in the top row gives access to the media within that bank. Thumbnails of the media within the bank will be found in the window below. Clicking on this will activate that clip or image on the active layer.
The way that this media is organized is covered elsewhere in this manual but for now you can experiment with viewing and selecting clips preloaded on the system.
The selection made will affect the active layer so begin by selecting the required layer in the layer overview window. Ideally, if this is your first encounter with Hippotizer, we suggest selecting layer 1 which is your 'background' layer. Select a bank and click through the media available. You will see the media change on the layer preview and master output (if your levels are at full). Once loaded you can use the functions we have covered in previous sections to manipulate the media and add effects, geometry changes, colour correction and so on.
If you wish to load media to different layers quickly you can simply click and drag the thumbnail into the relevant layer on the Layer Preview Window.
If you wish to see larger thumbnails there is a slider at the side of the window to increase or decrease the size of the thumbnail.

The Master Layer

You may remember from the earlier flowchart that whilst all layers are individually configurable they are then fed to one global layer called the Master Canvas or Master Layer where changes affecting all layers in a composition can be activated.
You can access the Master Layer by clicking the 'M' button in the HippoNet Overview window. Here you can make global changes to all layers along with some advanced controls such as keystone. To the side of the master layer is the level control allowing you

to change the output level. Use the tabs to access further settings and functions listed below. To see the view shown above use the view selectors at the top right of the window,

Keystone



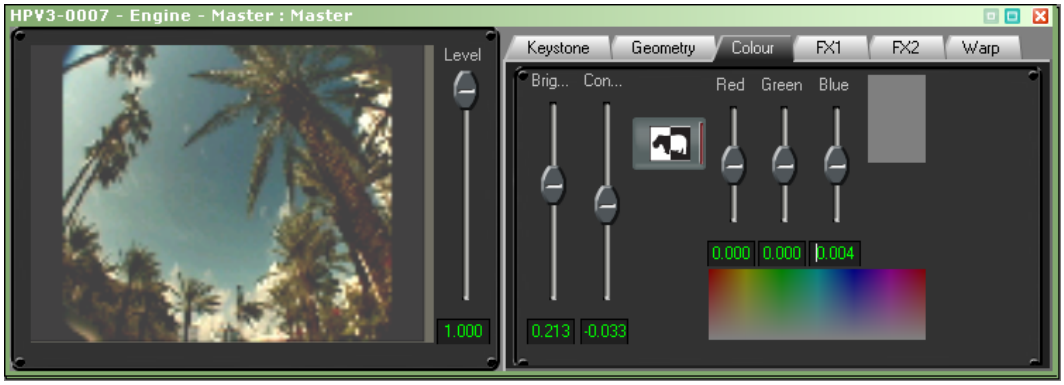
Select by clicking the tab marked keystone. When projecting onto screens from non-perpendicular positions, the projected image will be distorted. These 8 controls allow you to either enter the value or drag the values to alter the keystone effect applied to the overall image. The output can also be keystoned by dragging the corners of the green box to create a shape to suit.

Geometry

Next tab. This has identical functionality to that found on the layers but affects the composition as a whole. By dragging the light green box around this will alter the position of the media within the display playback. Values can again be entered manually or the mouse used to drag the values to increase/decrease them.

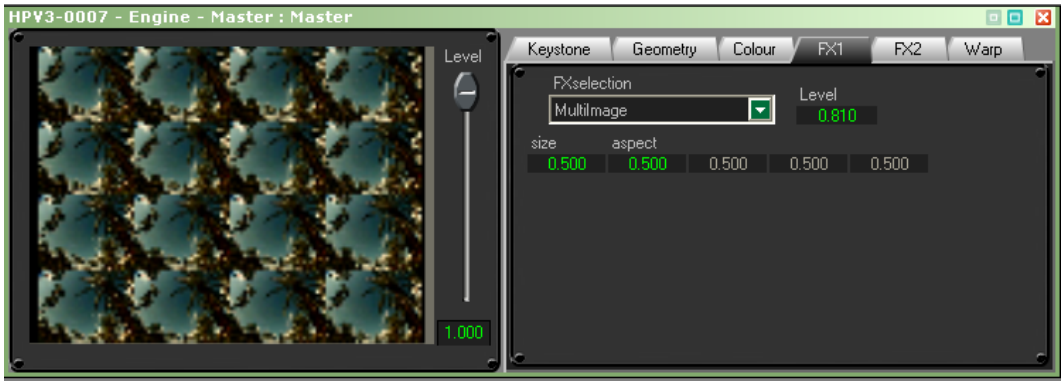
Clicking the circular arrow button  will allow you to set the continuous rotation speed of the media. When this button is pressed, the position values will change to the speed values. By dragging the cursor to the left it will rotate the media to the left and vice versa.

Colour



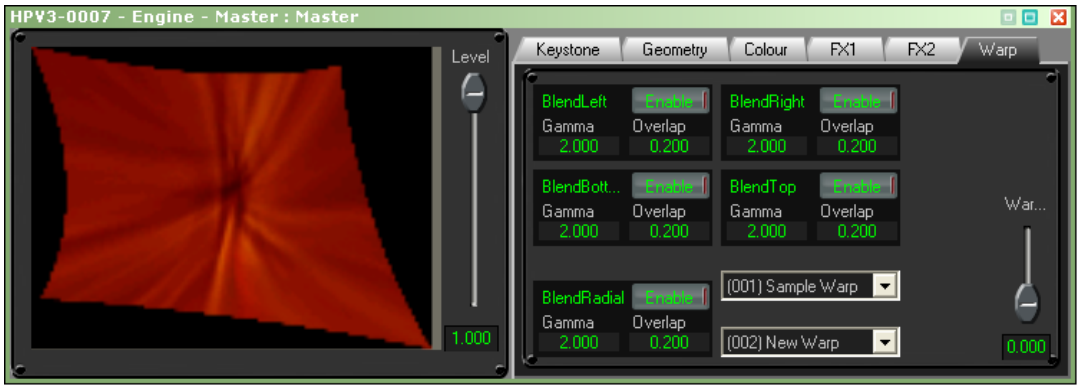
This tab contains controls to alter the brightness and contrast of the complete composition.. The invert function will invert the colours, while there is also the option to alter the RGB levels or use the colour picker just as in the layer functions.

FX



The Master layer has 2 FX engines which work in exactly the same way as the individual layer FX but once again affect the composition as a whole. You can access the second FX Engine by clicking on the FX2 tab.

ScreenWarp



ScreenWarp is a sophisticated screen shaping module found on all Hippotizers. It allows users to adjust the output image to appear linear on non-linear surfaces or just create an effect. This part of the ScreenWarp should be run in conjunction with the main module which can be opened via the ScreenWarp icon in the HippoNet overview window. Using the section located in the Master Canvas section we can fade between pre-created warps and adjust edge-blending parameters and so on. The creation of ScreenWarp presets will be covered in the advanced section later.

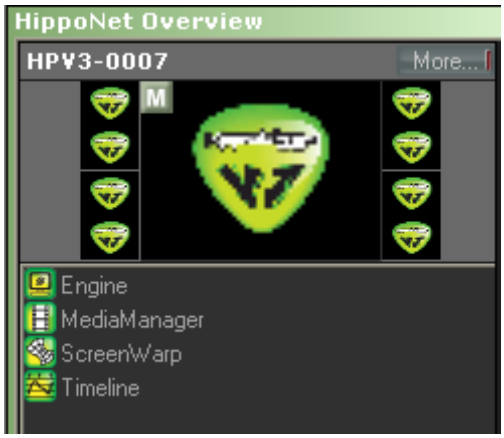
The four black boxes labelled BlendLeft, Blend Right etc allow you to adjust the soft edge blending for the warp; this enables you to join more than one output together if using multiple Hippotizer systems. See soft edge blending section.
To activate the soft edge blending click the enable button, then adjust the Gamma and Overlap value. Whilst holding down the left mouse button the values can be increased or decreased by dragging the mouse left or right or by simply typing the value into the value box.
The blend radial option allows you to create a circular blend. See subsequent sections for more details on using this feature.

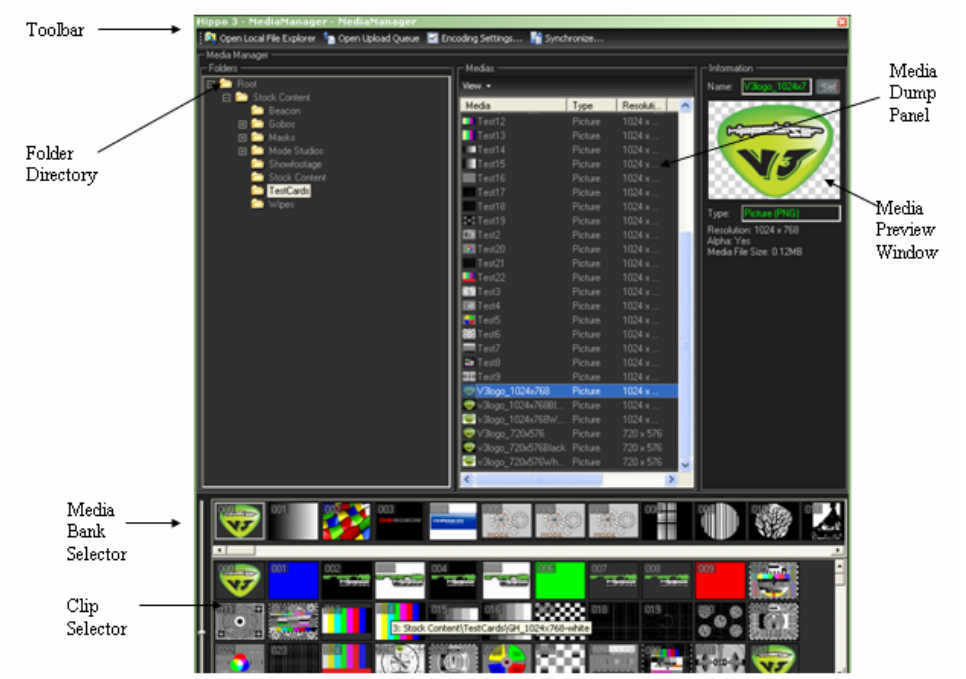
Media: Importing and Managing your Media

Hippotizer V3 software brings a revolution in content import for Media Servers. Traditionally users use third party encoding software on an external machine to encode media to the correct format. In Version 3 Hippotizer the encoder is built into the software and the entire process of importing, encoding and finally allocating your media to a bank and location can be done within ZooKeeper or from any other server. This reduces encode times and allows users to integrate the process into their overall working strategy on a running Hippotizer.
In Hippotizer V3, media management is done somewhat differently to those familiar with V2 Hippotizer. You can import media from any drive connected to the system. During the following process you will arrange your media into banks and clips as you wish without affecting the layout of your media on the source drives. During the process of importing the media, the system will encode the media to the correct format automatically, and link it to the location you choose.

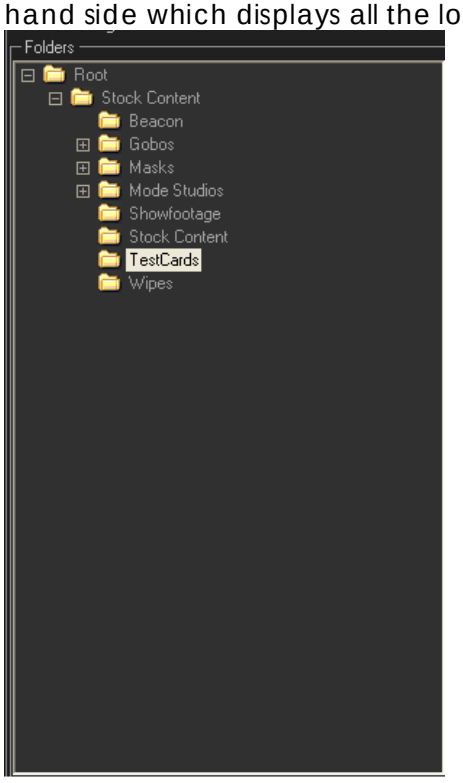
How to Import Media

To begin importing media double click the MediaManager icon in the HippoNet Overview window as shown below. The Media Manager will now open in a new window.

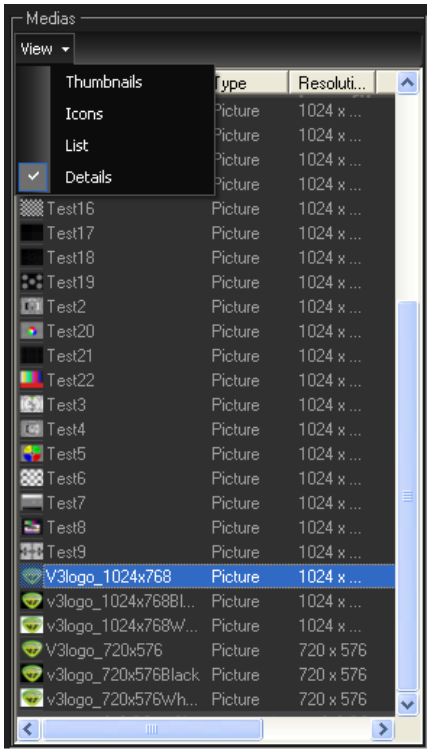




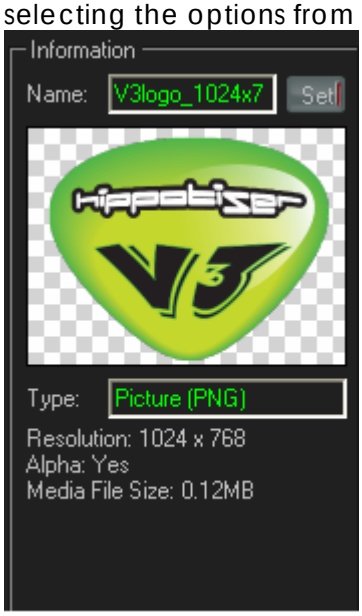
The MediaManager is divided into different panes with the Folders pane down the left hand side which displays all the locations of the imported media.



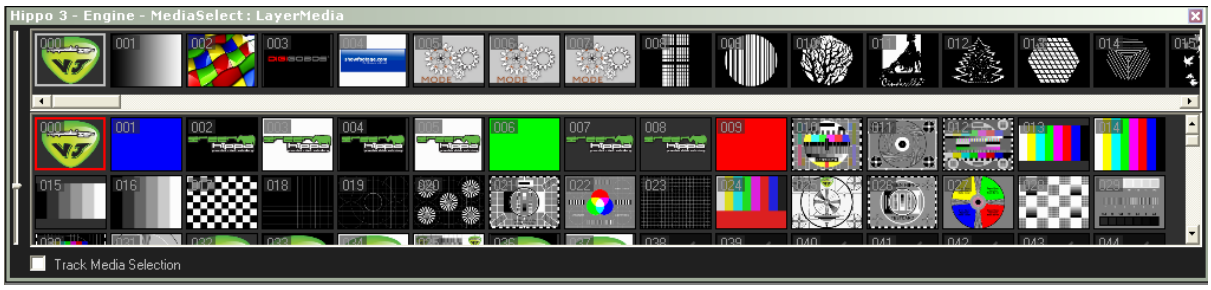
The above is a close-up of an example folders pane. Note that your system will have a different folder list than shown in this example.



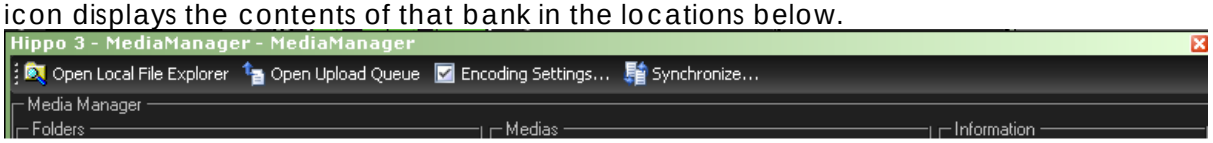
The Medias pane displays the imported media and can be viewed in different ways by selecting the options from the View menu.



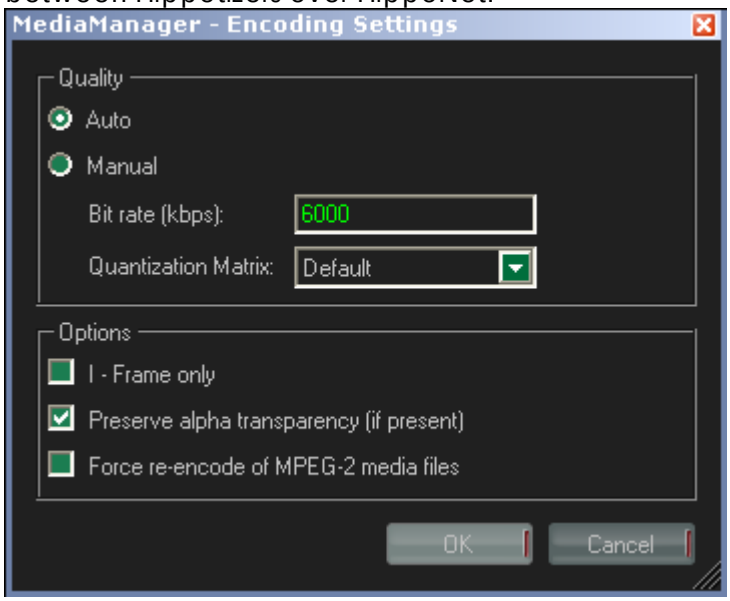
The Information pane shows a preview of selected media along with detailed information about the file. Selecting different files in the Medias pane displays relevant information for that file.



There is a representation of the media selector included in the MediaManager. This is used to allocate your media to a location which you can then access via the media selector within the layers. The media banks are displayed along the top of the window with the clip locations below. The first clip in each bank is used as a thumbnail for that bank. To scroll through the media banks use the horizontal scroll bar. The vertical scroll bar allows you to view the clips within a selected bank. To the left hand side of the media banks is a scalable toolbar which alters the thumbnail size allowing you to see more or less rows of clips within the bank. You can also increase the viewing area by clicking the corner of the window and dragging it to the desired size. Clicking on a bank icon displays the contents of that bank in the locations below.



The toolbar, found at the top of the window, allows you to import clips via the Media Manager, view upload progress, alter the encoder settings and synchronize media between Hippotizers over HippoNet.



Clicking the Encoder Settings will open a new window. We recommend you leave these settings at their default values unless you have a reason to change them. Hippotizer's Media Encoder is already set to the optimal parameters for general use.
However, the settings do allow you to do the following if needed:

- Change the quality from Auto to Manual and define your own bit rate.
- The Quantization Matrix allows CG/Animation to be selected for improved encoding of computer generated graphics or animation.
- Within the Options pane there is an option for 'I - Frame Only' ticking this option will improve playback of clips when played backwards. However the resulting files will be considerably larger increasing the use of system resources. Therefore only select this option if your show relies heavily upon reverse playback of files.
- Preserve alpha transparency will keep the transparent background that a media clip may have. Only certain source files are capable of supporting alpha channels and the most common will be uncompressed QuickTime files. Wherever possible, Hippotizer will encode the source file to Mpeg2 and preserve the Alpha Channel transparency information even in Mpeg2 format. The maximum vertical size for clips with alpha channel is 576 pixels.

- The '**Force re-encode of MPEG-2 media files'** option can be used if you experience erratic or unexpected playback from files added to the encoder which are already Mpeg2 format.

Importing Media – a tutorial

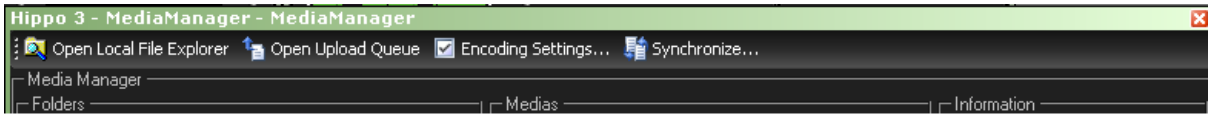
To proceed with this section you will need to have a folder on the system or on an external drive with some source media available. A handful of clips of any format will suffice and can comprise of video and stills. We recommend some video files are present as then you will see the full power of the encoder.

First begin by right clicking on the root of the file tree in **'folders'** and selecting 'Create Subfolder'. You can give the folder a name which will help you organise your media.

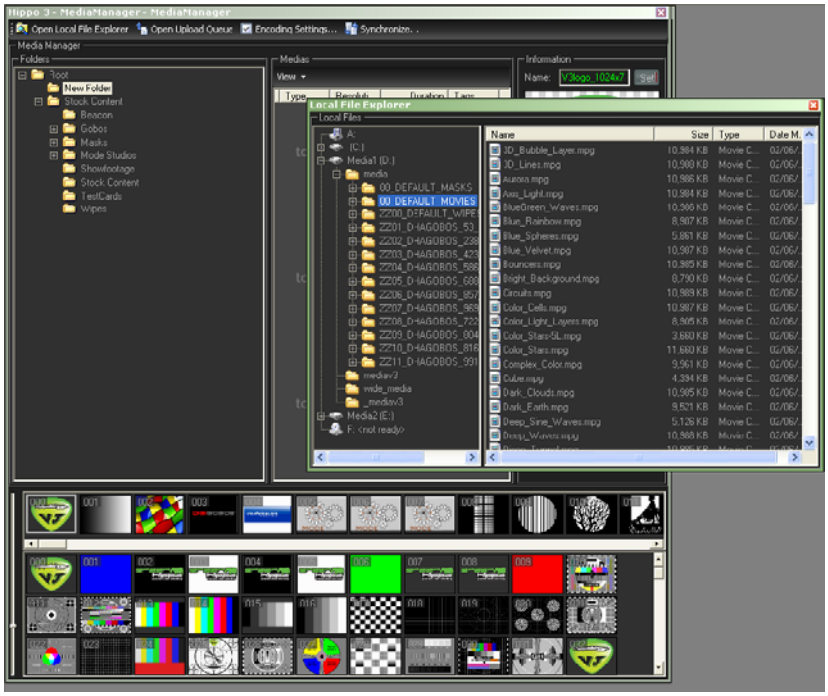
Be aware that at this stage you are not arranging your media for your show but simply organising your Hippotizer V3 library. Allocating the media to a specific bank is done later and can be done differently for each show you work with.

Give the folder a name such as ‘Example Media’

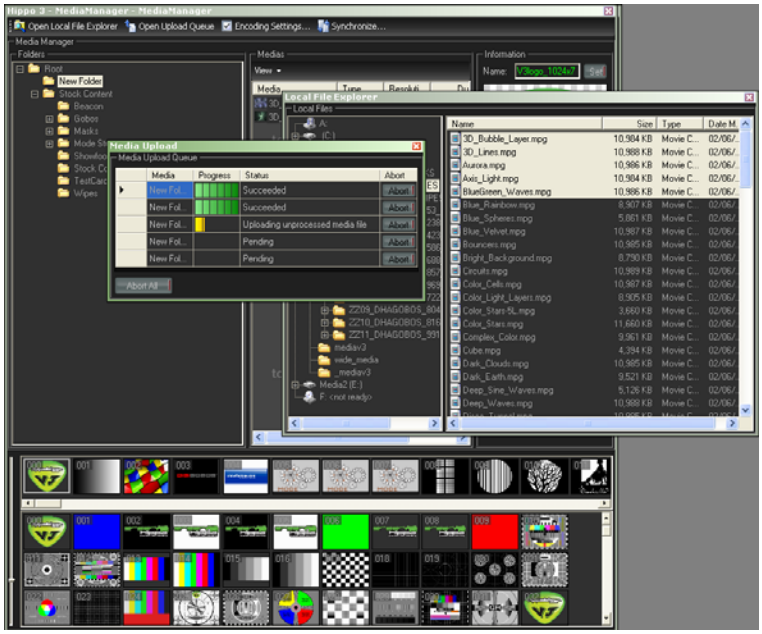
Now highlight your new folder in the folders window. This will mean the media you now encode will be added to this folder.



Click **‘open local file explorer’** on the toolbar.



Browse through the required drive or external device until you find the desired folder using the tree in the left hand pane. Then select the media by clicking on the individual file or select a whole folder. Note that multiple files can be selected using the Ctrl key or a range of clips selected using the shift key to select all files within the selection. With the files selected drag them from the explorer window into the area marked **“to add Media, drop files here…”** in the medias window.



This will start the Media Upload window which shows the progress of the encoding of the files to the MediaManager.
Once a file has been successfully encoded, its status will change to ‘Succeeded’. If there is a problem, an error message will be displayed explaining why it was unable to encode the file. If you have inadvertently selected a file or wish to cancel there is an abort button next to each clip and also an abort all option.

If you wish to add more files from other locations the above steps can be repeated at any time.
Once the files have been successfully imported into MediaManager the Media Upload window can be closed with the X in the corner.
Your files are now encoded and imported into Hippotizer V3 but they have not yet been allocated to a bank and clip location allowing access through the Media Selector during normal use.

Adding media to banks/clips

Once the above process is complete, you will see the media listed in the Medias window along with any subfolders you have created. This shows that the media is encoded and present, ready to be allocated to a bank for use during general Hippotizer operation.
Media can now be added into banks and clips by simply dragging the thumbnail from the list in the media window onto any space in the clips selector window below. By holding down the shift button and clicking on the first and last clip, multiple clips can be added. Similarly multiple selections can be made by holding down the CTRL key whilst clicking files.
There are a few working guidelines you might wish to follow here:

- You can drag any or all of the files to any slot in any bank. If you have selected multiple files the slot you chose will be the first media in the list and all others will be added in subsequent slots. For example if you add 5 clips to bank 1 beginning at 035 you will fill slots 035 to 039.
- If the media you have in the media window is exactly what you want in one folder of the media selector, you can drag the files to the thumbnail in the bank selector, but be warned that this will add the clips at location 000 onwards and overwrite any media references already present.
- The clips can be moved from slot to slot in the media selector by holding the clip and dragging to another slot. You can add the same clip to multiple locations if you wish. Right click and select delete if the file is no longer required at that location. (this does not delete the actual media file, just that instance of the clip/image)
-

Empty banks or clip locations are signified with a grey X on a black background.
The media is only stored as a clip location within the banks which means if a piece of media is used in a layer and then the clip location updated to new media within the bank it will update the layer to the new media too.

Delete a Clip

The clip can be deleted by highlighting and pressing delete or right clicking and selecting delete from the menu.

Synchronize

The Synchronize function allows you to duplicate the media library from one Hippotizer to other units on the network via HippoNet. Be aware that any media which is different on the other Hippotizers that may be in the banks will be replaced. See the Synchronize section for more details.

Mix Modes and Effects and Generators

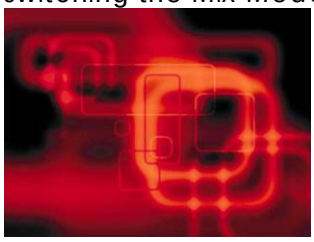
Now that you are familiar with the basic functionality and navigation of the user interface and how to load and access your media we can now take a look at ways to manipulate your media to combine multiple layers to create certain looks.

Mix Modes

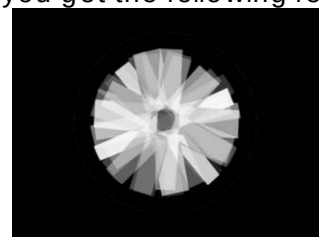
Mix-modes are an essential tool to create multi-layer compositions. Remember that to switch between the different layers and make them active in the **layer control window** you must click the corresponding layer in the **layer overview window**. Familiarise yourself with this procedure for switching between layers before you attempt to experiment the mix modes as it will be helpful.

So, Mix modes allow you to control how each layer interacts with other layers within the composition. If you are experienced in picture or video editing this will be familiar, albeit with a few key differences. For those not versed in the art of multi-layer compositions, simply look at Mix Modes as a way of deciding what the transparency properties of a layer are in order to view any layers beneath it. Experiment with these settings and use the following tutorials to get a feel for using these functions.

Here are some examples and a few tips on how to use the 16 different mix-modes. The examples all use the same 2 images on Layer 1 and Layer 2. If you have your Hippotizer running, select 2 similar images on layer 1 and 2 and experiment using this guide. By switching the Mix-Mode of Layer 2 you get the following results:

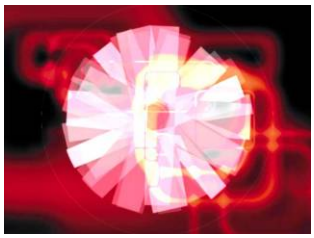


Layer 1



+ Layer 2

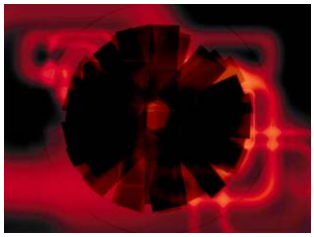
Add



This adds the pixel values in two layers. This is a good way to combine non-overlapping images in two layers.

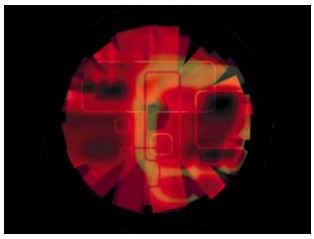
Because higher pixel values represent lighter colours, adding layers with overlapping pixels lightens the image. Black areas in both layers remain black. White in either layer results in white.

Sub



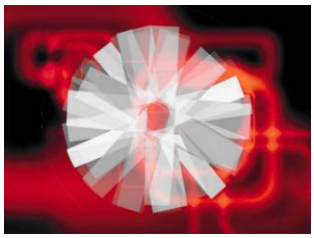
This subtracts the pixel values in the source layer from the corresponding pixels in the target layer.

Darken



When using 'Darken' the white disappears. Anything darker than white has the potential of darkening the underlying image.
Darken mode compares the active layer to the underlying image, only allowing those areas that are darker than the underlying image to show up.

Lighten

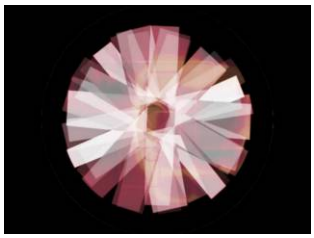


The 'Lighten' mode is the exact opposite of the 'Darken' mode. The black disappears and anything brighter than black has the potential of lightening the underlying image. Lighten mode compares the active layer to the underlying image only allowing those areas that are lighter than the underlying image to show up.

Softlight

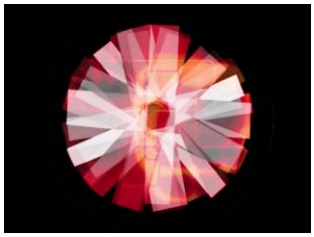
If the colour being applied is lighter than mid-grey, the image is lightened. If the colour being applied is darker than mid-grey, the image is darkened. Depending on the image, Soft light can also be used to produces soft shadows and highlights.

Softlight Inverted



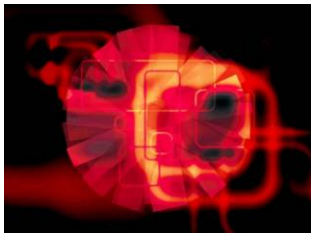
This is the same as 'Softlight', just more intense.

Hardlight



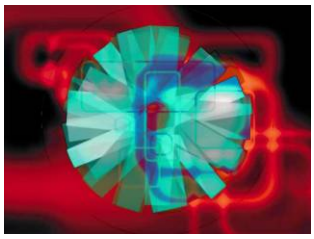
If the colours being applied are lighter than mid gray, screen mode (lightens) is applied. If the colours being applied are darker than middle gray, multiply mode (darkens) is applied.

Overlay



'Overlay' uses the information on the underlying layers to change the contrast of the active layer. It multiplies (darkens), or screens (lightens) the colours depending on the base colour. Totally unpredictable; try it and see if you like it.

Difference

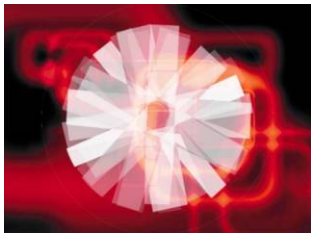


This looks at the two colours, and, subtracts the less bright from the more bright one. Therefore, blending with white inverts the colour values (you are subtracting colour values of 100 % so you go all the way to the inverse), while blending with black makes no change (black has zero colour values, so you subtract zero). This one changes the colours, not the brightness.

Gobo

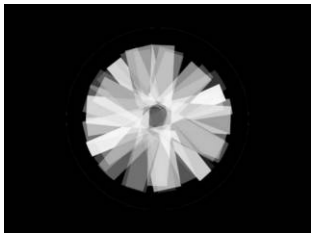
This effect allows you to place an image over the top of the layer to create a 'mask'. The lighter areas will let the image behind show through and the darker areas will cover or 'mask' the image underneath.

Screen



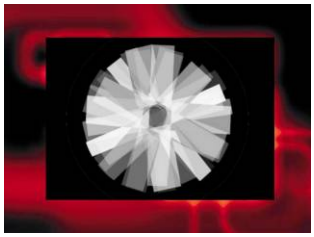
Screen mode is used for highlighting, and making the layer appear lighter. Since highlights cannot be shown with black, no effect will appear by applying the Screen mode to an entirely black layer, or part of a layer.

Opaque



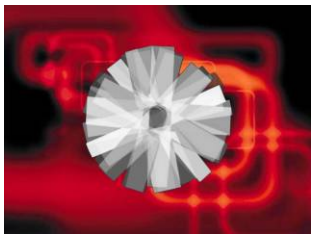
Opaque takes the top layer and fully covers any layers underneath. Even if you resize the layer using the layer zoom control to a value less than 100% then the underlying layer is still covered.

Sprite



Sprite is very similar to Opaque in that, at 100%, it fully covers any layers underneath. However if you resize the layer using the layer zoom control to a value less than 100% then the underlying layer is revealed. Use this mode to create window in window type effects.

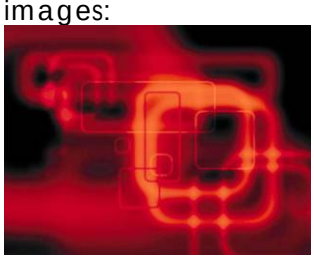
Luma (Luminance Key)



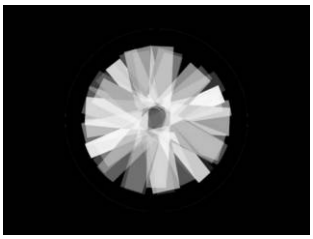
This mode uses the brightness of its layer to decide whether the underlying layer is visible or not. At 100% brightness, only the current layer is visible, however if you move the Level fader of layer 2 slowly down you will see that more and more of the underlying layer is revealed. The level fader determines the threshold at which the luminance key works. This is particularly useful for removing black surrounds from images and video clips. For those who are used to using Alpha-Channels in still images and want to create similar effects with video, this mode comes close to that and can be achieved by ensuring the areas you wish to be 'transparent' in your videos are black.

Matte

Matte uses 3 layers to work correctly. It uses layer 2 as a mask to determine which parts of layer 1 or layer 3 are visible. Layer 1 can be in any mode but layer 2 must be in Matte mode. Layer 3 must be in opaque mode to function properly. If you follow the example below, you will be able to see layer 1 through 'holes' in layer 3. The shape of the holes is dictated by the contents on layer 2. In our example we combine the following three images:

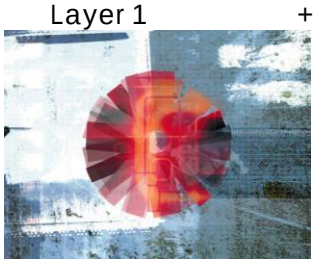


Layer 1 +



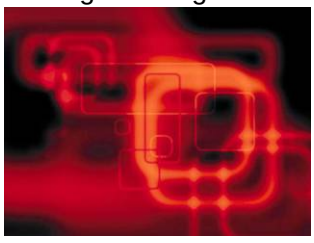
Layer 2 (Matte) +

Layer 3 (opaque)

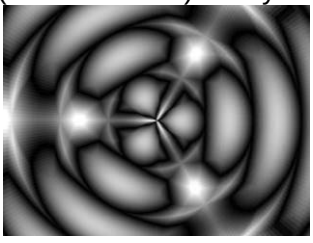


= Result!

With the matte mode you can create your own custom wipes to mix between layers. This is useful if you want to create an interesting transition between, say, video on layer 1 and video on layer 3. There are a few greyscale wipe image supplied with you Hippotizer (bank 3 if you have just the default media). Load one of these into layer 2, adjust the contrast for that layer to about 80% and then fade between layer 1 and layer 3 using the brightness fader (not the level!) of layer 2.



Layer 1 +



Layer 2 (Wipe) + Layer 3 (set to Opaque)

 = Result!

The above image represents the halfway stage of the wipe. When the brightness for layer 2 is at 100% you will see only layer 1. When brightness is at 0% you will only see layer 3.

Alpha

The Alpha mix mode allows you to check the transparency contained in your image or video clip. Any fully transparent areas are filled white. NB: Transparency is an attribute given to an image or video at time of creation. See your preferred image or video creation package for details on how to create media with transparency.
In Add mode on a single layer:

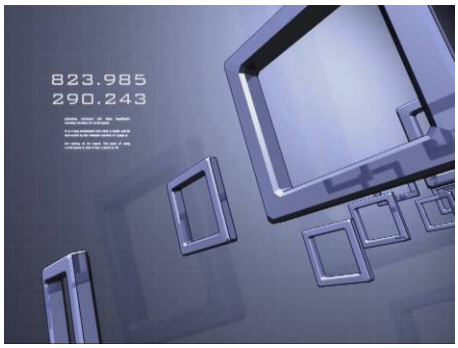
When combined in Sprite mode all transparent areas of the image become see-through and reveal the underlying layers. This is an excellent method to overlay logos or text:

These are just some basic principles for applying mix modes to your compositions. We suggest you chose some clips with which you are familiar and experiment with different mix mode combinations to familiarise yourself with the possibilities.

FX

There are over 40 effects within Hippotizer with different amounts of parameters which can alter how the clip is affected.

No Effect



This bypasses the effect engine. Always switch to this mode when you are not using an effect. Even when an effect Level is set to 0, the FX engine is still active and using resources.

Blur

The Blur effect applies as Gaussian blur to the whole of the layer.

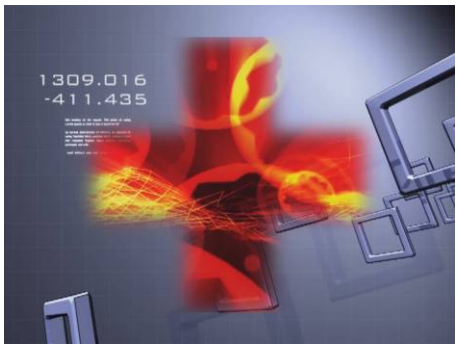
Radial Blur

This effect uses repetitions of the source image to achieve a rotary blur effect.

Motion Blur

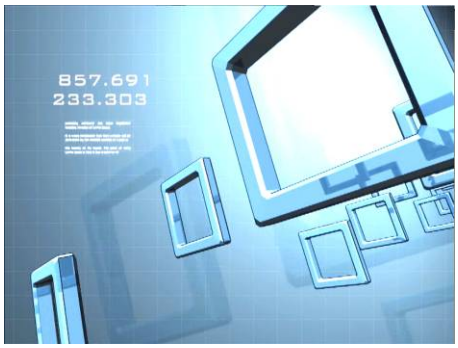
This applies a moving blur effect that will leave outlines of the animation within a video

Mask



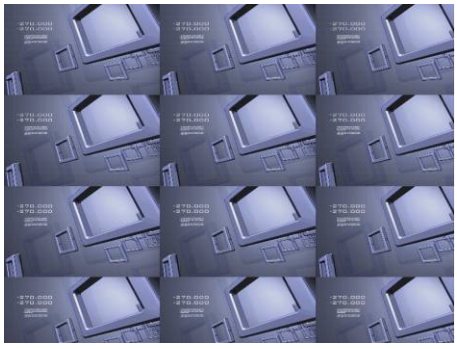
This effect allows you to place an image over the top of the layer to create a mask. The images that are used for this contain transparency information, which tells the Hippotizer which parts of the image show through and which do not. In most media servers this is often done using 2 layers; however this effect makes it possible without having to use another layer. The masked out area will become transparent, which means that if you have an image displayed on this or another lower layer then it will show through in the areas that have been masked.
To use the masks they need to be stored in bank 255 of layer media. The 'Mask' fader allows you to scroll through the different masks within the bank.
The blur function should be used carefully as it heavily uses resources.

Colour Trafo



This gives you control over hue, saturation and brightness.

Multimage

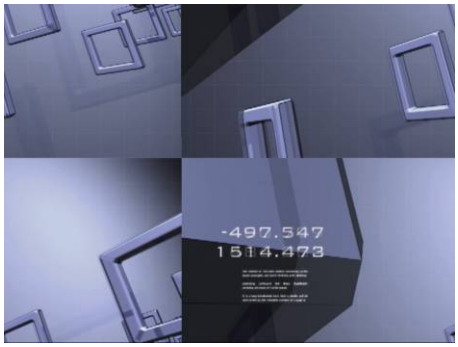


This effect repeats the source image over and over similar to a multi-monitor wall. Changing the Level creates some interesting "glass-wall" effects.

Inv Lumakey

Shorthand for Inverted Luma Key. This is similar to the Luma Key mix mode except that it makes the light areas of the picture become transparent instead of the dark areas.

Shifter



An animated effect that will move the layer around the screen through the x and y planes, with control to adjust the movement and speed,

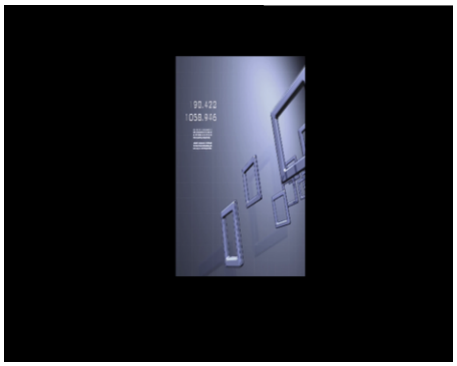
Shutter

Allows adjustment of image aspect ratio, and allows for cropping of the image (shutters).

Chromakey

This effect allows you to 'key' out certain colours. If you have 2 layers, it can be used to reveal what's on the layer below. In this example we are "Keying Out" the green areas of the logo to reveal the image below.

Johans Effect

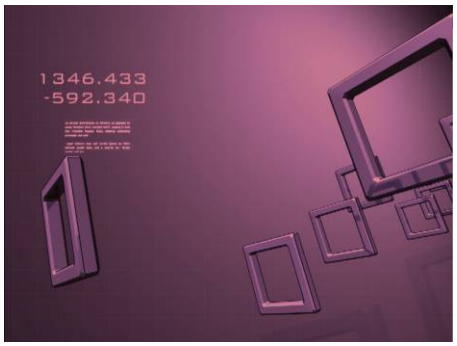


This effect allows you to resize the layer, giving both x and y controls.

Scroller

The layer continually scrolls across, with individual controls for direction across the x and y planes and speed.

RGB



This effect gives you control to change the colour of the image, with individual red, green and blue controls.

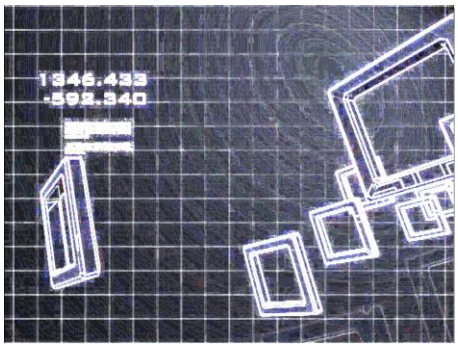
ColourStudio

This effect allows you to shift colours around the spectrum with additional brightness control.

Strobe

A strobe effect with adjustable timing. A unique feature here is the ability to select the strobe colour.

Neon

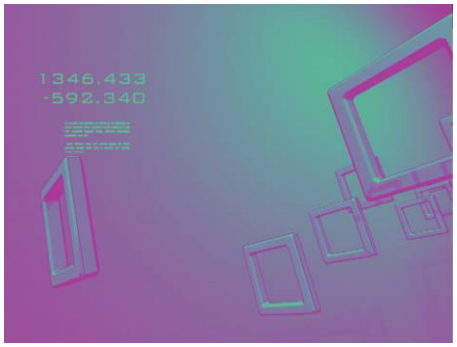


Neon traces the outline of elements in the image.

CTBO

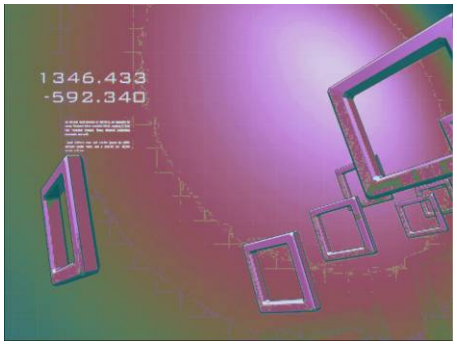
This is a colour correction effect for TV and Film which applies calibrated filers to the image similar to using CTB and CTO lighting filters.

DuoTone



This colour effect takes your image / video and desaturates the original colours before allowing the user to apply their own choice of tones for the high and low tones. This allows you to select a two colour scheme and have all your content fit within those colours.

Pallette

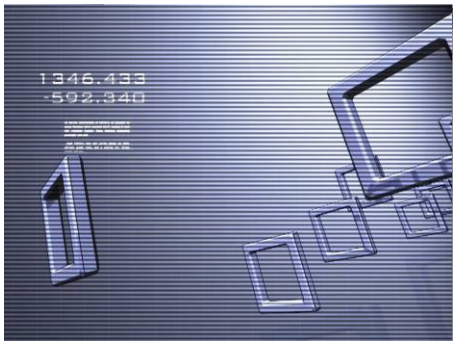


This effect allows you to shift each of the individual colours around the spectrum.

Bloom

This effect gives the edges of any lines a white glow.

Interlace

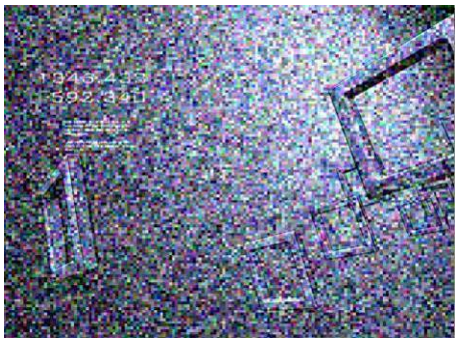


Creates a stripe effect with control to adjust the size and saturation of the stripes.

Random Colourizer

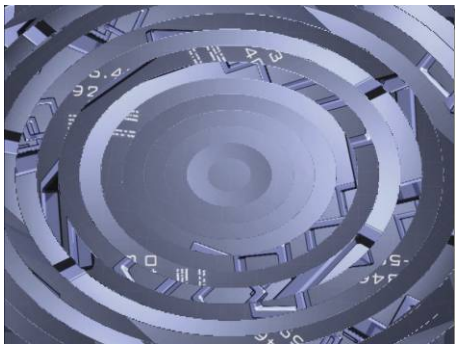
Changes randomly between colours with individual controls for speed and colour shift.

Noise



This effect creates a distorted pixelated effect with controls for grain size, frequency and colour.

Rings

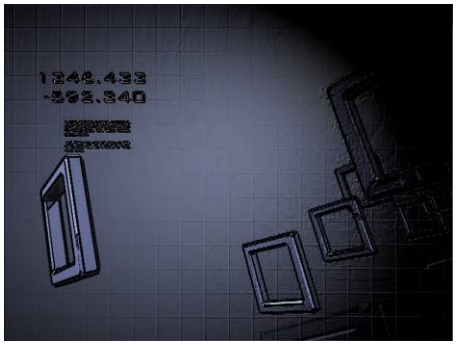


Creates a concentric circle break-up.

Cubestyle

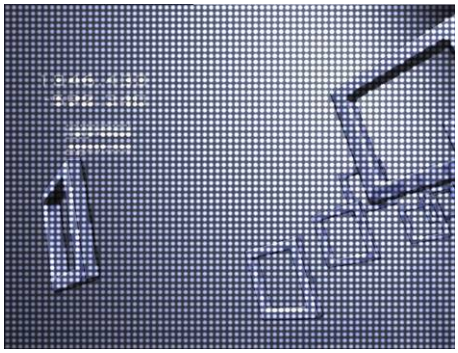
Another break-up effect using moving translucent squares with a ‘waterfall’ style of motion.

Bump



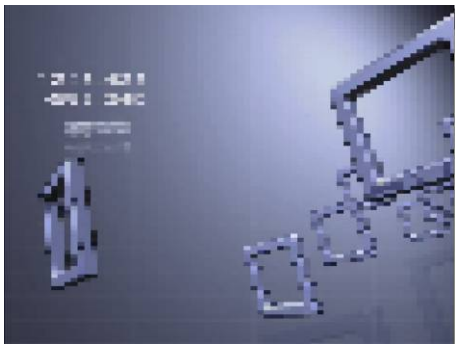
This effect uses a ‘virtual’ spotlight to be able to create the effect of a 3D textured surface from any 2D image; this works best with high contrast images.

LED



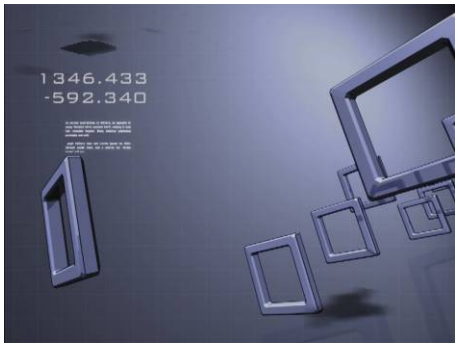
Creates the look of an LED wall.

Pixelate



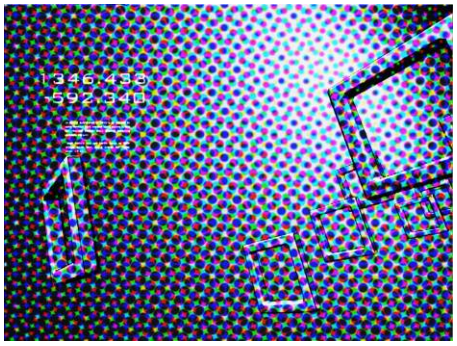
Pixelates the image. A great effect in combination with Neon for example.

Film



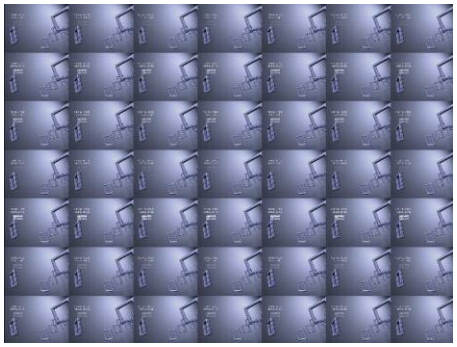
This effect simulates the attributes of old flickering movies. Use it together with the colour effect to de-saturate the original to black and white first. You can also use colour effects to create lots of different 'old film' looks.

Halftone



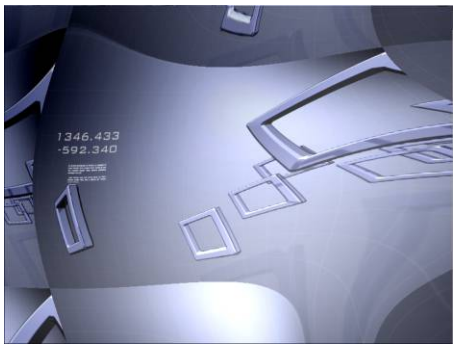
This effect simulates the printing quality/method of magazines / newspapers.

Recursion Window



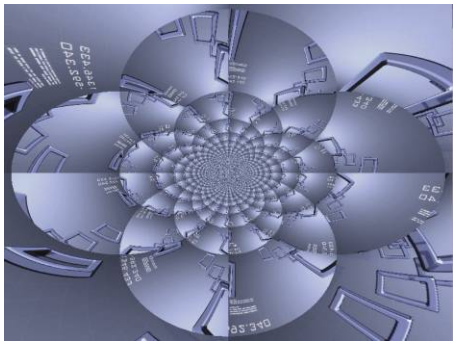
This Recursion effect works by multiplying and overlapping your original image /file.

Plasma



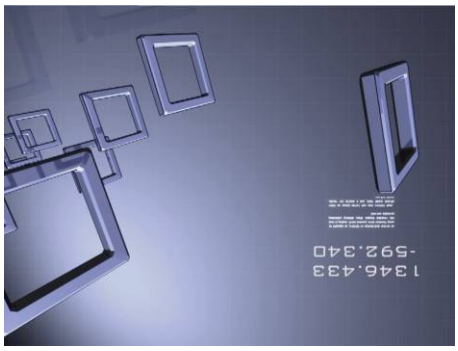
A liquid-like effect.

Flower



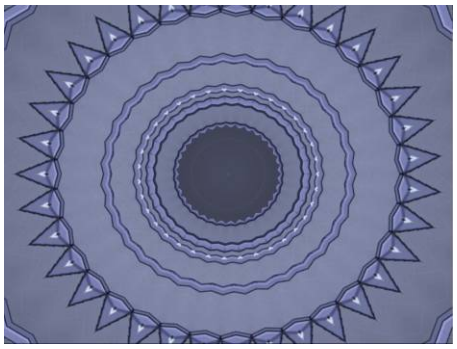
This flower effect that distorts the image into a pattern similar to the petals of a flower.

Flip



This effect allows the layer to be flipped through the x and y planes.

Kaleidoscope



This effect takes a section of the original image and repeats it 'in the round'

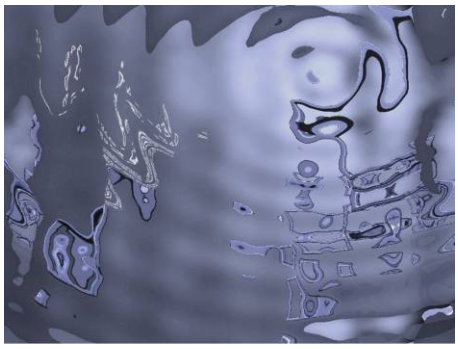
Rotozoom

A static combination effect using circular distortion and plasma distortion together

Glass

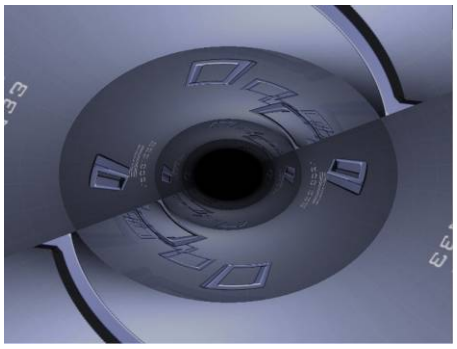
A distortion effect as if looking though a moulded glass window

Aqua



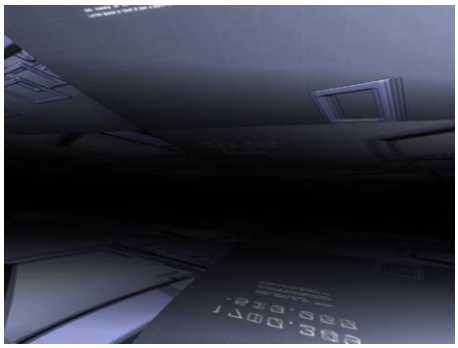
This effect simulates distortions created by ripples on a water surface

Tunnel



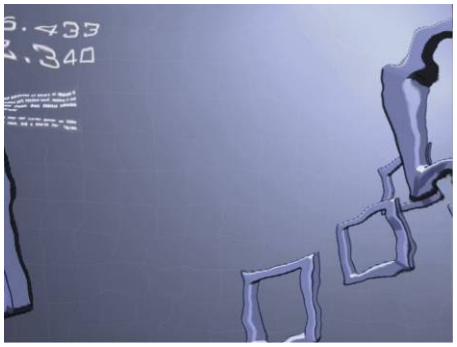
Creates the effect of travelling through a 3D tunnel

Planes



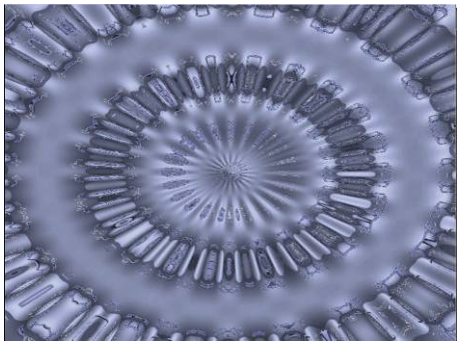
Creates a 3D Planes effect with adjustable orientation, using the Level slider can create some great effects on it's own

Fluid Distortion



This effect simulates distortions created by a water surface, very similar to viewing an submerged object.

PolarWave

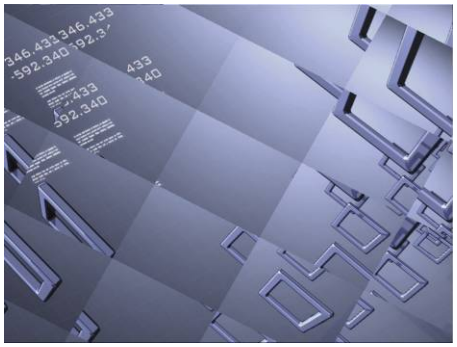


Creates a wave like effect on the image which extends outwards from the centre.

Twisted

A distortion effect as if looking though a moulded glass window, swirling the image towards the centre.

Rectangles

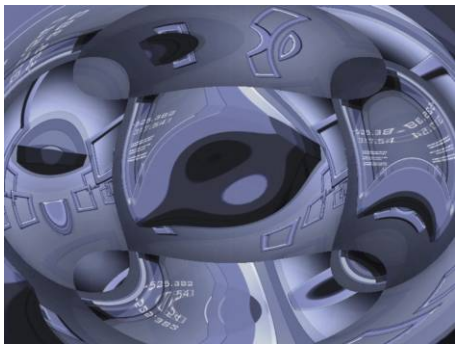


This effect creates multiple images, with control to adjust the number across the x and y planes.

Ripple

Creates a water ripple effect, with controls for the direction and number of ripples.

Wave



This effect is creates a sweeping wave effect, which extends from the centre of the image and moves outwards before moving back to the centre,

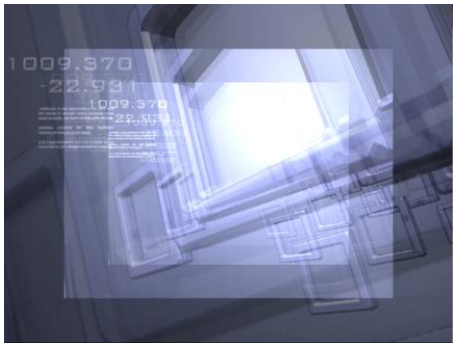
Jitter

This randomly makes the images dart around, with controls to adjust the offset across the x and y plane, speed, rotation and zoom.

Stripes

This effect creates a random stripes to reveal the previous layer, controls include scale and frequency

Infinite Zoom



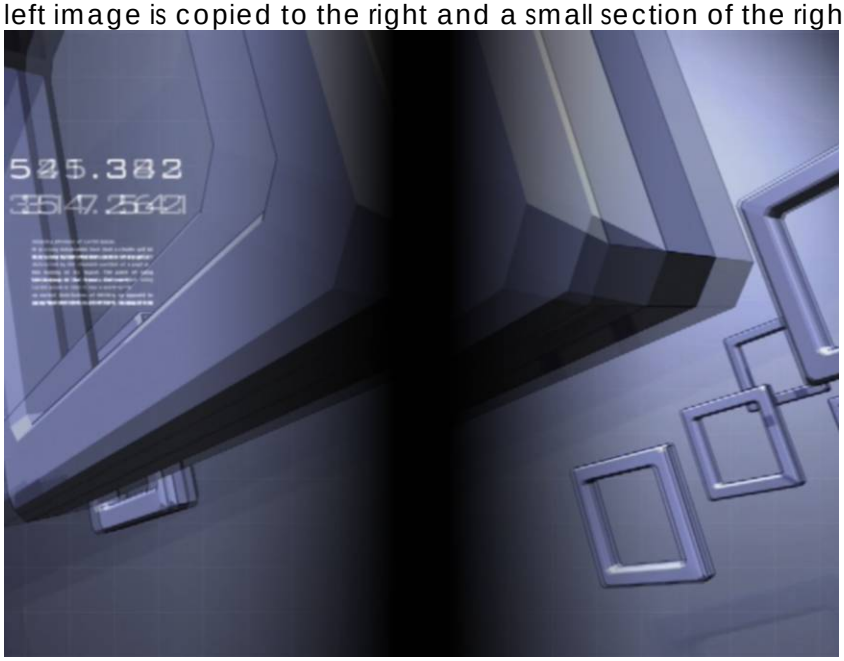
This effect continually zooms the image, overlaying each time.

Pixel Dust

A ‘dust’ style distortion effect

Soft-edge Blending

The soft edge effects built into Hippotizer are quite simple, but very powerful when used the correct way. The soft edge effects are designed to be used when the Hippotizer is connected to 2 projectors, or if you are using more than 1 Hippotizer and you want to create a wide screen panoramic image without seams. The soft edge effect varies depending on which one is used. The "PAN" soft edge effect is designed to be used with the Hippotizer in PAN mode, and should ideally be used on the master layer on Effect engine 2. It is likely that you will want to use this effect repeatedly once created so we recommend saving results as a master preset for easy recall. You could replace the media used to create the correction with white to use as a blank but with correct soft-edge blending. Here, the image is split down the middle, and then small section of the left image is copied to the right and a small section of the right is copied to the left.



The Hippotizer then creates a graduated fade to black on both of the inner edges and then sends each side out to a separate projector. This then allows the user to overlap the left and right images projected from each projector creating a seamless blend between the two and creating a single wide screen image which is almost twice the width of the standard single output. Because this mode creates a single, ultra wide 'desktop' area in the Control Centre, items can be positioned or moved anywhere on the screen including across the overlap.

The left, right, top, bottom and 'both' soft-edge effects are used in a similar way but for when you have multiple Hippotizers. For example, if you have two Hippotizers and you are using each one in single mode, but you want to have a wide screen output – you would set one to use a left hand soft-edge and the other to use a right hand soft-edge, you can then overlap the images to form a seamless join.

Note: You can also use screen-warp to create a softedge blend instead of any of the following effects.

SE-Left

Soft Edge blending along the left edge

SE-Right

Soft Edge blending along the right edge

SE-LeftRight

Soft Edge blending along the left and right edges

SE-Top

Soft Edge blending along the top edge

SE-Bottom

Soft Edge blending along the bottom edge

SE-TopBottom

Soft Edge blending along the top and bottom edges

Softedge Pan

Soft Edge blending along the centre of the image

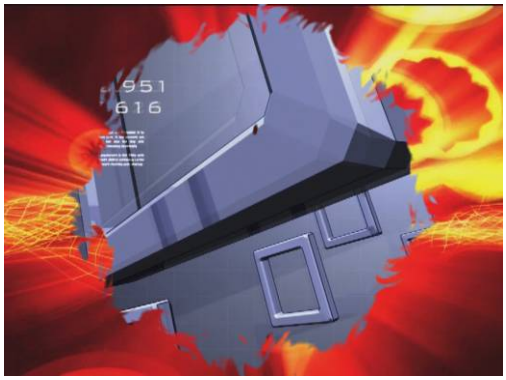
SE-Frame

Soft Edge blending along all edges of the image

Drop Shadow

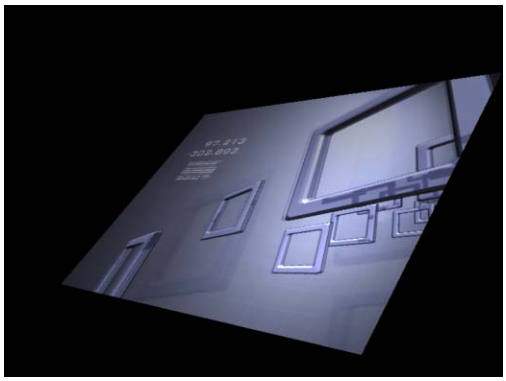
Creates a drop shadow of the layer, with control for distance, size, alpha and softness.

Alpha Transition



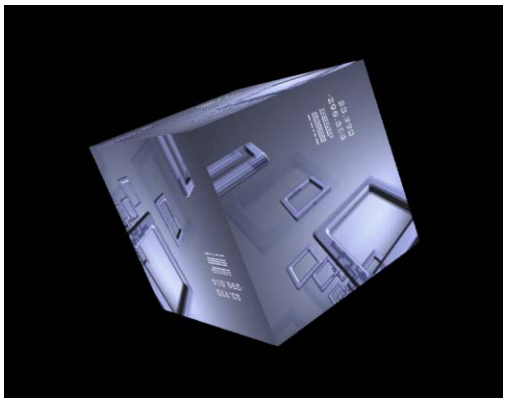
This effect is similar to the Mask FX. It uses the masks in bank 255 to reveal the previous layer. Use opaque or sprite mixmode. First select a mask, then use level to fade between fully opaque and fully transparent.

Plane



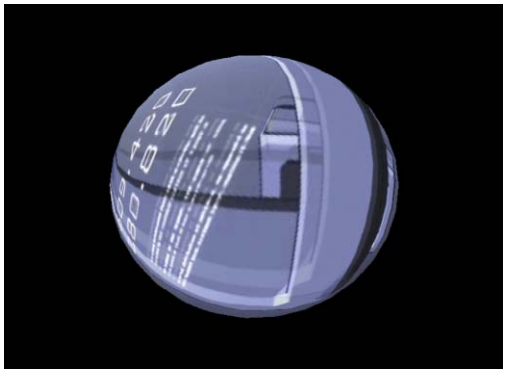
This gives you a simple Plane that can be moved on the X and Y axis and zoomed in or out.

Cube



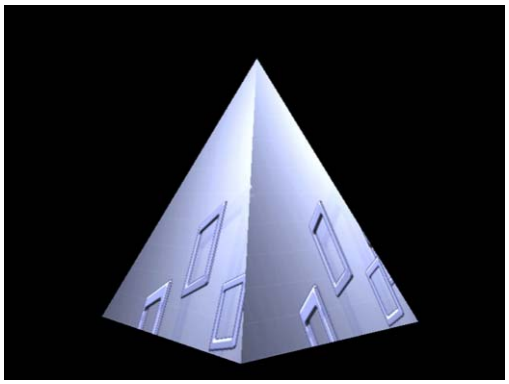
This gives you a 3D Cube that can be moved on the X and Y axis and zoomed in or out.

Sphere



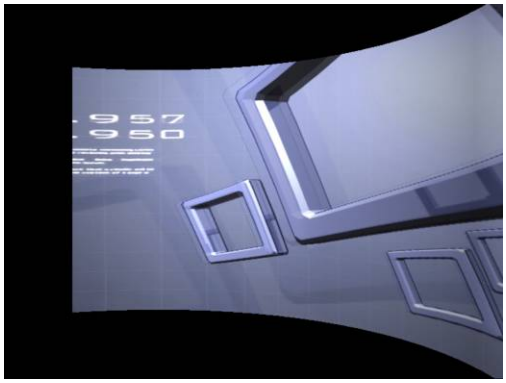
This gives you a 3D Sphere that can be moved on the X and Y axis and zoomed in or out.

Pyramid



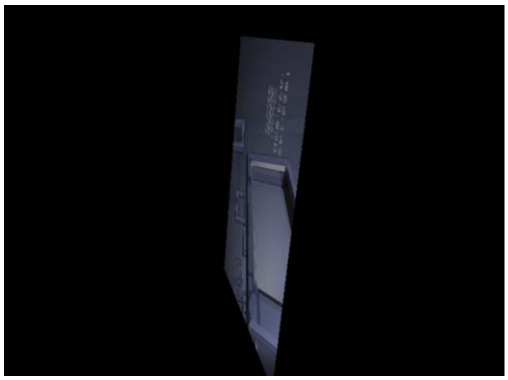
This gives you a 3D Pyramid that can be moved on the X and Y axis and zoomed in or out.

Curve



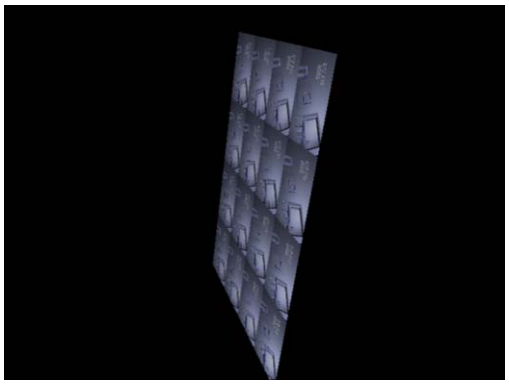
This gives you a 3D Curve that can be moved on the X and Y axis and zoomed in or out.

Plane_ani



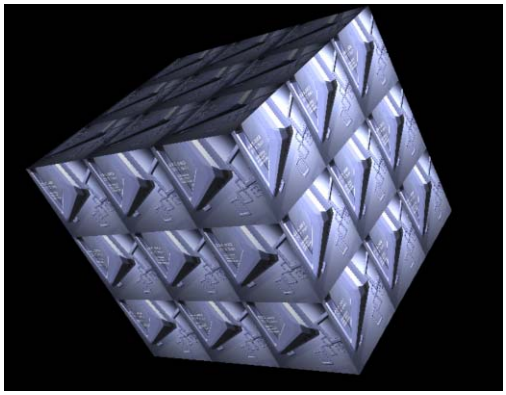
This gives you an animated plane, with control of the speed of animation and control of luminance key value.

Plane_ani2



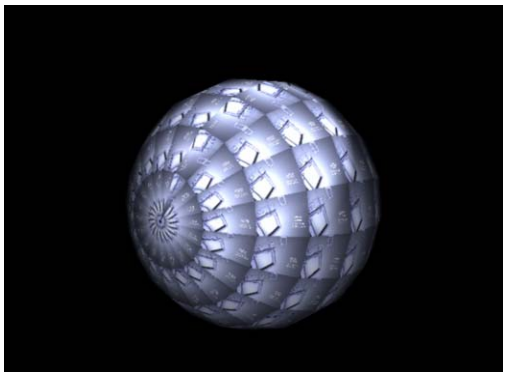
This gives you an animated plane, with multiple copies of the source image – also with control of the speed of animation and control of lumanance keying.

Cube_ani



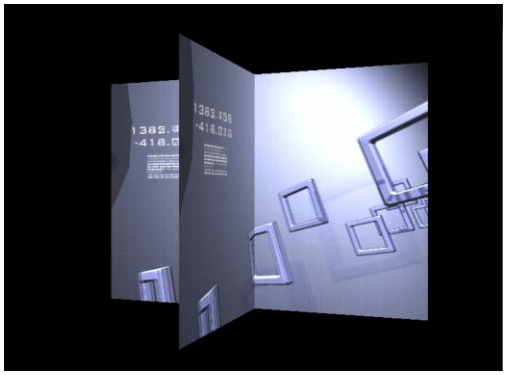
This gives you an animated cube, with multiple copies of the source image – also with control of the speed of animation and control of luminance keying.

Sphere_ani



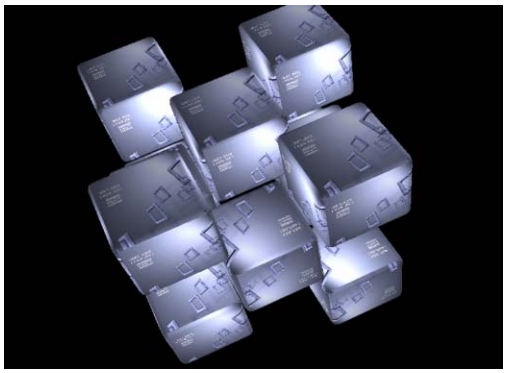
This gives you an animated sphere, with multiple copies of the source image – also with control of the speed of animation and control of luminance keying.

Spin



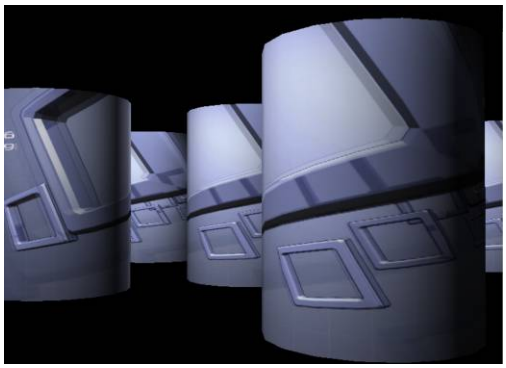
This give you 2 crossed over planes – animated.

Rubics



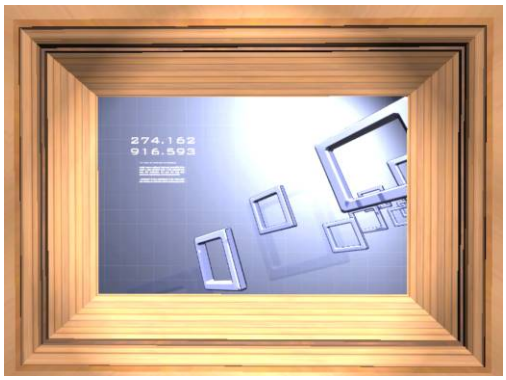
This is a collection of animated cubes that move continuously, creates great effects when zoomed into tightly.

Tubes



Animated tubes on a flat rotating platter

Frame

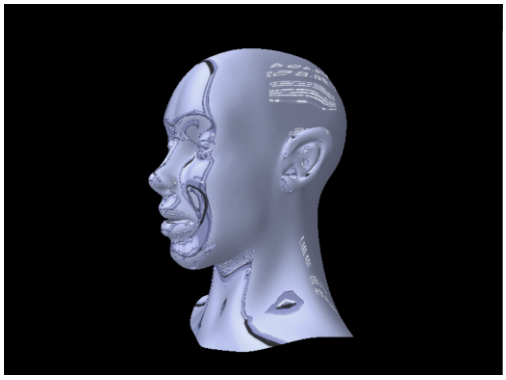


This 3D effect lets you put your source image in a ‘frame’

Water

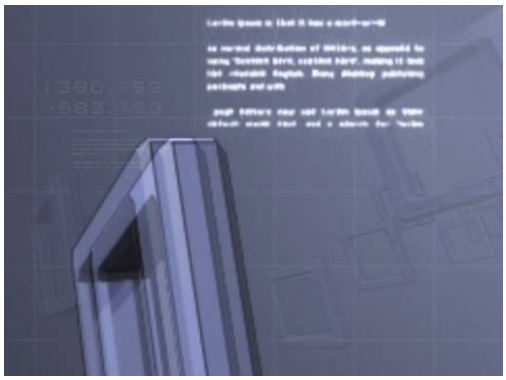
This effect shows 4 planes above an animated water surface, which reflects your source image

Head



This effect maps your source image onto our animated chrome spinning head

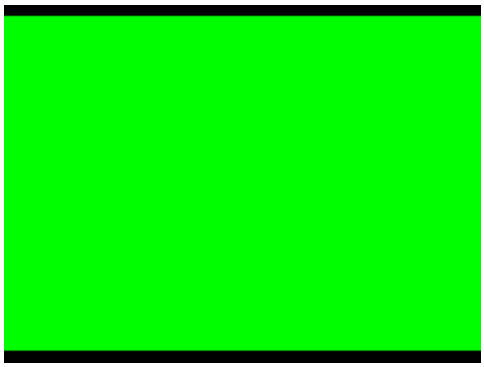
9wall and 3x3



Both 9 Wall and 3x3 are effects that are designed to be used with more than one Hippotizer.
They are both used in the same way but create very different results, in both cases the effect is designed to run on a layer and be used with up to 9 Hippotizers with their output screen arranged in a linear fashion based on a 3 x 3 grid of screens.
It is not necessary for all 9 outputs to be used, you could for example just choose to use one row of 3 outputs or a staggered corner to corner arrangement – you can also use a Hippotizer in dual mode to drive 2 outputs at the same time.
The 3 x 3 effect basically splits the media of the layer equally across all 9 outputs (or as many as you are using) to create the effect similar to a monitor wall – in this case parameter 1 is set on each Hippotizer to represent which screen that Hippotizer is driving, and parameter 2 is used to compensate for any soft-edge blending that you might be doing (using the soft-edge effects on the master) which allows you to create seamless large displays consisting of multiple projectors.
The 3 x 3 effect can be seen in the diagram on the next page.
The 9 wall effect is similar to the 3x3 and is set up in exactly the same way using anywhere between 2 and 9 Hippotizers, but this time the content is kept at its normal size, but the layer can be moved around from one screen to another (from one Hippotizer to another) as if the 9 screens formed one large canvas.
The important thing to remember with both of these effects is that all the machines need to have the same content on them and the content needs to be synchronised preferably by using time code, and also for the 9 wall effect to work correctly, all the x, y, zoom and rotate controls on the layer using this effect on all machines needs to by controlled together.

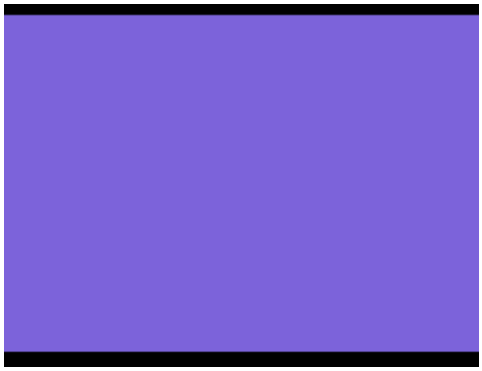
Generators

Colour



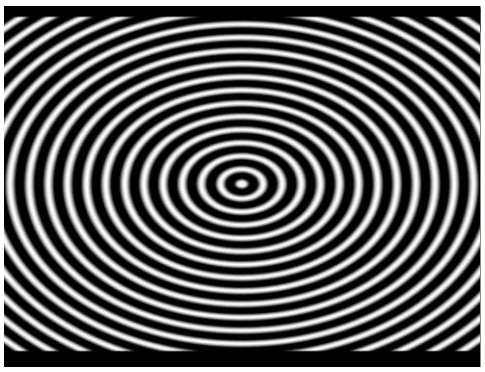
Allows random generation of colour using Red, Green and Blue faders.

Colour HSV



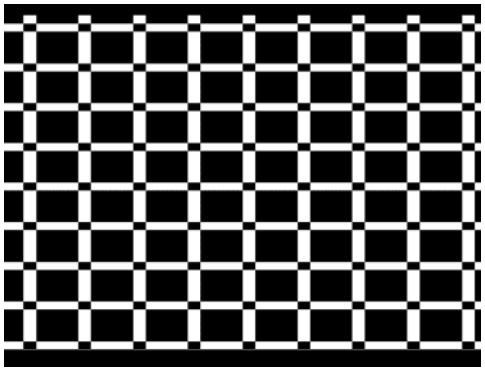
Allows random generation of colour using Hue, Saturation and Value faders.

Rings



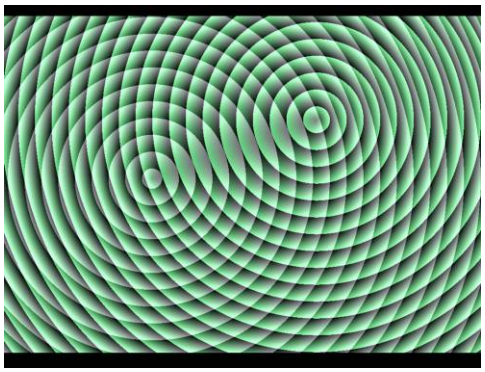
Concentric rings that expand out, includes zoom controls.

Chess



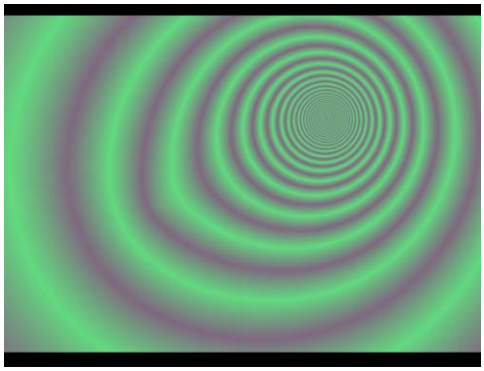
Generates a grid framework of boxes which can be zoomed

Interfaces (C+C)



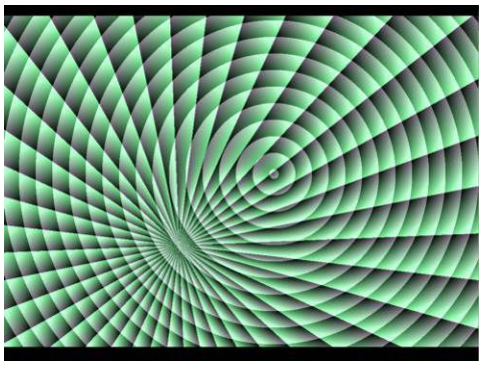
Generates two concentric swirling circles that move around the screen the two colours can be changed.

Interfaces, Retro (C+C)



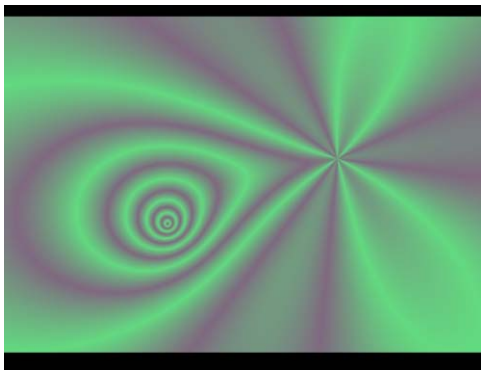
Creates a tunnel like effect that swirls around the screen whilst cascading.

Interfaces (R+C)



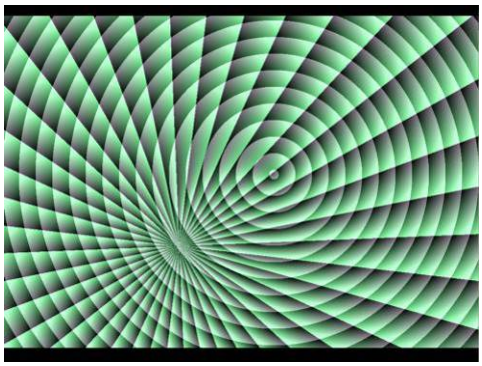
Generates both a set of concentric swirling rings and a radial fan that swirl around the screen.

Interfaces, Retro 2 (R+C)



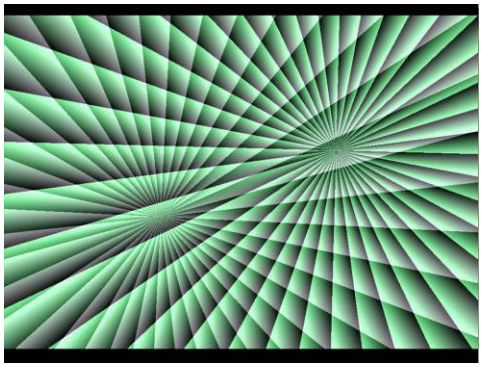
Creates a tunnels like effect that zooms in and generates a swirling flower effect that move around the screen randomly.

Interfaces, Retro (R+C)



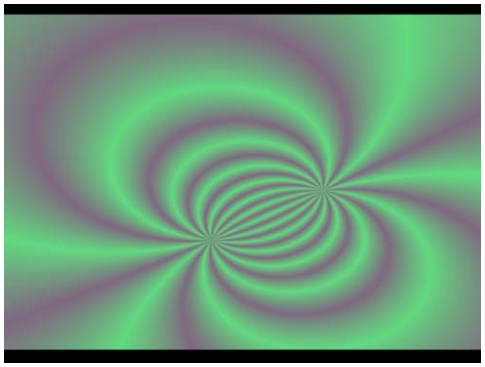
Similar to Interfaces (R+C) generates both a set of concentric swirling rings and a radial fan that swirl around the screen.

Interfaces (R+R)



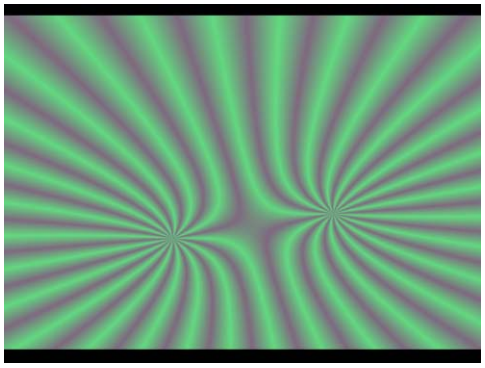
Creates two swirling radial fans that move around the screen.

Interfaces, Retro (R+R)



Generates a mirrored tunnel effect that will swirls around the screen.

Interfaces, Retro (R+R)



Creates a mirrored radial fan that swirls around the screen.

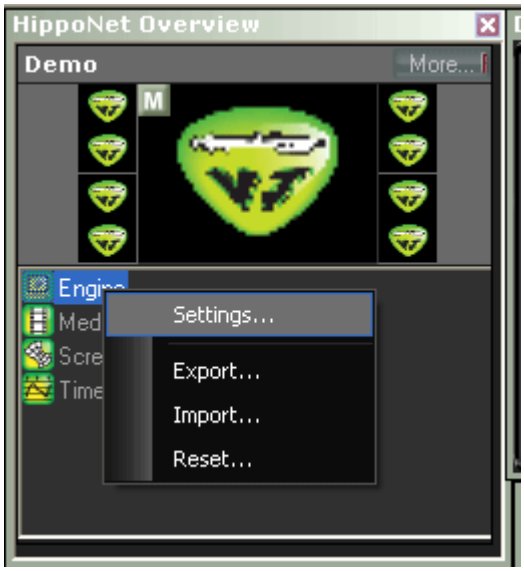
In-depth features

Display Settings

The Display Settings will allow you to set up the monitors and video displays to function as desired with the Hippotizer. Hippotizer V3 has four display modes, which are configurable from the engine settings. These settings are independent of whether or not you have ZooKeeper running and dictate how many displays you are driving and what configuration they run in.
The Output Modes are summarised as:
Single Mode DVI (VGA): Hippotizer drives a single Screen
Dual Mode DVI (VGA): Hippotizer drives two separate screens independently and the system operates like 2 media servers in one case with independent controls for each output. (Not available on Express variants)
Clone Mode: The same as Single mode but the first display is replicated on the second output. (not available on Express variants)
Pan Mode: The two outputs are combined to create one large desktop area. Media can be positioned anywhere across the combined screens. (Not available on Express variants)
Composite/S-video options: There are several combinations of the above which can use the single S-Video/composite output found on the main Graphics card.

Configuring Outputs

The screen set up is configured from the HippoNet Overview in ZooKeeper. This can be done locally on the machine you wish to set up, but in multi-server configurations the further instances of systems which will appear in the HippoNet overview will allow you to remotely configure any machines. However in any situation the approach remains the same.



To access the Output Settings right click on the engine icon for Hippotizer you are using and select Settings from the menu. (Note: in Multi-Server situations check the name in the top left hand corner of the window. After right clicking the engine icon, click 'Settings' which will open the Engine configuration box. Check you are in the 'Output Settings' tab and continue as follows.

Engine Settings

The Engine settings window will allow you to configure the outputs, live video settings and view status info.

Single Mode

Single Output Mode is used if you are only using one output, select this option from the drop down menu and choose Apply. Single Output is configured using the top graphics card options, with the first option allowing you to select which output on the graphics card it is connected to.

Now set your display resolution to the relevant setting using the drop-down box (will depend on the display device and the version of Hippotizer you own).
You can also decide how many layers you want your Hippotizer Engine to run. (options will vary according to Hippotizer Variant).

Dual

Dual Output Mode is used to have two separate outputs, each displaying different media; although you can choose 8 layers on each output it is recommended to a maximum of 4 per output. This will produce smooth playback. More layers can result in

uneven video playback.

Dual Output is configured using the two graphics card options, with the first option allowing you to select display options for the device connected to output one and the second connect to output two.

Pan

Pan Output Mode will stretch the display across the two outputs. To enable this option you first need to select this option from the Output Mode drop down box. Click 'apply' after you have selected it. This will now reconfigure the graphics-card output and load the possible resolutions for this mode. As the final stage select the required resolution (remember you need to select the combined output resolution, so 2048x768 for 2 x 1024x768) , check the layer mode and then click apply.


HPV3-1154 - Engine - Config : Config
Output Settings
Live Video Settings
Status Info
GFX Mode
Pan
Detect monitors
Toggle fullscreen
Fullscreen
Windowed
Adapter
GFX Card #2 to Plug 1 (Plug and Play Monitor)
Resolution
2048x768
Aspect ratio
1.333
FXC
8-Layers
Adapter
Resolution
Aspect ratio
1.333
FXC
8-Layers
Status:
Reset engine
Apply
Cancel

.

Clone

Clone Output Mode will duplicate the display from output one to output two, select this option from the drop down menu and choose Apply.

Clone Output is configured using the top graphics card options. The desired resolution can again be chosen for output, with the maximum resolution determined by the display screen with the lowest resolution.

Configuring S-Video/Composite

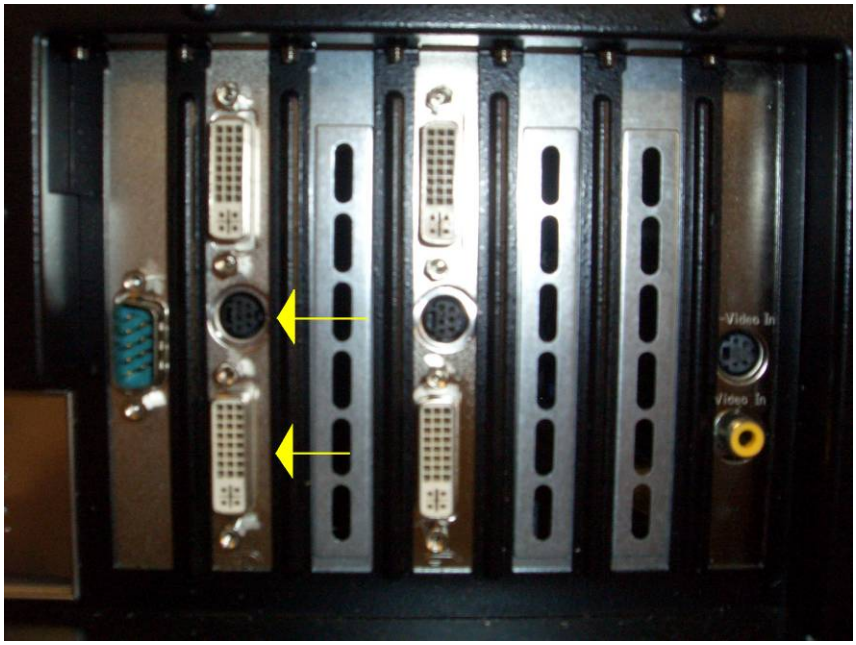
The Hippotizer can output composite video/S-Video directly which can be fed into monitors or vision mixers.

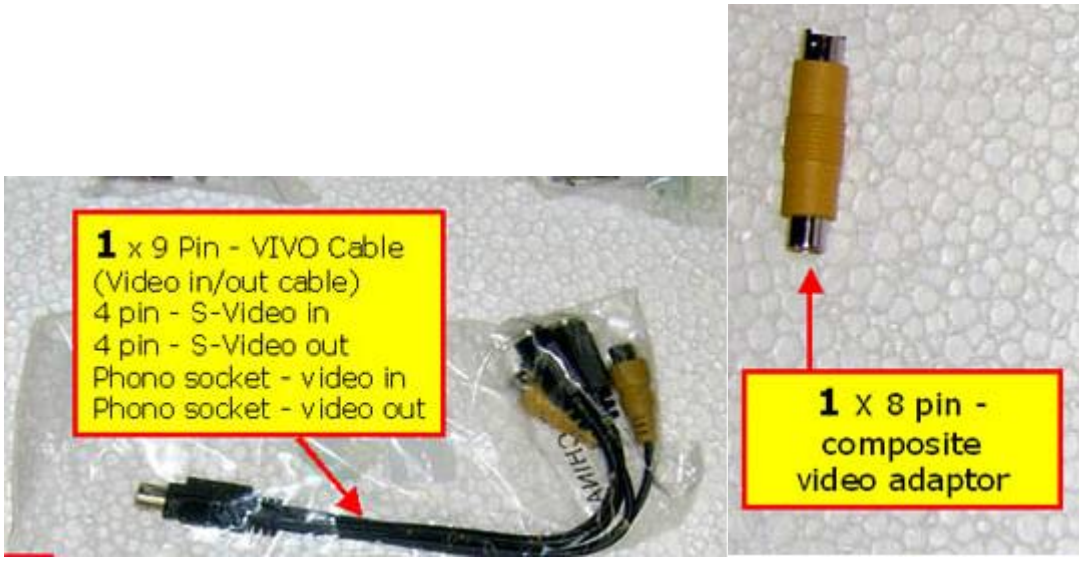
The composite/S-video output is, however, only available on the second output, which means that in single mode you can have a composite/S-video output for the main output – in Dual mode only the second screen can be output as composite/S-video and the same is true for pan mode.

To activate the this output, switch off the Hippotizer and connect a screen or video device to the S-Video connector in the middle of the graphics card.

If your device accepts an S-Video signal directly, then you can plug it directly into this connector, but if your device requires a composite video signal then you will need to use an S-Video to Composite adapter.

Setting up your composite output is usually as simple as connecting the video device and then switching on the Hippotizer. On boot up, the graphics card should auto-detect your screen and automatically make screen 2 appear on your new video device.





Resolution

The Detect Monitors will find any display devices connected to the outputs and add them to the options whilst identifying their maximum resolution.
The desired resolution can be selected from the drop down menu; maximum resolution that can be supported by the video display is automatically detected.
The output resolution of a Hippotizer V3 HD is unlimited, while on a Hippotizer V3 Stage the maximum resolution is 1280x1024 (2560x1024 Pan Mode). The Hippotizer V3 Express can output a maximum of 1024x768 pixels. Press "Apply" to apply the changes.

Layer Mode

An option in the setup menu allows you to choose to use a 4 or 8 layer output.
If the settings have been reset the Layer Mode "Test Image" will be selected. It is advisable to use the Test Image to change your display mode and test your output device as the engine startup time is much reduced and no interaction is required to see something on the output (in 4-8 layer mode you need to make sure media is loaded, selected and the layer is set to full etc). Once your output is working correctly and you

can output the signal, switch to the desired layer mode. Press “Apply” to apply the changes.

Full Screen / Windowed

By default Full screen is selected to maximise the view area.
If you only have one monitor connected and need to see the output as well as the user interface, you can select “Windowed” mode. This will create a small window on your desktop of the User Interface where you can see the output at a reduced resolution, but full refresh rate.

Export/Import

You can export your current Engine Settings which will contain all the information about resolution, layer mode and screen setup. This will allow you at a later stage to re-import these.

Reset

Use the “Reset” function to go back to a simple single mode with the Test Image. Sometimes this is the fastest way to start over.

Presets and Timeline programming

Presets

Often you will create a 'look' in Hippotizer using ZooKeeper and want to save it. You may want to save one or more elements or the whole composition. You might need to save certain parameters to apply to other parts of your show. You can do this using the presets function.

Presets can be created in the following ways:

- Drag a control panel or single value of a layer into the preset list in the timeline overview window.

Or

- Click the "New Preset" button in the timeline controls window.

Or

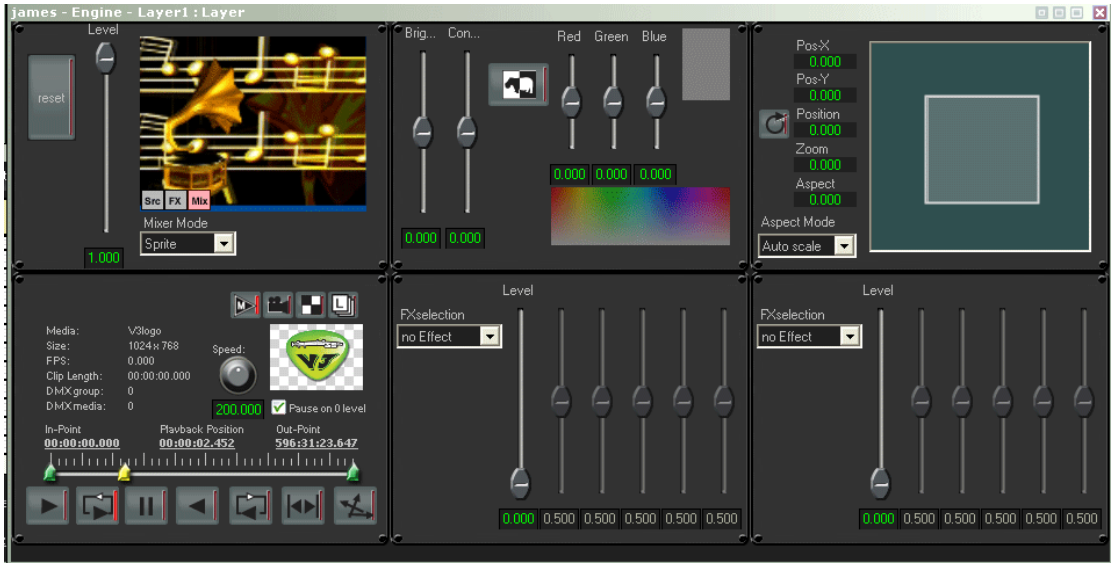
- Right click corresponding areas in HippoNet control window.
-

We will look at these in more detail soon but first a short introduction to how presets are accessed and how to work with them.

Accessing values

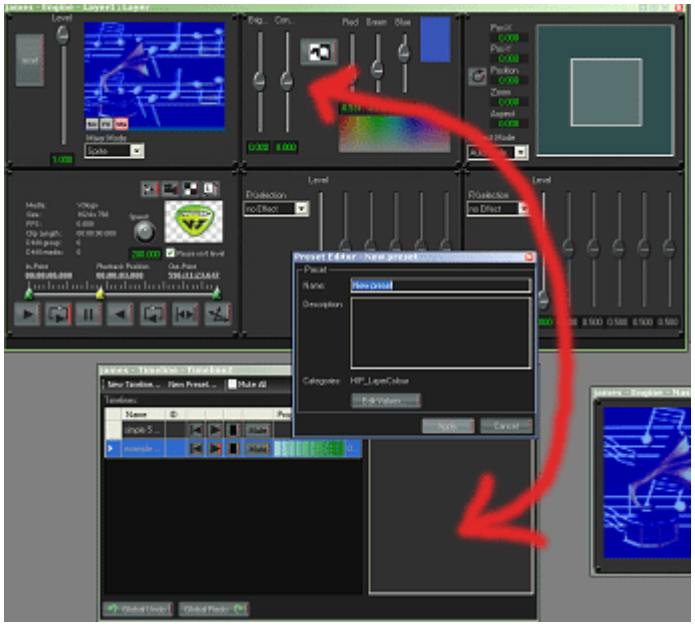
To keep ZooKeeper clean and tidy we have elected not to add buttons to the interface unless completely necessary. Because you can create presets at many levels of Hippotizer, adding 'create preset' buttons to the interface is not feasible. The screen would be cluttered with controls for all eventualities. However, many areas of ZooKeeper are 'active'. By that, we mean that dragging or right clicking can result in values being taken from that area and applied elsewhere. Once you master this functionality you will find working within the Hippotizer software simple and easy with multiple options to tackle navigation and creation of new looks. As mentioned in earlier sections, if you move the mouse around the interface you will see icons appear which indicate what the possibilities with mouse control in that zone. If you see an arrow below your cursor then that item is draggable. In general you can drag values to a location to create presets and drag presets to a location to apply presets. With a little practice it soon becomes second nature.

As a way of grouping functions the user interface is divided up into sections. For example, in the diagram below the interface is divided into areas defined by the grey background and the 'bolts' in the corners. The top left box contains monitoring for the layer along with some elements such as mix mode and level. To the right of that is a box for colour controls. Far right is a box for geometry and so on. In general there will be a zone within the box to access all controls for that area as well as individual zones such as labels where more specific items can be accessed.



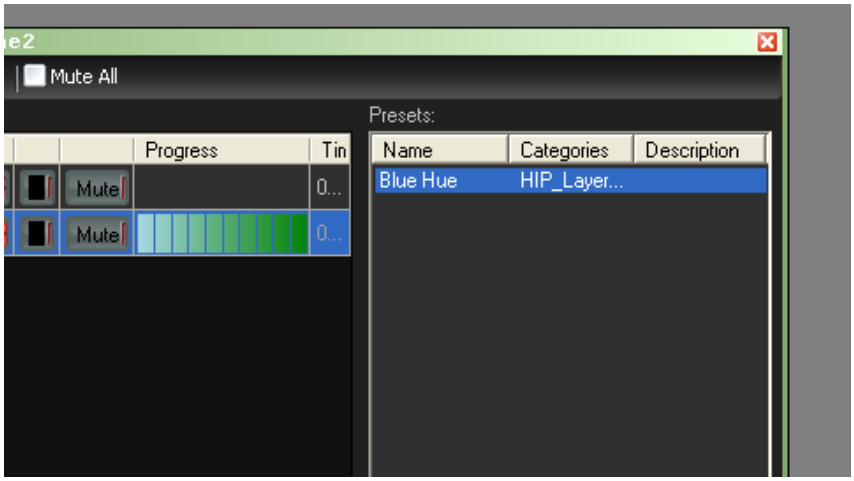
Create a Preset by Dragging

This technique requires some experimentation but is quick and simple once mastered. By placing your mouse in a desired area of ZooKeeper you can usually drag that value elsewhere. The element you are dragging depends on the starting position of your mouse. For example, adjust some of the colour controls as shown below. Make sure you have the timeline component open. Now place your mouse in the colour box, on the grey area, just below the invert button (the hippo in black and white). Click and hold then drag the mouse until you are over the presets area in the timeline window and release the mouse. A box will pop up as shown here:



You are prompted to give the preset a name. In this instance I have called it Blue Hue. At this stage you also have the option to edit values if you wish by clicking the corresponding button. It is also good to familiarise yourself with the categories information so later you will be confident with the kind of preset you are creating.

Save it and the item will be listed in the presets window for use later.



So, if we only wanted to save the red value as a preset, we repeat the process but this time we click the text 'red' in the colour window and drag that instead. This will save only the value of the red fader. Note that the category information now reads 'Float Plug'. In general you will get this category for individual items such as fader values.

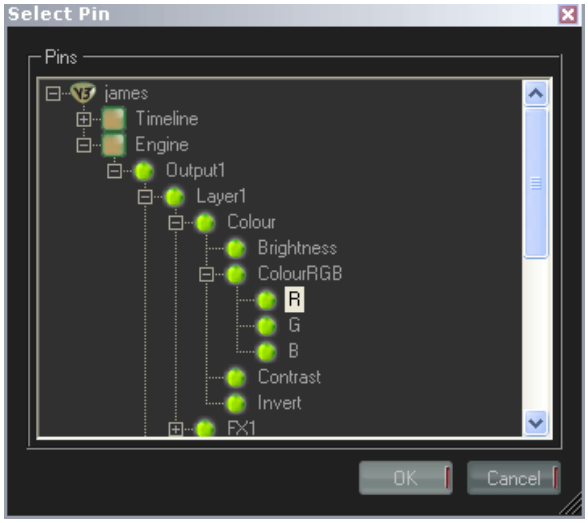
Experiment with these settings and see how you can build up a list of presets. In subsequent sections we will look at how to apply these.

Preset Categories

The preset categories class the different presets into their functional groups. For example HIP_Layer references a Hippotizer Layer preset. You can apply this preset onto any Layer in a Hippotizer. Other typical Categories are: Geometry, Colour, Media Source, etc.

Preset from 'New Preset' Button

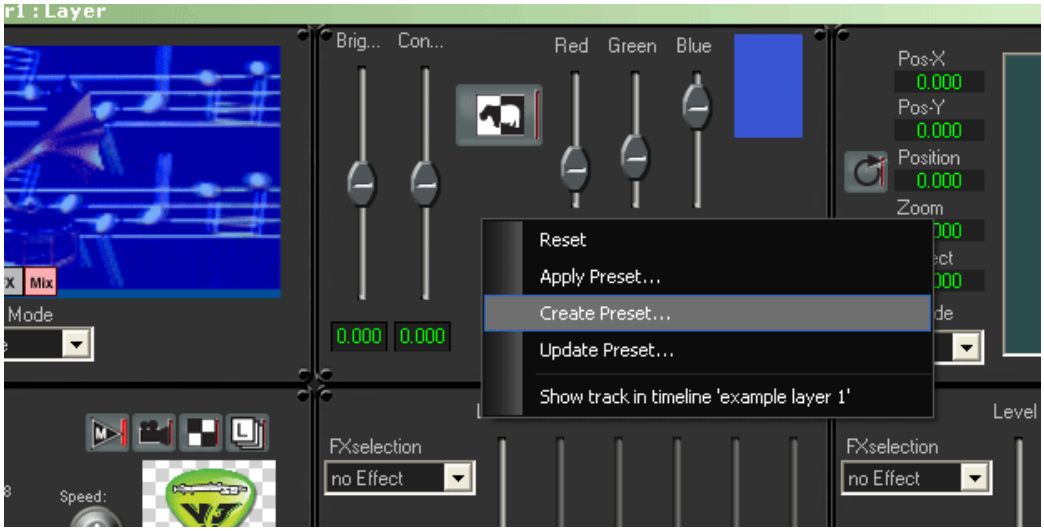
Alternatively you can click the 'new preset' button in the timeline window. You will be presented with a Pin Selector window. Navigate through the Hippotizer hierarchy to the correct pin and click ok. Once again the red value on layer one is chosen. The preset will adopt the corresponding values currently active in ZooKeeper.



Name the preset and it will appear in the presets list ready to be used later.

Preset by right clicking

Right clicking in the interface will also prompt you to create a preset.



Once again you will be prompted to save the preset. Choosing where you right click determines the contents of the preset.

Updating Existing Presets

If at any time you wish to amend a preset you can adjust the settings in the relevant area of ZooKeeper, right click and select 'update preset'. You will be presented with a list of presets of the same category. Select the one you wish to update and click apply. Any instances of the updated preset used in timelines will be updated too.

Applying Presets

Right Click:

At some point you will want to apply the presets you have created. In the above diagram you will see the option to apply a preset using right click on the mouse. Click this and you will be presented with a list of corresponding presets of the same category. Select one, click 'apply' and the corresponding layer or function will be updated.

Drag:

You can drag a preset from the preset list in the timeline window and drop it into ZooKeeper anywhere it is relevant. Areas where it can be applied will be shown by the cursor adding a plus sign next to it. Areas not allowed will show a circle with a line through the centre. You can also drag and drop them into the layer preview window.

You can apply presets to any layer regardless of which layer they were created on.

We will look at applying presets to the timeline in subsequent sections.

Timeline

Introduction

Hippotizer V3 features a sophisticated timeline. Users familiar with V2 Hippotizer will be encountering the timeline for the first time so let's take a few moments to explain the basic principles.

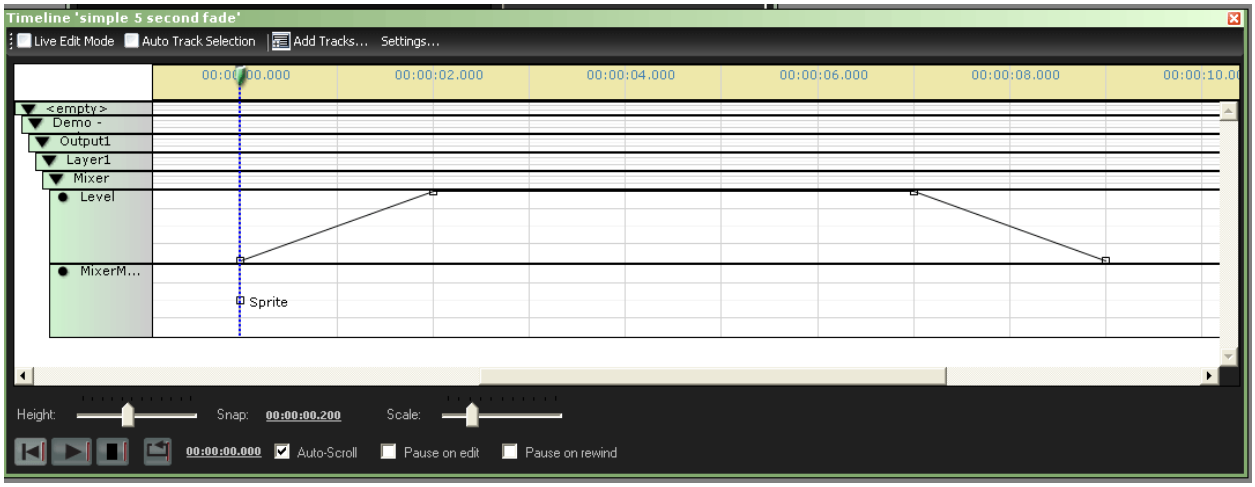
Until now all Hippotizers have been passive servers, waiting for realtime commands from either the User Interface or an external control protocol such as DMX, MIDI or timecode signals. With Hippotizer V3 it is now possible to create compositions which are capable of manipulating all the settings against time.

Users familiar with Video or Sound editing packages will recognise the basic principles immediately. Others may need to experiment a little more before fully understanding the concepts.

In principle the timeline comprises a series of events and each event usually incorporates a change of state for one or more variables within the system. There is a moving playback head, beginning at zero minutes, which progresses in realtime to an end point, the value of which is determined by the contents of the timeline. When a timeline is played the play head will move to the right, and executes any commands it encounters en route.

User can add 'nodes' which are moveable, configurable points, to instigate changes. Other parameters are changeable via timeline too. All items controlled by the timeline are referred to as events.

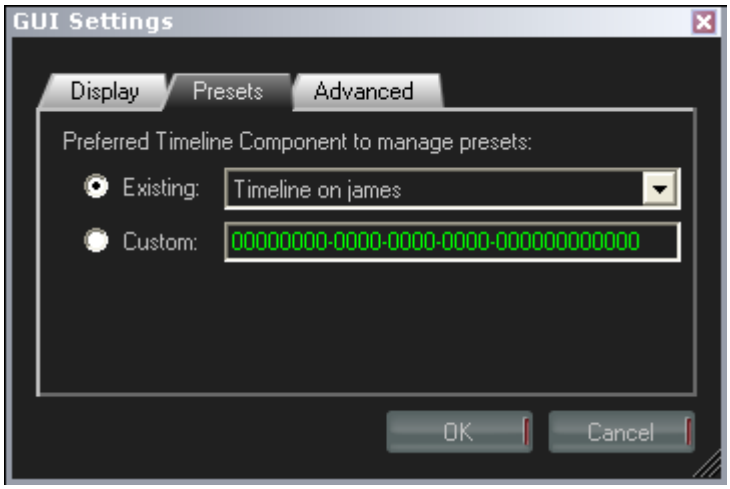
For example, if a user wishes to fade layer 1 up from zero intensity to full, starting at 0.00 seconds, remain at full for 5 seconds then fade to zero again, a simple series of nodes can achieve this. Nodes are added by clicking the mouse on the relevant track. The type of node created depends on the track type.



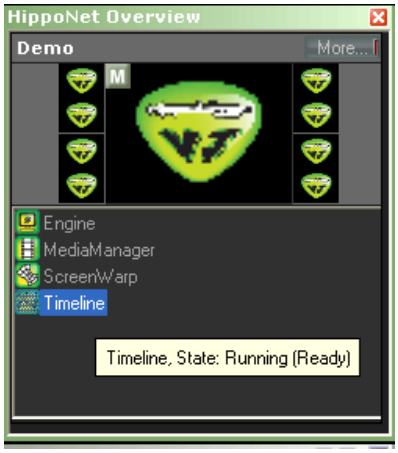
The visual representation of this would be as in the figure above. The play head (the line with the green head) begins at time 00.00.000, progresses to the right and executes the changes it encounters on the timeline, in this instance an increase and decrease in level for that layer.
This is a very simple example but all functions on the timeline follow a similar approach albeit in varying degrees of complexity.
In this section we will look at understanding the layout and ergonomics of a timeline, how to add items to be controlled, and how to trigger the timeline remotely from a variety of devices.

Creating a new timeline

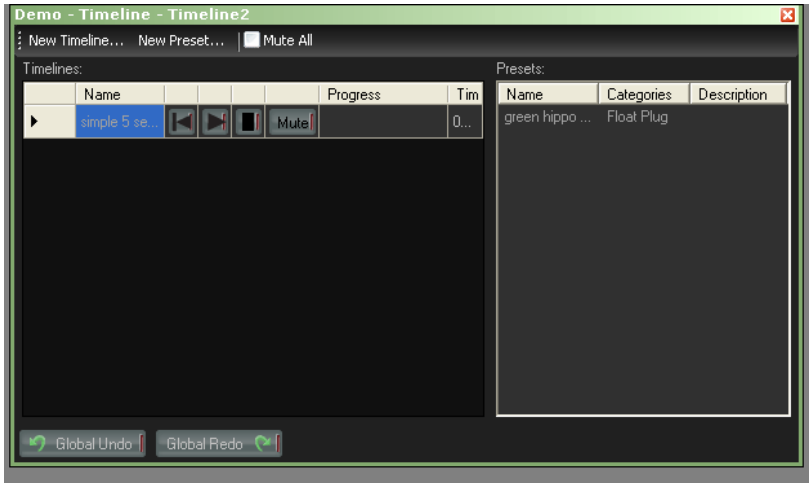
NOTE: If you are controlling your Hippotizers from ZooKeeper via HippoNet on a non-Hippotizer PC you need to designate a machine to store data for presets and timelines. A symptom of not having done this is to have preset and timeline options greyed out when right clicking. To allocate a PC to store the data, go to the top of your ZooKeeper interface, select settings -> GUI Settings and you will be presented with a GUI Settings box. Click the Presets tab and in the drop down box for 'Existing' select a machine from the list.



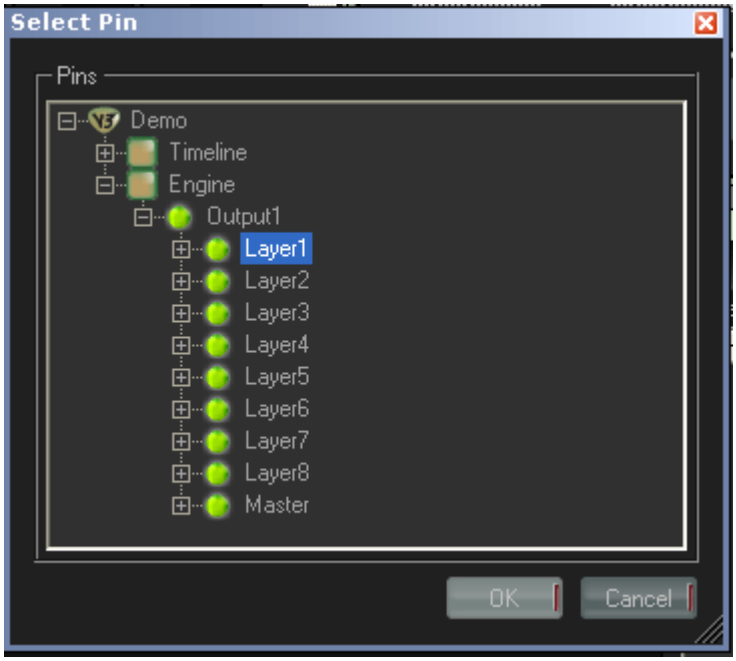
First we need to open the timeline component.



It is good practice if you wish to create a timeline from scratch, to reset the engine of your Hippotizer because your new timeline will inherit all the current states of the engine components you select. This can be useful at times but on this occasion we wish to begin with a clean sheet. So, as demonstrated in previous sections, right click in the centre of the large window in HippoNet Overview and select 'reset engine'.
Now, double click the timeline component icon within the HippoNet Overview window as in the above diagram. This will open the following timeline control box. Be aware that if you have several machines on the network, there will be an instance of this box on all machines present. Now is a good time to designate a 'master' machine where you will work.



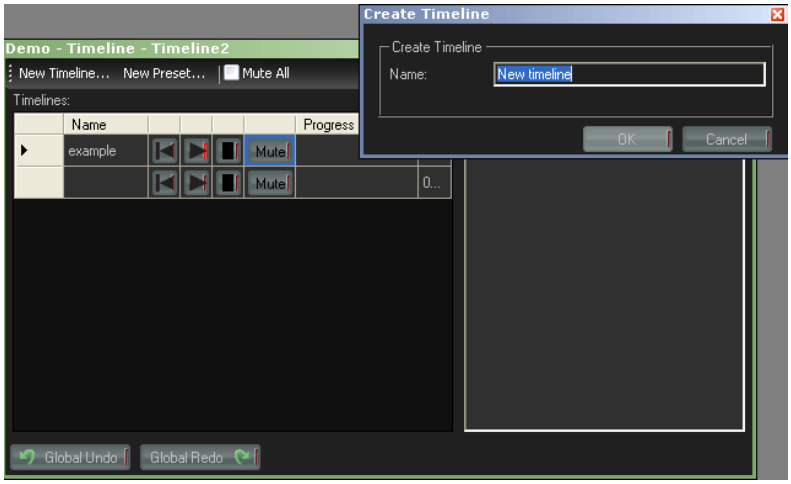
You will now see the preset and timeline control centre. Any previously created timelines and presets will be listed here. However we wish to create a new timeline. Begin by clicking the 'new timeline' button at the top of the Timeline Control Centre. This will open the pin selector window as shown above.



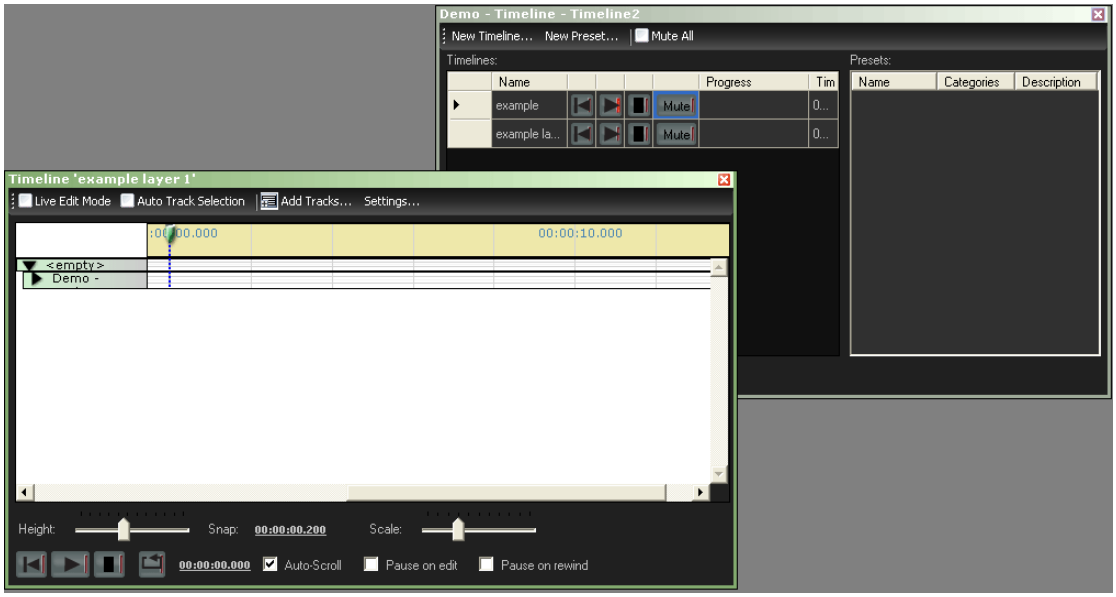
Pins are points in Hippotizer, accessible by the user for control. Click the '+' sign and expand the tree to the first level. You will see 'engine' appear. Click the '+' sign once again and you will see 'output 1' appear. Click output 1 and you will see all available layers and the master layer appear.

NOTE: Hippotizers with Dual mode activated will have Output 1 AND output 2 listed.

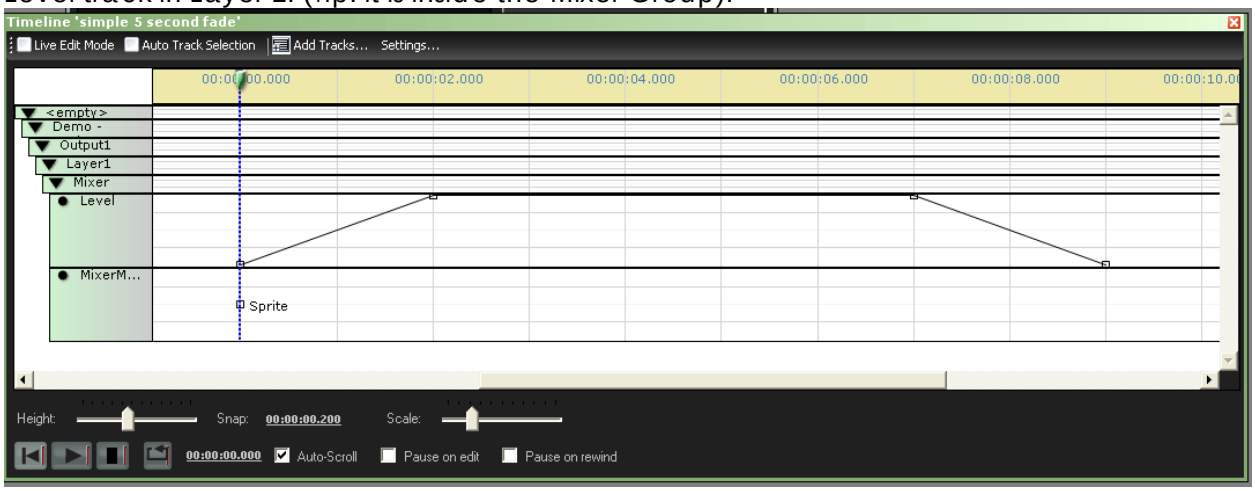
A timeline can consist of one single parameter such as the level of layer 1, or green on layer 3 and so on. Alternatively it can contain a complete Hippotizer Engine with all its settings down to the finest detail (by selecting 'output 1' from the tree). In setups with multiple machines you can also add any element from any other server on the network. The choice of what you add to your timeline is yours. A full Hippotizer will be harder to navigate than, for example, single layers so choose the elements you think you will need. More 'tracks' can be added later if needed. In this example we shall use all the elements of layer 1. So highlight 'layer 1' and click ok.



You will be asked to provide a name. In this example we have called it 'example layer 1'. Click OK to confirm.



You should now see a timeline window open with the title ‘example layer 1’ and your newly created timeline will also be listed in the window ‘timelines’ in the timeline Control Centre.
You can drag the corners of the timeline window to resize the timeline as you wish.
You are now ready to begin working on your timeline.
First of all try to navigate your track. A vertical arrow on the left of the track means that this track contains further daughter tracks and can be expanded. Click on the arrowhead to expand this group track and see what is inside. Try to navigate to the Level track in Layer 1. (Tip: it is inside the Mixer Group).

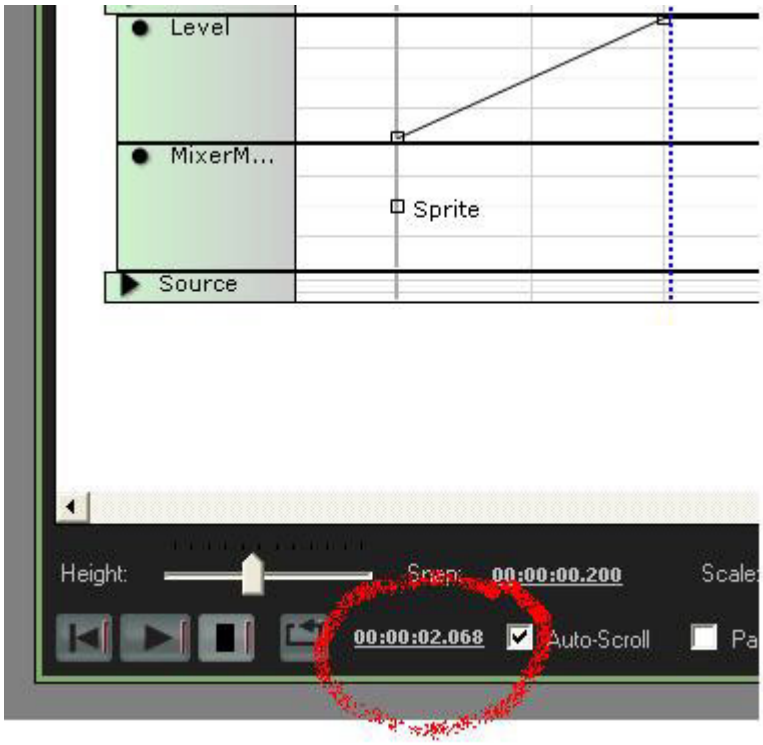


Now try to create a fade similar to the screen grab above by clicking in the level track with your mouse.. If you make a mistake you can undo it using Ctrl + Z on the keyboard.

Now click the play button  on the bottom of the timeline and the play head should progress along the timeline. On your output screen your layer 1 should fade up then fade down again and the timeline will stop. You can rewind using the back button  and loop the timeline using this button  .
Congratulations, you have created your first timeline in Hippotizer V3.

Because we are only controlling the level on this layer and have not defined other elements, any subsequent changes made to other parameters in ZooKeeper will remain. This is one key difference between Hippotizer timelines and video/audio editing. You can still work freely in the interface whilst only automating certain functions.

If you wish to navigate to a specific point on the timeline, use the position readout at the bottom of the screen shown here circled in red. You can type values directly into here. Alternatively you can simply drag the play head.



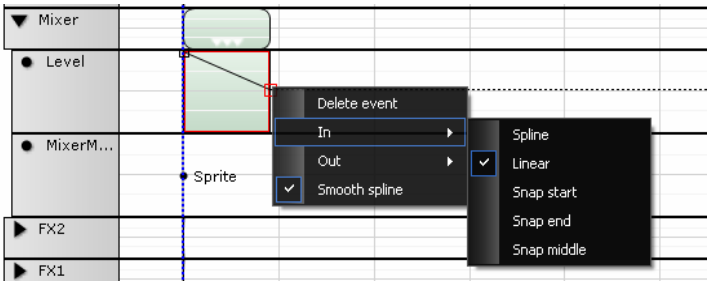
This counter will always show the current timeline position but you can jump to specific point you can type a value into this box and hit enter. This is particularly useful for compositions with rhythm.

Time Line Node Controls

Nodes and events are added to the timeline by clicking with the mouse. When you add nodes to the timeline they automatically assume the properties of the previous node applied. However, to allow for greater creativity and flexible programming, it is possible to shape the joining lines resulting from multi-node application.
To access these functions, right-click any existing nodes to see the following options:

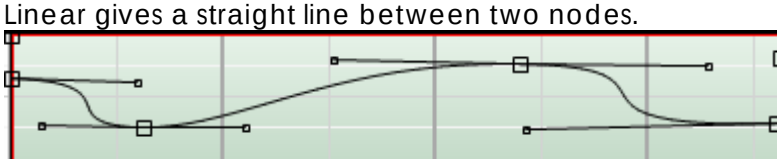
For variable values such as level, you can add shaping to the transition line between 2 nodes.

Spline
Spline allows the adjoining line to be shaped allowing for smooth in and out transitions. Once selected, hover the mouse over the node and handles will appear. Moving the handles up or down by clicking and dragging will the mouse will increase or decrease the severity of the curve as it joins the node. Moving to the right will adjust the duration of the curve.



Linear

Linear gives a straight line between two nodes.

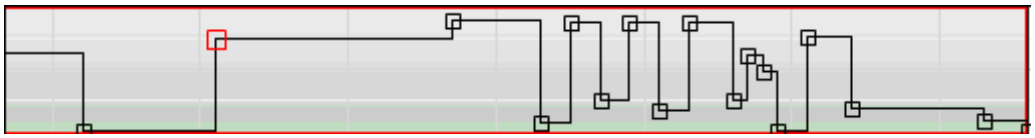


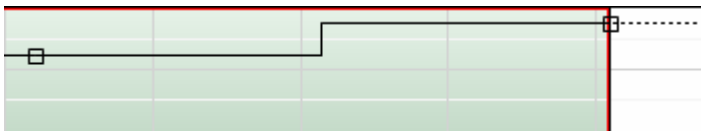
Snap Start/ Snap End

Snap at end and snap at start allow instant transitions to be achieved without the need to add additional nodes. The jump in value will follow whenever the node is moved.

Snap Middle

Snap middle will take the distance between the last node and the new node and snap to the final level half way between.

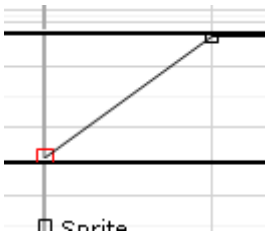




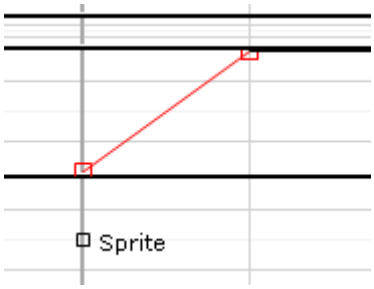
Selecting and Deselecting nodes and Events

General Rules:

After creating nodes the following rules can be applied.
A single click on an event will turn an item red to select it



Further events can be selected by holding the CTRL and clicking others.



Several events can be selected by dragging a bounding box around them. When the mouse is released selected points will be highlighted in red.

NOTE: To deselect an event or multi-selected events, click and hold in empty space and drag the mouse a little. NOTE: this is a technique you will soon come to rely on. Initially it is tempting to just click elsewhere but you will notice that this will add an unwanted node to the timeline. Should this happen remove the unwanted node with CTRL + Z or 'Global Undo' at the bottom of the timelines window.

Events can be modified using these rules:

To move a selected group of events together, drag one of the selected items and all others will follow. Alternatively to increase or decrease values simultaneously use the up and down arrows on the keyboard. Similarly, using the left and right arrows will move a selection of events along the timeline.

Deleting events

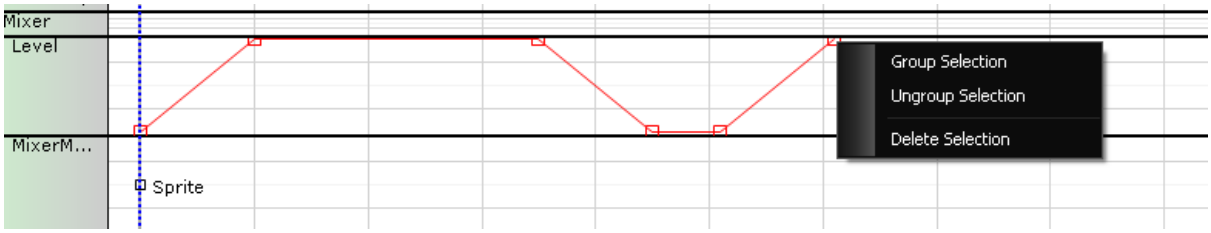
Single events can be deleted by right clicking them and selecting delete. The same approach can be used for a group of events.

To undo or redo any changes use either the 'Global Undo' box in the timeline window or CTRL + Z on the keyboard.

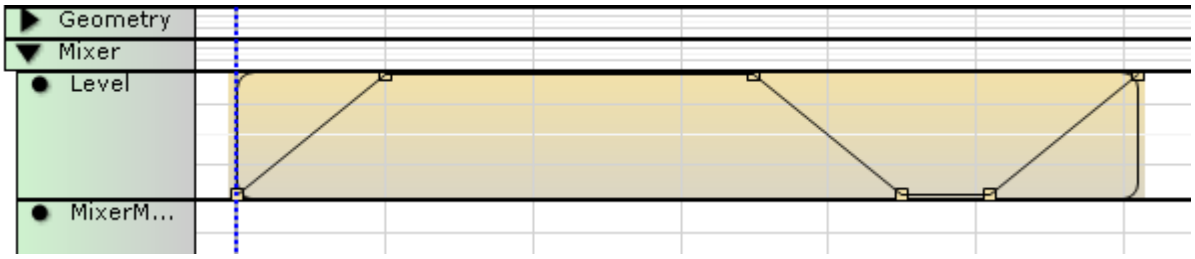
To redo an action use ‘Global Redo’ or CTRL + Y on the keyboard.

Groups

You can group a series of nodes by dragging a bounding box around them and right-clicking any item and choosing ‘Group Selection’ from the list.

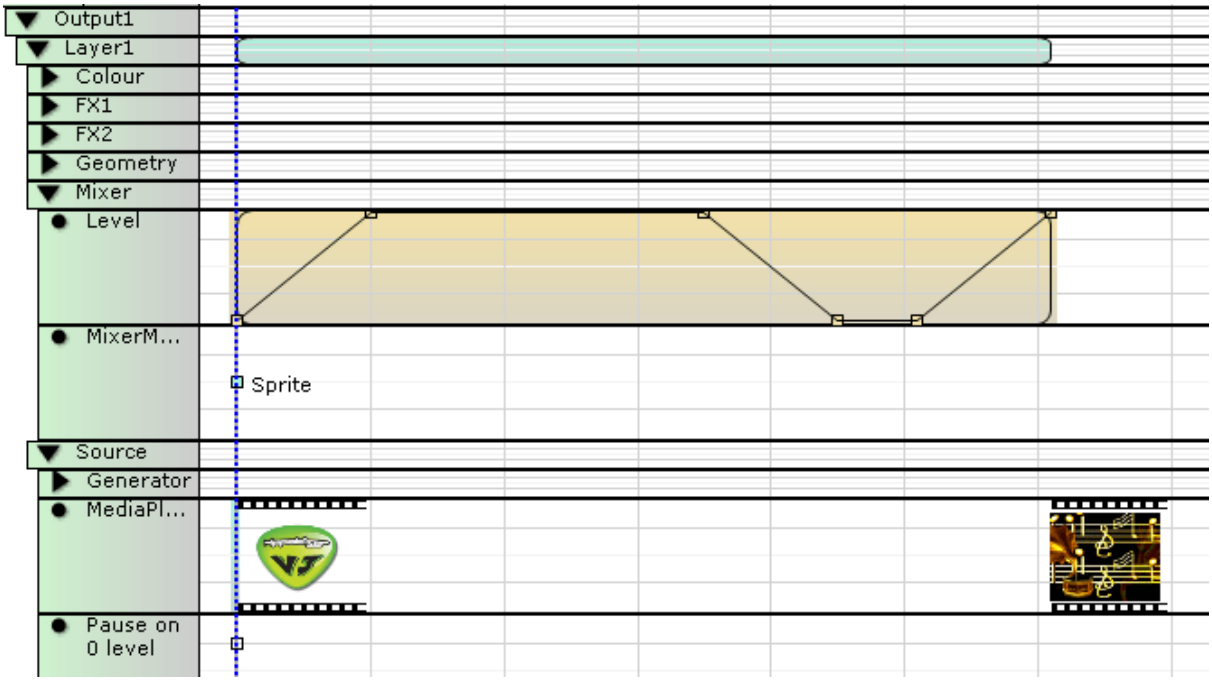


Once selected, the group will look like this.



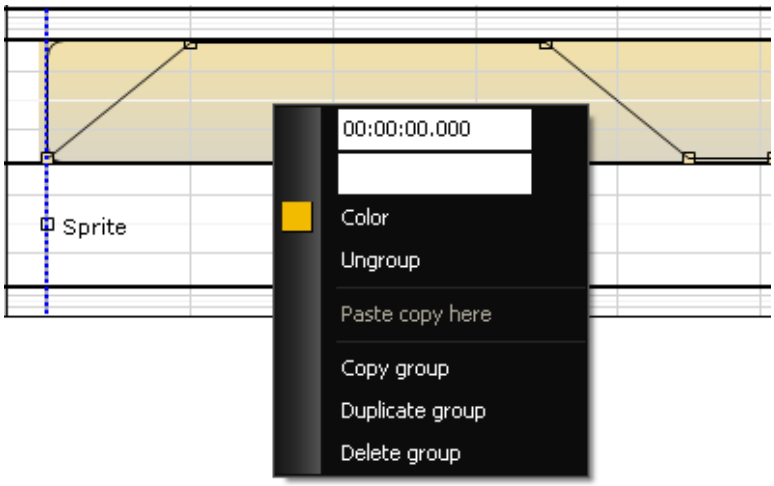
You can still add further items within the box but they will become part of that group. You can now drag the whole group around on the timeline by clicking and holding anywhere in the coloured area.

You can group items which are on different tracks too. By holding down the CTRL key whilst clicking items or dragging bounding boxes multiple items can be selected. Once you have completed the selection right click any element and then choose ‘group selection’. You will see a corresponding bar appear at the top of your layer or, if elements span different layers the line marked output 1 or similar. To move all elements in the group simultaneously drag this bar left or right. In the following example the media selection, mixer mode and level sequence have been grouped and a corresponding blue bar appears on the track named layer 1.



A group can also contain one or more events which are already contained in another group. Use the same approach as you would to create an isolated group. Just click the events you want to add and right-click to group them.

There are also some options you will find useful if you place the mouse over the group and right click.



- The time value allows you to move the first item in the group to any time on that track.
- You can give the group a name by typing it into the second box. This name will appear on the timeline in the bottom left corner of the group for easy identification.
- If you wish to change the colour of the group, select colour and you will be given a colour picker.
- Ungroup deletes the bounding box and returns the selections to individual points.

Copy or Duplicate?

You will also see the option to copy or duplicate a group. Duplicates are different and can be very useful. Copying a group allows you to take the created elements and paste them elsewhere by simply right-clicking and selecting 'paste copy here'. The copied group will be identical but you can change values within the second one independent of the first. However, you also have the option to 'Duplicate Group'. This is a very useful feature if used correctly. A duplicated group is linked to any other duplicates of that group found on the timeline. Any changes made in any of the duplicates will occur in all others. So if, for example, you foresee that some parameters may need to be changed later and you don't want to manually find every instance use duplicate. This is particularly useful in touring setups where you might want to fine tune geometric elements to suit different venues quickly and easily. Try this by creating a group, right clicking, select 'duplicate group'. Move to a point further down the same track and right click selecting 'paste duplicate here'. Now move any of the nodes in any of the groups and you will see the corresponding group move with it.

Live Edit Mode

In the above example we used the mouse to click and add nodes. An alternative is to use Live Edit mode. Activate by ticking the 'live edit mode' box at the top of the timeline. Once ticked, any changes you make to a track present on the timeline will add a corresponding node to the corresponding track.

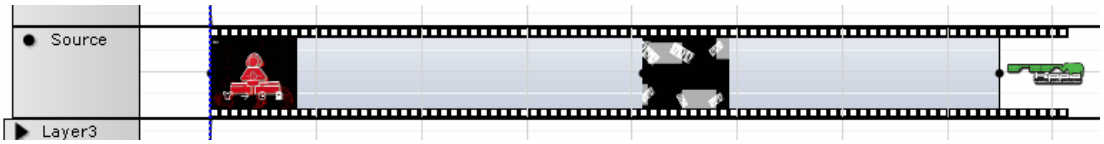
Let's try to do that.

Use the counter to type a value of 00.00.10.000 to move the cursor to 10seconds. Now move layer 1 level to zero and a node at zero will be automatically added. Move the fader up and down and you will see the level move accordingly. Position it at zero. Now advance the timeline to 12seconds, and move the fader to full. You will see another node added at full. This applies to any parameter. You can also move faders while the playback is in progress and nodes will be added automatically.

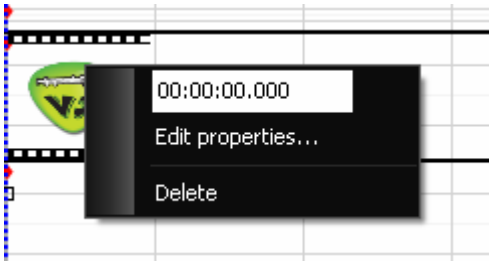
NOTE: Use live edit mode with extreme caution. Should you inadvertently leave it active, every move you make in the interface will be recorded. If this happens use the global undo button in the main timeline window to step back through your actions.

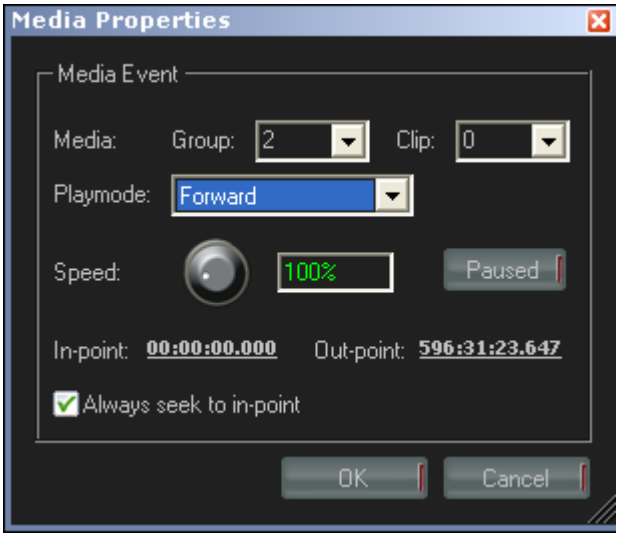
Let's now look at some more advanced timeline features.

Adding Media to a Timeline



Media can be added to a timeline by simply dragging it to the relevant track from the Media Selector. Navigate to the Layer 1 Source track. In the MediaPlayer track you will find a thumbnail of the media that will be displayed. You can either drag and drop a thumbnail from your media selector window or right click on it and select 'Edit Properties'. This will open the box below.





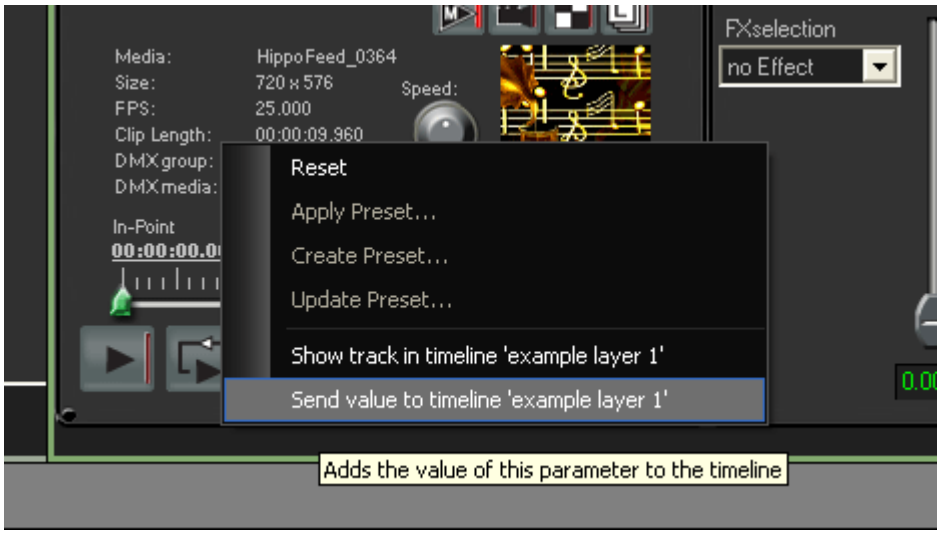
Clip location, play mode and speed can now be edited within the box by using the drop down menus.

To delete media, highlight a thumbnail, right-click and select delete or press delete on the keyboard.

'Send Value to timeline' and Show in timeline.

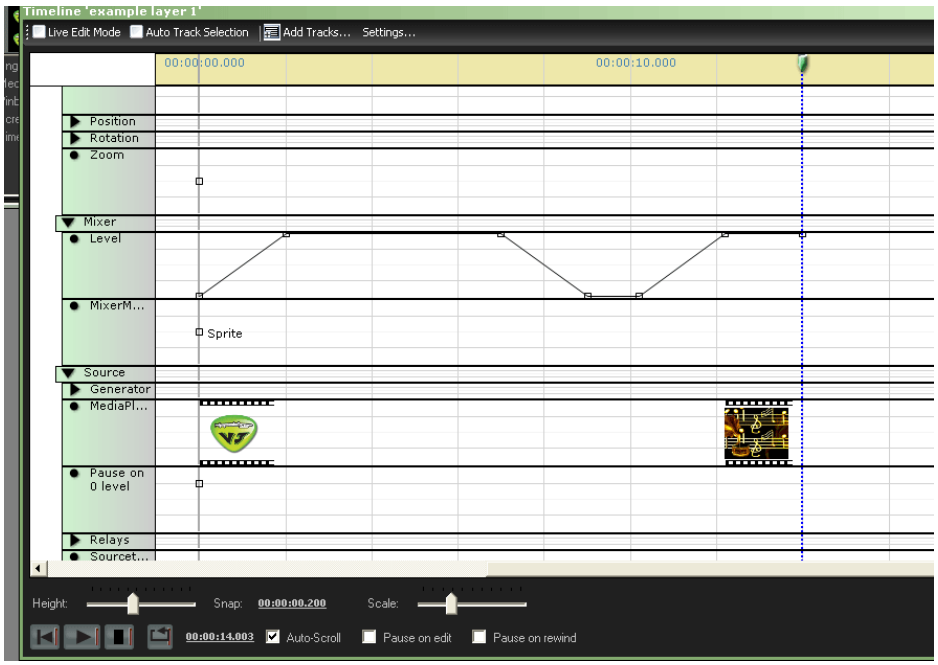
These features allow the viewing and application of functions quickly in the timeline. Let's show by an example. Either drag the cursor or use the position box to go to 12 seconds. In the media selector select a video clip. In the layer control window, take the speed to 200%.

Now right click the information area as shown here.

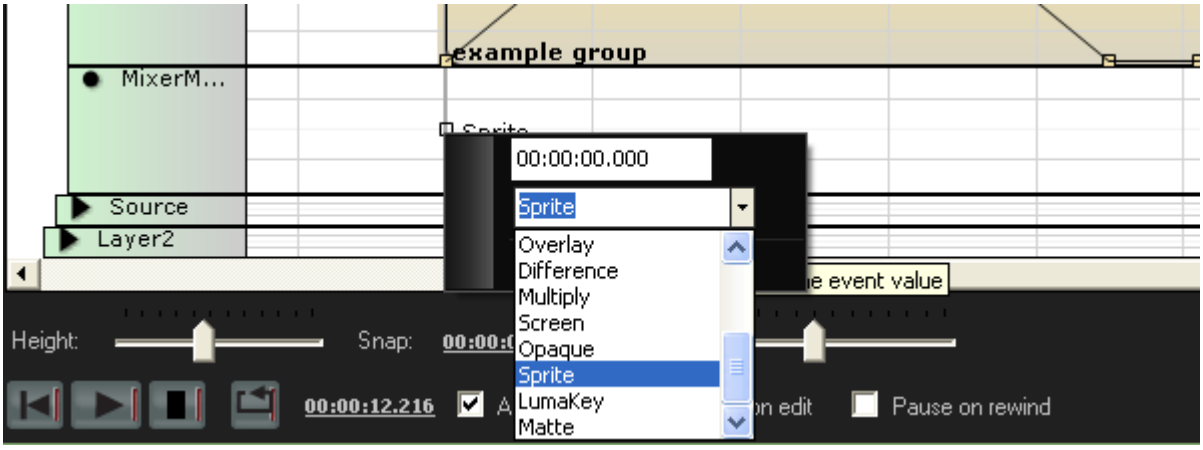


You could select the option to 'Show track in timeline 'example layer 1' and this would expand the track to allow you to see the parameter but we are actually going to select 'Send value to timeline 'example layer 1'. What this will do is send information on the file selected and the playback parameters associated with it to the current timeline position. Once done, place another level node on the timeline at 14seconds (a later event is needed to progress past the one we just sent) and return to the beginning of the timeline and press play. You should see the timeline perform all the previous edits and the last thing you see should be the media you selected playing back at 200% speed.

Your timeline will look like this.



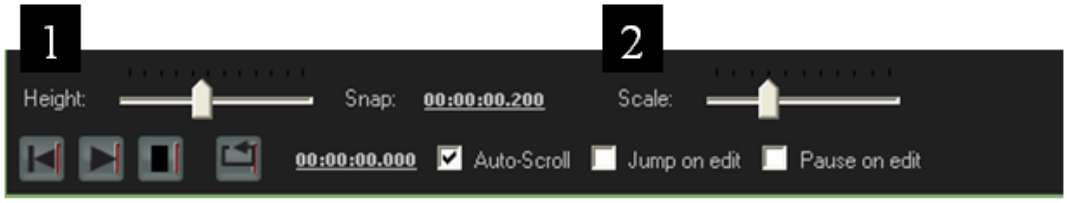
Some parameters are not values from zero to full such as, for example, Mixer Mode. These are shown as fixed points on the timeline. Navigate to Mixer and you will see Mixer Mode listed. If there is no node present, add one. Now right click it and you will see a selector window.



Select the mixer mode you wish to apply.

Timeline GUI Controls

There are many ways to maximise your workflow on the timeline. Familiarising yourself with the following controls will assist you, especially when using complex compositions.



1: **Height Control:** controls the height of the rows of the timeline.
2: **Scale:** Moving this slider allows the user to dictate how much detail is displayed on the timeline horizontally. If you are working in great detail with very specific values you may wish to drag this slider to the left to see more detail. For a more general view move to the right. The value can be set between 0.5 of a second and 14 hours.
Snap Value: Snap value is the setting which dictates the minimum distance between items added to the timeline as a time-value. Adjust this value if you wish to allow changes on the timeline to be closer together or more distant. You can type in the value as required.
Playback controls:

 Snap to start (Keyboard: Home)  Play/Pause (Keyboard: Space bar)

 Stop

 Loop

Auto-Scroll: When active, this ensures that the position of the play head on the timeline remains in view even as the playback position goes beyond that currently on display.
Pause on edit: will pause the timeline when an edit is made. (Doesn't seem to do anything)

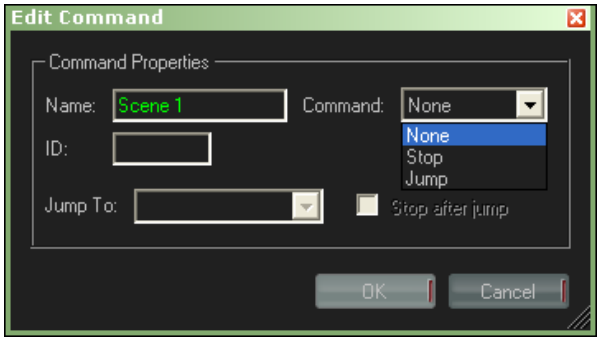
Pause on rewind: Automatically sets the play mode to Pause when the timeline if you jump back to the beginning.

Important Note:
The length of a timeline is determined by the first and last event/cue on the timeline. This means that if a clip is set to loop but no more value changes occur after a certain pint the timeline will stop and the clip will continue to loop. This is normal as Hippotizer's timeline is an **event** timeline. Adding another event on any track will extend the timeline to that length.

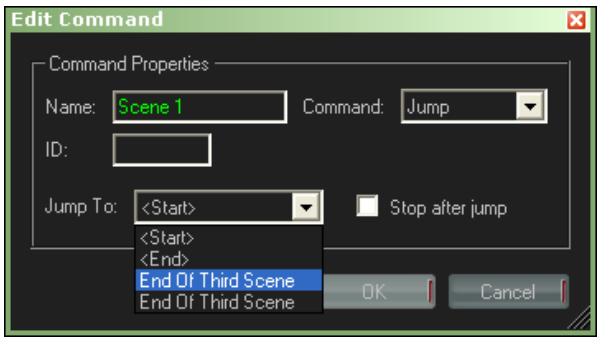
Timeline Markers / Commands

Timelines can contain stop, jump and go to commands using the Timeline markers. Markers can also be addressed by outside protocols for realtime access to certain timeline functions.

To add a marker to a timeline, right click on the yellow title bar at the top of the timeline window. A flag will be placed on the title bar. Commands can be added every two milliseconds.
To edit the command right click on a flag and open the edit command box



You can give the command a name which will appear on the timeline bar. The stop command will make the timeline halt on the flag until the next press of the space bar. Use the jump command to jump to another position on the timeline. Other markers will appear as jump-to locations. If no other markers are present only **jump-start** and **jump-end** will be available.
If you simply wish to add a command marker for information only with no action, select **none**.



To delete a command right click on the flag and select delete.

Adding Tracks

If you wish to add more tracks from any Hippotizer on the network click the 'Add Tracks...' button at the top of the timeline window. Use the pin selector to navigate to the element you wish to add and click OK.

Saving a Timeline

Timelines automatically save themselves whenever a change is made.

HippoNet

What is HippoNet

HippoNet is the network protocol that links all Hippotizer enabled systems. HippoNet allows users to view, configure and control any parameter of a HippoNet-ready device from any server when systems are connected together over a standard Gigabit Local Area Network.

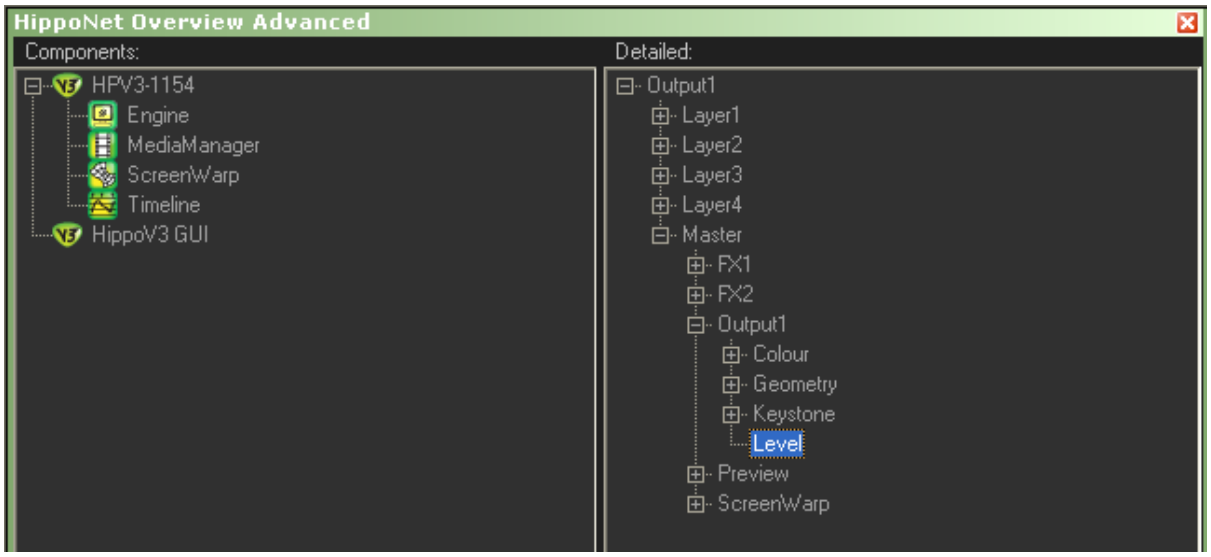
What makes HippoNet unique is the ability to directly control any element of a Hippotizer directly. Many systems claim remote control ability but these usually entail using resource-heavy remote-desktop approaches. HippoNet does not require this. Each user can have a custom desktop, sharing controls which suits their tasks without affecting other users.

The HippoNet overview window shows all Hippotizer systems available to you over HippoNet. If you are only running one system you will only see the one Hippotizer displayed within the HippoNet Overview Window. It is good practice to keep this window open at all times as it allows access to most of the regularly used functions in Hippotizer

V3. If you should inadvertently close this window, you can open it again at any time by clicking on the HippoNet overview button. This is located in the tool bar.
When using multiple Hippotizers in HippoNet, the auto discovery function allows Hippotizers to appear in the HippoNet overview automatically.

HippoNet advanced

For most projects all you need is the above HippoNet overview, however sometimes you need to get access to a specific function which is hidden away from the basic usage. By selecting Windows -> add HippoNet Overview advanced you can create a new window containing a pin selector style interface with all the components and all available controllers.



On the left you can see all components available on the HippoNet network. If you have only one standalone system running it should look something like the image above. Anything with the “V3” logo in front is what we call a Host. A Host is in essence the mother application where components can run inside. Each Hippotizer engine is a Host, but also the User Interface ZooKeeper is a Host. So ou should see 2 Hosts on the left: the engine and the ZooKeeper (it will be named HippoV3 GUI)
Let’s explore what components are loaded on the engine Host by clicking on the “+” symbol. You should now see the Engine, a Media Manager component, Screen warp and a Timeline Component.
Click on the “Engine” component to select it. You will now see Output 1 appear on the right. This window contains any details within the selected component which in essence is a list of pins.

What the hell are pins?
Pins connect Components. That is it really, They can have many different forms and shapes, but in essence they are just connectors. Imagine you have a sound desk, microphones, an amp and speakers. Each one of those could be represented as a component with the sockets they have as Pins. Once you connect 2 connectors, the 2 devices can start to communicate. This is exactly the way HippoNet works. Each pin can be connected to another matching pin and then data can travel between them.
Many pins are simple direct connections; however some Pins contain other pins inside. We call those Pin Groups. You could compare this to a MultiCore cable in our audio example: There is only one cable with one connector, however inside are many more cable and connectors.

Let's get back to our Engine and the Output1 pin that we can see. This is a group pin and if you click on the "+" you can expand the group and see what is hiding underneath. In this case it is another set of group pins. Keep expanding Layer 1 and Mixer so you can see Level and MixerMode. These are normal pins, not pin groups – you cannot expand them anymore.
Let's double click on "Level". You will see a new window appear with a fader inside. We have created a connection between the Level pin and the User interface. So now you can send information to the pin using the User interface – use your mouse to move the fader and the layer level will change. Now try double clicking on the Mixer group pin. Again a new window will appear, this time displaying a Mixer, i.e. a drop down box for the mixmode as well as the fader for level. You now have connected a 2 way MultiCore containing both signals between the user interface and the engine.

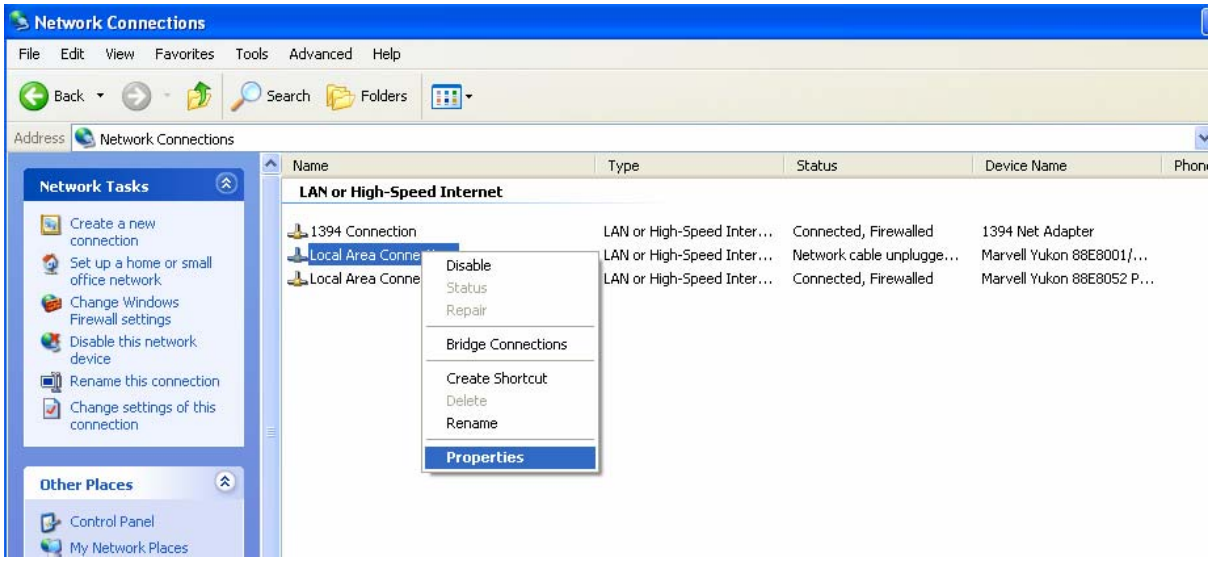
What's the use?
As mentioned before, most times you will not need to access the Advance HIppoNet Overview window, however at times you will want to have direct access to individual functions without the normal user interface. Or you want to have a separate set of faders for say all levels – you can simply navigate to these pins and double click them to get new windows. Many components do not have any interesting pins for the user, so most of the time you will only want to use the engine pins.

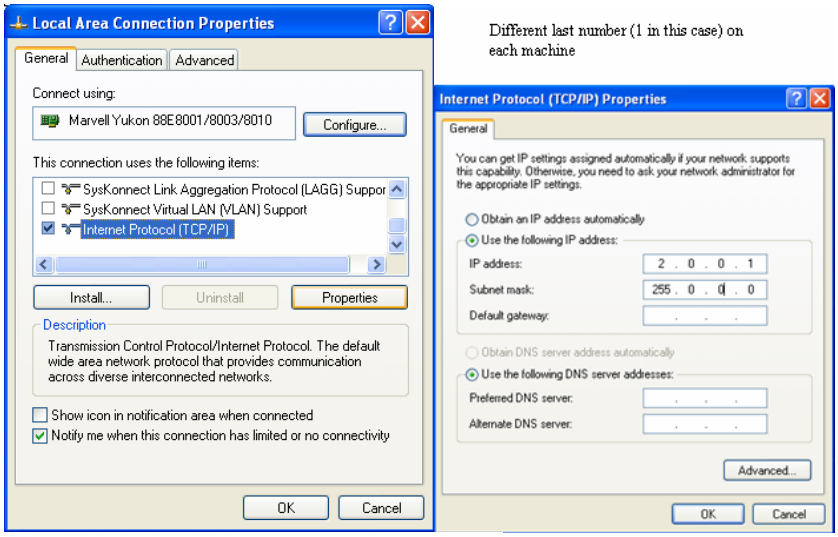
Set up your Network

IP addresses

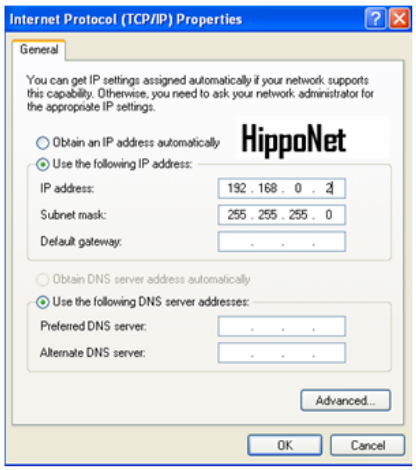
The Hippotizer Stage and HD come with 2 Ethernet ports at the back. It makes sense to use the first one (the one on the left) for HIppoNet and reserve the remaining one for ArtNet for example. The systems come with the Ethernet ports set to automatically search for a DHCP server to get an IP address. If none is present it will use an automatically generated one. We recommend you planning your setup and assigning a static IP address to each unit.
To change your IP address, connect the network cable.
Exit Hippotizer and go to Start -> Control Panel. Double Click on Network Settings. You will see a list of available adapters. You should have connected your Network cable to the left Ethernet port, also make sure it is plugged into a switcher at the other end. "Local Area Connection" should have the status of "Connected", if not, either you have connected your cable to the wrong port or the cable or switcher is defect.
If it says "Connected" double click on "Local Area Connection". In the list in the centre box, double click on "Internet Protocol (TCP/IP). Set the IP address in this dialog. If you have a DHCP server then use "Obtain and IP address automatically". Otherwise select "Use the following IP address" and fill in the details (IP address and Subnet mask required as minimum).
Tip: If unsure, use the following IP settings:
IP address: 192.168.0.x where x is the number of you Hippotizer in this rig.
Subnet mask: 255.255.255.0


HippoNet
Local Area Connection
Local Area Connection 2
LAN or High-Speed Inter...
LAN or High-Speed Inter...
Network cable unplugge...
Connected, Firewalled
Marvell Yukon 88E8001/...
Marvell Yukon 88E8052 P...
ArtNet


Network Connections
File Edit View Favorites Tools Advanced Help
Back
Search
Folders
Address
Network Connections
Network Tasks
Create a new connection
Set up a home or small office network
Change Windows Firewall settings
Disable this network device
Rename this connection
Change settings of this connection
Other Places
Control Panel
My Network Places
Name
Type
Status
Device Name
LAN or High-Speed Internet
1394 Connection
LAN or High-Speed Inter...
Connected, Firewalled
1394 Net Adapter
Local Area Conne
LAN or High-Speed Inter...
Network cable unplugge...
Marvell Yukon 88E8001/...
Local Area Conne
LAN or High-Speed Inter...
Connected, Firewalled
Marvell Yukon 88E8052 P...
Disable
Status
Repair
Bridge Connections
Create Shortcut
Delete
Rename
Properties



Different last number (2 in this case) on each machine



Firewalls and Viruses

The Hippotizer comes with no antivirus software installed or firewalls enabled, which means that the systems are very vulnerable to external attacks. This is why we recommend never connecting them to a network which is linked to the internet. If you need to transfer files (i.e. media) from a place in the internet (i.e. an ftp site) please use a separate machine with strong virus protection and scan any file downloaded before transferring to the Hippotizer. We can take no responsibility for viruses and other malicious software that attacks the Hippotizer.

If you use ZooKeeper on a machine other than a Hippotizer you need to ensure that the network settings are correctly set. Also make sure that if you have a firewall installed it allows for HippoNet data to pass.

Performance

Please make sure you use the recommended hardware listed below. Although Hipponet is very likely to work with most available hardware we have found that there are

exceptions which can have an impact on performance of the system. If you do want to use networking equipment other than recommended we suggest you allow for time to do some serious tests before specifying this equipment on a show.

Recommended Hardware

Network Switch

(Tom please insert)

Cable

Ethernet cable needs to be of the types:
CAT 5e
CAT 6

Controlling Multiple Servers

ZooKeeper

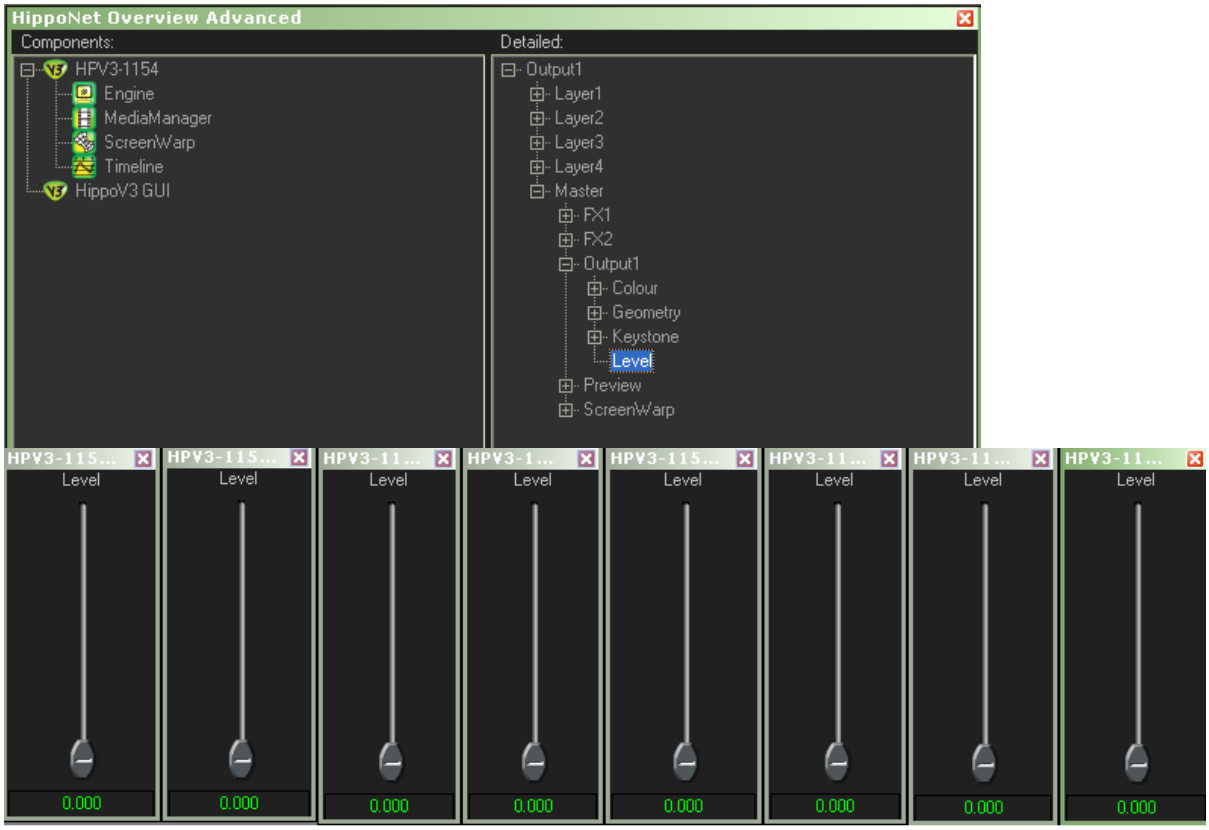
There are different ways to manage your user interface to be able to easily monitor and control multiple systems. Here are simply a few tips and trick which should help you get started more quickly.

Tip1: Get a bigger monitor.

Seriously you cannot work productively with a XGA monitor giving you 1024x768. This monitor size is ok for general maintenance and controlling a single machine, however not suitable for serious mulit unit control. We recommend using one or two 22" high definition monitors connected to a separate machine running ZooKeeper for maximum productivity. This way you can layout all your controls and previews you need easily and get to them instantly without having to drag and flip windows.

Tip 2: Take some time to do a nice layout

It is worth spending 20minutes or so thinking about what controls you need most and put them onto your monitors. If you use HippoNet Advanced overview you can create new windows with specific functions you may need. So if you want a separate set of Master Level Controls, simply browse to the required pin and double click on it. Then resize and move your control to where you can get to it easily.



Also when working with multiple systems you may want to see the 4 or 8 layer overview for each unit. Using the standard method of clicking on the central output in the HippoNet overview however creates a "shared" overview which gets re-assigned to each machine whenever you click on a different system. So to create fixed overviews that stay the same, simply double click on the engine of each Hippotizer. You will see that each time a new window is generated and it will not be reassigned to any other unit.
So if you have 3 Hippos running 8 layers each, you can then have 24 previews one for each layer side by side, so at any point in time you can easily see what is going on where.

Tip 3: practise your navigation

Because you cannot have all controls for all Hippotizers active at the same time you need to share some controls. It seems that most people want to see a preview for each layer and have direct access to its level, however sharing all other layer controls is well possible. When double clicking on a layer you will get the media selection window and a layer control window. Position these conveniently. Whenever you click now on a layer preview anywhere these 2 windows will now "point" to this layer and you can both monitor and change all parameters. Practise flying from one Hippotozer to another,

switch between layers and bring up media and work on compositions to get a feel for the workflow. Still not right? Play around with a different layout.

Tip 4: Save your desktop layouts

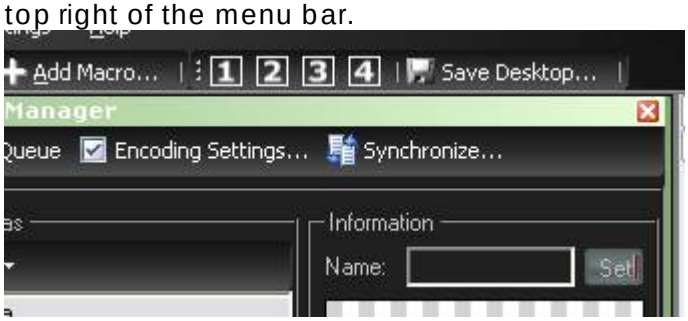
If you have a good layout you like, save it. Most likely at some point you will start dragging windows about and if it isb't you, somebody else will. So make sure you save them and Zookeeper will create a new button to easily recall this desktop setting for you when you need it. You may also have different layouts for programming and rehearsals? Just save them and easily switch between them.

Timeline

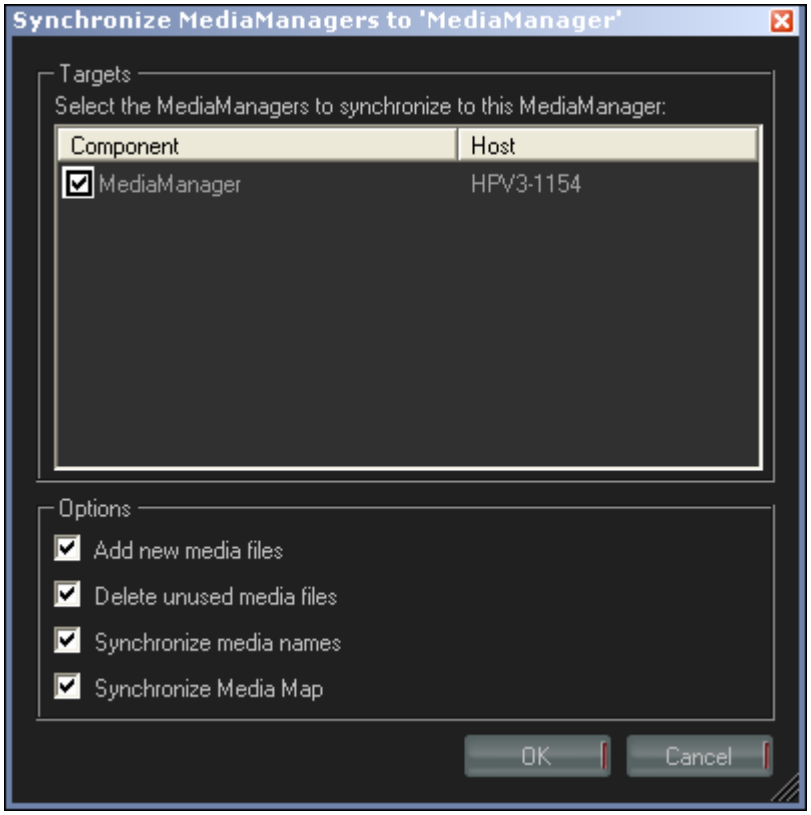
Programming multiple systems is not much different to programming a single system – you simply have more tracks to take care of. All the more it is important to learn about the tools provided to aid you editing the many parameters. Also again we recommend you doing a bit of tidying up before you start. By default when creating a new timeline you will find all the tracks within you selection. You may not want to access all these controls, so take some time to delete the traks you don't want. This way you can focus on the tracks you really need. Use the "Auto Track Selection" feature to fly between tracks by touching your controls rather than expanding tracks. Zoom in/out to see what you need to see and again get a bigger monitor to see more and do more.
Also please note that although the timeline looks so easy to use, it takes some time to really fly around it and work fast. You also don't become an expert on a lighting console in a day, so tae you time and learn and practise what you need to do before going on the job. It will be easier then ans also much more fun rather than stumbling across certain features for the first time on-site.

Synchronising Media

The Synchronize function allows you to duplicate the media library from one Hippotizer to other units on the network via HippoNet. Be aware that any media which is different on the other Hippotizers that may be in the banks will be replaced. To access this function open the Media Manager by double-clicking on the Media Manager icon in the HippoNet Overview. In the main Window click on the "synchronise..." button on the top right of the menu bar.



You will see the following dialog:

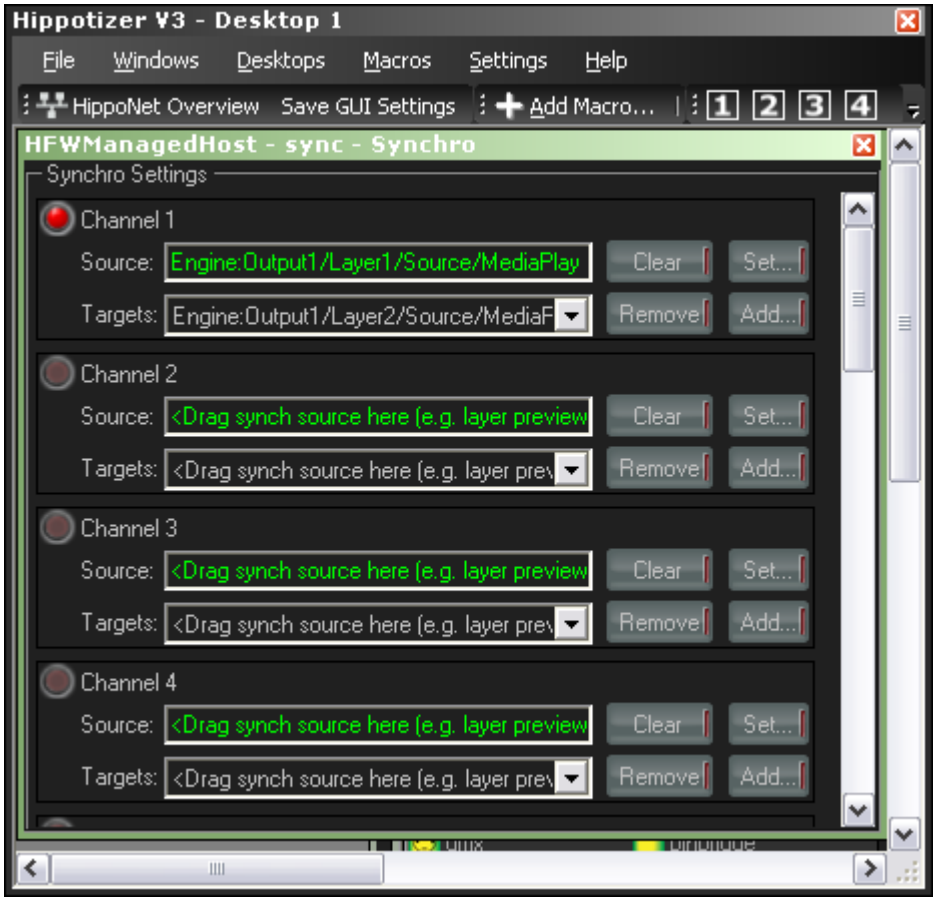


In the top area of the window you will see a list of all media manager components found on HippoNet. Make sure all systems that you wish to update are ticked.
In the lower area you have a series of options. For full synchronisation you would have all options ticked:
Add new media files: include the transfer of media files currently not present on the target systems.
Delete unused media: deletes unused media on the target systems. Untick this option if you wish to keep media on these systems even if it is not being used.
Synchronise media names: updates the media names if they have been changed by the user.
Synchronise Media Map: updates the way media files from the library are assigned to banks and slots.

Click OK to start the synchronisation process.
Please note that depending on the amount of media and the amount of systems in found it can take quite some time to synchronise media.

Synchronising Media Playback across multiple systems

Welcome the Synchronator! (Fanfare...)
HippoNet supports the transmission of timecode in our own special format across the network, so you can link any 2 media players together. They will do everything together; change media, play forward, play backward, change speed and so on.
Best of all it is very easy to setup:
Go to the Host Settings and add a new sync component, name it Synchronator (or anything else you like).
In HippoNet overview double click on the Synchronator you have jsut created.



You can have up to 16 channels of synchronised media players per sync component. Each channel consists of 1 Source and one or more Targets. As an example we will try to synchronise layer 2 to layer 1. Open the Layer overview (click on centre of preview), so you can see the 4 or 8 layer previews. Then drag layer 1 preview to the Source textfield and then the layer 2 preview to the Target text-field. Your window should now look similar to the one above. That is it.
To test load a video clip on layer 1 and play it – check in your layer overview and you can see that layer 2 does the same thing as layer 1.
You can drag the preview of any Hippotizer, local or remote, into these fields in order to synchronise them. Common setups are to have one master Hippo and synchronise all 8 media layers of all other Hippotizers to this master unit. So whatever you play back on this machine, all other will follow.

Common scenarios:

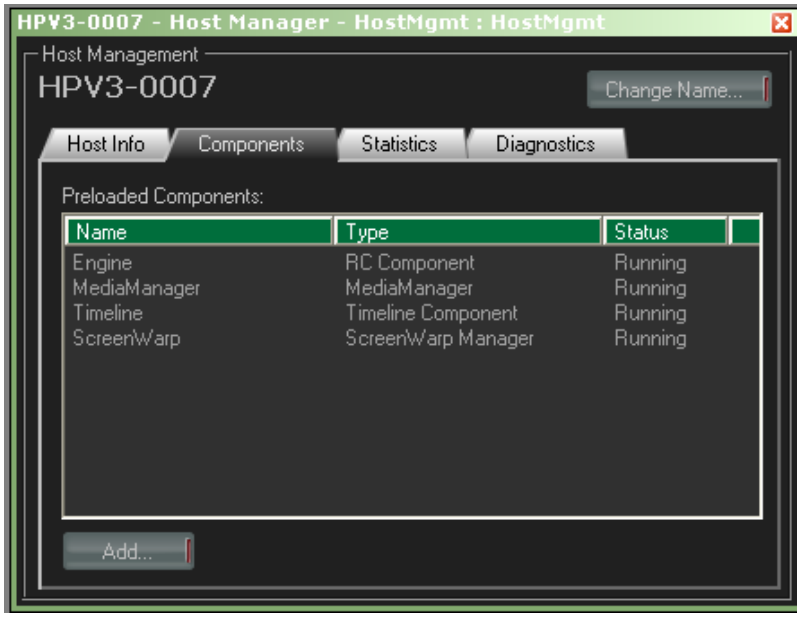
It is common to use multiple Hippotizers to create one large image. The Synchronator is perfect to sync the different units together. However you need to take care to split the media correctly and distribute it across the different units. As all synced units play the media located in the same bank/slot it is necessary to prepare the media in the right way. If you have 3 Hippotizers making one big image then you need to place the appropriate media in the same slot across the 3. For example in Bank 3, slot 3 you have a clowd animation. Hippotizer 1 is the master and also takes care of the leftmost portion of a 3 way softedge pan. So this unit will need the left portion of the clip uploaded to this slot. Hippotizer 2 takes care of the centre portion and needs this clip uploading and Hippotizer 3 looks after the right.

Whenever you now play back this clip on Hippotizer 1, the others will follow frame accurately. Please not you still need to control the levels and all other functions manually via DMX or timeline.

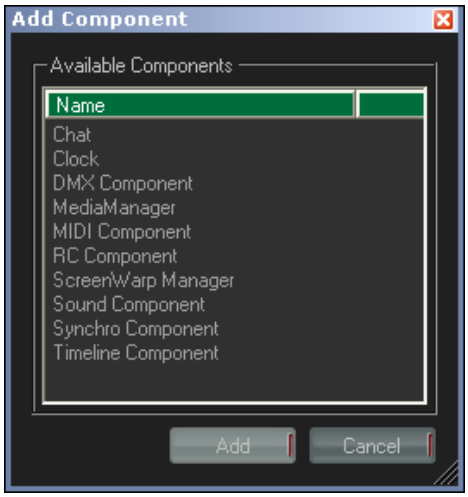
Components in detail

Overview

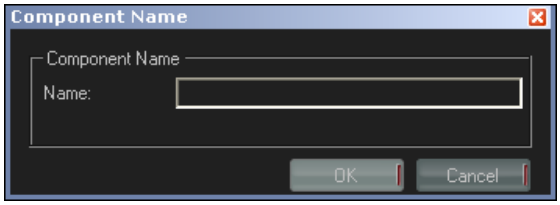
Components comprise of different attributes which can be enabled and disabled in Hippotizer through the setup menu in the HippoNet overview. Such functions as DMX, ScreenWarp can be enable or disabled without switching off the output. This can all be done on a remote desktop.
The Components tab shows details of the components running.



Adding Components



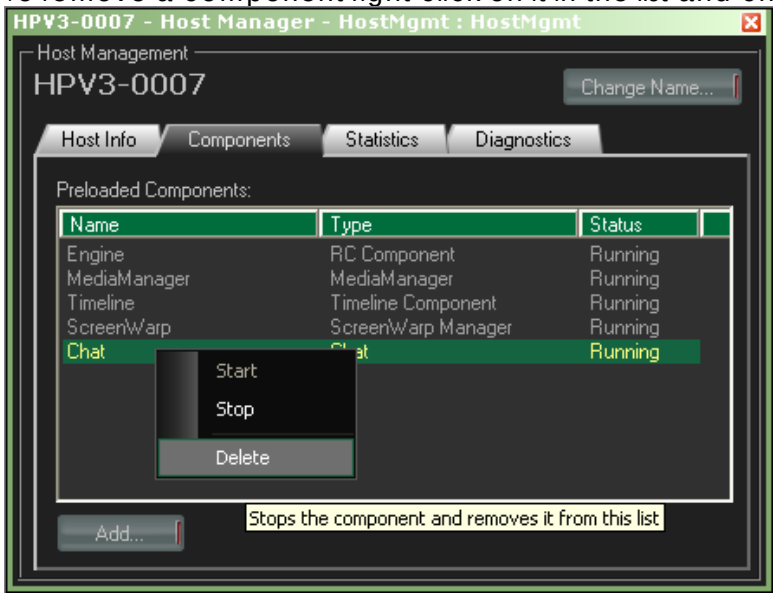
The Add component window allows you to add extra components to the HippoNet overview window for the Host Hippotizer. When you choose to add a component you will be asked to name, choose something that will help you identify it.



Once the component has been added it will start running automatically

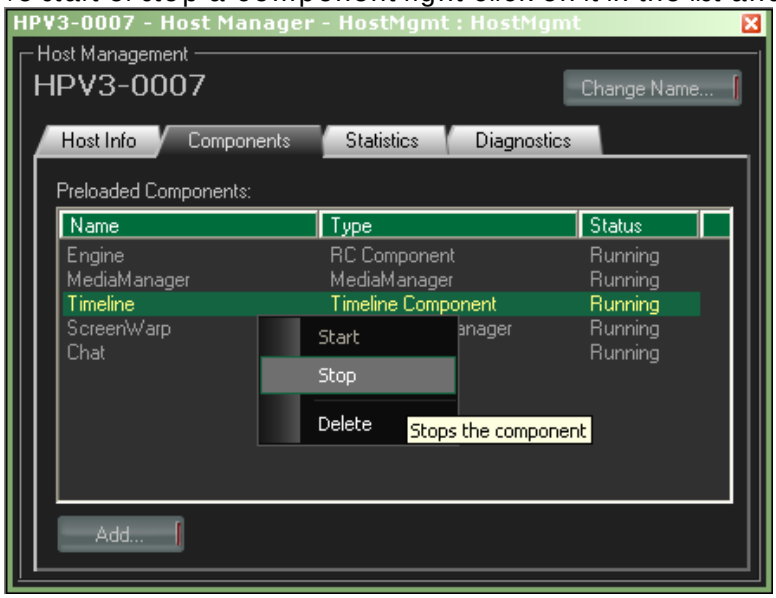
Removing Component

To remove a component right click on it in the list and choose delete.



Starting and Stopping Components

To start or stop a component right click on it in the list and choose 'Start' or 'Stop'



Import/Export

You can export and import the settings for each component individually. This is very useful when you for example want to export all the media of a particular show, so you can re-use it at a later stage. Please note not all components support Import/Export.

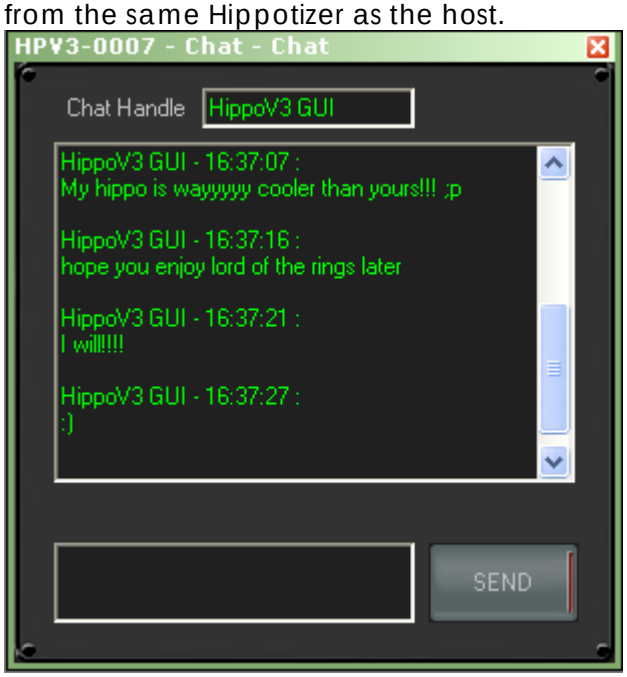
To export/import the settings go to the HippoNet Overview and right-click on the component and select the option you need. Please see at the required component for details.

(Tom: screen grab, right-click media manager, highlight export)

In general each component has a different set of options when exporting settings, so you can usually export only a part of your settings. For example you only want to export your media, but not the media map, then you can use the dialogs to do so.
On Import you again have the possibility to choose between different options, say you have an export with 10 timelines, however you only want to load a single one. Also you may need to re-map some of the components references. For example a timeline may have been programmed referencing a specific machine. However at a later date you wish to re-use the timeline, but the original machine got replaced with a different one. Because each machine is unique you now need to re-map all the timeline references to point to the new machines. You can do this conveniently with the import dialog.

Chat

A Chat component is available from the components list, this can then be run from the HippoNet overview window.
The Chat component will allow you to talk to other operators using Hippotizers over HippoNet. To enable chat on the other Hippotizers you must run the chat component from the same Hippotizer as the host.



Clock

A Clock component is available from the components list, this can then be run from the HippoNet overview window.
The clock is available is three sizes, and features analogue as well as digital time display, it also features the date.

DMX

See Section Controlling Hippotizers with External Control Protocols / ArtNet/DMX

MIDI

See Section “Controlling Hippotizers with External Control Protocols / MIDI”

Media Manager

The Media Manager component is used to import all the media into the Hippotizer.
It allows you to browse the hard drive or external drives to import media into the media banks on the Hippotizer.
This topic is covered in depth in the Managing: Importing and Managing your Media. For advanced topics such as synchronising media and multiplayer layer sync see the section “Controlling Multiple Servers”.

PixelMapper

See separate section PixelMapper

Screenwarp

See separate Section ScreenWarp.

Timeline

See section Presets and Timeline Programming

Render Engine (AKA RC Component)

See general introduction and Display Settings.

Media Manager

See section Media: Importing and Managing your media.
For advanced functions see Controlling Multiple Servers / Synchronising Media

Synchronator

See section Controlling Multiple Servers / Synchronising Media Playback across multiple systems.

Sound Connector

The Sound Connector allows You to utilise the Sound Analyser and map sound reactive functions to any parameter within the Hippotizer.
(Nigel to add details)

RS232 output

With this component you can control external devices with RS232 commands without additional hardware. A typical application would be the control of shutters of a projector.

Controlling Hippotizer with External Protocols

DMX/ArtNet

ArtNet:
Hippotizers use Artnet as their default protocol. There are more and more devices emerging that can generate Artnet over Ethernet without the use of traditional DMX 512. An example of this is the MagiQ desk from Chamsys http://www.chamsys.co.uk/ . If you are using this type of device you can simply connect it directly to the Ethernet port (Connector E, fig 1.2) without the need for a DMX to ARTNET converter.

DMX 512:
DMX 512 has been the standard control protocol in the lighting industry for many years. Although it has its limitations we have endeavoured to make all the functions of the server controllable via an external device using this protocol. This means that where you are controlling DMX devices, you can add the Hippotizer to your setup as another 'fixture' and integrate it into a larger show. Furthermore, there are many lighting consoles available that have the Hippotizer 'personality' and with these you can sequence any

series of commands easily. Please see our support website for a list of available drivers for lighting consoles.
There are two ways to control the Hippotizer via DMX. The first one is Full DMX mode, which controls all parameters directly through the lighting-console and uses 455+ channels. However for simpler projects this can be laborious since it requires adjustments across all of the 455+ parameters. One way to counter this is to use the timeline to program your cues and then use DMX to trigger the timelines you have created.
For both modes we recommend the following routine to setup the DMX interfaces and test them.

DMX On

Toggles DMX On and Off

Update only/Always Update

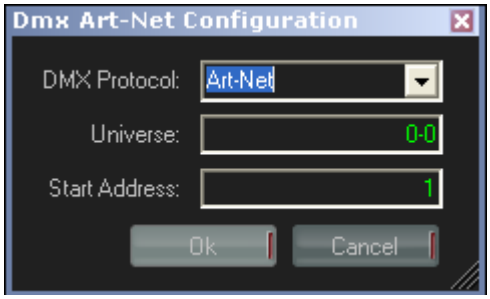
The advantage of using 'Update Only' is if your lighting console only outputs data when parameters are changed. The control centre will allow you to change parameters with the mouse without the desk trying to take back control.
Update only will update DMX only when the value outputted from the desk changes.
Always Update take all of the outputted data from a lighting console.

Reset Config

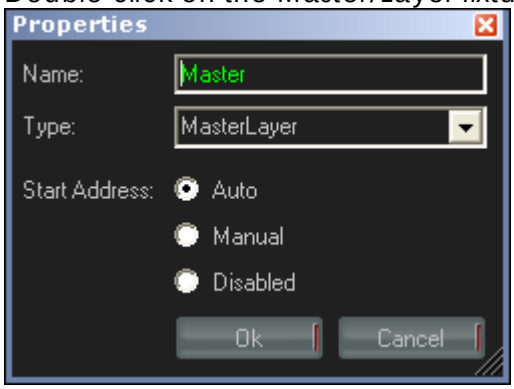
Resets the configuration to the default settings

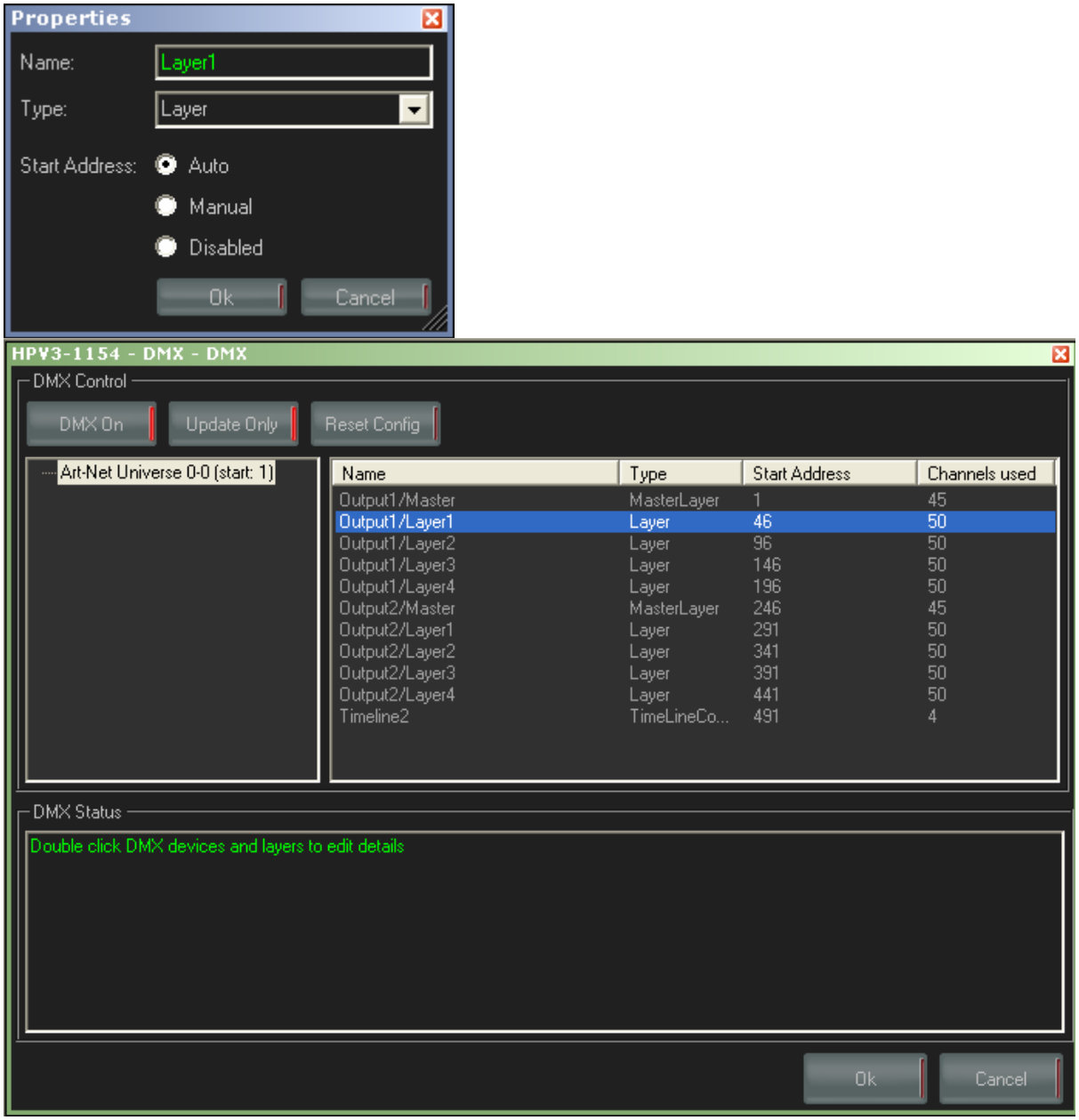
DMX Configuration

By double clicking on The Art-Net Universe you can alter the settings for the Universe and Start Address.



Double click on the Master/Layer fixtures to alter their parameters.





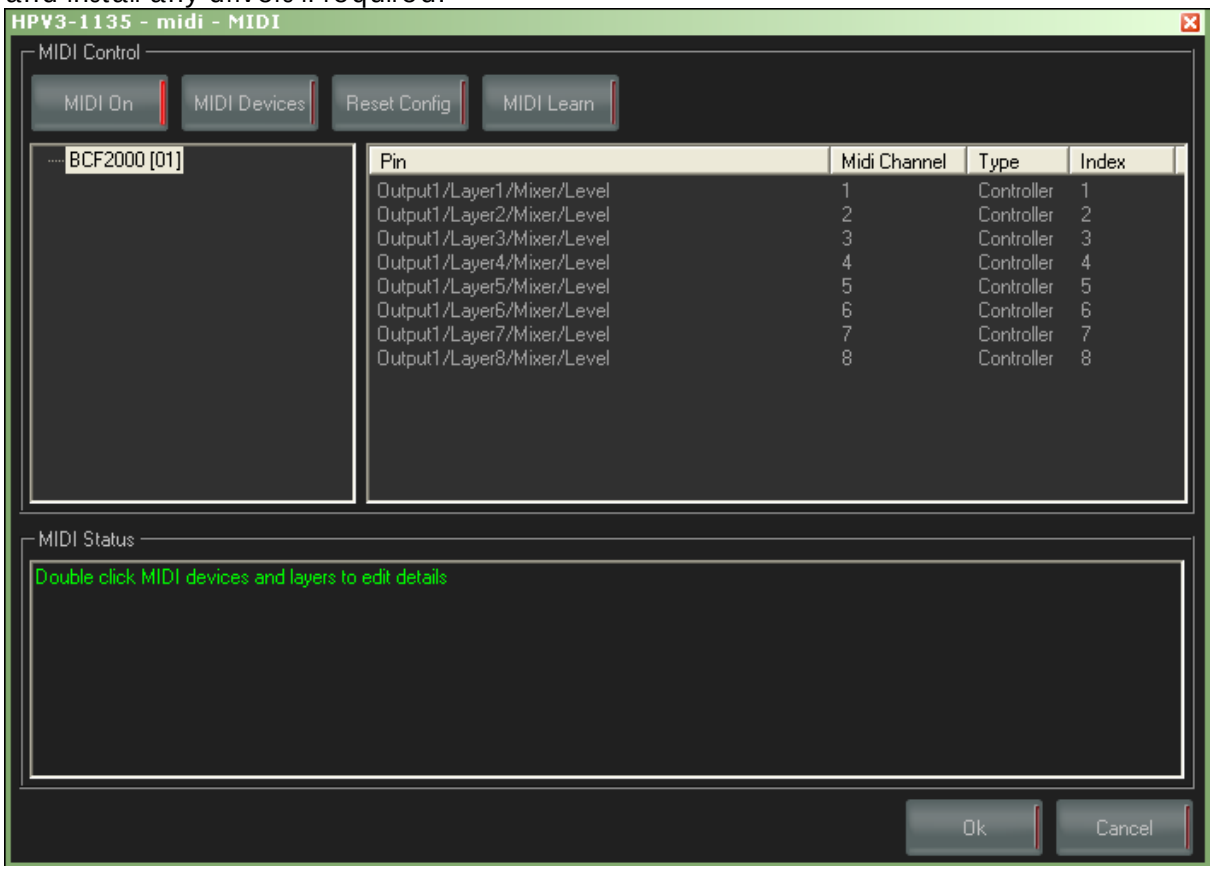
RS232

RS232 control is not supported in version 3.0.11 but will be available soon. Please contact Green Hippo Ltd for details.

MIDI

Although it has been around for over 20 years now, MIDI is still the defacto control standard in the music world. Synthesisers, keyboards, recording equipment all “speak” MIDI and through this interface can control the Hippotizer. Use a MIDI controller like the Behringer BCF 2000 to control any combination of Parameters, trigger clips using a MIDI Keyboard or record any sequence of commands on a Sequencer program such as Cubase and then edit and play it back at will.
All parameters inside the Hippotizer have been mapped to specific MIDI commands, so using any controller you can access these parameters through your equipment.

We find the Behringer BCF2000 extremely useful when using the Hippotizer as it has a very suitable combination of faders, rotation encoders and buttons that make controlling the system very easy.
Most MIDI devices these days come with USB connectivity, so simply connect you device and install any drivers if required.



MIDI On

Toggles MIDI On and Off

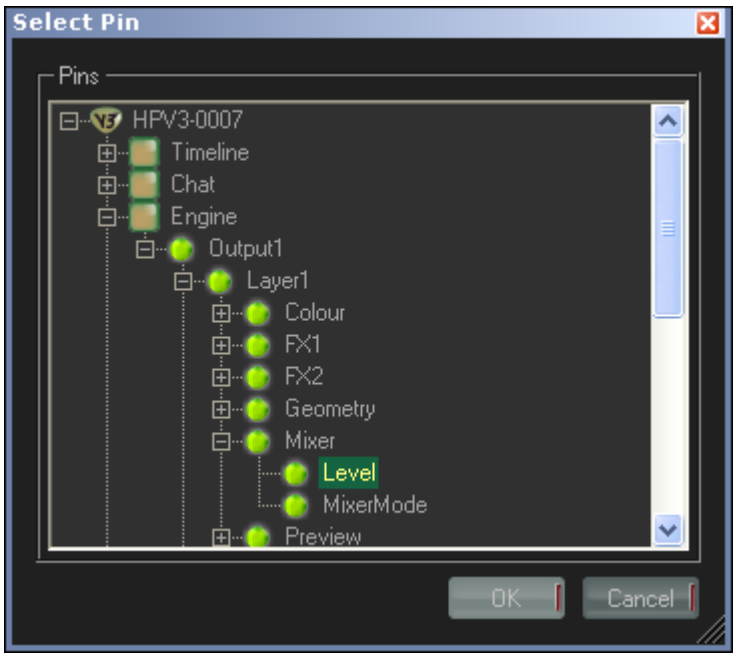
Reset Config

Resets the configuration to the default settings**. Currently this is an empty profile.**

MIDI Devices

This will display installed MIDI devices, which are installed in Windows. Tick the Device you wish to use and click ok. The device will now appear on the left hand side of the main MIDI interface.

MIDI Learn



This will bring up a list of available Pins which can then be assigned to the MIDI controller.

You can assign many different functions to a MIDI controller, however most commonly you would map functions from the Rener Engine to be controlled via the MIDI controller. Expand the Engine component to see all available parameters. To map for example Layer 1 Level, expand Output1 / Layer1 / Mixer and select Level. Click OK. The MIDI component will now wait for an incoming MIDI signal and map the parameters to this function. So if you were now to move a fader which outputs A Controller change 29 on Channel 3, then this parameter will be mapped to this MIDI command.MIDI Timecode

If you want to synchronise Timelines for example to external timecode you need to use a MTC (MIDI Timecode) compatible MIDI interface such as the MOTU Timepiece series. They also feature SMPTE to MTC conversion, so you can use this type of signal too. Install the MIDI device as before and configure the Device inside the MIDI component. A Timecode pin will automatically be generated, so you can use it as a synchronisation source inside i.e. the timeline.

ScreenWarp

ScreenWarp is a Hippotizer component for multi-point distortion and allows morphing and shaping of images for use on non-linear surfaces, or simply as an effect for creative designs.

The ScreenWarp Manager component is loaded by default and can be opened by double clicking the ScreenWarp icon in the HippoNet overview window. However for full configuration you need to have the Engine Master window open and expanded to full size.

When expanded you will see a tab at the far right marked 'Warp'. This gives you access to warps you are currently working on and all previously created items. You will notice you can select 2 active warps simultaneously. This allows you to cross fade between 2 warps or between an existing warp and no warp. NOTE: This can also be done on a timeline to powerful effect.

ScreenWarp Manager Explained

The blue area of the screen represents your output area.

Select existing warps to edit or create a new warp using the drop down window and radio buttons below the screen area.

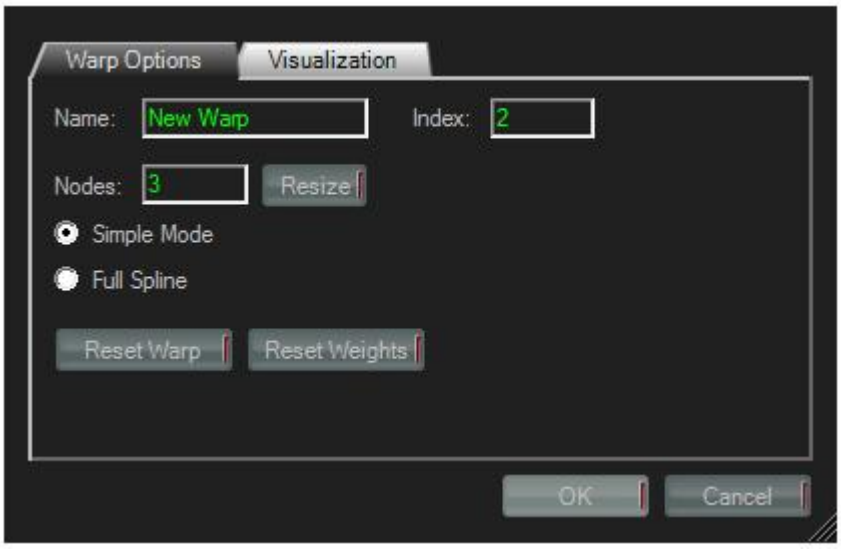
ScreenWarps are controlled by the black circles found at the corners of the box and also in the middle of the lines. These are referred to as nodes. Clicking and dragging will move the node and you will see a corresponding movement on your output screen. If you can't see any movement it may be necessary to select the warp you are manipulating as the active warp on your output. To do this, in the Master preview window, select your warp as either of the 2 active warps listed and, if necessary, use the fader to make that warp active.

Experimenting with a warp with provide you with the best insight into how the output behaves when you move a node.

Features and settings

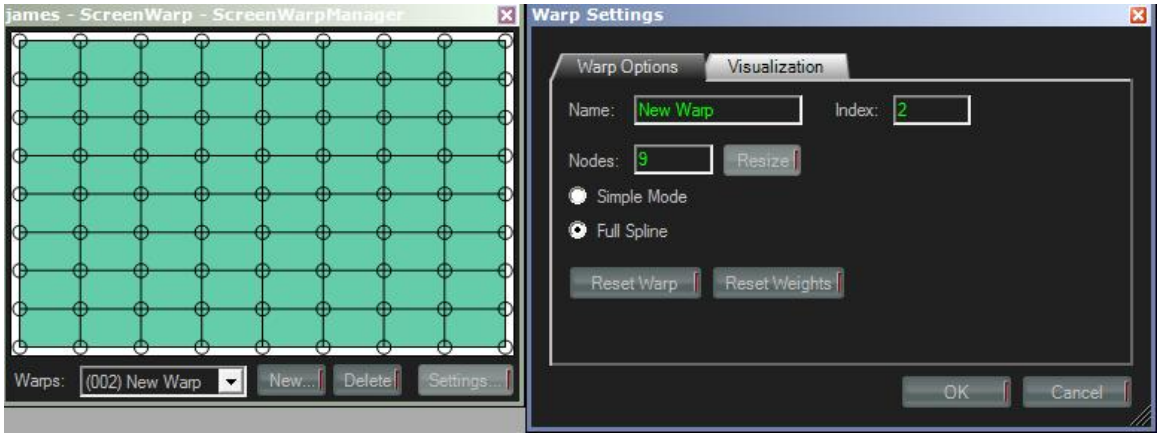
For simple shapes, such as curved screens, most shapes can be configured using the default settings. However, for more complex setups you may want to increase the complexity of the grid and adjust the functions to suit.

Click settings in the ScreenWarp Manager.



Here you can do the following:

- Rename the warp
- Change the index of the warp to a different value for access from other parts of Hippotizer.
- Adjust the number of nodes available for more complex setups. Type the new value and click resize to apply.
- Switch to Full Spline mode. In simple mode, available nodes are placed in the most common areas for creating warps. For more sophisticated warps where you may wish to pull and pinch key areas of the screen, full spline gives access to nodes located across the whole work area. The quantity and location of the nodes will vary according to the number of nodes selected. For example, changing the number of nodes to 9 and selecting full spline mode will result in the following. The maximum amount of nodes is 16.

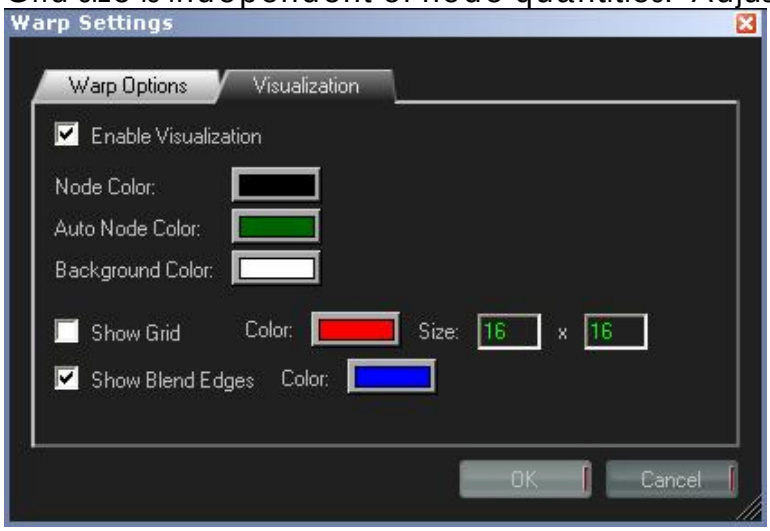


At any time the warp can be reset using the 'reset warp' button.

The 'visualization' tab allows customisation of the grid and nodes to suit a project. Ticking 'Enable Visualization' will activate all active visual aids such as gridlines, nodes etc.
NOTE: You may see a decrease in performance when visualizations are active. This is normal and will cease once visualizations are switched off.

It may be necessary to change the colours of visual aids depending on the media you are running. Options are available to change the colour of nodes, background and grid.

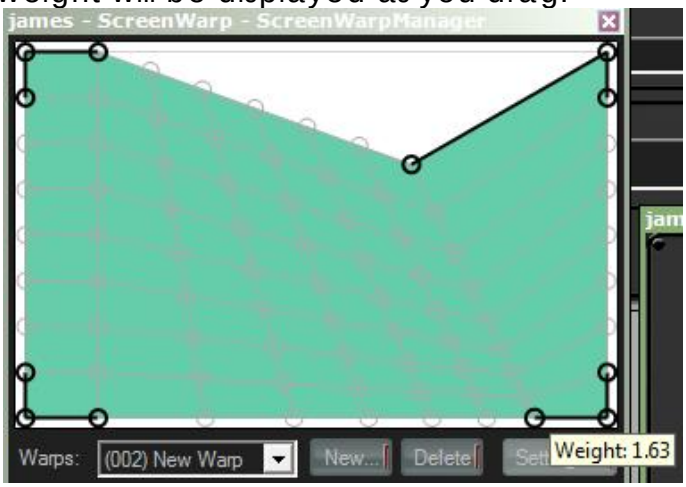
Grid size is independent of node quantities. Adjust to suit your application.



Weights Explained

Each node can have a 'weight'. The weight of a node dictates the degree of distortion and the effect of that distortion on the surrounding areas. If you need to achieve extreme shapes, or vary the amounts across the screen area, changing the 'weight' of a node will help achieve this.

Change the weight of a node by placing the cursor over a node and right-clicking the mouse button and dragging up or down. The value of the new weight will be displayed as you drag.



To reset weights back to default values click settings and in Warp Options, click 'reset weights'.

Soft Edge Blending with warps

When using multiple servers, you may need to edge-blend between warped images on different machines. The soft-edge blending found elsewhere in Hippotizer may not be appropriate as it edge-blends the outside edges of the screen area. Therefore, ScreenWarp has an alternative method which allows soft-edge blending around the perimeter of the warped area instead.

Firstly, in the visualizations tab, ensure 'Show Blend Edges' is ticked. This will give you representation of the area to be affected and is shown in the colour selected. Default colour is Blue. You can enable blending on any or all edges of the warp in the Warp tab on the master window.

By either manually typing the values into the windows or clicking in the value box and dragging, seamless soft edge blending between warps can be achieved. There is a Gamma and Overlap adjustment for each side of the warp. Once a desirable overlap for the warp is achieved, adjustment of these parameters can provide sufficient adjustment for seamless joining of adjacent warps.

PixelMapper

PixelMapper is a component in Hippotizer V3 which allows you to control simple or very complex lighting rigs using video instead of complicated cue lists.
In a traditional setup a Hippotizer mixes a number of video and still images to produce a picture, this picture is then output as a video signal to a projector or similar display device.
When you use PixelMapper, this image can be output as a set of DMX lighting control channels and can be fed to a whole host of DMX compatible lighting fixtures such as LED battens or moving lights.

How does it Work?

The image created on a Hippotizer is made up of thousands of small dots called pixels. Each pixel is made up of three colours – Red, Green and Blue. Normally these pixels are sent as video data to a projector or screen where the corresponding pixel lights up using the according colour and brightness. When using PixelMapper, each individual pixel is output as a set of 4 individual values between 0 and 255 representing each of the Red, Green, Blue and intensity values. These values can then be sent via DMX to a lighting fixture which will read the values and output the correct colour at the correct brightness. If enough lights are placed in a grid-style arrangement on the stage, each recieving its own colour and brightness information from PixelMapper, then you will begin to recreate the picture across all the lights. By carefully selecting your video content you can create very complicated effects across your display using very little programming time.

Often the layout of the lights on your stage is not a perfect grid design, and in this case there needs to be a way of telling the Hippotizer which lights are where, and what DMX addresses they all have – this is where PixelMapper comes in. With PixelMapper, you can create a graphical representation of the layout of the lights on your stage. PixelMapper will then automatically create a special pixelmap file that the Hippotizer will use to know where each light is on the stage, and make sure that it receives the right information.

Understanding Fixtures and Personalities

Fixtures are the basis of any pixelmap in PixelMapper. They represent the lights that you have on your stage.

Fixtures are usually based on LED technology, but this does not always have to be the case – Hippotizer is capable of controlling almost any light that is capable of accepting colour or brightness information.

Because there is such a huge range of different fixtures on the market, PixelMapper uses special fixture personality files that contain all the information about the fixture being used.

The personality file contains information about how many elements are in the fixture (elements are the individually addressable lights that are within a single fixture), if the elements are capable of displaying multiple colours or if they can only display white, as well as a list of all the special extra functions that a fixture may have such as built in chases or strobe effects.
Also contained in the personality file is the physical layout of the cells within a fixture. Some modern fixtures can contain up to 200 separately addressable "elements" and so it is important to know how these are arranged within the fixture.

Pixelmaps

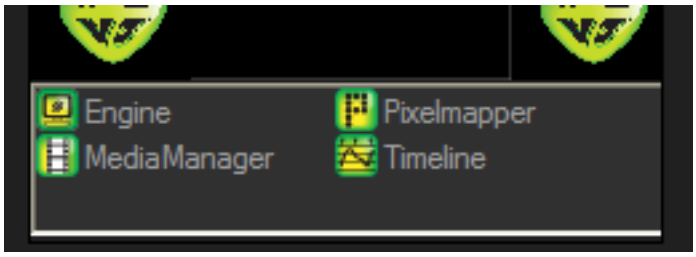
A pixelmap is the name given to a collection of fixtures that have been arranged in a particular way on the design grid to represent the layout of the fixtures on stage.
The pixelmap contains a copy of all the personalities that are used in it as well as details of the DMX addresses of all the individual fixtures.
It also contains information about the source of the video that is to be displayed on the fixtures when it is used.

PixelMapper Engines

PixelMapper engines are the 'brains' of the component. They do the actual conversion between the video pictures and the lighting fixtures. For a pixelmap to do anything it needs to be loaded into a PixelMapper engine. Each PixelMapper component can run a total of 10 separate PixelMapper engines, and each engine can be loaded with a different pixelmap. This can be very useful if you want to send different video signals to different sets of lighting fixtures to create 'Zones'.

Installing PixelMapper

The PixelMapper component can be added just like any other component in Hippotizer – please see “Adding Hippotizer Components” for instructions on how to do this.
Once the PixelMapper component has been added you should see an icon added to the components list in the Hippotizer Overview like this:



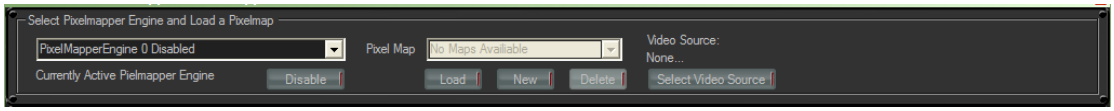
In order for PixelMapper to output a signal to a collection of fixtures you need to provide it with a video source, the PixelMapper component must be installed on the Hippotizer that will be providing that video source, although Editing of the pixelmap and previewing of the output of PixelMapper can be done anywhere on the HippoNet network.

PixelMapper will automatically start in the background when the system is started and it will enter the last used state unless instructed to do differently. To access the PixelMapper editor, simply double click the PixelMapper icon in the overview window and the main PixelMapper screen will open.

The Interface

The interface is divided into 3 main areas:

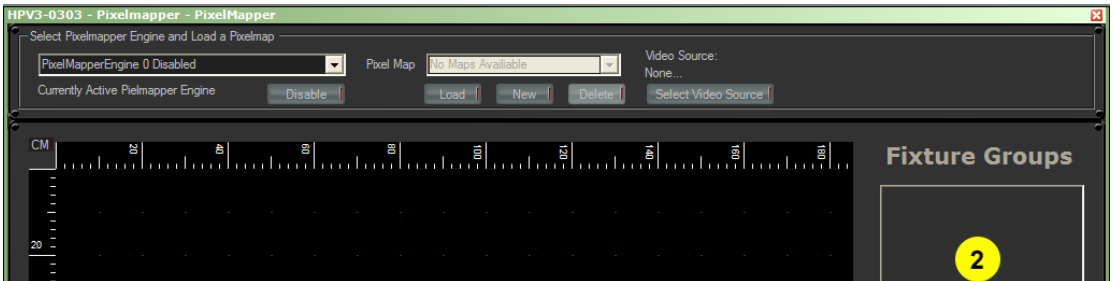
The Pixelmap Manager Panel:



The pixelmap manager panel is used to display and manage the 10 PixelMapper engines and also the database of pixelmaps stored on this machine.
From this panel you can create new pixelmaps, delete existing pixelmaps or load a pixelmap into one of the engines.

This is also where you can select the video source for a particular pixelmap.

The Main Design Grid



The main design grid is where the majority of the editing is performed; the central black area is the drawing space and represents the stage or space that your lighting fixtures occupy in the real world.

Design grid areas:

1 The main drawing area
2 Personality Selector / Group Selector
3 Group management console
4 Mode selection switches and fixture rotation control
5 Patch manager console and fixture patch information
6 Grid zoom control

The preview selection panel

The preview button panel is used to open PixelMapper previews for each of the 10 PixelMapper engines.

Using PixelMapper

Loading Pixelmaps

When the main PixelMapper interface is first opened the majority of the controls in the window are disabled, this is because it needs to know which engine/pixelmap it is working with, so before we can start editing a pixelmap we need to select a PixelMapper engine to work with and load a pixelmap into it.

So the first step is to select an engine to work with from the engines drop down box in the top left corner of the window.

If the engine has already had a pixelmap loaded then you will see that pixelmap load into the main design grid and the editor controls will become active, but if no pixelmap has been loaded then you will need to assign one to this engine.

To assign a pixelmap that has already been created, simply select it from the pixelmap dropdown box and then press the load button, the pixelmap will be loaded into the active selected engine and it will be displayed in the main design grid ready for editing.

To create a new pixelmap, press the “New” button and give your new map a name, then select the new map from the dropdown box and press the load button.
All the editing controls will now become active and the main design grid will clear ready for you to add your fixtures.

It is important to note that there is no such thing as “Save” for pixelmaps, all pixelmaps are saved as they are created so you should never loose any information. As you modify a pixelmap, those changes will instantly be updated to the database and to any other interfaces on the network where that pixelmap is being viewed or edited.

It is possible to have the same pixelmap open in more than one instance of ZooKeeper on the network so that it can be edited by more than one person simultaneously, but it is not possible to have the same pixelmap loaded into more than one engine.

Editing Modes

Once a pixelmap has been loaded you can begin to edit. To help you do this PixelMapper has 4 different editing modes which can be selected by pressing the appropriate mode button:

Add Mode: This is the mode you need to be in when adding fixtures to the grid.

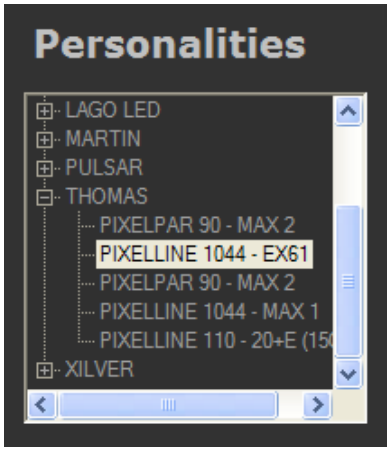
Edit Mode: In edit mode you can re-position, patch or delete the fixtures in your pixelmap

Patch Mode: This is a special mode used to easily and quickly patch your fixtures to their correct DMX addresses.

Scroll Mode: Selecting scroll mode will change your cursor to a hand which allows you to easily pan around your pixelmap to get to the area that you want to change, very useful on large or complicated Pixelmaps.

Adding Fixtures to the Pixelmap

Start by selecting Add Mode by clicking on the Add Mode button in the control box to the right of the main design grid.
The selector-box in the top right will change to display a list of fixture personalities grouped by manufacturer.



Alongside each of the manufacturers names you will find a small plus sign, by clicking on this plus sign you can display a list of all the fixture personalities for that manufacturer.

If you simply want to control a very basic LED fixture or dimmer, then you will find a manufacturer called 'Generic' which contains a list of very simple

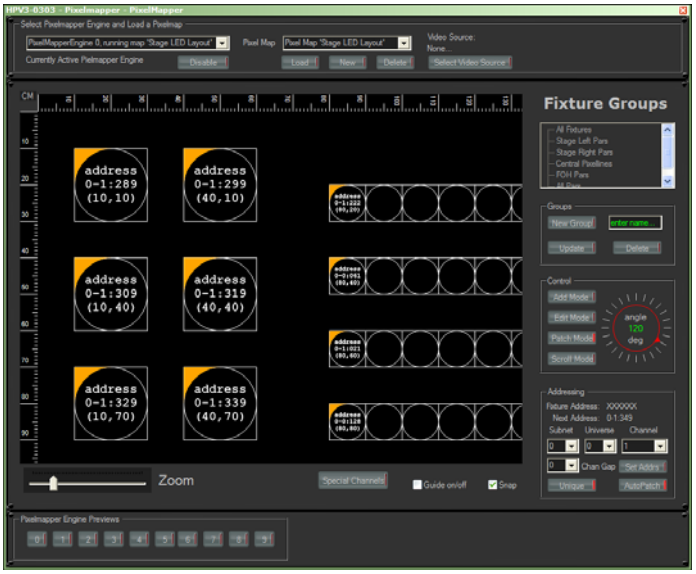
single element fixtures which can be used to control almost any LED fixture without any special features.

To add fixtures to the grid you must first click on one of the personalities in the personalities list to select it, as shown in the diagram.

Simply moving your cursor over the main design grid and right clicking will add a fixture to the Pixelmap. You can continue to add more fixtures by clicking again.

If you hold down the mouse button after adding a fixture you can drag the fixture into its correct place and then release it to confirm its position.

It is possible to add multiple fixture types into one Pixelmap by simply selecting a new personality from the list and clicking on the design grid again.



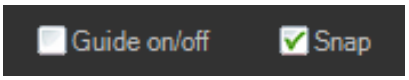
Real World Measurements

When adding fixtures to the main design grid it is important to know that it is actually infinite in size, although you can only see a portion of it at any one time in the window.

All measurements in PixelMapper are in real world units, by that we mean that the elements of a fixture will be represented to scale when placed onto the pixelmap, and so when creating your pixelmap you should use the rulers around the grid to place your fixtures in the correct layout according to their distances in the real world, so if 2 fixtures are 1 metre apart in real life then place them 1 metre apart on the grid.

To see more of the Pixelmap you can use the zoom control at the bottom of the main design grid;

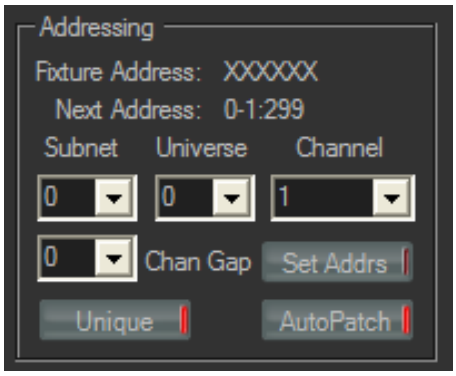
You can also zoom in and out by using the mouse wheel.
There are two other functions that help you when placing or moving fixtures on the design grid:



You can enable or disable the grid markings and select if fixtures are snapped to the nearest gridline point when added or moved – this helps to achieve a very neat pixelmap.

Patching

For a fixture to become active in the Pixelmap it needs to be patched to a dmx address. The controls for doing this are located in the address control panel:



The fixture address readout is for information purposes only; it shows the current patched address of the selected fixture. If more than one fixture is selected then this will simply display XXXXXX.

The Next address readout displays the next available dmx address that is reserved for patching.

There are 3 ways to patch a fixture or group of fixtures in PixelMapper, but all of them will use the next address readout to determine the starting point for patching the next fixture. For this reason it is possible at any time to manually change the next address so that you can manually set the address of the next fixture or group of fixtures.
To set the next address, select the subnet, universe and start channel from the three drop down boxes and then press the ‘Set Addrs’ button.

By default, consecutive fixtures will always be patched directly after each other using as few channels as possible, but sometimes you will want to separate the fixtures. You can do this by selecting a number in the 'Chan Gap' dropdown box, when selected PixelMapper will always leave this many channels between the last channel of the previous fixture and the first channel of the current fixture.

The 'Unique' button allows you to turn on or off the unique address check when patching multiple fixtures. When turned on (red LED on) the patching system will always check to make sure that there are no conflicting channels between the current fixture to be patched and any of the other fixtures in the Pixelmap, if there are then it will automatically find the next available address that can be used without conflict and patch the fixture to that address.

You must be careful not to have any patched channels overlapping in your final patch as this will cause LED's to flicker on the output when they are being fed information from two or more parts of the video source at the same time.

Autopatch

Autopatching is the first of three methods of patching a fixture, and is the default when a new pixelmap is created. Autopatching can be toggled on or off at any time by clicking the "Autopatch" button in the addressing control panel.

When autopatch is active, every fixture added to the pixelmap will automatically be patched to the next available dmx address according to the next address readout.

In most situations this is the ideal setting, however if you have a large pixelmap or a complicated channel assignment then it may be much easier to turn autopatch off and then patch the fixtures later.

Every fixture that is added to the grid will have 1 element that contains information about the fixture:

The information element shows the position of the fixture on the grid (or in the case of a multi element fixture, the position of the first element), it also contains the patch address of the fixture if it has been patched, or “Not Patched” if it has not.

The gold triangle points to the top left corner of the fixture and allows you to easily see the orientation of a fixture on the grid

Editing the Pixelmap

Once you have added fixtures to the Pixelmap you will no doubt want to make changes (unless of course you are perfect in every way!), so this is where the Edit Mode comes into play.
You can select edit mode by pressing the “Edit” button in the mode control panel.

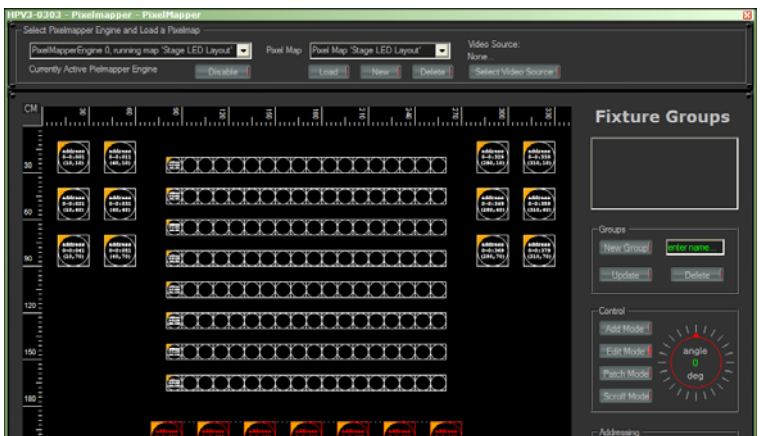
Selecting Fixtures

The heart of editing a pixelmap is being able to select and change fixtures in the design grid.
A selected fixture is always shown in RED as opposed to WHITE. There are multiple ways of selecting fixtures:

Manual Selection

The simplest way of selecting fixtures when you are in edit mode is to simply click anywhere within a fixture, this will deselect all other fixtures and select the fixture that you clicked on.
If you hold down the SHIFT key when you are doing that you can select multiple fixtures as it will simply add the last clicked fixture to the list of selected fixtures.

You can group select fixtures by dragging a box around them like this:



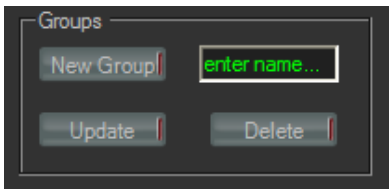
You can then hold down the SHIFT key to add extra fixtures to this selection. The full selection will always be bound by a dotted line. When holding the shift key and clicking on a fixture, a second click will remove the fixture from the list.

Group Selection

Group selection is very useful when you have a lot of fixtures in a Pixelmap or your fixtures are grouped into particular easily definable arrays.
You will notice that when switch edit mode the personality selection box becomes the 'Groups' selection box.

This box will later contain a list of all groups that you have created.

To create a selection group start by selecting the fixtures that you want to group together using manual selection.
Next go to the group control panel:



Next type a name for the group into the text box – it is important to make this name unique and relevant so to avoid confusion later.
Next press the "New Group" button, and PixelMapper will create a new group that contains all the fixtures that you selected.
You can continue to add as many fixture groups as you wish.

You can delete a group by selecting it from the groups list and then pressing the "Delete" button.

To use the group selection simply click on any of the group names in the group list and instantly that group of fixtures will be selected on the grid and will be coloured RED. You can now do anything with these fixtures that you would do with any normal selected fixture(s).

If you want to change a group you can click on the group in the groups list. This will select the fixtures in that group and allow you to add or remove fixtures from this list. When you are satisfied just press the update button and all your changes will be saved into that group.

Edit Functions

Once you have selected a fixture or a collection of fixtures using the above method you can do any of the following:

Move Fixture

By simply holding down the left mouse button whilst over one of the selected fixtures you can drag the fixtures anywhere on the grid, moving them to align with other fixtures or simply to move them to a different place.

Rotate

Just to the right of the Mode buttons you will find the rotation control, by placing your mouse cursor anywhere within this control and dragging the mouse up or down you can change the angle of rotation of any of the selected fixtures. The display in the centre of the control will show you the current angle of the fixture.

Note: fixtures will only rotate if they can do so without any part of the fixture leaving the bounds of the grid, if a fixture would leave the bounds of the grid if it was rotated then it will remain stationary until the angle increases to one where it can rotate to a position within the bounds of your defined work area.

Right Click Edit Menu

If you right click on one of the selected fixtures you will be presented with a local edit menu. This will list some additional edit functions along with a list of the Quick-Key shortcuts that can be used to access these functions without the menu later.

Delete

This will delete the selected fixtures from the grid. Pressing the DEL key will do the same.

Unpatch

This will unpatch all the selected fixtures. The fixtures will remain on the grid but will not be active in the pixelmap until they are given a DMX address. This is useful if you want to use the patch mode later to patch the fixtures.

Re-Patch

This will temporarily unpatch all the selected fixtures, and then automatically re-patch them consecutively starting from the next available dmx address.

Copy

This will make a copy of the fixtures that are selected and place it on the clipboard so that it can be pasted into another pixelmap or into the same pixelmap. This is very useful for creating very large pixelmaps as you can simply create one section and copy / paste that section many times. Please note that when a selection is copied to the clipboard it remembers the position of all the fixtures and also the addresses to which they were patched.

Cut

The same as Copy but it removes the fixtures from the grid where the cut command was executed.

Paste

Following a Copy or Cut command this allows you to put the copied or cut fixtures back onto a grid.

Universe +1, Universe -1

Allows you to increase or decrease the universe number of the selected fixtures.

Subnet +1, Subnet -1

Allows you to increase or decrease the subnet number of the selected fixtures

Unicast IP Address

There are 2 ways that the Artnet data can be sent to fixtures or fixture power supplies – Multicast (also known as broadcast) and Unicast.
Traditionally Artnet signals are sent Multicast which means that the dmx data is sent out to anything and everything that wants to listen on that network, the fixture itself then decides if the information that is coming down the network is of any use to it or not.
The advantage of Multicast is that it is very simple to setup and the fixtures are very easy to patch, but it has one very important disadvantage – every device on the network has to process all the information for all Artnet universes even if it does not need that information, this can lead to network hubs and switches being overloaded with information and possible not working correctly.
The alternative to this is to use Unicast, with Unicast you specify an IP address of a fixture along with that fixtures Artnet address – once this is done that fixtures Artnet details will only be transmitted directly to that fixture and not to all the other fixtures in the pixelmap.
A separate IP address must be assigned to each fixture, or each fixture power supply (depending on what device actually receives the Artnet data)

Selecting the IP Address option from the right click menu will allow you to enter an IP address for the selected fixtures in the form of xxx.xxx.xxx.xxx, or if required will allow you to set those fixtures to broadcast if you don't know the IP address for them.

Patch Mode

Patch mode can be selected from the mode buttons in the mode select window.

When in patch mode, moving the cursor anywhere over the main design grid will display a cursor showing the next available patch address along with a small arrow. Clicking the arrow onto any fixture on the grid will patch that fixture to the address displayed in the cursor, it will then increase that patch address by the number of channels in the patched fixture so that you can continue on to the next fixture.

Double clicking on a fixture with the cursor will make the patch address jump up one whole set of fixture channels without re-patching the same fixture, this allows you to easily create gaps the same size as one fixture in-between fixture patches in case you are patching a power supply that does not have all it's fixtures connected (eg. Pulsar chromabank)

Scroll Mode

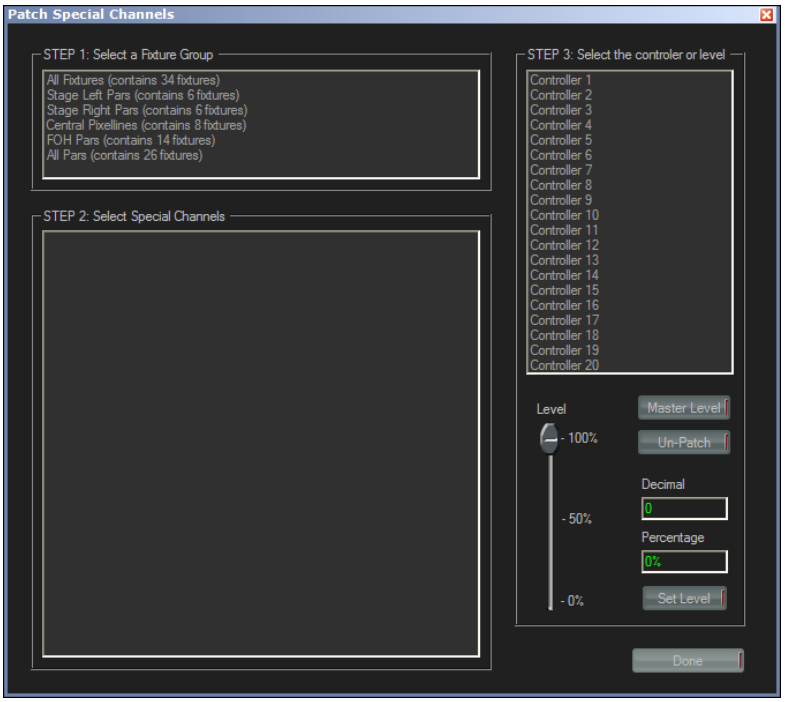
When scroll mode is selected, the cursor changes to represent a hand. By dragging the hand around the main design grid you can scroll the grid in any direction regardless of the zoom factor of the grid itself – very useful when working on very large pixelmaps so that you can still see enough detail in the map itself.

Patching Special Channels

Some fixtures will have 'Special Channels' such as built in chasers or master level controls, some fixtures even have mode select channels which need t o be set to specified levels all the time in order for the fixture to work correctly.

Special channel patching is done group by group so before you attempt to patch any special channels you need to create at least 1 fixture group (see editing fixtures), if you want to connect all the similar special channels together on all fixtures then you should select all the fixtures on the grid and create a new fixture group called "All fixtures"

Press the "Special Channels" button below the main design grid.



You will be presented with the special channel patch screen. There are 3 steps to patching special channels:

1 select the fixtures you want to patch
2 Select the special channel that you want to patch
3 Select what you want to patch it to

The first step is to select the fixtures that you want to patch and is done by clicking on one of the groups listed in the fixture groups box in the top of the window.
This will then display a list of all the different fixture personalities used by those fixtures in the box below.

The next step is to select one of the special channels listed in the personalities box, this is done by simply clicking on one of the channels in the list of personalities.

Finally you need to choose what controller you want to patch that function to.
In PixelMapper there are 20 special controllers that are available as faders in the main Hippotizer interface, and are also patched as 20 DMX channels via the DMX component if it is installed.
In addition to these 20 special controllers you have a master level controller.
The special controllers and the master level controller are identical except that the master level fader has a default value of 100% whilst the other special controllers have a default value of 0%.

Clicking on one of the 20 controllers on the right will patch the special channel to that controller.
Clicking on the “Master Level” button will patch that special channel to the master level controller.

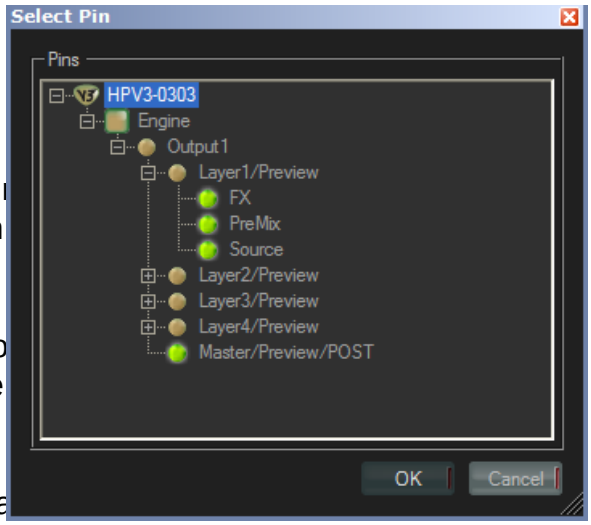
Alternatively you can assign a set value to any of the special channels by simply selecting the value using the level fader on the right and then pressing the “Set Level” button.

At any time, a special channel can be unpatched by pressing the “Un-Patch” button.

Assigning a video source

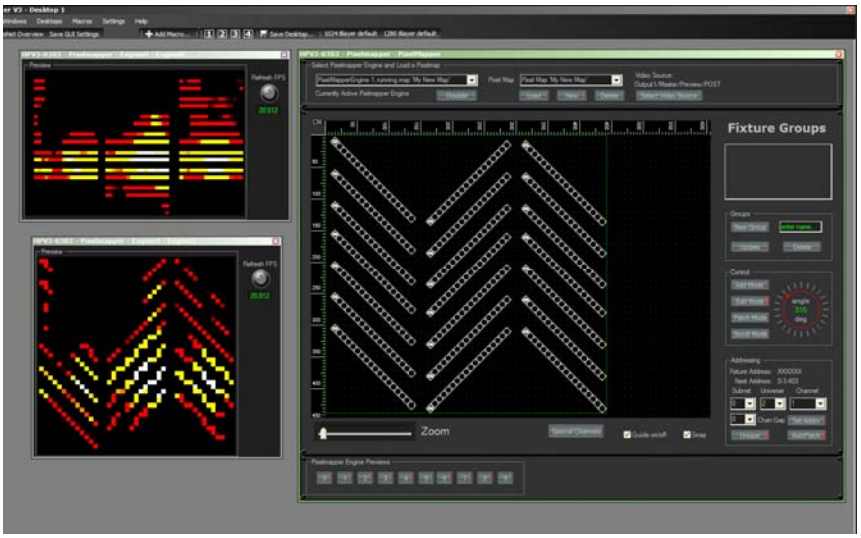
Once you have finished designing your pixelmap, or even while you are designing it – you will want to start to play videos through it. To do this you need to assign a video source for the pixelmap. The video source that is assigned to a pixelmap is remembered with every pixelmap so that when you load it again it can get its video signal straight away.

To do this, press the “Select Video Source” button on the pixelmap manager panel.
You will then see a HippoNet tree window that shows your Hippotizer and allows you to expand all of th various parts of the system.
You can grab a suitable picture source for PixelMapper from any o the nodes that have a bright gree dot next to them.
Once a suitable video source is selected, that engine and pixelma become active.



Previewing the result

Once a video source has been assigned and the engine is active, you can then preview the result of the pixelmapping and see exactly what is being sent to the fixtures on your stage.
Simply open a preview window by clicking on one of the ten preview buttons at the bottom of the PixelMapper window, this will open a preview window that can be sized to your liking and will remain open until it is closed manually.
You can have as many preview window open as you wish on one desktop.
Closing the main PixelMapper edit window will not affect the preview windows.



There is only one control on this window and this is the refresh rate of the data being sent to the fixtures. This is normally set around 20fps which is more than sufficient for most layouts, however you can increase this if you are likely to use any fast moving footage or flashing.
It is important to note that whilst increasing the refresh rate may give you a smoother playback result it will also greatly affect the amount of processing power required by the PixelMapper engines – so it is always a good idea to experiment with different values once you have all your PixelMapper engines active.

Resources and Resolutions

The Hippotizer Media Server is very powerful and flexible, however no resources are unlimited. We believe that it is important to give you the use a great deal in flexibility where and when you want to use those resources. So you can run an HD with 8 layers, however it will struggle to playback 8 1920x1080 video clips simultaneously. But rather than restricting this to 4 layers only you may need at times a fifth layer as a mask and this performs very well. The engine does not stop under heavy pressure, but reduces the frame-rate at which it renders. You can monitor this as part of the engine settings (right-click on Engine Component and go to the 3rd tab). You will see a readout of the fps (frames per second) the system is running at. Typically this will be around 60, as most displays use this refresh rate. If you now start to load up the system dramatically (lots of high-res video clips and many fx) this fps will start to come down. In some cases when doing for example horizontal animations this can be quite noticeable as the steps between frames will be much more noticeable. In other cases (i.e. a slow moving animation) you may not notice anything. So it is important to be aware of such limitations and if the output looks un-smooth, check the fps to see what is going on. Often the same look can be achieved with less resources (layers or fx) and can be optimised that way.

Managing Video Memory

The second thing to keep an eye on in the engine settings tab is the VMem usage. VMem is the video memory used and again you can overload it. Currently the Express and Stage versions ship with 256MB of video memory and the HD with 512MB. If You get close to this limitation performance will drastically drop and the fps will plummet. This is due to the system starting to use conventional memory, which is much slower.
The Hippotizer can dynamically resize each layer to work natively in the incoming resolution. This means that if you load a PAL clip, the layer will be resized to 720x576, if you use a 720p clip, it will expand to 1280x720. The same goes for images. Switching from one resolution to another takes resources and you may notice a hick in the playback (or you may not, if the system is not so busy). This is because the unit needs to re-allocate buffers for the new player. Once you are inside this resolution switching will be instant and smooth. So it is advisable for critical projects to design your resolutions, so each layer has a certain function and maintains the same resolution throughout the show. If you need to switch resolutions and it is noticeable (because for example there is a clip with strong motion), move the cue to a more static scene to “hide” the resolution switch.

It is important to understand this concept of allocating memory for a specific resolution as this can result in running out of video memory, although you are not "using" many layers. As an example you are using a stage in pan mode and have created background videos at 1920x576 resolution. Typically you would use layer 1+2 for the background playback and use PAL resolution on all other layers. However if you were to load the background videos on all 8 layers you would overload the system and the fps would drop. This is because you are running out of video memory. Even if you now switch to images on all layers, the situation will not improve as the video players on each layers still keep the same amount of video memory reserved. It is important to remember that images and videos reserve their own memory and are treated independently. So the situation will only improve when we start loading layers with lower resolution video clips, i.e. PAL clips. This will reduce the buffer size and release video memory.

Resolutions

We differentiate between 2 different types of resolutions: Media Resolution (which typically is also the Layer resolution) and output resolution. These 2 can be the same, but don't have to be. Each of the 3 versions has got different restrictions to both resolutions, which are important to understand when designing and using content.

Express

The Hippotizer Express can only play back PAL and NTSC resolution media – this is often referred to as SD (standard definition) content. Media at higher resolution cannot be encoded and needs to be resized before importing into the Media Manager. The maximum output resolution is 1024x768.

Stage

The stand can import and play back media with a maximum vertical resolution of or 768 pixels. So when working in 4x3 aspect-ratio this means 1024x768 media, however it can also handle 1280x720 content. When using the stage in Pan Mode you can go up to 1920x768 media allowing you to create nice panoramic backgrounds. However although you can load and play back these resolution this doesn't mean that you can load these high resolution layers on all 8 layers. There are limitations through the hardware and it is advisable to stick to 2 high resolution background layers and use the other layers in SD modes.
Output resolutions on the stage support up to 1280x1024 in single/dual mode and 2560x1024 in pan mode.

HD

You may have guessed it there are no restrictions on the HD other than the ones the technology places on us. The maximum video clip size is 1920x1080, no matter what mode you are in. Images can be bigger though. There are no restrictions on the output resolutions.