

EmulationPro

Manual



Contents

1 Overview	4
2 Patch	8
3 Matrix	12
4 Groups	16
5 Palettes	17
6 Cuelists	18
7 Playbacks	26
8 Actions	30
9 Kiosc	35
10 Hardware	39
11 Tempo	43
12 MIDI	44
13 OSC	51
14 Options	53
15 Personalities	56
Appendices	58
A Templates	59
B Trigger Types	60
C Task Types	66
D API	85

©2017 Visual Productions BV. All rights reserved.

No parts of this work may be reproduced in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the written permission of the publisher.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Due to the dynamic nature of product design, the information contained in this document is subject to change without notice. Revisions of this information or new editions may be issued to incorporate such changes.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

Chapter 1

Overview

Welcome to the EmulationPro user's manual, this document describes the EmulationPro software and the basics of lighting programming.

EmulationPro is an advanced and scalable lighting control application. The software is designed to control medium to large lighting installations, for both architectural and live-entertainment situations.

This manual is written for EmulationPro version 1.4.28.

1.1 Features

- Cross-platform (Windows, macOS, Linux)
- 32 Universes (16,384 DMX channels)
- Industry-standard Cuelist system
- FX Generator
- Pixel Mapping
- DMX in
- MIDI in & out
- OSC in & out
- UDP in & out
- Art-Net in & out
- sACN out
- Timecode in (SMPTE, MTC, Art-Net)
- Astronomical Clock (sunrise, sunset)
- Scheduling (date, time, weekday)
- 3,500+ personality files
- Compatible with Kiosc remote control software

1.2 User-interface

The main user-interface of EmulationPro consists of the following sections:

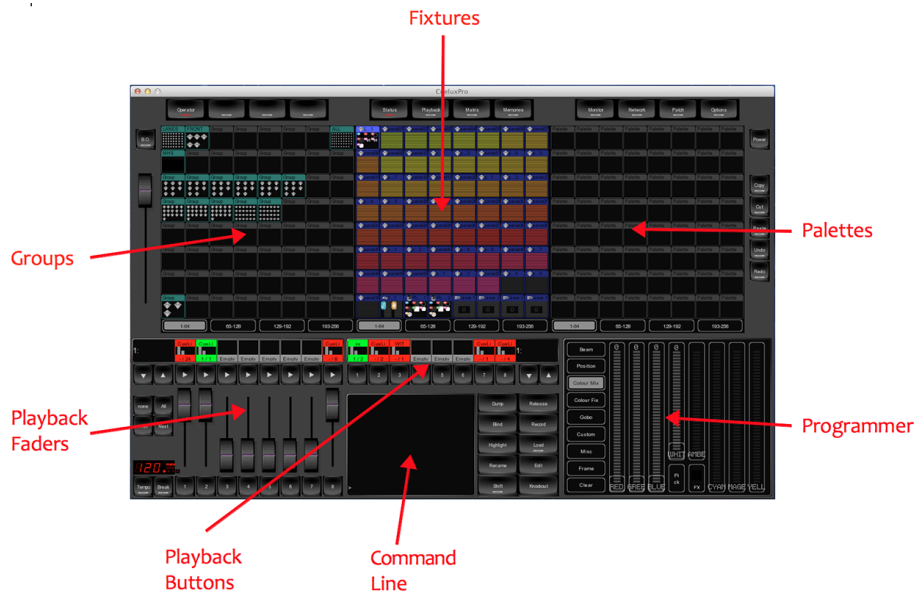


Figure 1.1: EmulationPro's Graphical User Interface

1.3 Supported Hardware

EmulationPro works in combination with the ArtSSC and ArtIO as its DMX and IO interfaces, the ArtB6 is supported as a remote control unit. All devices are connected by Ethernet.

Multiple ArtSSC devices can be connected to EmulationPro in order to achieve a large number of universes.

Chapter 10 on page 39 discussed the hardware in detail.

1.4 Licensing

The EmulationPro software is available for download. The licence is included in the ArtSSC, i.e. each ArtSSC unlocks 2 universes in the EmulationPro software.

1.5 System

Figure 1.2 gives an example of a EmulationPro system. The diagram shows a combination of ArtSSC devices to control a number of universes that exceeds the capacity of one interface. It also illustrates the possibility to have the EmulationPro software triggered by sensors (via an ArtIO) and a ArtB6 button

panel. Finally, the software's user-interface is enhanced by adding an optional MIDI control surface.

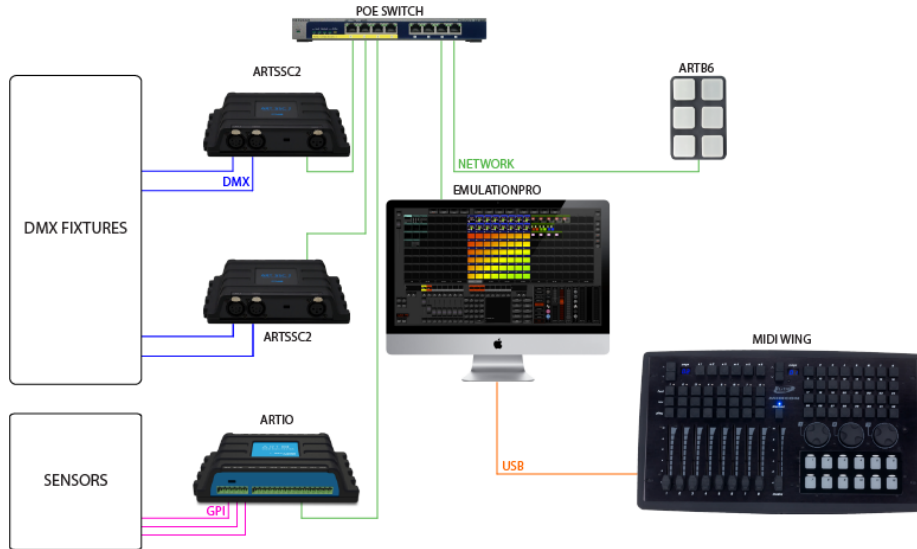


Figure 1.2: System example

It is convenient to power the hardware unit via a POE (Power over Ethernet) capable network-switch, however, the units can also be powered by their supplied wall-mount PSU. The ArtB6 is an exception; this unit can only be powered through POE.

1.6 System Requirements

Please make sure your system has at least the following specifications.

- Intel i7 processor or equivalent
- 4GB RAM
- minimal screen resolution of 1280 x 800.

The following operating systems are supported:

- Windows 7
- Windows 8
- Windows 10
- MacOS 10.11
- MacOS 10.12
- Ubuntu Linux 16.04 (amd64)

Although EmulationPro might run on older OS versions, this is not covered by Elation's technical support.

1.7 Further Help

If, after consulting this manual, you still have questions then you can obtain additional information and help through the on-line support forum. EmulationPro users and employees of Elation share their experiences and tips on this forum. You can find the forum at <http://forums.elationlighting.com>.

Chapter 2

Patch

The PATCH menu allows you to setup the DMX fixtures which are connected to EmulationPro.

2.1 Universe

In the Universes tab you can set up the number of DMX universes that you will be using. You can add, remove and rename universes. The maximum number universes is 32. Each universe needs to be linked to a DMX port on a ArtSSC. Each DMX port on a ArtSSC can only be linked to one universe. When one DMX port becomes linked to a universe then EmulationPro will become the 'master' of this ArtSSC. The ArtSSC will then suspend any standalone operation and become solely an input/output interface for EmulationPro. When the DMX port is unlinked from the universe or the EmulationPro software is closed, then the ArtSSC will automatically resume its standalone operation.

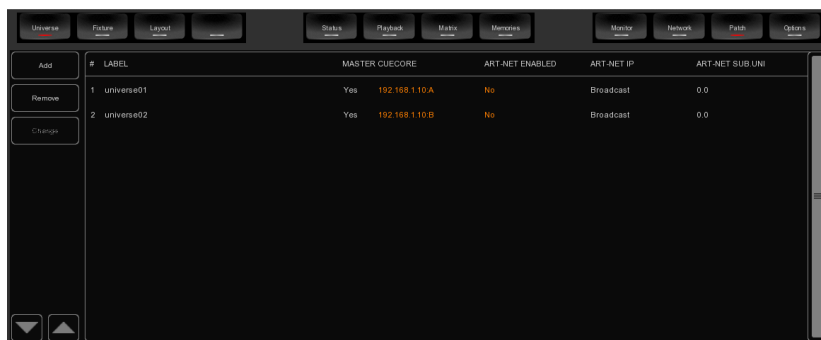


Figure 2.1: Universe screen

The ArtSSC can also manually be unlinked from EmulationPro by disabling the 'Master' setting in the universes table.

When connected to a ArtSSC, each universe's DMX data can also be send out via Art-Net and/or sACN . EmulationPro supports both broad-cast and uni-cast for transmitting Art-Net.

2.2 Fixture

The Fixture tab allows you to add, remove and change the fixtures in your patch.

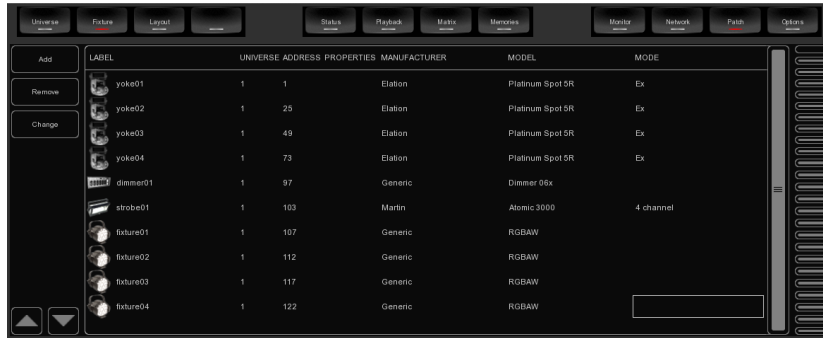


Figure 2.2: Fixtures screen

2.3 Add

Click ADD to open the Add Fixture dialog. Browse the manufacturers list, and choose the MANUFACTURER of the first fixture you would like to add.

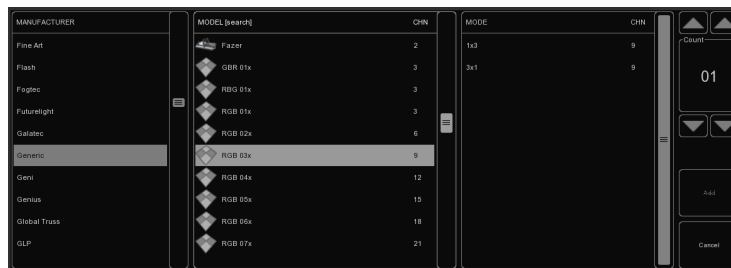


Figure 2.3: Library dialog

To quickly find a manufacturer, start typing the name of the manufacturer you're looking for on your keyboard. While typing, the list will jump to the correct manufacturer in the list. Browse the MODELS for the selected manufacturer and choose one by clicking it.

A special 'manufacturer' to take into consideration is 'Generic'. This collection contains many typical DMX fixtures with common traits like dimmers and RGB spots. It is likely that some of your DMX equipment will correspond with items from the Generic list.

If you would like to choose a fixture that is not present in these lists then please refer to page 56 to see how to obtain new personality files.

2.4 Remove

To remove one or more fixtures from the patch, select them in the Patch view by clicking or dragging and click REMOVE. To remove all fixtures, click REMOVE and keep the button pressed for at least 1 second.

2.5 Replace

If you have pre-programmed a show with your fixtures, and find out these fixtures are running in a different mode or are even a completely different fixture when on location, then you can 'replace' these fixtures. Select the 'manufacturer's' field of fixtures you would like to replace by clicking or dragging in the Patch view and click CHANGE. This will open the CHANGE FIXTURE dialog, which is similar to the ADD FIXTURE dialog. Choose another mode for the same model, or choose even another model.

2.6 Rename

To give your fixtures a more clear name, select the 'label' cells of 1 or multiple fixtures and press CHANGE. Type a new name for the fixture and click OK or press <ENTER>. If you've renamed multiple fixtures, EmulationPro will automatically add 01, 02, 03 etc. to the name you have entered.

2.7 Address

EmulationPro automatically sets the DMX address when adding fixtures to the patch, by finding the first available DMX channel in your configuration. However, if you want to change the address, select the 'address' cell of 1 or multiple fixtures and click CHANGE. Enter the new address and click OK.

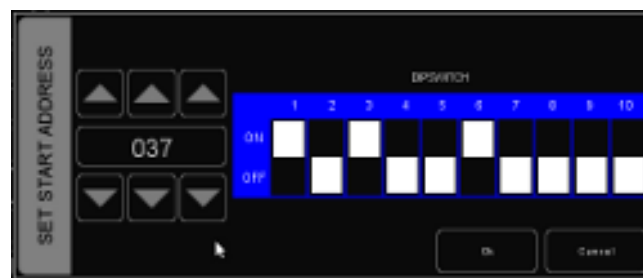


Figure 2.4: Address dialog

If you had multiple fixtures selected, EmulationPro will set the entered address for the first selected fixture and will automatically have the next selected fixtures follow the previous ones. For example, if you select four 8-channel dimmers in the patch, click ADDRESS and enter 101. This will result in addresses 101, 109, 117 and 125 for the selected dimmers.

2.8 Properties

Selecting the 'properties' field of a fixture and clicking on the CHANGE button will pop up the Fixture Properties window.

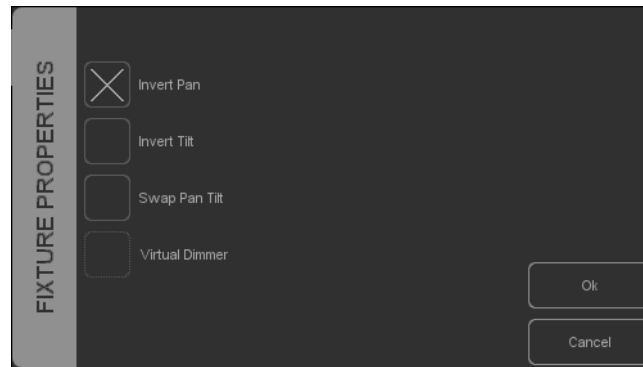


Figure 2.5: Properties dialog

This window allows you to enable INVERT PAN, INVERT TILT and SWAP PAN TILT in case the fixture is a moving light.

If the fixture has RGB colour mixing but no DMX channel for intensity, you can enable VIRTUAL DIMMER. This option will give the fixture dimmer capability separate from the RGB control.

Chapter 3

Matrix

EmulationPro contains a 2-dimensional matrix controller for pixel mapping on arrays of lighting fixtures. These lighting fixtures are typically LED fixtures, however, the matrix control can also be applied to any other DMX fixture.

3.1 Layout

To control a matrix you first patch the fixtures as usual in the Patch menu. The next step is to add only the fixtures that are part of the matrix to the members list in the Matrix->Layout menu. In this tab (figure 3.1) you can also set the width and height of the matrix.

3.1.1 Positioning members

Next you should arrange them to reflect the physical location of the fixtures. In the Layout tab you can select a matrix-member and then move it around using the arrow-keys. The Snap to Previous button will position the member on top of the previous member; this makes positioning faster as members are often arranged as a 'snake'.

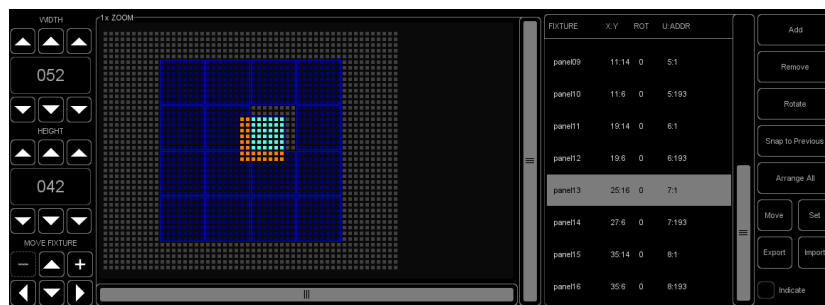


Figure 3.1: Layout screen

The Rotate button will clock-wise rotate the selected member(s) by 90 degrees.

Alternatively, you could use Arrange All button to have all the members automatically positioned according some typical patterns. See figure 3.2.

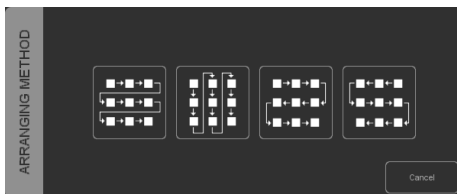


Figure 3.2: Arrange All dialog

3.1.2 Indicate

To assist you in establishing the layout you can enable the Indicate check-box, this will make the lighting fixture to display the same colour as used in the layout diagram. This will speed up the process because it helps you with recognizing which fixture is selected and how it is orientated.

3.1.3 Export & Import

By using the Export button you generate a CSV file with all the members and their position coordinates. The Import button reads these CSV files. This function is useful for large or complex matrices were fixture positions can be generated by external software tools.

3.2 Layer

Once the layout is created you should add at least one layer in the Layer tab (figure 3.3). Typically this layer has the same dimensions as the matrix; this is quickly achieved by pressing the Full Size button.



Figure 3.3: Layer screen

Each layer can playback a graphical effect. When you add more layers then this will allow you overlay multiple effects and cross-fade or blend layers into each other.

By reducing the size of the layer you can create picture-in-picture effects. Also, when two separate matrices are patches next to each other in the layout then both could be covered by a separate layer; thus allowing independent control of multiple matrices within EmulationPro.

3.2.1 Mix mode

The Mix mode setting determines how multiple layers are merged together.

3.3 Pattern

The Pattern tab (figure 3.4) shows the effects that are available to be played back on the layers. When starting a new show-file the patterns are loaded by default, however, you are free to add or remove any pattern. Some patterns have properties that can be modified by using the Edit button.

The available patterns range from monochrome effects to full colour rainbow effects. There is also a pattern for rendering text and static images such as JPG and PNG files. The pattern for playback of video support AVI files. The encoding used in the AVI files should match the installed video codecs on your PC. **Please note that at the time of version 1.4.28 video playback is not yet functional in the macOS release of EmulationPro.**

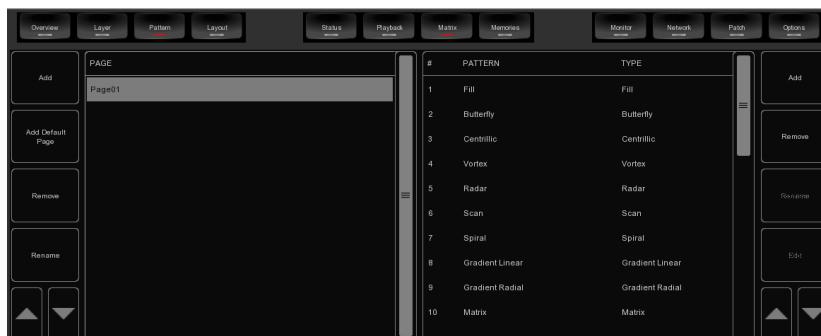


Figure 3.4: Pattern screen

3.4 Overview

The overview tab (figure 3.5) renders the output of the matrix control. When using multiple layers then this overview shows the result of the layers merged together.

3.5 Using the Matrix Control

For each layer that you have added a 'virtual' fixture will appear in the status menu (figure 3.6). This virtual fixture represents the layer. You turn on the layer by selecting it and then creating a scene in the programmer window, just

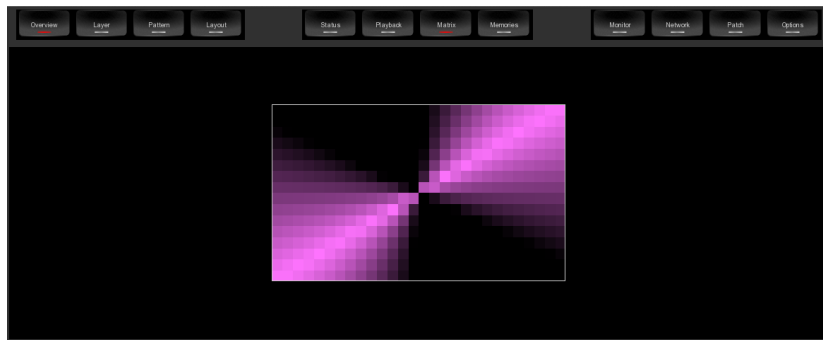


Figure 3.5: Overview screen

like you would be with moving light. The layer would need its intensity to be brought up and a colour-mix to be set (typically open white), then by using the gobo wheel you can select the pattern-page (gobo wheel 1) and the pattern (gobo wheel 2). Some patterns benefit from the gobo scroll to be enabled, others require the speed parameter that can be located on the Custom tab. When you like the scene you have created for the layer then you can record it into a palette or cue, just like you would do for a moving light.



Figure 3.6: Status screen

Chapter 4

Groups

You can create groups with fixtures and/or sub-fixtures. This makes selection of multiple (sub) fixtures easy and quick. To create a group you go to the Status menu and follow the steps:

1. Make sure the programmer is cleared (press CLEAR twice)
2. Select fixtures
3. Press RECORD
4. Click on an empty cell in the group grid

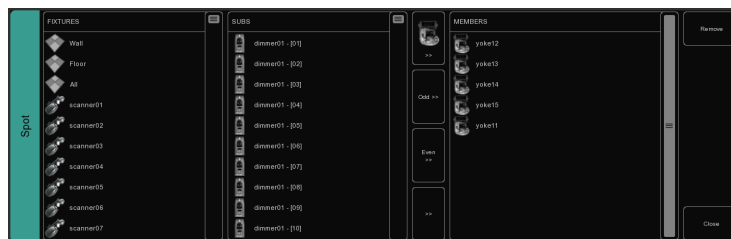


Figure 4.1: Group dialog

You can also edit an existing group by enabling the EDIT button and then click on a group cell. This will bring up the group dialog where you can add or remove individual fixtures.

To rename a group you first enable the RENAME button and click on a cell.

4.1 Sub-Fixtures

EmulationPro uses the concept of sub-fixtures. This means that some fixtures consist of multiple sub-fixtures, like a 10-channel dimmer rack is - in our terms - just one fixtures with 10 sub-fixtures. This also works for LED fixtures with multiple segments/pixels. The reason behind the concept of sub-fixtures is that it makes patching easier; you only add the physical fixtures to your patch and you dont have to worry about setting starting addresses per dimmer channel, or worse, per LED segment.

Chapter 5

Palettes

Palettes are memories that can contain a single lighting scene for one or more fixtures. This scene can contain just a single attribute (e.g. only intensity) or contain multiple attributes. When you activate a palette then the scene is loaded into the programmer.

The palettes are useful for live controlling your lights as you can make quick changes just clicking on different palette cells. Also, the palettes can be used to store scenes into cuelists. In that case no actual values are stored into the cues, instead a reference to the palette is saved. This allows you to later on change the palette and have the change reflected in each cue that is referring to this particular palette.

To create a palette go to the Status menu and simply build a scene in the programmer window, enable the RECORD button and then click on an empty palette cell. You can also edit an existing palette by enabling the EDIT button and clicking on a palette cell. Similarly, renaming a palette is done via the RENAME button and then choosing a palette cell.



Figure 5.1: Palette dialog

When you activate a palette then the behaviour depends on the fixture selection. When no fixture is selected then clicking on a palette cell will first select the fixture programmed in this palette. Clicking the cell again will activate transfer the values to the programmer. If there are already fixtures selected then clicking on the palette cell will apply the palette only of the fixture selection. When there are fixtures selected that do not appear in the palette then the values inside the palette will still be applied on these fixtures using a “let’s make the best of it” policy.

Chapter 6

Cuelists

A lighting scene is stored in a 'Cue' and cues are stored in 'Cuelists'. Each cuelist can contain one or more cues. You can create multiple cuelists that each control a part of your show, or you can create one single cuelist that addresses all your lights.

You can either create and change cues in the Status menu or use the Memories->Cuelist menu. This chapter discusses both approaches.

6.1 Tracking

Cuelist based lighting controllers can be either tracking or non-tracking. EmulationPro is a tracking console. Tracking means that in a cuelist, only changes need recording. If a light has the same value in two consecutive cues you don't need to store the second value, instead you make sure the second contains 'no' value so the first value remains unchanged through those cues.

6.2 Creating cuelists in the Status menu

The fastest way to create cuelists is to do it in the Status menu. Special buttons like RECORD, LOAD and KNOCKOUT are provided to make this process intuitive.

6.2.1 Programmer

When recording cues, you first have to create a lighting scene which will be then stored in the cue. The Programming window (figure 6.1) is the place where you create the scene. First you select a fixture, the programming window will update to show you the capabilities of that fixtures and enables you to set the different parameters, e.g. set a dimmer level, pick a colour or gobo. You can now also deselect the fixture and select a new one; the values will be kept in the programming window's memory.

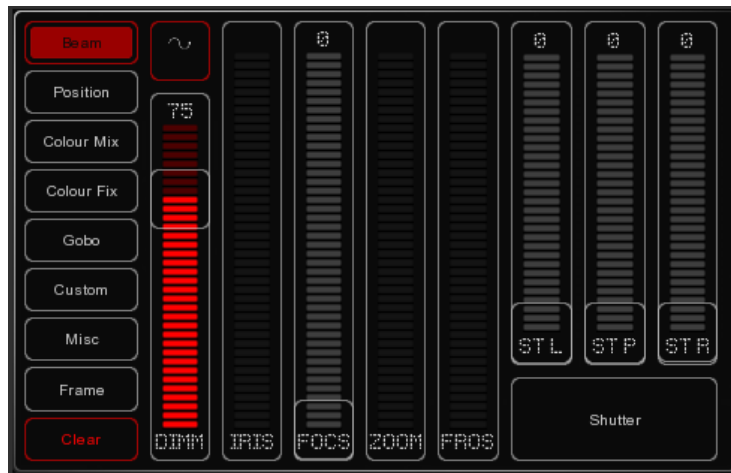


Figure 6.1: Programmer

6.2.2 FX

EmulationPro has an inbuilt FX generator for dynamic effects on the Intensity, Position and ColourMix attribute. To enable a FX click on the FX-button close to the attribute and choose an algorithm for the FX dialog (figure 6.2). You also need to set the size, speed and phase levels.

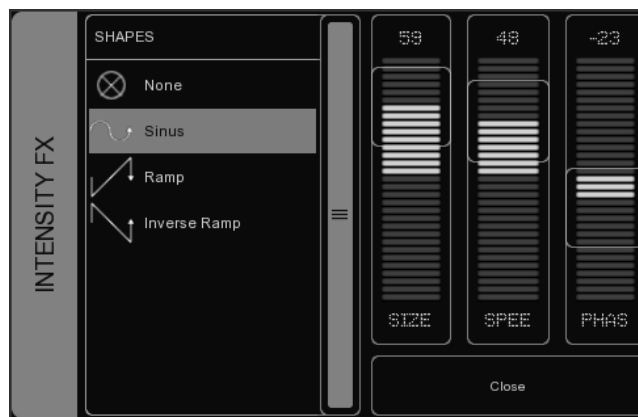


Figure 6.2: FX Dialog

6.2.3 Clear

Any values that reside in the programming windows' memory have priority. For example you might have a cuelist running that sets a certain dimmer to 50% but if the programming window contains a dimmer level of 10% for that particular fixture, then this dimmer will be set 10%. Therefore it is important to clear the programmer once you're finished recording cues. Press the CLEAR button once for clearing all values for the currently selected fixtures and press it twice for clearing all values, even for fixtures currently not selected.

6.2.4 Remove attributes

To remove an attribute from the Programmer-memory to make sure that it will not be recorded in a Cue, press the KNOCKOUT button and click the Attribute or Attribute-page in the Programmer to knock it out.

6.2.5 Fine Adjustments

Some fixtures support 16-bit values for controlling their attributes. To make small changes to a value in order to take use of very fine 16-bit control, you can use the CTRL key in combination with the mouse wheel to fine tune a fader's value.

6.2.6 Flip

A moving light of the yoke type - not a scanner - is, by using its fork and head, able to reach a certain position through two different pan/tilt configurations. When the programmer is containing position values for one or more fixtures you can use the FLIP button to reach exactly the same position by using the opposite pan/tilt values.

6.2.7 Record a cue

Once you've built up a scene in the programming window you can transfer the values to a new cue by following the next steps.

- Press the RECORD button
- Press the GO button of an empty playback

This will create a new cuelist with one cue that contains the scene from the programmer. The cuelist is automatically assigned to the playback. You can repeat this process to add new cues to the cuelist.

6.2.8 Edit a Cue

To edit the cue, first make sure the cue is outputted by activating the cuelist and stepping to the cue you want to edit using the PLAY button. Select the fixtures you want to change and change the attributes in the Programmer. You can also add other attributes by changing the attributes for the selected fixtures. Other fixtures can also be added: Select them and change the values you would like to store in the cue.

Press RECORD and click on the PLAY button of the cuelist where the cue you want to edit is active. A window will pop-up, asking you what to do. Choose MERGE to merge the active information in the Programmer with the cue.

6.2.9 Remove values or fixtures from a cue

To remove values or fixtures from a cue, were going to load the complete cue into the programmer, make the changes, and store the programmer back into the cue by replacing the old information.



Figure 6.3: Record dialog

Make sure the cue is active by activating the cuelist and stepping to the cue you want to edit using the PLAY button.

Load the cue into the Programmer by pressing LOAD and clicking on the PLAY button of the cuelist. All information in the current cue is now loaded into the Programmer. Performing a Load on a playback will automatically select the fixtures programmed in its cuelist.

To remove a fixture from the Programmer, select the fixture and press CLEAR in the Programmer once. To remove one or more attributes, select the fixtures, press KNOCKOUT and click on the attribute or the attribute-page; this action will delete the attribute or the complete attribute page from the programmer.

To store the Programmer back into the cue, press RECORD and click the PLAY button of the cuelist where the cue you want to edit is active. In the pop-up window (figure 6.3) choose REPLACE to replace the cue with the information in the Programmer.

6.3 Modifying a Cuelist via the menu

Next to working in the Status menu, you can also edit cuelists via the Memories->Cuelist menu. Although it is possible to create a new cuelist in the Cuelist menu, the menu is more setup for modifying cuelists once created in the Status menu.

To change an existing cuelist, open the Cuelist menu. Select a Cuelist and click EDIT to open the Cuelist editor. Here you can edit the properties of the CUELIST and the individual cues.

The following properties can be set for the cuelist:

6.3.1 Chase

When CHASE is enabled, the cuelist will no longer follow the cues' timings and conditions. The cuelist will be played back as a chase. The cross-fade can be changed using the ATTAK slider in the playback settings. The speed of the chase is linked to the main Chase tempo, which can be found at the bottom left

of the EmulationPro window. All cuelists set to CHASE will run synchronous to this tempo. In the CueList Editor, you can also specify a tempo divider for the chase.

- 1/1 Chase will step further on every beat of the main chase tempo
 - 1/2 Chase will step further once in every 2 beats of the main chase tempo
 - 1/4 Chase will step further once in every 4 beats of the main chase tempo
- Etc.

6.3.2 Precedence

The precedence radio button (figure 6.4) determines how the output of the cue list will be merged with other cue lists. It can be set to HTP (Highest Takes Precedence) and LTP (Latest Takes Precedence).

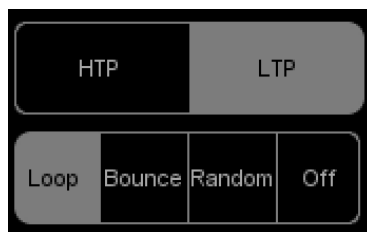


Figure 6.4: Precedence and Repeat properties

6.3.3 Repeat

This radio button (figure 6.4) allows you to change the behaviour of the cue list.

- Setting it to **Loop** will make the cue list repeat itself. This is the default value.
- **Bounce** will make it run forwards and backwards.
- **Random** will make it jump to random cues.
- **Off** will make the cue list automatically release when it reaches the end of its cues.

6.4 Modifying a Cue via the menu

The following properties can be set per cue:

6.4.1 Label

The label is the name of the cue for your reference.

6.4.2 Condition

The condition specifies when the cue will be triggered. There are 3 possible conditions:

Halt The cue will be triggered when you press the GO button.

Follow The cue will be triggered as soon as the previous cue has finished fading.

Wait The cue will be triggered automatically after the previous cue has been triggered.

6.4.3 Cue Timing

To explain the different timings in combination with the Cue Condition, see the following diagram:

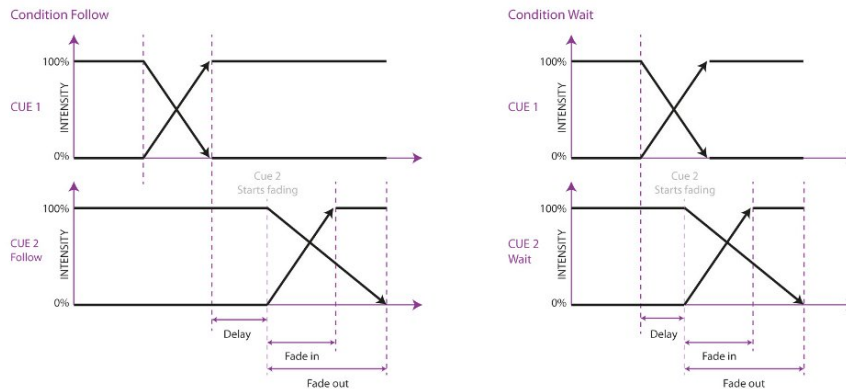


Figure 6.5: Cue timing

Delay

The delay time (in seconds) is the time between the cue being triggered, and the cue actually starting to fade.

Fade In

The Fade In time (in seconds) is the fade time for all dimmers fading in (dimmer values going UP) in the cue and all other fading attributes (e.g. colour mix, position).

Fade Out

The Fade Out time (in seconds) is the fade time for all dimmers fading out (dimmer values going DOWN) in the cue. Click and drag to select multiple properties for multiple cues, e.g. fade in for multiple cues or delay & fade in for multiple cues

6.4.4 Edit

The values in a cue can also be edited in the Cue Editor. Select a Cue and click EDIT.

Insert

Use Insert to add an attribute to the cue.

Delete

Use Delete to remove an attribute from the cue. The attribute's column will still show until it is removed from every cue.

Change

Select one or multiple values and click Change to change the value.

6.5 Wizard

The wizard (figure 6.6) can automatically create typical cuelists that might have taken quite a while to program if done by hand. To use the generated cuelist, it still has to be assigned to a playback fader or button. See page 9 for instructions.

6.5.1 Chase

The wizard can create a chase over multiple fixtures (figure 6.7). You can select any of the attributes that is supported by the fixtures you have selected. The wizard also offers different orders in which the chase can run e.g. Forward, Reverse, Zig Zag, Synchronous or Random (figure 6.8).

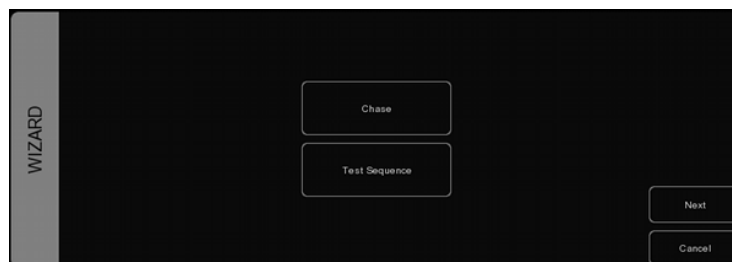


Figure 6.6: Wizard step 1

6.5.2 Test Sequence

The wizard can make you a cuelist that contains a sequence of steps for testing fixtures. Based on the personality file of the selected fixture it will generate cues for each attribute the fixture features. It is advised to create one test sequence per type of fixture.

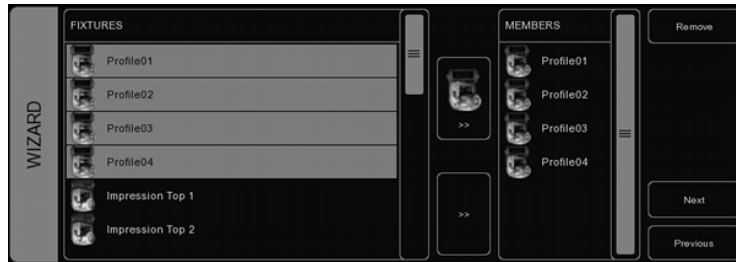


Figure 6.7: Wizard step 2

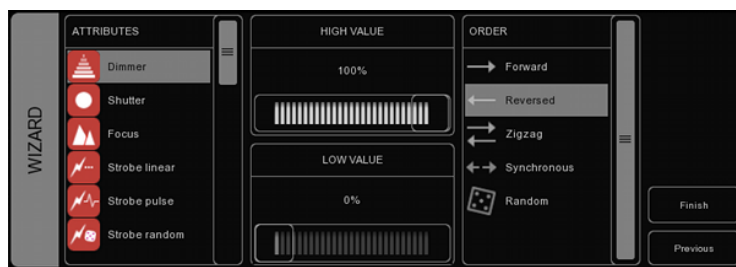
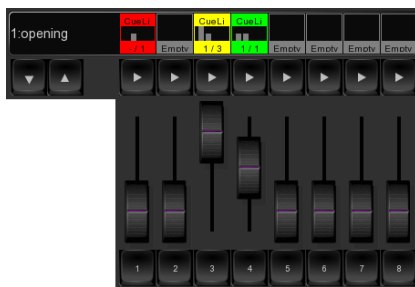


Figure 6.8: Wizard step 3

Chapter 7

Playbacks

Playbacks are an important element in a cuelist based lighting controller like EmulationPro. Cuelists are not activated directly, instead they are assigned to a playback. The playback allows the user to start (give the playback a 'Go') and stop ('release' the playback) the cuelist, as well as controlling other parameters like intensity, speed, attack, etc.



(a) Playback Faders



(b) Playback Buttons

Figure 7.1

There are two types of playbacks, playback faders (figure 7.1a) and playback buttons (figure 7.1b). They work in a similar way, the difference is that a playback button does not feature the intensity fader and the flash button. Therefore the playback button takes up less space in the EmulationPro user-interface. Playback buttons are more suitable for controlling cuelists that have fixed-value attributes like fixed colours, gobo, prism and shutter. On the other hand, playback faders are better suited for controlling cuelists containing level-value attributes like dimmer, RGB colour, iris, strobe, etc.

7.1 Assignment

You can assign a playback in two ways. Firstly, you can double-click on the 'indicator' just above a playback to bring up the Playback Settings view. Pressing the Assign button in this dialog will bring up the assignment dialog.

Alternatively, you can also assign by creating a new cuelist in Status menu,

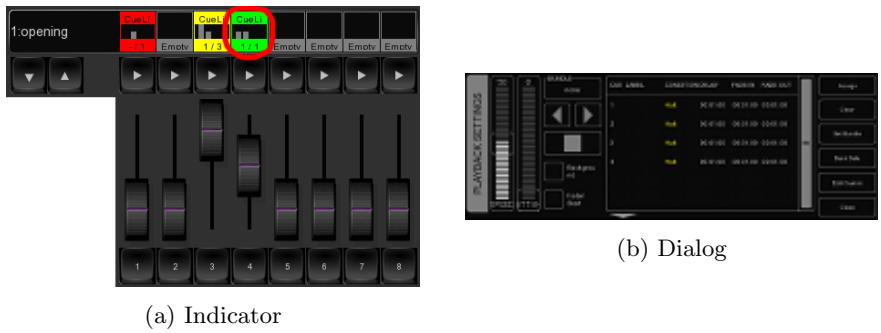


Figure 7.2: Assignment

this implicitly assigns the new cue list to a playback. Please refer to the Cue list chapter for an explanation on how this is done.

7.2 Indicator

The small rectangle above the playbacks are called 'indicators', they provide some basic feedback on the contents of the playback.

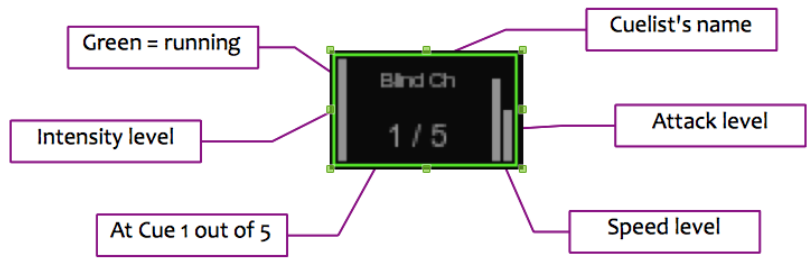


Figure 7.3: Indicator

7.3 Speed

The speed fader will control the overall speed of the playback. When set in the middle the speed will be neutral; it will not effect the programmed speed of the cues and fades.

If the cue list is set as a chase then the cue list will no longer follow the cues timings and conditions. The speed of the chase is linked to the main Chase tempo, which can be found at the bottom left of the EmulationPro window. All cue lists set to CHASE will run synchronous to this tempo. In this case the Speed slider will specify a tempo divider/multiplier for the chase. For example:

- 4/1 Chase will make four steps within every beat of the main chase tempo.
- 2/1 Chase will make two steps within every beat of the main chase tempo.
- 1/1 Chase will step further on every beat of the main chase tempo.
- 1/2 Chase will step further once in every two beats of the main chase tempo.
- 1/4 Chase will step further once in every four beats of the main chase tempo.

7.4 Attak

When the cuelist is set as a Chase, then the cross-fade can be changed using the ATTAK slider.

7.5 FXRate

The FXRate will modify the programmed speed for all FX in the cuelists. Keeping this slider in the middle will not change the programmed FX speed.

7.6 Background

If a playback is set to 'background' then it will start running automatically at the software's startup. Also, it will not be released by the 'release all' command (a 'release all' is performed when the RELEASE button is pressed for over one second).

The background feature is useful for cuelists controlling fixtures that should not be turned off during a show, e.g. 'work' lights backstage.

7.7 Fader Start

With Fader start enabled, the playback will automatically be triggered when the corresponding fader is being moved up or the flash button is pressed. The playback will also be released as soon as the fader is back at the bottom or when the flash button is released.

7.8 Bundle

You bundle playbacks together so they work mutually exclusive; i.e. only one playback is active at the same time. Whenever you start a playback it will automatically release any other playback in the same bundle. Use the Bundle dialog (figure 7.4) to apply the same bundle number to the playbacks that should cooperate in this way. You can set up to 20 different bundles.

Bundles come in handy if you have a couple of playbacks controlling cuelists for the same fixtures, especially if those cuelists contain HTP attributes like dimmer.

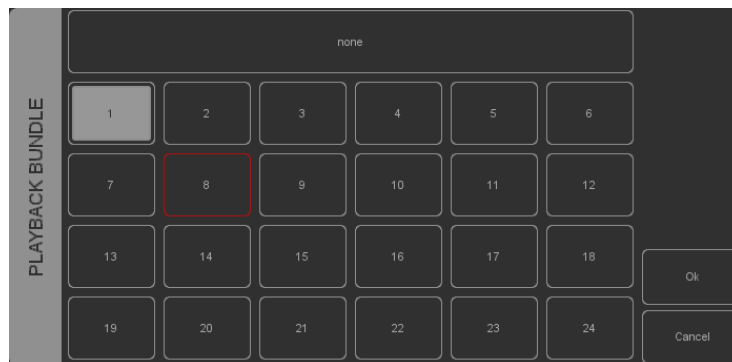


Figure 7.4: Bundle dialog

7.9 Button Primary/Secondary

These properties allow you to change the function of the flash button (Primary) and the go+ button (Secondary).

7.10 Banksafe

Some cuelists you will need to change so frequently, that you would like to access them from each bank. In the Playback Settings, you can achieve this quickly by clicking BANKSAFE.

Chapter 8

Actions

EmulationPro needs to respond to the outside world. With today's ever more demanding lighting projects, chances are it needs to respond to various different signals or protocols. The EmulationPro software supports a variety of protocols. In the Memories->Action menu (figure 8.1) you determine how your ArtSSC will respond to which signal and what tasks it will perform when triggered.

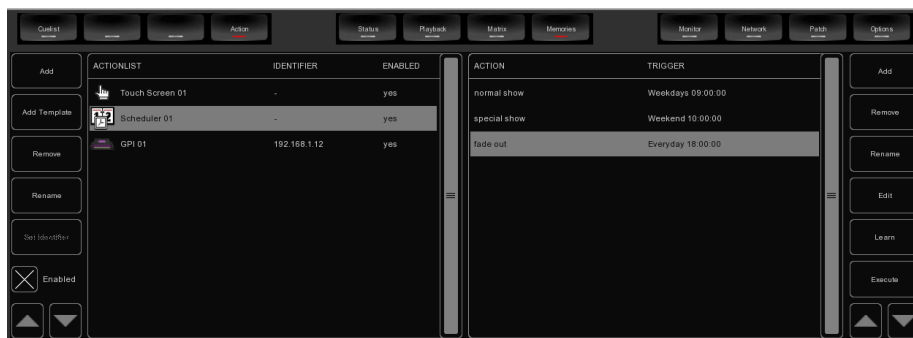


Figure 8.1: Action menu

This structure consists of actionlists and actions. All the different kind of signals EmulationPro can receive are categorized as 'sources'. Each actionlist relates to one source and can contain multiple actions. Each action details to which specific signal it is listening and contains a list of tasks it will perform when triggered. Actionlists and actions are discussed later on in this chapter.

8.1 Templates

The Memories->Action menu provides ready-made templates for several typical action arrangements. Templates can be easily copied to the Source list and modified in necessary. Appendix A gives an overview of the available templates.

8.2 Actionlists

Programming the show controller involves adding actionlist and specifying actions. In the Actionlists table you can include the sources you will be using in your project. Each Actionlist can be enabled and disabled.

The available sources are:

Touch Screen	Triggers from the Kiosk software tool.
Art-Net	Trigger on reception of Art-Net or convert Art-Net universes to DMX.
DMX In	Convert to complete universe to Art-Net or trigger by individual DMX channels.
MIDI	Trigger by or convert from incoming MIDI messages like Notes, Control Changes or Program Changes.
Timecode	Trigger by exact time-code frames. You specify the time-code protocol in the settings page.
Scheduler	The inbuilt RTC allows triggering on time, day, weekday and sunrise/sunset.
System	Miscellaneous triggers like 'OnStartup'
OSC	Incoming OSC messages
GPI	State changes on the ArtSSC's or ArtIO's GPI port.
GPO	State changes on the ArtIO's relays.
UDP	Incoming UDP messages

8.3 Actions

Within each Action-list you can create multiple Actions. For each Action you specify when it will be triggered and which Tasks it will perform when that trigger occurs. To change the details of an action, select it and press the EDIT button. This will open the Action page (figure 8.2).

8.4 Flank

For most types of actions you can set the flank. For example when editing a GPI action, it will be triggered only on closing the contact (also known as 'normally open') when the specifier is set to DOWN. When set to UP, the action will be only trigger on opening the contact (a.k.a. 'normally closed'). Finally, when the specifier is set to CHANGE, the action will be triggered on both closing and opening of the contact.

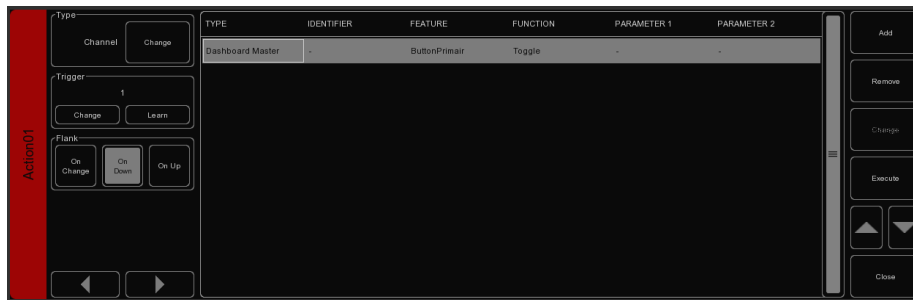


Figure 8.2: Action page

8.5 Trigger

Specify the exact trigger on which to execute the tasks. In the case of a GPI action, the trigger denotes the trigger port number (there are 4 ports on the ArtSSC and 8 ports on a ArtIO).

8.6 Tasks

You can specify up to 64 Tasks per action. When triggered, the Tasks are performed in the same order as they are listed in the Action. Tasks can control various elements and protocols in EmulationPro, such as playbacks, MIDI, OSC or fixture selection. Tasks can also be used to trigger other Actions, enable or disable action-lists and start/stop the internal time-code. Some tasks manipulate the software entities in the engine and other tasks control the user-interface of EmulationPro; the latter are called 'Dashboard' tasks. For example there is a 'Playback Fader' task and a 'Dashboard Playback Fader' task. The 'Playback Fader' task has features like 'Go+' and 'Release', directly changing the state of the playback. The 'Dashboard Playback Fader' task does, however, only control the buttons and faders in EmulationPro that belong to that particular playback. This task allows you to press and release the 'flash' and 'go' button. Because a Task can do a wide variety of things they are organized in different Task 'Types'. When adding a task a pop-up window will allow you to choose from the following types. These types are listed in detail in appendix C.

8.7 Feature

For each task you can select a Feature. The choice in Features differs for each Type.

8.8 Function

Each Task also has a Function field. The choice of Functions depends on the Task-Type and the selected Feature. For example, when you add a Task with the 'Playback Fader' Type and set its Feature to 'Intensity' then you can select

of the following Functions:

- Set Specify an intensity level.
- Control Set the intensity to the level that is provided as an argument from the source that triggered this task. For example, if this task was triggered by the DMX input then the level of the DMX channel will be used for the intensity level.

8.9 Scheduling

An important input Source is the Scheduler. The Scheduler uses the computers system time. There are several ways to specify a trigger.

8.9.1 Date and Time

You can use the Scheduler to trigger actions on certain dates and times (figure 8.3). When specifying a date and time it is possible to choose 'Don't Care' for each value by entering 'X'. E.g. if you set a date and specify 'Don't Care' for the year field, this Action will be triggered each year.

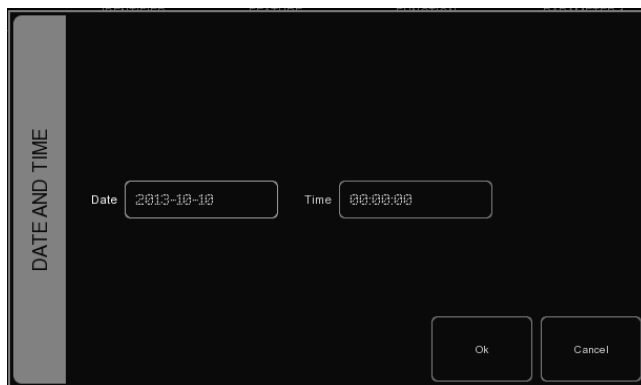


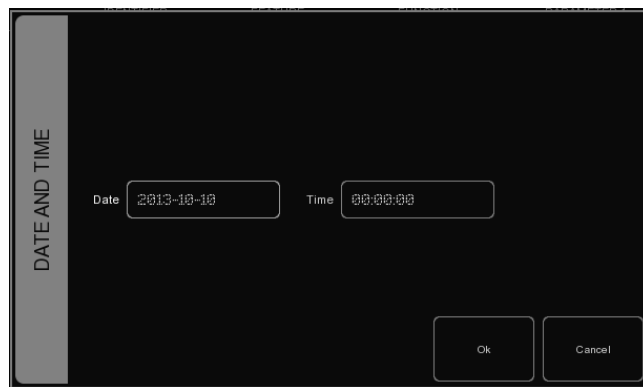
Figure 8.3: Date & Time

8.9.2 Weekday and Time

Sometimes you would like to define a trigger based on a day in the week, rather than a specific date. EmulationPro supports this, it allows to choose any combination of weekdays and time (figure 8.4).

8.9.3 Astronomical Clock

EmulationPro keeps an astronomical clock that based on the day of the year and position on the globe (as configured in the settings page) calculates the sunrise and sunset times. This allows you to trigger events on sunrise or sunset.



A dialog box titled "DATE AND TIME" with a dark background. It features two input fields: "Date" containing "2013-10-10" and "Time" containing "00:00:00". At the bottom right, there are two buttons labeled "Ok" and "Cancel".

Figure 8.4: Weekday & Time

Chapter 9

Kiosc

Kiosc is a simple app for creating custom user-interface. This app (see figure 9.1) is available on many operating systems (iOS, Android, Windows, macOS & Ubuntu Linux). It can remote control lighting controllers from Elation such as EmulationPro, ArtSSC2, ArtIO and the ArtB6.

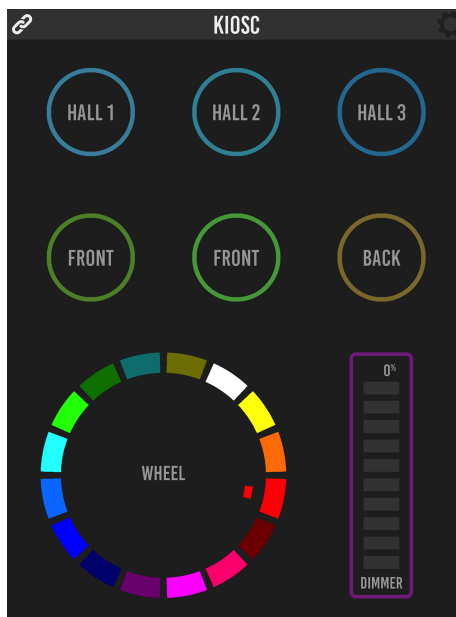


Figure 9.1: Kiosc

9.1 Connecting

The Kiosc app connects to a host (e.g. EmulationPro or ArtSSC) by Ethernet. Make sure all devices are within the same IP range. The Kiosc app is able to discover the hosts on the network, as seen in figure 9.2.

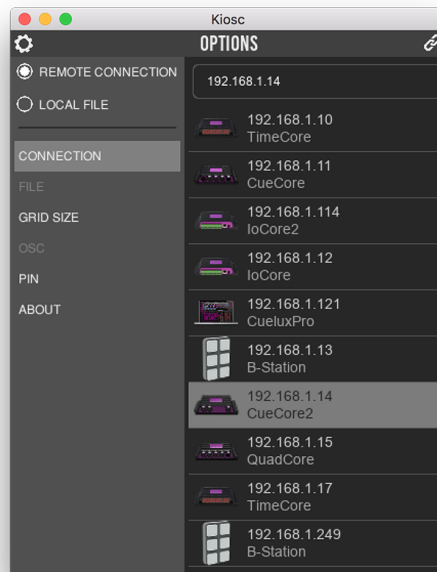


Figure 9.2: Connecting to a host

9.2 Designing the layout

The app features control elements like buttons, sliders, colour-pickers, clocks, etc. The layout of Kiosc is programmed by adding an actionlist with source 'Touch Screen'. This actionlist allows the control elements to be inserted. The order of the elements determines the location on the Kiosc screen. Also, the Kiosc app has a option that allows you to set the 'grid size' of the screen (see figure 9.3).

9.3 Password protect

Kiosc can be used to provide a fool-proof user-interface to people that should choose lighting presets without being able to alter settings in the system. For this purpose a password PIN code can be enabled. This setting is found in Kiosc's settings page, see figure 9.4.

9.4 Requirements

The minimal system requirements for Kiosc are:

- iOS 8.0 or higher
- Android 5.0 or higher
- Windows 10

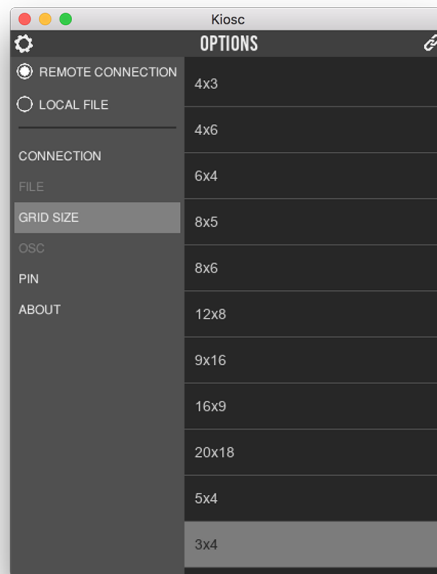


Figure 9.3: Choosing in Grid size

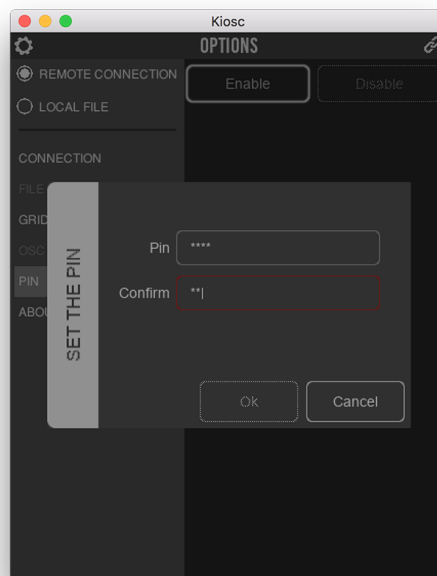


Figure 9.4: Enabling the PIN

- macOS 10.11 or higher
- Ubuntu Linux 16.04 (amd64)

9.5 Installing Kiosc

You can obtain Kiosc via the iOS Appstore, Google Playstore, Windows Appstore and macOS Appstore

On Ubuntu, you can acquire the Kiosc app from the uApp Explorer or install it by using the command-line:

```
snap find kiosc  
snap install kiosc
```

Chapter 10

Hardware

The EmulationPro software works together with the ArtSSC2, ArtSSC1, ArtIO and ArtB6 hardware. To unlock the software you need at least one ArtSSC. You can add more ArtSSC s to unlock more DMX universes. ArtIO s can be added provide GPI triggers or switch external equipment with the GPO relays. ArtB6 s provide a physical user-interface to select for example cues, palettes or other effects.

Once the ArtSSC is connected to the EmulationPro software it becomes 'mastered' and will act as input/output interface; outputting the EmulationPro's data via the DMX outputs. And in the case of a ArtSSC it will as well capture incoming DMX, MIDI, timecode and GPI triggers in real-time.

10.1 ArtSSC2

The ArtSSC 2 (figure 10.1) is a two universe interface for EmulationPro. Its DMX port can be set as output or as input. The unit also features MIDI ports, a SMPTE input, a four-port GPI interface and internal memory to hold lighting content that can be played back in standalone mode.



Figure 10.1: ArtSSC2

10.2 ArtSSC1

The ArtSSC1 (figure 10.2) is the interface originally designed for EmulationPro. It features two DMX outputs, one DMX input, MIDI, SMPTE input and 4x GPI. The ArtSSC1 is also fitted with internal memory to playback lighting content in standalone mode.



Figure 10.2: ArtSSC1

10.3 ArtIO

The ArtIO (figure 10.3) is a interface for adding GPI and GPO ports to EmulationPro; it does not unlock any universes. Additionally, the ArtIO also features a RS-232 port and a DMX port that can be used as DMX input into EmulationPro. The ArtIO will not unlock any universe in EmulationPro.



Figure 10.3: ArtIO

10.4 ArtB6

The ArtB6 (figure 10.4) is a wall-mount button panel that can be used to trigger presets in EmulationPro. The unit features 6 buttons that contain white LED lighting. The ArtB6 will not unlock any universe in EmulationPro.



Figure 10.4: ArtB6

10.5 Dumping content into the ArtSSC

Once the ArtSSC is connected to the EmulationPro software it becomes 'mastered' and will act as input/output interface; capturing incoming DMX, MIDI, timecode and GPI triggers in real-time as well outputting the EmulationPro's data via the DMX outputs.

The ArtSSC also has many features for standalone usage, making it a powerful and compact solid-state lighting controller. The lighting scenes can be programmed via the ArtSSC's web-interface or captured via DMX or Art-Net input. Alternatively, you can use the EmulationPro software to program the standalone memory of the ArtSSC.

The ArtSSC1 has two type of memory: Cues in the 'console' page and Recordings in the 'Recorder' page; both can be uploaded by EmulationPro. To program the cues simply create a lighting scene and dump this 'DMX snapshot' into one of the 255 available cues by pressing the DUMP button and entering the cue number followed by ENTER. The command-line would show for example:

```
> DUMP 3
```

You can also store a cuelist into the recording memory of the ArtSSC1. First you create a cuelist and assign it to playback. Then press the DUMP button, then press the playback's GO button, enter the recording number followed by

enter. In the command-line it would show like:

```
> DUMP PB2 12
```

When the cuelist has multiple cues and their conditions are set to follow, then the complete cuelist will be stored taking into account the programmed delay and fade times.

When the current cue in the cuelist has a condition set to halt, then only that cue is stored. If this cue contains any matrix patterns or intensity FX, colour FX or other FX then the duration of the FX will be used for the recording. In this case, EmulationPro will automatically make sure the pattern of FX will make one complete cycle in order to record a seam-less loop.

When your patch is spread out over multiple ArtSSC s, EmulationPro will distribute the generated DMX data over the recording in the various ArtSSC s.

Chapter 11

Tempo

All cuelists with property CHASE enabled, are synced to the Tempo. You can find the controls for the Tempo on the bottom left of the EmulationPro window . Using the TEMPO button below the tempo display, you can tap to the music to change the tempo in EmulationPro. You can also click the tempo display and drag up (tempo UP) or to the right (tempo DOWN).

11.1 Break

Click the BREAK button below the tempo display to pause all chases. Click again to continue all chases.

11.2 MIDI Clock

When the MIDI Input device youve selected in the MIDI Options (see chapter MIDI Controllers) sends out MIDI Clock messages, the Tempo will be automatically locked to the MIDI Clock tempo. This allows exact tempo matching when controlling EmulationPro from sequencer software for example at a concert.

In order for the tempo to be controlled by the MIDI Clock, the display should be set to 'midi' mode. Press the TEMPO button for more than one second to switch to 'midi' mode. Press the TEMPO again to switch back to 'manual' mode.



(a) Manual mode



(b) MIDI mode

Chapter 12

MIDI

EmulationPro supports various MIDI control surfaces. The buttons and faders on those controllers are assigned to features in the EmulationPro User-interface in a pre-defined midi-map. The following diagrams illustrate those assignments.

12.1 Generic Midi-map

Next to the hardware specific midi-maps, EmulationPro also offers a generic midi-map in which all the software functions that can be controlled through MIDI are assigned to Note or Control Change message. This midi-map is intended for use with external MIDI software like sequencers or DAWs.

12.2 Elation Midicon

The Elation Midicon (figure 12.1) is supported Plug & Play.

12.3 Elation Midicon2

The Elation Midicon2 (figure 12.2) is supported Plug & Play.

12.4 Elation MidiconPro

The Elation MidiconPro (figure 12.3) is supported Plug & Play.

12.5 Behringer BCF-2000

The Behringer BCF-2000 (figure 12.4) is supported Plug & Play: However, for optimal use we've included a Sysex-file that can either be found in the Program Files/Elation/EmulationPro/Sysex/ folder on Windows systems, or it can be obtained via the technical support forum.

The Sysex file can be uploaded to the BCF-2000 using one of the following (free) tools:



Figure 12.1: Elation Midicon

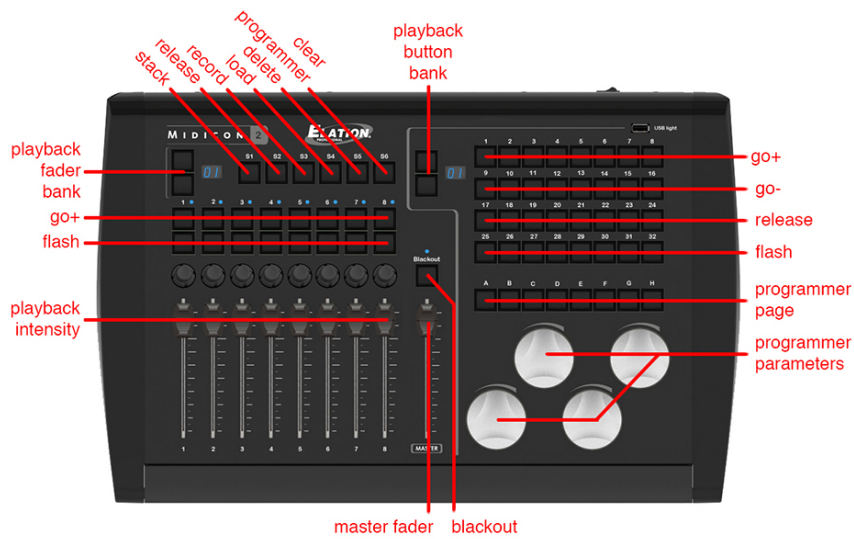


Figure 12.2: Elation Midicon2

- Midi-OX for Windows: <http://www.midiox.com>
- SyEx Librarian for Mac OS X: <http://www.snoize.com/SyExLibrarian>

After sending the Sysex file to the BCF-2000, please notice that the received

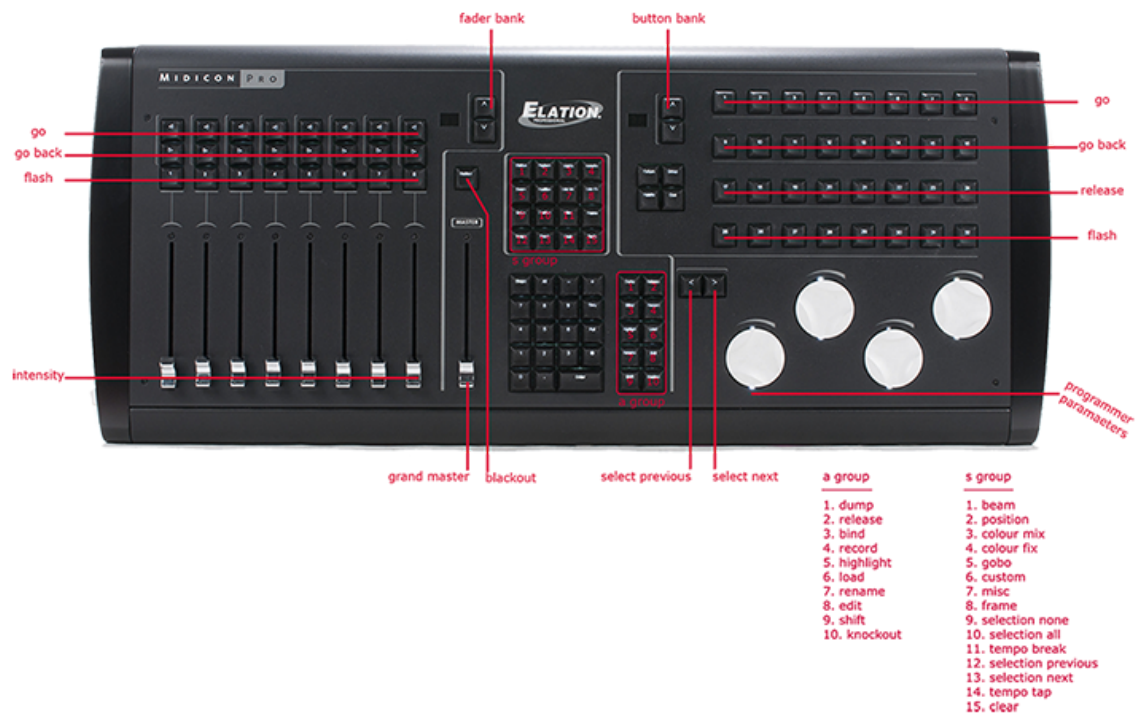


Figure 12.3: Elation MidiconPro

preset is in a temporary memory. If you switch off the BCF-2000, the preset will be lost. When you've received the preset on the BCF-2000, press STORE, use the PRESET buttons to choose a preset number for storing the preset, and press STORE again. The preset will be saved in the BCF-2000.

12.6 Behringer X-Touch Compact

The Behringer X-Touch Compact (figure 12.5) is supported Plug & Play.

12.7 Livid Instruments Ohm64

The Livid Instruments Ohm64 (figure 12.6) is supported Plug & Play.

12.8 Novation Launchpad

The Novation Launchpad (figure 12.7) is supported Plug & Play.

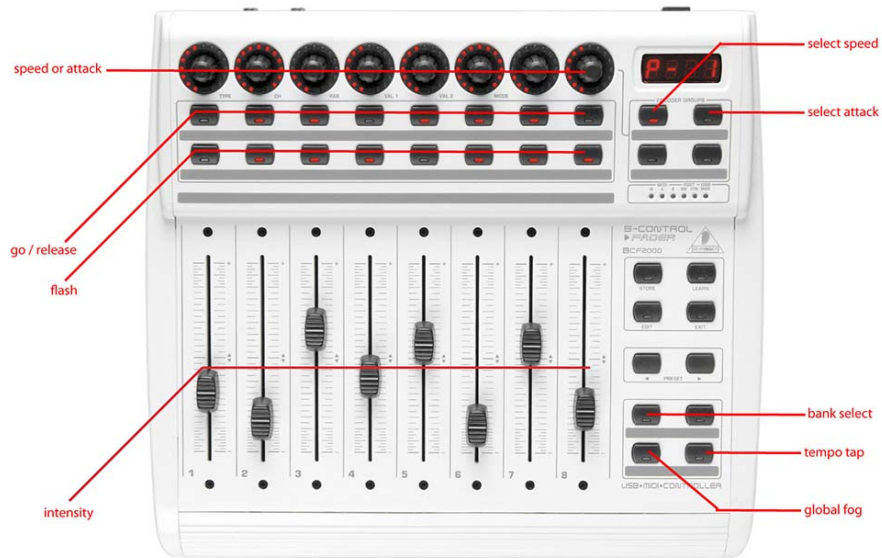


Figure 12.4: Behringer BCF-2000

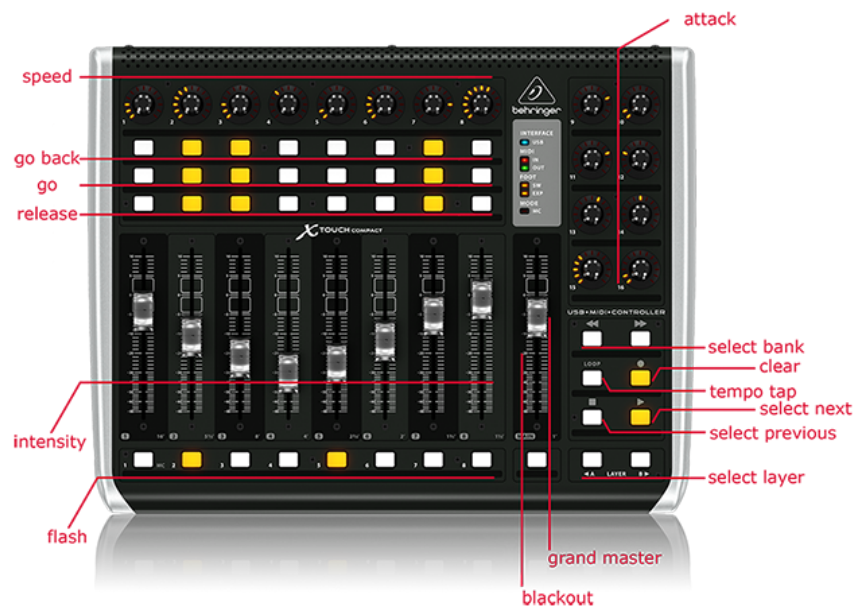


Figure 12.5: Behringer X-Touch Compact

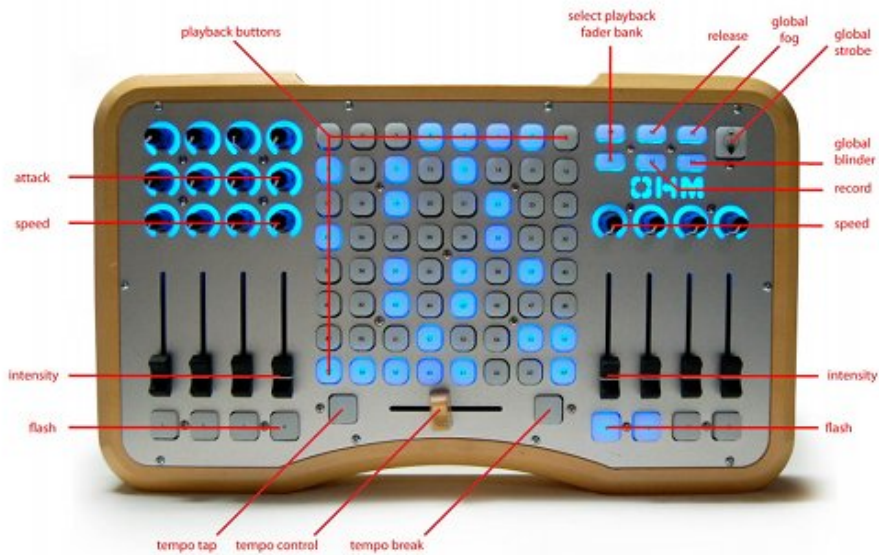


Figure 12.6: Livid Instruments Ohm64

12.9 Korg nanoKontrol

The Korg nanoKontrol (figure 12.8) and nanoKontrol2 are supported Plug & Play.

12.10 Akai APC Mini

The Akai APC Mini (figure 12.9) is supported Plug & Play.



Figure 12.7: Novation Launchpad

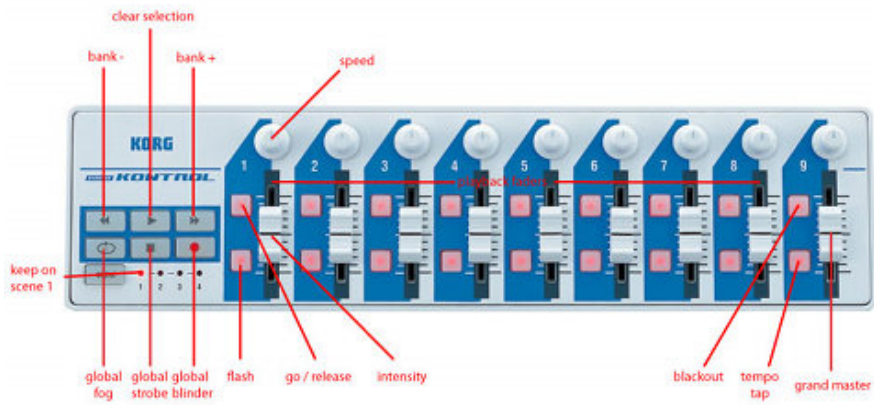


Figure 12.8: Korg nanoKontrol



Figure 12.9: Akai APC Mini

Chapter 13

OSC

Open Sound Control (OSC) is a protocol for communicating between computers, software and various multi-media type devices. OSC uses the network to send and receive messages, it can contain MIDI and custom information.

There are apps available for creating custom-made user interfaces on iOS and Android. These tools allow you to program fool-proof user-interfaces for controlling the device. E.g. TouchOSC from <http://hexler.net/software/touchosc>.

13.1 Remote Control

EmulationPro has an inbuilt implementation for remote controlling the software by OSC. This implementation exist independent from any OSC handling you might program in the action editor.

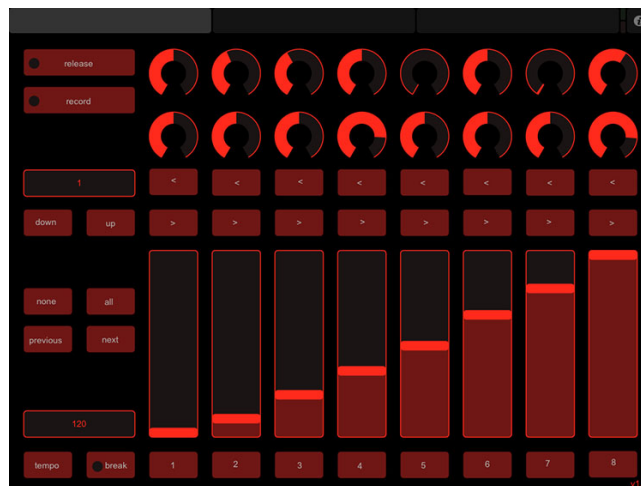


Figure 13.1: Remote control

13.2 Actions

You can also trigger to incoming OSC messages and define yourself the actions that need to be performed. You just add an OSC source to the actionlist in the Memories->Action menu and specify the actions, triggers and tasks. More information about programming actions can be found on page 30.

13.3 Forwarding

Some OSC apps can only send its OSC messages to one IP address, however, sometimes you need to send it to multiple IP addresses. In that case you can use the OUTPUT IP OSC table in the Options->Communication->OSC & UDP menu. Simply add IP addresses to this table and enable the FORWARD check-box.

Chapter 14

Options

The Options menu enables you to change preferences and view various settings.

14.1 General

This tab (see figure 14.1) enables you to choose a language and a screen resolution.

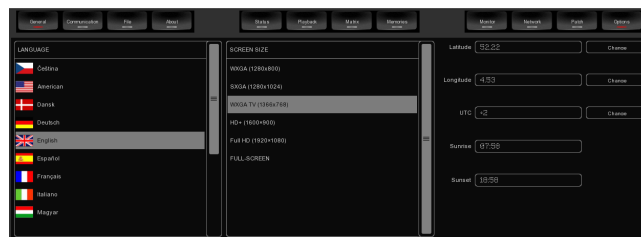


Figure 14.1: General options

The astronomical clock in the EmulationPro calculates the sunrise and sunset times based on day of the year, latitude, longitude and UTC values.

The latitude and longitude values define your position in the world and should be entered in degrees. The latitude value should be positive for North and negative for South, the longitude should be positive for East and negative for West. The website <http://www.findlatitudeandlongitude.com> can help you find the latitude and longitude values for your location.

The time-zone and perhaps daylight saving time of your location is expressed in the UTC (Coordinated Universal Time) value. UTC is in this context equivalent to GMT (Greenwich Mean Time).

For example, Elation's HQ is based in Commerce, California USA. During the winter we are UTC -8 and in the summer during day light saving time we are UTC -7. See the settings in figure 14.2.



Figure 14.2: Location settings

14.2 Communication

In this tab you can select the midi-maps for the attached MIDI control surfaces. You can specify two MIDI devices.

EmulationPro supports various MIDI control surfaces; it allows you to control EmulationPro' user interface (UI) through the buttons and faders on the MIDI controller. The software ships with a list of predefined Midi-maps. A midi-map file describes the MIDI controller and how its features (buttons, faders, etc) are mapped to the EmulationPro UI.

To set up EmulationPro for use with your MIDI controller, select the appropriate INPUT DEVICE and optionally an OUTPUT DEVICE. The output device is used by EmulationPro to provide feedback to MIDI controller's LEDs and motorized faders. Then select the MAP that corresponds to your MIDI controller.



Figure 14.3: Communication options

Please take into account that the MIDI controller needs to be connected to the computer before EmulationPro starts up; EmulationPro only scans for MIDI devices at start up. After that you would need to use the REFRESH button to scan again.

Please refer to page 44 for diagrams describing the layout of various Midi-maps.

This tab also allows you to change the settings for OSC and UDP communication. You can change the default network ports used for listening to incoming OSC and UDP messages. Also, you can have incoming OSC or UDP messages forwarded to other IP addresses. For this you add the ipaddress:port information to the OUTPUT IP OSC and OUTPUT IP UDP tables.

Furthermore, you can specify the incoming time-code protocol used by EmulationPro.

14.3 File

The File tab allows you to load and save show-files. A show-file contains all information about the patch, playback assignments, cuelists, etc. You don't need to save your show-file as EmulationPro will check for changes every few seconds and automatically save the file if needed.

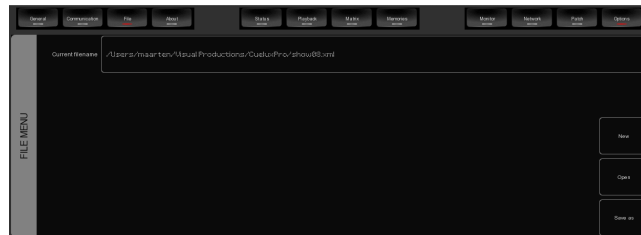


Figure 14.4: File options

By saving manually and choosing a name for the show-file you can manage different lighting projects or create backup versions. The show-files are stored in XML format at the following locations:

Windows	C:\Users\[username]\Documents\Elation \EmulationPro
macOS	/Users/[username]/Elation/EmulationPro
Ubuntu Linux	/home/[username]/Elation/EmulationPro

By copying the show-file you can easily transfer your show between different computers or even Operating Systems.

14.4 About

This tab displays the software's version number.

Chapter 15

Personalities

Most fixtures differ in the way how they are controlled by DMX. EmulationPro reads 'personality files' (sometimes referred to as 'profiles') to determine a fixture's DMX traits. When you patch a fixture you need to choose your fixture from a list of supported personalities (as described on page 7). This chapter describes how to obtain additional personality files in case your fixture is not yet present in our list.

15.1 Generic

Some types of fixtures typical have identical DMX traits. These common fixtures (e.g. Dimmers, fog generators, RGB LED fixtures) are represented in the 'Generic' collection in our library.

15.2 Request new personalities

Elation provides a free-of-charge service for creating personality files on request. Please make the request on the Elation Forum (<http://forums.elationlighting.com>) and include a link to the user-manual or DMX-chart of your fixture.

When you receive the file from Elation it needs to be copied into the following location, before starting up EmulationPro:

Windows	C:\Users\[username]\Documents\Elation \Common\Personalities\Factory
macOS	/Users/[username]/Elation/Common/Personalities/Factory
Ubuntu Linux	/home/[username]/Elation/Common/Personalities/Factory

15.3 Create your own

Sometimes it is better to create your own personality file, maybe you need it urgently and you're outside office hours. Or perhaps you don't have a manual available so you would need to create a file through trial-and-error, testing it on the physical fixture.

For any of these cases we supply an editor for creating the personalities yourself; the Personality Builder. It is an external tool for creating and modifying the personality files used by EmulationPro. The eBuilder is supplied free-of-charge for all EmulationPro users and can be downloaded from <http://www.emulationcontrol.com/downloads>.

For a detailed description of this editor please read its user manual.

Appendices

Appendix A

Templates

This appendix discusses the templates provided in the Show Control page.

Template	Description
GPI ->Dashboard Playback Button	Assigns 8 GPI (digital) ports from an ArtIO to the 8 playback buttons in the EmulationPro GUI.
GPI ->Playback Fader + Dimmer	Assigns 8 GPI (digital) ports from an ArtIO to the 8 playback faders on bank 1. A short press will toggle the playbacks, a long press will adjust the intensity. The playbacks are supposed to have 'fader start' enabled.
DMX ->Playback Fader	Assigns the first 8 channels on the DMX input to the 8 playback faders on bank 1. The playbacks are advised to have 'fader start' enabled.
Kiosc ->Playback Faders	Provides a Kiosc layout for controlling the playback faders. The Kiosc app is discussed on page 35.

Appendix B

Trigger Types

The following tables list the different types of triggers that can be used in the EmulationPro. The different types are accompanied with values and flanks.

B.1 Touch Screen

Trigger Type	Trigger Value	Flank	Description
-	-	Change	Button/Fader goes up or down
-	-	Down	Button is pressed
-	-	Up	Button is released

B.2 DMX In

Trigger Type	Trigger Value	Flank	Description
Channel	DMX address	Change	Channel changes
Channel	DMX address	Down	Channel becomes non-zero
Channel	DMX address	Up	Channel becomes zero
Receiving	-	Change	Start receiving or loose Art-Net signal
Receiving	-	Down	Lost Art-Net signal
Receiving	-	Up	Start receiving Art-Net signal

B.3 Art-Net

Channel	DMX Address	Change	Channel changes
Channel	DMX Address	Non-zero	Channel becomes non-zero
Channel	DMX Address	Zero	Channel becomes zero
Receiving	-	Change	Start receiving or loose Art-Net signal
Receiving	-	Stop	Lost Art-Net signal
Receiving	-	Start	Start receiving Art-Net signal

B.4 MIDI

Trigger Type	Trigger Value	Flank	Description
Message	Address	Change	Receive a message that matches the address
Message	Address	Down	Receive a message that matches the address and the value non-zero
Message	Address	Up	Receive a message that matches the address and the value is zero
Receiving	-	-	Receive any message

MIDI address can be any note-on, note-off, control-change, program-change and machine-control.

B.5 Scheduler

Trigger Type	Trigger Value	Flank	Description
WeekdayAndTime	-	-	Enable weekdays and specify a time (don't care 'X' can be used)
DateAndTime	-	-	Specify a specific date and time (don't care 'X' can be used)
Sunrise	-	-	When the sun rises in the morning
Sunset	-	-	When the sun goes down in the evening

B.6 System

Trigger Type	Trigger Value	Flank	Description
Startup	-	-	Trigger when EmulationPro is started up
Shutdown	-	Start	Trigger when EmulationPro is shut down

B.7 GPI

Trigger Type	Trigger Value	Flank	Description
Channel	Port number	Change	Port state changes
Channel	Port number	Down	Port is closed
Channel	Port number	Up	Port is opened
Binary	Combination value	-	A combination of ports being closed
ShortDown	Port number	-	A short press on a digital GPI port
LongDown	Port number	-	A long press on a digital GPI port

Use the Binary trigger type to catch port combinations when they are set as digital. Specify the port combination by adding the values that correspond to the ports (see table below). This value is entered as the trigger value.

Port	Value
1	1
2	2
3	4
4	8

For example, to trigger on both port 1 and 2 being closed fill in trigger value 3 (1+2). To trigger on port 5 and 6, fill in value 48 (16+32).

B.8 UDP

In the UDP source there is no choice in trigger types. Specify a ASCII string in the trigger value. The action will fired when an incoming UDP message matches this ASCII string.

B.9 OSC

In the OSC source there is no choice in trigger types.

The user can define his own URI as the trigger value of a message, however, the OSC specification dictate this string must start with a '/' sign. Please note that this string has a maximum length of 31 characters, including the '/'.

B.10 Serial

In the Serial source there is no choice in trigger types. Specify a ASCII string in the trigger value. The action will fired when an incoming RS-232 message matches this ASCII string.

B.11 Timecode

B.12 Dashboard Master

B.13 Dashboard Tempo

B.14 Dashboard Selection

B.15 Dashboard Programmer

Trigger Type	Trigger Value	Flank	Description
WheelActive	-	-	
WheelValue	-	-	
WheelLabel	-	-	

B.16 Dashboard Bank Fader

B.17 Dashboard Bank Button

B.18 Dashboard Playback Fader

B.19 Dashboard Playback Fader Grid

B.20 Dashboard Playback Button

Trigger Type	Trigger Value	Flank	Description
ButtonSecundair	-	-	

B.21 Dashboard Playback Button Grid

Trigger Type	Trigger Value	Flank	Description
ButtonSecundair	-	-	

B.22 Dashboard Playback Global

B.23 Dashboard Group

Trigger Type	Trigger Value	Flank	Description
ButtonPrimair	-	-	
WheelLabel	-	-	
Selection	-	-	

B.24 Dashboard Fixture

Trigger Type	Trigger Value	Flank	Description
ButtonPrimair	-	-	
WheelLabel	-	-	
Selection	-	-	

B.25 Dashboard Palette

Trigger Type	Trigger Value	Flank	Description
ButtonPrimair	-	-	
WheelLabel	-	-	
Selection	-	-	

B.26 Playback Fader

Trigger Type	Trigger Value	Flank	Description
Intensity	Playback ID	-	Playback's intensity level changed
Speed	Playback ID	-	Playback's speed level changed
Attack	Playback ID	-	Playback's attack level changed
Flash	Playback ID	-	Playback's flash button changed
State	Playback ID	-	Playback changed its play-state
Go+	Playback ID	-	Playback did a Go forward
Go-	Playback ID	-	Playback did a Go back
Release	Playback ID	-	Playback has been released

B.27 Playback Button

Trigger Type	Trigger Value	Flank	Description
State	Playback ID	-	Playback changed its play-state
Go+	Playback ID	-	Playback did a Go forward
Go-	Playback ID	-	Playback did a Go back
Release	Playback ID	-	Playback has been released

Appendix C

Task Types

Tasks allow you to automate the functionality in EmulationPro. All this functionality is categorized in task-types. This appendix provides a listing of the various task-types. The tables present an overview of all available features and functions per task-type.

C.1 GPO

Control the GPO relays in an ArtIO.

Feature	Function	Parameter 1	Parameter 2
Port	Set	Port [1,8]	On/Off
Port	Toggle	Port [1,8]	-
Port	Control	Port [1,8]	-
Port	Inverted Control	Port [1,8]	-
Port	Pulse	Port [1,8]	Duration (s)
Binary	Set	String	-
Binary	Toggle	String	-
Binary	Control	String	-

The Binary feature allows you to send a string of 8 characters to the ArtIO. Use a 0 to switch off a port, a 1 to turn on and a X to leave the port unchanged. For example the string 000XX111 will switch off port 1-3, leave port 4-5 as it is and turns on port 5-8.

C.2 DMX

Manipulate the DMX levels. These levels can be send out via Art-Net or sACN.

Feature	Function	Parameter 1	Parameter 2
Set Value	Set	DMX Channel	DMX Value
Set Value	Toggle	DMX Channel	-
Set Value	Control	DMX Channel	-
Set Value	Inverted Control	DMX Channel	-
Bump	Set	DMX Channel	DMX Value
Bump	Control	DMX Channel	-

C.3 MIDI

Send an MIDI message.

Feature	Function	Parameter 1	Parameter 2
Send Message	Set	MIDI Address	MIDI Value
Send Message	Control	MIDI Address	-
Send Message	Inverted Control	MIDI Address	-
Send Message	Control Launchpad	MIDI Address	-
Send Message	Control APC40	MIDI Address	-
Send Message	Control OhmRGB	MIDI Address	-

C.4 OSC

Send an OSC message via the network. The recipient can be specified in the identifier field. For example `192.168.1.11:8000`. If the identifier is set to `0.0.0.0:0` then the OSC messages is send to all IP addresses in the 'ouput IP OSC' table in the Communication options (see page 54).

Feature	Function	Parameter 1	Parameter 2
Send Float	Set	URI	floating point number
Send Float	Control	URI	-
Send Unsigned	Set	URI	positive number
Send Unsigned	Control	URI	-
Send Bool	Set	URI	true or false
Send Bool	Control	URI	-
Send String	Set	URI	String of characters
Send String	Control	URI	-
Send Colour	Set	URI	RGB colour
Send Colour	Control	URI	-

C.5 UDP

Send an UDP message via the network. The recipient can be specified in the identifier field. For example `192.168.1.11:7000`. If the identifier is set to `0.0.0.0:0` then the UDP messages is send to all IP addresses in the 'ouput IP UDP' table in the Communication options (see page 54).

Feature	Function	Parameter 1	Parameter 2
Send Float	Set	floating point number	IP address & port
Send Float	Control	-	IP address & port
Send Unsigned	Set	positive number	IP address & port
Send Unsigned	Control	-	IP address & port

C.6 Timecode

Manipulate the internal timecode generator.

Feature	Function	Parameter 1	Parameter 2
Playstate	Start	-	-
Playstate	Stop	-	-
Playstate	Restart	-	-
Playstate	Pause	-	-
Playstate	Toggle Start Pause	-	-
Playstate	Toggle Start Stop	-	-
Time	Set	-	Timecode frame
Source	Set	Source	-
Source	Toggle	Source	Source
Source	Increment	-	-
Autonoom Pause	Set	On/Off	-
Enable	Set	Source	On/Off

C.7 Selection

Manipulate the fixture selection.

Feature	Function	Parameter 1	Parameter 2
Set	-	-	-
Toggle	-	-	-
All	-	-	-
Clear	-	-	-
Next	-	-	-
Previous	-	-	-
Odd	-	-	-
Even	-	-	-
Invert	-	-	-

C.8 Special

Miscellaneous functionality.

Feature	Function	Parameter 1	Parameter 2
Run program	Set	path	-

C.9 Pattern

Manipulate a matrix pattern.

Feature	Function	Parameter 1	Parameter 2
Parameter Bool	Set	Parameter name	On/Off
Parameter Bool	Toggle	Parameter name	-
Parameter Bool	Control	Parameter name	-
Parameter Bool	Inverted Control	Parameter name	-
Parameter String	Set	Parameter name	String
Parameter String	Control	Parameter name	-

C.10 Action

Trigger another action.

Feature	Function	Parameter 1	Parameter 2
Link	Set	Action	-

C.11 Actionlist

Manipulate an actionlist.

Feature	Function	Parameter 1	Parameter 2
Enable	Set	Action-list	On or Off
Enable	Toggle	Action-list	-
Enable	Control	Action-list	-
Enable	Inverted Control	Action-list	-

C.12 Playback Fader

Control the playback faders.

Feature	Function	Parameter 1	Parameter 2
Intensity	Decrement	Delta (%)	-
Intensity	Increment	Delta (%)	-
Intensity	Continuous Decrement	Delta (%)	-
Intensity	Continuous Increment	Delta (%)	-
Intensity	Toggle	Value (%)	Value (%)
Intensity	Continuous Bounce	Delta (%)	-
Intensity	Stop Continuous	-	-
Intensity	Control	-	-
Intensity	Set	Value (%)	-
Speed	Control	-	-
Speed	Set	Value (%)	-
Attack	Control	-	-
Attack	Set	Value (%)	-
FxRate	Control	-	-
FxRate	Set	Value (%)	-
Go+	Set	-	-
Go-	Set	-	-
Release	Set	-	-
Jump	Control	-	-
Jump	Set	Cue Number	-

C.13 Playback Button

Control the playback buttons.

Feature	Function	Parameter 1	Parameter 2
Speed	Control	-	-
Speed	Set	Value (%)	-
Attack	Control	-	-
Attack	Set	Value (%)	-
FxRate	Control	-	-
FxRate	Set	Value (%)	-
Go+	Set	-	-
Go-	Set	-	-
Release	Set	-	-
Jump	Control	-	-
Jump	Set	Cue Number	-

C.14 Serial

Send data via the RS-232 port on a ArtIO . The Identifier field should contain the ArtIO's IP address.

Feature	Function	Parameter 1	Parameter 2
Send Message	Set	Text string	-

C.15 LED

Set the intensity of a LED on a ArtB6 . The Identifier field should contain the ArtB6's IP address.

Feature	Function	Parameter 1	Parameter 2
Set	Set	LED index [1,6]	Value (%)
Set	Control	LED index [1,6]	-

C.16 GPI

Control the GPI port on a ArtIO or ArtSSC. The Identifier field should contain the unit's IP address.

Feature	Function	Parameter 1	Parameter 2
Refresh	Set	-	-

C.17 Group

Control the groups. The Identifier field should contain the group's index.

Feature	Function	Parameter 1	Parameter 2
Activate	Set	On/Off	-
Activate	Control	-	-
Select	Set	On/Off	-
Select	Control	-	-

C.18 Palette

Control the palettes. The Identifier field should contain the palette's index.

Feature	Function	Parameter 1	Parameter 2
Intensity	Set	Value [0%,100%]	-
Intensity	Control	-	-
Position	Set	Value	-
Position	Control	-	-
Colour RGB	Set	Value	-
Colour RGB	Control	-	-
Colour CMY	Set	Value	-
Colour CMY	Control	-	-
Colour Wheel 1	Set	Value	-
Colour Wheel 1	Control	-	-
Activate	Set	On/Off	-
Select	Set	On/Off	-

C.19 Universe

Control the universe settings in the patch. The Identifier field should contain the universe's index.

Feature	Function	Parameter 1	Parameter 2
Master	Set	On/Off	-
Master	Toggle	-	-
Master	Control	-	-
Art-Net Enabled	Set	On/Off	-
Art-Net Enabled	Toggle	-	-
Art-Net Enabled	Control	-	-

C.20 Programmer

Control the programmer.

Feature	Function	Parameter 1	Parameter 2
Clear	Set	-	-
Clear Selection	Set	-	-
Release All	Set	-	-

C.21 Tempo

Control the BPM tempo. The Identifier field should contain the universe's index.

Feature	Function	Parameter 1	Parameter 2
Tempo	Set	Value (BPM)	-
Tempo	Control	-	-
Tempo	Toggle	Value (BPM)	Value (BPM)
Tempo	Decrement	-	-
Tempo	Increment	-	-

C.22 Dashboard Playback Fader

Control the playback fader GUI.

Feature	Function	Parameter 1	Parameter 2
LevelPrimair	Set	Value (%)	-
LevelPrimair	Control	-	-
LevelPrimair	Inverted Control	-	-
LevelPrimair	Decrement	-	-
LevelPrimair	Increment	-	-
LevelPrimair	Reset	-	-
Intensity Pickup	Set	Value (%)	-
Intensity Pickup	Control	-	-
Intensity Pickup	Inverted Control	-	-
Intensity Pickup	Decrement	-	-
Intensity Pickup	Increment	-	-
Intensity Pickup	Reset	-	-
Speed	Control	-	-
LevelSecundair	Set	Value (%)	-
LevelSecundair	Control	-	-
LevelSecundair	Inverted Control	-	-
LevelSecundair	Decrement	-	-
LevelSecundair	Increment	-	-
LevelSecundair	Reset	-	-
LevelTertiair	Set	Value (%)	-
LevelTertiair	Control	-	-
LevelTertiair	Inverted Control	-	-
LevelTertiair	Decrement	-	-
LevelTertiair	Increment	-	-
LevelTertiair	Reset	-	-
LevelQuadruple	Set	Value (%)	-
LevelQuadruple	Control	-	-
LevelQuadruple	Inverted Control	-	-
LevelQuadruple	Decrement	-	-
LevelQuadruple	Increment	-	-
LevelQuadruple	Reset	-	-
Play State	Set	Value (%)	-
Play State	Control	-	-
Play State	Inverted Control	75 -	-
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Control	-	-
ButtonSecundair	Set	On/Off	-
ButtonSecundair	Control	-	-
ButtonTertiair	Set	On/Off	-

C.23 Dashboard Playback Fader Grid

Control the playback fader GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonSecundair	Control	-	-

C.24 Dashboard Playback Button

Control the playback button GUI.

Feature	Function	Parameter 1	Parameter 2
LevelPrimair	Set	Value (%)	-
LevelPrimair	Control	-	-
LevelPrimair	Inverted Control	-	-
LevelPrimair	Decrement	-	-
LevelPrimair	Increment	-	-
LevelPrimair	Reset	-	-
Intensity Pickup	Set	Value (%)	-
Intensity Pickup	Control	-	-
Intensity Pickup	Inverted Control	-	-
Intensity Pickup	Decrement	-	-
Intensity Pickup	Increment	-	-
Intensity Pickup	Reset	-	-
Speed	Control	-	-
LevelSecundair	Set	Value (%)	-
LevelSecundair	Control	-	-
LevelSecundair	Inverted Control	-	-
LevelSecundair	Decrement	-	-
LevelSecundair	Increment	-	-
LevelSecundair	Reset	-	-
LevelTertiair	Set	Value (%)	-
LevelTertiair	Control	-	-
LevelTertiair	Inverted Control	-	-
LevelTertiair	Decrement	-	-
LevelTertiair	Increment	-	-
LevelTertiair	Reset	-	-
LevelQuadruple	Set	Value (%)	-
LevelQuadruple	Control	-	-
LevelQuadruple	Inverted Control	-	-
LevelQuadruple	Decrement	-	-
LevelQuadruple	Increment	-	-
LevelQuadruple	Reset	-	-
Play State	Set	Value (%)	-
Play State	Control	-	-
Play State	Inverted Control	-	-
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Control	-	-
ButtonSecundair	Set	On/Off	-
ButtonSecundair	Control	-	-
ButtonTertiair	Set	On/Off	-

C.25 Dashboard Playback Button Grid

Control the playback button GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonSecundair	Control	-	-

C.26 Dashboard Bank Fader

Control the playback fader GUI.

Feature	Function	Parameter 1	Parameter 2
Page	Set	Page number	-
Page	Toggle	Page number	Page number
Page	Control	-	-
Page	Decrement	-	-
Page	Increment	-	-
Page	Reset	-	-
PageUp	Control	-	-
PageDown	Control	-	-
Release	-	-	-

C.27 Dashboard Bank Button

Control the playback fader GUI.

Feature	Function	Parameter 1	Parameter 2
Page	Set	Page number	-
Page	Toggle	Page number	Page number
Page	Control	-	-
Page	Decrement	-	-
Page	Increment	-	-
Page	Reset	-	-
PageUp	Control	-	-
PageDown	Control	-	-
Release	-	-	-

C.28 Dashboard Master

Control the grand-master and Blackout GUI.

Feature	Function	Parameter 1	Parameter 2
LevelPrimair	Set	Value [0%,100%]	-
LevelPrimair	Toggle	Value [0%,100%]	Value [0%,100%]
LevelPrimair	Control	-	-
LevelPrimair	Inverted Control	-	-
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Toggle	-	-
ButtonPrimair	Control	-	-
ButtonPrimair	Inverted Control	-	-

C.29 Dashboard Tempo

Control the BPM tempo GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Toggle	-	-
ButtonPrimair	Control	-	-
ButtonPrimair	Inverted Control	-	-
ButtonSecundair	Set	On/Off	-
ButtonSecundair	Toggle	-	-
ButtonSecundair	Control	-	-
ButtonSecundair	Inverted Control	-	-

C.30 Dashboard Selection

Control the fixture selection GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonPrimair	Control	-	-
ButtonSecundair	Control	-	-
ButtonTertiair	Control	-	-
ButtonQuadruple	Control	-	-

C.31 Dashboard Programmer

Control the programmer GUI.

Feature	Function	Parameter 1	Parameter 2
Record	Set	On/Off	-
Record	Control	-	-
Load	Set	On/Off	-
Load	Control	-	-
Knockout	Set	On/Off	-
Knockout	Control	-	-
Release	Set	On/Off	-
Release	Control	-	-
Dump	Set	On/Off	-
Dump	Control	-	-
Shift	Set	On/Off	-
Shift	Control	-	-
Rename	Set	On/Off	-
Rename	Control	-	-
Blind	Set	On/Off	-
Blind	Control	-	-
Highlight	Set	On/Off	-
Highlight	Control	-	-
Edit	Set	On/Off	-
Edit	Control	-	-
Clear	Set	On/Off	-
Clear	Control	-	-
Page	Set	On/Off	-
Page	Control	-	-
Page	Decrement	-	-
Page	Increment	-	-
PageBeam	Set	On/Off	-
PageBeam	Control	-	-
PagePosition	Set	On/Off	-
PagePosition	Control	-	-
PageColourMix	Set	On/Off	-
PageColourMix	Control	-	-
PageColourFix	Set	On/Off	-
PageColourFix	Control	- 81	-
PageGobo	Set	On/Off	-
PageGobo	Control	-	-
PageCustom	Set	On/Off	-
PageCustom	Control	-	-
PageMisc	Set	On/Off	-

C.32 Dashboard Command

Control the command-line GUI.

Feature	Function	Parameter 1	Parameter 2
Key '0'	Control	-	-
Key '1'	Control	-	-
Key '2'	Control	-	-
Key '3'	Control	-	-
Key '4'	Control	-	-
Key '5'	Control	-	-
Key '6'	Control	-	-
Key '7'	Control	-	-
Key '8'	Control	-	-
Key '9'	Control	-	-
Back	Control	-	-
All	Control	-	-
Minus	Control	-	-
Plus	Control	-	-
Thru	Control	-	-
Full	Control	-	-
At	Control	-	-
Enter	Control	-	-
Period	Control	-	-

C.33 Dashboard Menu

Control the menu GUI.

Feature	Function	Parameter 1	Parameter 2
Tab1	Control	-	-
Tab2	Control	-	-
Tab3	Control	-	-
Tab4	Control	-	-
Status	Control	-	-
Playback	Control	-	-
Matrix	Control	-	-
Memories	Control	-	-
Monitor	Control	-	-
Network	Control	-	-
Patch	Control	-	-
Options	Control	-	-
Power	Control	-	-
Cut	Control	-	-
Copy	Control	-	-
Paste	Control	-	-
Undo	Control	-	-
Redo	Control	-	-

C.34 Dashboard Group Grid

Control the group GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Control	-	-
Select	Set	On/Off	-
Select	Control	-	-

C.35 Dashboard Fixture Grid

Control the fixture GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Control	-	-
Select	Set	On/Off	-
Select	Control	-	-

C.36 Dashboard Palette Grid

Control the palette GUI.

Feature	Function	Parameter 1	Parameter 2
ButtonPrimair	Set	On/Off	-
ButtonPrimair	Control	-	-
Select	Set	On/Off	-
Select	Control	-	-

Appendix D

API

The EmulationPro is pre-programmed to make its internal functionality available via OSC. There is a simple API implemented for each protocol. Notwithstanding this API, it is possible to create your own OSC implementation in the Memories/Actions menu (see page 30).

D.1 OSC

The following table uses playback #1 as an example. The number '1' can be replaced by any number in the range of [1,8].

URI	Parameter	Description
/playback-button/level-secundair1	float	Control the second level of playback #1. By default this controls the speed of the playback.
/playback-button/level-tertiar1	float	Control the third level of playback #1. By default this controls the attack of the playback.
/playback-button/button-secundair1	float	Control the second button of playback #1. By default this controls the Go+ of the playback.
/playback-button/button-tertiar1	float	Control the third button of playback #1. By default this controls the Go- of the playback.
/playback-button/bank	integer	Set the button bank page.
/playback-button/bank-up	float	Control the button bank increment button.
/playback-button/bank-decrement	float	Control the button bank decrement button.

The following table uses playback #1 as an example. The number '1' can

be replaced by any number in the range of [1,8].

URI	Parameter	Description
/playback-fader/level-primair1	float	Control the slider of playback #1. By default this controls the intensity of the playback.
/playback-fader/level-secundair1	float	Control the second level of playback #1. By default this controls the speed of the playback.
/playback-fader/level-tertiar1	float	Control the third level of playback #1. By default this controls the attack of the playback.
/playback-fader/level-quaddruple1	float	Control the fourth level of playback #1. By default this controls the fx-rate of the playback.
/playback-fader/button-primair1	float	Control the first button of playback #1. By default this controls the flash of the playback.
/playback-fader/button-secundair1	float	Control the second button of playback #1. By default this controls the Go+ of the playback.
/playback-fader/button-tertiar1	float	Control the third button of playback #1. By default this controls the Go- of the playback.
/playback-fader/button-quaddruple1	float	Control the fourth button of playback #1. By default this controls the Release of the playback.
/playback-fader/bank	integer	Set the fader bank page.
/playback-fader/bank-up	float	Control the fader bank increment button.
/playback-fader/bank-decrement	float	Control the fader bank decrement button.

URI	Parameter	Description
/programmer/release	float	Control the Release button.
/programmer/record	float	Control the Record button.
/programmer/highlight	float	Control the Highlight button.
/programmer/dump	float	Control the Dump button.
/programmer/rename	float	Control the Rename button.
/programmer/load	float	Control the Load button.
/programmer/shift	float	Control the Shift button.
/programmer/blind	float	Control the Blind button.
/programmer/knockout	float	Control the Knockout button.
/programmer/clear	float	Control the Clear button.

Index

- ArtB6, 40, 72
- eBuilder, 57
- ArtSSC1, 40
- ArtIO, 40, 72

- About, 55
- Action, 70
- Actionlist, 31, 70
- Actions, 30
- Address, 10
- APC Mini, 48
- API, 85
- Arrange All, 13
- Art-Net, 8, 61
- Assignment, 26
- Astronomical Clock, 33, 53
- Attak, 28
- Attributes, 20

- Background, 28
- Banksafe, 29
- BCF-2000, 44
- Binary, 66
- Bounce, 22
- Break, 43
- Bundle, 28

- Chase, 21, 24
- Clear, 19, 21
- Condition, 23
- Cuelists, 18

- Daylight Savind Time, 53
- Delay, 23
- DMX, 66
- DST, 53
- Dump, 41

- Edit, 21

- Fade In, 23
- Fade Out, 23

- Fader Start, 28
- Feature, 32, 66
- File, 55
- Fine Adjustments, 20
- Fixture, 9
- Flank, 31, 60
- Flip, 20
- Follow, 23
- Forum, 7
- Forwarding, 52
- Full size, 13
- Function, 32, 66
- FX, 19
- FXRate, 28

- Generic Midi-map, 44
- Generic Personalities, 9, 56
- GPI, 62, 72
- GPO, 66
- Group, 73
- Groups, 16

- Halt, 23
- Hardware, 39

- Indicate, 13
- Indicator, 27
- Internal timecode, 68
- Invert Pan, 11
- Invert Tilt, 11

- Kiosc, 35, 59

- Latitude, 53
- Launchpad, 46
- Layer, 13
- Layout, 12
- LED, 72
- Licensing, 5
- Load, 21
- Longitude, 53
- Loop, 22

Manufacturer, 9
 Matrix, 12
 Member, 12
 Merge, 20
 MIDI, 44, 54, 61, 67
 MIDI Clock, 43
 Midi-map, 44, 54
 Midicon, 44
 Midicon2, 44
 MidiconPro, 44
 Mix mode, 14

 nanoKontrol, 48

 Options, 53
 OSC, 51, 54, 62, 67, 85
 Overview, 14

 Palette, 73
 Palettes, 17
 Password, 36
 Patch, 8
 Pattern, 14, 70
 Personality file, 9
 Personality Files, 56
 PIN, 36
 Pixel mapping, 12
 Playback Button, 71
 Playback Fader, 70
 Playbacks, 26
 POE, 6
 Precedence, 22
 Programmer, 18, 74
 Properties, 11

 Random, 22
 Record, 20
 Repeat, 22
 RS-232, 62, 72

 sACN, 8
 Scheduler, 33, 61
 Selection, 69
 Serial, 62, 72
 Special, 69
 Speed, 27
 Starting address, 10
 Startup, 61
 Sub-Fixtures, 16
 Sunrise, 33
 Sunset, 33

 Swap Pan Tilt, 11
 System, 61
 System Requirements, 6

 Task, 32
 Task type, 66
 Templates, 30, 59
 Tempo, 43, 74
 Test Sequence, 24
 Time-zone, 53
 Timecode, 54, 68
 TouchOSC, 51
 Tracking, 18
 Trigger, 32
 Trigger type, 60

 UDP, 54, 62, 68
 Universe, 8, 73
 URI, 62
 UTC, 53

 Virtual Dimmer, 11

 Wait, 23
 Wizard, 24

 X-Touch Compact, 46