

# **Ai Media Server**

## **System Operation Quick Start Guide**

**Ai Version 5.x**





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# 1. Overview

This section gives an overview of how the Ai system works.

If you're itching to get going, section 10 has some step-by-step instructions for various setups.

For more details about configuring the system see section 2.

## 1.1 Ai features

- Smooth playback of Multi-layer 4k resolution (upgrade to 8k possible with latest SSD drives).
- Multiple 1080p HD Outputs.
- Soft-edge blending of multiple projectors.
- Timeline timecode sequencer.
- Support for 3D displays.
- Build and create in the 3D Stage Visualiser.
- Map and Warp onto any 3D surface.
- Video Map onto moving scenery.
- Remote vertex adjustment.
- Audio reactive media control.
- Intuitive modular LED support
- Configure multiple systems as Master-Slave
- Internet and iPad remote control
- Node Based Engine – Optimise Ai for your performance
- Up to 32 layers – additional layers available via Salvation engine

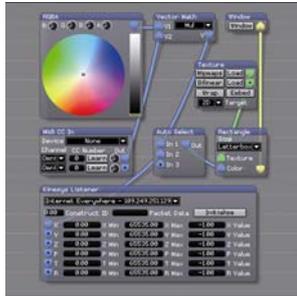
### Resolution

The Ai server features market leading media playback quality. Smooth playback of multiple layers of 4k media, or even up to 8k resolution media is possible with the truly revolutionary AiM Codec and the latest fast SSD drives. The AiM codec is a cross platform Quicktime codec available exclusively to Ai users and content creation teams at no additional cost for use in any Quicktime capable application. This unparalleled playback performance has been made possible through the use of the latest GPU technology bred for the gaming industry but now re-developed with the support of AMD and Nvidia exclusively for Ai.



## Salvation

'Salvation' is the node based engine under the hood of the Ai server. The entire core of the system can be easily optimised and reconfigured to suit the requirements of your individual performance. This makes previously impossible show configurations possible - within minutes. For example 'Would you like to reverse the direction of a midi control input and also read an Artnet input, and depending on which input changed most recently map it to a custom Colour adjustment, but only when an Ethernet motion control input is above a certain position?' This task and an infinite number of other possibilities can be achieved in minutes by the user adding a few visual controls and cabling them together with the mouse. Your budget and your imagination are the only limitations!



## Generative content

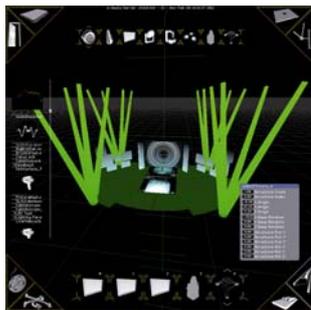
Whether it's on site client logo animations, interactive scoreboards, audio visual performances, motion tracking, interactive art work or live video inputs – the list goes on and on. The summary is that Ai genuinely streamlines your real time content creation workflow. Intuitive node based programming with Salvation allows the user to create dynamically controllable bespoke real time animations in minutes.

The screenshot shows a 'FINAL RESULTS' scoreboard for 'BMX PARK PRO'. The table lists 10 participants with their names, heat numbers, run numbers, and best scores.

|                 | HEAT | RUN | BEST |
|-----------------|------|-----|------|
| 1 MARK WEBB     | 95.5 | 93  | 95.5 |
| 2 ARCH SULLIVAN | 95.5 | 93  | 95.5 |
| 3 HARRY MAIN    | 95.5 | 93  | 95.5 |
| 4 DANIEL DHERS  | 95.5 | 93  | 95.5 |
| 5 MICHAEL BERAN | 95.5 | 93  | 95.5 |
| 6 BRUNO HOFFMAN | 95.5 | 93  | 95.5 |
| 7 BEN WALLACE   | 95.5 | 93  | 95.5 |
| 8 TODD MEYN     | 95.5 | 93  | 95.5 |
| 9 MATT PRIEST   | 95.5 | 93  | 95.5 |
| 10 ALAN CROFTON | 95.5 | 93  | 95.5 |

## Experience

Build your show, stay ahead of the game, see how the show will really look in the Ai real time 3d stage visualiser. A 3D environment which allows the viewer to experience and sell the show before your production has been loaded onto the truck. The stage is represented in precisely UV Mapped Geometry. Relax with the client and set the visualiser's point of view to different positions within the audience or even the broadcast camera's perspective.



## Mapping



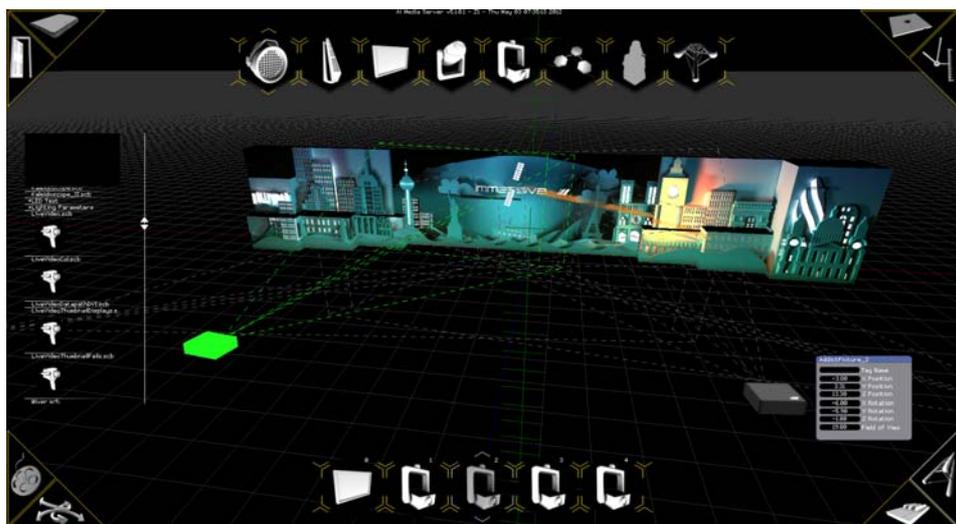
Nobody does projection mapping quite like Ai does. The game-changing virtual mapping engine allows you to perform fast, accurate LED and projection mapping, much faster than on any other system. Features such as sub-pixel accuracy, transformable vertices, group selection, range selection and remote control with a remote tablet completely re-write the rule book on what's possible in video mapping. We have also recently launched the new quick and easy Live map tool which allows users with no prior knowledge of 3d models, mapping or measuring facilities to rapidly video map onto LED or projection surfaces.

## 1.2 Basic principles

The AI software uses 3D modelling of your projection or LED display setup to automatically warp your media in real time for correct undistorted display across multiple projectors, LED screens or other display surfaces.

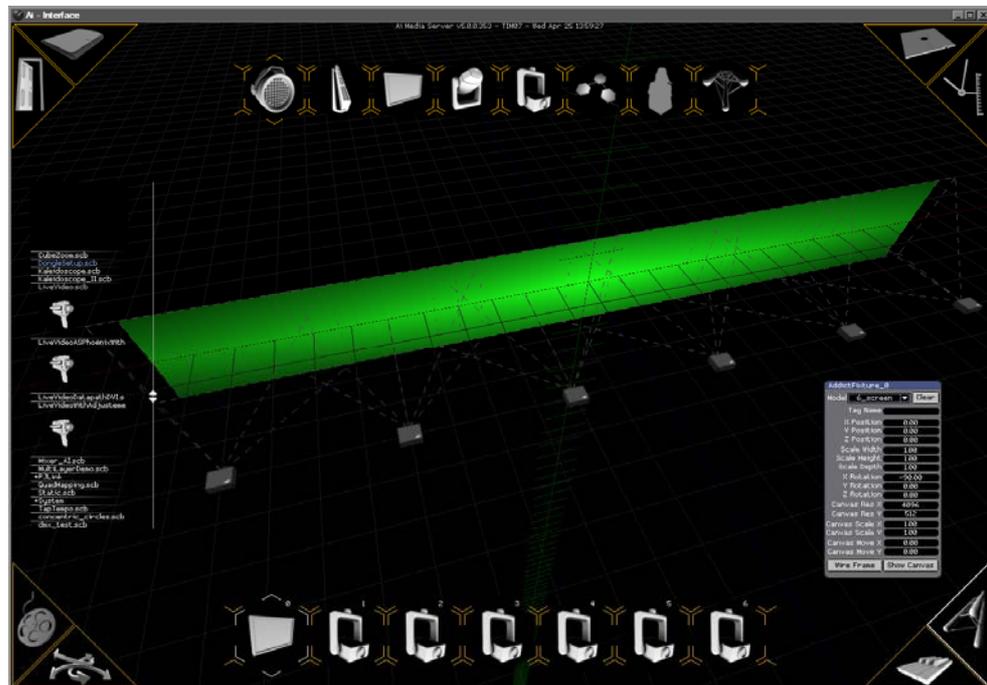
This frees you from any need to manipulate the media yourself and allows you to concentrate on creating great content and amazing shows. Repositioning of projectors or projection surfaces at rigging time can be dealt with quickly and efficiently. Additionally because the media is mapped in real-time it is possible to project onto moving objects.

The system constantly displays a 3D visualisation of your stage or installation showing you in real time what is being played and what your show will look like.



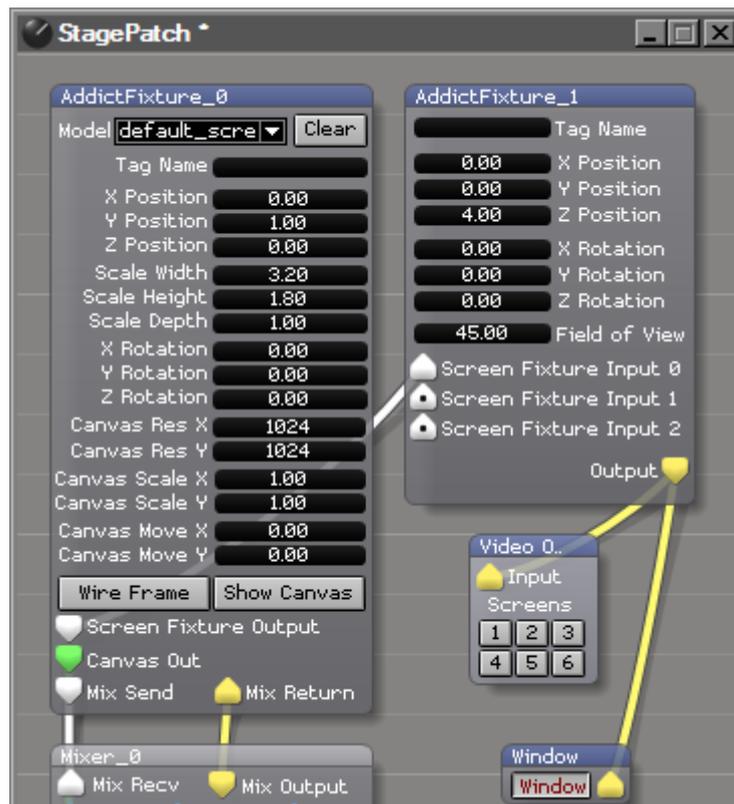
## 1.3 Setting up a model

The Stage Construction page allows you to build a virtual representation of your stage or installation, this becomes the basis of your project. A typical project will include one or more screen fixtures on which the media is displayed, often with one or more projectors or other display devices. The screen fixtures can be anything from a simple flat screen to a complex 3D surface which may be imported from an existing 3D model.



The example above shows the stage construction page for a large screen using six projectors.

Screen fixtures and projectors are connected using the Stage Patch (shown below) which allows you to choose which projectors are connected to each physical output, and which how projectors should deal with a multi-projection surface or a multi-screen scenario. The Stage Patch is based on modules which you interconnect to give the desired operation, allowing great flexibility. Additional modules can be included to provide effects, and external control functionality.



## 1.4 Importing media

Media clips are selected for playback using clusters of hexagon cues on the Performance page. A media clip may be dragged and dropped onto each hexagon, or a blank area to create new hexagons. These hexagon cues can then be touch triggered or clicked with your mouse to allow instant playback of the media. 36 banks (pages) of clusters can be stored, with each cluster storing up to 128 cues. This results in a total of 4608 cues which can be instantly accessed by triggering them manually or via midi, artnet, timecode or ethernet IP packet.

In addition to triggering quicktime movie files, it is also possible to drop still images, timelines, motion triggers, control signals, audio files and real time generative patches into the hexagon cluster, creating a tactile interface to trigger anything that is happening on stage.



## 1.5 Running the show

If you are manually running your show, you can use the hexagon cues to trigger media onto your fixture groups (screen's, light's etc).

If you have more than one screen fixture, you can select which fixture the media will play on; you can play media synchronised on multiple screen fixtures, or play separate media on each fixture.

For timed shows, each fixture has its own timeline which can be used to trigger media playback as a free running timeline or from external timecode or from the internal system clock.

Additionally, external controls such as MIDI, Artnet / DMX, Ethernet IP, may be used to manipulate the media being played.

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## 2. Setting up the Ai server

This section covers setting up and configuring the server. Although there are many complex options available, we will start with the basic configuration which is relatively simple.

### 2.1 System requirements

Ai can be used in a variety of ways. Avolites Media supply pre-configured servers which just plug in and go. However with a security dongle you can also run the Ai software on your own PC or laptop. The minimum requirements to run Ai on your own hardware are:

**CPU:**

-Intel CPU with at least 4 cores, preferably i7 or better.

**Graphics:**

-1 or 2 matching Nvidia Graphics Cards with at least 512Mb of RAM, purchased after 2009.

-or- 1 AMD Firepro Graphics Card purchased after 201.

(on board intel graphics will not work)

**Storage:**

-7200 RPM Hard disc drive for 2x layers of 1080p

-or- Single SSD Drive for 3x layers of 1080p media

-or- x2 SSD RAID 0 drives up to 6x 1080p or 1x 4k

-or- x4 SSD RAID 0 drives up to 8x 1080p or 2x 4k

**Optional Capture Cards for live video input:**

-Blackmagic Decklink / Intensity

-or- Active Silicon Phoenix HD SDI

-or- Datapath Vision SD4+1 DVI plus 4 SD



If you are using AI with a dongle, the dongle drivers can be found after installation in  
C:/Program Files/Avolites/Ai/Distrib/System/Dongle  
Please select the correct version for your Windows installation and run the installer to ensure the dongle can be recognised by AI.

### 2.2 Connecting your system

An Ai server is simply a PC with a good graphics card and fast hard drives often with a larger than usual number of monitor outputs.

For manual control, you will connect a single monitor, keyboard and mouse to allow system operation through the Graphical User Interface.

Depending on the hardware of the server, up to 8 further outputs are then available for connecting to LED screens, projectors and other display devices.

When using Ai on a laptop, if more than 1 output is required many users choose to use a multi-output device (such as Matrox DualHead2Go) to provide more display outputs.



When using Ai for a show you should power the server from an Uninterruptible Power Supply, to protect from power glitches and unintentional disconnections of the power.

## 2.3 The Ai interface

When Ai starts up, it shows the Performance Page with a 3D view of your system, or whichever page was last loaded when the user saved their project.

You can load an existing project using the Project Viewer, or start a new project. An example of setting up a new project is given in section 10.

The Graphical User Interface is designed for use on a touch screen, with large buttons for easy touch operation.

The main area of the screen always shows a 3D visualiser of your system, with live view of the media being played (except for the media preview page or the project loader).

### 2.3.1 Ai Server menu

Salvation is the graphics engine which provides the video processing within Ai. Only advanced users will need to interact directly with the Salvation engine. So if you are new to Ai you may wish to skip to the next section.

The Salvation menu is located across the top of the operating screen.

Salvation allows you to enter the license key for your Ai software installation, and to exit the server software.

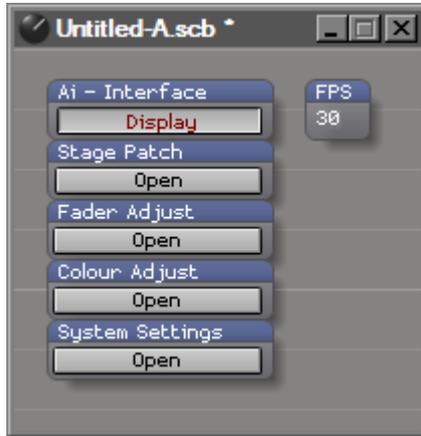
The File menu allows you to create, load and save patches. A patch is a group of Salvation modules. A patch can be used to accomplish a simple task like midi input or output or colour adjustment. A patch can also achieve more complex tasks, infact the whole Ai system is a group of nested patches, so using the file menu you can save out parts of your project (like the stage patch for example) and insert patches into other patches.

The Edit menu allows you to select, delete and copy and paste salvation modules from within a patch. This can also be achieved using the traditional window hot keys, Ctrl C, Ctrl X, Ctrl V. It also possible to undo and redo patch operations from this menu and with the traditional windows shortcuts Ctrl Z and shift Ctrl Z.

The View menu allows the user to launch the Salvation file browser and the Inspector (which can be used to monitor patch parameters).

### 2.3.2 Top level window

In the top left hand corner of the screen is the top-level window. The top level window is the parent window of all of the elements of your project. If you select this window then you can use the file menu on the Salvation menu bar to save your project file. This can also be achieved by using the large save button in the top right corner of the main Ai – Interface.



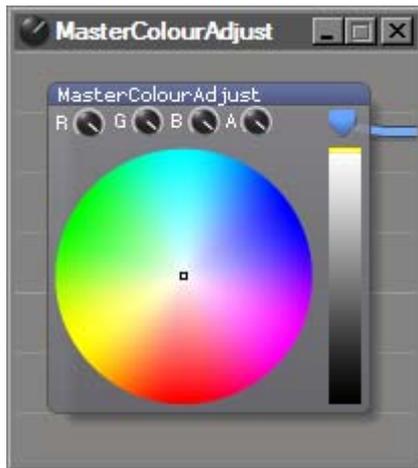
**Ai-Interface** shows or hides the main Ai interface window.

**Stage Patch** opens the Stage Patch page where you set how the various control modules in the system are linked together. See section 5 for details of this page.

**Fader Adjust** shows a master fader page which lets you adjust the output level of each fixture. If you have the system configured in 2 Ch Cross Fade mode in the mixer in the stage patch then The Cross Fade fader adjusts the relative levels of Layer 1 and Layer 2. When first opened the window only shows the faders for Fixture 0, but as you add more fixtures to your project then more faders should appear. If you expand the window to the right you can see the faders which move to the left when fixtures are created.



**Colour Adjust** shows a window which allows you to change the master colour of the whole system output.



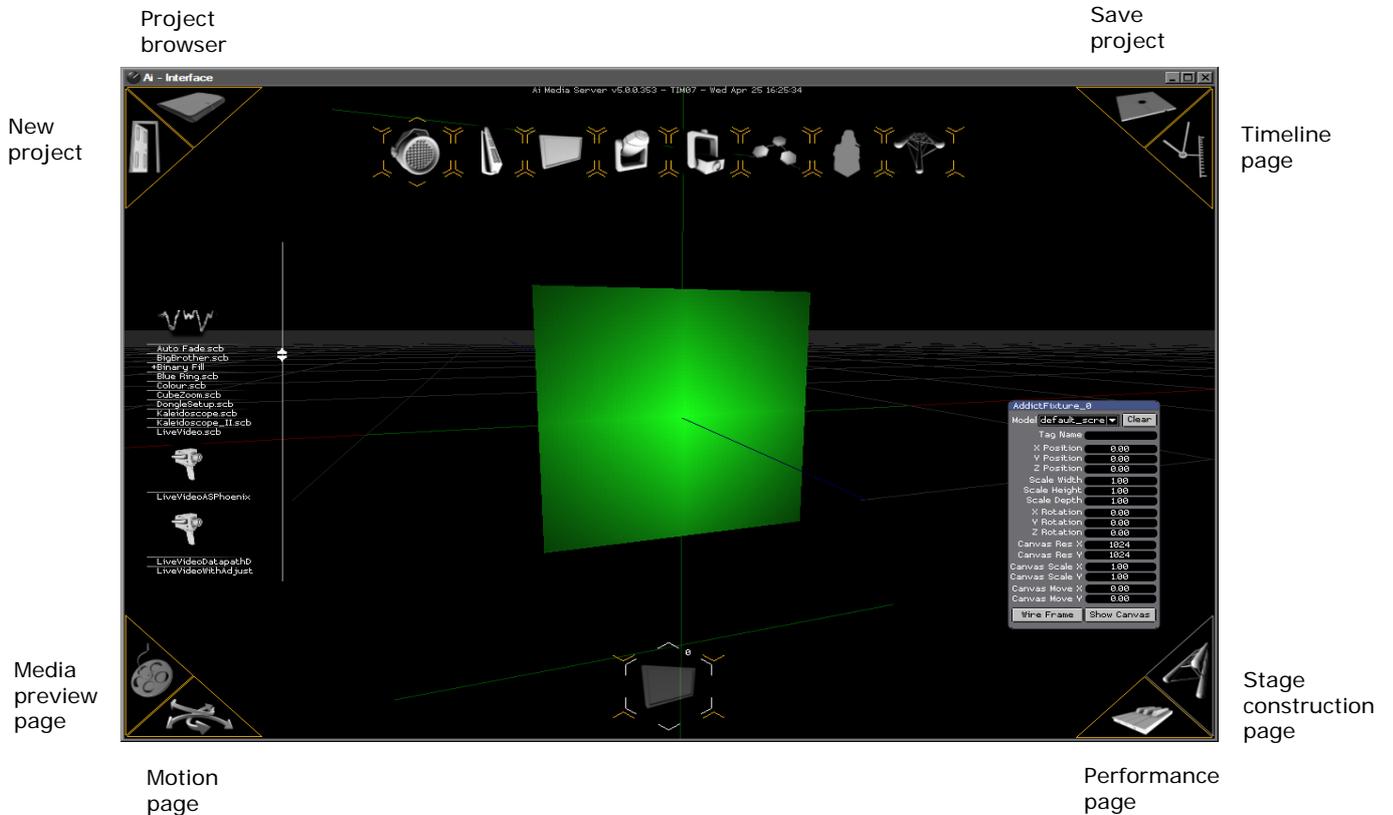
**System Settings** allows you to configure the master system settings:

- Artnet/CITP settings – for linking to an external control system (often a lighting console, or multiple Ai servers in a master-slave configuration)
- MIDI – for setting up a connection to a MIDI device
- General – to set the number of playback layers per fixture (up to 4) and other settings



### 2.3.3 Corner buttons

Within the Ai interface window in the corners of the screen are eight buttons which allow you to access the different pages of the software.



From top left these are:

**New Project:** starts a new blank project

**Project Browser:** Allows you to browse and load existing projects currently stored on the system

**Save Project:** Saves the current project (same as selecting the top level project window and clicking, file->save)

**Timeline Page:** Opens the timeline page which allows you to precisely control media along a timeline and adjust parameters at keyframe points

**Media Preview Page:** This is where you can browse, label, import & trim media clips from your selected hexagon cluster without affecting what is happening on your stage on the performance page.

**Motion Page:** Allows fixture movements to be programmed.

**Performance Page:** Used when running the show to trigger and control media using the hexagon cue's on the selected cluster bank.

**Stage Construction Page:** Opens the stage construction page allowing you to configure your stage fixtures in your virtual stage.

### 2.3.4 Controlling the 3D visualiser

In the 3D visualiser the mouse is used to move around the 3D space.

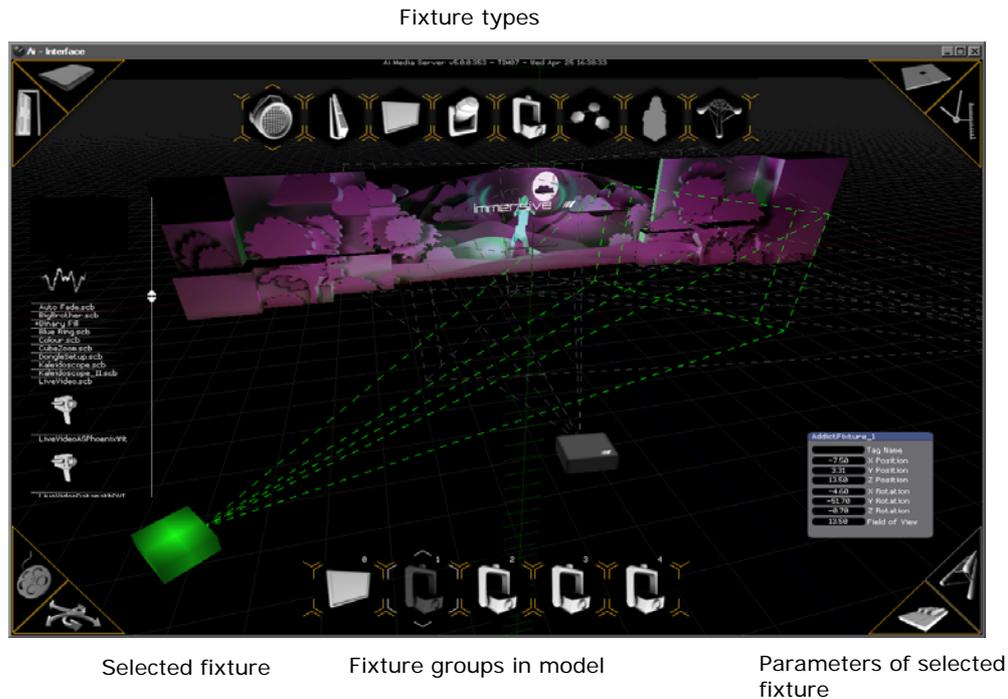
Pressing Alt + clicking and dragging the mouse whilst over your 3D scene moves your position in the virtual space

Pressing Shift + clicking and dragging the mouse whilst over your 3D scene rotates your view of the space as if panning a camera around the stage.

Moving the mouse wheel zooms in and out in the virtual space.

## 3. Stage Construction page

This page is used to configure the virtual representation of your stage or installation. The example shown has four projectors and one screen fixture group with multiple surfaces forming a large projection surface.



Detailed examples of how to set up your project are given in section 10.

### 3.1 Fixture selector

Across the top of the screen is a list of the new fixtures which are available to be placed in the system, such as screens, projectors and so on. From left to right these are: Light fixture; LED batten fixture; Screen fixture; Moving head lighting fixture; Projector fixture; Modular LED fixture; Human; Structure Fixture.

### 3.2 Fixture groups

Across the bottom of the screen are fixture groups which have been added to your project. These buttons are used in the construction page to select a fixture group for editing, on the performance page to select for media playback, in the timeline page for sequencing and in the motion page for applying movement.

### 3.3 Positioning and configuring fixtures

Once a new fixture has been placed, you can position it in the model using the parameter box. This allows you to precisely edit the position

and rotation of the fixture (and size, where appropriate). You can type in the numbers, or place the mouse cursor over the number and use the mouse wheel.

With the mouse wheel you can use Shift and Ctrl to give added accuracy.

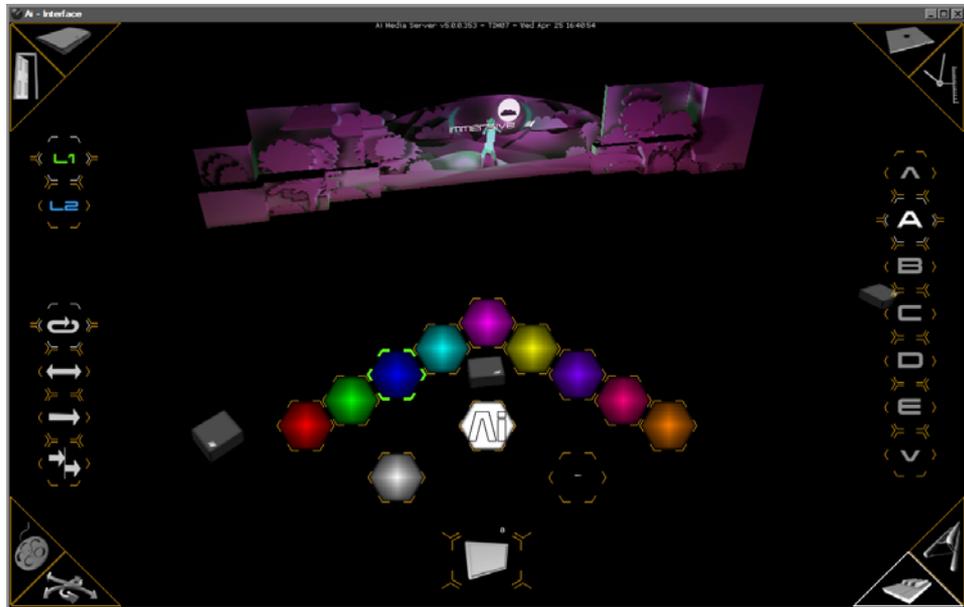
- Hold Ctrl to move in steps of 0.1
- Hold Shift and Ctrl to move in steps of 0.01

Simple flat projection surfaces can be placed directly using the screen fixture, then sized correctly using the parameter box. For more complicated surfaces, 3D models of stage sets, buildings and so on can be dragged and dropped onto a simple screen fixture to create a group of screen fixtures. The system can accept models in the following formats:

- 3ds Max 3DS ( .3ds )
- Wavefront Object ( .obj )
- Collada DAE ( .dae )
- Blender 3D ( .blend )
- 3ds Max ASE ( .ase )
- Industry Foundation Classes (IFC/Step) ( .ifc )
- XGL ( .xgl, .zgl )
- Stanford Polygon Library ( .ply )
- \*AutoCAD DXF ( .dxf )
- LightWave ( .lwo )
- LightWave Scene ( .lws )
- Modo ( .lwo )
- Stereolithography ( .stl )
- DirectX X ( .x )
- AC3D ( .ac )
- Milkshape 3D ( .ms3d )
- \*TrueSpace ( .cob, .scn ).3DS (3D Studio)

## 4. Performance page

This page is used when running a show to trigger media.



### 4.1 Triggering media to fixtures

Media is triggered using clusters of hexagon-shaped buttons to cue media, which you configure on the performance page or on the Media Preview page.

Select the fixture group on which you want the media to play using the fixture group buttons at the bottom, then press or click on the hexagon cue. You can select multiple groups to play the media on as many or as few fixtures as required. To select multiple fixtures simply click and drag the mouse over the desired fixtures.

- Press F6 to toggle small/large hexagons.

### 4.2 Cluster banks

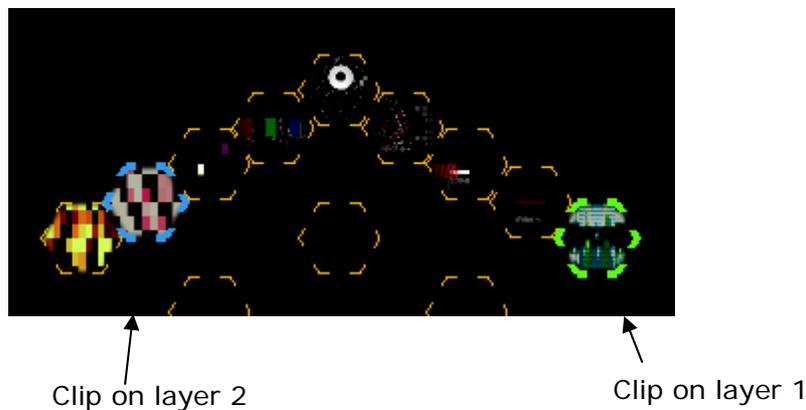
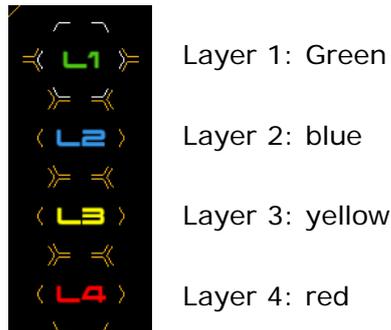
Down the right hand side are cluster bank buttons, which select different banks (pages) of hexagon clusters. Each page can be independently configured in the Media Preview page or on the performance page.

You can press the A-Z and 0-9 buttons on the keyboard to jump to a cluster bank.

### 4.3 Layers

AI can support multiple layers of media. As standard there are two layers per fixture group. On the left hand side at the top are layer enable buttons (two layers L1 and L2 shown in the example above).

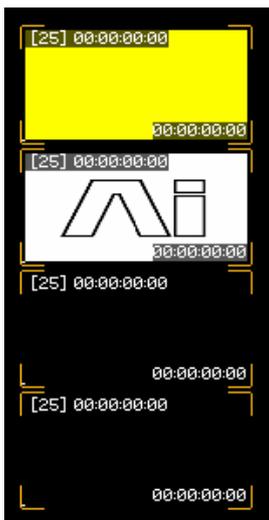
You can increase the number of layers up to a maximum of 4 in the System Settings page (opened from the top level project window). The layers are highlighted in the following colours:



Use the Crossfade fader in the Fader Adjust window (open from the top level window) to set the relative levels of the first two layers. By default Layer 1 is 100% visible and Layer 2 is 0% visible (so you won't see the media on Layer 2 until you change the fader). This cross fade functionality is only available when the system is configured to run in 2 ch cross fade mode, this option switch is accessed within the mixer module in the stage patch.

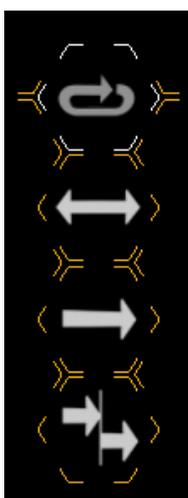
For more than 2 layers there are separate faders for each level to control layer brightness, these are accessed from within the mixer module in the stage patch.

Pressing F5 whilst on the performance page shows the Info Widget which gives you more information about the media playing on each layer.



### 4.4 Media control buttons

These buttons control how the media plays back.



Loop media

Bounce play media

Play Once mode. Single play then stop on last frame

Takeover mode, play media from previous media's last frame (great for switching between pre recorded cameras)

### 4.5 Tap widget

The Tap Widget allows you to quickly set up an automated playback sequence which will run in time with a music track.



F4 shows/hides the tap widget (only in the performance page)

Tap/click the centre to set a speed/tempo. The widget pulses at the current speed.

Clip V - advances through a group of hexagons (visually grouped together)

X Fade/ X Switch controls the layer crossfade. This allows you to fade or switch between the media on two layers.

Bright / Motion – these options are not currently in use.

1-4-8-16 – sets the number of taps/beats which occur before the action happens. For example if set to 4, the action will occur every 4 taps.

## 4.6 Keyboard shortcuts for performance page

- shift click and drag on stage visualisation to rotate around stage
- alt click and drag on stage visualisation to pan around stage
- shift F7 or F8 or F9 to store stage visualisation view point
- F7 or F8 or F9 to jump to stored stage visualisation view point
- mouse scroll wheel to zoom in and out of stage visualisation
- a-z, 0-9 - each keyboard letter jumps straight to the cluster
- F4 - open tap widget
- F5 - open info widget
- F6 - toggle large / small hexagons
- shift click on hexagon to buddy media
- alt click and drag to move hexagons
- shift click and drag to pan 3d scene
- ctrl click on hexagons to lock to selected fixture group
- ctrl shift click on cluster copies currently selected cluster to clicked cluster
- ctrl u - un-lock un-buddy hexagon
- ctrl b - block hexagon from remote control
- ctrl l - re-load selected cluster
- ctrl s - save selected cluster
- shift ctrl l - re-load all clusters
- shift ctrl s - save all clusters
- ctrl p - pre-load all clusters
- ctrl m - midi learn on selected hexagon
- ctrl i - hex info (displays hex cue index which is also the Artnet ch)
- < > - adjust speed up and down ( , or . also do the same thing)
- ctrl t - timecode trigger offset learn
- home - toggles display of per hex midi timecode trigger offset
- page up / page down - when triggers are not visible - master video offset midi timecode adjust (if vid is ahead push up, if behind push down)
- page up / page down - when triggers are visible - adjust per hex midi timecode trigger values

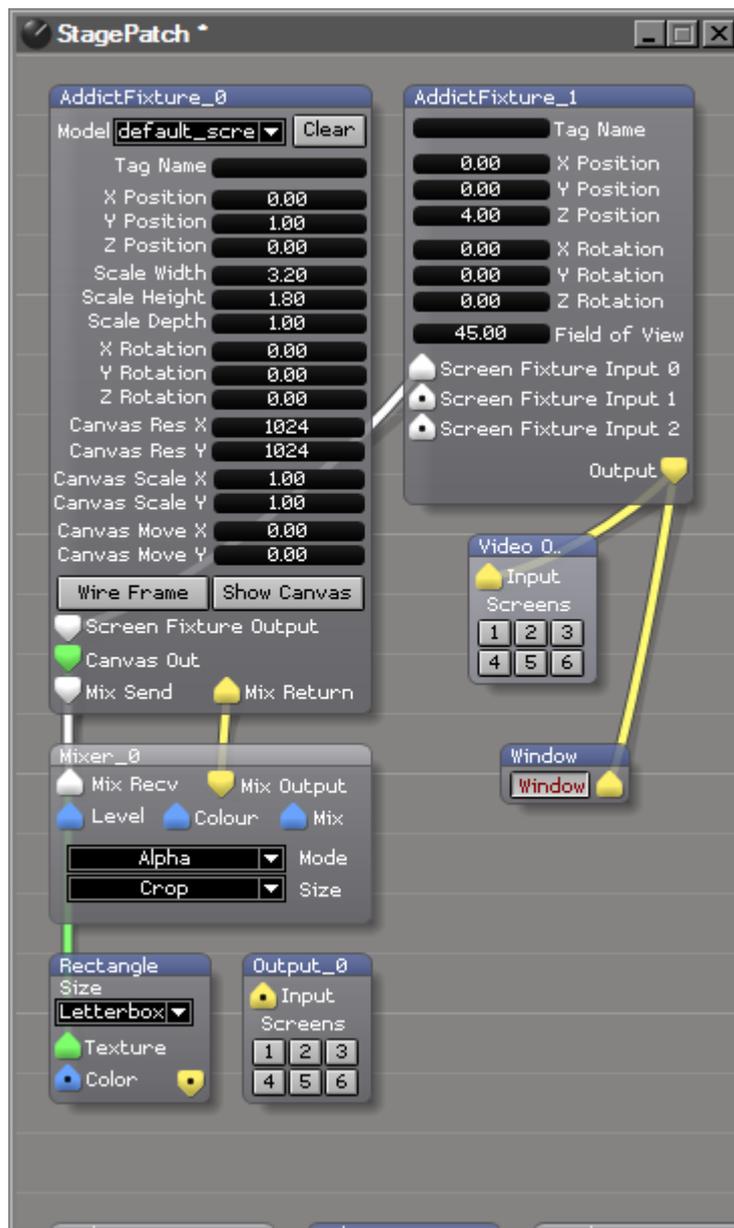
- shift page up / page down - master lighting offset adjust midi timecode adjust
- ctrl f - 1st press displays filenames for all hexagon cues, 2nd press displays full path of each hex cue, 3rd press removes all names & paths



## 5. Stage Patch page

The Stage Patch page is opened from the top level project window which is usually at the top left of the screen.

The Stage Patch controls how your media is routed to the physical outputs of your media server device, and what happens to it on the way, using modules (nodes) with interconnecting ports. This gives you great flexibility in what you can do with your media.



### 5.1 Connecting modules

The system is comparable to a rack of equipment / modules which you plug together by drawing wires between the ports.

In a standard project Media is played on your screen fixture. In order to send this media to your physical outputs you will need to connect the screen fixture to your LED Screens or projectors (or other display devices). When using a 3d object to represent your screen surface the Ai software uses the 3D information about your setup to automatically map and warp the media so it displays correctly on your outputs.

One example of a simple project could be one screen fixture and one projector fixture as shown on the previous page. The output of the screen fixture is connected to the input of the projector fixture.

A Video Out module is used to direct the media to the desired physical output(s) on the server. You can also connect a Window module at any point which displays a small monitoring window showing exactly what is coming out of the connected port.

## 5.2 Inserting a new module

A large number of modules are available to process and manipulate media and control information. To insert a new module, right click in the background of the Stage Patch window and select Insert Module, then choose from the module you wish to use. The modules are listed in section 11.

## 5.3 Types of interface ports

The input/output ports of a module are colour coded to identify the type of information which passes through them. Grey ports are generic and are used for a variety of connections.

### Control Value / Vector Port



Routes control data between modules using 64-bit floating point values.

A control value port is commonly used to route a single numerical value from one module to another (such as rotation angles, brightness and contrast)

Vectors can also be passed through the control value port. A vector is a group of control values stored as an ordered list of numerical values which can be sent from one module to another (such as XYZW location in space, or RGBA colour information).

### GL Render Port

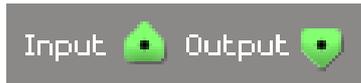


Routes rendering streams from one module to another.

The drawing commands represented by a graphics stream are not executed unless the stream

is connected to an on-screen window.

### GL Texture Port



Shares image data stored as openGL textures between modules.

Typically a 2 dimensional image file ( .jpg, .tga, .png, etc ) or a video file ( .mov )

The Fixture Output node of a module contains geometry (mapping) information in addition to the media. The Canvas Output just contains the raw media. This can be used when the media itself needs to be modified, for example in a soft edge effect where two projectors overlap.

## 5.4 System Patches

The system patches can be found by right clicking the mouse in an empty area of the Salvation window and choosing Insert System Patch. They are a variety of useful modules that allow the user to perform regularly used, important tasks. User generated patches can be added to the system patches menu by saving to the system folder found within the patches folder.

### 5.4.1 AI Patch Output

Used when making patches to ensure the video output from the patch meets the required specification to be triggered from the performance page within the AI software.

### 5.4.2 Mapping Editor

An advanced vertex editing system which allows for complex deformation and remapping of the screen by repositioning the vertices of the model within 3d space.

### 5.4.3 Quad Mapping

A 4 point quad with a user definable amount of rows and columns used to deform the output using a simple grid based warping system.

### 5.4.4 Shared Constants Input

Allows control data to be transferred between patches running within AI.

### 5.4.5 Soft Edge modules

Soft Edge Dual 10 Positions  
 Soft Edge Horizontal 10 Positions  
 Soft Edge Horizontal 5 Positions  
 Soft Edge Vertical 10 Positions  
 Soft Edge Vertical 5 Positions  
 Soft Edge Free Edges

A selection of Soft edge blend modules with different versions which contain horizontal and vertical blends in varying orientations and amounts, allowing the user to compensate for brightness discrepancies when overlaying multiple projectors by using individually adjustable multi band blending.

#### **5.4.6 Texture Coordinates Editor**

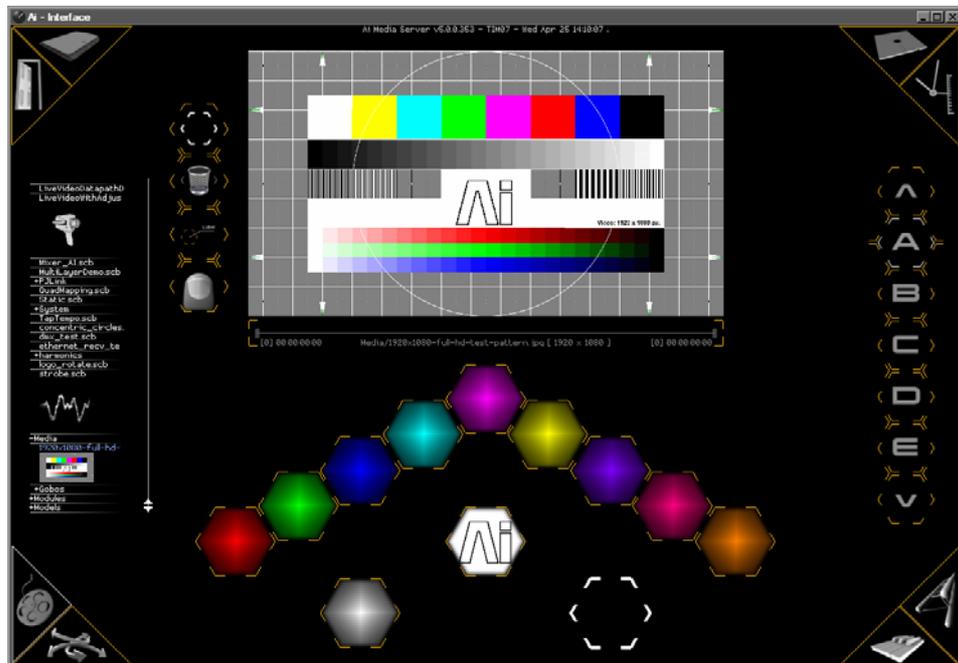
Allows the user to replace a 3d models texture coordinates with a cylindrical or planar UV map.

#### **5.4.7 Media Container**

The template patch used to create a video clips properties patch when the video clip is dragged into the AI timeline. This should only be opened and edited by advanced users who wish to change the default properties of a video clip when they drag their clip into the timeline.

## 6. Media Preview page

The media preview page is where you browse, label, import & trim media clips from your selected hexagon cluster without affecting what is happening on your stage on the performance page.



### 6.1 Creating hexagon cues

Media clips are represented by a hexagon cue for triggering on the performance page.

On the left hand side of the screen is a list of all media clips available within the application's media folder. A + sign to the left of the name shows a subfolder; clicking on this will expand the folder to show what's in it.

Clicking on a media clip will preview the clip in the top part of the window; this allows you to view a clip without affecting the main output.

To import a clip, drag and drop the clip from the list into a blank area near your hexagon cluster. Alternatively you can drag it onto one of the hexagons to replace the media contained therein.

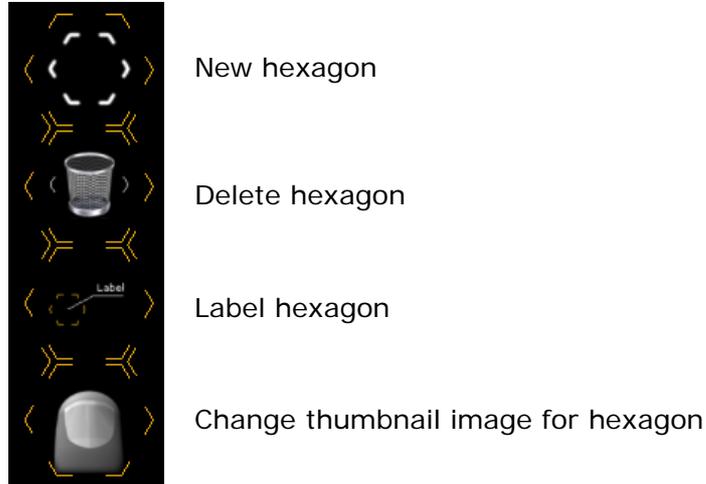


You can also drag and drop media directly from a Windows explorer folder.

## 6.2 Editing hexagons

To move a hexagon (while on the Media Preview page), hold down Alt while dragging the hexagon to the desired position.

To place a new hexagon, delete a hexagon, add a text label or change the thumbnail image, use the buttons to the left of the preview area.



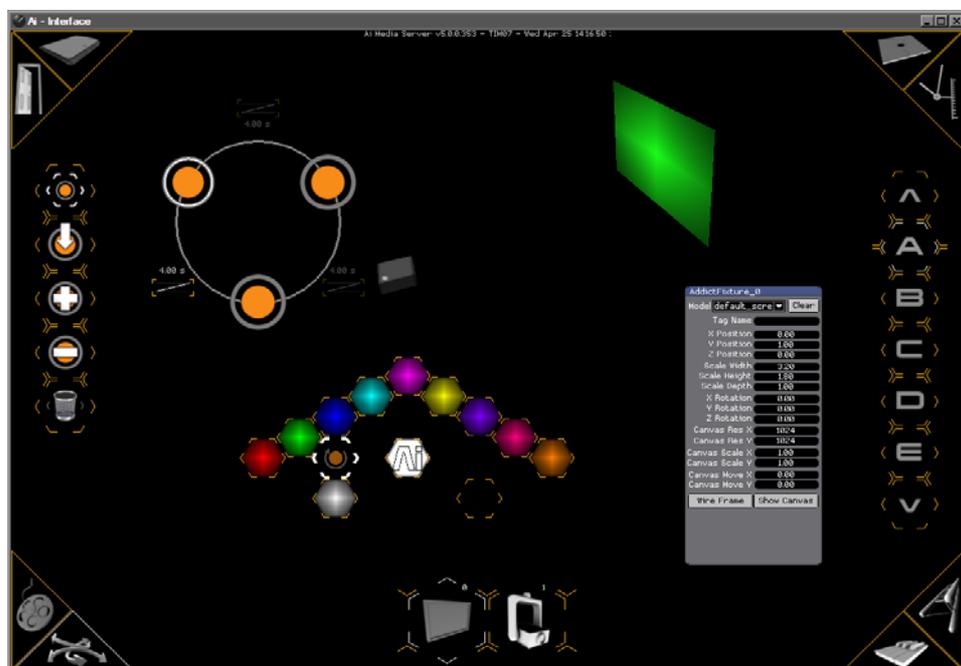
Use the cluster bank buttons down the right hand side to select different clusters of hexagons.

## 7. Motion page

The motion page is used to add motion triggers. These triggers can be added to your hexagon cluster, and they are used to quickly make changes to your stage.

You can use a motion trigger to quickly reconfigure the 3D model to give you different "looks". For example you might wish to project onto one object for part of your show, then remap the same projection setup to warp the media onto a different object. Using the motion page you can program a hexagon button which will instantly reconfigure your model to allow this.

The motion page also allows you to program movements into your model. Thanks to the revolutionary virtual mapping engine, projection onto moving objects is possible.



### 7.1 Motion control buttons

Motion triggers are shown in a hexagon with a grey arrow around the orange centre. The buttons on the left are used to configure the motion.



Create new motion trigger hexagon

Store current positions to selected motion trigger

Add a keyframe point to selected motion trigger

Remove a keyframe point from selected motion trigger

Delete selected hexagon

## 7.2 Storing positions

Click the “Create New” button to create a motion hexagon.

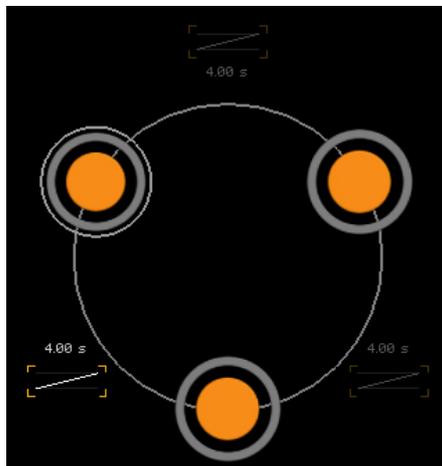
Using the properties windows for your model, position your fixtures and projectors as desired.

Click the “Store position” button to store the current positions to the hexagon.

Repeat and create a different setup. You should now be able to move your stage between the two configurations by clicking the triggers.

## 7.3 Programming a motion sequence

Motion sequences can also be stored in a motion trigger just like a single position.



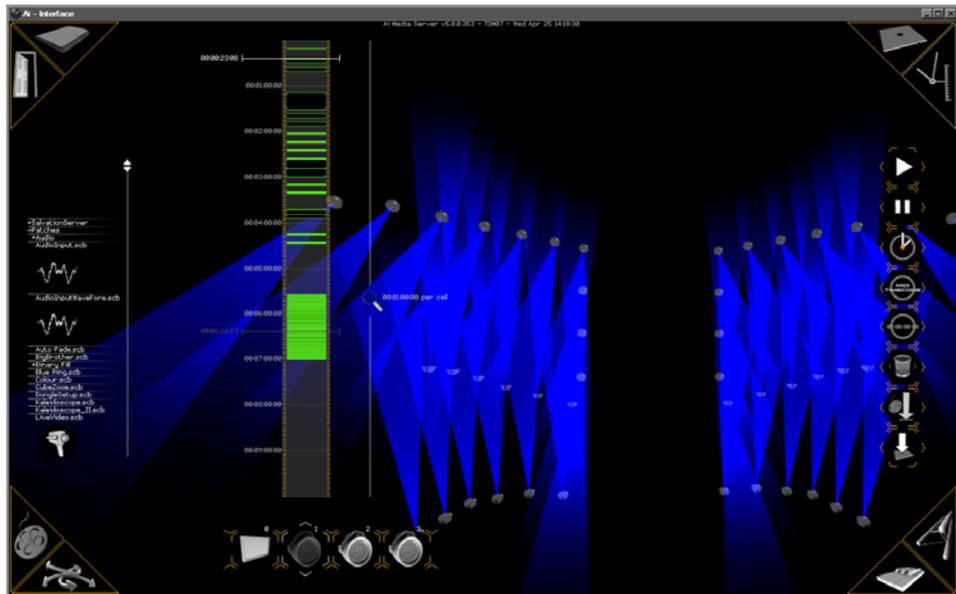
Click the top motion button to add a trigger. Initially the trigger will have only one step, shown by a pulsing orange circle. Add keyframes to your program by clicking the + button. You now have more orange circles, each representing a keyframe in the triggerable sequence. Position your model objects for step 1, press save, then press the second circle, position for step 2, press save again, and so on.

To trigger the motion sequence select the motion trigger hexagon whilst viewing the performance page.



## 8. Timeline page

The timeline page is used to automatically play back media in a preset sequence. This is often used when a timed sequence is required to match a show to music, or for repeated or automated shows.

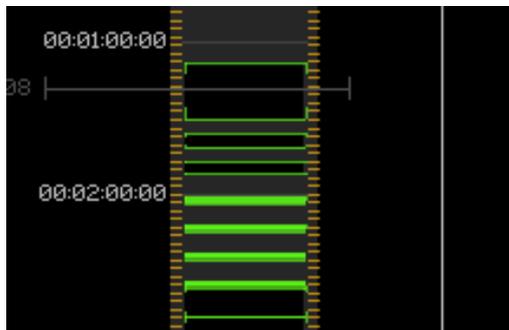


Each fixture group has its own vertical timeline. The timeline is vertical rather than horizontal so that a timeline can be shown above each fixture group group maintaining a consistent intuitive layout between different pages of the interface.

### 8.1 Adding media to a timeline

Clips are added to the timeline by dragging media from the menu on the left, or from a Windows folder, and dropping on the timeline.

Media placed on the timeline is shown as a green bracketed area.



To **change the in/out points** of a clip, select the clip then hold Alt and drag the ends.

A single audio file may be added to the timeline by dragging an compressed 16bit WAV audio file onto the timeline.

You can add and remove markers on the timeline to help with positioning the media by pressing the Insert button (while playing back the timeline).

**Scroll** the timeline by clicking and dragging up and down on it.

**Zoom** the timeline by dragging the magnifier icon to the right of it.

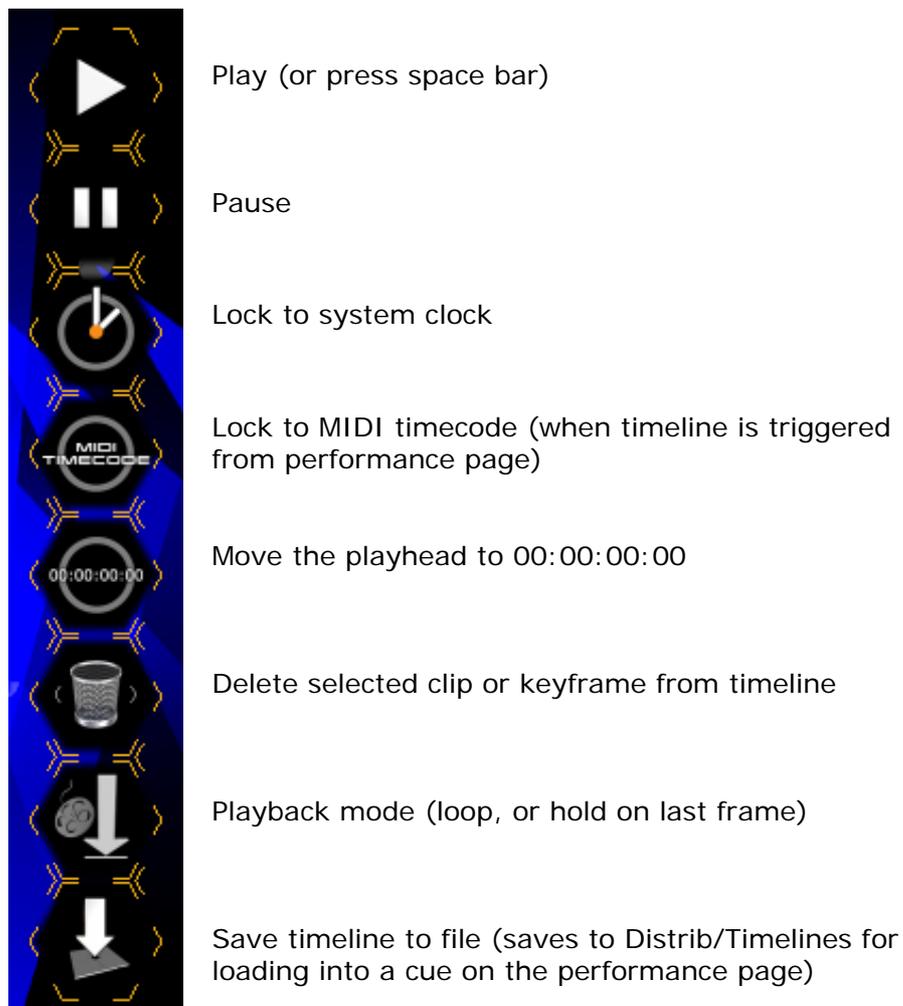
**Position the Play Head** by left-clicking in the timeline.

When a clip is selected a Parameter List menu appears to the left of the clip. Once a parameter has been selected from the list, by right-clicking in the clip you can keyframes to your chosen parameter.

You can **add multiple layers** to the timeline by pressing + (the minus button removes layers). This allows you to trigger multiple layered timelines.

## 8.2 Controlling timeline playback

Timeline playback is controlled using the buttons on the right. These are:



When a saved timeline is loaded into a hexagon cue on the performance page, the hexagon shows the timeline button logo. Timelines can then be triggered from the performance page along with other hexagon cues.

### 8.3 Mouse/keyboard shortcuts for timeline page

- drag wav file from explorer onto timeline to insert waveform display
- click drag timeline to navigate timeline
- shift click and drag to multi select media or keyframes
- ctrl click to multi select media or keyframes
- alt click and drag to move media
- alt click and drag bracket to change length of media (loop / cut not timestretch)
- +/- - add or remove layers to selected fixture group timeline
- ctrl e - clear timeline
- insert key - add marker / remove marker at current cursor pos
- ctrl c - copy selected clipnodes or keyframes
- ctrl v - paste clipnodes / keyframes
- m - move selected media
- [ / ] jump to beginning / end of selected media or first / last clip if nothing selected
- delete - to remove selected keyframes
- return - play / stop from current cursor position
- space bar - play / stop from original cursor position
- up arrow - navigate timeline upwards (per frame)
- down arrow - navigate timeline downwards (per frame)



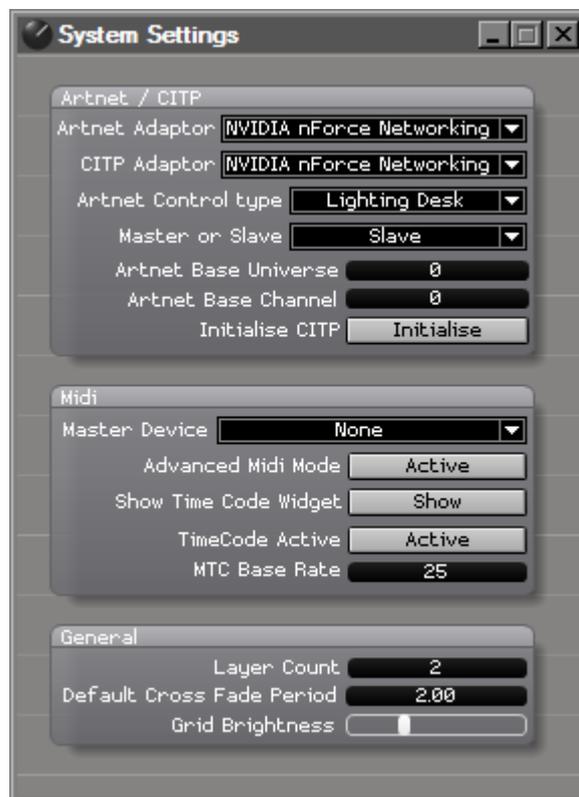
## 9. External control

AI is controllable by MIDI, Artnet/DMX, Timecode, network protocols and a variety of control sources.

Almost every parameter within AI is controllable from an external source.

### 9.1 Setting up interfaces

This is performed through the System Settings menu (click the System Settings button in the top-level menu window).



**Artnet Adaptor** – select which physical network adaptors we are using for the Artnet inputs and outputs. The system IP address in windows needs to be set to 2.0.0.x where x is a unique number for each system in the network.

**CIP Adaptor** - select which physical network adaptors we are using to send commands to and from a CIP compatible lighting console to Ai. CIP is used to pass media thumbnail images back to the lighting console.

**Artnet control type** – Lighting desk (use a standard desk) / AI remote (select when using multiple servers in a master slave configuration)

**Master or Slave mode** - Master mode allows you to control multiple servers together from this server – one server will control all of the

others. Slave mode is used when this server is to be controlled by another server (the Master).

For the base universe, use 0 or multiples of 8 (i.e. 0, 8, 16...)

## 9.2 Setting up a lighting console to control Ai

The console will need a personality for the Ai server – you can patch as an active fixture (uses CITP to retrieve thumbnails of the media clips) or a normal fixture (no thumbnails).

Patch the server as a fixture.

If using Active Fixture, on the Ai System Settings menu click CITP initialise (wait), the Ai server should then be visible on the lighting console as an active fixture.

(may need to restart AI software)

On Avolites consoles, the Ai Server is then controlled using the Attribute Editor window.

Master – mainly used for overall brightness control

Fixture group – controls attributes of the fixture

Layer – controls layer – media clip select with thumbnail display and so on.

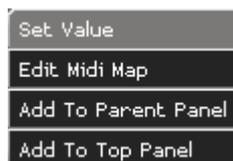
A complete list of Artnet Channel definitions is available in the Appendix.

## 9.3 Controlling by MIDI

You can use MIDI input to control almost any parameter of Ai. The simplest control is to use MIDI notes and controllers to trigger buttons and faders, but using the stage patch window even numerical fields can be controlled.

Example: Controlling a fader by MIDI

- 
- 1> *Open the Faders window from the top-level menu*
  - 2> *Right click the fader to be controlled (you can right click on most objects to MIDI control them)*
  - 3> *On the context menu click Edit Midi Map*



- 4> *Choose MIDI device to be used, and the MIDI channel to listen on*



- 
- 5> *Select Learn CC#, then operate a controller on the midi device to link the fader to the controller.*
- 

Example: trigger a hexagon from a midi note

(first select your Master MIDI device in the System settings)

---

- 1> *Select hexagon to be controlled*
  - 2> *Press ctrl-M*
  - 3> *The hexagon turns pink*
  - 4> *Send the desired MIDI note*
  - 5> *The hexagon turns green*
- 

You can also place a MIDI module on the Stage Patch screen to enable different control functions.

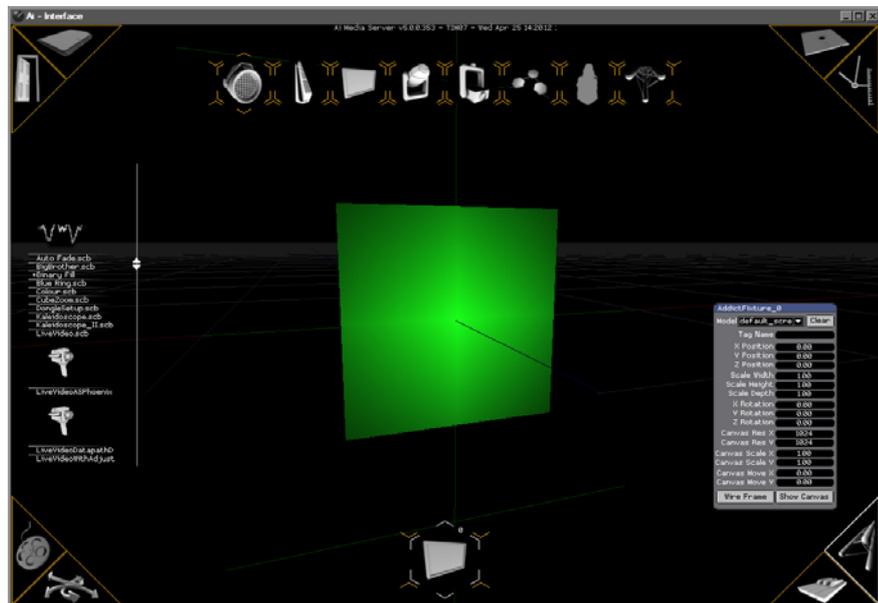


## 10. Examples

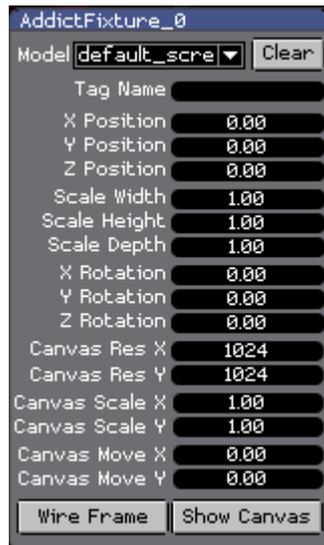
### 10.1 Creating a simple screen/projector project

In this example we will create the simplest possible project with a single screen and a single projector.

- 1> Start a new project by clicking the "open door" button top left. You are asked for a name for your new project; type this and press Enter.



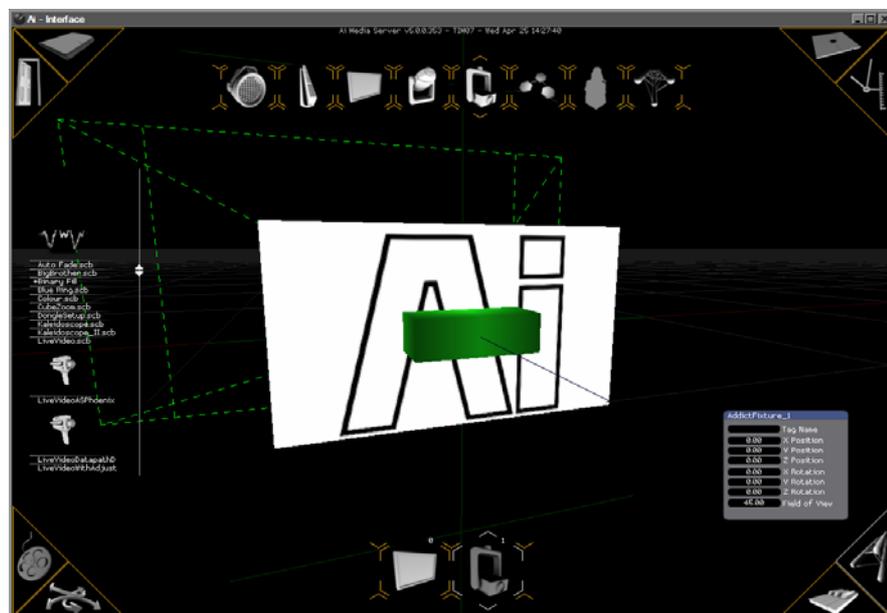
- 2> Your new project automatically contains a single fixture group number 0 (at the bottom of the screen) containing a 1:1 ratio screen. This fixture group button is used on the construction and performance pages to select the fixture group.
- 3> Using the parameter box, change the screen to a 16:9 ratio by entering 1.6 into the Scale Width box and 0.9 into the Scale Height box (these numbers are nominally in metres). You can also use the mouse wheel to change the values (hold Ctrl to change in 0.1's and Shift-Ctrl to change in 0.01).



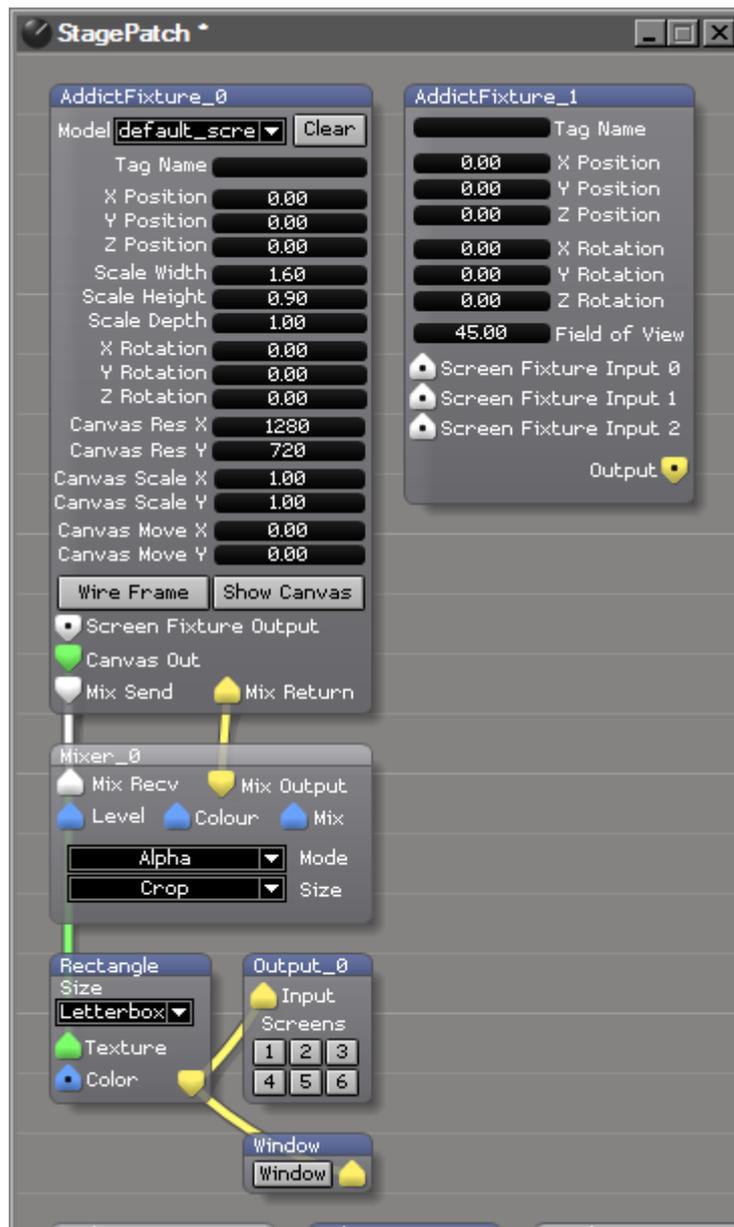
- 4> Change the Canvas Res X to 1920 and the Canvas Res Y to 1080 to give correct 16:9 resolution.

*Note: For many Ai projects, the projection surface is much more complex than a single screen. You can drag a 3D model from a windows folder onto the screen fixture group button to convert the screen fixture into a full 3D model. The dropdown box at the top of the fixture properties window allows you to select the different models if there is more than one – e.g. for screens that change shape – different UV mapping in the model*

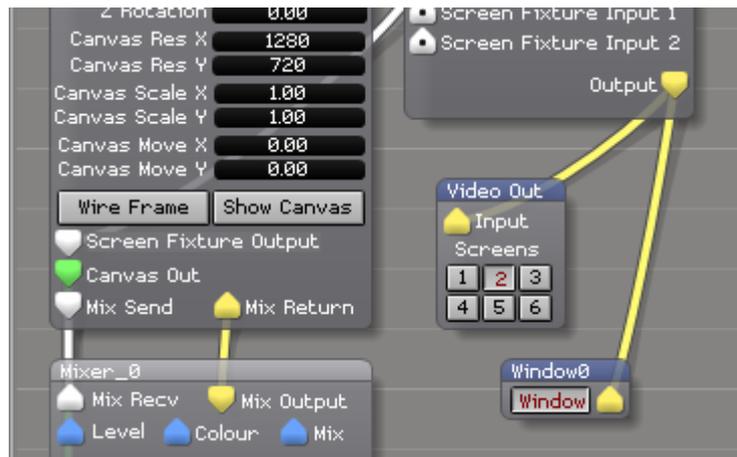
- 5> Add a projector to the project (5<sup>th</sup> button across at the top). The projector will appear at the 0,0,0 position and a new fixture group for the projector appears at the bottom.



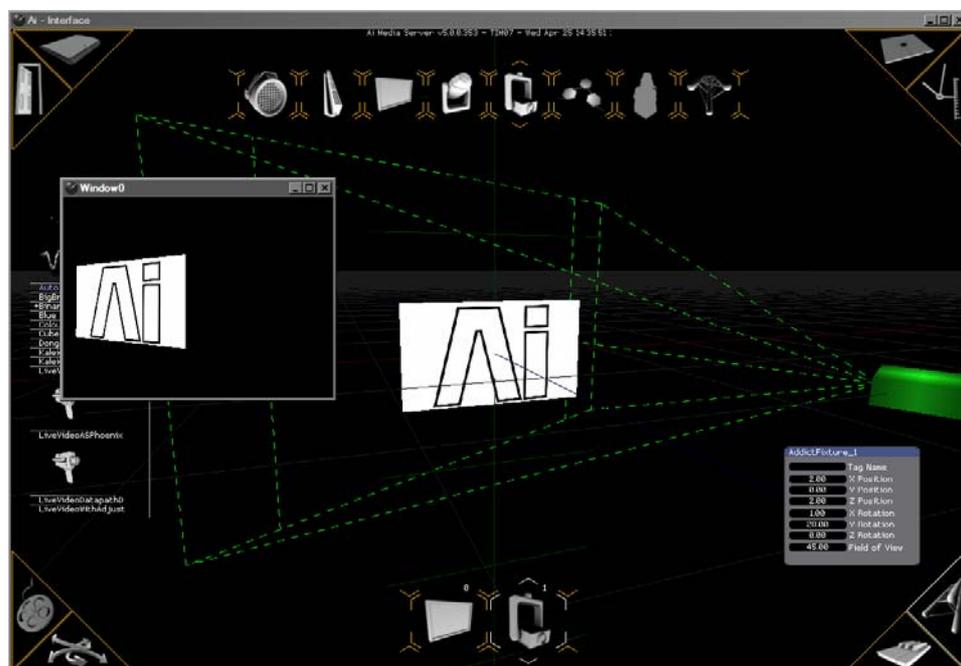
- 6> Click on the Projector fixture, position the mouse over the Z-position value and change it to plus 2.00 to move the projector 2 metres back.
- 7> Go to the Stage Patch window (using the top level window in the top left corner of the screen).



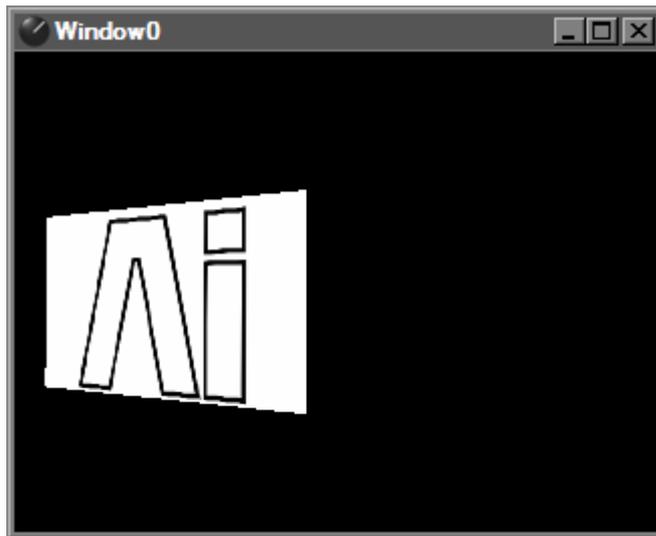
- 8> Link together the screen fixture and the projector by drawing a line from the screen fixture output of the screen (Fixture 0) to the screen fixture input of the projector (Fixture 1).
- 9> If there is not one already present, you may need to add a Video Out module by right clicking on the background of the stage patch window and selecting Insert Module, Display, Video Out. This module sets which physical output socket on the server will be used to output the video. Link the Output of the projector module to the Input of the Video Out module, and click the 2 button to select video output 2 (if you have a video device on output 2 you should see the Ai logo appear on it).
- 10> Add a Monitor Window module by right clicking and selecting Insert Module, GL, Window. This module displays a window which allows you to view the actual video signal going to the projector after it has been warped. Link the Output of the projector module (Fixture 1) to the Input of the Window module and click the Window button to display the window.



- 11> Go to the Media Preview page and drag a media file from the list on the left (or from a Windows folder) to one of the hexagon buttons.
- 12> Go to the Performance page, select the screen fixture group and click the hexagon cue you created when you dragged in your media file. The media will begin to play and you should see it on the 3D rendering of the screen fixture, and also in the monitor window you created.
- 13> Go back to the construction page, select the Projector fixture and move the projector around by changing the values in the parameter window. You will see the output in the monitor window move and warp as required to correctly display the media on the screen.



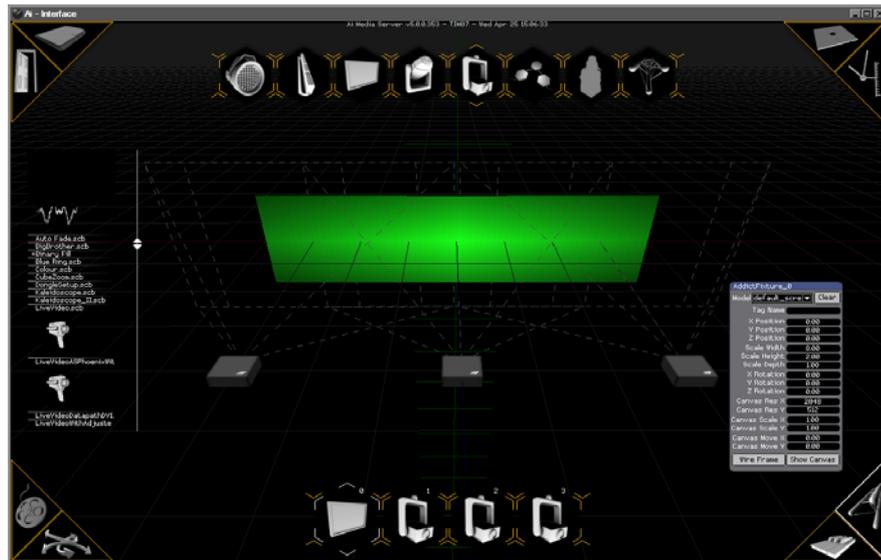
As the projector in the example above is offset to the right, the monitor window shows how the picture has been automatically keystone and cropped to keep the actual projected image correct:



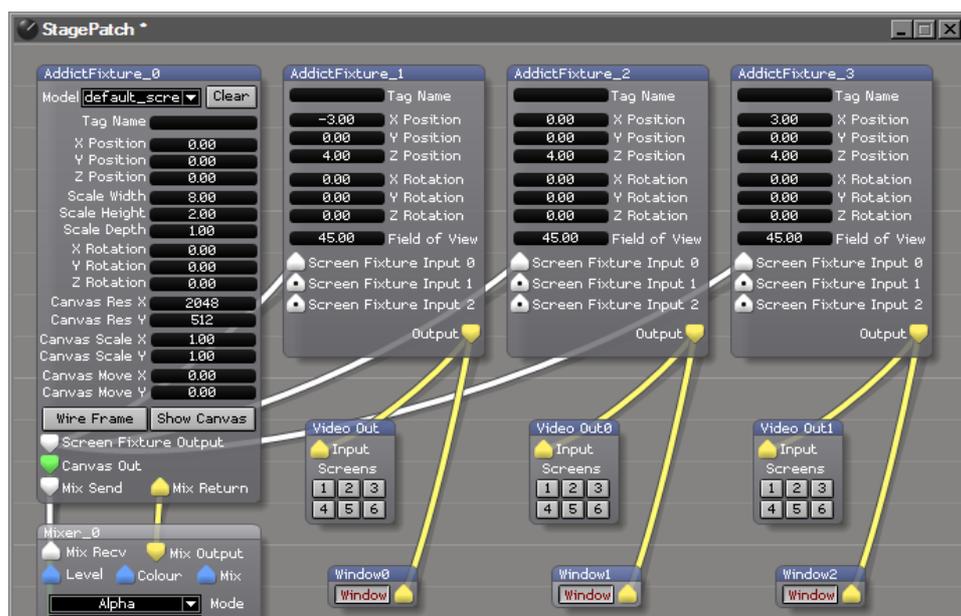
## 10.2 Creating an edge-blended screen

In this example we will create a system with a large screen and three edge-blended projectors.

- 
- 1> *Start a new project.*
  - 2> *Change the screen to be 8.00 wide and 2.00 high (you will need to zoom out using the mouse wheel to see it all). Change the resolution to 2048x512 (or some other resolution with 8:2 ratio).*
  - 3> *Add 3 projectors to the project by clicking the Projector button three times (wait between each press for the projector fixture to appear at the bottom of the page)*
  - 4> *Click the Fixture 1 button to select the first projector and change its X position to minus 3.00 and Z position to 4.00. Click the Fixture 3 button to select the third projector and change its X position to plus 3.00 and Z position to 4.00. Click the Fixture 2 button to select the second projector and change its Z position to 4.00, leaving X at 0.00.*



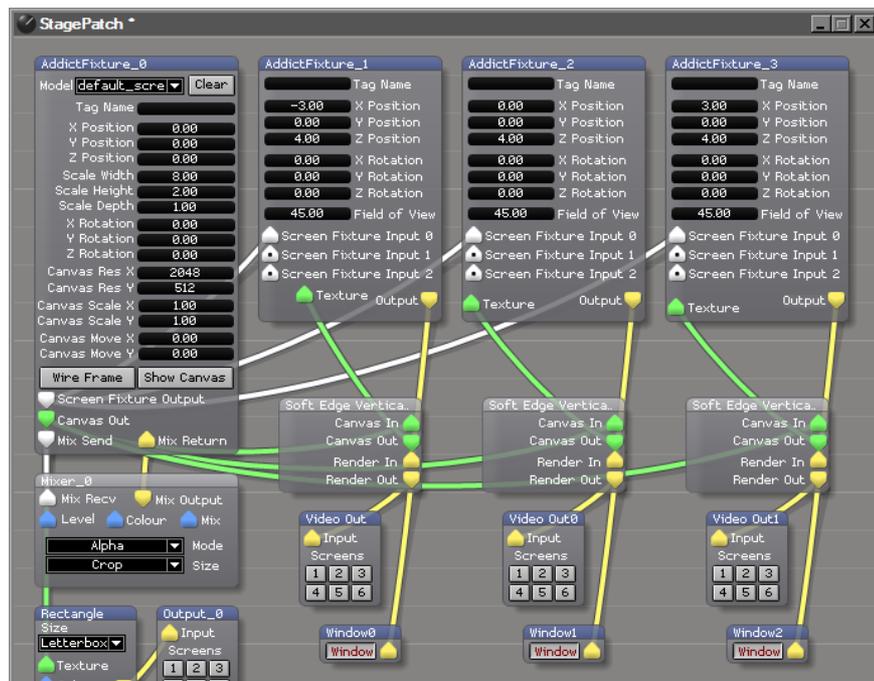
- 5> Open the Stage Patch window. Connect the Screen Fixture Output of Fixture 0 to the input of Fixture 1. Repeat for fixtures 2 and 3.
- 6> Right click on the Stage Patch window and select Insert Module, Display, Video Out. Place the Video Out component under Fixture 1 and connect Fixture 1 Output to the Video Out module's input.
- 7> Use Copy (Ctrl+C) and Paste (Ctrl+V) to make two copies of the Video Out module for Fixture 2 and Fixture 3, and connect them up.
- 8> Insert a Window (Right click, Insert Module, GL, Window) under Fixture 1 and connect it to the output of the fixture. Copy and paste the window twice to give you a window for each projector fixture.



This gives you a setup with the media correctly split across the three projectors, and using the monitor windows you should be able to see how the image is split on the output of each projector.

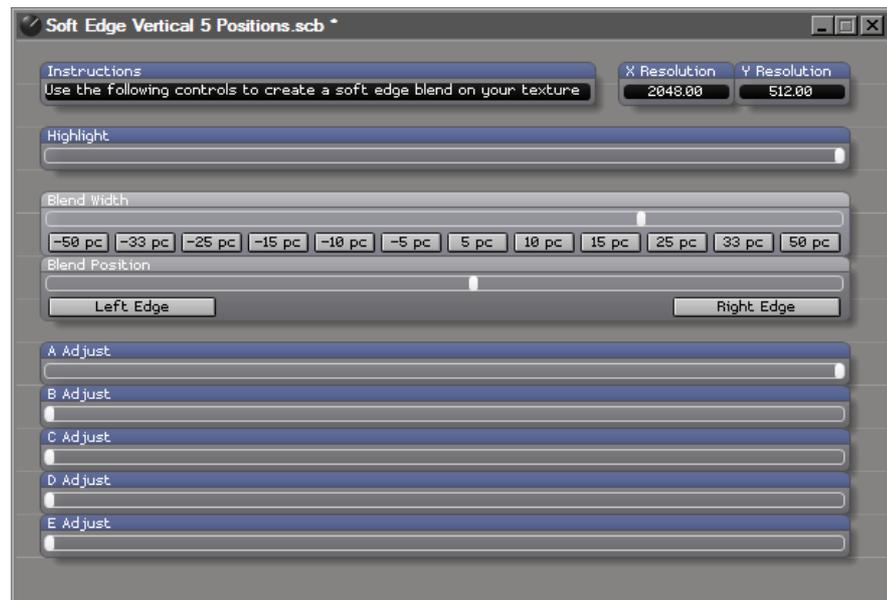
In a real life system, it is often necessary to blend the edges of the projectors where they overlap to make the join invisible. Next we show how you do that.

- 1> *On the Stage Patch, insert a Soft Edge patch. This is done by right clicking then selecting "Insert System Patch" and select "Soft Edge Vertical 5 positions". Copy and paste this twice. To make the Stage Patch easier to follow you can rearrange the modules so that the Soft Edge module is below the projector fixture with the Video Out and Window modules below that.*  
*Note: patches in the Insert System Patch option are just those saved in the \patches\system folder – you can save any patches here for quick access.*
- 2> *Connect the Canvas Out of the screen fixture 0 to the Canvas In of each of the soft edge patches (The Canvas out node is the unmodified video feed).*
- 3> *On each of the projector fixtures, right click and select Show Port, Texture. This adds a Texture port which allows an alternative video feed into the fixture, while still passing the mapping information down the Fixture Input line.*
- 4> *Connect the Canvas Out of each soft edge patch to the Texture port you have just enabled on each projector fixture.*
- 5> *Disconnect the projector outputs from the Video Out modules and the Window modules by right clicking on the output node and selecting Disconnect.*
- 6> *Connect the output of the projector fixtures to the Render In of the soft edge module, and connect the Render Out of the soft edge module to the Video Out module and the Window module for each fixture.*

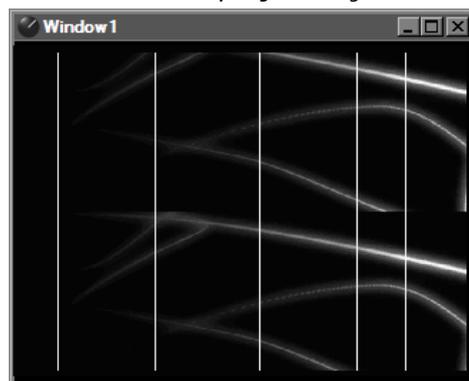


- 7> *Now you need to adjust the position of the soft edge for each projector. Right click on the soft edge module for Fixture 1 and*

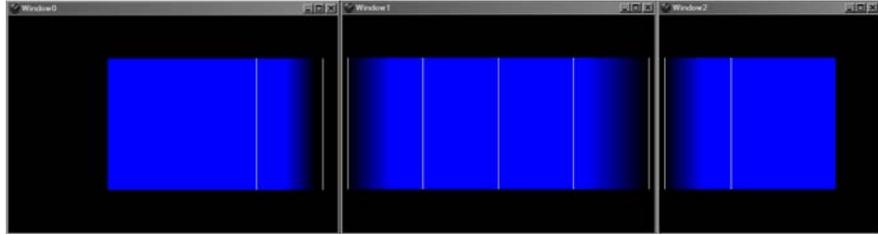
select *Expand Patch*. This opens a properties window for the module as shown below.



- 8> Set the X and Y resolution to match the resolution of the screen, 2048 x 512 in our original example.
- 9> This module allows you to set the intensity of the video at 5 positions. The positions are shown by white highlight lines on the output, if the Highlight fader is up (once the positions are set, reduce the Highlight fader to zero to make the lines invisible). The Blend width/position faders work across the full screen width, so you need to ensure that the position is within the area of the projector you are working on.



- 10> For the left hand projector, the settings above are used; A at full, B-E are set to zero. This fades the media between lines A and B. Set the Blend Position slider so that Line B is at the edge of Window 0 and click the 50% button of the Blend Width slider.



- 11> *For the central projector, right click the soft edge module for Fixture 2 and select Expand Module. Set the resolution again, and then you need to fade both edges, so A and B are used to fade the left side, D and E are used to fade the right side. Adjust the Blend Width and Blend Position sliders so that all 5 lines are visible on the centre monitor window and lines A and E are at the edges of the picture.*
  - 12> *For the right hand projector, use A and B to fade in the picture and C, D E are unused.*
  - 13> *Once you have set up the soft edges, ensure you set the Highlight to zero so the guide lines are not visible on the actual video output.*
-



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## 11. Module information

This section lists the modules available in the Stage Patch screen.

These modules allow you to configure Ai to do just about anything you require.

The diagram on the next page categorises the modules which are available, then the modules are each described in order.

| Categories         | Audio                  | Display            | GL                   | Generator      | Midi                    | Scripting                   |
|--------------------|------------------------|--------------------|----------------------|----------------|-------------------------|-----------------------------|
| Audio              | Master Volume Adjust   | Template Generator | BindTexture          | Cubes          | ExtClock In             | Javascript                  |
| Capture            | Capture                | Video Out          | BlendMode            | Light Rays     | Midi CC In              | Text                        |
| Color              | Active Silicon Phoenix | Drawing Primitives | Camera               | Quad Mapping   | Midi CC Out             | Convert To String           |
| Controller         | Dalsa Genie Camera     | Binary Circle      | Clear                | Rectangle      | Midi In Device          | Notepad                     |
| Display            | Color                  | Circle             | Crossfade            | Text           | Midi Key In             | String Combine              |
| Drawing Primitives | HSBA                   | Line Generator     | DepthTest            | Texture Warp   | Midi Key Out            | String Compare              |
| Effects            | Hue Rotate Matrix      | Particle System    | DisplayList          | Tunnel         | Midi Key Range In       | String Parser               |
| File IO            | Image Color            | Effects            | GLGetVector          | Wave Pool      | Midi Out Device         | String Switch               |
| GL                 | RGBA                   | FreeFrame          | GLSLProgram          | Import         | Motion Control          | String Texture              |
| Generator          | Controller             | FreeFramesGL       | GLSetVector          | 3D Model       | Kinesys Listener        | Time                        |
| Import             | AIController           | LinearSpread       | Iterator             | 3D Morph Model | Kinesys Listener        | Clock Tick                  |
| Keyboard           | Auto Select            | RadialSpread       | Light                | AI Vector Art  | Network                 | Scheduled Quit              |
| Math               | Camera                 | File IO            | MultiMatrix          | AI Vector Font | ArtNet Input            | Timeline Day Selector       |
| Midi               | Constant               | CSV File Reader    | MultiTexture Demux   | Live Audio     | ArtNet Remote Control   | UI                          |
| Motion Control     | DynamicStore           | String Present     | Render Display List  | Live Video     | ArtNet Remote Master    | Time Code Widget            |
| Network            | LFO                    | Render Merge       | Render Merge         | Media Bin      | ArtNet Server           | Video                       |
| Patch              | Latch                  | Render Target      | Render Vertex Buffer | Media Player   | ArtNet Video            | Sampler                     |
| Scripting          | Monitor                | Rotate             | Rotate               | Texture        | CITP                    | Switch                      |
| Text               | Ramp                   | Scale              | Scale                | TextureList    | Ethernet Command        | Vision                      |
| Time               | Sequence               | Texture            | Scale                | Video File     | Ethernet Receive        | Binary Pattern Read         |
| UI                 | Smooth                 | Texture Bank       | TextMode             | Keyboard       | KINET Server            | Color Tracker               |
| Video              | Switch                 | Texture Switch     | TexRotate            | Key Detect     | Patch                   | Human Tracker               |
| Vision             | Vector                 | Translate          | TexScale             | Math           | Patch Clock             | Levels Adjust               |
|                    | Vector Smooth          | Texture Bank       | TextTranslate        | Const Diff     | Patch IO                | Motion Detector             |
|                    |                        | Texture Switch     | Texture Bank         | Counter        | Patch Short Cut         | RGB To Grey                 |
|                    |                        | Translate          | Texture Switch       | Noise          | Shared Constants Input  | Raw Buff Read               |
|                    |                        | Vector Font Switch | Vector Font Switch   | Trig           | Shared Constants Output | Raw Buff Save               |
|                    |                        | Video Texture      | Video Texture        | Vector Join    | UI Lock                 | Video Average               |
|                    |                        | Window             | Window               | Vector Math    |                         | Video Blob Tracker          |
|                    |                        |                    |                      | Vector Select  |                         | Video Replay                |
|                    |                        |                    |                      | Vector Split   |                         | Video Subtract              |
|                    |                        |                    |                      |                |                         | Video Temporal Displacement |

## 11.1 Audio

### 11.1.1 Master Volume Adjust

(Licence level: Anjuna)



Attenuates the master level of the system's audio signal.

## 11.2 Capture

### 11.2.1 Active Silicon Phoenix

(Licence level: Miami)



Allows for configuration of and output from an Active Silicon Phoenix HD SDI single or dual channel video input card.

### 11.2.2 Dalsa Genie Camera

(Licence level: Anjuna)



Allows for configuration of and output from a Dalsa Genie Camera.

## 11.3 Color

### 11.3.1 HSBA

(Licence level: Bondi)



Outputs a vector containing the Hue, Saturation, Brightness and Alpha (transparency) components of a colour

### 11.3.2 Hue Rotate Matrix

(Licence level: Bondi)



Outputs a vector containing the hue component of a colour

### 11.3.3 Image Color

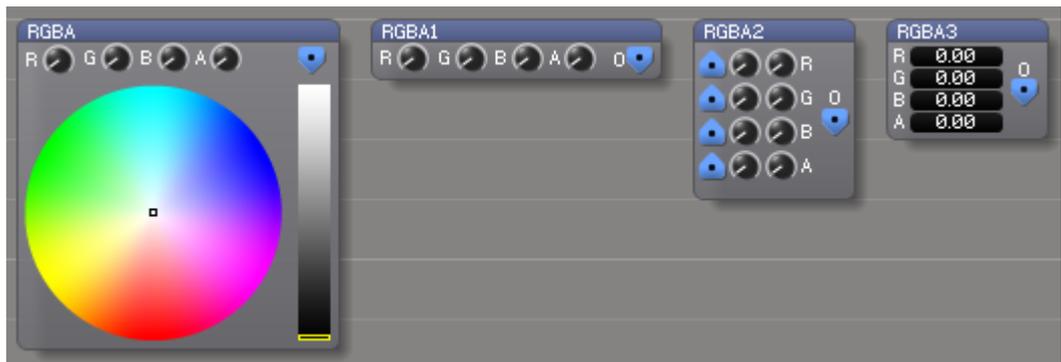
(Licence level: Miami)



Outputs a vector containing a colour value based on the chosen X and Y location within a specified image.

### 11.3.4 RGBA

(Licence level: Anjuna)

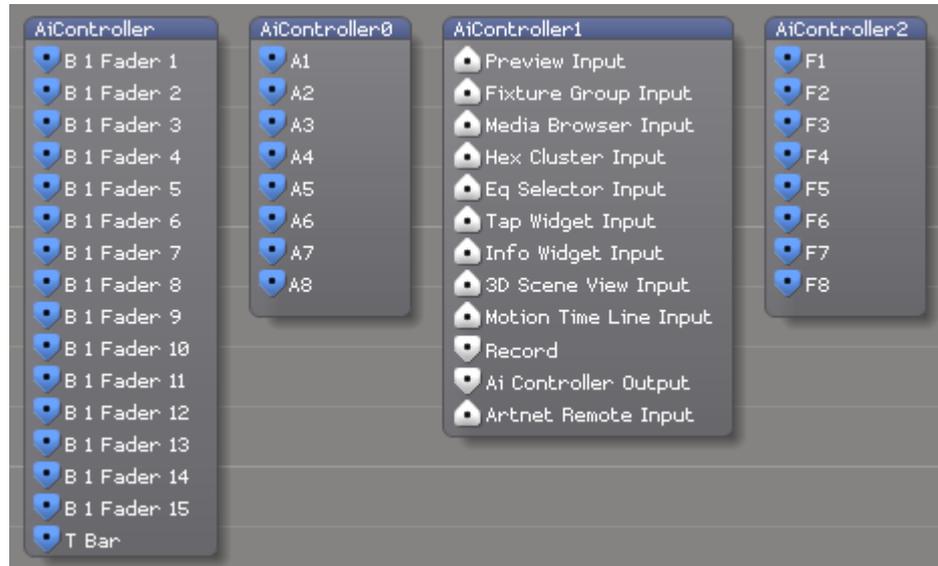


Outputs a vector containing the Red, Green, Blue, and Alpha (transparency) components of a colour

## 11.4 Controller

### 11.4.1 Ai Controller

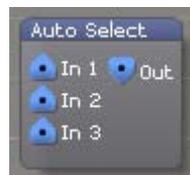
(Licence level: Anjuna)



A series of hardware specific modules for the AI range of controllers allowing for connection within the Salvation engine.

### 11.4.2 Auto Select

(Licence level: Anjuna)



Automatically chooses an input and passes it through to the output according to the last value received.

### 11.4.3 Camera

(Licence level: Miami)



Defines a 3D camera position and view using video game style WASD+mouse control (also supports keyframe storage and interpolation)

### 11.4.4 Constant

(Licence level: Anjuna)



Outputs a user defined numeric value according to the value range and control type selected. The number value is stored internally as a 64-bit floating point number.

### 11.4.5 Dynamic Store

(Licence level: Bondi)



Stores the last value received at the input and passes it through to the output. When Ai quits out and restarts, the last value is recalled.

### 11.4.6 Latch

(Licence level: Bondi)



When triggered, latches and stores the input value, always outputting the most recently latched value

### 11.4.7 LFO

(Licence level: Anjuna)



Outputs an oscillating control signal in the shape of a sin, saw, triangle, or square wave

### 11.4.8 Monitor

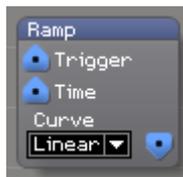
(Licence level: Anjuna)



Displays the value of the control signal received at the input.

### 11.4.9 Ramp

(Licence level: Bondi)



When triggered, outputs a linear or smooth ramp from 0.0 to 1.0 over a specified period of time.

### 11.4.10 Sequence

(Licence level: Miami)



Captures a sequence of data from the input and replays it through the output according to the specified loop, start and stop options.

### 11.4.11 Smooth

(Licence level: Bondi)



Smooths a control signal to prevent rapid changes or discontinuities

### 11.4.12 Switch

(Licence level: Anjuna)



Selects one of the control signals and passes it through to the output

### 11.4.13 Vector

(Licence level: Anjuna)



Outputs a vector containing 4 user-defined components

### 11.4.14 Vector Smooth

(Licence level: Bondi)



Smooths each component of the input vector to avoid rapid changes or discontinuities and outputs the result

## 11.5 Display

### 11.5.1 Template Generator

(Licence level: Anjuna)



Displays an alignment template at the resolution of the connected GL output.

### 11.5.2 Video Out

(Licence level: Anjuna)



Takes the video input signal and allows the user to specify its output destination. Alternate skins allow access to LED config, Live Map and also to Multiple Unit Modular LED configuration options.

## 11.6 Drawing Primitives

### 11.6.1 Binary Circle

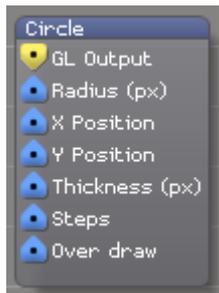
(Licence level: Miami)



Generates a binary circle for use with pattern readers based on the parameters received at the input.

### 11.6.2 Circle

(Licence level: Bondi)



Generates a circle based on control data received at the parameter inputs.

### 11.6.3 Line Generator

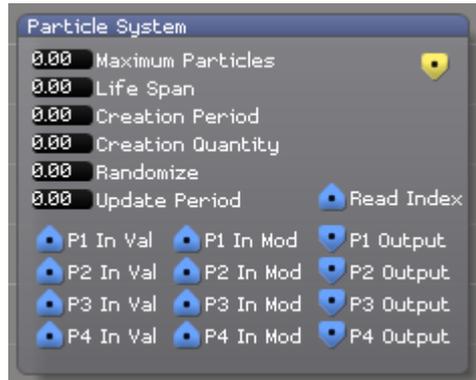
(Licence level: Bondi)



Generates horizontal or vertical lines based on user selected parameters.

### 11.6.4 Particle System

(Licence level: Miami)

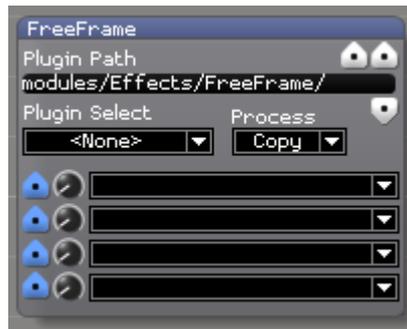


Generates control data which can be used to create a particle system.

## 11.7 Effects

### 11.7.1 FreeFrame

(Licence level: Anjuna)



Processes the input video frame using CPU powered FreeFrame effects and outputs the result as video data. Freeframe video effects should be stored in the distrib/modules/effects/freeframe folder.

### 11.7.2 FreeFrameGL

(Licence level: Anjuna)



Processes the input texture using GPU powered FreeFrameGL effects and outputs the result as GLRender data. FreeframeGL video effects should be stored in the distrib/modules/effects/freeframeGL folder.

### 11.7.3 Linear Spread

(Licence level: Bondi)



Repeats the input GL primitives along a line through 3d space.

### 11.7.4 Radial Spread

(Licence level: Bondi)



Repeats the input GL primitives around a centre point in a circular pattern in 3d space.

## 11.8 File IO

### 11.8.1 CSV File Reader

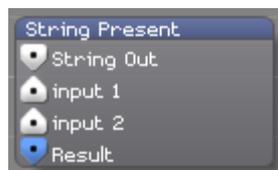
(Licence level: Miami)



Allows a comma separated value file (CSV file) to be read according to user specified column and rows and outputs the value.

### 11.8.2 String Present

(Licence level: Miami)



## 11.9 GL

### 11.9.1 BindTexture

(Licence level: Anjuna)



Binds the input video textures to the input GL render signal.

### 11.9.2 BlendMode

(Licence level: Anjuna)



Applies the specified blend modes to the input GL render signal.

### 11.9.3 Camera

(Licence level: Bondi)



Renders the input GL render from the point of view of the input camera

### 11.9.4 Clear

(Licence level: Anjuna)



Clears the GL view port and depth buffers and then renders any input primitives

### 11.9.5 Crossfade

(Licence level: Miami)



Allows cross fading between 2 input textures and outputs from the resulting GL render.

### 11.9.6 DepthTest

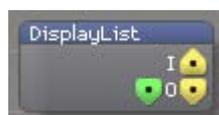
(Licence level: Miami)



Applies the specified depth testing modes to input GL primitives

### 11.9.7 DisplayList

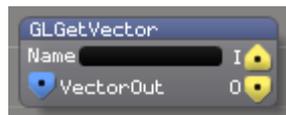
(Licence level: Miami)



Stores model geometry data on the graphics card and uses this until the data changes, thereby reducing processing time and power consumption.

### 11.9.8 GLGetVector

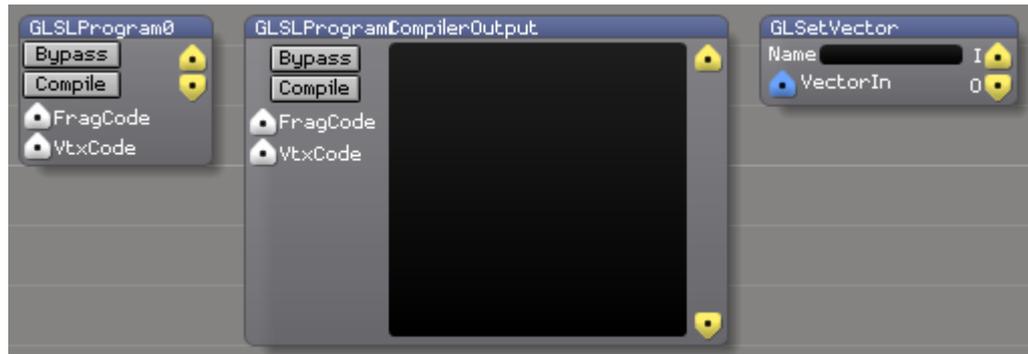
(Licence level: Miami)



Takes the vector value from the incoming GL signal's name variable.

### 11.9.9 GLSLProgram/Shader

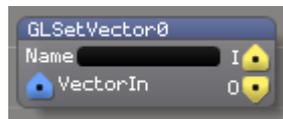
(Licence level: Anjuna)



Takes the video input, passes it through a user specified GLSL shader and outputs the resulting video signal

### 11.9.10 GLSetVector

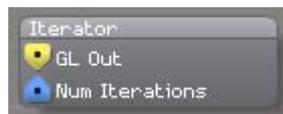
(Licence level: Miami)



Binds a vector value to the incoming GL Signal variable specified by the name.

### 11.9.11 Iterator

(Licence level: Anjuna)



A special patch into which you can insert modules which will render into the GL Output a number of iterations specified by the Num Iterations port.

### 11.9.12 Light

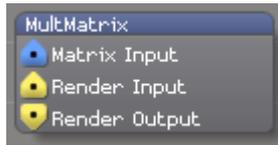
(Licence level: Miami)



Applies directional or spot lighting to the input GL primitives

### 11.9.13 MultMatrix

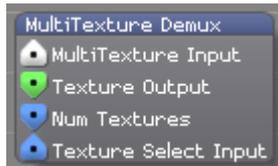
(Licence level: Miami)



Multiplies the current model view matrix with the one specified.

### 11.9.14 MultiTexture Demux

(Licence level: Miami)



Splits the incoming multi texture stream and outputs the texture specified at the Texture Select Input.

### 11.9.15 Render Display List

(Licence level: Miami)



### 11.9.16 Render Merge

(Licence level: Anjuna)



Renders each of the GL inputs in order, or renders a single specified input if the 'Select' input is connected.

### 11.9.17 Render Target

(Licence level: Miami)



Provides an off-screen frame buffer for rendering GL primitives and outputs the result as a texture. Must be merged into an active GL render path in order for processing to be performed.

### 11.9.18 Render Vertex Buffer

(Licence level: Miami)



Converts the vertex buffer input and converts it to a GL video signal.

**11.9.19 Rotate**

(Licence level: Anjuna)



Adjusts the rotation angle of the input GL primitives

**11.9.20 Scale**

(Licence level: Anjuna)



Adjusts the scale (zoom / magnification) of input GL primitives

**11.9.21 TexMode**

(Licence level: Bondi)



Configures the mipmap, bilinear, and wrap modes of the input GPU texture

**11.9.22 TexRotate**

(Licence level: Bondi)



Adjusts the rotation of the input GPU texture

**11.9.23 TexScale**

(Licence level: Bondi)



Adjusts the scale (zoom / magnification) of the input GPU texture

**11.9.24 TexTranslate**

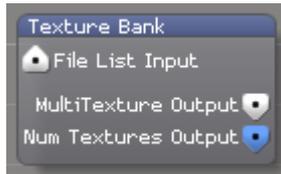
(Licence level: Bondi)



Adjusts the position of the input GPU texture in 2D texture coordinate space

### 11.9.25 Texture Bank

(Licence level: Miami)



Outputs Multitexture and control data according to the specified file list input.

### 11.9.26 Texture Switch

(Licence level: Anjuna)



Outputs the selected input texture based on the control value chosen at the select input.

### 11.9.27 Translate

(Licence level: Anjuna)



Adjusts the position of input GL primitives in 2D or 3D space .

### 11.9.28 Vector Font Switch

(Licence level: Miami)



Outputs a specified Vector font based on the control value received at the select input.

### 11.9.29 Video Texture

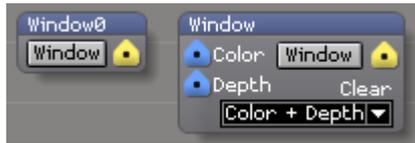
(Licence level: Anjuna)



Streams video to the GPU and outputs a GPU texture containing the current video frame.

### 11.9.30 Window

(Licence level: Anjuna)

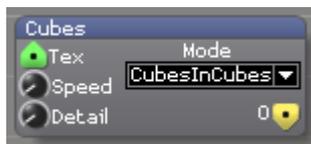


Creates and maintains a windowed, full screen, or multi-screen OpenGL display

## 11.10 Generator

### 11.10.1 Cubes

(Licence level: Bondi)



Generates wireframe cubes and spheres according to user specified parameters.

### 11.10.2 Lights Rays

(Licence level: Bondi)



Generates light rays according to the received control inputs and outputs the result to the GL stream.

### 11.10.3 Quad Mapping

(Licence level: Anjuna)



Allows for simple mapping of a video signal by adjusting the 4 corner points along the X and Y axis. This is similar to keystone correction but offers a greater amount of precision.

### 11.10.4 Rectangle

(Licence level: Anjuna)



Renders a rectangle to the GL output, using either the input texture or any texture currently applied via GL/BindTexture

### 11.10.5 Text

(Licence level: Anjuna)



Renders the input string to the GL output

### 11.10.6 Texture Warp

(Licence level: Bondi)



Deforms the texture received at the Texture input along the X and Y axis according to the frequency, amount and detail settings specified and outputs it to the GLRender stream .

### 11.10.7 Tunnel

(Licence level: Bondi)



Generates a tunnel based on user specified parameters.

### 11.10.8 Wave Pool

(Licence level: Bondi)



## 11.11 Import

### 11.11.1 3D Model

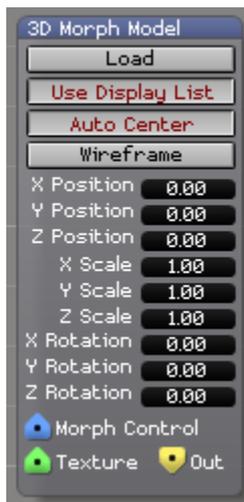
(Licence level: Anjuna)



Opens a local .3ds file and outputs the model.

### 11.11.2 3D Morph Model

(Licence level: Miami)



Interpolates between the chosen 3d models. All models must have the same number of vertices.

### 11.11.3 AI Vector Art

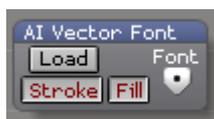
(Licence level: Bondi)



Imports an Adobe Illustrator vector art file and outputs it to the GL stream.

### 11.11.4 AI Vector Font

(Licence level: Bondi)



Imports an Adobe Illustrator vector font file and outputs it to the GL stream.

### 11.11.5 Live Video

(Licence level: Anjuna)



Outputs live video from any attached video device (cameras, capture cards, etc.)

### 11.11.6 Media Bin

(Licence level: Bondi)



Maintains a collection of videos and images. Output is determined by user selection, auto advance, or control signal.

### 11.11.7 Media Player

(Licence level: Anjuna)



Plays back a specified video file and puts it on the GPU as a texture.

### 11.11.8 Texture

(Licence level: Anjuna)



Opens a local image file and outputs a GPU texture containing the image

### 11.11.9 TextureList

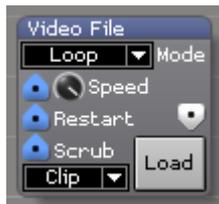
(Licence level: Anjuna)



Opens a specified local image file from a folder and outputs a GPU texture containing the image

### 11.11.10 Video File

(Licence level: Anjuna)



Outputs video from a local file

## 11.12 Keyboard

### 11.12.1 Key Detect

(Licence level: Bondi)



Detects when a user specified key is pressed and outputs the data.

## 11.13 Math

### 11.13.1 Const Diff

(Licence level: Bondi)



Detects the movement of a control value whilst the value is changing.

### 11.13.2 Counter

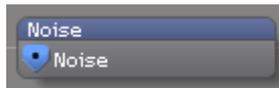
(Licence level: Bondi)



Counts and displays events received at the control input.

### 11.13.3 Noise

(Licence level: Bondi)



Outputs a random value within the specified range

### 11.13.4 Trig

(Licence level: Miami)



Outputs the cosine, sine, and tangent of the input angle.

### 11.13.5 Vector Join

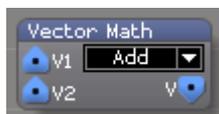
(Licence level: Anjuna)



merges the control values received at the inputs and outputs them as a vector.

### 11.13.6 Vector Math

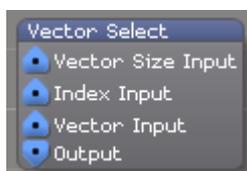
(Licence level: Anjuna)



Performs one of several common math functions on the two input vectors and outputs the result.

### 11.13.7 Vector Select

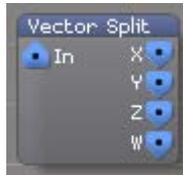
(Licence level: Anjuna)



Selects a component of a vector based on the Size and Index parameters.

### 11.13.8 Vector Split

(Licence level: Anjuna)



Examines the input vector and outputs each of the first four components individually.

## 11.14 Midi

### 11.14.1 ExtClock In

(Licence level: Anjuna)



Specifies which device to use for External Midi clock.

### 11.14.2 Midi CC In

(Licence level: Anjuna)



Outputs continuous controller ("CC") values received from an attached MIDI device

### 11.14.3 Midi CC Out

(Licence level: Bondi)



Sends continuous controller to an attached MIDI device ("CC") based on control values received at the inputs.

### 11.14.4 Midi In Device

(Licence level: Anjuna)



Specifies the Midi input device.

### 11.14.5 Midi Key In

(Licence level: Anjuna)



Specifies a Midi key input device and outputs the gate and velocity value.

### 11.14.6 Midi Key Out

(Licence level: Bondi)



Outputs gate and velocity values for to any attached MIDI device

### 11.14.7 Midi Key Range In

(Licence level: Anjuna)



Specifies a Midi key input device, its upper and lower limit and then outputs the value.

### 11.14.8 Midi Out Device

(Licence level: Anjuna)

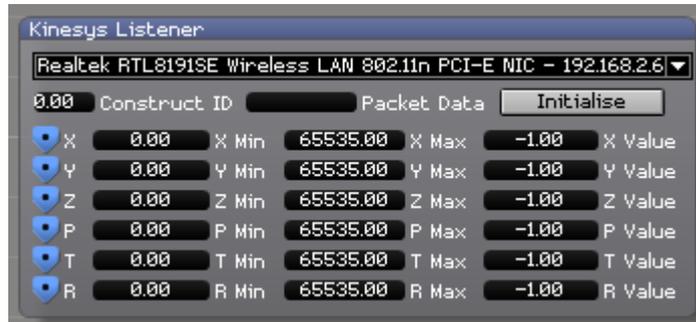


Specifies the Midi output device.

## 11.15 Motion Control

### 11.15.1 Kinesys Listener

(Licence level: Miami)



Allows for control inputs from Kinesys motion control products.

## 11.16 Network

### 11.16.1 ArtNet Input

(Licence level: Anjuna)



Receives data from a connected ArtNet device and converts it into Control Value data.

### 11.16.2 ArtNet Remote Control

(Licence level: Anjuna)



Internal system module used by AI for ArtNet communication.

### 11.16.3 ArtNet Remote Master

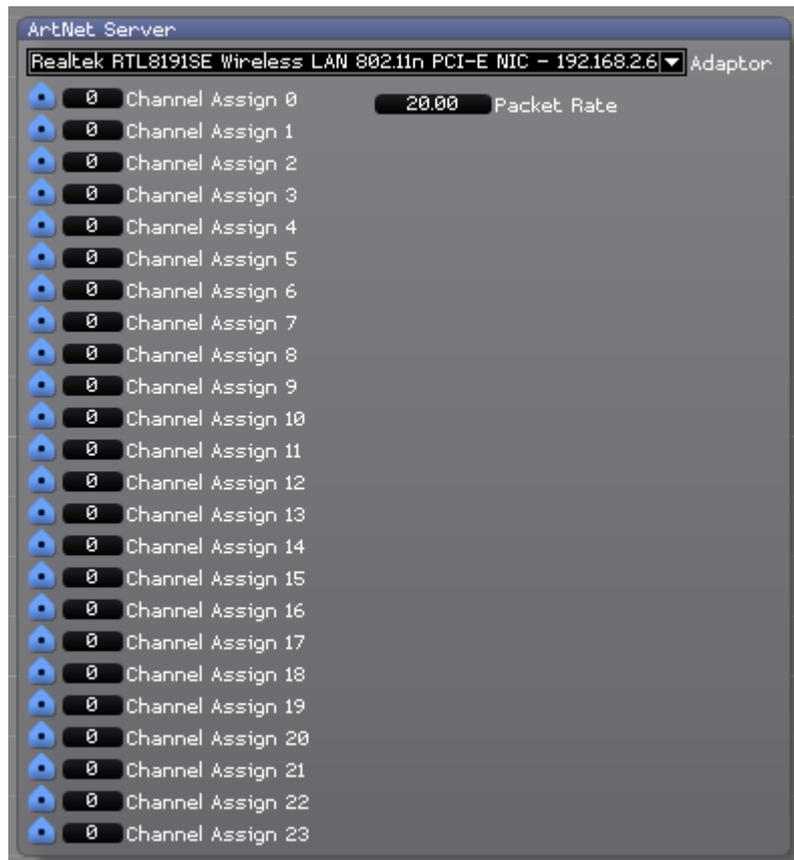
(Licence level: Anjuna)



Internal system module used by AI for ArtNet communication.

### 11.16.4 ArtNet Server

(Licence level: Anjuna)



Converts incoming control data into ArtNet data and sends it to the selected channel, universe and ArtNet adaptor.

### 11.16.5 ArtNet Video

(Licence level: Bondi)



Allows for the transmission of video to ArtNet fixtures.

### 11.16.6 CITP

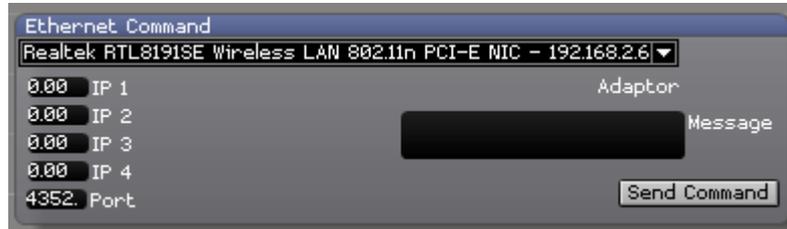
(Licence level: Anjuna)



Advanced protocol for sharing of video thumbnail information and remote control operations and functions via a lighting desk.

### 11.16.7 Ethernet Command

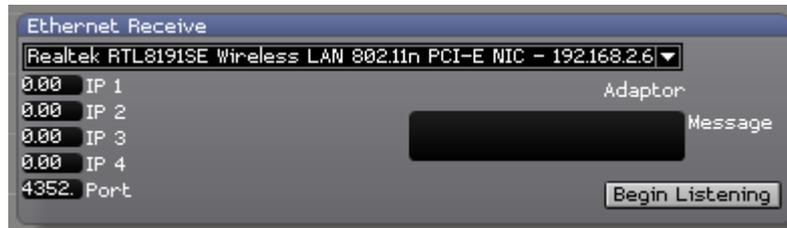
(Licence level: Bondi)



Sends commands to an external device connected via Ethernet either when loaded or when the Send Command button is pressed.

### 11.16.8 Ethernet receive

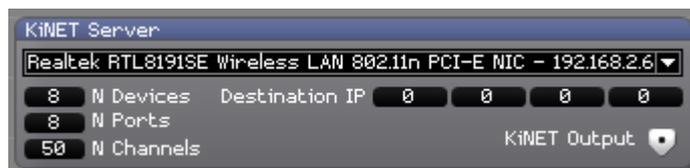
(Licence level: Bondi)



Listens for commands from an external unit connected via Ethernet either when loaded or when the Begin Listening button is pressed.

### 11.16.9 KiNET Server

(Licence level: Anjuna)



For the setup and configuration of a KiNET network.

## 11.17 Patch

### 11.17.1 Patch Clock

(Licence level: Anjuna)



Controls the time clock of a patch via tap tempo, tempo adjust, and clock restart.

### 11.17.2 Patch IO

(Licence level: Anjuna)



Allows data to be passed between patches.

### 11.17.3 Patch Short Cut

(Licence level: Anjuna)



Specifies a short cut to a window within the patch system

### 11.17.4 Shared Constants Input

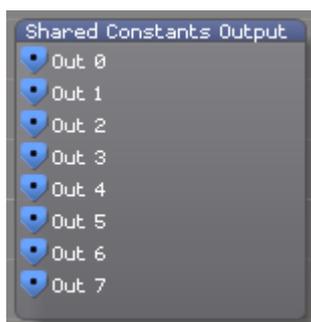
(Licence level: Bondi)



Sends control signals between patches.

### 11.17.5 Shared Constants Output

(Licence level: Bondi)



Receives control signals from other patches.

### 11.17.6 UI Lock

(Licence level: Bondi)

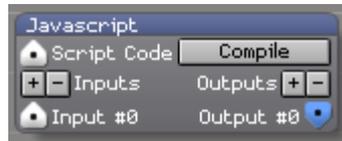


Prevents changes to the patch layout

## 11.18 Scripting

### 11.18.1 Javascript

(Licence level: Miami)

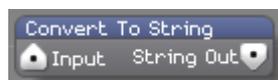


Allows for the use of Javascript within Salvation.

## 11.19 Text

### 11.19.1 Convert To String

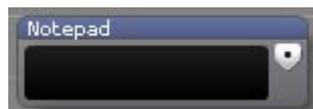
(Licence level: Bondi)



Takes the input signal and converts it to string data.

### 11.19.2 Notepad

(Licence level: Anjuna)



Outputs a string containing the text from the text field - also useful for leaving notes in a patch

### 11.19.3 String Combine

(Licence level: Anjuna)



Takes the signals received at both inputs and combines them into a single string.

### 11.19.4 String Compare

(Licence level: Bondi)



Compares the signals received at both inputs and outputs the result.

### 11.19.5 String Parser

(Licence level: Bondi)



Selects a component of the incoming string based on the value received at the Token Index input.

### 11.19.6 String Switch

(Licence level: Bondi)



Outputs one of the input strings based on the value of the 'Select' input.

### 11.19.7 String Texture

(Licence level: Bondi)



Uses the input string data to draw text with any font registered within the operating system.

### 11.19.8 Clock Tick

(Licence level: Bondi)



Outputs a clock tick based on the system clock.

### 11.19.9 Scheduled Quit

(Licence level: Bondi)



Automatically quits the AI system on the user specified hour, minute and second.

### 11.19.10 Timeline Day Scheduler

(Licence level: Miami)

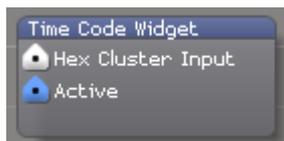


Allows for date values to be used to schedule activities.

## 11.20 UI

### 11.20.1 Time Code Widget

(Licence level: Anjuna)



Provides access to the AI timecode widget.

## 11.21 Video

### 11.21.1 Sampler

(Licence level: Miami)



Samples, stores and replays a video signal received at the input.

### 11.21.2 Switch

(Licence level: Miami)



Outputs one of the input video signals based on the value of the 'Select' input

## 11.22 Vision

### 11.22.1 Binary Pattern Read

(Licence level: Miami)



Module for interpreting data presented by Binary Patterns to the video input and outputting the resulting value as control data.

### 11.22.2 Color Tracker

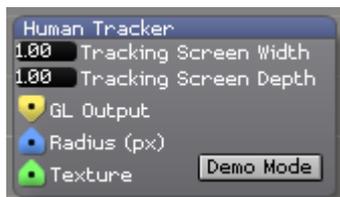
(Licence level: Miami)



Allows for tracking based on colour for the signal received at the video input and then outputs the resulting information as control data.

### 11.22.3 Human Tracker

(Licence level: Miami)



Tracks an input based on area selection and texture tracking.

### 11.22.4 Levels Adjust

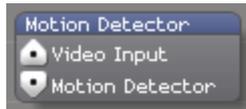
(Licence level: Miami)



Adjusts the level of the input video signal.

### 11.22.5 Motion Detector

(Licence level: Miami)



Allows for motion detection within the incoming video signal.

### 11.22.6 RGB To Grey

(Licence level: Miami)



Takes the RGB signal received at the input and converts it to greyscale.

### 11.22.7 Raw Buff Read

(Licence level: Miami)



Sends the raw buffer data.

### 11.22.8 Raw Buff Save

(Licence level: Miami)



Saves the raw buffer data.

### 11.22.9 Video Average

(Licence level: Miami)



Averages the input video signal based on the value specified at the live influence parameter.

### 11.22.10 Video Blob Tracker

(Licence level: Miami)



Allows for tracking according to user specified parameters.

### 11.22.11 Video Replay

(Licence level: Miami)



Allows for sampling and playback of a video source.

### 11.22.12 Video Subtract

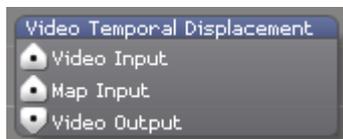
(Licence level: Miami)



Subtracts the value of one video signal from another and outputs the result.

### 11.22.13 Video Temporal Displacement

(Licence level: Miami)



Adjusts the temporal play back of the video received at the input and outputs the resulting video signal.

## 12. Artnet channel definitions

The Ai Server uses 8 universes. Each universe is used to control each fixture group in your project.

The following is a list of the channel definitions for each fixture group/universe.

**Please Note. At version 5.1 of Ai only 4 layers per fixture group are supported. There may be support for up to 12 layers in future versions of Ai, hence the 12 layers listed in the Artnet Personality.**

| DMX ADDR | FUNCTION                         | RANGE  | DEFAULT | RANGE INFO  |
|----------|----------------------------------|--------|---------|---|
| 1        | MASTER_BRIGHTNESS                | 0..255 | 255     |   |
| 2        | MASTER_LOOK_SELECT               | 0..255 | 0       |   |
| 3        | MASTER_RE-TRIGGER                | 0..255 | 0       |   |
| 4        | MASTER_RESERVED_1                | 0..255 | 0       |   |
| 5        | MASTER_RESERVED_2                | 0..255 | 0       |   |
| 6        | MASTER_RESERVED_3                | 0..255 | 0       |   |
| 7        | MASTER_RESERVED_4                | 0..255 | 0       |   |
| 8        | MASTER_RESERVED_5                | 0..255 | 0       |   |
| 9        | MASTER_RESERVED_6                | 0..255 | 0       |   |
| 10       | MASTER_RESERVED_7                | 0..255 | 0       |   |
| 11       | MASTER_RESERVED_8                | 0..255 | 0       |   |
| 12       | MASTER_VOLUME                    | 0..255 | 255     |   |
| 13       | FIXTURE_GROUP_0_BRIGHTNESS       | 0..255 | 255     |   |
| 14       | FIXTURE_GROUP_0_SPEED            | 0..255 | 255     |   |
| 15       | FIXTURE_GROUP_0_RED_MULTIPLIER   | 0..255 | 255     |   |
| 16       | FIXTURE_GROUP_0_GREEN_MULTIPLIER | 0..255 | 255     |   |
| 17       | FIXTURE_GROUP_0_BLUE_MULTIPLIER  | 0..255 | 255     |   |
| 18       | FIXTURE_GROUP_0_BLEND_MODE       | 0..7   | 0       | 0 = Alpha,<br>1 = N.A.M,<br>2 = LUMA,<br>3 = Lighten,<br>4 = Add,<br>5 = Difference,<br>6 = Wipe,<br>7 = Custom |
| 19       | FIXTURE_GROUP_0_ASPECT_RATIO     | 0..3   | 0       | 0 = Letterbox,<br>1 = Crop,<br>2 = Stretch,<br>3 = Multi  |
| 20       | FIXTURE_GROUP_0_ZOOM_HI          | 0..255 | 127     |   |
| 21       | FIXTURE_GROUP_0_ZOOM_LO          | 0..255 | 0       |   |
| 22       | FIXTURE_GROUP_0_POS_X_HI         | 0..255 | 127     |   |
| 23       | FIXTURE_GROUP_0_POS_X_LO         | 0..255 | 0       |   |

|    |                                       |        |     |   |
|----|---------------------------------------|--------|-----|---|
| 24 | FIXTURE_GROUP_0_POS_Y_HI              | 0..255 | 127 |   |
| 25 | FIXTURE_GROUP_0_POS_Y_LO              | 0..255 | 0   |   |
| 26 | FIXTURE_GROUP_0_ROTATE_HI             | 0..255 | 0   |   |
| 27 | FIXTURE_GROUP_0_ROTATE_LO             | 0..255 | 0   |   |
| 28 | FIXTURE_GROUP_0_ROTATE_VERTICAL_HI    | 0..255 | 0   |   |
| 29 | FIXTURE_GROUP_0_ROTATE_VERTICAL_LO    | 0..255 | 0   |   |
| 30 | FIXTURE_GROUP_0_ROTATE_HORIZONTAL_HI  | 0..255 | 0   |   |
| 31 | FIXTURE_GROUP_0_ROTATE_HORIZONTAL_LO  | 0..255 | 0   |   |
| 32 | FIXTURE_GROUP_0_KEystone_POINT_1_X_HI | 0..255 | 127 |   |
| 33 | FIXTURE_GROUP_0_KEystone_POINT_1_X_LO | 0..255 | 0   |   |
| 34 | FIXTURE_GROUP_0_KEystone_POINT_1_Y_HI | 0..255 | 127 |   |
| 35 | FIXTURE_GROUP_0_KEystone_POINT_1_Y_LO | 0..255 | 0   |   |
| 36 | FIXTURE_GROUP_0_KEystone_POINT_2_X_HI | 0..255 | 127 |   |
| 37 | FIXTURE_GROUP_0_KEystone_POINT_2_X_LO | 0..255 | 0   |   |
| 38 | FIXTURE_GROUP_0_KEystone_POINT_2_Y_HI | 0..255 | 127 |   |
| 39 | FIXTURE_GROUP_0_KEystone_POINT_2_Y_LO | 0..255 | 0   |   |
| 40 | FIXTURE_GROUP_0_KEystone_POINT_3_X_HI | 0..255 | 127 |   |
| 41 | FIXTURE_GROUP_0_KEystone_POINT_3_X_LO | 0..255 | 0   |   |
| 42 | FIXTURE_GROUP_0_KEystone_POINT_3_Y_HI | 0..255 | 127 |   |
| 43 | FIXTURE_GROUP_0_KEystone_POINT_3_Y_LO | 0..255 | 0   |   |
| 44 | FIXTURE_GROUP_0_KEystone_POINT_4_X_HI | 0..255 | 127 |   |
| 45 | FIXTURE_GROUP_0_KEystone_POINT_4_X_LO | 0..255 | 0   |   |
| 46 | FIXTURE_GROUP_0_KEystone_POINT_4_Y_HI | 0..255 | 127 |   |
| 47 | FIXTURE_GROUP_0_KEystone_POINT_4_Y_LO | 0..255 | 0   |   |
| 48 | FIXTURE_GROUP_0_STROBE                | 0..255 | 0   |   |
| 49 | FIXTURE_GROUP_0_MASK_SELECT           | 0..255 | 0   |   |
| 50 | FIXTURE_GROUP_0_EFFECT_SELECT         | 0..255 | 0   |   |
| 51 | FIXTURE_GROUP_0_EFFECT_PARAMETER_1    | 0..255 | 0   |   |
| 52 | FIXTURE_GROUP_0_EFFECT_PARAMETER_2    | 0..255 | 0   |   |
| 53 | FIXTURE_GROUP_0_EFFECT_PARAMETER_3    | 0..255 | 0   |   |
| 54 | FIXTURE_GROUP_0_EFFECT_PARAMETER_4    | 0..255 | 0   |   |
| 55 | FIXTURE_GROUP_0_TRANSPORT_CONTROL     | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause,<br>30..39 =<br>Reverse |
| 56 | FIXTURE_GROUP_0_CUE_ADVANCE           | 0..255 | 0   |   |
| 57 | FIXTURE_GROUP_0_CUE_ADVANCE_PERIOD_HI | 0..255 | 0   |   |
| 58 | FIXTURE_GROUP_0_CUE_ADVANCE_PERIOD_LO | 0..255 | 0   |   |
| 59 | FIXTURE_GROUP_0_RESERVED_1            | 0..255 | 0   |   |
| 60 | FIXTURE_GROUP_0_RESERVED_2            | 0..255 | 0   |   |
| 61 | FIXTURE_GROUP_0_RESERVED_3            | 0..255 | 0   |   |
| 62 | FIXTURE_GROUP_0_RESERVED_4            | 0..255 | 0   |   |
| 63 | FIXTURE_GROUP_MASK_X_POSITION         | 0..255 | 0   |   |
| 64 | FIXTURE_GROUP_MASK_Y_POSITION         | 0..255 | 0   |   |

|    |   |        |     |  |
|----|---|--------|-----|--|
| 65 | FIXTURE_GROUP_MASK_ZOOM                       | 0..255 | 0   |  |
| 66 | FIXTURE_GROUP_MASK_ROTATE                     | 0..255 | 0   | 0..0.5 index angle &<br>0.5..0.75 rotate anti clockwise,<br>0.75..1.0 rotate clockwise |
| 67 | AI_V3_FIXTURE_GROUP_LAYER_1_BRIGHTNESS        | 0..255 | 255 |  |
| 68 | AI_V3_FIXTURE_GROUP_LAYER_1_CLUSTER_SELECT    | 0..35  | 0   |  |
| 69 | AI_V3_FIXTURE_GROUP_LAYER_1_CLIP_SELECT       | 0..127 | 0   |  |
| 70 | AI_V3_FIXTURE_GROUP_LAYER_1_RED_MULTIPLIER    | 0..255 | 255 |  |
| 71 | AI_V3_FIXTURE_GROUP_LAYER_1_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 72 | AI_V3_FIXTURE_GROUP_LAYER_1_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 73 | AI_V3_FIXTURE_GROUP_LAYER_1_CONTRAST          | 0..255 | 127 |  |
| 74 | AI_V3_FIXTURE_GROUP_LAYER_1_IN_FRAME_HI       | 0..255 | 0   |  |
| 75 | AI_V3_FIXTURE_GROUP_LAYER_1_IN_FRAME_LO       | 0..255 | 0   |  |
| 76 | AI_V3_FIXTURE_GROUP_LAYER_1_OUT_FRAME_HI      | 0..255 | 255 |  |
| 77 | AI_V3_FIXTURE_GROUP_LAYER_1_OUT_FRAME_LO      | 0..255 | 255 |  |
| 78 | AI_V3_FIXTURE_GROUP_LAYER_1_SPEED             | 0..255 | 127 |  |
| 79 | AI_V3_FIXTURE_GROUP_LAYER_1_ZOOM_HI           | 0..255 | 127 |  |
| 80 | AI_V3_FIXTURE_GROUP_LAYER_1_ZOOM_LO           | 0..255 | 0   |  |
| 81 | AI_V3_FIXTURE_GROUP_LAYER_1_POS_X_HI          | 0..255 | 127 |  |
| 82 | AI_V3_FIXTURE_GROUP_LAYER_1_POS_X_LO          | 0..255 | 0   |  |
| 83 | AI_V3_FIXTURE_GROUP_LAYER_1_POS_Y_HI          | 0..255 | 127 |  |
| 84 | AI_V3_FIXTURE_GROUP_LAYER_1_POS_Y_LO          | 0..255 | 0   |  |
| 85 | AI_V3_FIXTURE_GROUP_LAYER_1_ROTATE_HI         | 0..255 | 0   |  |
| 86 | AI_V3_FIXTURE_GROUP_LAYER_1_ROTATE_LO         | 0..255 | 0   |  |
| 87 | AI_V3_FIXTURE_GROUP_LAYER_1_PLAY_MODE         | 0..3   | 0   | 0 = Loop,<br>1 = Bounce,<br>2 = One Shot,<br>3 = Continue from last frame              |
| 88 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 89 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 90 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 91 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 92 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 93 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 94 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 95 | AI_V3_FIXTURE_GROUP_LAYER_1_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 96 | AI_V3_FIXTURE_GROUP_LAYER_1_TRANSPORT_CONTROL | 0..39  | 15  | 0.9 = Stop,<br>10..19 = Play,<br>20..29 = Pause,<br>30..39 =                           |

|     |   |        |     | Reverse  |
|-----|---|--------|-----|--|
| 97  | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_1        | 0..255 | 0   |  |
| 98  | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_2        | 0..255 | 0   |  |
| 99  | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_3        | 0..255 | 0   |  |
| 100 | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_4        | 0..255 | 0   |  |
| 101 | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_5        | 0..255 | 0   |  |
| 102 | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_6        | 0..255 | 0   |  |
| 103 | AI_V3_FIXTURE_GROUP_LAYER_1_RESERVED_7        | 0..255 | 0   |  |
| 104 | AI_V3_FIXTURE_GROUP_LAYER_2_BRIGHTNESS        | 0..255 | 255 |  |
| 105 | AI_V3_FIXTURE_GROUP_LAYER_2_CLUSTER_SELECT    | 0..35  | 0   |  |
| 106 | AI_V3_FIXTURE_GROUP_LAYER_2_CLIP_SELECT       | 0..127 | 0   |  |
| 107 | AI_V3_FIXTURE_GROUP_LAYER_2_RED_MULTIPLIER    | 0..255 | 255 |  |
| 108 | AI_V3_FIXTURE_GROUP_LAYER_2_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 109 | AI_V3_FIXTURE_GROUP_LAYER_2_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 110 | AI_V3_FIXTURE_GROUP_LAYER_2_CONTRAST          | 0..255 | 127 |  |
| 111 | AI_V3_FIXTURE_GROUP_LAYER_2_IN_FRAME_HI       | 0..255 | 0   |  |
| 112 | AI_V3_FIXTURE_GROUP_LAYER_2_IN_FRAME_LO       | 0..255 | 0   |  |
| 113 | AI_V3_FIXTURE_GROUP_LAYER_2_OUT_FRAME_HI      | 0..255 | 255 |  |
| 114 | AI_V3_FIXTURE_GROUP_LAYER_2_OUT_FRAME_LO      | 0..255 | 255 |  |
| 115 | AI_V3_FIXTURE_GROUP_LAYER_2_SPEED             | 0..255 | 127 |  |
| 116 | AI_V3_FIXTURE_GROUP_LAYER_2_ZOOM_HI           | 0..255 | 127 |  |
| 117 | AI_V3_FIXTURE_GROUP_LAYER_2_ZOOM_LO           | 0..255 | 0   |  |
| 118 | AI_V3_FIXTURE_GROUP_LAYER_2_POS_X_HI          | 0..255 | 127 |  |
| 119 | AI_V3_FIXTURE_GROUP_LAYER_2_POS_X_LO          | 0..255 | 0   |  |
| 120 | AI_V3_FIXTURE_GROUP_LAYER_2_POS_Y_HI          | 0..255 | 127 |  |
| 121 | AI_V3_FIXTURE_GROUP_LAYER_2_POS_Y_LO          | 0..255 | 0   |  |
| 122 | AI_V3_FIXTURE_GROUP_LAYER_2_ROTATE_HI         | 0..255 | 0   |  |
| 123 | AI_V3_FIXTURE_GROUP_LAYER_2_ROTATE_LO         | 0..255 | 0   |  |
| 124 | AI_V3_FIXTURE_GROUP_LAYER_2_PLAY_MODE         | 0..3   | 0   | 0 = Loop,<br>1 = Bounce,<br>2 = One Shot,<br>3 = Continue<br>from last frame |
| 125 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 126 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 127 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 128 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 129 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 130 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 131 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 132 | AI_V3_FIXTURE_GROUP_LAYER_2_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 133 | AI_V3_FIXTURE_GROUP_LAYER_2_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =                                   |

Pause,  
30..39 =  
Reverse

|     |  |        |     |  |
|-----|--|--------|-----|--|
| 134 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_1       | 0..255 | 0   |  |
| 135 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_2       | 0..255 | 0   |  |
| 136 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_3       | 0..255 | 0   |  |
| 137 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_4       | 0..255 | 0   |  |
| 138 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_5       | 0..255 | 0   |  |
| 139 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_6       | 0..255 | 0   |  |
| 140 | AI_V3_FIXTURE_GROUP_LAYER_2_RESERVED_7       | 0..255 | 0   |  |
| 141 | AI_V3_FIXTURE_GROUP_LAYER_3_BRIGHTNESS       | 0..255 | 255 |  |
| 142 | AI_V3_FIXTURE_GROUP_LAYER_3_CLUSTER_SELECT   | 0..35  | 0   |  |
| 143 | AI_V3_FIXTURE_GROUP_LAYER_3_CLIP_SELECT      | 0..127 | 0   |  |
| 144 | AI_V3_FIXTURE_GROUP_LAYER_3_RED_MULTIPLIER   | 0..255 | 255 |  |
| 145 | AI_V3_FIXTURE_GROUP_LAYER_3_GREEN_MULTIPLIER | 0..255 | 255 |  |
| 146 | AI_V3_FIXTURE_GROUP_LAYER_3_BLUE_MULTIPLIER  | 0..255 | 255 |  |
| 147 | AI_V3_FIXTURE_GROUP_LAYER_3_CONTRAST         | 0..255 | 127 |  |
| 148 | AI_V3_FIXTURE_GROUP_LAYER_3_IN_FRAME_HI      | 0..255 | 0   |  |
| 149 | AI_V3_FIXTURE_GROUP_LAYER_3_IN_FRAME_LO      | 0..255 | 0   |  |
| 150 | AI_V3_FIXTURE_GROUP_LAYER_3_OUT_FRAME_HI     | 0..255 | 255 |  |
| 151 | AI_V3_FIXTURE_GROUP_LAYER_3_OUT_FRAME_LO     | 0..255 | 255 |  |
| 152 | AI_V3_FIXTURE_GROUP_LAYER_3_SPEED            | 0..255 | 127 |  |
| 153 | AI_V3_FIXTURE_GROUP_LAYER_3_ZOOM_HI          | 0..255 | 127 |  |
| 154 | AI_V3_FIXTURE_GROUP_LAYER_3_ZOOM_LO          | 0..255 | 0   |  |
| 155 | AI_V3_FIXTURE_GROUP_LAYER_3_POS_X_HI         | 0..255 | 127 |  |
| 156 | AI_V3_FIXTURE_GROUP_LAYER_3_POS_X_LO         | 0..255 | 0   |  |
| 157 | AI_V3_FIXTURE_GROUP_LAYER_3_POS_Y_HI         | 0..255 | 127 |  |
| 158 | AI_V3_FIXTURE_GROUP_LAYER_3_POS_Y_LO         | 0..255 | 0   |  |
| 159 | AI_V3_FIXTURE_GROUP_LAYER_3_ROTATE_HI        | 0..255 | 0   |  |
| 160 | AI_V3_FIXTURE_GROUP_LAYER_3_ROTATE_LO        | 0..255 | 0   |  |
| 161 | AI_V3_FIXTURE_GROUP_LAYER_3_PLAY_MODE        | 0..3   | 0   | 0 = Loop,<br>1 = Bounce,<br>2 = One Shot,<br>3 = Continue<br>from last frame |
| 162 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_X_LEFT_HI   | 0..255 | 0   |  |
| 163 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_X_LEFT_LO   | 0..255 | 0   |  |
| 164 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_X_RIGHT_HI  | 0..255 | 255 |  |
| 165 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_X_RIGHT_LO  | 0..255 | 255 |  |
| 166 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_Y_TOP_HI    | 0..255 | 255 |  |
| 167 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_Y_TOP_LO    | 0..255 | 255 |  |
| 168 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_Y_BOTTOM_HI | 0..255 | 0   |  |
| 169 | AI_V3_FIXTURE_GROUP_LAYER_3_CROP_Y_BOTTOM_LO | 0..255 | 0   |  |
| 170 | AI_V3_FIXTURE_GROUP_LAYER_3_TRANSPORT_CON    | 0..39  | 15  | 0..9 = Stop,   |

| TROL |  |        |     | 10..19 = Play,<br>20..29 =<br>Pause,<br>30..39 =<br>Reverse                  |
|------|--|--------|-----|--|
| 171  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_1       | 0..255 | 0   |  |
| 172  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_2       | 0..255 | 0   |  |
| 173  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_3       | 0..255 | 0   |  |
| 174  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_4       | 0..255 | 0   |  |
| 175  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_5       | 0..255 | 0   |  |
| 176  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_6       | 0..255 | 0   |  |
| 177  | AI_V3_FIXTURE_GROUP_LAYER_3_RESERVED_7       | 0..255 | 0   |  |
| 178  | AI_V3_FIXTURE_GROUP_LAYER_4_BRIGHTNESS       | 0..255 | 255 |  |
| 179  | AI_V3_FIXTURE_GROUP_LAYER_4_CLUSTER_SELECT   | 0..35  | 0   |  |
| 180  | AI_V3_FIXTURE_GROUP_LAYER_4_CLIP_SELECT      | 0..127 | 0   |  |
| 181  | AI_V3_FIXTURE_GROUP_LAYER_4_RED_MULTIPLIER   | 0..255 | 255 |  |
| 182  | AI_V3_FIXTURE_GROUP_LAYER_4_GREEN_MULTIPLIER | 0..255 | 255 |  |
| 183  | AI_V3_FIXTURE_GROUP_LAYER_4_BLUE_MULTIPLIER  | 0..255 | 255 |  |
| 184  | AI_V3_FIXTURE_GROUP_LAYER_4_CONTRAST         | 0..255 | 127 |  |
| 185  | AI_V3_FIXTURE_GROUP_LAYER_4_IN_FRAME_HI      | 0..255 | 0   |  |
| 186  | AI_V3_FIXTURE_GROUP_LAYER_4_IN_FRAME_LO      | 0..255 | 0   |  |
| 187  | AI_V3_FIXTURE_GROUP_LAYER_4_OUT_FRAME_HI     | 0..255 | 255 |  |
| 188  | AI_V3_FIXTURE_GROUP_LAYER_4_OUT_FRAME_LO     | 0..255 | 255 |  |
| 189  | AI_V3_FIXTURE_GROUP_LAYER_4_SPEED            | 0..255 | 127 |  |
| 190  | AI_V3_FIXTURE_GROUP_LAYER_4_ZOOM_HI          | 0..255 | 127 |  |
| 191  | AI_V3_FIXTURE_GROUP_LAYER_4_ZOOM_LO          | 0..255 | 0   |  |
| 192  | AI_V3_FIXTURE_GROUP_LAYER_4_POS_X_HI         | 0..255 | 127 |  |
| 193  | AI_V3_FIXTURE_GROUP_LAYER_4_POS_X_LO         | 0..255 | 0   |  |
| 194  | AI_V3_FIXTURE_GROUP_LAYER_4_POS_Y_HI         | 0..255 | 127 |  |
| 195  | AI_V3_FIXTURE_GROUP_LAYER_4_POS_Y_LO         | 0..255 | 0   |  |
| 196  | AI_V3_FIXTURE_GROUP_LAYER_4_ROTATE_HI        | 0..255 | 0   |  |
| 197  | AI_V3_FIXTURE_GROUP_LAYER_4_ROTATE_LO        | 0..255 | 0   |  |
| 198  | AI_V3_FIXTURE_GROUP_LAYER_4_PLAY_MODE        | 0..3   | 0   | 0 = Loop,<br>1 = Bounce,<br>2 = One Shot,<br>3 = Continue<br>from last frame |
| 199  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_X_LEFT_HI   | 0..255 | 0   |  |
| 200  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_X_LEFT_LO   | 0..255 | 0   |  |
| 201  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_X_RIGHT_HI  | 0..255 | 255 |  |
| 202  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_X_RIGHT_LO  | 0..255 | 255 |  |
| 203  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_Y_TOP_HI    | 0..255 | 255 |  |
| 204  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_Y_TOP_LO    | 0..255 | 255 |  |
| 205  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_Y_BOTTOM_HI | 0..255 | 0   |  |
| 206  | AI_V3_FIXTURE_GROUP_LAYER_4_CROP_Y_BOTTOM_LO | 0..255 | 0   |  |

| _LO |   |        |     |  |
|-----|---|--------|-----|--|
| 207 | AI_V3_FIXTURE_GROUP_LAYER_4_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause,<br>30..39 =<br>Reverse  |
| 208 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_1        | 0..255 | 0   |  |
| 209 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_2        | 0..255 | 0   |  |
| 210 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_3        | 0..255 | 0   |  |
| 211 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_4        | 0..255 | 0   |  |
| 212 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_5        | 0..255 | 0   |  |
| 213 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_6        | 0..255 | 0   |  |
| 214 | AI_V3_FIXTURE_GROUP_LAYER_4_RESERVED_7        | 0..255 | 0   |  |
| 215 | AI_V3_FIXTURE_GROUP_LAYER_5_BRIGHTNESS        | 0..255 | 255 |  |
| 216 | AI_V3_FIXTURE_GROUP_LAYER_5_CLUSTER_SELECT    | 0..35  | 0   |  |
| 217 | AI_V3_FIXTURE_GROUP_LAYER_5_CLIP_SELECT       | 0..127 | 0   |  |
| 218 | AI_V3_FIXTURE_GROUP_LAYER_5_RED_MULTIPLIER    | 0..255 | 255 |  |
| 219 | AI_V3_FIXTURE_GROUP_LAYER_5_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 220 | AI_V3_FIXTURE_GROUP_LAYER_5_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 221 | AI_V3_FIXTURE_GROUP_LAYER_5_CONTRAST          | 0..255 | 127 |  |
| 222 | AI_V3_FIXTURE_GROUP_LAYER_5_IN_FRAME_HI       | 0..255 | 0   |  |
| 223 | AI_V3_FIXTURE_GROUP_LAYER_5_IN_FRAME_LO       | 0..255 | 0   |  |
| 224 | AI_V3_FIXTURE_GROUP_LAYER_5_OUT_FRAME_HI      | 0..255 | 255 |  |
| 225 | AI_V3_FIXTURE_GROUP_LAYER_5_OUT_FRAME_LO      | 0..255 | 255 |  |
| 226 | AI_V3_FIXTURE_GROUP_LAYER_5_SPEED             | 0..255 | 127 |  |
| 227 | AI_V3_FIXTURE_GROUP_LAYER_5_ZOOM_HI           | 0..255 | 127 |  |
| 228 | AI_V3_FIXTURE_GROUP_LAYER_5_ZOOM_LO           | 0..255 | 0   |  |
| 229 | AI_V3_FIXTURE_GROUP_LAYER_5_POS_X_HI          | 0..255 | 127 |  |
| 230 | AI_V3_FIXTURE_GROUP_LAYER_5_POS_X_LO          | 0..255 | 0   |  |
| 231 | AI_V3_FIXTURE_GROUP_LAYER_5_POS_Y_HI          | 0..255 | 127 |  |
| 232 | AI_V3_FIXTURE_GROUP_LAYER_5_POS_Y_LO          | 0..255 | 0   |  |
| 233 | AI_V3_FIXTURE_GROUP_LAYER_5_ROTATE_HI         | 0..255 | 0   |  |
| 234 | AI_V3_FIXTURE_GROUP_LAYER_5_ROTATE_LO         | 0..255 | 0   |  |
| 235 | AI_V3_FIXTURE_GROUP_LAYER_5_PLAY_MODE         | 0..3   | 0   | 0 = Loop,<br>1 = Bounce,<br>2 = One Shot,<br>3 = Continue<br>from last frame |
| 236 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 237 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 238 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 239 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 240 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 241 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 242 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_Y_BOTTOM     | 0..255 | 0   |  |

| _HI |   |        |     |  |
|-----|---|--------|-----|--|
| 243 | AI_V3_FIXTURE_GROUP_LAYER_5_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 244 | AI_V3_FIXTURE_GROUP_LAYER_5_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause,<br>30..39 =<br>Reverse  |
| 245 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_1        | 0..255 | 0   |  |
| 246 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_2        | 0..255 | 0   |  |
| 247 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_3        | 0..255 | 0   |  |
| 248 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_4        | 0..255 | 0   |  |
| 249 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_5        | 0..255 | 0   |  |
| 250 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_6        | 0..255 | 0   |  |
| 251 | AI_V3_FIXTURE_GROUP_LAYER_5_RESERVED_7        | 0..255 | 0   |  |
| 252 | AI_V3_FIXTURE_GROUP_LAYER_6_BRIGHTNESS        | 0..255 | 255 |  |
| 253 | AI_V3_FIXTURE_GROUP_LAYER_6_CLUSTER_SELECT    | 0..35  | 0   |  |
| 254 | AI_V3_FIXTURE_GROUP_LAYER_6_CLIP_SELECT       | 0..127 | 0   |  |
| 255 | AI_V3_FIXTURE_GROUP_LAYER_6_RED_MULTIPLIER    | 0..255 | 255 |  |
| 256 | AI_V3_FIXTURE_GROUP_LAYER_6_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 257 | AI_V3_FIXTURE_GROUP_LAYER_6_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 258 | AI_V3_FIXTURE_GROUP_LAYER_6_CONTRAST          | 0..255 | 127 |  |
| 259 | AI_V3_FIXTURE_GROUP_LAYER_6_IN_FRAME_HI       | 0..255 | 0   |  |
| 260 | AI_V3_FIXTURE_GROUP_LAYER_6_IN_FRAME_LO       | 0..255 | 0   |  |
| 261 | AI_V3_FIXTURE_GROUP_LAYER_6_OUT_FRAME_HI      | 0..255 | 255 |  |
| 262 | AI_V3_FIXTURE_GROUP_LAYER_6_OUT_FRAME_LO      | 0..255 | 255 |  |
| 263 | AI_V3_FIXTURE_GROUP_LAYER_6_SPEED             | 0..255 | 127 |  |
| 264 | AI_V3_FIXTURE_GROUP_LAYER_6_ZOOM_HI           | 0..255 | 127 |  |
| 265 | AI_V3_FIXTURE_GROUP_LAYER_6_ZOOM_LO           | 0..255 | 0   |  |
| 266 | AI_V3_FIXTURE_GROUP_LAYER_6_POS_X_HI          | 0..255 | 127 |  |
| 267 | AI_V3_FIXTURE_GROUP_LAYER_6_POS_X_LO          | 0..255 | 0   |  |
| 268 | AI_V3_FIXTURE_GROUP_LAYER_6_POS_Y_HI          | 0..255 | 127 |  |
| 269 | AI_V3_FIXTURE_GROUP_LAYER_6_POS_Y_LO          | 0..255 | 0   |  |
| 270 | AI_V3_FIXTURE_GROUP_LAYER_6_ROTATE_HI         | 0..255 | 0   |  |
| 271 | AI_V3_FIXTURE_GROUP_LAYER_6_ROTATE_LO         | 0..255 | 0   |  |
| 272 | AI_V3_FIXTURE_GROUP_LAYER_6_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =<br>Continue from<br>last frame |
| 273 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 274 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 275 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 276 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 277 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_Y_TOP_HI     | 0..255 | 255 |  |

|     |   |        |     |  |
|-----|---|--------|-----|--|
| 278 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 279 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 280 | AI_V3_FIXTURE_GROUP_LAYER_6_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 281 | AI_V3_FIXTURE_GROUP_LAYER_6_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse     |
| 282 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_1        | 0..255 | 0   |  |
| 283 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_2        | 0..255 | 0   |  |
| 284 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_3        | 0..255 | 0   |  |
| 285 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_4        | 0..255 | 0   |  |
| 286 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_5        | 0..255 | 0   |  |
| 287 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_6        | 0..255 | 0   |  |
| 288 | AI_V3_FIXTURE_GROUP_LAYER_6_RESERVED_7        | 0..255 | 0   |  |
| 289 | AI_V3_FIXTURE_GROUP_LAYER_7_BRIGHTNESS        | 0..255 | 255 |  |
| 290 | AI_V3_FIXTURE_GROUP_LAYER_7_CLUSTER_SELECT    | 0..35  | 0   |  |
| 291 | AI_V3_FIXTURE_GROUP_LAYER_7_CLIP_SELECT       | 0..127 | 0   |  |
| 292 | AI_V3_FIXTURE_GROUP_LAYER_7_RED_MULTIPLIER    | 0..255 | 255 |  |
| 293 | AI_V3_FIXTURE_GROUP_LAYER_7_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 294 | AI_V3_FIXTURE_GROUP_LAYER_7_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 295 | AI_V3_FIXTURE_GROUP_LAYER_7_CONTRAST          | 0..255 | 127 |  |
| 296 | AI_V3_FIXTURE_GROUP_LAYER_7_IN_FRAME_HI       | 0..255 | 0   |  |
| 297 | AI_V3_FIXTURE_GROUP_LAYER_7_IN_FRAME_LO       | 0..255 | 0   |  |
| 298 | AI_V3_FIXTURE_GROUP_LAYER_7_OUT_FRAME_HI      | 0..255 | 255 |  |
| 299 | AI_V3_FIXTURE_GROUP_LAYER_7_OUT_FRAME_LO      | 0..255 | 255 |  |
| 300 | AI_V3_FIXTURE_GROUP_LAYER_7_SPEED             | 0..255 | 127 |  |
| 301 | AI_V3_FIXTURE_GROUP_LAYER_7_ZOOM_HI           | 0..255 | 127 |  |
| 302 | AI_V3_FIXTURE_GROUP_LAYER_7_ZOOM_LO           | 0..255 | 0   |  |
| 303 | AI_V3_FIXTURE_GROUP_LAYER_7_POS_X_HI          | 0..255 | 127 |  |
| 304 | AI_V3_FIXTURE_GROUP_LAYER_7_POS_X_LO          | 0..255 | 0   |  |
| 305 | AI_V3_FIXTURE_GROUP_LAYER_7_POS_Y_HI          | 0..255 | 127 |  |
| 306 | AI_V3_FIXTURE_GROUP_LAYER_7_POS_Y_LO          | 0..255 | 0   |  |
| 307 | AI_V3_FIXTURE_GROUP_LAYER_7_ROTATE_HI         | 0..255 | 0   |  |
| 308 | AI_V3_FIXTURE_GROUP_LAYER_7_ROTATE_LO         | 0..255 | 0   |  |
| 309 | AI_V3_FIXTURE_GROUP_LAYER_7_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =<br>Continue from<br>last frame |
| 310 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 311 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 312 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 313 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_X_RIGHT_LO   | 0..255 | 255 |  |

|     |   |        |     |  |
|-----|---|--------|-----|--|
| 314 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 315 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 316 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 317 | AI_V3_FIXTURE_GROUP_LAYER_7_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 318 | AI_V3_FIXTURE_GROUP_LAYER_7_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse     |
| 319 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_1        | 0..255 | 0   |  |
| 320 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_2        | 0..255 | 0   |  |
| 321 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_3        | 0..255 | 0   |  |
| 322 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_4        | 0..255 | 0   |  |
| 323 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_5        | 0..255 | 0   |  |
| 324 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_6        | 0..255 | 0   |  |
| 325 | AI_V3_FIXTURE_GROUP_LAYER_7_RESERVED_7        | 0..255 | 0   |  |
| 326 | AI_V3_FIXTURE_GROUP_LAYER_8_BRIGHTNESS        | 0..255 | 255 |  |
| 327 | AI_V3_FIXTURE_GROUP_LAYER_8_CLUSTER_SELECT    | 0..35  | 0   |  |
| 328 | AI_V3_FIXTURE_GROUP_LAYER_8_CLIP_SELECT       | 0..127 | 0   |  |
| 329 | AI_V3_FIXTURE_GROUP_LAYER_8_RED_MULTIPLIER    | 0..255 | 255 |  |
| 330 | AI_V3_FIXTURE_GROUP_LAYER_8_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 331 | AI_V3_FIXTURE_GROUP_LAYER_8_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 332 | AI_V3_FIXTURE_GROUP_LAYER_8_CONTRAST          | 0..255 | 127 |  |
| 333 | AI_V3_FIXTURE_GROUP_LAYER_8_IN_FRAME_HI       | 0..255 | 0   |  |
| 334 | AI_V3_FIXTURE_GROUP_LAYER_8_IN_FRAME_LO       | 0..255 | 0   |  |
| 335 | AI_V3_FIXTURE_GROUP_LAYER_8_OUT_FRAME_HI      | 0..255 | 255 |  |
| 336 | AI_V3_FIXTURE_GROUP_LAYER_8_OUT_FRAME_LO      | 0..255 | 255 |  |
| 337 | AI_V3_FIXTURE_GROUP_LAYER_8_SPEED             | 0..255 | 127 |  |
| 338 | AI_V3_FIXTURE_GROUP_LAYER_8_ZOOM_HI           | 0..255 | 127 |  |
| 339 | AI_V3_FIXTURE_GROUP_LAYER_8_ZOOM_LO           | 0..255 | 0   |  |
| 340 | AI_V3_FIXTURE_GROUP_LAYER_8_POS_X_HI          | 0..255 | 127 |  |
| 341 | AI_V3_FIXTURE_GROUP_LAYER_8_POS_X_LO          | 0..255 | 0   |  |
| 342 | AI_V3_FIXTURE_GROUP_LAYER_8_POS_Y_HI          | 0..255 | 127 |  |
| 343 | AI_V3_FIXTURE_GROUP_LAYER_8_POS_Y_LO          | 0..255 | 0   |  |
| 344 | AI_V3_FIXTURE_GROUP_LAYER_8_ROTATE_HI         | 0..255 | 0   |  |
| 345 | AI_V3_FIXTURE_GROUP_LAYER_8_ROTATE_LO         | 0..255 | 0   |  |
| 346 | AI_V3_FIXTURE_GROUP_LAYER_8_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =<br>Continue from<br>last frame |
| 347 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 348 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 349 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 350 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_X_RIGHT_LO   | 0..255 | 255 |  |

| O   |   |        |     |  |
|-----|---|--------|-----|--|
| 351 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 352 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 353 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 354 | AI_V3_FIXTURE_GROUP_LAYER_8_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 355 | AI_V3_FIXTURE_GROUP_LAYER_8_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse     |
| 356 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_1        | 0..255 | 0   |  |
| 357 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_2        | 0..255 | 0   |  |
| 358 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_3        | 0..255 | 0   |  |
| 359 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_4        | 0..255 | 0   |  |
| 360 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_5        | 0..255 | 0   |  |
| 361 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_6        | 0..255 | 0   |  |
| 362 | AI_V3_FIXTURE_GROUP_LAYER_8_RESERVED_7        | 0..255 | 0   |  |
| 363 | AI_V3_FIXTURE_GROUP_LAYER_9_BRIGHTNESS        | 0..255 | 255 |  |
| 364 | AI_V3_FIXTURE_GROUP_LAYER_9_CLUSTER_SELECT    | 0..35  | 0   |  |
| 365 | AI_V3_FIXTURE_GROUP_LAYER_9_CLIP_SELECT       | 0..127 | 0   |  |
| 366 | AI_V3_FIXTURE_GROUP_LAYER_9_RED_MULTIPLIER    | 0..255 | 255 |  |
| 367 | AI_V3_FIXTURE_GROUP_LAYER_9_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 368 | AI_V3_FIXTURE_GROUP_LAYER_9_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 369 | AI_V3_FIXTURE_GROUP_LAYER_9_CONTRAST          | 0..255 | 127 |  |
| 370 | AI_V3_FIXTURE_GROUP_LAYER_9_IN_FRAME_HI       | 0..255 | 0   |  |
| 371 | AI_V3_FIXTURE_GROUP_LAYER_9_IN_FRAME_LO       | 0..255 | 0   |  |
| 372 | AI_V3_FIXTURE_GROUP_LAYER_9_OUT_FRAME_HI      | 0..255 | 255 |  |
| 373 | AI_V3_FIXTURE_GROUP_LAYER_9_OUT_FRAME_LO      | 0..255 | 255 |  |
| 374 | AI_V3_FIXTURE_GROUP_LAYER_9_SPEED             | 0..255 | 127 |  |
| 375 | AI_V3_FIXTURE_GROUP_LAYER_9_ZOOM_HI           | 0..255 | 127 |  |
| 376 | AI_V3_FIXTURE_GROUP_LAYER_9_ZOOM_LO           | 0..255 | 0   |  |
| 377 | AI_V3_FIXTURE_GROUP_LAYER_9_POS_X_HI          | 0..255 | 127 |  |
| 378 | AI_V3_FIXTURE_GROUP_LAYER_9_POS_X_LO          | 0..255 | 0   |  |
| 379 | AI_V3_FIXTURE_GROUP_LAYER_9_POS_Y_HI          | 0..255 | 127 |  |
| 380 | AI_V3_FIXTURE_GROUP_LAYER_9_POS_Y_LO          | 0..255 | 0   |  |
| 381 | AI_V3_FIXTURE_GROUP_LAYER_9_ROTATE_HI         | 0..255 | 0   |  |
| 382 | AI_V3_FIXTURE_GROUP_LAYER_9_ROTATE_LO         | 0..255 | 0   |  |
| 383 | AI_V3_FIXTURE_GROUP_LAYER_9_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =<br>Continue from<br>last frame |
| 384 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 385 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 386 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_X_RIGHT_HI   | 0..255 | 255 |  |

|     |   |        |     |  |
|-----|---|--------|-----|--|
| 387 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 388 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 389 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 390 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 391 | AI_V3_FIXTURE_GROUP_LAYER_9_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 392 | AI_V3_FIXTURE_GROUP_LAYER_9_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse     |
| 393 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_1        | 0..255 | 0   |  |
| 394 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_2        | 0..255 | 0   |  |
| 395 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_3        | 0..255 | 0   |  |
| 396 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_4        | 0..255 | 0   |  |
| 397 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_5        | 0..255 | 0   |  |
| 398 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_6        | 0..255 | 0   |  |
| 399 | AI_V3_FIXTURE_GROUP_LAYER_9_RESERVED_7        | 0..255 | 0   |  |
| 400 | AI_V3_FIXTURE_GROUP_LAYER_10_BRIGHTNESS       | 0..255 | 255 |  |
| 401 | AI_V3_FIXTURE_GROUP_LAYER_10_CLUSTER_SELECT   | 0..35  | 0   |  |
| 402 | AI_V3_FIXTURE_GROUP_LAYER_10_CLIP_SELECT      | 0..127 | 0   |  |
| 403 | AI_V3_FIXTURE_GROUP_LAYER_10_RED_MULTIPLIER   | 0..255 | 255 |  |
| 404 | AI_V3_FIXTURE_GROUP_LAYER_10_GREEN_MULTIPLIER | 0..255 | 255 |  |
| 405 | AI_V3_FIXTURE_GROUP_LAYER_10_BLUE_MULTIPLIER  | 0..255 | 255 |  |
| 406 | AI_V3_FIXTURE_GROUP_LAYER_10_CONTRAST         | 0..255 | 127 |  |
| 407 | AI_V3_FIXTURE_GROUP_LAYER_10_IN_FRAME_HI      | 0..255 | 0   |  |
| 408 | AI_V3_FIXTURE_GROUP_LAYER_10_IN_FRAME_LO      | 0..255 | 0   |  |
| 409 | AI_V3_FIXTURE_GROUP_LAYER_10_OUT_FRAME_HI     | 0..255 | 255 |  |
| 410 | AI_V3_FIXTURE_GROUP_LAYER_10_OUT_FRAME_LO     | 0..255 | 255 |  |
| 411 | AI_V3_FIXTURE_GROUP_LAYER_10_SPEED            | 0..255 | 127 |  |
| 412 | AI_V3_FIXTURE_GROUP_LAYER_10_ZOOM_HI          | 0..255 | 127 |  |
| 413 | AI_V3_FIXTURE_GROUP_LAYER_10_ZOOM_LO          | 0..255 | 0   |  |
| 414 | AI_V3_FIXTURE_GROUP_LAYER_10_POS_X_HI         | 0..255 | 127 |  |
| 415 | AI_V3_FIXTURE_GROUP_LAYER_10_POS_X_LO         | 0..255 | 0   |  |
| 416 | AI_V3_FIXTURE_GROUP_LAYER_10_POS_Y_HI         | 0..255 | 127 |  |
| 417 | AI_V3_FIXTURE_GROUP_LAYER_10_POS_Y_LO         | 0..255 | 0   |  |
| 418 | AI_V3_FIXTURE_GROUP_LAYER_10_ROTATE_HI        | 0..255 | 0   |  |
| 419 | AI_V3_FIXTURE_GROUP_LAYER_10_ROTATE_LO        | 0..255 | 0   |  |
| 420 | AI_V3_FIXTURE_GROUP_LAYER_10_PLAY_MODE        | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =<br>Continue from<br>last frame |
| 421 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_X_LEFT_HI   | 0..255 | 0   |  |

|     |  |        |     |  |
|-----|--|--------|-----|--|
| 422 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 423 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 424 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 425 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 426 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 427 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 428 | AI_V3_FIXTURE_GROUP_LAYER_10_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 429 | AI_V3_FIXTURE_GROUP_LAYER_10_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse |
| 430 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_1        | 0..255 | 0   |  |
| 431 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_2        | 0..255 | 0   |  |
| 432 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_3        | 0..255 | 0   |  |
| 433 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_4        | 0..255 | 0   |  |
| 434 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_5        | 0..255 | 0   |  |
| 435 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_6        | 0..255 | 0   |  |
| 436 | AI_V3_FIXTURE_GROUP_LAYER_10_RESERVED_7        | 0..255 | 0   |  |
| 437 | AI_V3_FIXTURE_GROUP_LAYER_11_BRIGHTNESS        | 0..255 | 255 |  |
| 438 | AI_V3_FIXTURE_GROUP_LAYER_11_CLUSTER_SELECT    | 0..35  | 0   |  |
| 439 | AI_V3_FIXTURE_GROUP_LAYER_11_CLIP_SELECT       | 0..127 | 0   |  |
| 440 | AI_V3_FIXTURE_GROUP_LAYER_11_RED_MULTIPLIER    | 0..255 | 255 |  |
| 441 | AI_V3_FIXTURE_GROUP_LAYER_11_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 442 | AI_V3_FIXTURE_GROUP_LAYER_11_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 443 | AI_V3_FIXTURE_GROUP_LAYER_11_CONTRAST          | 0..255 | 127 |  |
| 444 | AI_V3_FIXTURE_GROUP_LAYER_11_IN_FRAME_HI       | 0..255 | 0   |  |
| 445 | AI_V3_FIXTURE_GROUP_LAYER_11_IN_FRAME_LO       | 0..255 | 0   |  |
| 446 | AI_V3_FIXTURE_GROUP_LAYER_11_OUT_FRAME_HI      | 0..255 | 255 |  |
| 447 | AI_V3_FIXTURE_GROUP_LAYER_11_OUT_FRAME_LO      | 0..255 | 255 |  |
| 448 | AI_V3_FIXTURE_GROUP_LAYER_11_SPEED             | 0..255 | 127 |  |
| 449 | AI_V3_FIXTURE_GROUP_LAYER_11_ZOOM_HI           | 0..255 | 127 |  |
| 450 | AI_V3_FIXTURE_GROUP_LAYER_11_ZOOM_LO           | 0..255 | 0   |  |
| 451 | AI_V3_FIXTURE_GROUP_LAYER_11_POS_X_HI          | 0..255 | 127 |  |
| 452 | AI_V3_FIXTURE_GROUP_LAYER_11_POS_X_LO          | 0..255 | 0   |  |
| 453 | AI_V3_FIXTURE_GROUP_LAYER_11_POS_Y_HI          | 0..255 | 127 |  |
| 454 | AI_V3_FIXTURE_GROUP_LAYER_11_POS_Y_LO          | 0..255 | 0   |  |
| 455 | AI_V3_FIXTURE_GROUP_LAYER_11_ROTATE_HI         | 0..255 | 0   |  |
| 456 | AI_V3_FIXTURE_GROUP_LAYER_11_ROTATE_LO         | 0..255 | 0   |  |
| 457 | AI_V3_FIXTURE_GROUP_LAYER_11_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 =<br>Bounce, 2 =<br>One Shot, 3 =                            |

Continue from  
last frame

|     |  |        |     |  |
|-----|--|--------|-----|--|
| 458 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 459 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 460 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 461 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 462 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 463 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 464 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 465 | AI_V3_FIXTURE_GROUP_LAYER_11_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 466 | AI_V3_FIXTURE_GROUP_LAYER_11_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop,<br>10..19 = Play,<br>20..29 =<br>Pause, 30..39<br>= Reverse |
| 467 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_1        | 0..255 | 0   |  |
| 468 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_2        | 0..255 | 0   |  |
| 469 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_3        | 0..255 | 0   |  |
| 470 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_4        | 0..255 | 0   |  |
| 471 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_5        | 0..255 | 0   |  |
| 472 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_6        | 0..255 | 0   |  |
| 473 | AI_V3_FIXTURE_GROUP_LAYER_11_RESERVED_7        | 0..255 | 0   |  |
| 474 | AI_V3_FIXTURE_GROUP_LAYER_12_BRIGHTNESS        | 0..255 | 255 |  |
| 475 | AI_V3_FIXTURE_GROUP_LAYER_12_CLUSTER_SELECT    | 0..35  | 0   |  |
| 476 | AI_V3_FIXTURE_GROUP_LAYER_12_CLIP_SELECT       | 0..127 | 0   |  |
| 477 | AI_V3_FIXTURE_GROUP_LAYER_12_RED_MULTIPLIER    | 0..255 | 255 |  |
| 478 | AI_V3_FIXTURE_GROUP_LAYER_12_GREEN_MULTIPLIER  | 0..255 | 255 |  |
| 479 | AI_V3_FIXTURE_GROUP_LAYER_12_BLUE_MULTIPLIER   | 0..255 | 255 |  |
| 480 | AI_V3_FIXTURE_GROUP_LAYER_12_CONTRAST          | 0..255 | 127 |  |
| 481 | AI_V3_FIXTURE_GROUP_LAYER_12_IN_FRAME_HI       | 0..255 | 0   |  |
| 482 | AI_V3_FIXTURE_GROUP_LAYER_12_IN_FRAME_LO       | 0..255 | 0   |  |
| 483 | AI_V3_FIXTURE_GROUP_LAYER_12_OUT_FRAME_HI      | 0..255 | 255 |  |
| 484 | AI_V3_FIXTURE_GROUP_LAYER_12_OUT_FRAME_LO      | 0..255 | 255 |  |
| 485 | AI_V3_FIXTURE_GROUP_LAYER_12_SPEED             | 0..255 | 127 |  |
| 486 | AI_V3_FIXTURE_GROUP_LAYER_12_ZOOM_HI           | 0..255 | 127 |  |
| 487 | AI_V3_FIXTURE_GROUP_LAYER_12_ZOOM_LO           | 0..255 | 0   |  |
| 488 | AI_V3_FIXTURE_GROUP_LAYER_12_POS_X_HI          | 0..255 | 127 |  |
| 489 | AI_V3_FIXTURE_GROUP_LAYER_12_POS_X_LO          | 0..255 | 0   |  |
| 490 | AI_V3_FIXTURE_GROUP_LAYER_12_POS_Y_HI          | 0..255 | 127 |  |
| 491 | AI_V3_FIXTURE_GROUP_LAYER_12_POS_Y_LO          | 0..255 | 0   |  |
| 492 | AI_V3_FIXTURE_GROUP_LAYER_12_ROTATE_HI         | 0..255 | 0   |  |

|     |  |        |     |  |
|-----|--|--------|-----|--|
| 493 | AI_V3_FIXTURE_GROUP_LAYER_12_ROTATE_LO         | 0..255 | 0   |  |
| 494 | AI_V3_FIXTURE_GROUP_LAYER_12_PLAY_MODE         | 0..3   | 0   | 0 = Loop, 1 = Bounce, 2 = One Shot, 3 = Continue from last frame |
| 495 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_X_LEFT_HI    | 0..255 | 0   |  |
| 496 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_X_LEFT_LO    | 0..255 | 0   |  |
| 497 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_X_RIGHT_HI   | 0..255 | 255 |  |
| 498 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_X_RIGHT_LO   | 0..255 | 255 |  |
| 499 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_Y_TOP_HI     | 0..255 | 255 |  |
| 500 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_Y_TOP_LO     | 0..255 | 255 |  |
| 501 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_Y_BOTTOM_HI  | 0..255 | 0   |  |
| 502 | AI_V3_FIXTURE_GROUP_LAYER_12_CROP_Y_BOTTOM_LO  | 0..255 | 0   |  |
| 503 | AI_V3_FIXTURE_GROUP_LAYER_12_TRANSPORT_CONTROL | 0..39  | 15  | 0..9 = Stop, 10..19 = Play, 20..29 = Pause, 30..39 = Reverse     |
| 504 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_1        | 0..255 | 0   |  |
| 505 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_2        | 0..255 | 0   |  |
| 506 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_3        | 0..255 | 0   |  |
| 507 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_4        | 0..255 | 0   |  |
| 508 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_5        | 0..255 | 0   |  |
| 509 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_6        | 0..255 | 0   |  |
| 510 | AI_V3_FIXTURE_GROUP_LAYER_12_RESERVED_7        | 0..255 | 0   |  |
| 511 | NOT USED                                       |        |     |  |
| 512 | NOT USED                                       |        |     |  |

## Avolites Ai Operator's Manual

Additional copies of this manual, together with other useful spares etc. can be purchased through the Avolites On line shop. Visit <http://www.avolites.com> then navigate to Avo Shop from the links on the left hand side.