Avolites Titan Manual

Titan 18.0

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Before contacting Avolites for service enquiry please ensure that you have the **product serial number** and the **software version**. The serial number can be found on the back of the desk; the software version is displayed on the menu prompt when the console is switched to System mode.

The latest version of this manual and console software can be downloaded from the Avolites website.

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Written by Tim Mitchell, Sabre Technology Ltd, with thanks to Nic Morris and Sebastian Beutel

2 Introduction

2.1 Introduction to Avolites Titan

Welcome to Avolites Titan! This manual aims to you tell you everything there is to know about operating your Avolites console.

If you're already familiar with using lighting consoles but new to Titan, the Quick Start (Abschnitt 3.1) section explains most common actions.

After that we try to take you through all the things you will need to know in the order that you're most likely to need them, so we start with how to connect up the console (Abschnitt 5.1), then look at patching lights (Abschnitt 6.1). After that we go through how to control (Abschnitt 7.1) the different attributes of the lights, then how to store frequently-used settings in palettes (Abschnitt 8.1). Titan has some great built-in effects (Abschnitt 9.1), so we look at those, then how to build a show by recording cues (Abschnitt 10.1), chases (Abschnitt 11.1), cue lists (Abschnitt 12.1) and timelines (Abschnitt 13.1). Later there are sections on Capture Visualiser (Abschnitt 14.1), the video integration system Synergy (Abschnitt 15.1), help when running a show (Abschnitt 16.1), remote control (Abschnitt 17.1) of the console from a phone or tablet, and system settings (Abschnitt 19.1) to configure how the console works.

Finally, we end up with a glossary (Abschnitt 23.1) which covers some of the lighting terms which get used in this manual, and also explains some of the terms which mean different things on other brands of console.

Happy programming!

2.1.1 Conventions used in the manual

Links or cross-references to a more detailed description are shown like this.

To help you find buttons and controls: - <This> indicates a physical button on the console - [This] indicates a softkey menu option on the touchscreen - {This} indicates an option in a context menu or a general touch button on the screen

Step-by-step guides are shown as follows:

> 1. Do this.
> 2. Then do this.
> 3. Finally, do this.

> Useful related information is displayed like this.

3 Quick Start

3.1 Quick Start

This section is a quick guide on how to do most things on Avolites Titan consoles. Each section has a link to take you to the appropriate manual section for more details.

- <This> indicates a physical button on the console
- [This] indicates a softkey option on the touchscreen (the A-G menu buttons)
- {This} indicates an option in a context menu

Most functions on Titan use the Workspace Windows shown on the touch screen(s). To open different windows press the <View> button (on some consoles this is labelled <Open Window> - the manual refers to this as the <Open/View> button). A selection of icons is shown on each screen which you can press to open the different windows. You can save different arrangements of windows to the Workspaces buttons (either in a block to the left of the softkeys, or down the side of the screen, depending on the console). See Workspace Windows (Abschnitt 5.2) for more details.

3.2 Patching fixtures

Press <Patch>, [Dimmers] or [Fixtures].

For Fixtures, from the softkeys choose fixture manufacturer (type on keyboard to filter the list) then fixture type, then fixture mode.

Set [DMX Line] and [Address]. Console will automatically set these if you don't change them.

Press buttons in the Fixtures window to patch the fixture, or patch fixtures on faders (except the main playback faders) by pressing the blue select button (See Patching Fixtures or Dimmers (Abschnitt 6.2)).

To patch a number of dimmers or fixtures at once, draw a selection box over buttons on the screen, or on physical buttons hold down first select button and press last in range. Or, set [Quantity] in the patch menu.

To change DMX address or line, use [Repatch Fixtures] (see Repatch Fixtures (Abschnitt 6.3.8)).

3.2.1 View fixture patch

To see an overview screen of how the console is patched, press <Open/View> then <Patch> to open Patch View (Abschnitt 6.3.1).

3.2.2 Setting fixture options

Press <Patch>, [Edit Fixtures], or use the Patch View screen.

3.3 Controlling fixtures

Select fixtures for control by pressing select buttons. Fixture buttons turn blue when selected.

Press <Locate> to "home" selected fixtures with lamp on. If fixture is patched on a fader, the fader controls the dimmer. Hold <Locate> and press attribute button to remove that attribute from the locate (e.g. to locate without changing pan/tilt, hold <Locate> and press <Position>). See the Locate (Abschnitt 7.1.2) section for more information.

Select attribute to control using attribute bank buttons (labelled Intensity/Dimmer, Colour, Gobo etc), then turn the wheels to set fixture. Display shows which attribute each wheel is controlling. (See Changing Attributes Using the Wheels (Abschnitt 7.2.1)).

Open Attribute window (Abschnitt 7.2.4) on-screen (<Open/View> then one of the attribute bank buttons such as <Position> or <Intensity>) to select attributes from buttons and to control sub-fixtures of battens/arrays. (See Fixtures with Multiple Cells (Abschnitt 7.1.4)).

Use Palettes to store often-used colours, positions etc. for instant recall, see next page.

3.3.1 Fixture Groups

Fixtures may be grouped (Abschnitt 7.4) for quick selection of different arrangements of fixtures, press <Group>, [Record Group], select fixtures for group, set legend using [Provide a legend], press a handle to store. If the handle has a fader it becomes a master fader for the group. Order of fixture selection is remembered for use with shapes. Physical layout of fixtures in group can also be set for use with pixel mapper or shapes.

3.3.2 Shapes & Effects

Titan can use preset shapes from its Shape Generator (Abschnitt 9.2), patterns you create yourself (key frame shapes (Abschnitt 9.3)) or pixel mapped patterns (Abschnitt 9.4).

Select some fixtures. The order in which you select the fixtures is used by shapes.

At top menu press [Shapes and Effects], [Shape Generator], [Create]. Select attribute of shape then select a shape to run.

Or from the Shape Library window (double press <Open/View>, [Shape Library]) you can select a shape directly. Filter the list of shapes using the attribute buttons.

Use the wheels and [Adjust Speed, Size and Spread]/[Adjust Phase, Spread and Offset] to configure the shape. Spread distributes the shape across a number of fixtures.

Key frame shapes (Abschnitt 9.3) are similar to a chase (Abschnitt 11.1) but you can spread the sequence across fixtures.

To use Pixel Mapper (Abschnitt 9.4), save fixtures to a group, select the group. Use Layout Editor (Abschnitt 7.4.2) to set the real-world layout of the fixtures. Then use Effects Editor to create effects on the pixels.

3.4 Programming cues and chases

3.4.1 Cues

Set up the look to be recorded.

Press <Record>.

Set [Record Mode] to [Channel] (saves only modified attributes), [Fixture] (saves all attributes of fixtures which have been modified or are selected), [Stage] (saves all attributes of all fixtures with non-zero dimmer), or [Quick Build] (merges palettes and playbacks into the cue when you select them).

To store, press a fader **Select** button, a macro/executor button or a touch button in Playbacks window. (See Creating a Cue (Abschnitt 10.2)).

3.4.2 Chases

Press <Record> twice (or <Record> then [Create Chase]).

Press **Select** button, a macro/executor button or a touch button in Playbacks window.

Set up the look for the first step, press playback select button to store. Repeat until all steps stored. Quick Build mode can be used to merge palettes and cues into chase steps.

Press <Exit> to finish storing chase steps. (See Programming Chases (Abschnitt 11.2.1)).

3.4.3 Timings

All times (cue times and fixture attribute times) are stored in the programmer and are saved when you store a cue.

To edit times in the programmer before saving, press the <Times> button (previously labelled <Set> on Quartz/Titan Mobile/Sapphire Touch/Tiger Touch and <Next Time> on Pearl Expert/Tiger Touch 1).

For chases, speed and fade can be set with wheels A and B when the chase is running.

To edit times in a saved cue, at top level menu press [Edit Times] then the select button for the playback. Timing options are set from softkeys.

 [Fixture Overlap] sets each fixture to fade in sequence (100%=all together, 0%=fixture waits for previous one to complete). See Fixture Overlap (Abschnitt 10.5.1).

 [Attribute times] sets individual fade times for different attributes.

[Fixture order] changes sequence for shapes and Fixture Overlap.

See Cue Timing (Abschnitt 10.5) for more details.

3.4.4 Cue Lists

Cues may be stored in a Cue List (Abschnitt 12.2) which allows a full show to be run from a Go button. Chases can be included using Autoload (Abschnitt 12.2.4). Cue lists can run in tracking or non-tracking mode, set from [Options].

3.5 Programming palettes

Set up the attributes to be recorded. If attribute is the same for all fixtures of one type (e.g. colour), only one fixture need be set up and palette will be "shared".

Press <Record>, <Palette> (See also Quick Record below).

Use [Set Mask] to choose attributes to record/exclude. If you are storing in a palette touch button the mask is automatically set.

Touch a button in one of the Colours/Positions/Gobos workspace windows to store the palette.

See Creating Palettes (Abschnitt 8.2) for more details.

To recall palette, select fixtures, select recall mask using Attribute Bank buttons, press palette button.

To set a legend, press [Set Legend] then the palette's button. Press [Picture] to draw a picture legend.

3.5.1 Quick Record

Press an unused button in one of the palette windows - the button turns red with a +. Press again to save the palette. The mask is automatically set to match the window (e.g. Positions window is masked for only position attributes). See Palettes - Quick Record (Abschnitt 3.5.1).

3.5.2 Busking with palettes

To fade palettes when busking a show, select fixtures, type fade time on the keypad then recall the palette (you have to do this each time). If no fixtures selected, palette will recall to all applicable fixtures (called a Quick Palette. Quick Palettes do not go into the programmer so don't use when programming).

To set fixture overlap (Abschnitt 8.6.3), type 0-100 then press [Set Overlap], then recall the palette.

To set a fade time for all palettes (Abschnitt 8.6.4), press Palette then [Master Time].

3.6 DMX network setup

The console will control up to 64 universes of DMX. You patch fixtures onto one of 64 **DMX Lines** which may be routed to the XLR sockets on the console or to Art-Net or sACN universes over Ethernet (see DMX Output Mapping (Abschnitt 19.6) for details).

- If using the T1 / T2 / T3 hardware the output is limited to the first one, two or sixteen universes respectively. A console would normally output up to 16 universes itself (32 for D9 and D7), further Titan Network Processors (TNP) units would be connected to the network using TitanNet to control up to 64 universes. For simple programming or rigs with lots of space in the patch you may be able to output more than 16 universes (32 for D9 and D7) from a console but operating speed may be affected.

Multiple consoles can be linked by Ethernet to provide a multi-user (Abschnitt 5.5) system, or to provide automatic backup (Abschnitt 16.6.2).

Go to the **System** menu (<Avo> + <Disk>), press [DMX Settings].

Select a Node on the left (where the DMX is going to). On the right, select the DMX line it will be fed by. The small {Cog} buttons set properties for Nodes/Lines. See DMX Output Mapping (Abschnitt 19.6).

To change the IP address of the console, press [Network Settings] on the **System** menu (see Network Settings (Abschnitt 21.1)).

To change User Settings (Abschnitt 19.5) which let you personalise how the console works, hold down <Avo> and select [User Settings].

3.7 Tips and tricks

The following section gives you some quick ways to operate Titan. <n> means type a number on the keypad. "<Avo> +" means hold down the first button.

3.7.1 Fixture control and recording

- Select all fixtures: <AVO> + <ALL> <ALL> <ALL>
- Select all fixtures with non-zero intensity: <Select If> <Select If>
- Set full intensity in the Programmer for selected fixtures: Tap <@><@>
- Set intensity value <n> in the programmer: <@> <n> <Enter> (value as 0-99 unless you've changed the user settings)
- Clear over a time: <n> <Clear> will clear over that time
- <Wheel @> Keys: Allow fast Access to Freeze, Off, Or on for the attribute active for that wheel. Tap it twice for 100% of a percentage based attribute (such as Intensity, RGB or CMY). (more)
- How to see/select cells on multi cell fixture: Use <Unfold> then tap fixture.
- Group Pattern Selection: Click and hold <Group> then select from the soft keys Odd/Even etc

- Quick Pattern Selection: Select fixtures or Group then click <ALL> to select within selected fixtures a pattern such as odd, even, random – etc
- Select all cells in the currently selected fixtures: <.> <Enter>
- Quickly set record type: press <Record> once for Cue, twice for chase, three times for cue list, four times for timeline
- Quick open record palette menu: <AVO> + <Palette>
- Quick open record group menu: <AVO> + <Group>
- Quick open record macro menu: <AVO> + <Macro>
- Record time into palettes/cues: <Time> key to put times in the programmer
- Entering timecode times: Use <Through> and <And> buttons as left/right arrows to go between hours, minutes, seconds etc.
- Select "Move" on consoles which don't have a Move button: <AVO> + <COPY>
- Want to Move/Copy/ Delete lots of items: Use the <Latch Menu> after <COPY>, <MOVE>, or <Delete> to stay in that menu

3.7.2 Playback and running a show

- Set BPM/Rate directly: <n> then tap one of the master's keys (any of them) and it will set that as the BPM/Rate %
- Fire Macro <n> times: Type number then fire macro, macro will be played that many times
- Change fade time of next Cue: <n> <GO> - fades in the next cue in a cue list in <n> seconds, overriding the programmed fade time
- Release all running playbacks: Double tap <Release> to release ALL running playbacks
- Quickly create Mask FX: Double tap <Mask FX> to create Mask FX for selected fixtures, or all fixtures if nothing selected
- Legend Wing Pages: Set Legend then <Go Page> on the wing.

3.7.3 Views, menus and windows

- Quick open Patch View: <Open/View> <Patch>
- Quick Open Fixtures Window: <Open/View> <Fixture>
- Quick Open Groups Window: <Open/View> <Group>
- Quick Open Macros Window: <Open/View> <Macro>
- Quick Open Attribute Editor: <Open/View> <Options>
- Quick Open Active Playbacks: <Open/View> <Off>
- Quick Open Position Palettes Window: <Open/View> <Position>
- Quick Open Colour Palettes Window: <Open/View> <Colour>
- Quick Open Gobo and Beam Palettes Window: <Open/View> <Gobo> (or <Open/View> <Beam>)
- Quick Open Shape Palettes Window: <Open/View> <Shape>
- Quick Open Intensity View: <Open/View> <Intensity>
- Quick Open Cue List View of connected Cue List: <Open/View> <Connect/Cue>
- Quick exit menus to the top: <AVO> + <EXIT>, this will also exit the Unfold Menu

- Search deep in menus: use the search box to find menu options faster.
- Options missing in a Menu: Check to see if you have typed in the search box in the prompt area by accident
- Window too small to Adjust: <Open/View> <Min/Max> to resize window
- Move Window to different screen: <AVO> + <Size/Position> Moves the currently selected window to another screen.
- Close All Windows: <AVO> + <Close>
- Delete a workspace select button: <Open/View> <Delete> {Workspace button}
- Move or Copy a workspace select button: <Open/View> <Move> {Workspace button} or <Open/View> <Copy> {Workspace button}
- Move Camera in Capture with wheels: In the Context Menu {Camera Move} then how you want to move the camera

3.7.4 Setup, operating system and hardware

- Save the show instantly: Tap <DISK> <DISK>
- Get the next available channel to patch: In patch view, if you need to quickly find the next available DMX address you can click on the 'space' between the fixtures in the Bargraph and if you are patching it will automatically put this address as the next patch address
- Set the time: Click on the clock in the top bar. Always check the time zone before changing hours to prevent licensing issues
- Set Desk Lamp or Screen Brightness: Enter the system menu (<AVO> + <DISK>) use wheels to adjust (only some consoles have brightness control)
- Hard Key Not Working: Use the Virtual Panel from the [Tools] panel in the top toolbar to get you through till it can be repaired.

4 About The Consoles

4.1 Console Hardware

This manual covers all types of Avolites console, and while the operation of Titan is pretty much the same on all of them, the layout and connectivity of each console is different.

This section has details about each individual console design in turn, showing where the controls are and how they differ between consoles, and the various connections available on the back panel.

The USB connected T1 and T2 (Abschnitt 4.9) devices are also described, and the TNP network processing unit (Abschnitt 4.11).

In addition, the different console extension fader wings (Abschnitt 4.13) are covered.

4.2 Diamond 9
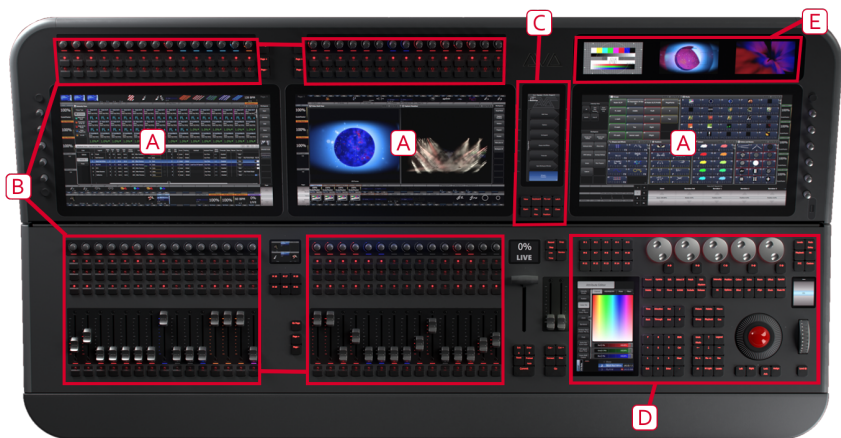
The Diamond 9 has the following main control areas. There are two models, the D9-330 as shown and the compact D9-215 which has two main touchscreens and fewer playback faders:

 (A) The three main **Touch screens** (two on D9-215) contain fixture, palette and group select buttons. At the bottom of the right-hand screen, the current wheel assignments are shown along with legends for the 15 Macro Keys. At the top and bottom of the left-hand screen(s), handle legends for the main faders and encoders are shown.

 (B) The **Playback faders** and **Rotary playback faders** select and control cues, cue lists and chases, and other configurable functions. (D9-215 only has the right hand set of faders).

 (C) The **System Prompt and Menu Softkeys** have their own touchscreen.

 (D) The **Programming and setup controls** configure and program the console, within which the **editor touchscreen** shows and sets fixture attributes and the **macro/executor buttons** are playback buttons allowing storage of cues or chases, frequent key sequences, screen layouts or groups. To the left of these controls are the cue list playback controls and the Scene Master T-bar.

 (E) Three **Layer screens** are provided for monitoring video feeds via NDI, or for additional workspace window touch screens.

4.2.1 Touch screen controls
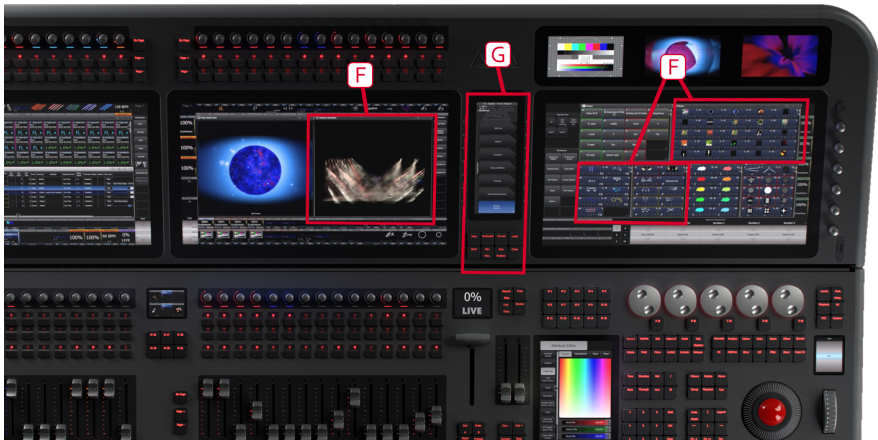
 (F) The **Workspace windows** on the touch screens contain a user-configurable layout of touch buttons for fixtures, palettes, groups, playbacks, macros and more. You can also show the integrated Capture visualiser, video feed monitors or a range of information screens such as intensity levels or DMX output levels.

 (G) The **System Prompt and Menu Softkeys** screen is the nerve centre of the console and shows you what is going on. This display contains touch buttons for the main menu which change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

4.2.2 Playbacks
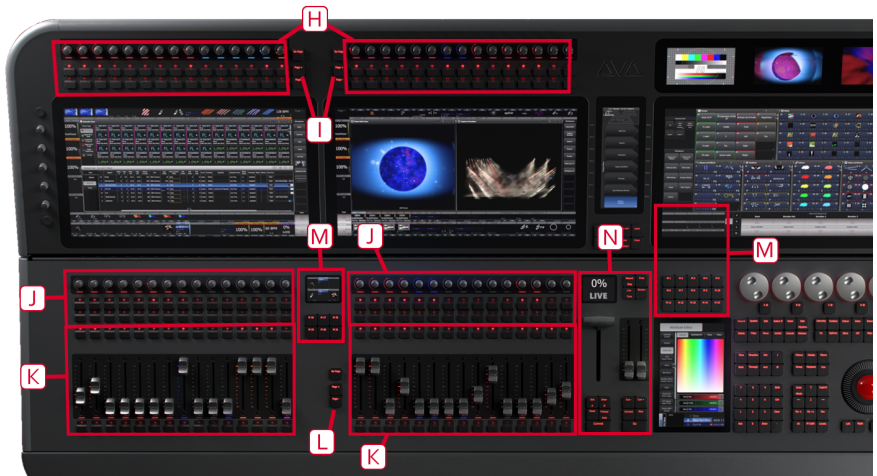
(H) The **Rotary Faders** and buttons at the top can be used to store a range of program functions including cues, chases, and fixture groups. The rotary faders have a level indicator around them which is shown in a user-configurable colour (halo colour). The touch screen below the faders shows legends indicating their function. There are additional rotary faders down the sides of the left and right touchscreens.

(I) The **Page Select buttons** in the centre of the faders let you change the left or right fader banks to a different page.

(J) Two more sets of **Rotary Faders** are provided above the Playback Faders.

(K) The motorised **Playback faders** and buttons are the main place to store and play back cues or chases but can also be assigned a range of other functions. Each fader has a level indicator which can be set to a user-configurable halo colour. The touch screen above the faders shows information about each playback.

(L) The **Page Select buttons** let you change the left or right fader banks to a different page of playbacks (for both the playback faders and the lower rotary faders).

(M) The **Macro Buttons** store playbacks or frequently used sequences of keypresses which can be replayed with a single button press. The display immediately above the buttons shows legends for the buttons. There is a smaller bank of 6 buttons between the playback faders with their own legend screen.

(N) The **Playback controls** are used to control the playback of cue lists and include a T-bar with display for the Scene Master function and a motorised fader pair in the Sequence Control Section to control the connected playback/master.

4.2.3 Programming controls

(O) The five **Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The touch screen above the wheels shows information about the attributes being controlled. The buttons to the right of the wheels switch them to other functions such as fade timing, shape control or visualiser control.

(P) The dedicated **Editor Touchscreen** shows the Attribute Editor window giving a different way to select attributes such as colours and gobos.

(Q) The **Function buttons** are used to carry out functions such as storing cues, copying, patching, saving to disk, etc.

(R) The **Attribute Buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons light up to show you which attributes are active.

(S) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

(T) The dedicated **Intensity Wheel** and display controls intensity of selected fixtures.

(U) The **trackball** controls pan and tilt of fixtures, and can also be used to control a mouse pointer for the screens.

4.2.4 Front edge of the console

Under the armrest at the front of the console is the **Power Switch**, a **USB socket** for connecting USB drives, and a pull-out drawer with an illuminated **Keyboard** for entering legends.

The front edge of the console has built-in LED illumination, useful for reading a script or notes. Press the reading light switch next to the keyboard drawer to turn this light on or off. If you hold down this button for 2-5 seconds it will turn on or off the red backlighting behind the screens.

4.2.5 The Back Panel
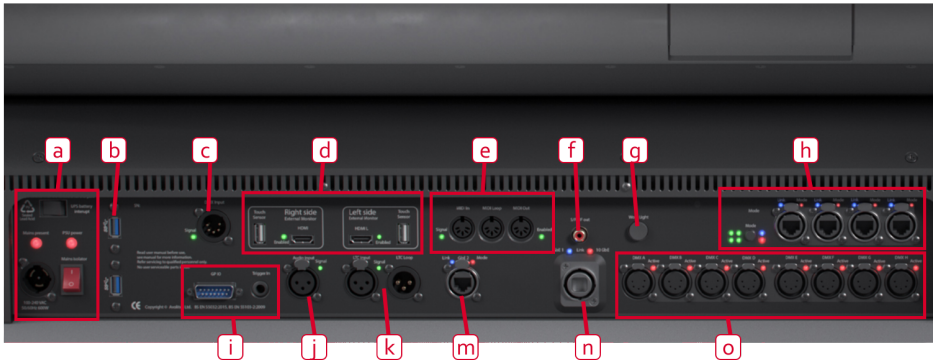
 (a) Mains power input (PowerCON TRUE1), mains isolator and UPS interrupt switch. Do not power the console off using this mains isolator switch, use the power switch at the front of the console.

(b) Additional USB sockets for general purpose use.

(c) DMX input for triggering.

(d) Outputs for two additional screens - HDMI and USB for touch screen.

(e) MIDI in, thru and out.

(f) Digital S/PDIF audio output.

(g) Work light switch. Turns on or off the integrated LED lighting around the connections panel.

(h) Four gigabit etherCON network connections from the internal Luminex network switch.

(i) GPIO trigger connection (D-connector and separate jack connector).

(j) Audio input for sound triggering.

(k) LTC Linear Timecode in and loop connections.

(m) Additional gigabit etherCON network connection.

(n) 10Gb quad opticalCON terminal.

(o) Eight DMX512 outputs.

4.3 Diamond 7

The Diamond 7 has the following main control areas. There are two models, the D7-330 with three touch-screens and 30 playback faders and the smaller D7-215 (illustrated) which has two touchscreens and 15 playback faders:

(A) The two main **Touch screens** (three on D7-330) contain the main workspace windows for the console. These contain a user-configurable layout of touch buttons for fixtures, palettes, groups, playbacks, macros and more. You can also show the integrated Capture visualiser, video feed monitors or a range of infor-mation screens such as intensity levels or DMX output levels. At the bottom of the right-hand screen, the current wheel assignments are shown. At the bottom of the left-hand screen(s), handle legends for the main faders and encoders are shown.

(B) The **Playback faders** and **Rotary playback faders** select and control cues, cue lists and chases, and other configurable functions. (D7-330 has additional faders).

(C) The **Programming and setup controls** configure and program the console, within which the **editor touchscreen** shows and sets fixture attributes and the **macro/executor buttons** are playback buttons al-lowing storage of cues or chases, frequent key sequences, screen layouts or groups. To the left of these controls are the cue list playback controls.

The Diamond 7 has built in LED lighting above the screens to light the desk surface. There are also sockets for conventional gooseneck lamps for scripts. The brightness is controlled from the wheels when in System Menu.
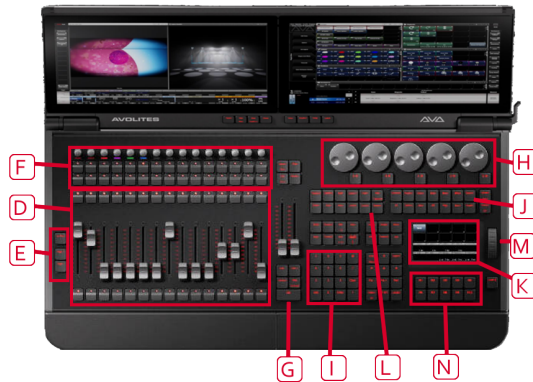
4.3.1 Playback section

(D) The motorised **Playback faders** and associated buttons are the main place to store and play back cues or chases but can also be assigned a range of other functions. Each fader has LED halo lighting which represents the active state of the playback in a user-configurable colour. The touch screen above the faders shows information about each playback.

(E) The **Page Select buttons** at the left side of the faders let you change to a different page.

(F) The **Rotary Faders** and associated buttons can be used to store a range of program functions including cues, chases, and fixture groups. The rotary faders have LED halo lighting around them which represents the active state of the playback in a user-configurable colour. The touch screen above the faders shows legends indicating their function.

(G) The **Playback controls** are used to control the playback of cue lists and include a motorised fader pair in the Sequence Control Section to control the connected playback/master.

4.3.2 Programming section

(H) The five **Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The touch screen above the wheels shows information about the attributes being controlled. The buttons to the right of the wheels switch them to other functions such as fade timing, shape control or visualiser control.

(I) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

(J) The **Attribute Buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons light up to show you which attributes are active.

(K) The dedicated **Editor Touchscreen** shows the Attribute Editor window giving a different way to select attributes such as colours and gobos.

(L) The **Function buttons** are used to carry out functions such as storing cues, copying, patching, saving to disk, etc.

(M) The dedicated **Intensity Wheel** and display controls intensity of selected fixtures.

(N) The **Macro Buttons** store playbacks or frequently used sequences of keypresses which can be replayed with a single button press. The display immediately above the buttons shows legends for the buttons.

4.3.3 Front edge of the console

At the front of the console is there is a pull-out drawer with an illuminated **Keyboard** for entering legends, and the console **Power Switch** (O) can be found to the right of the keyboard when it is pulled out.

A USB-C socket (P) is provided in the right hand handle recess.

4.3.4 The Back Panel
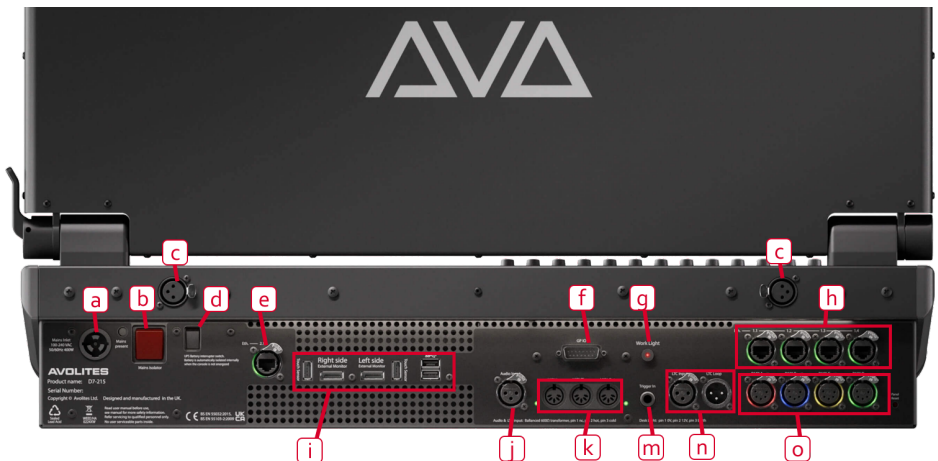
(a) Mains power input (PowerCON TRUE1)

(b) Mains isolator. Do not power the console off using this mains isolator switch, use the power switch at the front of the console.

(c) Gooseneck lamp (script light) sockets

(d) UPS interrupt switch

(e) Secondary gigabit etherCON network connection

(f) GPIO trigger connections (multiple triggers on D-connector).

(g) Work light switch. Turns on or off the integrated LED lighting around the connections panel.

(h) Four gigabit etherCON network connections from the internal network switch.

(i) DisplayPort and USB connections for external touch screens, with 2 additional USB sockets

(j) Audio input for sound triggering.

(k) MIDI in, thru and out.

(m) GPIO trigger connection (jack)

(n) LTC Linear Timecode in and loop connections.

(o) DMX512 outputs (4 on D7-215, 8 on D7-330).

4.4 Sapphire Touch
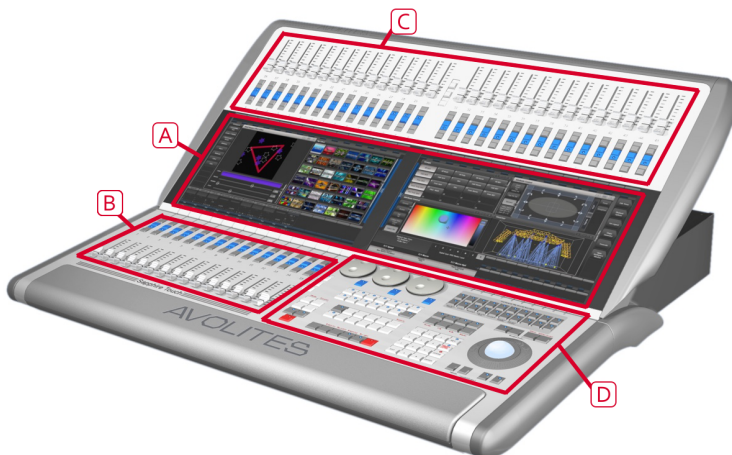
The Sapphire Touch has four main control areas:

 (A) The two **Touch screens** contain fixture, palette and group select buttons. They also show legends for the playback faders and shows the current menu page and softkey buttons on the top right of the right hand screen.

 (B) The **Playback faders** select and control cues, cue lists and chases, and other configurable functions.

 (C) The **Preset playbacks** are used for patching fixtures or for additional playbacks.

 (D) The **Programming and setup controls** configure and program the console, within which the **macro/executor buttons** are playback buttons allowing storage of cues or chases, frequent key sequences, screen layouts or groups.

4.4.1 The Main Controls
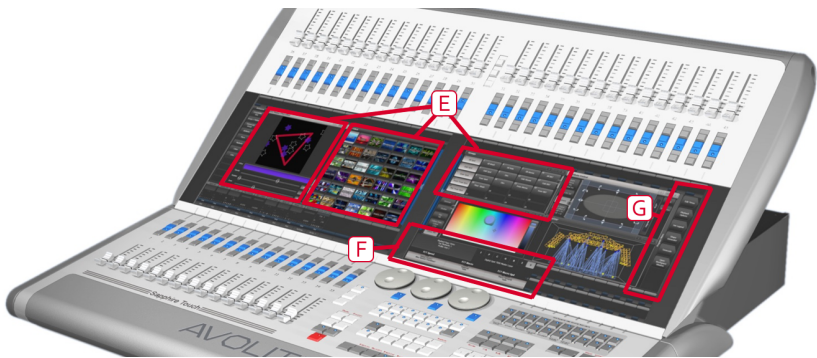
 (E) The **Workspace windows** on the touch screens contain touch buttons for fixtures, palettes, groups, playbacks, macros and more. You can also set fixture attributes and show information windows.

 (F) The **System display** area of the touch screen is the nerve centre of the console and shows you what is going on. This part of the display shows various screens of information depending on what you are currently doing.

 (G) The **Menu Softkeys** (labelled A - G) are used to select control options. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]
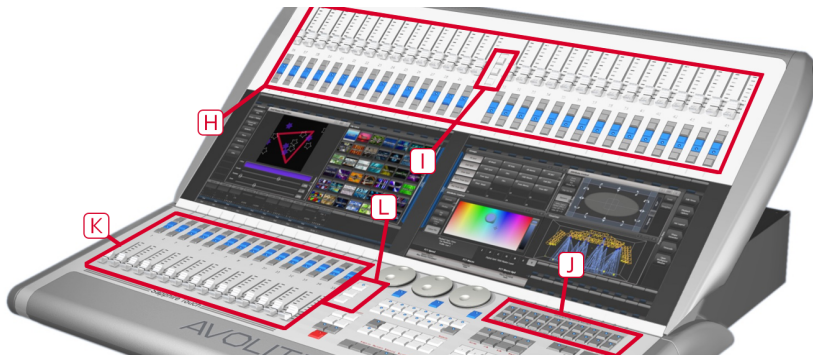
(H) The **Preset Faders** at the top are used to patch fixtures, and store and play back cues or chases.

(I) **The Preset Page Select buttons** in the centre of the faders let you change to a different page.

(J) The **Macro Buttons** store playbacks or frequently used sequences of keypresses which can be replayed with a single button press. The display immediately above the buttons shows legends for the buttons.

(K) The **Playback faders** are used to store and play back cues or chases.

(L) The **Playback Page Select buttons** let you change to a different page of playbacks. The touch screen above the faders shows information about each playback.

(M) The **Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The touch screen above the wheels shows information about the attributes being controlled.

(N) The **trackball** controls pan and tilt of fixtures, and can also be used to control the mouse pointer for the screens.

(O) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

 (P) The **Function buttons** are used to carry out functions such as storing cues, copying, patching, saving to disk, etc.

 (Q) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. The Red button just below allows you to locate fixtures, which sets them to a known start position while programming.
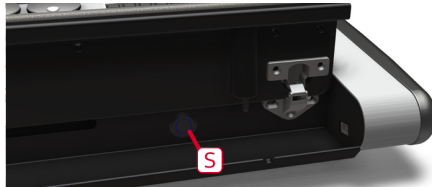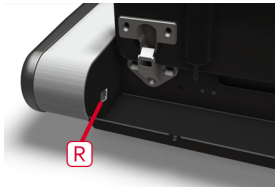
The Wrist Rest across the front of the console lifts to reveal a handy storage tray. On the left hand end (R) is a USB socket for saving shows and power/disk indicator lights. Near the right hand side (S) is the power switch.

4.4.2 The Back Panel
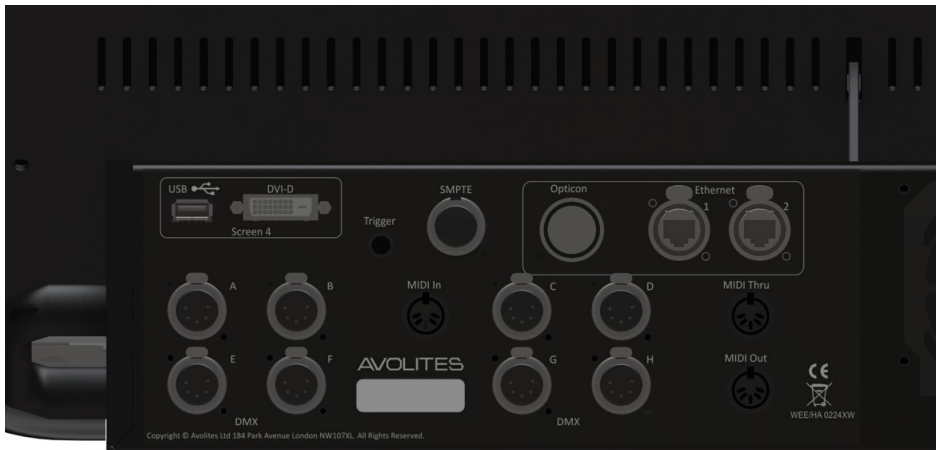
All the connections required for the console are found on the back panel.

On the left hand side are connectors for eight DMX512 outputs, MIDI, Ethernet, and a DVI/USB connection for an external touch screen.
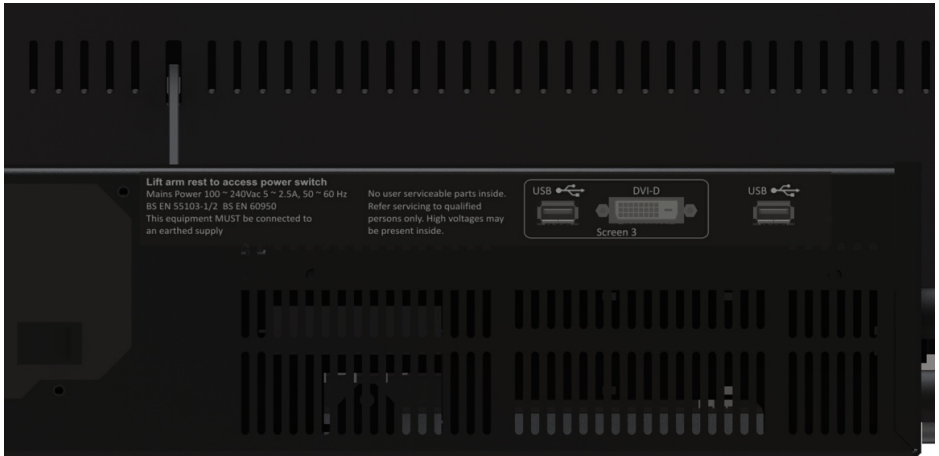
On the right hand side are DVI/USB connections for another external touch screen (screen 3) and a general purpose USB connector.

Power is connected in the middle of the rear panel.

4.5 Arena

The Arena has five main control areas:

 (A) The **Touch screen** contains fixture, palette and group select buttons. It also shows legends for the playback faders and shows the current menu page and softkey buttons on the top right of the screen.

 (B) The **Playback faders** select and control cues and programs.

 (C) The **additional playback faders** provide further positions for storing cues, programs, fixtures and other elements.

 (D) The **Mini screen** gives you another touch screen and additional masters or playbacks using four rotary encoders.

 (E) The **macro buttons** store playbacks or frequently used sequences of keypresses which can be replayed with a single button press.

 (F) The **Programming and setup controls** configure and program the console
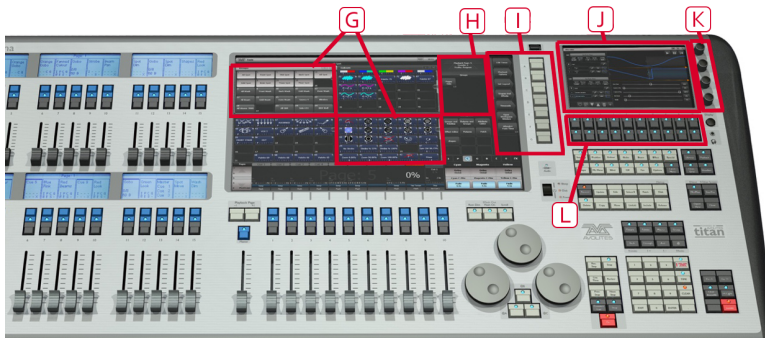
4.5.1 The Main Controls

 (G) The **Workspace windows** on the touch screen contain touch buttons for fixtures, palettes, groups, playbacks, macros and more. You can also set fixture attributes and show information windows.

 (H) The **System display and menu** area of the touch screen is the nerve centre of the console and shows you what is going on. This part of the display shows various screens of information depending on what you are currently doing.

 (I) The **Menu Softkeys** (labelled A – G) are used to select control options. The display next to the buttons shows what each one will do. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

 (J) The **Mini screen** displays additional workspace windows.

 (K) The four **rotary encoders** act like normal handles and can be allocated as masters or playbacks. Pressing the encoder is like pressing the blue button on a handle.

 (L) The **Macro Buttons** store playbacks such as strobe cues or frequently used sequences of keypresses which can be replayed with a single button press.
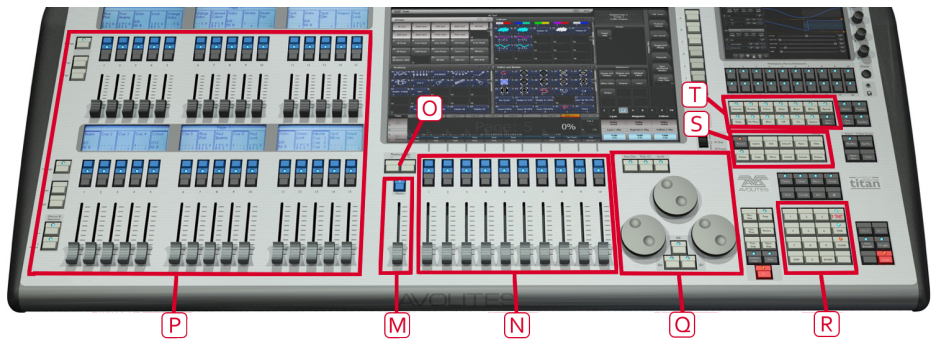
(M) The **Master fader** can be used to control the overall output of the console (though it is disabled by default).

(N) The **Playback faders** are used to store and play back cues or chases.

(O) The **Page Select buttons** let you change to a different page of playbacks. The touch screen above the faders shows information about each playback.

(P) The **Additional playback faders** in two banks of 15 allow you to store more cues and chases, or store palettes, groups, or fixtures. Each bank of 15 has separate page select buttons and displays above the faders show what they are.

(Q) The **Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The touch screen above the wheels shows information about the attributes being controlled. Press the **Window Scroll Button** to switch the wheels into scroll mode – this is used to move a selection box around the screen when editing.

(R) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

(S) The **Function buttons** are used to carry out functions such as storing cues, copying, saving to disk, etc. These buttons have lights on to indicate when they are active.

(T) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. In the bottom right corner of the console is the **Locate** button which sets fixtures to a known start condition while programming.

4.5.2 The Back Panel

(U) USB and reset buttons for panel reset and internal UPS battery disconnect.

(V) Network connections, monitor output, SMPTE input and audio input.

(W) DMX outputs and MIDI in/out.

(X) Desk lamp sockets.

All the connections required for the console are found on the back panel. There are 8 DMX outputs on 5-pin XLR, MIDI in/out/thru on 5-pin DIN, two desk lamp sockets, four Ethernet sockets from the internal Ethernet switch, an opticalCON Duo optical terminal for fibre network, a DVI connector for external monitor, three USB sockets, SMPTE input, audio input on 1/4 inch jack and remote trigger terminal on 1/4 inch jack.

The Panel reset switch may be pressed to restart the front panel electronics if something odd happens with the switches and faders. The main processor will continue running but the DMX output will be interrupted until the restart is completed.

The UPS battery disconnect switch cuts off the power to the console when it is running on UPS, in the unlikely event of a complete lock up that can't be recovered by holding down the power switch.

> Using the battery disconnect switch will also power down the inbuilt network switch (TNS). Be aware of this if you are running from a backup console connected via the network switch.

The Arena console has adjustable legs to angle the console for easier operation. Lift the rear of the console and press the Leg Release button at each side to set the leg to the desired height. Make sure you support the rear of the console when adjusting the height.

4.6 Tiger Touch
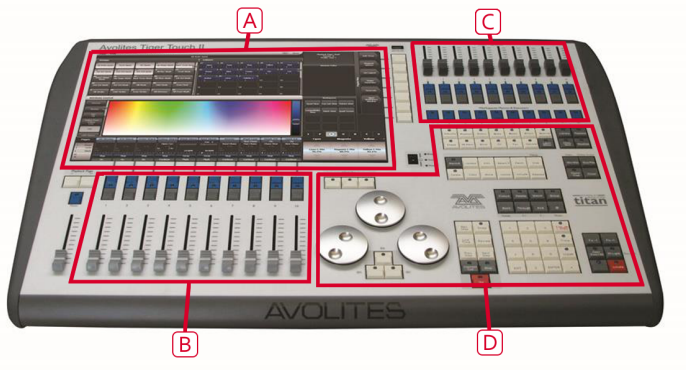
The Tiger Touch has four main control areas:

(A) The **Touch screen** contains fixture, palette and group select buttons. It also shows legends for the playback faders and shows the current menu page and softkey buttons on the top right of the screen.

(B) The **Playback faders** select and control cues and programs

(C) The **Preset playbacks** give you additional (unpaged) playbacks and the **macro buttons** allow storage of playbacks such as strobe cues or frequent key sequences.

(D) The **Programming and setup controls** configure and program the console.

> The first version of the Tiger Touch had a slightly different front panel layout.

4.6.1 The Main Controls

(E) The **Workspace windows** on the touch screen contain touch buttons for fixtures, palettes, groups, playbacks, macros and more. You can also set fixture attributes and show information windows.

(F) The **System display and menu** area of the touch screen is the nerve centre of the console and shows you what is going on. This part of the display shows various screens of information depending on what you are currently doing.

(G) The **Menu Softkeys** (labelled A - G) are used to select control options. The display next to the buttons shows what each one will do. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

(H) The **Preset Playbacks** are used to store and play back cues or chases that you need frequently. These playbacks are not changed by the page select buttons, but you can assign macro buttons to change pages.

(I) The **Macro Buttons** store playbacks or frequently used sequences of keypresses which can be replayed with a single button press.
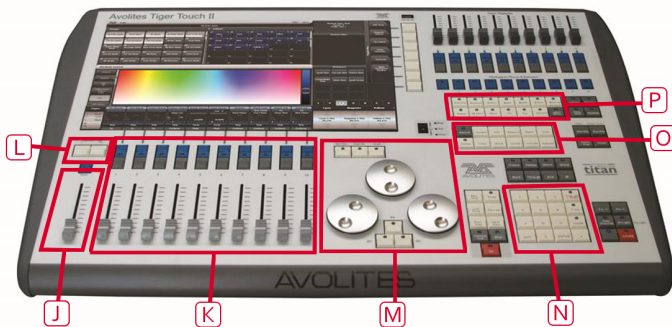
(J) The **Master fader** can be configured to control the overall output of the console (it is disabled by default).

(K) The **Playback faders** are used to store and play back cues or chases.

(L) The **Page Select buttons** let you change to a different page of playbacks. The touch screen above the faders shows information about each playback.

(M) The **Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The touch screen above the wheels shows information about the attributes being controlled. Press the **Window Scroll Button** to switch the wheels into scroll mode - this is used to move a selection box around the screen when editing.

(N) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

 (O) The **Function buttons** are used to carry out functions such as storing cues, copying, saving to disk, etc. These buttons have lights on to indicate when they are active.

 (P) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. The red button in the bottom right corner of the console allows you to locate fixtures, which sets them to a known start position while programming.
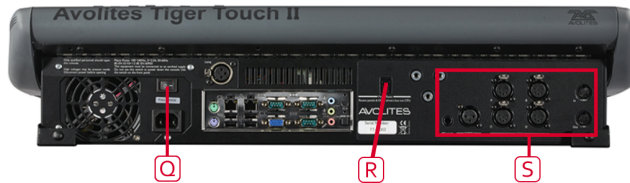
4.6.2 The Back Panel

All the connections required for the console are found on the back panel. Most are self-explanatory.

 (Q) The power switch above the mains inlet is used for isolating the power supply. Do not turn the console off using this switch, use the power switch on the front panel to ensure the software is correctly shut down.

 (R) The Panel reset switch may be pressed to restart the front panel electronics if something odd happens with the switches and faders. The main board will continue running but the DMX output will be interrupted until the restart is completed.

 (S) The console provides four DMX outputs on XLR, SMPTE input and MIDI in/out connections.

4.7 Quartz
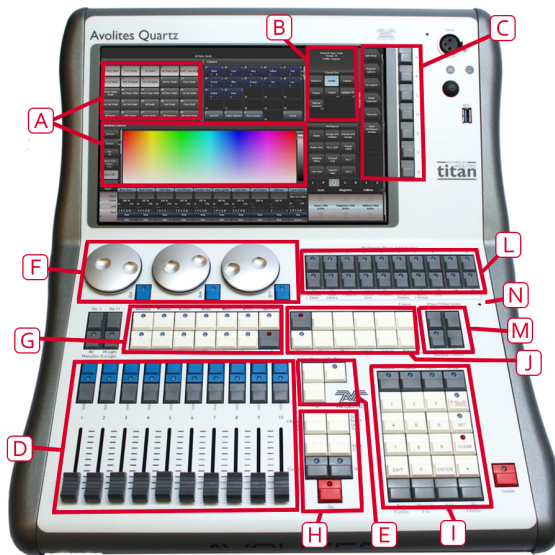
(A) The **Workspace windows** on the touch screen contain touch buttons for fixtures, palettes, groups, play-backs, macros and more. You can also set fixture attributes and show information windows.

(B) The **System display and menu** area of the touch screen is the nerve centre of the console and shows you what is going on. This part of the display shows various screens of information depending on what you are currently doing.

(C) The **Menu Softkeys** (labelled A - G) are used to select control options. The display next to the buttons shows what each one will do. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

(D) The **Playback faders** are used to store and play back cues or chases.

(E) The **Page Select buttons** let you change to a different page of playbacks. The bottom of the screen shows information about each playback.

(F) The **Attribute Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The bottom right corner of the screen shows information about the attributes being controlled.

(G) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, posi-tion) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. Attribute functions such as Fan and Shapes are also controlled here.

(H) The **Chase and Cue List control buttons** allow you to start and stop chases and cue lists, and move about in the list.

(I) The **Numeric keypad** and other control buttons are used to enter values and change controls on the system.

(J) The **Function buttons** are used to carry out functions such as storing cues, copying, saving to disk, etc.

(L) The **Workspaces, Macros and Executers** buttons are programmable buttons which can be used to store workspaces (screen layouts), button macros or cues.

(M) The **Workspace Window select buttons** are used to set which windows are shown on the screen.

(N) Near the power switch there is a small hole in the front panel. This is the **Panel Reset Switch** which may be pressed using the end of a paper clip or other pointy thing to restart the front panel electronics if something odd happens with the switches and faders. The main processor will continue running but the DMX output will be interrupted until the restart is completed.

4.7.1 Connections panel
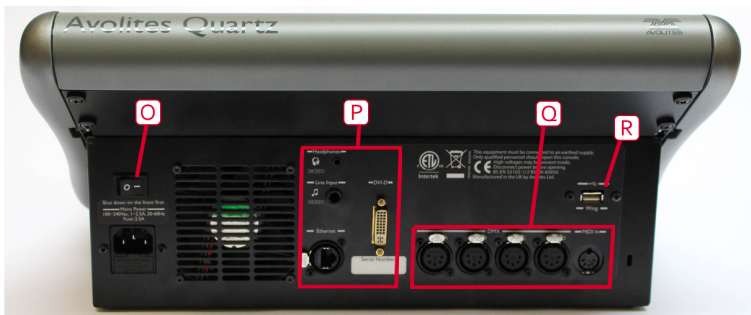
All the connections are on the rear panel. Most are self-explanatory.

(O) The power switch on the rear panel is an isolator for the power supply and should not be used to turn the console off. Use the switch on the front panel to turn the console on and off, this will make sure the software shuts down properly.

(P) In the centre of the panel are connections for network, external DVI monitor, and audio line in for triggering.

(Q) To the right of the panel are four DMX outputs on XLR, and MIDI input.

(R) The rear USB connector may be used to connect a wing or an external touch screen.

4.8 T3

T3 is a USB control surface which plugs into a Windows PC or laptop running the Titan Go software. See minimum PC specifications for details of the PC requirements. Four DMX outputs are provided, up to 16

DMX universes may be controlled over Ethernet (expandable with optional licence).

 (A) The **Playback faders** and buttons are the main place to store and play back cues or chases but can also be assigned a range of other functions.

 (B) The **Page Select buttons** let you change to a different page of playbacks. The bottom of the screen shows information about each playback ((b) in the next picture).

 (C) The **Attribute Control wheels** are used to set control values (attributes) for the fixtures, and also to set other parameters. The bottom right corner of the screen shows information about the parameters and values the wheels are controlling.

 (D) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, position) are going to be controlled using the Control wheels. The buttons light up to show you which attributes are active.

 (E) The **Playback control buttons** allow you to control cue lists and chases, and move about in the list.

 (F) The **Numeric keypad** and other control buttons are used to enter values and change controls on the system.

 (G) The **Function buttons** are used to carry out functions such as recording cues, copying, saving to disk, etc.

(H) The **Workspace, Macros and Executer** buttons are programmable buttons which can be used to store cues such as strobe cues, workspaces (screen layouts), or button macros.

(I) The **Workspace Window buttons**, along with the <View> button at the top right of the numeric keypad, are used to set which windows are shown on the screen. The <Latch> button bottom right keeps the current menu active.

(J) The **Menu Softkeys** (labelled A - G) are used to select control options. The right hand side of the display shows what each one will do - if you are using a touch screen computer you can touch the softkey on-screen instead of using these buttons. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times].

At the bottom of the Softkeys, the <Locate> button is used to light up and set selected fixtures to a zero position.

(K) The **Fixture Select buttons** are used when programming to step through a range of selected fixtures, turn highlighting on or off, fan the values or select a pattern of fixtures.

(L) The **Syntax Select buttons** are used to form syntax/keypad commands when you are programming.

4.8.1 PC Screen Layout

Titan is designed to be used with a touch screen, but may be used with a mouse. You can connect multiple monitors (to a maximum of 3) if your computer supports them.
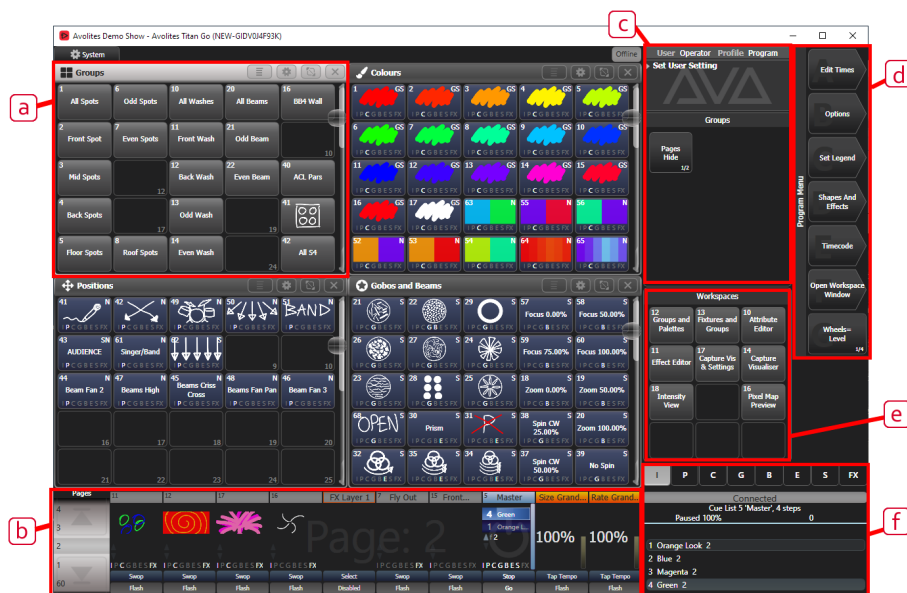
(a) A range of different **Workspace Windows** may be shown on the screen. These contain touch buttons to control fixture selection, palette selection, groups, shapes, attributes, and so on. Visualiser may also be shown in a window. The windows can be repositioned and resized.

(b) The **Playback information** shows the legend and other information about the playbacks on the 10 faders. You can select playbacks by touching in this area.

(c) The **System prompt** area shows feedback about the current actions on the console. Below that are **Context buttons** which appear when relevant to the operation you are doing.

(d) The system **Menu softkeys** are down the top right hand side. You can select these by touching or clicking them, or by using the menu buttons on the right hand edge of the control panel.

(e) The **Workspace Buttons** allow you to quickly select and save different workspace screen layouts.

(f) The **Wheels display** shows the current attributes or control parameters available on the 3 wheels. The **Attribute status display** (IPCGBESFX) above that shows which attributes are currently active or modified and allows you to select the active Attribute Bank.

4.8.2 T3 Connections panel

All the connections required for the control panel are found on the right hand side. Most are self-explanatory.

(Q) Four optically isolated DMX outputs are provided on 5-pin XLR. Up to 16 universes can be controlled via Art-Net or sACN using the network port on the host computer (expandable to 32 or 64 with optional additional licence).

(R) USB-C to host computer. The panel is powered via the USB connection. A screw lock hole is provided for use with an appropriate USB-C cable.

(S) Input for LTC timecode. A signal LED above the USB socket shows LTC activity.

4.9 T1 and T2

T1 and T2 are USB devices which plug into a Windows PC or laptop. See minimum PC specifications for
details of the PC requirements. Both devices include an AvoKey.

T1 will control a single universe of DMX, from its 5-pin XLR output or over Ethernet from the host computer
(fixed to Universe 1). USB-MIDI devices are not supported.

T2 will control two universes of DMX, output on two 5-pin XLRs or over Ethernet from the host computer
(fixed to Universes 1 and 2). It has a 3-pin XLR input to connect Audio for external triggering, or LTC timecode
(this is a balanced input with a 600 ohm transformer across pins 2 and 3, pin 1 not connected). T2 also
enables the use of a USB MIDI device plugged into the host computer for MIDI triggering of Titan, which for
example would allow you to use a MIDI fader surface. You can also connect the T3 or Titan Mobile fader

wing to provide physical faders.

The older Titan One dongle (now discontinued) also provided a single universe of DMX output on a 5-pin XLR or over Ethernet. USB-MIDI devices are not supported.

This version of the Titan One dongle with the fixed USB cable does not include an AvoKey; a separate AvoKey must be purchased and attached to another USB port on your computer to allow use of Titan v12 and later.

4.9.1 Installing the Titan software

Install the Titan PC Suite software on your PC (see Connecting up T3/Titan Mobile and T1/T2) before you plug in the USB, to make sure the correct drivers are installed. The link also lists some Windows settings you should check to avoid interruptions to your show.

The T1 and T2 devices use the Titan Go application. All functions are identical to the Titan software used on consoles, but the operating screen layout is slightly different to a console display as it provides virtual touch buttons and faders to replace the physical controls on the consoles.

4.10 Titan Mobile

Titan Mobile is a USB wing which plugs into a Windows PC or laptop running the Titan Go software. See minimum PC specifications for details of the PC requirements.
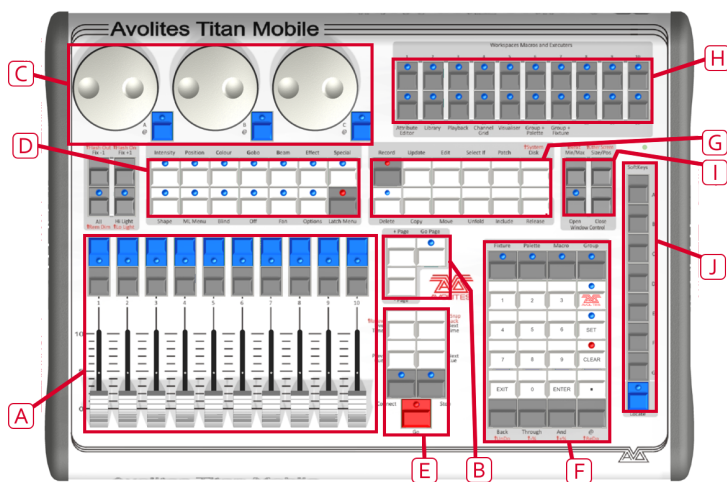
 (A) The **Playback faders** are used to store and play back cues or chases.

(B) The **Page Select buttons** let you change to a different page of playbacks. The bottom of the screen shows information about each playback.

(C) The **Attribute Control wheels** are used to set control values (attributes) for the fixtures, and to set chase speeds and fades. The bottom right corner of the screen shows information about the attributes being controlled.

(D) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, position) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. Attribute functions such as Fan and Shapes are also controlled here.

(E) The **Chase and Cue List control buttons** allow you to start and stop chases and cue lists, and move about in the list.

(F) The **Numeric keypad** and other control buttons are used to enter values and change controls on the system.

(G) The **Function buttons** are used to carry out functions such as storing cues, copying, saving to disk, etc.

(H) The **Workspaces, Macros and Executers** buttons are programmable buttons which can be used to store cues such as strobe cues, workspaces (screen layouts), or button macros.

(I) The **Workspace Window select buttons** are used to set which windows are shown on the screen.

(J) The **Menu Softkeys** (labelled A - G) are used to select control options. The right hand side of the display shows what each one will do. - if you are using a touch screen computer you can touch the softkey on-screen instead of using these buttons. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

4.10.1 The Screen

The system is designed to be used with a touch screen, but may be used with a mouse.
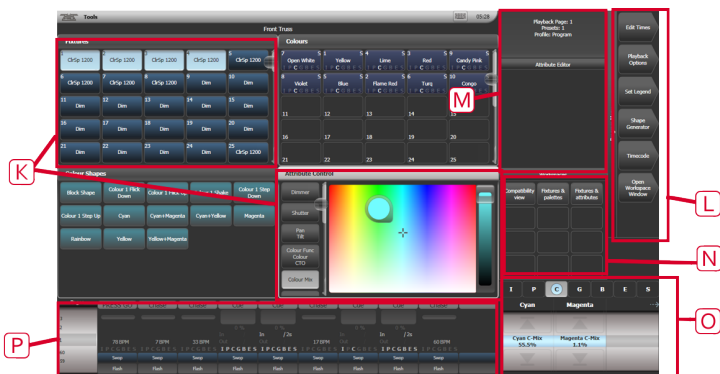
 (K) Four **Workspace Windows** may be shown on the screen. These contain touch buttons to control fixture selection, palette selection, groups, shapes, attributes, and so on. Visualiser may also be shown in a window.

 (L) The system **Menu softkeys** are down the top right hand side. You can select these by touching or clicking them, or by using the menu buttons on the right hand edge of the control panel.

 (M) **System prompts** are shown just to the left of the menu keys. Below that are **Context buttons** which appear when relevant to the operation you are doing.

 (N) The **Workspace Buttons** allow you to quickly select and save different workspace screen layouts.

 (O) The **Wheels display** shows the current attributes available on the 3 wheels. The **Attribute status display** above that shows which attributes are currently active or modified.

 (P) The **Playback information** shows the legend and other information about the playbacks on the 10 faders.

4.10.2 Titan Mobile Connections panel
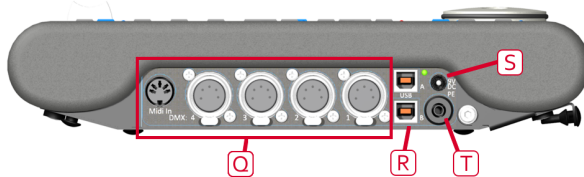
All the connections required for the control panel are found on the right hand side. Most are self-explanatory.

 (Q) Four DMX outputs are provided on XLR, and a MIDI input.

 (R) USB to host computer. The current version of the Titan Mobile panel has only one USB socket rather than the original 2 shown in the picture above. Normally the panel is powered via the USB connection. Some laptop USB ports may not provide sufficient power for the panel, in which case the DC power input (S) can be used to connect an external 9V DC power supply, available from Avolites.

 (T) The PE socket / stud is to allow you to ground/earth the panel, which can help resolve DMX problems if your laptop is not earthed.

4.11 TNP (Titan Net Processor)

The TitanNet Processor is the insides of a console without the control surface. It allows you to expand the number of DMX lines in a show beyond the 16 which a console can produce by offloading the processing into a separate unit.

 (A) MIDI and SMPTE connections

 (B) Network connections.

 (C) Eight DMX outputs on XLR

 (D) Integral touch screen for local setup and control

 (E) Power switch

 (F) USB for keyboard, mouse or memory stick.

It is also possible to improve robustness by running the whole show from one or more TNP units onstage and having the console simply acting as a remote control. The TNP can also act as a simple stand-alone controller using the onboard touchscreen, or by connecting an external touchscreen you can operate it using the Titan Go screen. It can load shows which have been created on a full console. You can also use a console in multi-user mode to create shows directly on the TNP.

See Titan Net (Abschnitt 18.1) for more information about using TNPs.

4.12 Pearl Expert and Touch Wing
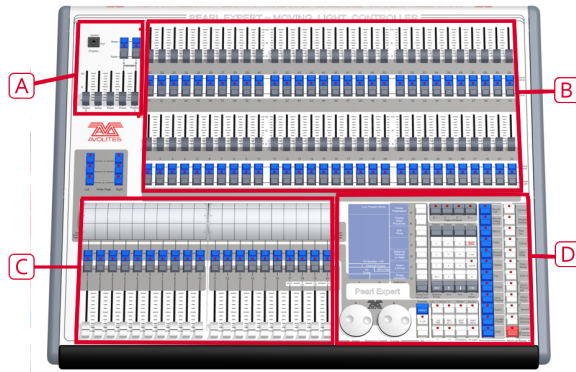
The Pearl Expert has four main control areas:

(A) The **Master faders** set overall levels on the console

(B) The **Preset faders/handles** select and control individual fixtures (and you can store cues and chases here too)

(C) The **Playback faders** and **rollers** select and control cues and programs

(D) The **Programming and setup controls** configure and program the console
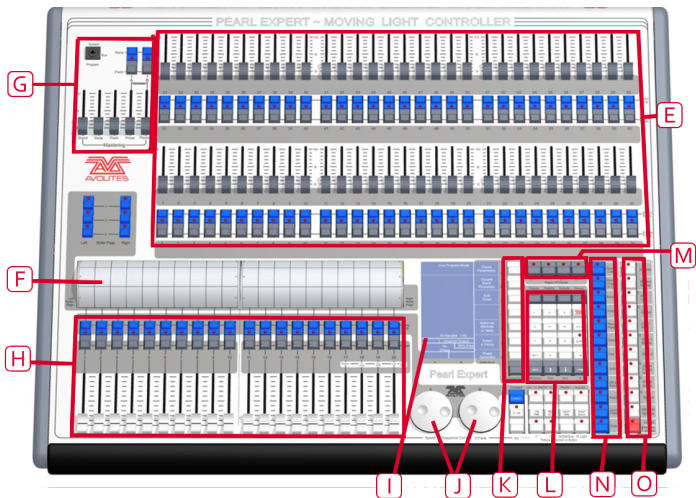
4.12.1 The Main Controls

(E) The **Preset Faders** are used to control individual dimmer channels and fixture intensities. Cues and chases can also be stored on these faders. The 2 buttons below the faders are used to select and flash whatever is stored on the fader. Each fader and buttons is called a 'Handle'.

(F) The **Page select rollers** let you select different pages of playbacks, and you can write the playback names on the rollers so you know what's in them. There are 2 rollers each controlling 10 playback faders

(G) The **Master faders** control the overall output of the various parts of the console. You will normally have these set at Full.

(H) The **Playback faders** and flash buttons are used to play back cues or chases you have programmed, when you are running a show.

(I) The **Main display** is the nerve centre of the console and shows you what is going on. The display can show various screens of information.

(J) The **Control wheels** are used to set control values on the fixtures, and to set chase speeds and fades.

(K) The **Menu softkeys** (labelled A – G) are used to select control options. The display next to the buttons shows what each one will do. The options for each key change depending on what the console is doing. Softkey commands are shown in the manual like this: [Edit Times]

(L) The **Numeric keypad** and other control buttons are used to enter values and change controls on the console.

(M) The **Fixture Page** buttons are above the keypad, and allow selection of 4 pages for the Preset Faders.

(N) The blue **Command buttons** are used to carry out functions such as storing cues, copying, saving to disk, etc. These buttons have lights on to indicate when they are active.

(O) The **Attribute select buttons** are used to select which attributes of a fixture (e.g. colour, gobo, pan, focus) are going to be controlled using the Control wheels. The buttons have lights on to show you which attributes are active. The bottom (red) button allows you to locate fixtures, which sets them to a known start position while programming.

- The main **Power switch** is on the front of the console to the left.

- A **QWERTY keyboard** and mouse touchpad is provided in a drawer on the front of the console.

4.12.2 The Back Panel

All the connections required for the console are found on the back panel. Most are self-explanatory.

(P) Four DMX outputs are provided on XLR. MIDI in and out is provided.

(Q) The Panel reset switch may be pressed to restart the front panel electronics if something odd happens with the switches and faders. The main board will continue running but the DMX output will be interrupted until the restart is completed.

(R) The USB reserve sockets and switches are for future expansion. The switches should be set to 'Normal operation'.

(S) The power switch on the rear panel is to isolate the power supply, do not switch the console off using this switch. The switch on the front edge of the console should be used to start it up and shut it down properly.

4.12.3 The Pearl Expert Touch Wing

The optional Pearl Expert Touch Wing uses a touch screen and additional wheels to provide the standard Titan interface for selecting fixtures, palettes, groups and setting attributes. It can only be used with the Pearl Expert and connects to the DVI port and the 9-pin D connector on the rear of the console, just above the panel with the rear USB/network sockets.

 (T) The main area of the Touch Wing shows up to 4 **workspace windows**. You can select the content and configure the size and layout of these windows using the Window Selection and Size/Position buttons below the screen.

 (U) The arrangement of windows can be saved and recalled using the **Workspaces** touch buttons on the right of the screen.

Some windows have additional command buttons which are displayed in the **Context touch buttons** area on the top right of the screen when the window is active.

 (V) The three **Attribute Wheels** take over attribute control from the wheels on the console, which are then used for speed/fade control of chases. Below the wheels the **Scroll Mode Button** to switch the wheels into scroll mode - this is used to move a selection box around the screen when editing.

 (W) The **Attribute Display** shows which attributes are being controlled by the wheels, and the current settings. Touching the roller graphic will set the attributes to min or max.

 (X) Across the bottom of the screen there is an area showing information about the **playbacks** on the current roller pages.

4.13 Fader Wings

"Wings" are additional control surfaces which can be connected to the console to provide more faders and buttons, and in some cases extra touch screens.

4.13.1 T3 Wing

The T3 Wing adds 20 additional playback faders and 30 macro/executor buttons to the main console. It connects by a single USB cable to the PC running the Titan software (or to a console).

It is designed to fit next to the T3 control surface, but it can be used with any of the Avolites Titan console range and also the T2 USB device.

If you want to see the legends and function information for the controls on the wing, there is a **Mobile Wing** workspace window - double click <View/Open> and select "Mobile Wing". Using the Context Menu buttons you can select different views for this workspace which combine the playbacks and macro/executor buttons into one screen, or you can display them in separate pages.

The T3 Wing can be used with consoles running Titan v16 or newer.

4.13.2 Tiger Touch Wing

The Tiger Touch wing provides 30 additional handles each with an associated legend display. The handles can be used as playbacks or to patch fixtures/dimmers. Each row of 15 faders has its own independent paging control.

The Tiger Touch Wing connects by USB to the main console. It also needs a mains power connection. The Wing has a built in USB hub to provide 2 further USB sockets for a keyboard etc.

A switch on the rear of the wing sets it to left or right position, allowing you to attach two of the wings to a console. The switch position is only read on power-up.

The Tiger Touch Wing is designed to fit next to the Tiger Touch console but can also be used with the D9, the Sapphire Touch, the Arena and the Pearl Expert.

> If you connect the Tiger Touch wing to a D9-330, the left hand faders on the console are the same handle group as the faders on the wing, so the same playbacks will appear in both places.

4.13.3 Titan Mobile Wing

The Titan Mobile Wing adds 20 additional playback faders and 30 macro/executor buttons to the main console. It connects by a single USB cable to the console or the PC running the Titan software.

It is designed to fit next to the Titan Mobile panel, but it can be used with any of the Avolites Titan console range and also the T2 USB device.

If you want to see the legends and function information for the controls on the wing, there is a **Mobile Wing** workspace window - double click <View/Open> and select "Mobile Wing". Using the Context Menu buttons you can select different views for this workspace which combine the playbacks and macro/executor buttons into one screen, or you can display them in separate pages.

> The toggle switch on the rear of the console next to the USB does not have any function.

5 Titan Basics

5.1 Connecting up and Titan basics

This section covers how to connect the console up, and the basic things you need to know about operating Titan.

> Radio transmitters may affect the operation of the console and we recommend that they are not placed on, above or behind the console. If you are wearing one it is best placed in a back pocket or behind you when attached to a belt.

5.1.1 Connecting mains power

You can safely connect the console to any voltage from 80 to 260V. If your console is not fitted with an internal UPS (uninterruptible power supply) we recommend that you should power the console via an external UPS (available from computer suppliers). If a UPS is not used, when the sound engineer pulls out the wrong plug and kills power to the console you can lose data (up to the last Autosave) and the console may want to check its disk on startup which can cause delays. The UPS will protect you from most power problems and give you chance to shut down the console normally.

If an internal UPS is fitted (Diamond 9, Diamond 7, Sapphire Touch, Arena, optional on other consoles), on power loss a warning dialog will pop up on the screen and the current show will be autosaved. Except on D9 and D7, the toolbar on the screen will also turn orange and display how long you've got before the console shuts down.

- When the UPS battery runs low and the console is about to shut down, the toolbar turns red.

- If any console or TNP in your session is running from UPS, an error will appear in the event log.

Diamond 9, Diamond 7 and Arena only: The Network Switch inside the console has an independent UPS system which allows the network switch to continue to run while the console is power cycled. When the console is shut down the network switch will continue to run for about 5 minutes, or until mains power is removed. This is important when a backup console is running the show through the network switch in the console, as it allows the main console to be power cycled without losing the network link to the stage.

5.1.2 Starting up and shutting down

The console runs a Windows-based operating system internally, so you need to make sure it is shut down properly rather than just turning off its power.

Start up the console by pressing and releasing the Power switch on the face or front edge of the console (lift up the wrist rest on the Sapphire Touch). The console display(s) should come alive. The console takes up to 1 min 30 seconds to start up.

Shut down the console by pressing and releasing the Power switch again. The console will perform a controlled shutdown. Wait until the Power light has gone off (about 30 seconds) before you disconnect power from the console.

> If the console has a switch on the power module on the back, do not use this to turn off the console as this does not close down the software properly and you will lose any changes to your show.

5.1.3 Forced Shutdown

To carry out a **Forced Shutdown** of the console, if the normal shut down does not work, hold down the power switch for 5 seconds. You will lose any changes to your show since the last save.

On consoles with a built-in UPS, you cannot just pull out the power to shut down the console if it is not possible to shutdown the console by any of the above means. In this case having disconnected the mains power you should press the Battery Disconnect switch on the rear panel.

D9 / D7 and Arena only: Battery Disconnect will also shut down the internal network switch so be careful if you are running a backup console via the switch. When you shut down the console normally, the network switch will stay on for about 5 minutes then power off. There is no harm in leaving it to do this.

5.1.4 Connecting up T3 / Titan Mobile and T1/T2

Do not connect the T3 / Titan Mobile panel or the T1/T2 dongle to your PC for the first time until you have installed the **Titan PC Suite** software, which you do simply by running the installer file. This will make sure the drivers for the panel are installed.

> **PC specifications:** From Titan v14, your PC should be running Windows 10 64-bit (other versions may not work correctly and we can't provide you with support). Some users have successfully used Virtual Machines to run Titan, but we don't provide support for them.
> We recommend i5 processor with 4GB RAM as a minimum.
> Please see https://avolites.com/titan-pc-system-requirements for the full specification.

For best usability, your PC should have a touch screen. If not you can use the mouse to select touch buttons.

T3 / Titan Mobile

Having installed the Titan PC Suite software, connect the USB cable for the panel (older Titan Mobile panels have two USB connectors - you only need to connect port A, nearest the DC socket). If your PC asks you for

drivers, select 'Install the Software Automatically'. If you have an older Titan Mobile panel without the built-in AvoKey you also need to attach an AvoKey to a free USB port to license the software.

The T3 panel, and recent Titan Mobile panels have a built-in AvoKey so you can swap the panel between different computers with the Titan software installed - the software will only run when the panel is connected. The AvoKey license is pre-activated at the factory. See licensing (Abschnitt 19.9.2) for more details. Older Titan Mobile panels will require a separate AvoKey to be connected.

- The Titan Go software should automatically detect if a T3 or Titan Mobile panel is connected, and hide the virtual hardware touch buttons which are shown when you use it with T1/T2 devices - if you want to keep these buttons visible this can be manually overridden using the User Setting Virtual Hardware (Abschnitt 19.5.2) in the **Display** tab.

Titan Mobile DC socket: Power is normally supplied down the USB connection and the external DC power socket is not used, but if your PC has a lot of other USB devices plugged in, or in the case of some laptops, an external DC power supply may be needed. The required power supply is: 9-12 volt 800mA DC. Connector: 2.5mm hole, outside diameter 5.5mm, length 9.5mm, wired centre pin positive. Example Part number: DCPP2

T1/T2

The T1/T2 USB devices give you a full lighting control system that will output one or two universes of DMX or Art-Net. The software to run it is called Titan Go. Both devices have a built-in AvoKey so you can use them on different computers with Titan installed, as long as the T1/T2 device is connected. The AvoKey license is pre-activated at the factory.

- If you are using an older cabled version of the Titan 1 dongle, you will need to attach an AvoKey to a free USB port to license the software.

Windows settings for Titan PC Suite

A standard Windows PC will have some options set which may cause disconnection of USB hardware, sleep/shutdown of the computer or other things you wouldn't want during a show. To avoid unwanted interruptions when using Titan on a normal PC with T1, T2, T3 or Titan Mobile, **please check the following Windows settings.**

1. Disable Windows USB Power Saving for the Avolites hardware (open Device Manager and go into Properties for the T1, T2, T3 or Titan Mobile device)

2. Set your PC, screen and disk drives to remain active continuously (open "Power and Sleep" settings and change all settings to "Never")

3. Disable automatic Windows Updates (open "Windows Update", select "Advanced Options", set "Restart this device" to "Off". Also you can set "Pause Until" to a future date to prevent updates

being installed.)

4. Disable Disk Indexing (select "This PC" in folder view, right click on system drive, select Proper-
   ties, untick "Allow files on this drive to have contents indexed" at the bottom)

5. Disable Windows Firewall (if you are not on an internet-connected network) or ensure that all
   the Titan applications are listed in the Firewall exceptions.

5.1.5 Titan Healthcheck

When the Titan software starts up, it runs a small utility called Titan Healthcheck which checks the file sys-
tem and the installed firmware and software for anything that might cause you problems. If any problems
are found, a warning screen is displayed which offers the option to fix the problems.
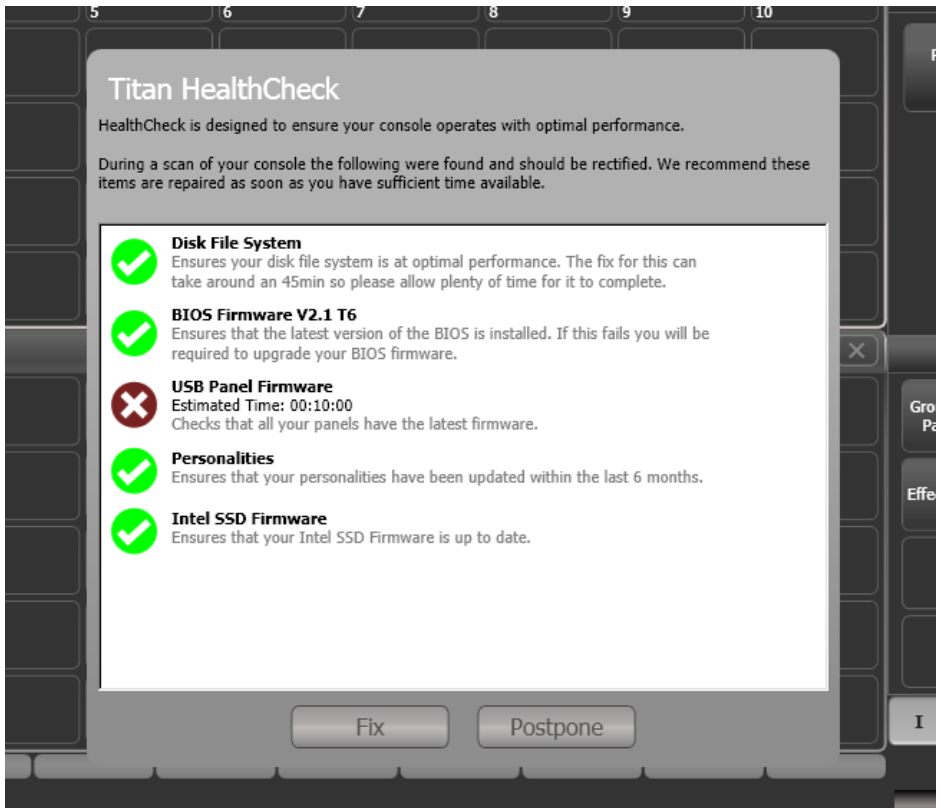
Only run fixes if you have plenty of time as some fixes can take up to an hour to complete.

5.1.6 Connecting DMX Lines

Consoles have a number of DMX outputs on 5-pin XLR for direct connection to fixtures and dimmers, and can send Art-Net or sACN over Ethernet.

When you patch a dimmer or fixture you tell Titan which of the 64 DMX lines it is on. Each line can be configured to come out of one or more of the XLR outputs on the back of the console, and/or to Art-Net or sACN universes over Ethernet. Some hardware has limitations on the number of lines you can output - see the DMX output section (Abschnitt 19.6.1) for more information.

The D9, D7 and Arena include a built-in Ethernet switch (Abschnitt 21.2) and have an optical network con-nection.

> By default on a new show, the XLRs on the console are automatically connected to DMX lines starting at line 1, however if you are loading a show from a different model of console or the simulator, check the DMX Settings option to confirm how the DMX outputs are set up.

The 5-pin XLR sockets on the console are wired like this:

Pin #	Use
Pin 1	Earth
Pin 2	Data -
Pin 3	Data +
Pin 4	Not used
Pin 5	Not used

Each DMX line should pass through all the fixtures to be connected on that line one after the other and have a DMX terminator fitted at the end (120 ohm resistor between pins 2 and 3). You should not split the DMX lines using passive splitters (Y-splits) as this can corrupt the data.

5.1.7 Connecting a Monitor

You can connect an additional monitor to the console (2 monitors on D9, D7 and Sapphire Touch). This gives you extra screen space for workspace windows which can be handy for showing Visualiser or additional buttons. Touch monitors are very useful to give additional control surfaces. We advise you use a monitor compatible with Windows Touch to avoid problems with touchscreen drivers.

Titan PC Suite (Titan Go / Titan Simulator) will also support 2 additional monitors if the PC you are using has the facility.

An external monitor is disabled by default and will show a 'disabled' message. To enable, switch to **System**

menu (press <Avo> + <Disk>) and select [Display Setup] then press [External Display Disconnected]. The option will change to [External Display Connected] and the display will be enabled.

If you need to change the monitor resolution or settings on a console, touch 'Tools' at the very top of the screen and select 'Control Panel', then 'External Monitor', then select the option to match the resolution of your monitor.

The External Displays (Abschnitt 19.3) section gives more information about setting up an external monitor.

5.1.8 Other Connections

You can connect a USB keyboard and mouse to the console. If you are using an external non-touch monitor on a console without a built-in keyboard/touchpad you will need a mouse to access the buttons on it, or on the Sapphire Touch you can use the trackball in mouse mode.

You may need to use a small USB hub to connect additional devices if the console does not have enough USB sockets itself.

All consoles provide MIDI connections which can be used to trigger playbacks or connect MIDI timecode to the console for timecode-controlled cue lists. USB-MIDI devices may also be used. MIDI cannot be used with the T1, but can be used with T2 and T3 if you attach a USB-MIDI device.

Some consoles provide a SMPTE input to allow the console to be linked to a timecode source.

You can connect the console to a LAN (local area network) using the EtherCON or RJ45 network socket(s) on the rear. This allows you to operate many more universes of DMX using DMX network protocols, and also allows backup and multi-user consoles to be connected to each other.

One or two 3-pin XLR sockets for desk lamps are provided on the rear of the console. Suitable lamps are available from Avolites. The lamps are 12 volt DC, wired from pins 1 (negative) and 2 (positive) of the XLR (not all desk lamps are wired like this and may require rewiring to work).

- You can set the brightness of the desk lamps on the wheels when in the **System** menu (press <Avo> + <Disk>).

5.1.9 Connecting Console Wings

"Wings (Abschnitt 4.13)" are additional control surfaces which can be connected to the console to provide more faders and buttons. They connect to the console by USB.

The Pearl Expert Touch Wing can only be used with the Pearl Expert (Abschnitt 4.12) console and should be connected before the console is powered up.

5.2 Workspace Windows

The main area of the screen contains the workspace windows. These contain buttons and controls for se-lecting fixtures, groups, palettes, and playbacks, for controlling fixture attributes, showing cue lists, or the visualiser - in fact there is a workspace window for every feature of the console.

The windows can be freely arranged and each monitor can have its own arrangement of windows. You can save different layouts to the Workspace select buttons which allows you to instantly reconfigure the console for different tasks. The saved layouts can change just the monitor they are on, or all monitors together.

The picture below shows a typical arrangement of workspace windows.

5.2.1 Opening and Positioning Workspace Windows

Double press the <Open/View> button to show the workspace open buttons overlay on all monitors. On the monitor where you want the workspace, press the appropriate button and the window will open on that monitor.

The <Open/View> button is labelled differently on some consoles:

- Diamond 9 / Diamond 7: <View>. There's an additional <Open> button which is the same as double pressing <View>.

- Quartz, Titan Mobile: <Open>

- T3, Titan Go, Tiger Touch 1, Pearl Expert: <View>

If the window was already open on a different monitor, it will move to the monitor you selected keeping the same size and position.

You can also use the [Open Workspace Window] menu command on the root menu to show the workspace open buttons. Pressing <Open/View> again will close the workspace button overlay, or pressing the {X} at the top of the button overlay on any screen will close it on all screens.

There are also button shortcuts to open some of the windows:

Shortcuts to Open Workspace Windows

- <Open/View> then an Attribute Bank button opens the Palette window for that attribute.

- <Open/View> then <Patch> opens the Patch View window.

- <Open/View> then a fixture select button opens the Fixture View window showing patch details for that fixture.

- <Open/View> then <Connect/Cue> opens the Playback View window.

- <Open/View> then <Off> opens the Active Playbacks window.

- <Open/View> then <Macro> opens the Macro window.

Changing window size and appearance

At the top right of each workspace window are three or four buttons which access other functions for the window.

The **Window Appearance Options** button ({Cog} button) lets you select the standard window sizes and positions (top left quarter, top right quarter etc.) Buttons are also shown allowing you to set the button size and the text size of the buttons in the window, and move the window to a different monitor. The Appearance options may vary depending on which window it is, the setup of the console and if you have any external monitors. The {Rows / Columns} buttons allow you to control how buttons are arranged, see Controlling Button Layout/Grid (Abschnitt 5.2.1.4).

The {Resize Window} button allows you to set adjustable window sizes. A grid screen will open.

With the softkey [Edit All Windows] set to Off, you just set the size of the selected window.

Touch and drag the top left or bottom right corners to resize the window. Touch and drag anywhere else to move the window.

Tap on a corner to set a start corner position - the window will highlight in red and ask you to tap to set the opposite corner position.

If the softkey [Resize Neighbours] is set to On, surrounding windows will resize to make room for the window you are editing. If Off, the other windows will stay the same size and go behind the current window.

If [Edit All Windows] is set to On, corner arrows will appear in all windows and you can adjust the size of all the windows together. Press <Enter>, <Exit> or [OK] to finish.
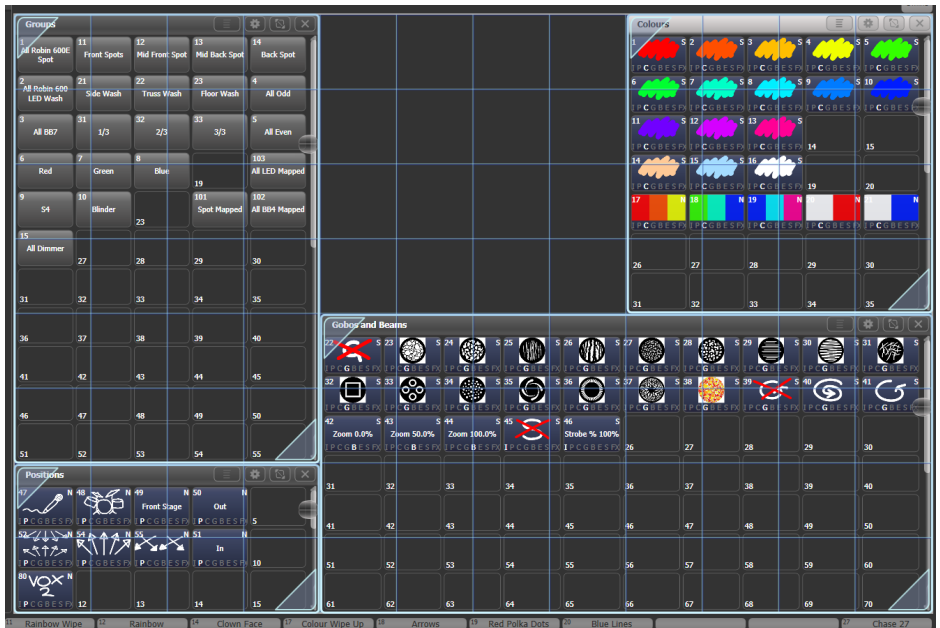
> If you accidentally set a window to a single grid size, you can't then get to the Window Layout button to resize it. Select the window and use the [Min/Max] softkey to set the window to a fixed size.

You can move the active window between screens from the Window Appearance screen, or by pressing View then [Window Options] then [Move Screen], or hold <Avo> and press the <Size & Position> button.

You can close the active window using the <Close> button (not on all consoles). You can close all windows by pressing <Avo>+<Close>, or use the [Close All] softkey.

Context Menu Buttons

On all consoles apart from Sapphire Touch and Titan Go, **context menu buttons** appear which contain useful functions for the current active window and change depending on the window.

On Diamond 9 the context menu buttons are in the top left hand corner of the right hand screen; on Arena, Quartz and Tiger Touch they are below the prompt area on the top right of the main screen. The picture below gives an example of how the context buttons appear when Patch View window is active.
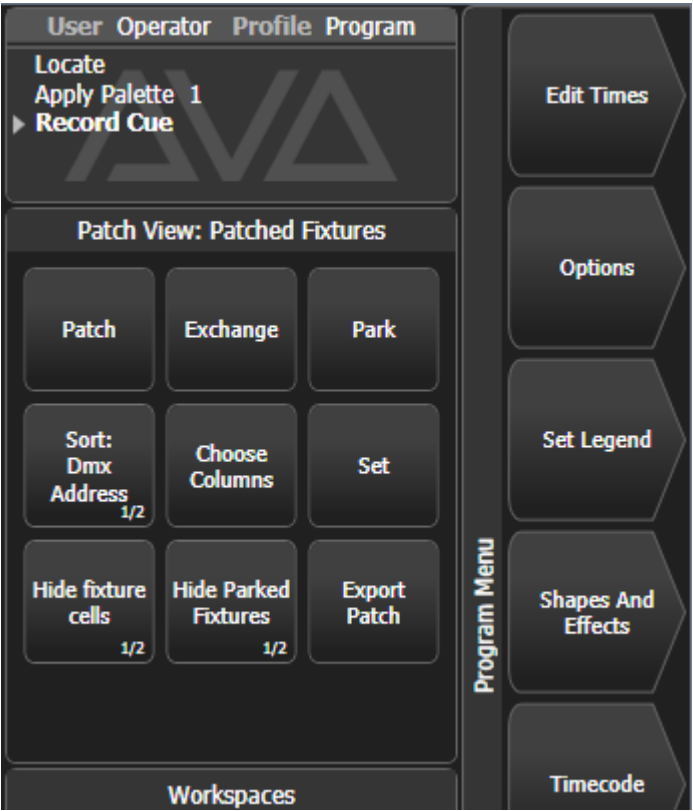
On D7, Sapphire Touch and Titan Go the context menu buttons are not shown on the main screen, each window has a {Context Menu} button in the top window bar, which gives a drop down menu showing the context menu buttons for the current window.
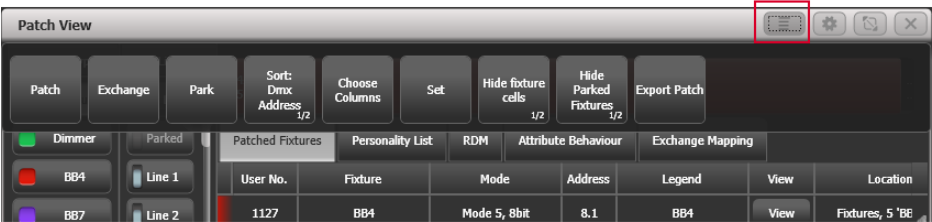
Controlling Button Layout/Grid

Buttons normally resize automatically to suit the screen size and resolution, however this means that mov-

ing shows between different consoles or different screens can make the number of rows and columns change, causing buttons to move around. If you have set a particular layout you want to keep (for example if you've positioned fixtures in the window to match the layout on stage), open the Window Appearance menu using the {Cog} button and set Button Size to {Button Size Set Rows & Columns}. You can then set a fixed layout using the {Rows} and {Columns} buttons.
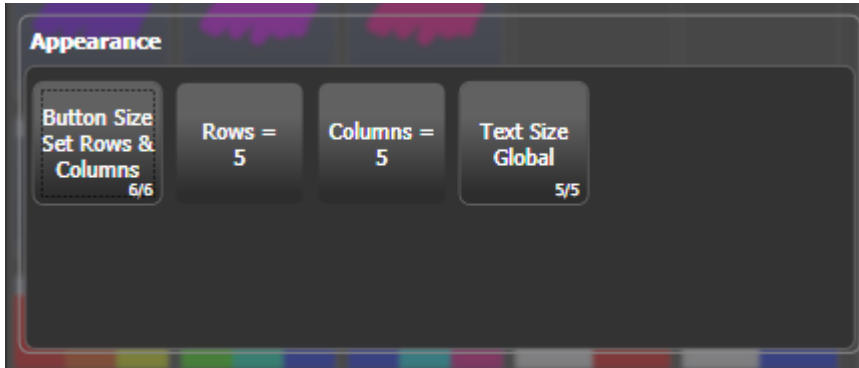
The Rows and Columns settings are remembered even if you change the button size back to one of the automatic sizes, which allows you to swap between auto and fixed button size modes.

5.2.2 Saving Workspace Layouts

You can save workspace layouts, allowing you to reconfigure either all the windows on one screen, or all the windows on all the screens, at the touch of a button.

Workspace layouts are saved to the Workspaces touch buttons. Depending on the console these are either above the Wheel displays or in a bar down the side of the screen.
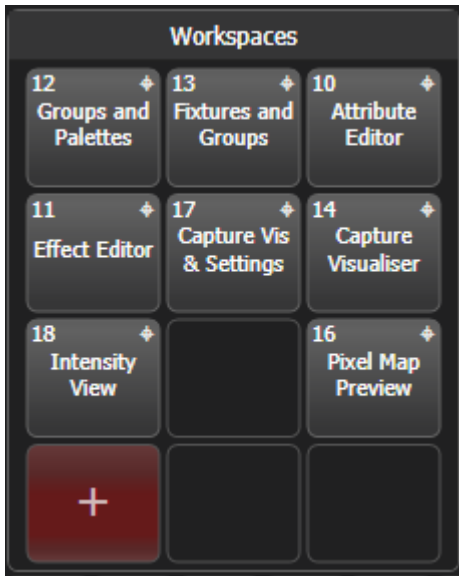
External screens can have their own workspace buttons down the side of the screen (these can be turned on or off in the User Settings (Abschnitt 19.5.2) .)

To record, press <Open/View> then [Record Workspace], then touch one of the Workspaces buttons, or just touch an empty button twice to Quick Record. You can also save workspaces onto any grey handle or macro button.

When saving and loading workspaces, it's often useful to be able to set how existing windows will behave if you load more windows, and to be able to target particular windows to a certain screen on the console.

- [Record Visible/All Windows] lets you set whether the workspace will contain only the windows which are currently visible, or will also include any windows which are hidden underneath other windows (this option is not available when using Quick Record).

- [Remove/Leave other windows on recall] sets whether all other windows will be closed when this workspace is recalled. If set to remove, the Workspace button will show an {X} in the corner.
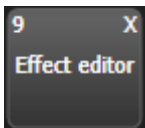
- [Screens=] sets whether the workspace layout will record all the screens, or individual screens (you can select or deselect each screen).

- [Recall as Recorded / Where Selected] only appears if the Screens option is set to record only a single screen, and sets whether the workspace will recall onto the screen where you recorded it (button shows S + the screen number), or if it will recall onto the screen where you selected it (button shows a target symbol in the corner).
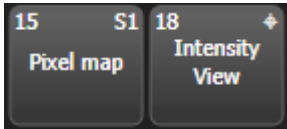
- To delete a workspace button, press <Open/View>, <Delete>, then the workspace button to be deleted.

- When recalling a workspace, if you press <Open/View> first then softkey buttons let you set the workspace to recall to the particular screen where it was recorded [As Recorded], or to a different screen (the other screen numbers are listed on softkeys). This is useful when a workspace contains only a single screen, allowing you to recall it onto a different screen.

> **Screen numbering**
> On consoles with a single internal screen, that is (1) and the external screen is (2).
> On Diamond 9 the right main screen is (1), middle is (2), left (not D9-215) is (3), Editor screen is (4), Video preview screens are (7) (6) (5), external screens are left=(9) and right=(8).
> On Diamond 7 the right main screen is (1), middle is (2), left (not D7-215) is (3).
> On Arena the main screen is (1), the mini screen (2) and the external screen (3).
> On Sapphire Touch the right main screen is (1), the left main screen is (2) and the external screens are (3) and (4).

As an example of setting up a workspace, suppose while programming you wanted to be able to access fixtures, position palettes, fixture attributes and shapes:

1. Double press the <Open/View> button, or press <Exit> to get to the root menu and then the [Open Workspace Window] menu softkey.

2. Find the {Fixtures} icon on the screen and press it.

3. If the window is not in the top left quarter, press the <Size & Position> button (above the numeric keys) until the window occupies the top left quarter. Or press the {Cog} button on the window top bar and press the top left position button in that window.

4. Double press <Open/View> again and select the {Positions} window. Press the <Size & Position> button to position it in the desired location.

5. Repeat to activate the {Attribute Editor} and {Effects} windows.

> 6. Press <Open/View> then [Record Workspace], or hold <Avo> and press <Open/View>. Type in
>   a name for the workspace. Then touch the Workspace button where you want to store this
>   workspace layout. Or, you can use Quick Record – just touch an empty workspace button and it
>   will turn red with a +. Type a name for the workspace and touch again to store it.

5.2.3 Quick Record
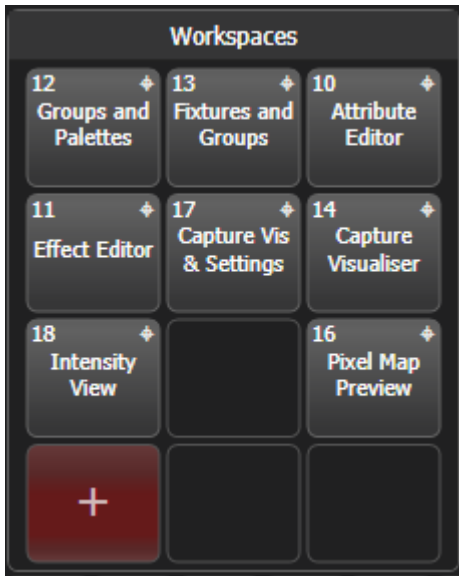
Some windows - Groups, Workspaces, and all the Palette windows - have a Quick Record function. Set up
what you want to record, then touch or click an empty button once. The button will light up red with a +
sign. At this point you can enter a legend. Touch or click again to store the item.

The Quick Record function can be disabled for a particular button type using Key Profiles (Abschnitt 19.4).

For palette buttons, the quick record function works slightly differently to pressing <Record> followed by
the button because a mask is automatically applied. See Storing a Palette (Abschnitt 8.2.2).

5.2.4 Legends and Picture Legends

All controls can have legends set to remind you what they do. These can be text or image files, or you can
draw your own picture legends. To do this, select [Set Legend] then press [Picture]. A drawing space will
open on the touch screen for you to draw the legend. There is also a library of pictures to choose from
including popular gobo designs.

Colour palettes will automatically create a picture legend showing the colour(s) in the palette when you save it. Gobo palettes will show an image of the standard gobo, if the fixture personality has this information in it.

5.2.5 Button Halo

You can set a custom coloured halo for fixture, group, playback or palette buttons. This can be really useful for identifying different types of button at a glance. Select the [Halo] option on the Set Legends menu.

If you set a halo on fixture buttons (Abschnitt 6.3.6), the halo colour is also used in other windows; fixture

buttons can also have an automatic halo to help identify different types of fixture, which is also used in the patch window.

On the Diamond 9 and Diamond 7, the halo colour set on playbacks is used in the LED lighting for the faders/rotary controls.

5.2.6 Touch Keyboard

At the end of the toolbar is the keyboard popup button which will open the touch keyboard.
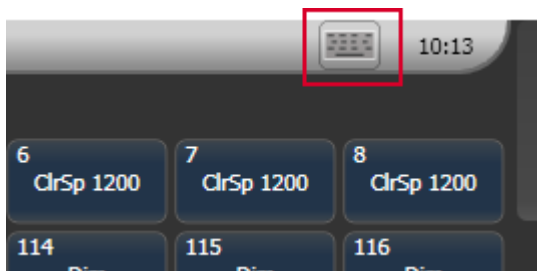
The touch keyboard can be switched between large and small size using the Max/Min button and you close it using the large {X} button in the top right hand corner. You can also move it on the screen by touching and dragging the blank area of the keyboard at the top.

If you want the keyboard to pop up automatically when text input is required, set the {Man/Auto} button to "Auto". This setting will stay active until you change it back to "Manual".

The small version of the keyboard (pictured) does not have some of the less frequently used buttons.

5.2.7 Trackball (Diamond 9 and Sapphire Touch only)

The trackball on the right of the console can be used either to control the mouse pointer on the touch screens and external monitors, or to control fixtures.

To use in mouse mode, hold the <Assign> button below the trackball and click the 'Left' mouse button. The trackball will then control the mouse pointer and the ring will scroll windows up and down.

To use in console mode for controlling fixtures, press the <Assign> button on its own. The trackball will control pan and tilt of selected fixtures - see Trackball control (Abschnitt 5.2.7).

5.2.8 Video preview screens (Diamond 9 only)

The three preview screens on the top right of the console can be configured to show NDI video streams, or can also be used as extra workspace windows.

To configure a screen, double press <Open/View> and window selection buttons will pop up on each screen, touch the type of window you want to configure the view. For NDI Preview select **Video Preview** (1 2 or 3 depending which screen you are setting). To select an NDI stream, tap on the screen and you will then see thumbnails of the available NDI streams to select. See Media Viewer (Abschnitt 15.3.2) in the Ai section for more details.

5.2.9 Mini Screen (Arena only)

The mini-screen can be used as a configurable workspace display just like the main monitor. To configure the screen double press <Open/View> and window selection buttons will pop up on the screen, touch the type of window you want to configure the view.

The <Display> button below the rotary encoders toggles through four fixed layouts for the Mini screen:

- Workspace window(s) with encoder legends on the right
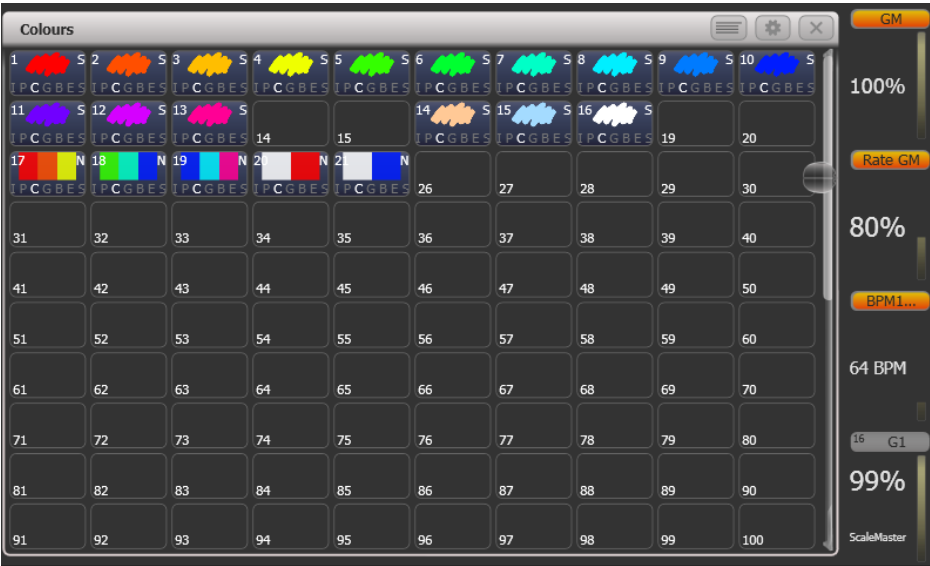
- Workspace window(s) with macro button legends below
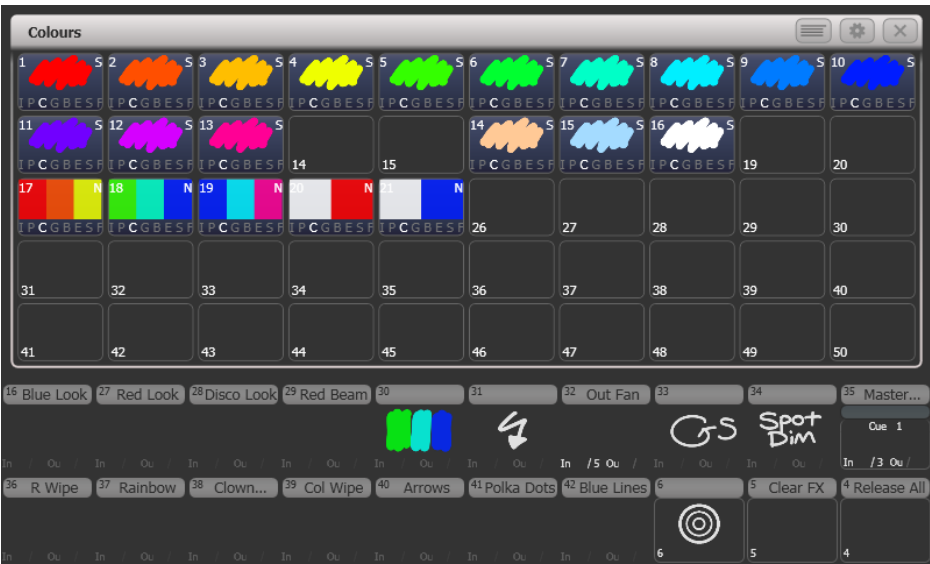
- Fixed playbacks window - in this mode the first two rows of touch buttons are the same as the macro

buttons below. This window cannot be moved to another screen, and other windows open on the Mini screen will move to the main screen when this layout is set.

- Workspace window(s) fill the full screen, no button/encoder legends shown.

5.2.10 Console Lock and Venue Mode Workspace for basic controls

You can lock the controls on the console to prevent tampering while you're not there by pressing <Avo>, [Lock]. See Locking the Console (Abschnitt 16.1.4).

You can designate a workspace to be displayed on the screen when the console is locked, this is called a Venue Mode workspace. This lets you provide a selection of playbacks or other controls on the lock screen, allowing basic controls for non-technical staff when the lighting operator is not present.

In the User Settings (Abschnitt 19.5.3) you can configure what lock mode the console will power up into, so you can ensure that staff can gain an appropriate level of control even if the console was not powered on.

See Venue Mode Workspace (Abschnitt 16.1.4.2).

5.2.11 Compatibility Windows for Pearl Expert Shows

The "Fixtures and Playbacks" and "Groups and Palettes" windows allow you to access the preset fader handles in shows which have been programmed on the Pearl Expert.

When either of these windows is opened, there is a context button option to {Move to workspace}. This will move the handles from the compatibility window to the appropriate workspace window. You need to do this twice, once with the "Fixtures and playbacks" window selected, and once with the "Palettes and groups" window selected.

5.3 Other Parts of the Touch Screen

5.3.1 The Menu/Softkeys

On all consoles except Diamond 9, the right hand side of the main touch screen is used for the main menu display. These are known as the "Softkeys" and are lettered A-G. On the Diamond 9 there is a separate Menu touchscreen for the system prompt and the menu softkeys to the left of the right-hand screen. *(Pearl Expert also has a separate display for the menu.)*

If there are more functions than will fit on one screen, [Previous] and [Next] buttons are provided to page through the functions. You can either touch the key on screen, or most consoles provide real buttons next to the screen.

The vertical bar to the left of the softkeys shows you which menu you are currently in. You can 'latch' the menu to keep the current command active (so that you don't have to keep reselecting it) by pressing the <Menu Latch> button (<ML Menu> on Pearl Expert & Tiger Touch 1). The menu bar turns red when latched. This is useful for example when copying or moving playbacks to rearrange the console.

The area to the top left of the menu buttons with an Avolites logo in the background is the system prompt area which shows instructions to the user and information from the console. The last commands you used are also shown here, for use with the Undo function. On the Diamond 9 this is displayed on the Menu screen above the menu softkeys.
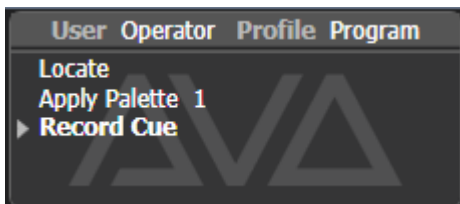
On the screen above the control wheels, the current function of the wheels is shown on a simulated roller. If fixture attributes are being set, this shows the possible settings which are available on the fixtures. Above the roller image a legend shows which attributes are being controlled by each wheel and the centre of the

roller shows the current attribute. Touch the upper or lower segment of the roller to set the attribute to maximum/minimum.

If a chase is being controlled, information about the chase is shown here.
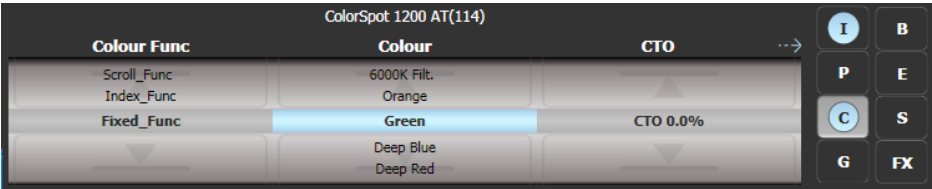
Next to the roller display, the screen shows which attribute group (IPCGBESFX or Intensity, Position, Colour, Gobo, Beam, Effect, Special, FX) is selected (grey box) and which are currently modified (blue circle).

The appearance of the softkeys varies to indicate the type of actions available:

Appearance	Meaning
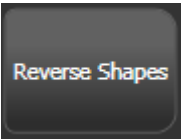
Action button - console will carry out the action shown||
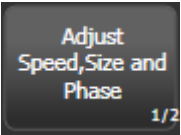
Option button - cycles through a range of options||
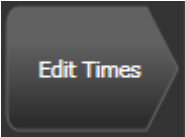
New menu button - jumps to a new menu||
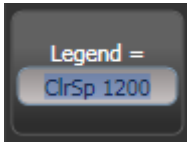
Text entry button - press and enter text using the touch keyboard |

5.3.2 The Toolbar

On all consoles except Diamond 9, Diamond 7 and Sapphire Touch, across the very top of the screen is the toolbar.
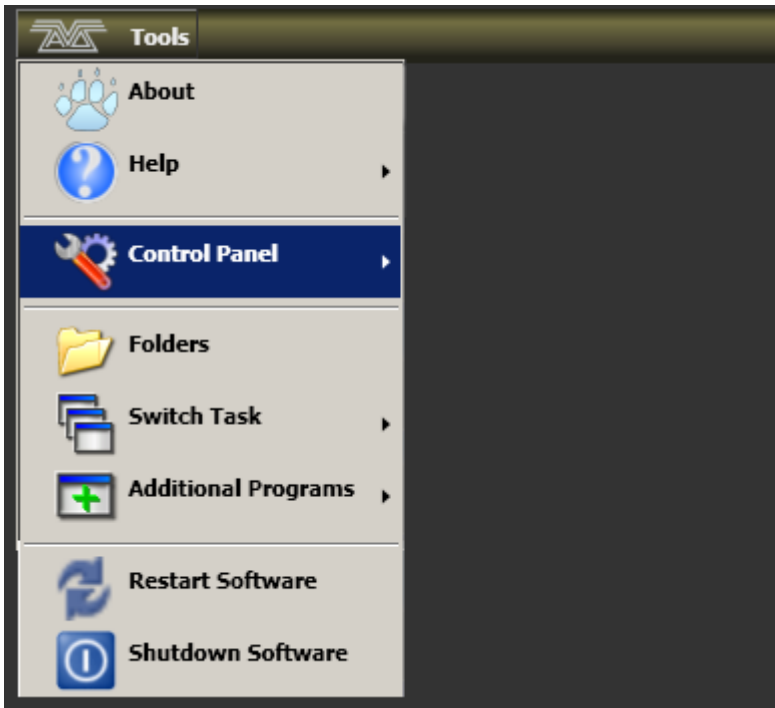
On Sapphire Touch the toolbars are shown vertically where the 2 screens meet in the middle.
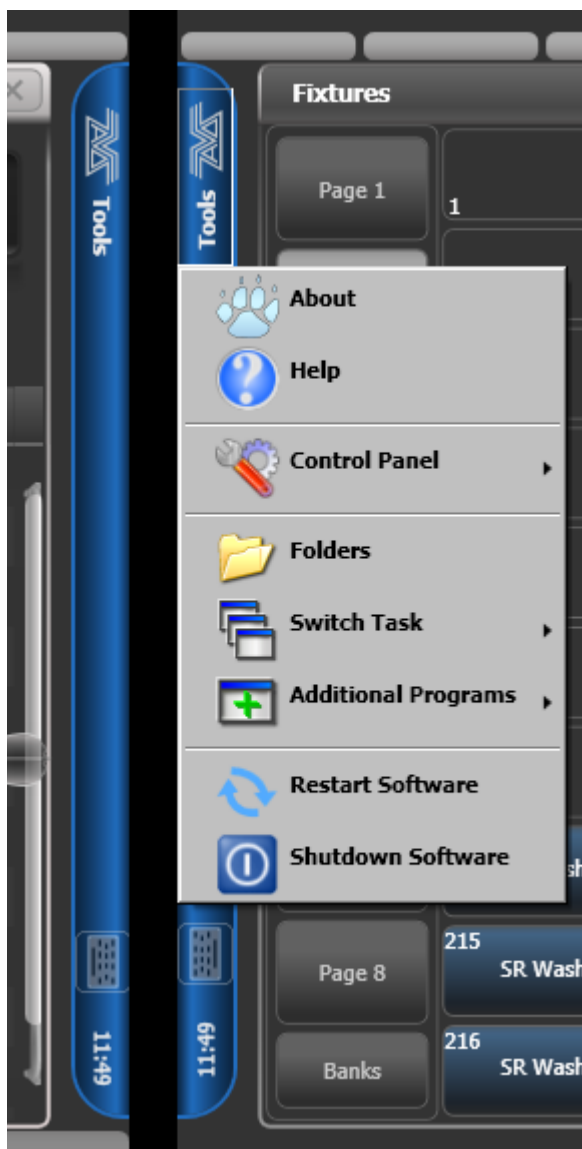
On Diamond 9 / Diamond 7 the toolbar is replaced by a small {Tools} button. On D9 this is at the top left of the right hand screen. On D7-215 (2 screens) it is at the top left of the left hand screen, on D7-330 (3 screens) it is at the top left of the centre screen. There is also a <Tools> button on the pull-out keyboard.
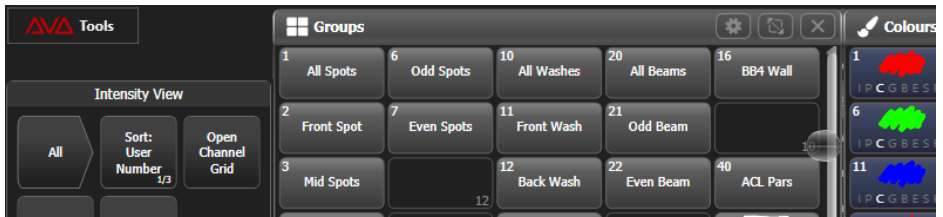
If you click/touch on 'Tools', you will get a menu giving you access to some configuration functions (these options may change slightly depending on the console).

About gives you information about the software version.

Help shows you the online manual.

Control Panel opens a submenu allowing changes to monitor settings and to the USB expert console which links the front panel controls to the system. The 'More…' option opens Windows Control Panel allowing you to change the operating system configuration.

Touch Screen Setup (in Control Panel) opens the setup utility which allows you to align touch positions on the screen.

USB Expert Console (in Control Panel) sets up the connection between the front panel controls and the software. If you are having problems this can be used to troubleshoot.

Folders opens the file explorer. You might need this when backing up show files or when updating the operating software.

Switch Task allows you to show other programs (may be needed when upgrading software) on the touch screen or move them between screens. Touch the Switch Screen icon to swap the program between different screens. Touch the Centre icon to centre the window on the screen. Touch Close to close the program. The appearance of this window varies depending on the console.

Switch Software allows you to run different versions of Titan software (which you will need to install yourself, different versions are not installed by default). This can be useful if you need to load shows from older versions.

Additional Programs allows you to run some diagnostic programs which might help Avolites Support find problems you're having.

Restart and **Shutdown Software** restarts and closes the Titan software. You would normally only need to use these when upgrading the software.

The toolbar also has a keyboard button allowing you to pop up the touch keyboard. On Diamond 9 there is a button <Keyboard> for this.

> Toolbars are not provided on Titan PC Suite (Titan Go / Titan Simulator) as all these functions can be carried out using standard Windows operations.

5.3.3 Visualiser
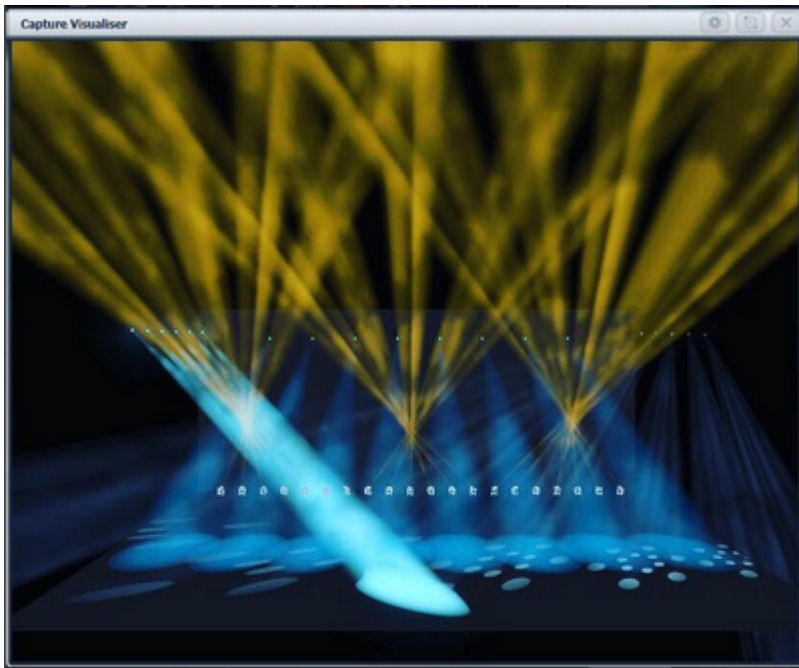
Capture visualiser is integrated into Titan from v10. The Capture Visualiser chapter (Abschnitt 14.1) deals with how it works.

The visualiser gives you a realistic view of the stage, allowing you to pre-program or make changes to your show at home or in your hotel. It can also be used in Blind mode for programming during a show.

5.3.4 Undo/Redo

A short list of recent actions is shown in the prompt area to the left of the menu.
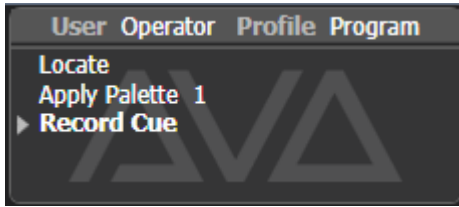
You can undo and redo recent actions (including fixture and cue changes) by touching the prompt area. This will automatically open the Undo History window which shows a more detailed list of actions you can undo.

The current action is shown in red in the Undo window and in bold in the prompt.
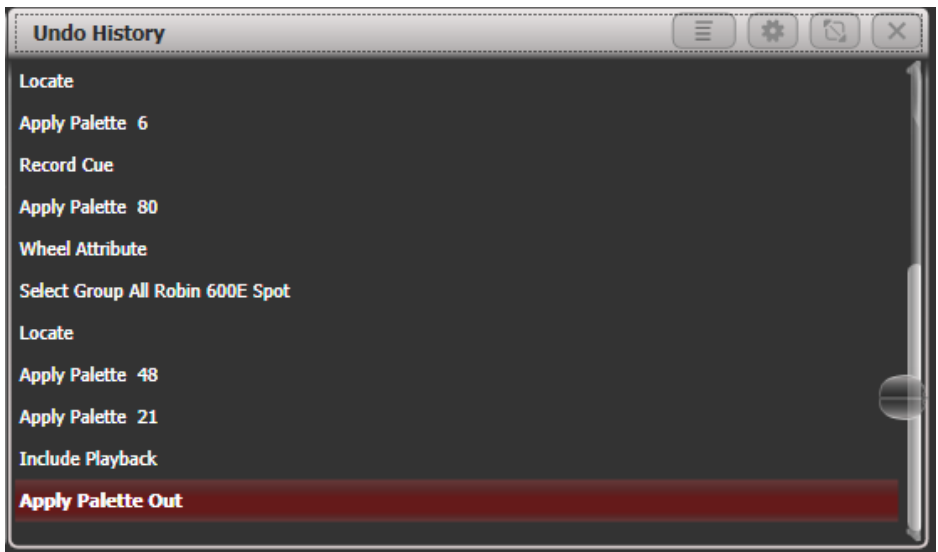
You can touch this window to undo all actions up to the one you touch. Once actions have been undone they are shown greyed out, and can be redone by touching them.

You can also use the <Undo> and <Redo> buttons (not on all consoles) to step through the list.

Some actions cannot be undone which is indicated with the "not allowed" symbol as shown below.
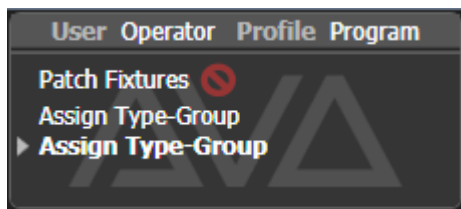
If you are in multi-user mode, the Undo History can show a column for each user with undo points for that user - open the Context menu and select {Show All Users and Consoles}. The default setting is {Show Only Current User}.

5.4 Front Panel Buttons

The Select and Flash buttons associated with fader handles, and the macro/executor buttons are configurable and you can use them in various ways.

5.4.1 Select and Flash buttons

Each fader handle on the console has buttons associated with it. These are called the **Select** and **Flash** buttons, though the actions can be reassigned using Key Profiles (see below).

 (A) **Select** button

 (B) **Flash** button

On the **Diamond 9**, **Diamond 7** and **T3** the buttons are arranged like this for the rotary faders (D9/D7 only) and the linear faders:

On the **Sapphire Touch** the buttons are like this for the upper and lower faders. The Sapphire Touch also has a black button with each handle which can be assigned a function using Key Profiles (see below).
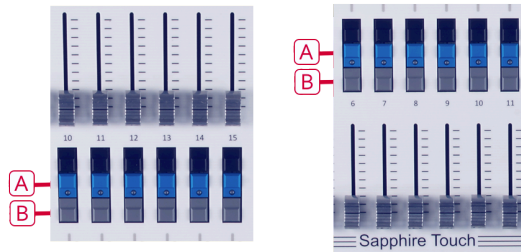
On **all other consoles**, the buttons are arranged like this:
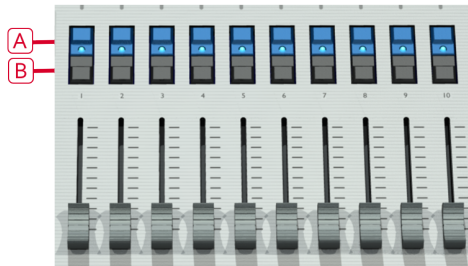
5.4.2 Key profiles

The console allows you to change the function of the Select and Flash panel buttons (and the black buttons on Sapphire Touch). You can also change the way some of the touch keys work. You can save your settings as a Key Profile (Abschnitt 19.4). Different profiles can be selected for different users or to enhance the operation of the console for a particular use.

5.4.3 Key macro buttons

Lighting programming can sometimes require a repeated sequence of button presses. You can record sequences of keypresses and play them back with a single keypress - this is called a **macro**. The macro can reproduce the timing of your button presses (Real Time mode) or just repeat the sequence of buttons with no timing (Full Speed mode).

Real Time mode is useful when you are using a macro to reproduce a lighting effect, for example a sequence of flash buttons. Full Speed mode is more useful for admin tasks such as changing console mode.

Macros can be stored in most workspace windows, on the dedicated Macro/executor buttons and on the handle buttons. There is also a dedicated Macro button window which can be shown in the workspace. The macro/executor/workspace button legends are shown in the Static Playbacks workspace window. *The 10 Macro buttons on the Tiger Touch 1 correspond to the first 10 macros in the Macros window.*

- The Diamond 9 has an additional six macro buttons with dedicated legend display in between the two banks of playback faders.

- The Arena also has two additional Macro buttons on the bottom left corner of the console.

To record a macro:

1. Press the <Macro> button (above keypad).
2. Press [Record].
3. Select [Full Speed] or [Real Time].
4. Press [Record] to record the macro into the show library, or press a suitable empty button on the panel, or an empty button in the Macro window on the screen. Recording starts. The Macro button flashes during recording.
5. Press the sequence of buttons you want to record.
6. Press <Macro> to finish recording.

To play back the macro, just press or touch the button where you recorded the macro. The macro will repeat all your button presses, with correct timings if you selected Real Time mode.

- Macros will only record physical button presses and a few particular types of touch screen presses (selecting fixture handles; changing menus). Changing properties on the touch screen won't be recorded.

- You can also write macros programmatically, this is known as a **script**. See Avolites WebAPI which introduces scripting, the Avolites API documents which lists the API commands, and Avolites user scripting examples (external website).

5.4.4 Keyboard shortcuts

Many features of the console can be controlled by shortcuts on the keyboard. These are especially useful when using Titan PC Suite (Titan Go or Titan Simulator).

The Titan application "captures" the keyboard on start up, meaning that if you try to use other applications at the same time they will not receive keypresses. Pressing Break on the keyboard releases the keyboard for other applications but disables all text entry for Titan including the shortcut keys; changing menus will reconnect the keyboard to Titan.

Key	Action	Key	Action
F1	Open user manual	Ctrl X	Cut text
F2	Activate window	Ctrl C	Copy text
F3	Minimise/Maximise	Ctrl V	Paste text
Shift F3	Next window	Ctrl A	Select all text

Key	Action	Key	Action
F4	Size/Position	Ctrl Z	Undo
Shift F4	Move to other screen	Ctrl Y	Redo
F5	Close window	Alt C	Clear
Shift F5	Close all windows	Alt R	Record menu
F6	Open Playbacks window	Alt A	Toggle Avo menu
F7	Open Fixtures window	Alt L	Locate
F8	Open Groups window	Alt P	Patch
F9	Open Colours window	Alt ⇑ D	Disk menu
F10	Open Positions window	Alt ⇑ S	System menu
F11	Gobos/Beams window	Alt V	Open/View menu
F12	Open Channel Grid	Alt G	Go
Esc	Exit menu	Alt D	Delete
Enter	Enter	Alt ⇑ C	Copy
Alt 1	Softkey A	Alt M	Move
Alt 2	Softkey B	Alt U	Unfold
Alt 3	Softkey C	Alt I	Include
Alt 4	Softkey D	Alt ⇑ R	Release
Alt 5	Softkey E	Alt S	Shape
Alt 6	Softkey F	Alt ⇑ T	Fixture Tools/ML Menu
Alt 7	Softkey G	Alt B	Blind
Alt ⇑ F	Fixture	Alt O	Off
Alt ⇑ P	Palette	Alt F	Fan
Alt ⇑ M	Macro	Alt ⇑ O	Attribute options
Alt ⇑ G	Group	Alt ⇑ L	Latch menu
/ (num)	Thro	Alt Q	Cue/Connect
(num)	@	Alt W	Open Window
- (num)	Not	Alt T	Times
+ (num)	And	Alt ⇑ U	Update
Alt ←	Previous fixture	Alt ⇑ I	Select If
Alt →	Next fixture		
Alt ↑	All		

Key	Action		Key	Action
Alt ↓	Highlight			

⇑ means shift

(num) means on the numeric keypad

5.5 Multi⊠User Operation

You can connect multiple consoles together to work together on a show. You can also have multiple user setups on a show on a single console to allow different layouts, for example for a support band LD.

5.5.1 Users

Each show can have multiple users. Each user has their own user settings, key profiles and handle layout (known as a *handle world*). This provides a quick way to switch between preferred user settings and handle layouts, for example at a festival or other event where there are a number of operators.

Users are stored in the showfile and the currently selected user is restored when loading a show. The default user is called "Operator" and the prompt area in the display shows the current user name and selected key profile.
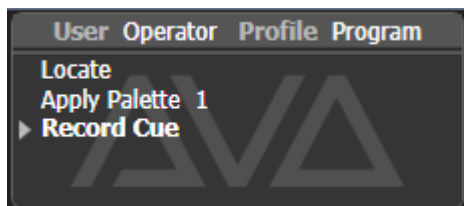
To change or create users, go to the Users menu.

1. Press the <Disk> button.
2. Press [Users].
3. To switch to a different user, press [Change Current User] and select a new user from the list (the current user is highlighted).
4. To create a new user, press [Add a User], enter a name for the new user and press [OK].
5. You can also quickly change user from the root menu by holding <Avo> and pressing [User …]

- If multiple consoles are connected in a collaborative session, any user added to one of the consoles will be available on any of the other consoles.

5.5.2 Handle Worlds

Each show can have multiple Handle Worlds, each having its own layout of handles. This allows each user to have their own layout of cues, palettes and chases which can be easily switched, for example when a support band and headline band are using the same console, or when multiple programmers are working collaboratively on a number of consoles.

When a new user is selected, the handle world they were using is also loaded.

All handle worlds are stored within the showfile, the default handle world is called "Mapping World 1".

Handle Worlds are managed from the Disk menu.

1. Press the <Disk> button.
2. Press [Handle Worlds].
3. To switch to a different handle world, press [Select Handle World] and select a new handle world from the list (the current one is highlighted).
4. To create a new handle world, press [Add Handle World], enter a name for the new world and press [OK].
5. [Delete Handle World] will delete the world, any handles used only in that world will become unassigned (and can be retrieved using the Show Library if needed).

- Items created in a different handle world can be accessed using the Show Library workspace and assigned to handles in the current handle world.

- The [Follow World Page Change] option sets whether the handle page will change if a user using the same handle world on another console changes the page.

5.5.3 Linking to other TitanNet Sessions

If multiple Titan consoles are connected in the same network you can choose to connect them as multi-user, backup (Abschnitt 16.6.2), or both.

All consoles to be linked must be running the same version of Titan for networking to work correctly.

For details of how to connect Titan consoles together on a network, see Networking the Console (Abschnitt 21.1).

1. Press the <Disk> button.
2. Press [TitanNet Sessions].
3. [Sessions View] opens a window that shows you how your console is connected to others, and what other TitanNet sessions are available. You can touch on another console in the window and click [Connect] to start a connection, or use the other buttons to leave a session.

> 4. Or select [Backup], [Multi-User] or [Backup & Multi-User] to show a list of sessions which you can connect to. Click on the session to start the connection.
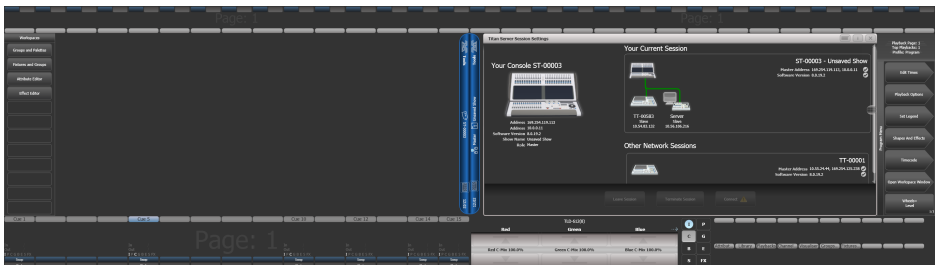
A green line shows a good connection, a dotted red line shows a problem with a connection. Unavailable consoles are shown with a red background.

Initially all consoles are "Master" consoles. If you connect to a session on another console as multi-user you become a "Slave" on that console. The show on the Master is transferred across the network to the Slave. On the Slave you can choose to save the show locally or to save changes back to the Master console.

The toolbar will show details of the master/slave status. Console legends can be changed in the System menu using the [Console Legend] option.

Consoles connected in a multi-user session work on the same show. If the same handle worlds are selected then an action on one console is mirrored across them all, for example firing a cue on the slave console will also fire the cue on the master. If the master has motorised faders, the fader will move; if not, fader levels must match before they can take over. If different handle worlds are selected, users can work independently on their own pool of handles.

> All consoles in a session using the same user & handle world will share the same connected handle. If this is not the desired behaviour, then the other consoles in the session will require their own user/handle world.

In all situations the master console outputs DMX and channels in a remote programmer are shown with a blue dot on the touch wheel views. If two or more consoles are editing the same fixture, the last console to change any attribute will take over control of the fixture.

Slaves can leave a session using the [Leave Session] button in the **Sessions View** or in the **TitanNet menu**. The console will restore the local show it had loaded prior to joining. Master consoles have the option to [Terminate Session].

If a console is running as backup (Abschnitt 16.6.2), it has options to [Takeover], [Sync now] and [Leave Session]. If [Takeover] is selected, the console will immediately become the master and take over DMX output with the chosen user and handle worlds selected. The console which was master will go into a dormant state with DMX disabled.

> Consoles must be running the same version of Titan to join a multi-user or backup session.

Titan PC Suite (Titan Go / Titan Simulator)

Network Discovery must be enabled in the **Windows User Profile** you are using or consoles will not be able to see each other on the network. Ensure the Windows option **'Turn on network discovery'** is selected in the **Network Sharing** options.

5.5.4 Multi-user programming

Each user (including remotes) has their own programmer which allows independent programming of fixtures. If a user makes changes to the fixtures but does not press <Clear> afterwards, this will leave their changes active in their programmer which will affect the output on the stage. This can be confusing as a single press of <Clear> will not clear the changes.

To fix this you can clear all programmers from all users by holding <Clear> on the console and selecting [Clear all programmers].

When fixtures are being controlled by another programmer, the attribute displays show a cyan dot at the left hand side.
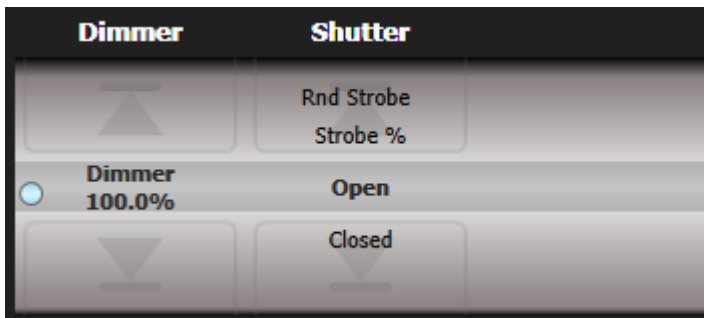
5.6 Titan Simulator

Need to pre-program or tweak your show before you get to the venue? No problem, just run the Titan Simulator on your PC. You can then load your show and simulate any of the Titan consoles, using an on-screen "virtual panel".

> Avolites hardware must be connected via USB to allow you to run Titan Simulator - either an Editor AvoKey, T1, T2 or Mobile. Editor AvoKeys are available from the Avolites website shop.

5.6.1 Installing Titan Simulator

You will need a Windows user account with Administrator privileges to install or run Titan Simulator. From v12, to run the Titan Simulator an Editor AvoKey must be connected, or a T1/T2 device.

> See minimum PC specifications for details of the PC requirements.

- Capture visualiser requires a capable graphics card. If you have problems with Capture, ensure you have installed the latest drivers for your graphics card from the manufacturer.

Simply download and run the **Titan PC Suite** installer from the Avolites website. The first time you run the Editor you will need to license the software (Abschnitt 19.9.2) to the AvoKey; follow the instructions given on screen by the Authenticator system.

Once licensed, you have a choice of how Titan will operate:

- If you run the Titan Go application with an Editor AvoKey, you will get one universe of DMX (via Art-Net or sACN) with no spoilers. With a T1 or T2 connected you will get one or two universes of DMX via XLR and Art-Net or sACN with no spoilers.

- If you start Titan Simulator and run a simulated console, you will get full DMX output on all universes (via Art-Net or sACN), but periodically random DMX values will be sent down all DMX outputs as a "spoiler", please wait for this to stop before continuing programming.

5.6.2 Running Titan Simulator

When you start Titan Simulator you need to select which console you are simulating. The simulator will then open a Virtual Panel, which replicates the physical controls of your chosen console, and monitor windows for each of the monitor outputs.

> The touch screen display is shown separately from the Virtual Panel. It is helpful to have two monitors to allow you to see the touch screen and the Virtual Panel at the same time.

The Virtual Panel works exactly the same as the real panel; to hold a button down so you can press a second button, right click it using the mouse.

5.6.3 Using Virtual Panel with a console

As well as its use with the simulator, you can also run the Virtual Panel on a console. This could be handy to keep things going if you are suffering hardware problems with the real console controls.

To show the Virtual Panel, click the Tools menu on the toolbar, then select Other Programs, then Virtual Panel. The Virtual Panel controls will work in parallel with the real controls.

5.7 Show Library

The Show Library window collects all the information about your show into a single place. It is very useful to transfer programming when importing parts of previous shows, or when moving shows to a Titan consoles with fewer faders, but can also be used to move items around within your show.

Double press <Open/View> then press [Show Library] from the window select buttons to open the window (or if in the root menu, [Open Workspace Window], [Show Library]).

5.7.1 Show Library tab

The Show Library lists all programmed elements of your show including fixture patch, fixture groups, palettes, playbacks, macros and workspaces. Use the buttons down the left hand side to filter what types of information are displayed.
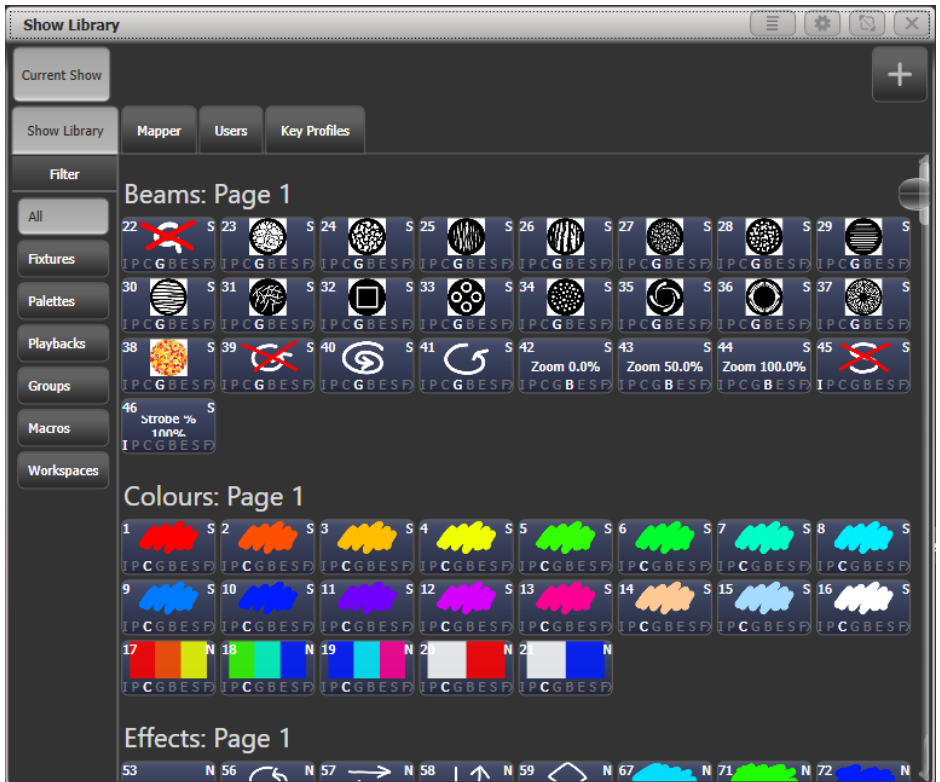
Clicking on the buttons in the Show Library window will activate them.

5.7.2 Mapping shows for import

Press the Plus button top right to map another showfile to allow you to import elements of it.

Using the Mapper tab you can map similar fixtures from an imported show to the current show. This lets you load in your favourite programming from other shows (Abschnitt 5.8.3).

5.7.3 Users tab

This tab allows you to set up and select users for the console. This is the same as the [Users] option found in the Disk menu.

5.7.4 Key profiles view

Selecting the Key Profiles (Abschnitt 19.4) tab shows all information about the different Key Profiles available on the console. The available profiles are listed down the left hand side, and the key allocations are shown on the right. You can't change the Key Profiles using this screen, it's just for viewing the settings.
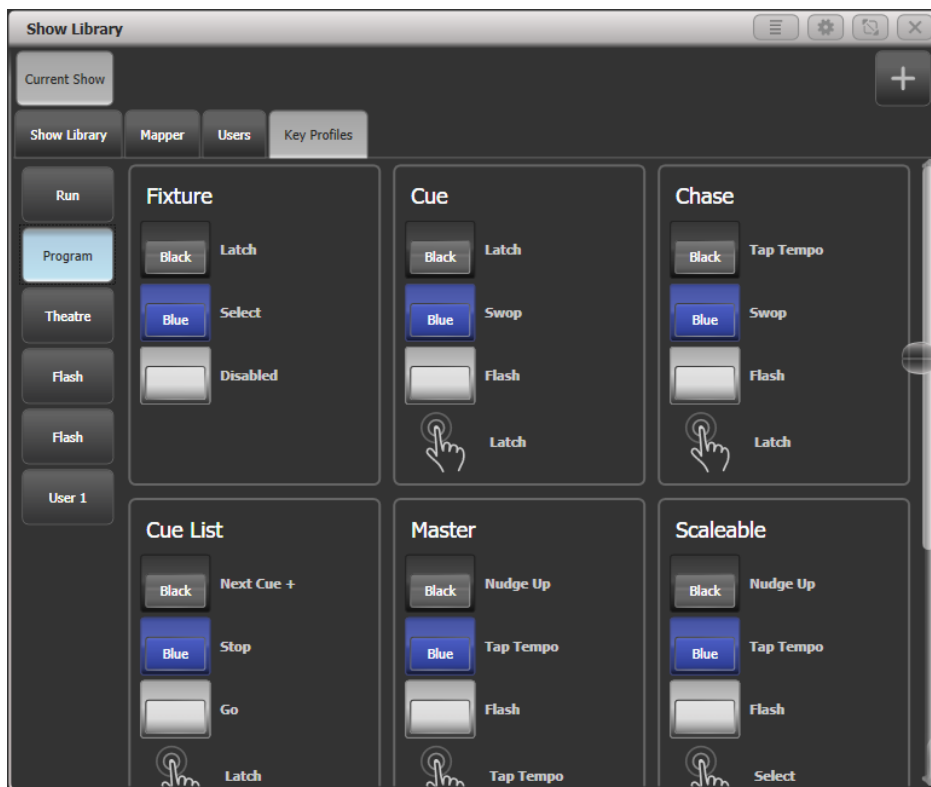
5.8 Loading and saving shows

You can save any number of different shows on a USB drive or the console's internal hard disk. The console will also autosave the show periodically.

> Shows created on a Titan console can be loaded into any other model of Avolites Titan console, but not to older non-Titan consoles as the showfile format is different.
> Showfiles from newer versions of Titan may not load correctly (or at all) into consoles with older versions of Titan.

Although your show is safe on the hard disk, it's a good idea to also save it to a USB pen drive which you can take with you in case something bad happens to the console or if you want to transfer a show to a different console.

5.8.1 Saving the show

You can save your show at any time either with its current name or with a new name. If you save your show with its current name, a new version of the show will be created. This allows you to go back to previous versions of your show if needed.

To save your current show:

1. Press the <Disk> button.
2. Press [Save].
3. If you have a USB drive connected, use the softkeys to select whether to save on [Removable Disk] or [Internal hard drive].
4. If this is a new show, enter a name for the show on the keyboard. If this is a new version of an existing show you can enter a tag to help identify the version, which will be shown on the Show Browser screen when you load shows.
5. Press <Enter> or [Save] (or [Overwrite] if the show already exists). The show will be saved.
6. Press <Exit> or [OK] to leave Disk mode.

- To save the show under a different name, use the [Save As] softkey.

- Pressing the <Disk> button twice will make the console save a Quicksave version of the file. A Quicksave is just a version of the show saved with the same filename.

- A new version of the file will be saved even if you enter the same tag as previously used.

If you save to hard drive, shows are saved in the folder 'D:\Shows' (on Titan PC Suite (Titan Go / Simulator) the folder is 'Documents\Titan\Shows').

5.8.2 Loading a show

The console will automatically reload the last show when it is turned on.
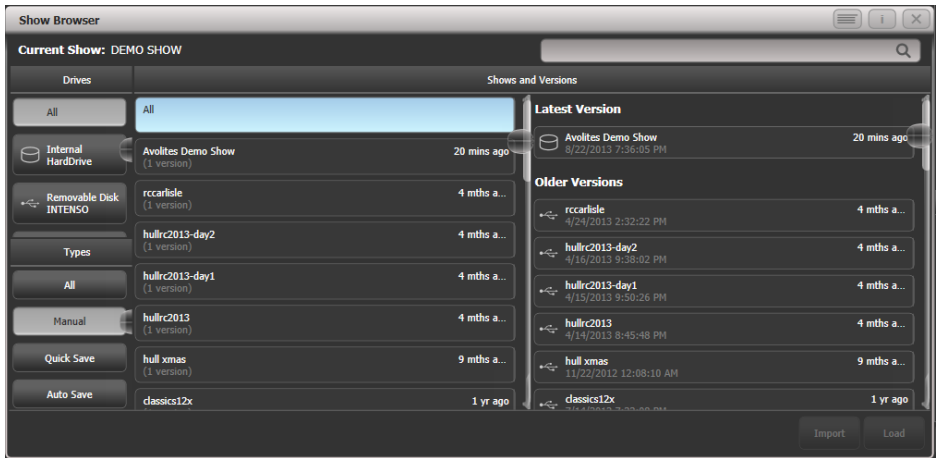
Press the <Disk> button then [Load Show] to load in a new show. The Show Browser window will appear.

On the top left you can select which drive is used, or show files on all drives. On the bottom left you can filter the list of shows to see all shows, or just manual saves, quick saves or autosave files. On the right you can see different versions of the showfile; this allows you to reload an earlier version if you need to.

You can also load shows from the softkeys:

1. Press the <Disk> button.
2. Press [Load Show].
3. If you have a USB drive connected, select which drive you want to load from.
4. Available shows are listed on the softkeys; press the key to load the show (the F and G keys show more pages). If you type the first few letters of the show name on the touch keyboard, the list will only include shows starting with those letters, which can make it easier to locate the show you want.
5. If there are multiple versions of the show stored on the disk, select the one you want.
6. Press Load Show. The console will show a loading screen as the different elements of the show load.
7. When the show has loaded the normal operating screen will reappear.

When loading a show you have the option to keep the existing DMX settings of the console, or to load the settings stored in the showfile. The DMX settings determine how the XLR sockets on the back of the console are used and how DMX is sent over the network using TitanNet.

5.8.3 Importing parts of other shows

If you are doing a show which is similar to a previous one, you might want to import parts of the previous showfile, for example you might want the palettes for some Robe Robins from another show, but not the

other fixtures. This is where the Import Show function comes in handy.

For Import Show to work, you need to map fixtures from your imported file to fixtures in the current show so that Titan knows where to import the programming to.
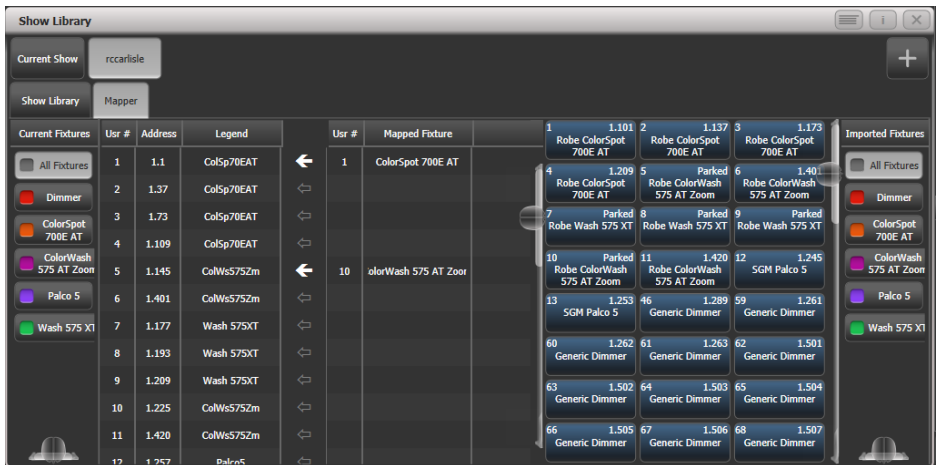
You can then select items from the imported show and store them onto workspace or panel buttons in your current show.
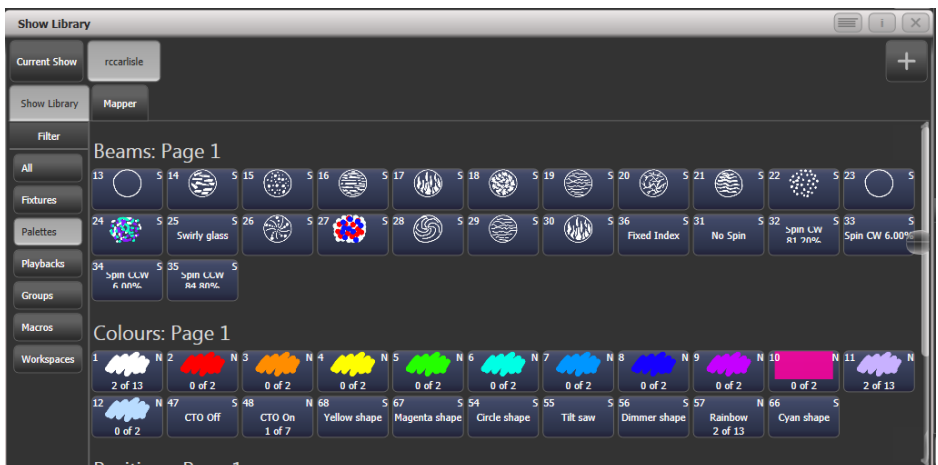
1. Press the <Disk> button.
2. Press [Import Show] (The plus button at the top right of the Show Library window also opens this menu).
3. The Show Browser window opens. Select the show you want to import from and press [Load

Show].

4. The Show Library window will now open. Your current show and the imported show will appear as buttons at the top of the show browser. You can import items from more than one show at once by repeating steps 1-3.

5. Click on the Mapper tab, and select your imported show.

6. Select a fixture in your imported show, then click the arrow beside the fixture it maps to in the current show. To remove a mapping, click the [Clear Fixture Mapping] context button.
You can select multiple target fixtures by dragging a box over the fixtures, or click on the source fixture again and map to another target.

7. When you have mapped all fixtures you want to import data from, click on the Show Library tab.

8. Select the items you want to import (single or multiple). Use the buttons on the left to select Palettes, Groups etc.

9. Select handle(s) where you want to store the imported items.

10. When you have imported all the items you want, press <Exit>.

- You can filter fixture types to make the mapping easier using the buttons on the left and right sides of the show browser.

- You can directly import shows without using the Disk menu by clicking the Plus button at the top right of the Show Browser.

- You can find more information about the Show Library here (Abschnitt 5.7).

5.8.4 Autosave

The console will automatically save your show to its internal hard disk when you shut it down. It will also autosave the show every 30 minutes in case the console loses power.

You can disable Autosave or alter the time between saves using option [Auto Save] on the Disk menu (press the <Disk> button). You can reload Autosave files using the Show Browser.

> This option is included because Autosave used to make the console pause, however this is no longer the case and we recommend that you do not disable Autosave. If you lose power while programming Autosave will make your day a whole lot better.

5.8.5 Recover show

If Titan shuts down improperly due to a crash or power failure, and when you restart it the most recent showfile can't be reloaded, a softkey option [Recover Show] will be displayed which will attempt to load the show from the temporary directory. You will also see options to start a new show or load a previous show.

5.8.6 Backing up existing show files to USB pen drive

If you just want to save a copy of your current show, you can use the normal save function to save it to the USB drive instead of the hard drive.

To copy an existing show file on the hard disk to a USB drive, first ensure your current show is saved, then use the Disk functions to load the existing show from hard disk, then save it to the USB drive. Alternatively you can use the Folders command on the Tools menu.

5.8.7 Setting a show to load on start up

Normally on start up the console will reload the show it was using when it was last shut down. In some situations (for unattended operation or for use with venue mode (Abschnitt 16.1.4.2)) you might want to always load a default/standard show on power up, in case someone has loaded a different show the night before. The **Start Up Show** function lets you do this.

1. Load the show that you want to be the default Start Up Show.
2. Press the <Disk> button.
3. Press [Next] softkey until you see the **Start Up Show** option.
4. Press [Start Up Show] softkey. This will show **Unlocked** if no Start Up Show is set.
5. Press [Create and Lock Show]. The current show will now be loaded on power up and the option will show **Start Up Show Locked**.
6. If a Start Up Show was already set/locked, you can [Update Show] to change the Start Up Show to be the currently loaded show or you can [Unlock] to disable the Start Up Show. option.

You can also configure playbacks to fire when the show is loaded, this lets you put the venue into a known state when the console powers on (for example if working lights are run from DMX or you want to startup with a basic lighting state on). See Run On Startup (Abschnitt 10.6.2.4) in the Cues chapter.

If this option is configured, unsaved changes will be lost when the console is shut down.

5.9 Clearing the Console

When you start a new show on Titan it is usually a good idea to clear the console. All programming and patching is deleted, and user options are returned to default settings.

1. Press the <Disk> button.
2. Press [New Show].
3. Press [OK] to confirm.
4. Press <Exit> to leave Disk mode.

- When starting a new show you have the option to keep existing DMX settings. This preserves the DMX/TitanNet configuration of the console which determines how the XLR sockets on the back of the console are used and how DMX is sent over the network.

- There is also an option [Wipe] in the System menu which has the same function, this option is provided for Avolites oldies who are used to the "classic" Avolites software.

5.10 Creating Reports

When preparing a show it is often useful to create a report of how the show is patched or programmed on the console, for example to give to a crew when pre-rigging fixtures, or just for your records.

AVOLITES

Showname: BELLOWHEAD NOV 2012 Preprog
Date: 05/04/13-16:30
Software Version: PREVIEW
Console Name: W174
Console Type: Titan Mobile

Patch View

User no.	Fixture	Mode	Address	Legend	Location	Pan Invert	Tilt Invert	Iris Invert	P/T Swapped
1	Robin 100 LEDBeam	Mode 1, 35 DMX	1.1	R100 LED B	Fixtures, 0.000	No	No	No	No
1.1	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.7	Cell 1	, 0.000	No	No	No	No
1.2	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.15	Cell 2	, 0.000	No	No	No	No
1.3	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.23	Cell 3	, 0.000	No	No	No	No
2	Robin 100 LEDBeam	Mode 1, 35 DMX	1.36	R100 LED B	Fixtures, 0.001	No	No	No	No
2.1	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.42	Cell 1	, 0.000	No	No	No	No
2.2	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.50	Cell 2	, 0.000	No	No	No	No
2.3	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.58	Cell 3	, 0.000	No	No	No	No
3	Robin 100 LEDBeam	Mode 1, 35 DMX	1.71	R100 LED B	Fixtures, 0.002	No	No	No	No
3.1	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.77	Cell 1	, 0.000	No	No	No	No
3.2	Robin 100 LEDBeam	1x RGBW cell, 8 DMX	1.85	Cell 2	, 0.000	No	No	No	No

Reports can be created in HTML, PDF, CSV or XML formats for the following:

- Fixtures
- Memory (Cues)
- Chases
- Cue Lists
- Palettes
- Groups

To generate reports:

1. Press the <Disk> button.
2. Press [Reports].
3. Select the item(s) you want to include in the report
4. Select the format in which you want to output the report
5. Select the drive where you want to save the report

Reports are stored in the following folders:

- PC suite (Titan Go, Titan Simulator): `Documents/Titan/Reports`
- All other consoles: `D:/Data/Reports`

When the report is complete, Titan will open the folder where the report is stored so you can see where it went.

6 Patching

6.1 Patching

Patching is the process where you tell the console

- What type of lighting units you have connected to it
- What DMX addresses they are operating at
- Which DMX line (universe) each unit is connected to (there are 64 lines, but the console itself can only output 16 lines; further lines can be controlled using networked DMX processors over TitanNet)
- Which buttons on the console you want to use to access them (either physical buttons or touch buttons)
- Particular option settings for each fixture.

> Before you start rigging, you can use the console to work out the DMX addresses for the fixtures in your rig. Patch them on the console (or simulator), then press <Open/View>, <Patch> to show the Patch View window. This will use the DMX channels as efficiently as possible without leaving any gaps.

If your fixtures are RDM equipped, the console can patch itself from the rig, see Patching by RDM (Abschnitt 6.2.7).

On older consoles with a System/Run/Program switch, the switch must be set to Program before you can patch.

By default in a new show, each physical DMX output socket (5 pin XLR) is connected to a DMX line. If you want to change this or use other lines, go to the DMX Settings (Abschnitt 19.6) window from the **System** menu.

> If nothing is happening to the lights when you make changes on the console it is worth checking the DMX Settings (Abschnitt 19.6.1) window to make sure the DMX lines are allocated to outputs.

6.2 Patching New Fixtures or Dimmers

6.2.1 Fixture Select Buttons and Handles

To control intelligent fixtures or dimmer channels, they must each be patched to a button (sometimes referred to as a "handle"). You can patch onto touch buttons in the Fixtures window, to a fader handle or to a Macro/Executor button. If the handle you patch to has a fader, the fader will control intensity.

If the Fixtures window is not shown, press <Open/View> then <Fixture> or double press <Open/View> then press [Fixtures] from the window select buttons.

Fixture buttons can be shown either in pages with Page buttons, or you can use the scroll bar on the right to show different pages. Use the [Pages Show/Hide] button in the context buttons on the right of the screen to select between page buttons and scrolling mode (these buttons drop down using the menu button in the window top bar for Sapphire Touch and Titan Go). You can change the fixture page at any time.

You can allocate fixtures and dimmers to Groups, which allows you to quickly select a set of fixtures with one button. Groups are described in the next chapter.

Once you have patched fixtures or dimmers, the Patch View (Abschnitt 6.3.1) screen shows you an overview of what is patched where and lets you edit the patch.

6.2.2 Patching Dimmers

Each fixture button can control single or multiple dimmer channels. You allocate a button using the Patch menu (described below) or the Patch View (Abschnitt 6.3.1) window.

1. Press <Patch>, then [Dimmers].
2. [DMX Line=] shows you which of the DMX output lines you are patching onto. Enter a new number to change the line. [Address =] shows the DMX address about to be patched. You can change this by typing in the new address on the numeric keypad and pressing <Enter>.

Select a fixture handle to patch
or exchange.
Dimmer

DMX Line =
1

Address =
1

Quantity =
1

User Number =
1

Legend =
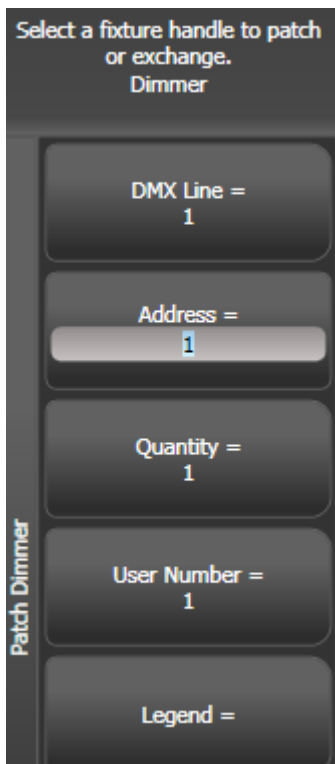
Patch Dimmer

3. To patch a single dimmer, press a Fixture touch button, a Macro/Executor button or the **Select** button of a fader handle. To patch a sequence of dimmers each to its own button, press [Quantity] and set the number of dimmers then press the first select button. Alternatively, run your finger or draw a selection box round the touch buttons, or for physical buttons hold down the first button in the range and press the last button in the range. The range of dimmers will be patched to sequential DMX addresses.

4. A fixture button turns dark blue and shows fixture details when it is patched. If you patch to a fader handle the select button will light up dimly.

5. Repeat from step 2 for other dimmers.

- When setting the DMX address using [Address=], you can set the DMX line (universe) as well by entering {line}.{DMX}, for example 2.56 will set DMX address 56 on DMX line 2.
- To see how DMX channels are patched, press <Open/View> then <Patch> to show the Patch View (Abschnitt 6.3.1) window.
- [User Number = xx] allows you to set a user-defined number for each dimmer or fixture patched, to help you identify them later. You can also edit the User Number from the Repatch Fixture menu.
- You can patch multiple dimmer channels to a single handle. This can be useful if, for example, you

want to control all the lights for one area together. To do this, just press the same Fixture Select button again when patching the new dimmer channel. You can tell the dimmer channel has patched OK because the DMX address will increase by 1.

- If you need to remove a dimmer from multiple dimmers on a single handle without losing programming, make a copy of the handle then repatch the copy to the individual dimmer address.

6.2.3 Patching Moving Light Fixtures

Moving light fixtures are more complicated to patch than dimmers because they have more attributes to control, such as pan, tilt and colour, whereas a dimmer channel just has intensity.

Avolites consoles use a "personality" system to control fixtures. This means you don't have to know how each fixture works, you just tell Titan what you want to do and it will send the right control commands. The console has built-in personalities for most types of fixture, which tell it what attributes are available and how to control them. If the console does not have the personality for your fixture, you can download further personalities from the Avolites website, create your own using the Personality Builder application installed on the console, or Avolites can create one for you. See the personalities section (Abschnitt 20.1) for details of how to find personalities.

You can patch either using the Patch menu (described below) or the Patch View (Abschnitt 6.3.1) window.

1. Press <Patch>.
2. Press [Fixtures].
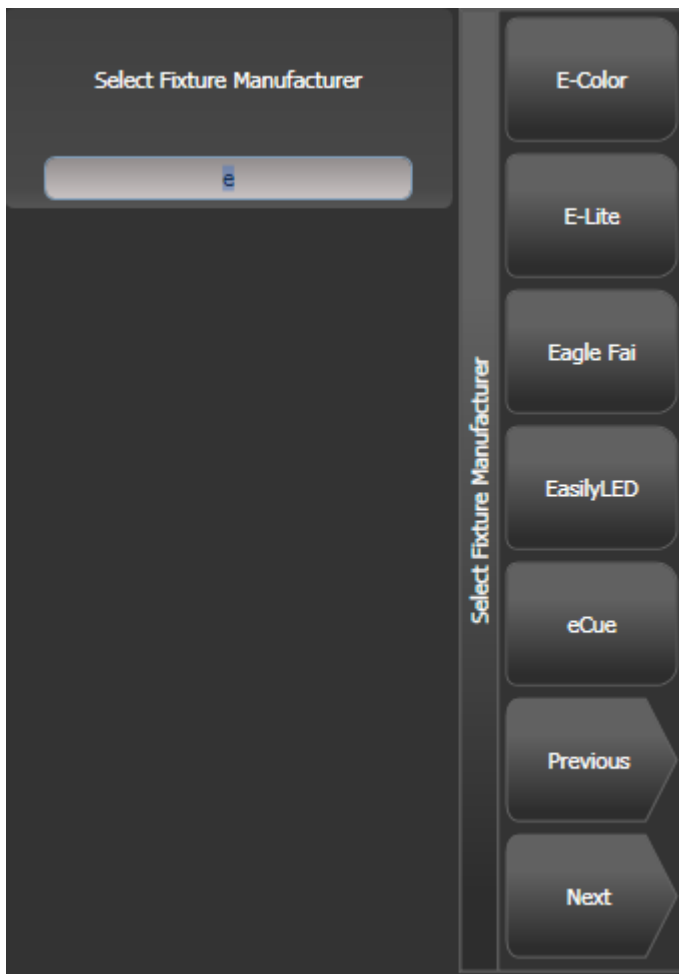
3. Select the correct fixture manufacturer from the softkeys ([Previous] and [Next] page through the list of manufacturers). Or use Quick Search and type the first few letters of the manufacturer's name on the keyboard to find the one you want.
4. Select correct fixture from the softkeys (F and G show other pages). You can use Quick Search here as well.
5. Select the correct fixture operating mode from the softkeys.
6. [Address =] shows the first free DMX address. Type the new address on the numeric keypad if you want a different one. [DMX line=xx] lets you patch to a different DMX line, or you can enter the address as [line].[address], e.g. 2.45 would set address 45 on line 2.
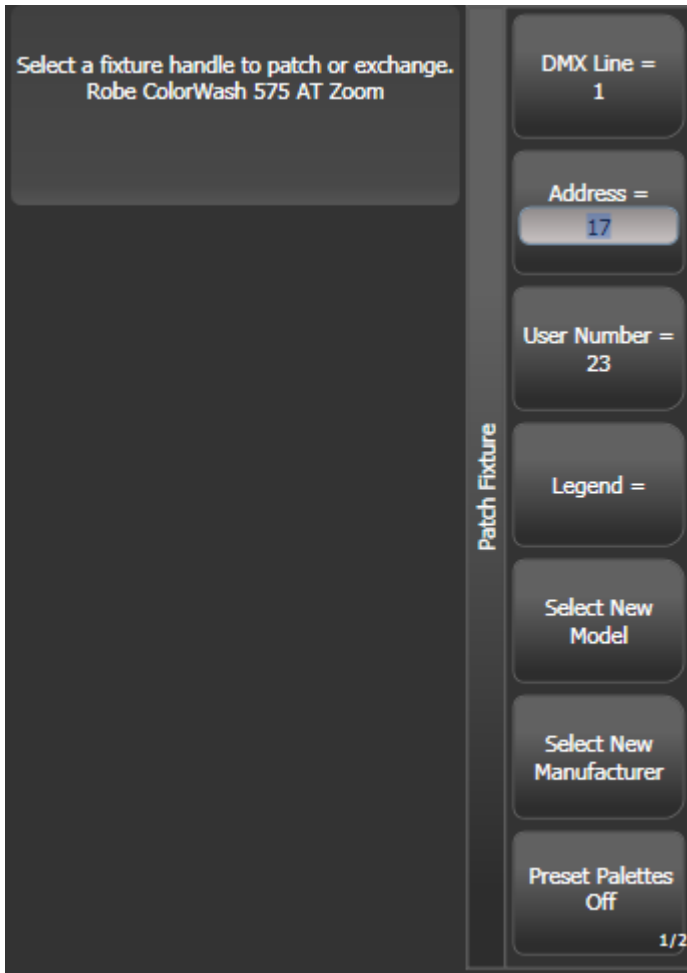
7. Patch the fixture by pressing a Fixture touch button, a Macro/Executor button or the **Select** button of a fader handle (not the main playback faders).
8. A fixture touch button turns dark blue and shows fixture details when it is patched. If you patch to a fader handle the select button will light up dimly.
9. Repeat from 7 to patch more of the same fixture type. The DMX address automatically updates so you can just keep patching by pressing Select buttons.

- To patch multiples of the same fixture, use the [Quantity] option. Or you can run your finger or draw a selection box round the touch buttons, or for physical buttons hold down the first button in the range and press the last button in the range. The fixtures will be patched to sequential blocks of DMX

addresses.

- [Options], [Offset] allows you to leave gaps in the DMX channels between fixtures when patching multiple fixtures, which is useful if you are planning a show which may involve exchanging fixtures. The Offset number is the size of the block which will be allocated to the fixture, for example if you want to allow 32 channels for each fixture you would set Offset to 32.

- You cannot patch more than one fixture onto a handle. If the handle is already used, the patch will fail.

- If you are patching a fixture which uses a separate dimmer channel, such as a VL5, you can patch the dimmer channel onto the same handle as the moving light part of the fixture so you can control it all together. This is called a Pending Dimmer (in the Patch View (Abschnitt 6.3.1) window this is indicated with a flash symbol behind the user number).

- [Options], [Preset Palettes] sets whether the console will create default colour, gobo and position palettes for the new fixture. These are created in the Position, Colour and Beam workspace windows.. This option is turned off by default but can give you a useful starting point.

- [Options], [AutoGroups] sets whether the console will automatically create groups from the fixtures you patch. If Enabled, a group is created for all fixtures of the same type, and another if you patch a quantity of fixtures.

- To show the DMX address for fixtures, press <Open/View> then <Patch>. To show patch details for a single fixture press <Open/View> then the fixture select button. On touch buttons the DMX address is displayed on the top right of the button in the format {DMX line}.{Address} (this display can be disabled using the context menu).

- If a patch goes over the capacity of a DMX line, the console will patch at the beginning of the next line. For example if you try to patch a moving head fixture at channel 1.510, it will actually be patched at 2.1.

- The console will show a picture of the fixture you select in the prompt area to help you check you have got the right one (if provided in the fixture personality; some fixtures do not include this information)
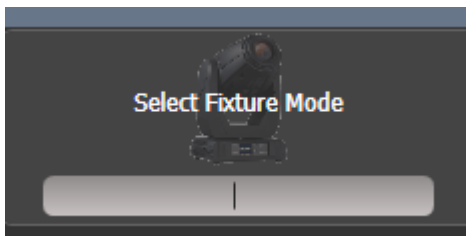
6.2.4 Capture Visualiser Auto Patch

If you want to use Capture Visualiser, start it by double pressing <Open/View> then press [Capture Visualiser] from the window select buttons. Some consoles also have a dedicated <Visualiser> button. Capture will open in a workspace window with an automatic representation of your patch.

You will see the fixtures you have patched laid out on screen in handle number order. You can then use the Visualiser controls (Abschnitt 14.1) to reposition the fixtures if you wish.

- You can turn off Auto Patch in the Capture Visualiser Settings window (Stage tab).

- Fixture modes which will work with Auto Patch show a Capture icon in the button. If the icon is not shown, that fixture mode isn't supported in the integrated Capture.

- If you are using the console linked to the full version of Capture (Abschnitt 14.5) (Nexum or above) on an external computer, then changes to the patch on the console will automatically sync to the Capture show. Also changes you make in Capture will sync back to the console.

6.2.5 Patching Fixtures with Multiple Cells (sub-fixtures)

Some fixtures have multiple cells of control within a single fixture (for example an RGB LED batten). To avoid having to patch every cell as a single fixture, you can patch the whole fixture as one "super fixture" and each cell will then appear as a "sub-fixture". This is very useful when laying out fixtures for use with the

Pixel Mapper as it allows you to move and rotate the fixture as a single fixture, but keep individual control over the cells.

If you access the fixture using the handle it is patched on, all cells of the fixture will be controlled together. To access the sub-fixtures independently, use the Attribute Editor window or you can press <Unfold> then the select button of the fixture. In the Fixtures workspace, the current page of fixtures will be replaced by select buttons for each individual fixture cell.

If patched on a fader then the cells will start at fader 1. You can also select sub-fixtures from the numeric keypad. See the fixture control section (Abschnitt 7.1.4) for more details of working with fixture cells.

To go back to normal, press <Unfold> then [Exit Unfold].

> The Sub fixtures feature has to be defined in the fixture's personality. If sub-fixtures does not work on your fixture you may need to obtain the latest fixture personality from Avolites.

6.2.6 Patching Active Fixtures / Media Servers

For Ai media servers see the Synergy section (Abschnitt 15.1) which allows you to connect to Ai for control of the setup and media playback.

Other media servers which support CITP can be patched using the [Active Fixtures] command on the Patch menu. This allows the console to retrieve thumbnail images of the media clips to display in the Attribute Editor when you are selecting the clip to play.

Once the media server is connected to the network, selecting [Active Fixtures] then [CITP Media Servers] will display a list of the available display layers on the connected server(s). Each layer can then be patched to a fixture button for control.

6.2.7 Patching by RDM

RDM (Remote Device Management) is a system which allows the console to interrogate the lighting rig to find out what's there. It can then patch itself to match the existing DMX addresses. You can also remotely change modes and other settings on the fixture.

> The fixtures need to be connected to the console by an RDM-enabled Art-Net node, the XLR connectors do not support RDM. Obviously the fixtures must be equipped with RDM for this to work; many fixtures are not. Also if you have DMX buffers or splitters in your rig, they must be RDM enabled or they will block the information being sent back to the console.

Press <Open/View> then <Patch> to open the Patch View (Abschnitt 6.3.1) window then select the RDM tab. All devices which support RDM will be listed here. Click the [Full Discover] context menu button to rescan the rig for RDM devices.
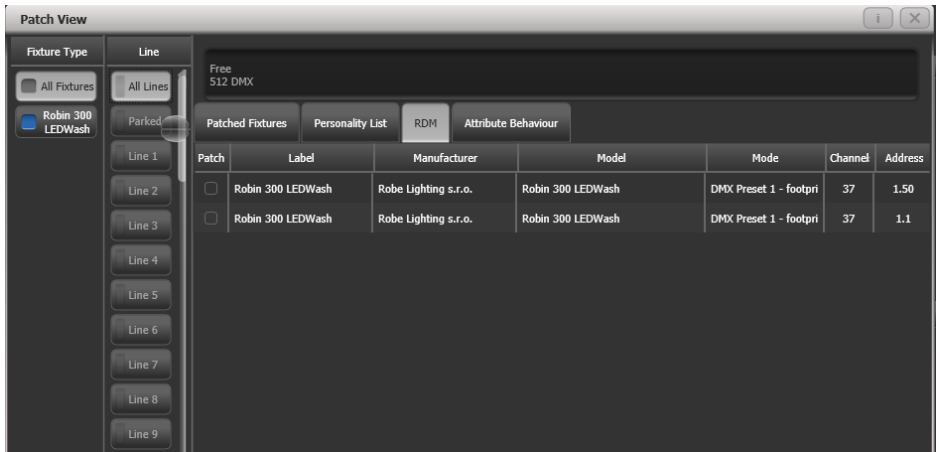
- Select one or more fixtures in the grid and click the Patch context menu button to patch the devices.

- Click on the Mode or Address cells in the grid to change these settings remotely.

- Click on the Identify button (at the right hand end of the screen, you might need to scroll to see it) to turn the fixture on so you can see where it is in the rig.

- Click on the RDM Quick Patch context menu button to automatically patch all RDM devices.

6.2.8 Parked Fixtures

If you attempt to patch, copy or move a fixture to a DMX address where its control channels would overlap one or more other fixtures, the console will give you the option to **Park** the conflicting fixture(s). Parked fixtures retain all their programming but do not output to the DMX outputs.

You can re-enable a Parked fixture by giving it a new DMX address using the Patch View (Abschnitt 6.3.1) window which has a button to display all parked fixtures.

6.2.9 Finding a Lost Fixture

Sometimes a fixture may be rigged with the wrong DMX address set, or connected to the wrong DMX line.

The Find Fixture function allows you to find the start address of the fixture by scrolling a "locate" state through all possible DMX addresses. When the fixture responds with its Locate state, you know its DMX address and might hopefully avoid a trip up the rig to look at it..

1. Press <Patch>, [Fixture] and select the type of fixture you are looking for.
2. Press [Options], then [Find Fixture] to enable the Find Fixture mode.
3. Turn Wheel B to go through all possible DMX addresses. Wheel A sets DMX lines.
4. When the fixture responds with its Locate state, you have found the correct DMX address.
5. Turn off [Find Fixture] mode and (if not already occupied) patch the fixture. The DMX address/Line will be automatically set to match the Find Fixture settings.

- Wheel C (DMX Slot) jumps through DMX addresses using the fixture channel count (for example if a fixture uses 16 channels, it will jump through in 16's).

6.3 Changing the Patch

6.3.1 Patch View

The Patch View window gives a full overview of how all the fixtures in your show are patched, and allows you to patch, repatch, legend, renumber, invert, pan/tilt swap, freeze, exchange, park and view fixtures. If you need to change the settings of multiple fixtures (for example, changing the DMX address of several fixtures) then it's really easy to do in one operation in the Patch View.

To show the Patch View window press <Open/View> then <Patch>, or double press <Open/View> and select [Patch View] from the window select buttons.
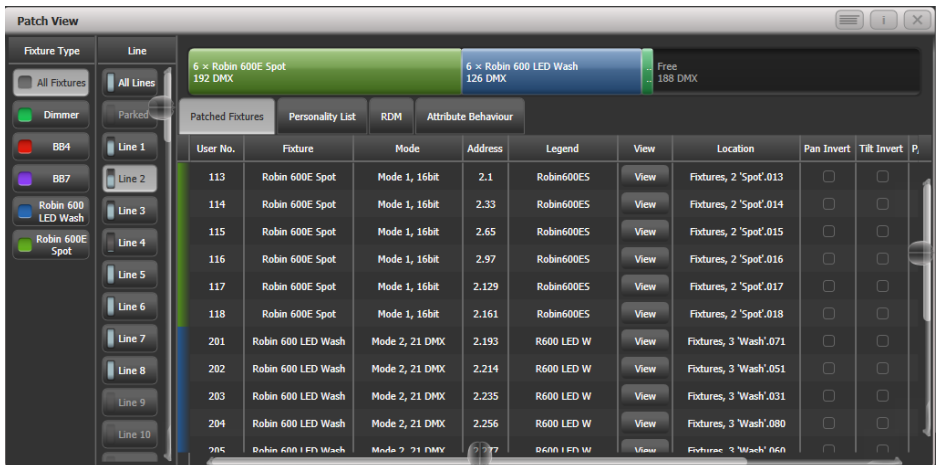
Fixture type: lists the different types of fixture in your show. Each fixture has a unique colour code. Click on these buttons to filter the view so it only shows one fixture type.

Line: lists the available DMX output lines/universes. The blue bar graph in the button shows how much of the line is used by patched fixtures and how much is free. Click a button to show the details of that line in the right hand side of the window.

The **coloured bar** at the top shows how fixtures are patched on the selected output line, using the unique colour code for each type of fixture. Click on a section of the bar to select those fixtures in the grid below.

The **grid area** shows details for each patched fixture on the selected output line. Some parameters are editable by clicking in the grid, then the softkeys allow you to change the parameter.

> You can change parameters for multiple fixtures by dragging a selection box over the grid, or hold the Ctrl button on the keyboard and click on the required fixtures. Then edit the parameter on the softkeys, and use the [Set] context button or press <Enter> to update the selected fixtures.

- You can switch off some of the display columns to make the Patch View simpler. Press the [Choose Columns] context menu button and then use the options on the softkeys to turn columns on and off.

- You can add notes to each fixture in the Patch View. Click on the Notes field and enter text using the keyboard.

- The tabs across the top allow you to switch the window to **Personality List** (lists all fixtures available on the console), **RDM** (allows you to patch devices using RDM) and **Attribute Behaviour** (allows you to set invert, freeze, curve, and limit. See the detailed fixture information section (Abschnitt 6.3.2) for Attribute Behaviour.

- A context menu option allows you to show or hide parked fixtures. If you show parked fixtures they will appear greyed out in the position they were originally patched.

6.3.2 View Detailed Fixture Information

In the Patch View window click on the View button for the fixture you wish to view, or press <Open/View> followed by a fixture handle. A Fixture View window will open showing details for that fixture, including the personality and mode used to patch, and the individual DMX channel addresses for each attribute. Attributes can be inverted or frozen by clicking on the checkboxes at the right hand side.

If the fixture address is set using DIP switches, the console can show you how to set the switches by clicking on the DIP Switches tab.
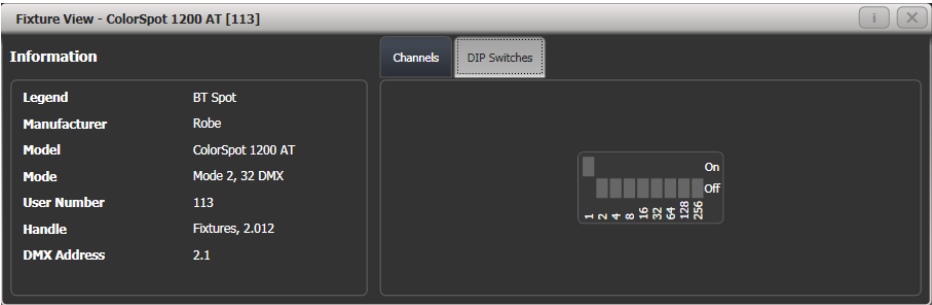
There is also a Personality tab (not shown in the pictures) which shows history information about the personality file for the fixture. This can be useful for checking the version of the personality file.

6.3.3 Changing DMX Addressing using Patch View

You can easily change the DMX address of one or more fixtures from Patch View. Select the DMX address cells you want to modify - draw a selection box over multiple cells to select more than one.

Type the new address for the first fixture in the selection and press <Enter> (using the format Universe . Address - if you miss out the universe part it will stay unchanged).

All fixtures will be renumbered keeping the addressing offset between the fixtures the same (in other words if each fixture takes 20 channels, the addresses will be set with an offset of 20 channels between each fixture).

The [Swap Fixture Addresses] softkey lets you swap the addressing between two groups of fixtures. This operates in two modes, [One For One] or [Retain Layout], which you can select by softkey after pressing [Swap Fixture Addresses].

Select one group, then press [Swap Fixture Addresses] and select the target group. In One for One mode the target must be the same quantity of fixtures or the console will display an error. In Retain Layout mode the console will attempt to add or remove fixtures to get the same quantity - if this conflicts with other fixtures it will give you the options to [Park Conflicting] or [Cancel].

6.3.4 Changing DMX address using Patch menu

As well as using the Patch View screen, you can use the Patch menu to re-patch a fixture to a different DMX address or a different DMX output line. All programming is kept.

1. Press <Patch> (if you're not already in Patch mode).
2. Press [Repatch Fixtures].
3. Press the Select button of the fixture you want to change.
4. To change DMX press [Address], type the new address and press enter. If this address is already in use, a warning icon will be shown.
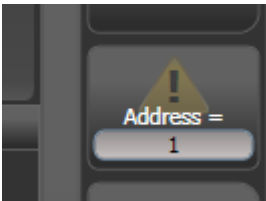
5. To change the DMX output line, press [DMX Line=x] and enter a new output line number.
6. Press <Enter> or [Repatch] to confirm the change.
7. Repeat from step 3 if you want to change other fixtures.

- You can "Park" the fixture using [Park]. This removes the fixture from the DMX output map, but all programming is retained. The original DMX line and address is remembered and you can restore it using the [Unpark] option.

- If the new DMX address already has another fixture or dimmer patched on it, the console will warn you (unless this is disabled in User Settings (Abschnitt 19.5)). You can either press [Select another DMX address] to abort the change or [Park Conflicting Fixtures]. All programming for the parked fixture is preserved, but you need to repatch it to a free DMX address using the above procedure before you can use it again. If you press [Always Park Conflicting Fixtures] the console will park this and any future conflicting fixtures without warning you (you can change this option back in the User Settings).
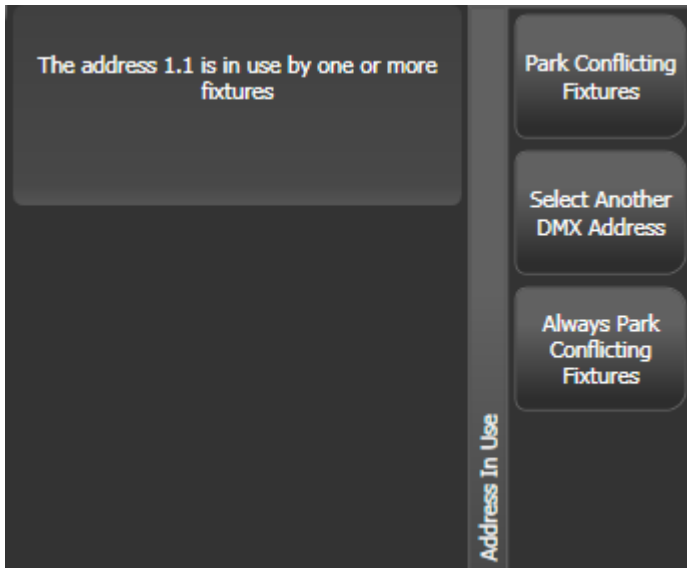
6.3.5 Setting Legends

You can set a legend for each fixture or dimmer you've patched which is displayed in the touch button. This can be really useful to help you identify the fixture.

1. Press <Legend> (D9/D7 only) or on the main menu press softkey [Set Legend].
2. Press the Select button for the fixture you want to legend.
3. Type the legend on the keyboard.
4. Press <Enter> when you have finished.

- You can also choose to have a picture legend using the softkey options.

- You can set the same legend for multiple fixtures by selecting a group of fixtures after pressing [Set Legend].

- You can change the User Number for the fixture using the [User Number] softkey on the [Set Legend] menu. User Numbers are used when selecting fixtures from the keypad theatre-style.

- You can automatically allocate User Numbers for multiple fixtures by selecting a group of fixtures, then setting [User Number]. The first fixture will have the User Number you entered, and the other selected fixtures will be given a number increasing by 1 for each fixture.

- You can set a legend for the current page of fixtures using the [Set Legend] function from the main Program menu, then [Page Legends], then the page tab which you like to change (if pages are not

shown you can enable this in the context menu). The legend is shown on the touch button for the page.

6.3.6 Fixture Button Halo

You can configure fixture buttons to have a "halo" colour which helps you to find them quickly. Halo colours can be set manually for each fixture (the default setting), or automatically by fixture type using the same fixture colours used in the patch window..

To set a manual halo colour, press <Legend> or click [Set Legend], click the fixture button (or select multiple buttons) then select the [Halo] option. A colour picker will open to let you set the colour, or pressing [System Colours] will give you colour options on the softkeys. A [Remove Halo] softkey lets you remove the colour.
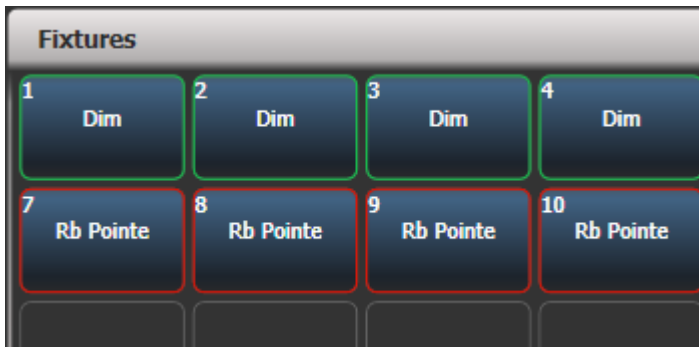
To enable automatic halo colours, hold <Avo> and select [User Settings], then [Handles], then set Fixture Halos to [Auto]. Fixture buttons will then be coloured to match the automatic fixture colours used in the Patch window.

Halo colours are also shown in the Intensity View and Show Library workspace. In list views such as DMX, Channel Grid, Cue View and Palette view the halo colours are shown as a bar to the left of the list - this uses the user halo colour if one is set, otherwise the automatic colour is used. The User Setting does not affect this display.

6.3.7 DMX View Window

When you're having problems getting fixtures to work it can be useful to see the actual DMX output values coming from the console. Double press <Open/View>, then select [DMX] from the window select buttons.

The buttons on the left let you filter by attribute and by fixture type and select the different output lines from the console. Scrolling the window to the right shows more information about each DMX channel.

6.3.8 Fixture Exchange

The Fixture Exchange function enables you to repatch fixtures in your show using alternative fixtures, retaining important elements such as cue times, shapes and legends. This is very useful for touring shows and venues with a high turnover of events.

Fixture Exchange works best if you use Palettes to create your cues. This allows you to adjust for position

differences and so on by reprogramming a few position palettes, rather than having to reprogram every cue. Cues recorded with absolute values will need to be re-recorded, preferably using palettes.

The pan, tilt and dimmer will always be preserved from one fixture type to the next. For other attributes, the console will attempt to match the functions between the fixtures, but you can change the details of this using the Exchange Mapping function (see next section (Abschnitt 6.3.9)). All programmed items including palettes will be preserved, so the programming can be easily adjusted by updating your palettes as normal.

Fixture exchange also gives you a powerful way to re-use an existing show with new lights, so you can give yourself a programming head start when faced with a new fixture.

- It's a good idea to save your show before performing major changes such as fixture exchange. Should you change your mind or have problems, you will easily be able to return your show to its previous state.

1. Enter patch mode by pressing <Patch>.
2. Select the new fixture type you wish to use.
3. Touch the select button of the fixture which is to be exchanged.
4. The console will warn you that the fixture is in use. Press the [Exchange Fixture] option.
5. Repeat from step 3 to exchange other fixtures with the same type of new fixture.

After exchanging fixtures you need to update the palettes which used those fixtures. If you have trouble switching values off in a palette, set new values for all the attributes in the attribute group and re-record the palette. You should then be able to switch off an attribute group as required.

6.3.9 Exchange Mapping

When you exchange fixtures the console will attempt to map the functions on the new fixture to the same functions on the old fixture so that your show does not look any different with the changed fixtures.

However, this may not always work out quite right, so using Exchange Mapping you can manually map functions between the fixtures. For example this allows you to map the old gobos to similar new gobos even if they are not in the same wheel position, and to ensure that rotation speeds work the same.

Any changes made will apply immediately to the show. Mappings are remembered and will be used whenever you exchange the same fixtures in the future (though you can restore to factory mappings at any time should you need to using the [Clear All Mappings] softkey).
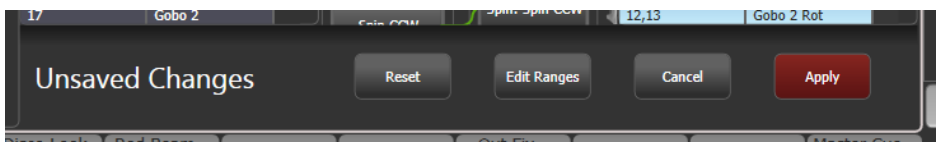
To set up mapping:

1. Press <Open/View> then <Patch> to show the Patch View screen.
2. Select the Exchange Mapping tab.
3. In the leftmost column, click the fixture type of the new fixture which you have changed to.
4. The view shows the old fixture on the left and the new fixture on the right with attributes listed for both fixture types. You can sort the list either alphabetically or in DMX channel order using the [Sort] context menu option.
5. Select an attribute to show the mapping. The mapped attribute on both fixtures will highlight in light blue. Brown controls are not mapped. The centre of the view shows the individual functions of the selected attribute, and coloured lines show how these map between the fixtures.
6. To map a function, click on a source function then a destination function. Any previous mapping will be removed. You can map multiple source functions to a single destination function.
7. To unmap a function, double click the source function. If there are multiple sources mapped, double click the destination function.
8. To move a mapping, click the existing destination, then click the new destination.

- Where a fixture has been exchanged from more than one source fixture you can switch between them by selecting the relevant source fixture under the 'exchanged from' column.

- When you change the mapping, the 'Unsaved Changes' options will pop up at the bottom of the screen. Here you can store the new mappings by pressing Apply, forget the changes by pressing Cancel or restore all mappings to Avolites factory default by pressing Reset. All these actions have to be confirmed by pressing the [Confirm] softkey.

Range Mapping

If the destination function has a range (for example 0-100%) you can adjust the range to which the source function is mapped.

Where multiple source functions are mapped to a single destination function with a range, separate destination buttons are shown allowing you to set a different destination range for each source function.

To set the range, first select a destination function, then click the Edit Ranges option at the bottom of the window. Then select the function whose range you wish to change. (Note that it is only possible to adjust the range of a mapped function. Any functions that are not mapped or are not ranges will grey out). You can then adjust the maximum and minimum values for the range either by wheel, by touching the wheel view on touch consoles or by selecting the relevant softkey and entering the value.

Once complete, click Apply then [Confirm] to commit the changes or [Cancel] then [Confirm] to forget.

6.3.10 Updating Patched Personalities

This option allows you to update the personality for a fixture used in your show. Normally a copy of each fixture personality in the show is saved in the showfile, so when you update the personality library (Abschnitt 20.1.2) on the console it does not update fixtures which are already patched.

- It's a good idea to save your show before using Update Personalities, then you will be able to undo any changes if you change your mind or have problems.

1. Install the latest personality library on the console or computer (see Updating the Personality Library (Abschnitt 20.1.2))
2. Enter patch mode by pressing <Patch>.
3. Press [Edit Fixtures].
4. Press [Update Personality].
5. Titan shows all fixture types which are patched in the show and which it has updates for in the installed fixture library. Select the type(s) you want to update, or click [Update All] to update all patched fixture types to the most recent version in the library.

- Updating a number of fixtures may take a little while.

6.4 Copying⊠ moving and deleting fixtures

6.4.1 Copying or moving a patched fixture

Using the <Copy> or <Move> buttons you can make a copy of an existing fixture or move it to a new handle. You cannot link fixture handles like you can with cues. You can copy or move multiple fixtures in one operation.

Fixture copying is very useful if you need an additional fixture of a type you've already patched and programmed because the new copy will come complete with all the cues and palettes of the original fixture

you've copied. The copied fixture will be "Parked" (have no DMX channel allocated) so you will need to set an address before you can use it (see changing the patch section (Abschnitt 6.3))

Move is useful for tidying up the console.

1. Press the <Copy> or <Move> button (on consoles which don't have a **Move** button press <Avo> and <Copy>).
2. Press the Select button of the fixture you want to copy/move. You can select multiple fixtures - use the <And> button to add more fixtures to the selection.
3. Press the empty Select button where you want it to go.

- The <Menu Latch> button latches the Copy or Move menu, so you can keep copying or moving things without having to keep pressing the <Copy> or <Move> button. Press again to unlatch.

- The [Retain Layout] or [Bunch Up] option is used when copying a group of fixtures with empty handles in the group - you can either keep the empty handles, or bunch up the used handles together. There is also a [Bunch Up With Offset] option which allows you to leave a gap in the DMX channels, if you are running a show where you need to exchange fixtures to ones which use more DMX channels.

- When in Copy mode, option [Copy Legends] can be changed to [Don't copy legends] so that the copied fixtures are given default legends.

- When in Move mode, [Swap Items if Required] will attempt to reposition any existing handles which are in the way of the move. This is useful when rearranging buttons on a page which is nearly full.

6.4.2 Deleting a Patched Fixture

You can delete a fixture or dimmer from a button if you patched it accidentally or if you change your rig and want to use the button for something else.

All programming for the fixture is also deleted. You cannot undo deletion of a fixture or get the programming back by repatching a fixture to the same handle. If you might need the fixtures again later, move them to an unused fixture page.

1. Enter Patch mode by pressing the <Patch> button.
2. Press the <Delete> button.
3. Press the Select button of the fixture you want to delete.
4. The button (if a touch button) will light up red and the console asks for confirmation. Press the Select button again to confirm.

- You can delete a range of fixtures in one operation.

6.5 Fixture Personality Options

Titan uses fixture personalities to tell the console how to operate each type of fixture. Avolites have created personalities for most fixture types in the known universe, but as new fixtures are being created all the time, you may need to add a new fixture personality. See the personalities section (Abschnitt 20.1) for details of how to find personalities if the console does not have a personality for the fixture you are using.

There are also various options you can set which affect how the fixture works. All of the options below can also be set from the Patch View window.

6.5.1 Swap Pan and Tilt

This allows you to make the pan channel control tilt and the tilt control pan. This can be useful for fixtures rigged in strange orientations.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Swap Pan and Tilt].
4. Select the fixtures to be pan-tilt swapped. Press [Pan and Tilt …] to select either [Swapped] or [Normal] for the selected fixtures.
5. Press <Exit> when finished.

6.5.2 Invert Attributes

This option inverts individual attributes of fixtures. Useful if you have a fixture which pans right when the rest pan left, saving a trip up the rig to set fixture options.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Invert Attribute].
4. Select fixture(s) to be changed.
5. Select the attribute to invert from the softkeys. The display shows [Inverted] when the attribute is inverted.
6. Press <Exit> to finish.
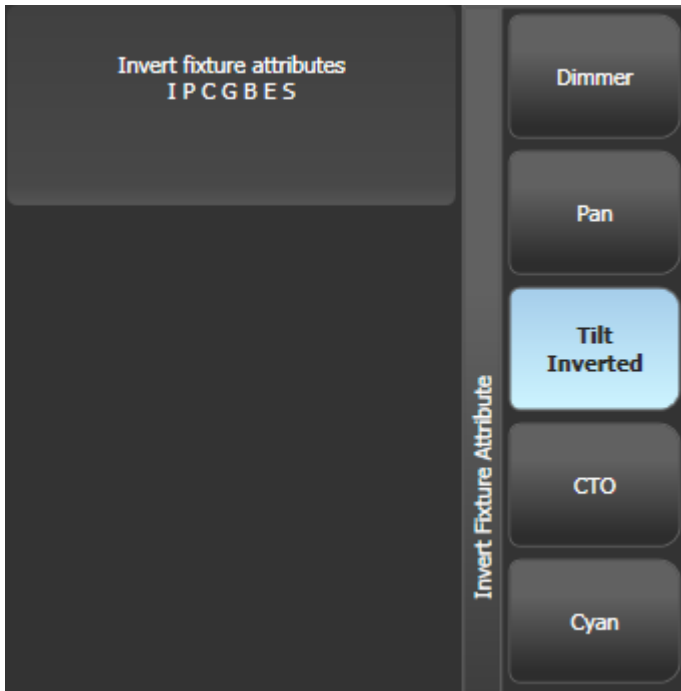
- You can change the invert on multiple fixtures by selecting more than one, but the "Inverted" display will not show if there is a mixture of inverted and non-inverted fixtures in the selection.

- Some attributes cannot be inverted.

- Invert can also be set from the Attribute Behaviour tab of the Patch View window.

6.5.3 Attribute Limits

You can set upper and lower limits for any attribute. This can be useful for example to limit the pan/tilt movement of a fixture, or if a fixture has a combined dimmer/strobe function and you only want the dimmer part of the operation.

Attribute limits are set either from the Edit Fixtures menu or using the Attribute Behaviour tab of the Patch View window.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Set Limits].

4. Select the fixtures to be set.
5. Use the softkeys to select which attributes are to be set, then select upper or lower limit.
6. Input a percentage value for the limit value, or press [Set To Current Value]. To remove a limit press [Remove Limit].
7. Press <Exit> when finished.

From the Attribute Behaviour tab, use the context buttons to set Attribute Limits.

It is still possible to put values into the programmer outside the limits. A "limited" watermark will appear on the wheel view behind an attribute when it is being limited.
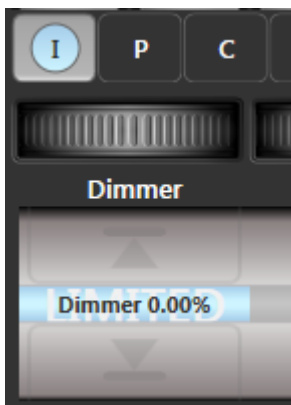
6.5.4 Fixture Offset

You can set an offset to any attribute of any fixture. The normal use for this is to correct pan/tilt positions when fixtures are rigged in a different orientation to how they were programmed. The offset is applied to channels just before final output.

There are 4 ways to set an offset:

- Select fixture, <Locate>, then adjust attributes to the desired locate value. Then press <Record>, <Locate>, [Update Offset]. This does not change the actual locate value but sets the difference between the locate position and your set position as the offset. This is an easy visual way to set the offset.

- You can also set offsets using palettes. Select fixture, apply palette, adjust fixture to desired values then press <Record>, select the palette you have applied and click [Update Offset]. Again this does not change the palette, but sets the difference between the palette and the position you changed it to as the offset value.

- In the Patch View window, in the Patched Fixtures list there are cells for Pan or Tilt offset

- In the Patch View window, in the Attribute Behaviour tab you can select [Offset] from the context menu buttons. This lets you view or adjust offsets set by the first two methods.

6.5.5 Fixture / Attribute curves

Curves set how an attribute behaves over the full range of values. They are most often used for dimmer attributes to set the way the dimmer level follows a slider, but can be applied to any attribute.

Curves are set either from the Edit Fixtures menu or using the context buttons on the Attribute Behaviour tab of the Patch View window.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Set Curve].
4. Select the fixtures to be set.
5. Use the softkeys to select which attributes are to be set.
6. Use the softkeys to select the type of curve required. The normal setting is Linear.
7. Press <Exit> when finished.

See the curves section (Abschnitt 19.7) for details of the different curves available.

6.5.6 Freeze Fixtures or Attributes

This option allows you to freeze individual attributes of a fixture, or to freeze the whole fixture. Attributes or fixtures which are frozen are not affected by playbacks or by the programmer.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Freeze Fixture or Attribute].
4. Select the fixtures to be frozen/unfrozen.
5. Use the softkeys to select which attributes are frozen, or to freeze the whole fixture. Frozen attributes are indicated on the softkey.
6. Press <Exit> when finished.

- Freeze can also be set from the Attribute Behaviour tab of the Patch View window.

- A "Frozen" watermark is shown on the wheel display when an attribute is frozen.
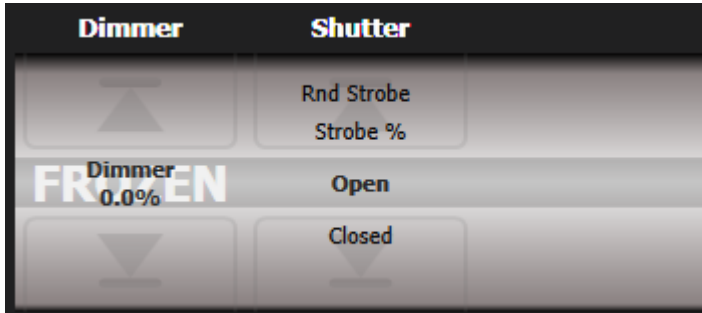
6.5.7 Resetting fixture options back to defaults

The [Reset Behaviour] softkey resets the following fixture personality options to their default values:

- Upper Limit
- Lower Limit
- Offset
- Frozen State
- Curve
- Inverted

If you have a fixture behaving in unexpected ways, this is useful for resetting all the options back to standard to help work out what is happening.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Next].
4. Press [Reset Behaviour].
5. Select a fixture or multiple fixtures to reset
6. Press [Confirm].

6.5.8 Editing the Personality

Sometimes you may want to modify the way a fixture behaves, or you may find a fixture personality contains errors and needs editing. You can edit personalities directly on the console.

1. Press <Patch>.
2. Press [Edit Fixtures].
3. Press [Edit Personality].
4. The softkeys show a list of all fixture types patched in your show. Select the fixture type to be

edited.
5. Personality Builder will open allowing you to edit the personality.
6. When you save changes, your changes are saved as user personality on the console, and you are prompted whether to apply the changes to the show.

- Edited personalities will be saved in the User/Custom personality folder at D:\Personalities - if using Titan PC Suite (Titan Go or Simulator), the folder is at \Documents\Titan\Personalities. Personalities in this folder are searched and loaded before those in the library and are not overwritten when a new fixture library is installed.

- A separate user guide for Personality Builder is available from the Avolites website.

If you find a problem in a fixture personality provided by Avolites, please let us know using the bug report form in the Personality section of the website.

7 Controlling Fixtures

7.1 Selecting Fixtures

When you are programming a show, and sometimes when you are running a show, you need to manually control the fixtures and dimmers to set the intensity, position, colour, etc. To do this you first select the fixtures you want to change. The following section (Abschnitt 7.2) tells you how you can set the attributes of those fixtures to get the look you want on stage.

7.1.1 Selecting Fixtures and Dimmers for Control

To select which fixtures or dimmer channels you want to control, you use the Fixture Select buttons in the Fixtures window. You can also select items using Layout windows, see Layouts (Abschnitt 7.5). You can select fixtures or dimmers individually, or several at once. You can also put fixtures into Groups (Abschnitt 7.4) which allow you to quickly select different combinations of fixtures.

If the fixture is patched on a fader handle, press the **Select** button to select the fixture.

1. Press the Select buttons for the fixtures you want. Touch buttons will light up pale blue when selected, physical buttons will light brightly.
2. To select a range of fixtures, slide your finger across the touch buttons to draw a selection box. For fixtures patched on faders, hold down the Select button for the first fixture then press the

> Select button for the last fixture.

Here are some other useful things to know:

- Press <Locate> to light up the selected fixtures in open white and move them to a central position. Locate options are described in detail in the next section (Abschnitt 7.1.2).

- You can deselect a fixture by pressing the select button again.

- In the top bar of the screen, the console will show you which fixtures are currently selected.

- Press <Clear> (right of numeric keys) to deselect all fixtures and remove all changes from the programmer. See the next section (Abschnitt 7.1.3) for more Clear options.

- Once you have changed any attribute, pressing a Select button will deselect all fixtures and start the selection process again. All changes you made to fixtures (since you last pressed <Clear>) stay in the programmer. Once a fixture has been changed, Fixture buttons show a darker blue. The picture above shows the first two fixtures selected, with the next three in the programmer and the others unselected.

- You can select fixtures on another page by touching one of the page buttons to the left of the fixture buttons, if you have 'Pages' set to Show (using the context button). Otherwise you can use the scroll slider to show more buttons. On fader handles, Page buttons are provided to change pages – on the Pearl Expert these are above the numeric keypad, on other consoles they are next to the faders.

- Using Key Profiles (Abschnitt 19.4) you can set the fixture touch button to latch mode so that it turns the fixture's dimmer channel on (like putting a preset fader to full).

7.1.2 Setting Fixtures to a Start Position (Locate)

The <Locate> button is used to put the fixture into a known position with light coming out, so that you can start programming it.

A quick press of the button will move all selected fixtures to a central position and reset all the attributes so that you get a white light. However you sometimes might not want to move the fixture, or may want to keep some other attributes unchanged.

- The **Locate** button does not put attribute values into the programmer for recording. If you are in **Record by Channel** mode then the Locate state won't be recorded unless you make changes to the attributes. (See Record Mode (Abschnitt 12.2.1.1))

By holding down the <Locate> button rather than a quick press, you get some more options:

- You can mask off some of the Locate settings (such as only turning the fixture on, but not changing its position or colour) by holding down <Locate> and pressing [Set Mask to Exclude All]. Then (still holding <Locate>) turn on the Attributes you want to change using the Attribute buttons. Only the lit attributes will be changed by Locate. Pressing the <Options>/<Attribute Options> button will clear the mask.

- Option [Auto Reset Mask] sets the mask to be automatically reset to include everything each time Locate is pressed, or you can toggle the option to [Remember Mask] which will keep the mask setting you used last time.

- Option [Don't Clear/Clear Located Attributes] helps to avoid accidentally storing Locate values when you record a cue in **Record by Channel** mode. When the option is set to **Don't clear** (default) then when you press <Locate> any attribute values already in the programmer will be changed to the Locate state and would get recorded if you record a cue. If the option is set to **Clear** then attribute values already in the programmer will be cleared when you press <Locate> and so would not get recorded in a cue.

> To quickly locate **without changing pan/tilt**, hold <Locate> and press the Pan/Tilt (or Position) button, then release <Locate>.
> To quickly locate **pan/tilt only**, hold <Locate>, press <Options> (<Attribute Options> on some consoles), then press <Position> (<Pan/Tilt> on some consoles), then release <Locate>.

Changing the Locate State

You can change the default locate state of each fixture in a show by recording a new Locate State. This can be shared (you set the values for one fixture, and then it applies to all fixtures of the same type) or individual (you can set different values for each individual fixture). To store, set up the desired locate state on the fixture(s) you want to change, then press <Record>, then <Locate>. Select [Shared] or [Individual] from the softkeys. Press <Record> or <Locate> a second time to confirm.

7.1.3 Clearing the fixture selection and the programmer

The <Clear> button (on the right of the numeric keypad) is used to remove all changes from the programmer and deselect all fixtures.

Normally a **quick press** of the <Clear> button clears the fixture selection and also clears from the programmer all the fixture changes you've made. However you can change this so that the button operates in two stages when some fixtures are selected, and also there are some changes in the programmer - a **first press** of the button will clear only the fixture selection, then a **second press** will clear the contents of the programmer, or the other way round. See Action Precedence (Abschnitt 7.1.3.2) below in the Clear Options menu.

Clear button hold-down options

If you hold down the <Clear> button, then more options are available on the softkeys. These will take effect when you release the <Clear> button.

The **Set Mask** options let you choose which attribute groups are to be cleared (for example, you could leave the pan/tilt in the programmer but clear everything else). The top [Set Mask] button lets you choose which attributes will be cleared - or you can use the attribute group buttons to set the mask. [Set Mask to Clear Nothing] disables all attributes from being cleared to give you a clean slate to start with and [Set Mask to Clear All] enables all attributes to be cleared.

You can also clear all the mask attributes by pressing the <Options>/<Attribute Options> button will clear the mask.

The **Time** mask option allows you to clear or retain the fade/delay times in the programmer for all attributes (clearing individual attributes will also clear times for that attribute, for example setting a P mask will clear position times).

When you release the <Clear> button the attributes selected in the mask will be cleared and the mask will reset to **Clear All** - you can change the Auto Reset Mask option as described below so that the mask is remembered next time you press <Clear>.

- Hold <Clear> and press <All> to deselect all fixtures, but leave the changes in the programmer.

- [Clear Options] opens a submenu showing some further options (described below).

- [Clear All Fixtures/Selected Fixtures] sets whether all fixtures will be cleared from the programmer, or if only currently selected fixtures will be cleared. This is useful if you want to clear specific fixtures.

- [Individual Attributes] gives you a list of attributes currently in the Programmer - press the appropriate softkey to clear that attribute. This lets you clear individual attributes rather than the whole group, for example you could clear Pan but leave Tilt. You can press the attribute buttons to filter what's shown in the list.

- [Clear All Programmers] will clear all programmers that are currently active on the console, including Multi-user programmers from other users, and the Titan Remote programmer.

Clear options menu

The options in the "Clear Options" submenu are as follows. These options are stored with your user profile and can also be set in the Clear tab of the User Settings (Abschnitt 19.5.12).

- [Auto Reset Mask] sets the mask to be automatically reset to clear everything each time Clear is pressed, or you can toggle the option to [Remember Mask] which will keep the mask setting you used last time.

- [Leave/Zero Preset Fader Levels] is used to set whether latched fixtures are cleared (the fixture key profile (Abschnitt 19.4.1) can be set to "Latch" mode, which turns on the fixture dimmer channel when the fixture button is touched.)

- [Freeze current values] sets what happens to LTP (non-intensity) channels you have modified. If set to [Freeze Current Values] the channels remain as you set them. If set to [Release To Playback Values] the channels will go back to how they are set in the current playback. For example: you have an active playback making some lights green, then you select the lights and change them to red. If you press Clear with this option set to [Freeze] then the lights remain red. If the option is [Release] the lights will go back to green.

- [Clear/Maintain Cue Times] - determines whether or not to clear the cue time information from the programmer (this will not affect fixture attribute times in the programmer).

- [Clear/Maintain Rate Settings] - sets whether rate settings will be cleared from the programmer.

- [Clear Direction] - sets whether direction will be cleared from the programmer.

- [Action Precedence] - Sets a two-stage action for presses of the <Clear> button:

  – Selection With Programmer: **(default)** Any press of the button clears both the fixture selection and all fixture changes in the programmer

  – Selection Then Programmer: If any fixtures are selected, fixture selection is cleared on button press. If no fixtures are selected then the programmer is cleared.

  – Programmer Then Selection: If there are any changes in the programmer, then the programmer is cleared on button press. If there's nothing in the programmer then fixture selection is cleared.

> If you type a number then press <Clear>, HTP values in the programmer will fade out over that time, for example 5 <Clear> would fade over 5 seconds. This can be very useful if you are trying to be subtle when making changes during a show.

Directly removing attributes from fixtures

You can use the Channel Grid (Abschnitt 7.3.1) window to selectively view and remove attributes from fixtures.

7.1.4 Fixtures with Multiple Cells/Sub-Fixtures

If a fixture has multiple cells of control (for example an RGB LED batten) and its personality supports it, you can select and control the fixture either as a whole or as independent cells. This is particularly useful when using Shapes or the Pixel Mapper.

If you select the fixture using the handle it is patched on, all cells of the fixture will be controlled together.

You can use the buttons which appear at the top of the attribute editor window to select the main fixture, or individual cells for control (double press <Open/View> to open the Attribute Editor window from the window select buttons).
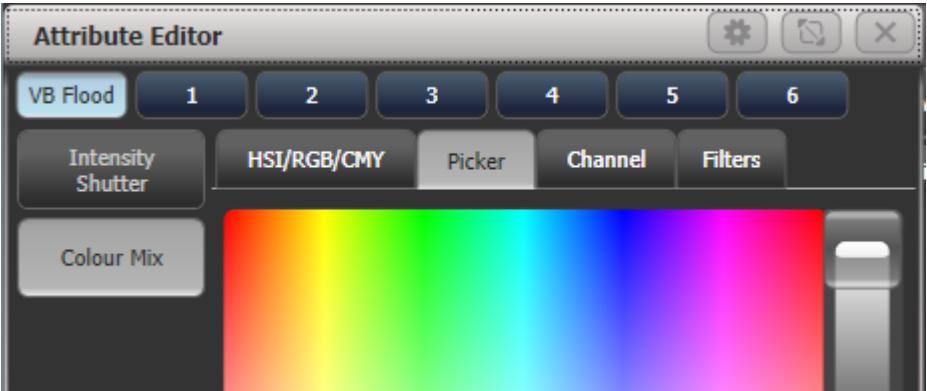
You can also use <Unfold> to expand the cells onto individual select buttons. In the Fixtures workspace, the current page of fixtures will be replaced by select buttons for each individual fixture cell. On fader handles, the unfolded fixture cells will start at handle 1.

There are two ways to unfold fixture cells:

- Press <Unfold> then select range of fixtures. The cells will immediately appear on the handles.

- Select fixtures, press <Unfold>, then press [Selected Fixtures]. This method allows for non-consecutive fixtures to be unfolded.

To go back to normal, press <Unfold> then [Exit Unfold].

You can also use the numeric keypad to quickly select cells. The syntax is as follows: (<THRO> is called Through on some consoles)

Keypresses	Selection
<.>	All sub-fixtures of selection
n <.>	All sub-fixtures of fixture **n**
<.> <THRO> <.> **j**	Sub-fixtures 1 - **j** of all selected fixtures
n <.> <THRO>	All sub-fixtures of fixture **n** through last consecutive of that type
n <THRO> <.> **j**	Shorthand for above
n <.> <THRO> **i**	Sub-fixtures 1 - **i** of fixture **n**

Keypresses	Selection
<.> **m**	Sub-fixture **m** of all selected fixtures
n <.> <THRO> **i** <.> **j**	Sub-fixtures 1 - **j** of fixtures **n** - **i**
<.> **m** <THRO>	Sub-fixtures **m** through last of all selected fixtures
n <.> **m**	Sub-fixture **m** of fixture **n**
<.> **m** <THRO> <.> **j**	Sub-fixtures **m** - **j** of all selected fixtures
n <.> **m** <THRO>	Sub-fixtures **m** through last of fixture **n**
<.> **m** <THRO> **j**	Shorthand for above
n <.> **m** <THRO> **i**	Sub-fixtures **m** - **i** of fixture **n**
n <THRO> **i** <.>	All sub-fixtures of fixtures **n** - **i**
n <.> **m** <THRO> **i** <.>	Sub-fixture **m** through last of fixtures **n** - **i**
n <THRO> **i** <.> **j**	Sub-fixture **j** of fixtures **n** - **i**
n <.> **m** <THRO> **i** <.> **j**	Sub-fixtures **m** - **j** of fixtures **n** - **i**
n <THRO> <.> **j**	Sub-fixture 1 - **j** of fixture **n**
n <.> **m** <THRO> <.> **j**	Sub-fixtures **m** - **j** of fixture **n**

- Fixture cell selection state will be saved with a group, this provides a quick way to select cells / sub-fixtures without having to use the Attribute Editor or Unfold.

7.1.5 Selecting Fixtures and Dimmers by number (Channel)

In some situations, for example when programming lots of dimmers, it can be easier to type in the dimmer channels you want to program. The Channel menu allows you to do this for dimmers or fixtures. To access the Channel menu, press the <Fixture> button on the top left of the numeric keypad. You can also simply start typing numbers on the keypad, when you press Through, And or @ then the Channel menu will be shown.

Through, And and @ are provided as softkey functions or (depending on console) are buttons adjacent to the numeric keypad.

Fixtures may be selected by User Number, Handle Number or DMX Address, as set by the option on Softkey A.

When using the Channel menu it is helpful to latch it by pressing <Menu Latch>.

- To select a fixture, type the number and press <Enter>.

- To select more than one fixture, press the [And] softkey between each number. For example 1 And 2 And 5 <Enter> will select 1, 2, 5.

- To select a range of fixtures, press [Through]. For example 1 Through 8 <Enter> will select 1-8. If you miss out the last number it will select all remaining fixtures of the same type.

- To miss out fixtures in a range, use [Not], for example 1 Through 4 Not 3 <Enter> will select 1, 2, and 4.

- The @ softkey sets a dimmer level to the selected fixtures, for example 1 Through 8 @ 5 <Enter> will set 1-8 at 50%. (You can choose whether 50% is entered as "5" or "50" in the User Settings (Abschnitt 19.5) - When you press @ there are softkey options for Full, Off and +/- (increase or decrease brightness).

- You can work with Groups using the Group button, for example Group 1 And Group 2 Not 5 <Enter> will select all fixtures in group 1 and group 2 except for fixture 5.

- You can use <Locate> instead of <Enter>, to select fixtures and locate them. For example 1 Through 4 <Locate> will select fixtures 1 to 4 and locate them.
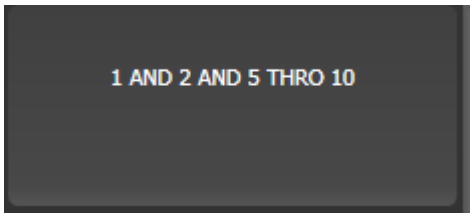
- When entering a command, the command line is shown on the display. You can go back using the grey Back button and you can abandon the line using the grey @ button.

- The AND, THRO and @ functions are also provided on the grey buttons either above or below the numeric keypad, as printed on the legend next to the buttons.

7.1.6 Selecting Fixtures using a Pattern

When programming you will often want to select patterns of fixtures from within a Fixture Group (Abschnitt 7.4.1) or a range of manually selected fixtures. Rather than having to individually select and deselect fixtures, Titan has an easy way of selecting patterns of fixtures within a range.

1. Select some fixtures.
2. Press the <All> button (labelled Odd/Even on some consoles).
3. Select a pattern from the softkeys. Your selection is modified so you will only be controlling, say, the odd fixtures.

Select a built-in pattern from the
softkeys or type a description.
[ALL] to clear the pattern.

PATTERN

To create a pattern type
X IN Y: X fixtures out of Y
X.Y: X=Selected, Y=Gap

Odd

Even

1 In X

Direction
None

Random Order

Cells
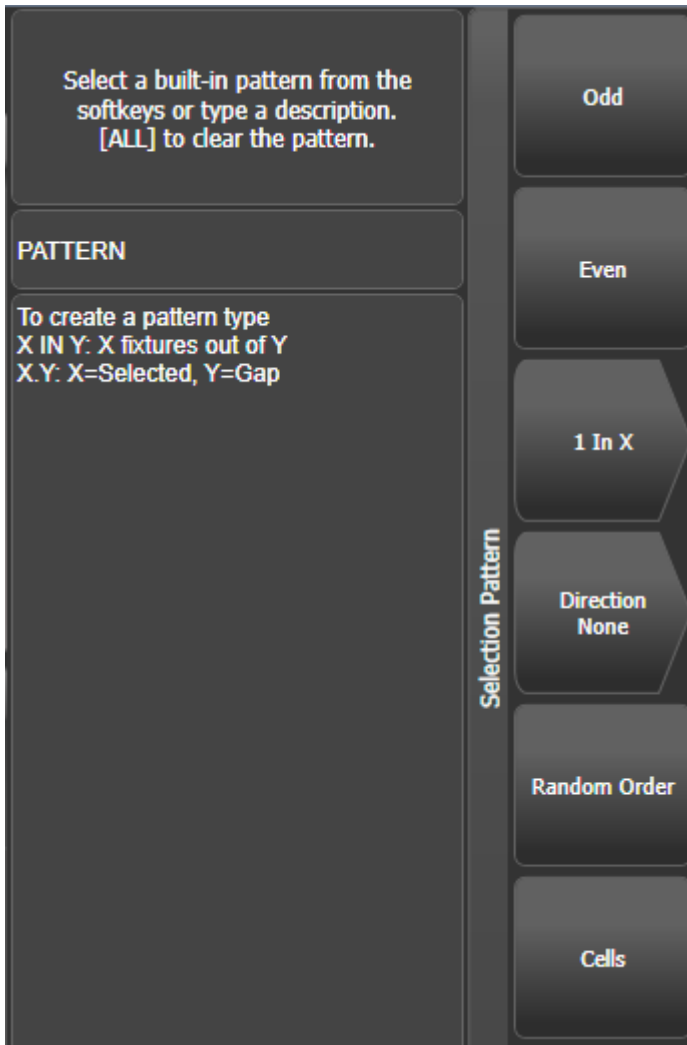
Selection Pattern

4. Press the <Fix +1> or <Fix -1> button to change the selection to the next stage of the pattern
   (<Next> and <Prev> on some consoles).
5. To end the pattern selection, press <All> twice.

- The Direction option allows you to set the fixture selection order to go in a specific direction (using
  the group layout). This is useful for selecting symmetrical pairs of fixtures and for quickly creating
  cues using Fixture Overlap (Abschnitt 10.5.1).

- Direction will return to "None" when you press Clear. You can change this by setting [Clear / Maintain Direction] in the [Clear Options] menu (hold the Clear button down to see this option).

- For example, if you are programming a chase using 16 fixtures and you want every 4th fixture to do the same thing, you just select the 16 fixtures, then press <All>, then [1 in x], then [1 in 4]. You will see that the 1st, 5th, 9th and 13th fixtures are now selected, and you can create the look for those fixtures. Then press <Fix +1>, and the 2nd, 6th, 10th and 14th fixtures will be selected ready for programming. After you have programmed the fourth set of fixtures, the pattern will go back to the first position again, until you press <All> twice to end.

- You can enter your own patterns using the numeric keypad and softkeys, for example "2" [In] "6" <Enter>.

- You can also get to these options by holding down a group selection button for the fixtures.

- When using a pattern selection, for example 2 in 10, holding down the <Avo> button while pressing <Fix +1> or <Fix -1> will jump the selection forward or backward in blocks.

7.1.7 Selecting Fixtures which are in a Playback

To select fixtures which are controlled by a particular playback use the **Select If** function.

To select fixtures used in a playback, press <Select If> then the playback button. (If the console does not have a <Select If> button, press <Fixture> then [Select If]. The <Fixture> button is at the top left of the numeric keypad and may be labelled <Channel> on older consoles.)

You can also use <Select If> with the <@> and <Through> buttons and the numeric keypad to select fixtures set to a particular intensity.

<Select If> <@> 5: select fixtures set to intensity 50%

<Select If> <@> <Through> 5: select fixtures with intensity 0 – 50%

<Select If> <@> 5 <Through>: select fixtures with intensity 50% – Full

<Select If> <@> 5 <Through> 7: select fixtures with intensity between 50% and 70%

<Select If> <@> <@>: select fixtures with intensity above 0.

Intensity levels may be input as 0-9 or 00-99 depending on the User Setting (Abschnitt 19.5) [Channel Levels Set In].

7.1.8 Stepping through selected fixtures one at a time

If you have selected a range of fixtures, or a group, the console has functions to step through the selected fixtures one at a time. This can make it easier to program a range of fixtures because you don't have to select each one manually.

This mode uses the All/HiLight/Fix +1/Fix -1 buttons.

1. Select a range of fixtures or a group.
2. The <Fix +1> and <Fix -1> buttons will select the fixtures in the range one at a time (in the order you selected them). Buttons are labelled <Prev> and <Next> on some consoles.
3. The <All> button will select all fixtures in the programmer (everything which has been selected since <Clear> was last pressed).

- The HiLight function can be used to highlight the output of the selected fixture (make it brighter on-stage), see the next section.

7.1.9 Highlighting the Selected Fixture with Prev/Next

When stepping through a fixture selection using <Fix +1>/<Fix -1>, you can highlight the selected fixture on stage. This makes it very easy to see which fixture you are controlling. The other fixtures in the selection go to a dimmed "lowlight" level.

- Press <HiLight> to enable highlight mode. Press <HiLight> again to disable. When you are in highlight mode, the highlighted attribute is overridden and any changes you make to it are not stored in the programmer (so if the highlight uses intensity, you cannot change the intensity of the fixture).

- You can change the levels used for Highlight/Lowlight by pressing <Record> then pressing <HiLight>, [Store Highlight State] or [Store Lowlight State].

7.1.10 Turn Off Unselected Fixtures (Remainder Dim)

To turn off all unselected fixtures use the Remainder Dim function by pressing <Rem Dim> (<Avo>+<All>). The zero intensity is placed in the programmer and will be recorded into any cue. This is useful when removing fixtures from cues.

7.2 Changing Fixture Attributes

Once you have selected the fixtures you want to operate, you then have various options for controlling them.

7.2.1 Changing Attributes Using The Wheels

"Attributes" are the functions of the fixture, like pan, tilt, colour, dimmer, etc. You select which attributes you want to modify using the **Attribute Bank** buttons - Intensity, Position, Colour, Gobo, Beam, Effect, Special, FX (abbreviated as IPCGBESFX) and then set values using the wheels. The attributes available depend on the fixture type. Dimmer channels only have a dimmer attribute.

The touch display above the wheels shows the current attribute bank (grey background) and the current values on the wheels. The light blue circles show attributes which you have changed and which are in the programmer. The roller graphics show the different attributes which are available, which may be a percentage for a variable attribute, or named ranges for something like a colour or gobo wheel.
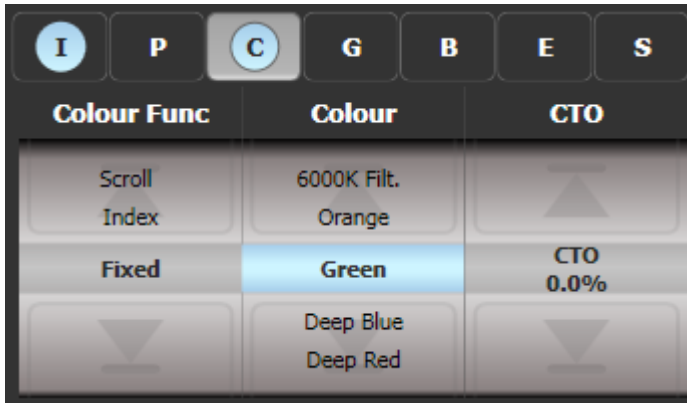
You can also set attributes using the Attribute Editor workspace window (Abschnitt 7.2.4).

> On the Pearl Expert the wheels on the Touch Wing are used instead of the wheels on the console, unless you change this using the User Settings.

Each attribute button controls several attributes, one on each wheel. On Diamond 9 and Sapphire Touch the trackball controls pan/tilt of the selected fixtures, with the ring controlling dimmer by default. You can change this by pressing the <Assign> button next to the trackball.

1. With some fixtures selected, press the button for the attribute to be changed.
2. Turn the wheels to set the attribute. The settings which are available scroll up and down on the wheel display as you turn the wheels.
   You can also touch the roller image on the screen to change the attributes up or down by one step. For continuously variable controls like a dimmer, touching the roller will set the attribute to full or zero.
3. Repeat from **step 1** to change other attributes of the selected fixtures.

Some other things to know about attributes:
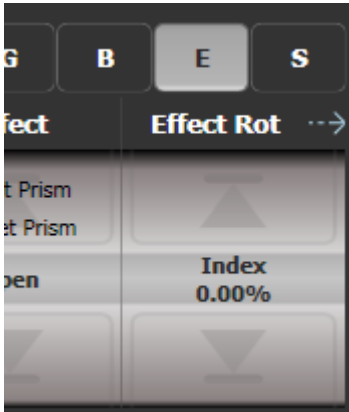
- If the wheel display shows a small arrow next to the legends as shown above, this means that there are more than three attributes to control in this bank. Press the attribute button again to toggle through the attributes (for example some LED fixtures have Red, Green, Blue, Amber, White - so on a console with three wheels, when you press <Colour> you would first get Red, Green, Blue on the three wheels, then if you press <Colour> again you will get Amber and White.)

- If an attribute is in the programmer, the value in the programmer is highlighted in pale blue on the wheel display and the IPCGBESFX button also has a pale blue highlight. This provides a quick way to see which attributes are in the programmer.

- If the display above the wheels does not show the attribute when you press the button, that attribute is not available on the selected fixtures.

- The wheels operate in an "acceleration" mode. If you spin the wheel fast, the fixture changes in larger steps. If you move the wheel slowly, the fixture moves in its smallest increment.

- Holding down the <Avo> button while turning a wheel puts the wheel into "Fast" mode. When in this mode, a single rotation of the wheel changes the attribute you are controlling over its full range. For example, if while moving the Pan wheel you hold down <Avo> the fixture will make a complete pan movement between end stops in one rotation of the wheel.

- Some LED colour mixing fixtures have a Virtual Dimmer function (using the Intensity wheel) which offers intensity control by mastering the RGB levels when the fixture itself does not provide an intensity channel.

7.2.2 Trackball (Diamond 9 and Sapphire Touch only)

The trackball normally controls Pan and Tilt of selected fixtures, with the Z-ring controlling intensity. You can assign the trackball to different attributes like this:

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1. Select some fixtures having the attribute you want to assign (this is just so the wheel functions are displayed on the roller view).
2. Select an Attribute Bank so that one of the wheels is controlling the attribute you want to assign.
3. Press <Assign>.
4. Press the softkey for the function you want to assign, [Track Ball X], [Track Ball Y] or [Wheel Z].
5. Press the <@> button of the wheel which has the function you want to assign.

The attribute is assigned and the assign menu closes. To check the assignment has worked you can press <Assign> again and the softkeys should show the new attribute.

- You can also switch the trackball to control the mouse pointer on the touchscreens, see Trackball (mouse control) (Abschnitt 5.2.7).

7.2.3 Intensity wheel (Diamond 9 and Diamond 7 only)

On the D9 and D7 a dedicated wheel is provided to set the intensity of selected fixtures. A display above the wheel shows the wheel display for intensity. This wheel always controls intensity and is not changed by the Attribute Bank buttons (unless you reassign it as described below).

Below the wheel is a <Level @> button which shows the Adjust Attribute Value menu for intensity (see Adjusting Attributes with @ button).

- You can assign this wheel to control a different attribute - see the trackball section above, but at step 4 use the [Level Wheel] softkey to assign the attribute. The display above the wheel will change to show the controlled attribute.

7.2.4 Attribute Editor Window

For attributes with fixed values such as gobos and fixed colour wheels, the Attribute Editor window can be easier to work with than the wheels as you can directly choose gobos or colour slots. It also offers a colour picker window for fixtures with RGB or CMY colour mixing.

The Diamond 9 and Diamond 7 have a dedicated Editor touchscreen to show the Attribute Editor, on other consoles you open it as a workspace window - Double press <Open/View> then [Attribute Editor] from the window select buttons to show it. As a shortcut you can also show it by touching the attribute name text just below the on-screen IPCGBES buttons.

The buttons on the left of the window select the attribute to change.

The rest of the window contains buttons or controls to set the attribute value. For attributes such as gobos and fixed colours, a button is provided for each one, making selection a lot quicker than scrolling through on a wheel.

When you apply an attribute, the button turns blue to show that the attribute is in the programmer. If you touch the button again, the attribute will be removed from the programmer.

Touching the title of an attribute (such as "Gobo 2") expands the attribute to the full window, displaying more buttons as shown below. Gobo images will be shown if the fixture personality has the information included (not all do).

If an attribute has a range of values, sliding your finger left and right on the button will show a horizontal slider which allows you to adjust the attribute.
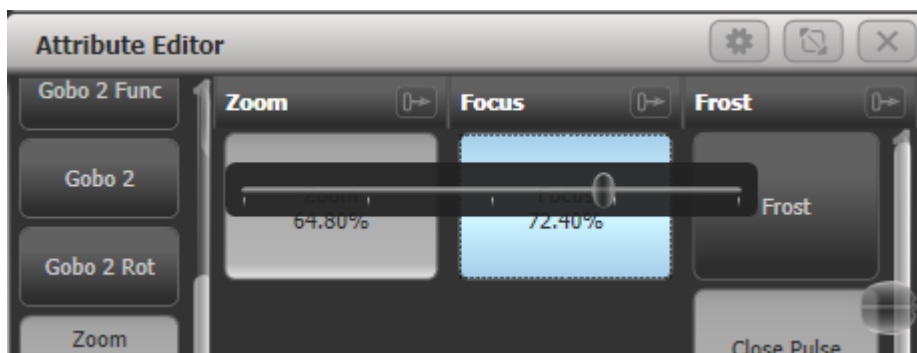
When the selected fixture has sub-fixtures or cells, buttons appear at the top of the attribute editor window allowing you to select the whole fixture (left hand button), or individual cells for control. The layout of the cell buttons matches the layout set in the pixel mapper to help you locate the correct cell on the fixture.
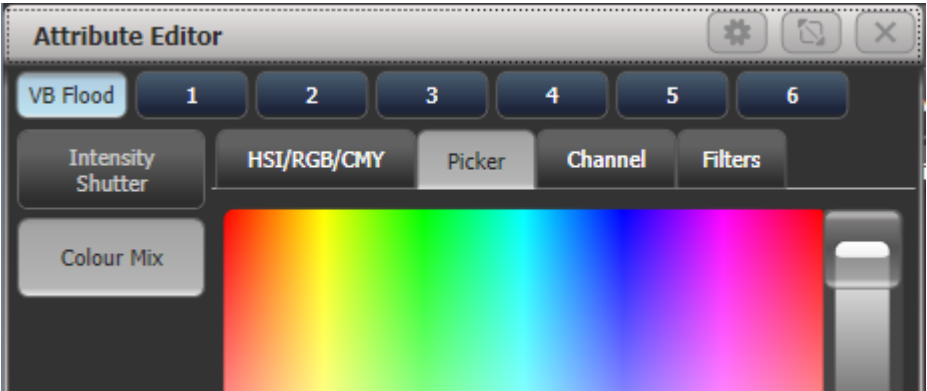
Some types of attribute have special displays as follows:

Intensity/Shutter

Provides an easy slider for Dimmer, also buttons for 0%, 100%, up and down 5%, and intensity locate (affects only the intensity).

Position
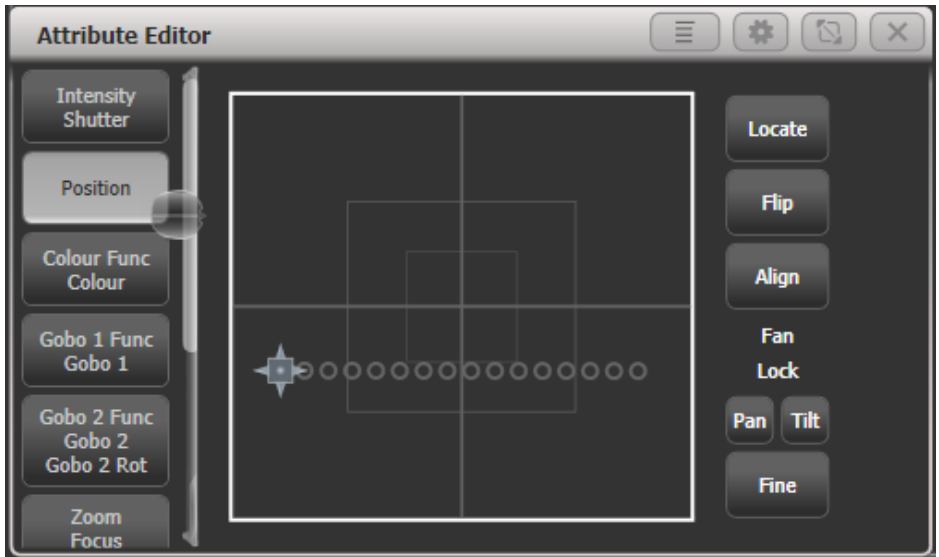
Provides a way to set the position from the touchscreen using an X-Y grid. Positions of selected fixtures are shown as circles on the grid which is useful to check positioning or spacing of fixtures. Other controls are provided:

- Locate sets 50/50 position (other attributes not affected),

- Flip (Abschnitt 7.2.9) sets a moving head to its opposite yoke position.

- Align sets pan/tilt to match the settings in the programmer of the most recently selected fixture. For example if you want to match the tilt of 4 fixtures to the first fixture, select fixtures in the order 2-3-4-1 and press [Align].

- Pan/Tilt lock buttons are helpful when setting positions of multiple fixtures using the X-Y grid. For example if you have 10 pan-fanned fixtures and you want to just move the tilt, select Pan lock. Otherwise the fixtures will all move to the position you click on, losing the fan effect.

- Fine button switches to fine control mode for more precise positioning.

Colour Mix: Channel

The Colour mix editor has 4 different ways of selecting colours, which are useful in different ways (on Diamond 9, and on other consoles if you resize the window to a portrait shape, the sliders are horizontal rather than vertical as shown in the pictures.)

The **Channel** tab provides a colour picker, with a slider for each colour control channel in the fixture. The sliders shown will vary depending on what is provided in the fixture - this example is an ETC Lustr fixture which has 7 independent LED emitter colours. This mode is useful to obtain colours such as tints of white or UV/Congo Blue which are hard to mix from a picker or colour wheel.

Colour Mix: HSI/RGB/CMY

HIS/RGB/CMY provides a colour wheel with interactive sliders for changing Hue/Saturation/Intensity, Red/Green/Blue, and Cyan/Magenta/Yellow. Changing any slider or clicking on the wheel will adjust all other sliders to match that colour, allowing you to make easy small adjustments of colour using whichever control is easiest; for example use the Saturation slider to create a pastel version of a colour without affecting the hue.

All types of slider work for all fixtures, so a fixture with CMY mixing can still be controlled using the RGB or HSI sliders.

Colour Mix: Picker
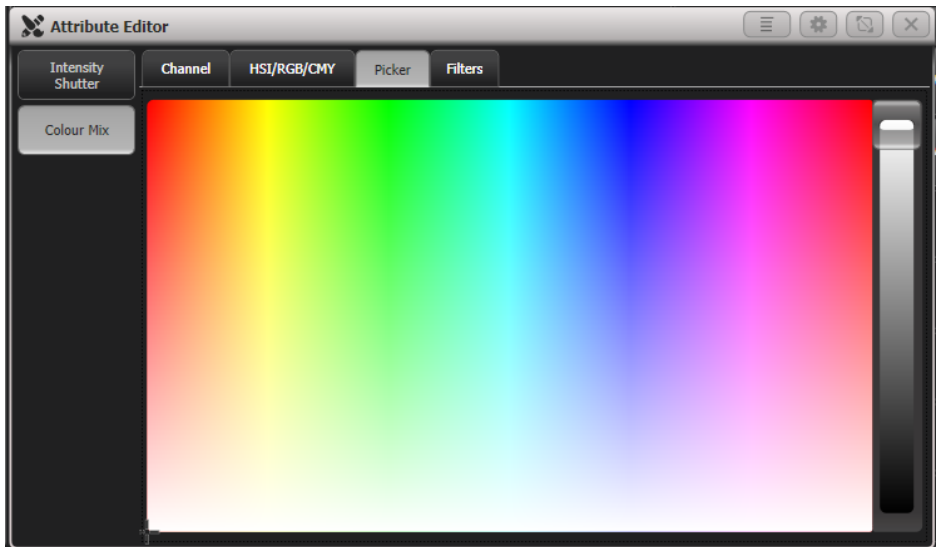
This is the classic colour picker from earlier versions of Titan which provides a picker for hue and saturation, with a slider on the right hand side to set the intensity.

Colour Mix: Filters
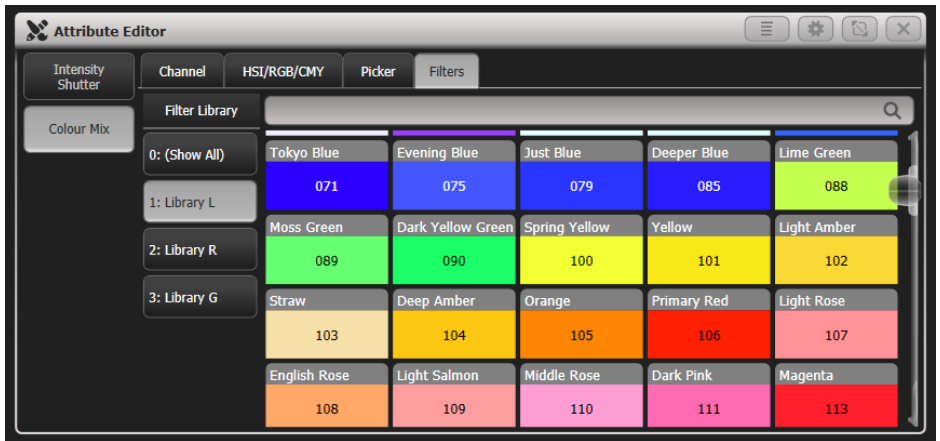
Lets you pick a gel/filter colour from commonly used ranges of filters. You can search for a particular colour by name or by number using the search bar. There is a context menu button to [Order Filters by Number] or [Order Filters by Hue].

- Using the keypad you can directly select a gel/filter by its reference number by typing <@> *library number* </> *Gel number*. For example to set all selected fixtures to 106 from "Library L" you would type <@> *1* </> *106*. Or you can select fixtures as part of the command, for example 10 <@> 1 </> 106 would set the fixture with user number 10 to 106. For this command 1=Library L, 2=Library R, 3=Library G. If your console does not have a hardware </> button you will need to use an external keyboard or the touch keyboard.

> For LED fixtures with additional emitters for Warm/Cool white, Amber, UV, Lime or Cyan, Colour Mix will automatically control all the colour channels to obtain the colour. In versions previous to Titan v9 only RGB elements were controlled by the colour picker and other colours had to be set independently.

Media Servers/Active Fixtures

Active fixtures such as media servers will display a thumbnail of the media clip in the button. The media server must support CITP and be patched as an active fixture for the thumbnails to work.

For Ai media servers please see the Synergy (Abschnitt 15.1) section for more details of how Synergy allows you to control the setup and media playback.

Shutter Blades/Keystone

Fixtures which support keystoning or blades/shutters can be controlled graphically in the attribute window. Select and drag the corners or sides of the image to control the fixture. This control can have various different appearances depending on the control channels in the fixture.
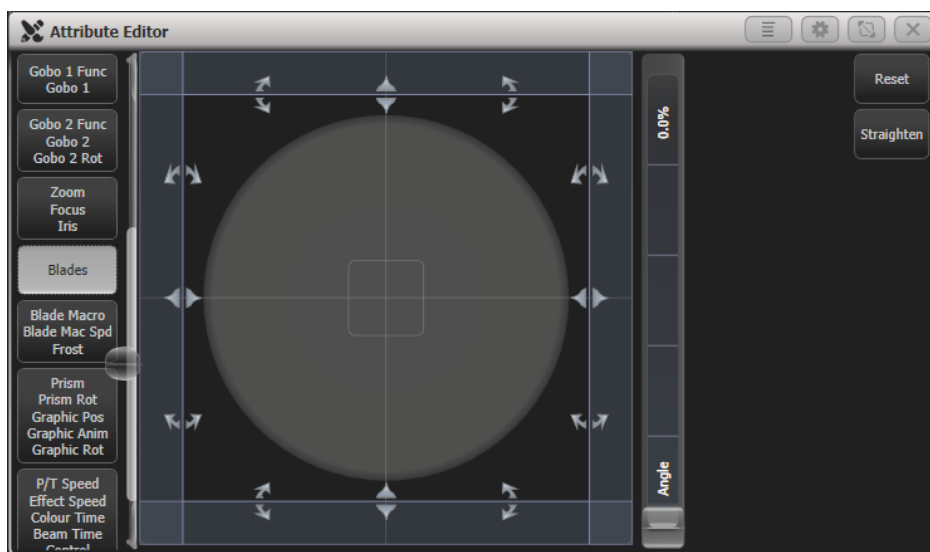
Updated personality files may be required to support the keystone/blade functions. If the functions are not shown in the Attribute View, try downloading and installing the latest personality library, then update the personalities (Abschnitt 6.3.10) in the Patch menu.

7.2.5 Setting Attributes from the Softkeys

You can directly enter a numeric value for the attributes which are live on the wheels. You must be at the main Program menu to do this (keep pressing <Exit> until the vertical menu bar shows "Program Menu").

Type a number on the numeric keypad then press one of the softkeys to set the value to the fixture. The Softkey legend will show what effect your value is going to have (such as [Gobo 5], or [Deep Blue]).

For attributes displayed in percent, such as Dimmer, or Colour Mix, you enter a value from 0-100 to set the percentage output (for intensity, you can change the User Settings so that you enter a single digit 0-9 for 0-90% - see the Formatting tab of the User Settings (Abschnitt 19.5.10)).

For attributes where the output is divided up into ranges, such as colour wheels, you enter the index of the range you want. For example to select the 3rd colour (as displayed in the list above the wheel) you would enter 3.

You can use the <@> button by the numeric keypad to set Dimmer levels in theatre-style programming, so <@> 50 <Enter> would set selected fixtures to 50% intensity.

7.2.6 Adjusting Attributes with the @ buttons

Pressing the <@> button next to a wheel opens the Adjust Attribute Value menu for that attribute.

You can also open this menu by touching the centre of the on-screen wheel view for the attribute, or by clicking on the attribute in the Channel Grid window.

(On Tiger Touch 1 the three buttons between the wheels act as @ buttons. On the Pearl Expert you will need to use the touch screen method.).

The menu gives you the following functions:

- Select Function: gives you shortcuts on the softkeys to the possible settings for the attribute (for dimmers, a range of values is provided).

- Touch/Clear: places the attribute in the programmer or removes the attribute from the programmer

- Locate: locates the attribute (does not place in programmer)

- Release: releases the attribute

- Off: sets the attribute to Off. This temporarily disables the attribute, though its value is stored and can be restored with On.

- On: sets the attribute to On (when merged to a cue or palette, On will restore a value which has previously been set to Off)

- Freeze/Unfreeze: freeze or unfreeze the attribute

7.2.7 Attribute Groups - IPCGBES-FX

To make life a bit simpler, the console groups together attributes which have similar effects, using the letters IPCGBES-FX.

I-Intensity (dimmer, strobe shutter)

P-Position (pan, tilt)

C-Colour (colour wheel, CMY mixing)

G-Gobo (gobo wheels, gobo rotate, gobo position)

B-Beam (iris, focus, zoom, beam shaper)

E-Effects (prism)

S-Special (motor speeds)

FX-Shapes, Pixel Mapper

These groups are used to select which attributes you want to work with in many of the functions on the console, particularly when you are "masking off" certain attributes from being saved.
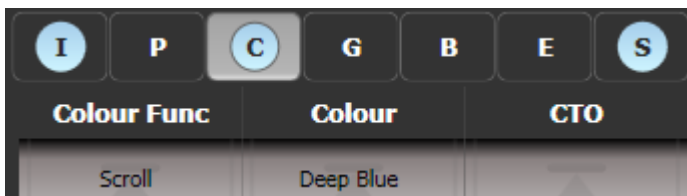
Above the attributes roller on the screen, the console shows you which attribute group you are currently changing (the grey box). The Attribute Group is also highlighted in blue if the programmer contains any of those attributes. For example in the image above we are currently changing Colour attributes, but Intensity and Special attributes have also been modified.

7.2.8 Align Fixtures

You can copy attributes from one fixture to another using the Align Fixtures function. This is useful for example if you accidentally left a fixture out of a cue, you can use Align to copy settings from its neighbour.

You can align multiple fixtures to others in one operation, either using groups or individual selection. If you are aligning different numbers of fixtures there are options to set how this is handled, see below.

1. Select the fixtures you want to Align either manually or using a group.
2. Press <ML Menu> then [Align Fixtures] (on D9/D7 press <Align>).
3. Set the mask to include the attribute groups you want to copy (using the Attribute Bank buttons, or using the softkey options for exclude and include all attributes).
4. Touch the select button of the fixture or group you want to copy the settings from.
5. Press [Align].

The fixture selection order is used to determine how the aligned values are copied.

- The [Auto Reset Mask] option will always set the mask to Include All whenever you enter the Align Fixtures function. The alternative option [Remember Mask] will leave the last mask set.

- [Spread Attributes] will try to spread out the attribute changes if there are a different number of fixtures in the source and target groups (best for positions). [Repeat Attributes] will repeat the source selection on extra fixtures, or attempt to mirror the fixtures if there are fewer.

- [Add To Programmer, Matching Source] will only align the attributes which are in the programmer, [Add All Attributes To Programmer] will align all the attributes which are enabled by the mask. So for example if you want to align the tilt of some fixtures and you have set the tilt you want on an example fixture, [Add To Programmer, Matching Source] would only change the tilt; but [Add All Attributes To Programmer] would copy the pan setting from the source fixture as well.

- [Palette References Maintained] will copy palettes from the source fixtures. [Palette References Lost] will convert the palettes to absolute values in the target fixtures.

- If the fixture you are copying the settings from is also one of the fixtures being aligned, it's difficult to tell what you are doing as all the fixture buttons light up red. However if you look at the top line of the screen, there is a list of the fixtures you have selected.

7.2.9 Flip

Moving head fixtures can point at the same stage position from two possible yoke positions. Sometimes to get the fixture moving the same as other fixtures, you need to swap to the opposite yoke position and the Flip function lets you do that.

1. Select the fixtures you want to Flip.
2. Press <Fixture> then [Flip Pan and Tilt].

- The Position window in the Attribute Editor also has a [Flip] button which does this.

- On consoles with a <ML Menu> button you can also use that menu to access Flip.

The settings used for Flip are defined in the fixture personality. If Flip doesn't work you may need to update to the latest personality.

7.2.10 Fan Mode

Fan mode automatically spreads out the values on a selected range of fixtures. If used on pan and tilt, the result is spreading out "rays" of light beams. The first and last fixtures of the range are affected most, and the central fixtures are affected least. The amount of fan can be set using the attribute wheels.

As with shapes, the order in which you select the fixtures sets how the fan effect works. The fixtures you select first and last will be the ones which change most. If you use a group to select the fixtures, the order you selected the fixtures when you recorded the group is used.

The fan effect, while normally used on pan or tilt attributes, can be applied to any attribute.

1. Select the fixtures you want to fan.
2. Press <Fan>.
3. Select the attribute you want to Fan using the attribute bank buttons.
4. Set the amount of fan using the attribute wheels.
5. Turn off Fan by pressing the Fan button again when you have finished. Fan will turn off automatically if you change the fixture selection.

If you have selected fixtures from multiple groups, you can choose whether the fan effect works with or ignores the groups. For example if you have 12 fixtures across the stage in 3 groups of 4, you may want a fan of light beams spread evenly across the stage, or you may want 3 groups of separately fanned light beams.

By holding down <Fan> you can select:

- [Ignore Groups] All fixtures are fanned as one large group

- [Fan Group as Fixture] All fixtures in a group take on the same value.

- [Fan Within Group] Fan runs across individual fixtures in each group.

Holding down <Fan> also allows you to select the Curve used for the fan. The different curves allow you to obtain different fan effects.

Fan mode needs to be used on at least 4 fixtures to give good effects. If you have an odd number of fixtures, the central fixture will not change in fan mode.

Press <Fan> again to leave Fan mode. Any effects you have set will remain in the programmer.

> It's all too easy to accidentally leave Fan mode turned on and be very confused about why the wheels aren't working properly, so turn it off as soon as you have completed the effect. To avoid this there is a User Setting (Abschnitt 19.5) 'Press and hold Fan'. If enabled, you have to hold down <Fan> to enable Fan mode.

Fan Curves

You can select different curves to use when in Fan mode. Hold down <Fan> and select [Curve], the options are:

- Line: Traditional fan, the first and last selected fixture are affected equally in opposite directions, the midpoint remains unchanged. This is most useful for pan.
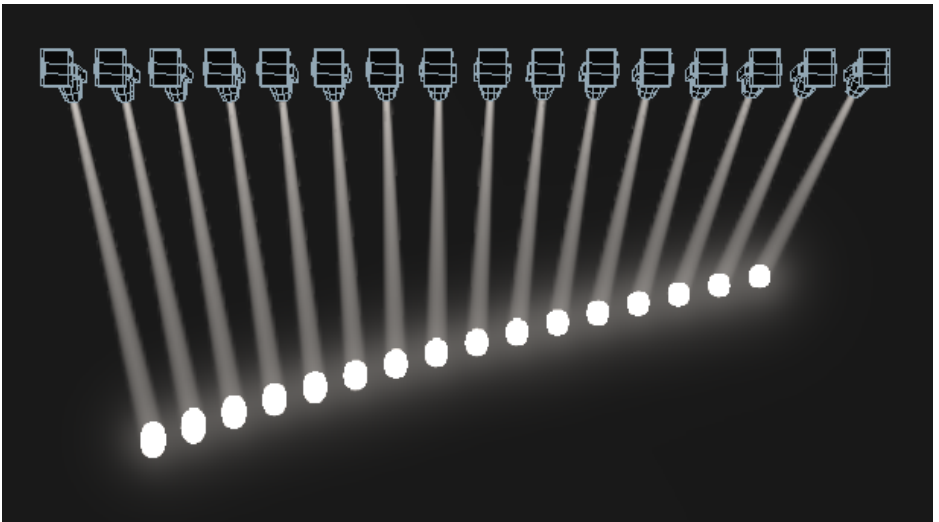
- Mirror- Divides the selection into two halves, the position in each half is the mirror of the other half
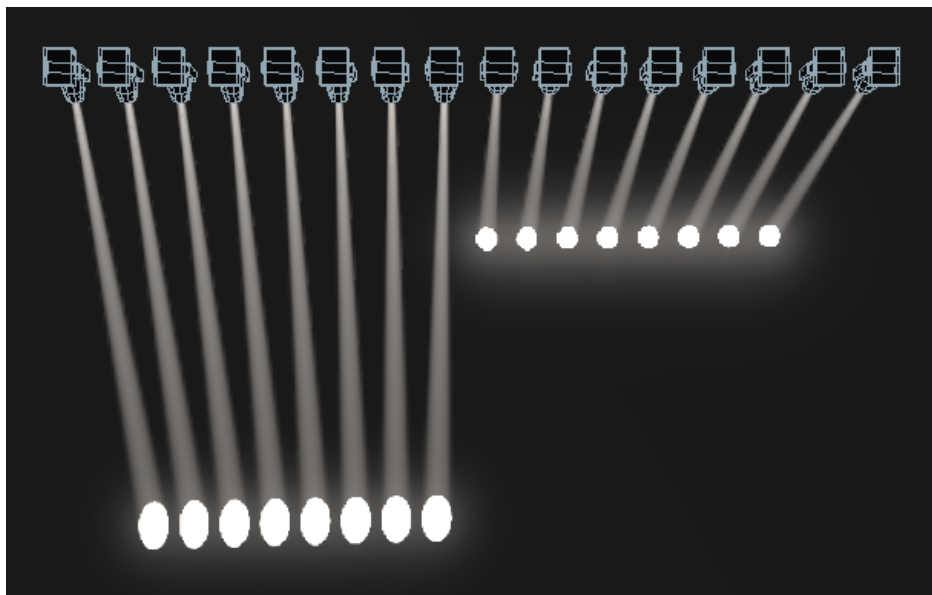
- Wings – Divides the selection into three parts, the positions in the outer two parts mirror each other and the central part does not change.
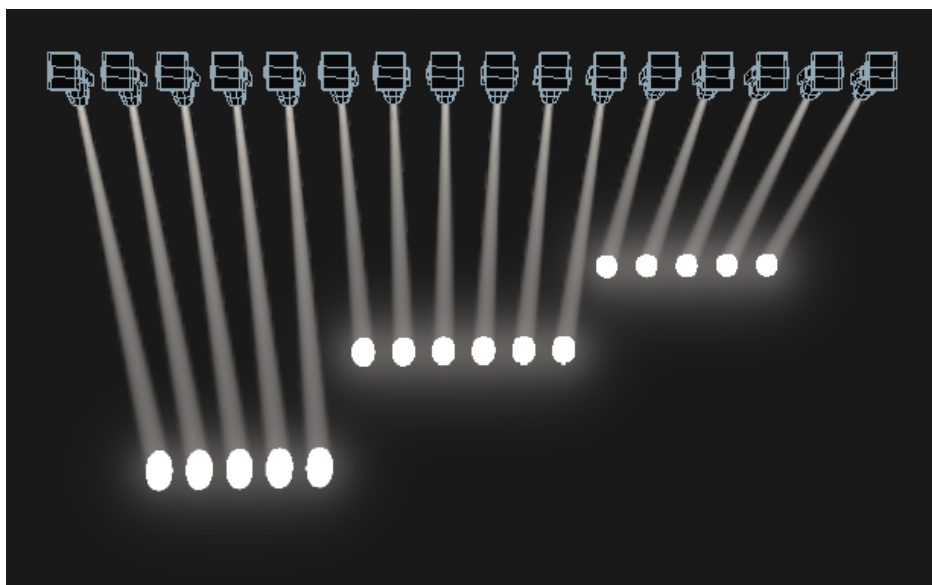
- Arrow - The first and last selected fixture are affected equally to the midpoint fixture but in the opposite direction. This is useful for colour mixing, tilt and dimmer.
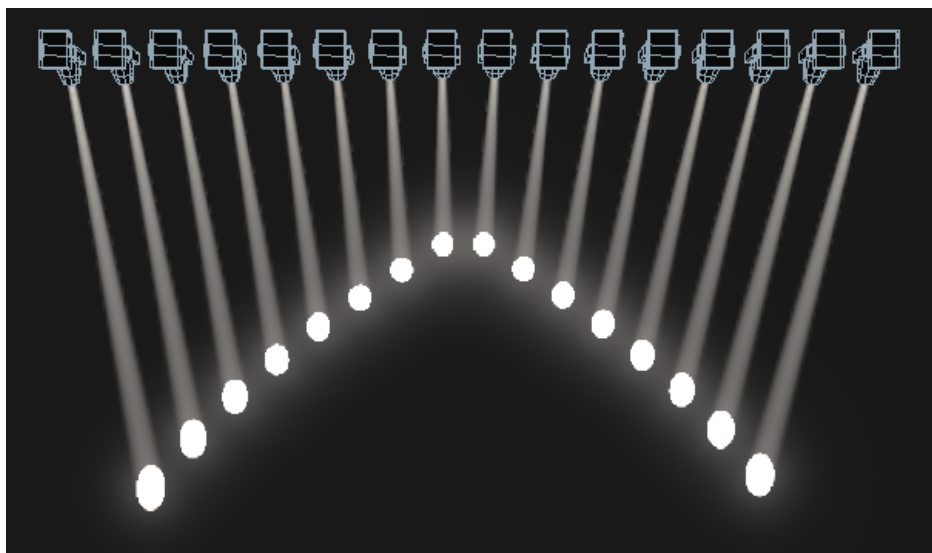
- Pull Middle - The first and last selected fixture remain at the current value, the midpoint is affected most. This is useful for colour mixing, tilt and dimmer.
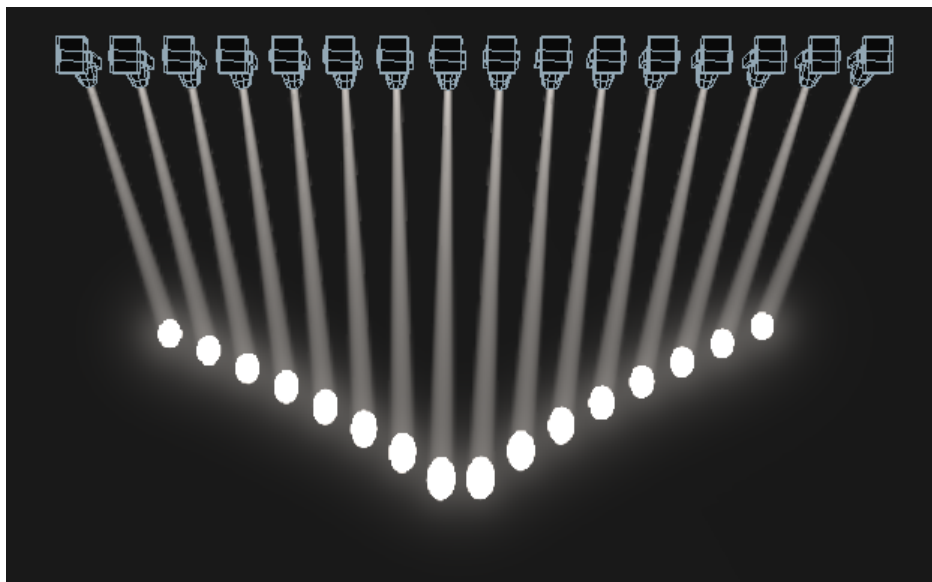
- Pull Ends - The first and last selected fixture are affected most, the midpoint is unchanged. This is useful for colour mixing, tilt and dimmer.
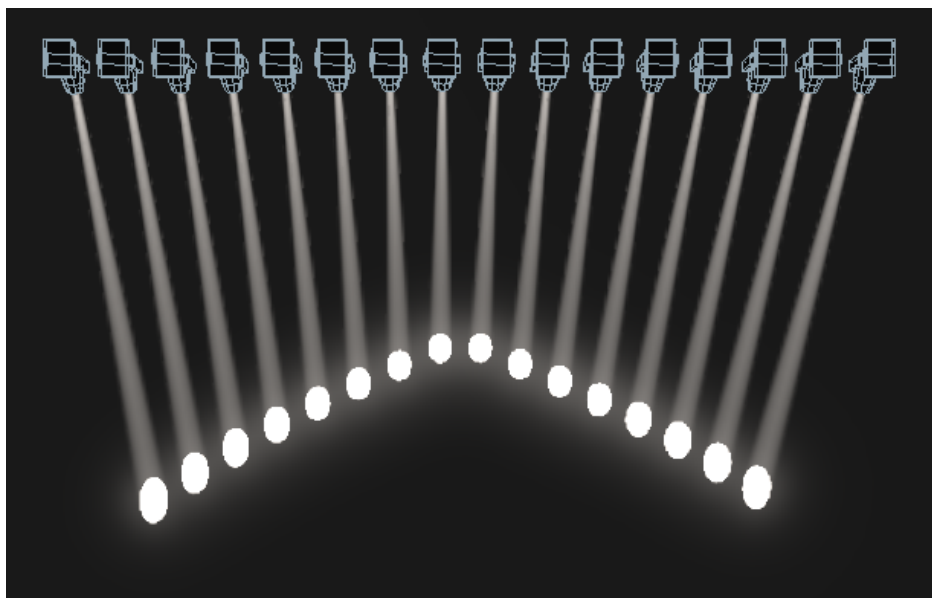
• Pull End – Like pull ends but only from one end, the other end does not change
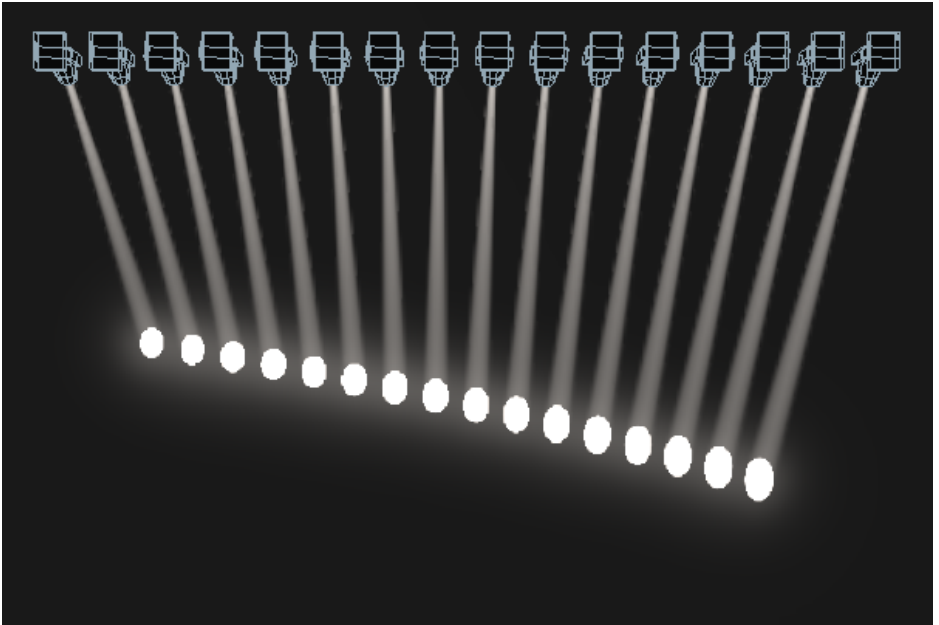
Fan Parts

When using the Fan function you can split the fan into a number of groups. Select all the fixtures, hold down <Fan> and type a number on the numeric keypad. The Fan will divide into that number of parts, for example:

Normal (1):
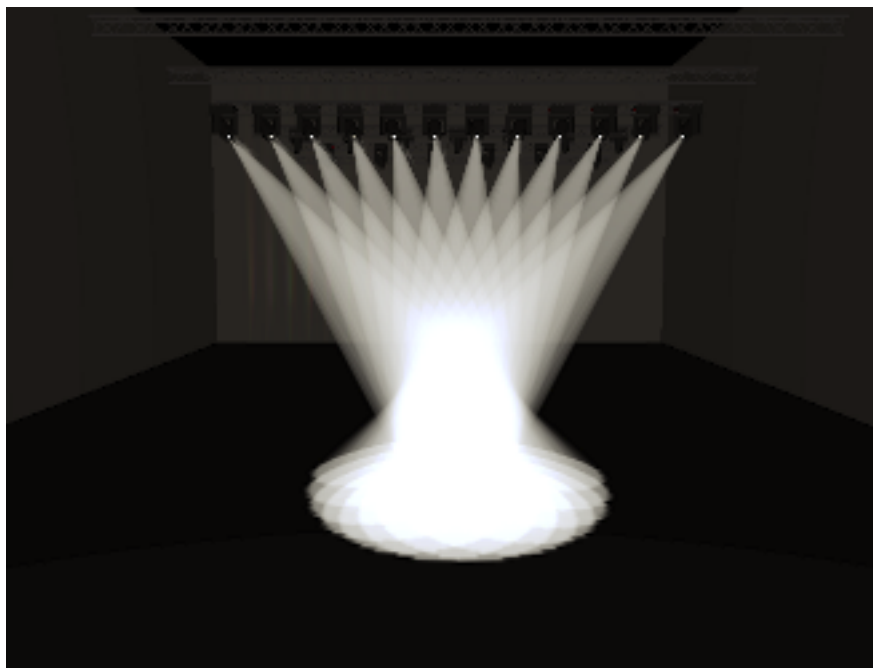
2:
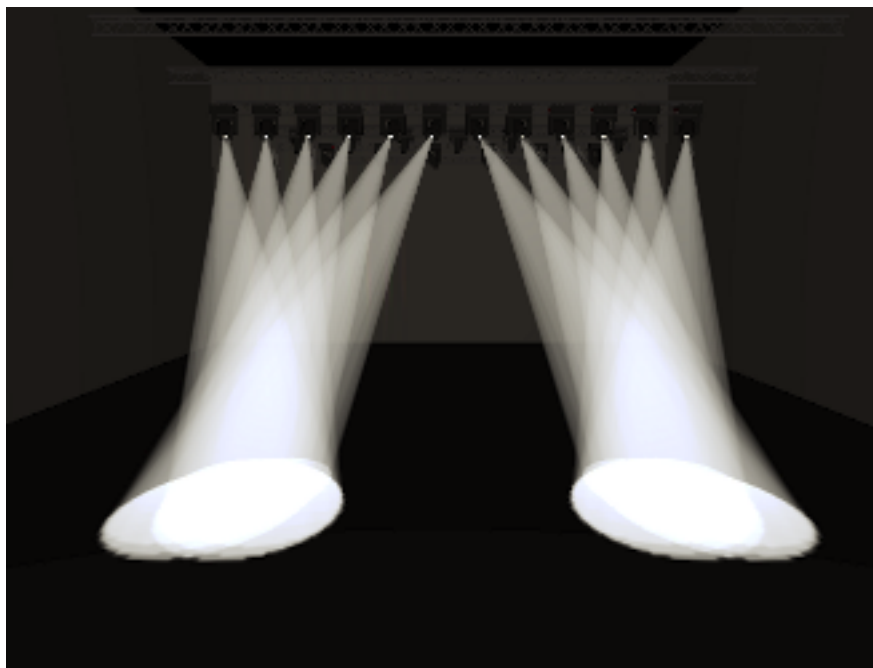
3:
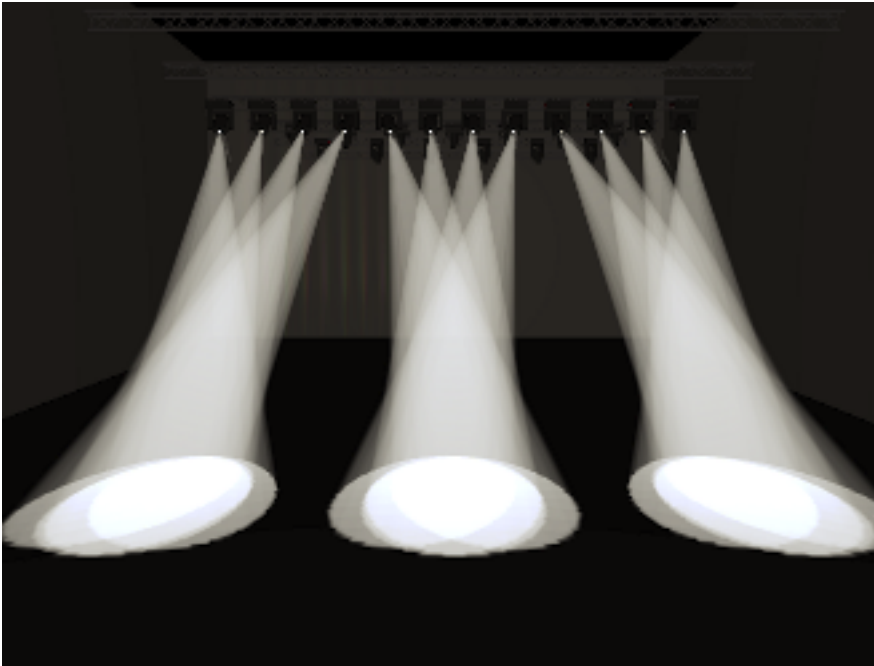
7.2.11 Setting Fixture/Attribute Times

Fade and delay timings can be directly set for each fixture or individual attributes of a fixture. When you store the settings into a cue, the time settings will then become part of the cue.

There are a number of ways to set the times:

- You can set individual attribute times by switching the wheels to Fade Time / Delay Time mode using the [Wheels=] softkey on the root menu. The Diamond 9 has a <Fade / Delay> button to the right of the wheels to set this mode.

- Individual attribute times can also be set using a combination of the wheel @ keys and the <Time> key.

- They can also be set by selecting fixtures and entering into the attribute times submenus from the <Time> key.

- There is also command syntax that allows various options to set attribute time values - e.g. <Time> <Fixture> <Position> 5 @ 3 would set a 5s fade, 3s delay time onto the current fixture selection P group. Wheel @ keys can also be used in the syntax. Fan options are also available through syntax using THRO.

Setting a time attribute value will cause the 'in programmer' indication to light up.

The Channel Grid window has a Times context menu button which allows you to view or edit all the attribute times currently in the programmer. You can set a time to Off to temporarily disable it; the On option will restore the previous setting.

You can try out time settings by pressing <Avo> + <Time> or double tap the <Time> button. (previously the <Set> button on Titan Mobile/Sapphire Touch and the <Next Time> button on Tiger Touch/Pearl Expert).

7.2.12 Clearing Attributes Using "Off"

Once you have changed an attribute, the value you set will be in the programmer and will be stored in any cues or palettes you create. If you've accidentally changed something and don't want to store it, you can use the Off function to remove it from the programmer.

1. Press <Off> to display the Off menu.
2. Use the Attribute Bank buttons to toggle which attributes you want to change. Then press the [Attributes Off] softkey to set them to Off.
3. The softkeys also give you options to turn off active attributes, such as [Dimmer Off].

- To remove complete fixtures, select the fixtures, press <Off> then [Selected Fixtures Off].

7.3 Viewing and Editing Fixture Values

7.3.1 The Channel Grid Window

It can sometimes be useful to display and edit exactly what each fixture is doing. The Channel Grid window allows you do to that. Display it by double pressing <Open/View> then [Channel Grid] from the window select buttons.

The window can be set to different modes using the context buttons to the left of the menu. The modes are:

- All / Stage / Programmer / Selected: lets you filter which fixtures are shown in the list. Stage lists all fixtures with dimmer above zero.
- Sort: Sets the list order as User Number, Last Selected or DMX Address
- Open Intensity View: Opens the intensity view window. You can swap back to the Channel Grid by pressing the Open Channel Grid button in that window which is in the same position.
- Show/Hide Palettes: lets you show which palettes are allocated to fixture attributes
- Playbacks / Levels / Shapes / Effects / Times: Only one of these buttons can be selected, and sets what is displayed in the columns.

You can **select** fixtures by touching the fixture names on the left of the screen, or if you select any fixture values, the appropriate fixture will automatically be selected.

You can **clear** attributes in the channel grid by selecting them (touch or touch and drag to select multiple attributes). Then press <Clear>.

You can **edit values** by selecting one or more values in the grid, then modify the values using the wheels, or type a new value on the numeric keypad and press <Enter>.

You can filter what is shown in the grid either by IPCGBES attribute (using the buttons top left) or by fixture type (using the buttons below that).

7.3.2 The Intensity View Window

If you want to see at a glance the intensity setting of each fixture, the Intensity View window is the place to be. To show the window, double press <Open/View> then select [Intensity View] from the window select buttons.
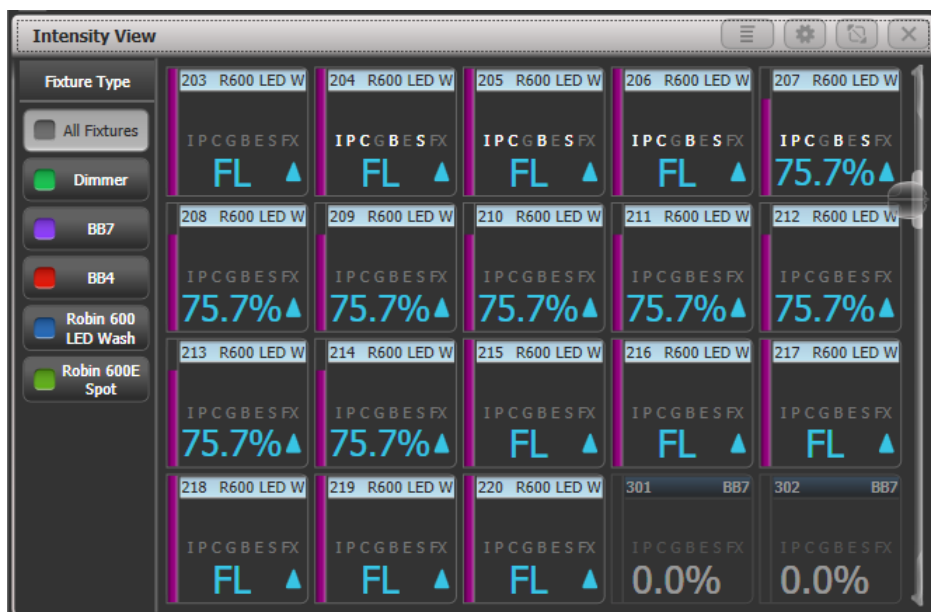
Each fixture has a block showing the intensity as a number and as a bar down the left side. The header bar shows selection/programmer state like fixture buttons – blue for selected and cyan for in programmer.

Rising or falling intensity is shown with a blue up arrow or a green down arrow.

Tracked values from previous cues are shown with a magenta equals sign.

In a solo or block cue a red "not permitted" symbol is shown.

If intensity levels are controlled by an effect they are shown in yellow with a tilde symbol (~).

If the intensity is controlled from a cue or cue list the name of the cue will be shown.

The IPCGBESFX states of the fixture are also highlighted if any attributes have been set in the programmer.

If colour halos are set for the fixture buttons, the halo is also displayed around the fixture intensity. This option can be changed to show the automatic fixture colours, see below.

- Filter the view to show only a certain type of fixture using the buttons on the left

- Change the display order of the fixtures using the [Sort] context menu buttons - User Number, Last Selected or DMX Address.

- Click on a fixture to select it, you can then edit the intensity directly.

- Press <Open/View> followed by a fixture button to show more detailed information about the fixture.

Filtering the fixtures shown

The context menu options give you settings to change how the window is displayed.

The first option lets you only show fixtures in a particular state:

- All - all fixtures (default)
- Stage - fixtures with intensity above zero
- Programmer - fixtures in the programmer
- Selected - fixtures which are selected
- Live cues - only intensities coming from active cues
- Connected cue - only fixtures in the currently connected cue (for cue lists or chases)
- Frozen - fixtures with frozen intensity

The second option changes sort order as described above.

[Search] allows you to enter characters to search for in the legend or user number, matching fixtures will be shown as you type. When Search is active a search bar is shown at the top of the window, click the {X} to remove the search filter or click on the text to modify the search string.

[View If] lets you click on a group and/or playback to show only the fixtures in that group or playback. For a chase or cue list, this will include all fixtures in all the cues of the chase/list. The filter settings are shown in a bar at the top of the window, click the {X} to remove the filter or click on the bar to change the group/playback.

 [Open Channel Grid] opens the Channel Grid (Abschnitt 7.3.1).

Window appearance settings

In the **Window Appearance Settings** ({Cog} button) there are further display options. Turning off some of the options will reduce the size of each fixture button which may be useful if you want to get more fixtures on the screen.

- Filter Fixtures Shown/Hidden: Shows or hides the fixture selection buttons on the left

- User Number Hidden/User Number Shown/DMX Address Shown: Sets what information is shown in the top left corner of the button

- Legend Shown/Hidden: Sets whether the fixture legend is shown in the top bar

- Cue Information Shown/Hidden: Sets whether the button shows the current cue information

- Attribute Mask Shown/Hidden: Sets whether the button shows the IPCGBESFX settings

- Halo Colour Custom/Auto: If set to Custom, buttons will have a halo colour if you have set one, otherwise they will not have a halo. If set to Auto, buttons will be coloured using the automatic fixture type colour used in the filter buttons on the left.

- Fixture Cells Shown/Hidden: If set to Shown, separate buttons are shown for cells (sub-fixtures) of any multi-celled fixture, along with a master intensity.

- Tracked Fixtures Shown/Hidden: (This option only appears when the view is filtered to Live Cue or Connected Cue). Sets whether fixtures with tracked intensity are shown or not.

7.4 Fixture Groups

7.4.1 Using Fixture Groups

You can create groups of fixtures or dimmer channels, which can then be quickly selected together by pressing a single button or typing the group number. You can, for example, make a group for each type of fixture, then also group by stage left / stage right, etc.

If you have a lot of fixtures, clever use of groups will greatly increase your programming speed.
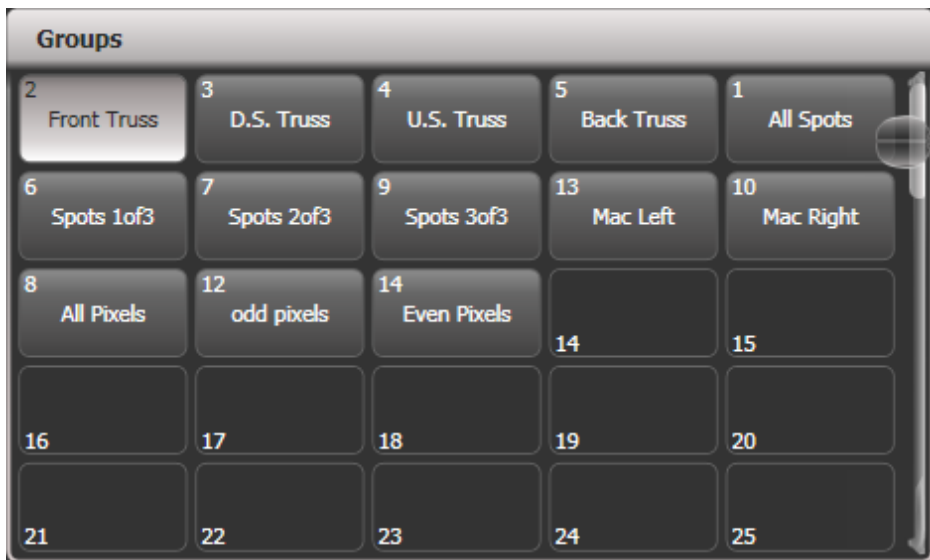
Groups can be stored in the Groups window, on fader handles or on Macro/Executor buttons.

If you assign a group to a handle with a fader, the fader becomes an intensity master for the group. You can also set different functions for the buttons using Key Profiles (Abschnitt 19.4).

Record a Group

If the Groups window is not visible, you can show it by pressing <Open/View>, <Group> (above numeric keys).

1. Select the fixtures/dimmers you want in the group (the order in which you select them will also be stored in the group).
2. Press <Group> (top right of the numeric keys) then [Record Group]. You can also press <Record> then <Group>.
3. Use softkey A to enter a number for the group, or B [Provide a legend] to set a legend.
4. Touch an empty button in the Groups window, or press the Select button of a fader handle where you want to store the group, or press [Store] to store as a numbered group.
5. Press <Clear> then repeat from 1 to store other groups.

- You can also press <Avo> and <Group> to go directly to the Record Group menu, or on the screen touch the button twice to use Quick Record - on the first touch the button will turn red with a +, on the second touch the group will be recorded.
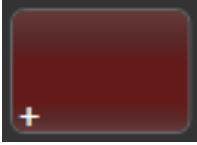
- To select all the fixtures/dimmers in a group, just press the button for the group.

- The order in which you originally selected the fixtures when creating the group is also stored. This takes effect when you use the last fixture - next fixture functions described in the next section (Abschnitt 7.4.2), and when you use Shapes, Fan mode and Fixture Overlap functions. You can change this later, see the next section (Abschnitt 7.4.2).

  You can override the selection order while recalling a group by holding down the group button and using the softkey options.

- You can also recall a group by its number:

  1. Press <Group>.
  2. Type in the number of the group you want to recall.
  3. Press [Recall Group].

- The <Group> button also gives you facilities on the softkeys to edit and delete groups.

- You can use <Select If> to deselect a group of fixtures from a selection. This can be useful to select a subset of fixtures from a group. For example if you have a group for the outside edges of a 5x5 matrix, and a group which selects odd and even pixels from the matrix, you can select the outside edge, then use <Select If> with the odd/even group to remove the alternate pixels round the edge.

Deleting Fixtures from Groups

To remove fixtures from a group:

  1. Press <Group>.
  2. Press the button for the group you want to change. All fixtures currently in the group will be selected.
  3. Deselect the fixtures you want to remove from the group.
  4. Press <Exit>.

The group will now only contain the fixtures which remained selected.

Auto Groups

When patching multiple fixtures, the console automatically creates groups for you. A fixture type group is created which contains all fixtures of the same type (for example, [All Robe Pointe]). Another group is created each time you patch a quantity of fixtures (for example, [4 BB4].) This function can be turned off using [Auto Groups] in the User Settings.

- "All" fixture type groups can't be deleted - when you press Delete the group will become unassigned and be moved to the Show Library. This is also the case if a group has been used in a pixel effect. Titan shows a warning message.

7.4.2 Fixture Order and Fixture Layout in groups

Fixtures in a group are stored with a two-dimensional position layout which is used by Shapes and Pixel Mapper. Initially fixtures are arranged in a row in the order you selected them when you created the group, but you can edit this to reflect the actual physical location of fixtures. The horizontal (X) position of each fixture is used to create a Fixture Order which the console uses with Fan and Overlap.

You can edit fixture positions in the group either by Fixture Order or by the Group Layout editor, but remember that the fixture order is set by the x-position of the fixture so changing one will automatically change the other.

The Group Layout can also be used when creating Layout screens as described in the next section.

Fixture Order

To change the numerical fixture order:

1. Press <Group>.
2. Select the group you want to edit.
3. Press [Fixture Order].

The fixtures in the group will be shown numbered in the fixtures window.

To change the order, select [Auto Increment] to On, then select the fixtures in the order you want. If you press a fixture twice, it will show an X indicating that it is not part of the sequence.

Group Layout

To change the 2D fixture layout for the group:

1. Press <Group>
2. Select the group you want to edit.
3. Press [Edit Layout]. The Group Layout Editor window will open.

Initially fixtures will be all in a row. You can reposition the fixtures anywhere on the screen by dragging them. Or press a fixture to select then use the wheels to move it around the grid. You can resize the grid by dragging the bottom or right sides.

Multi-celled fixtures appear showing all the cells but when moved or rotated, move as a block. Depending on the fixture personality, sometimes the cells may not match the actual physical layout of the cells on the fixture.

The [Arrange Fixtures] context command will automatically place the fixtures in a rectangular block, you specify the number of rows (Height) and columns (Width).
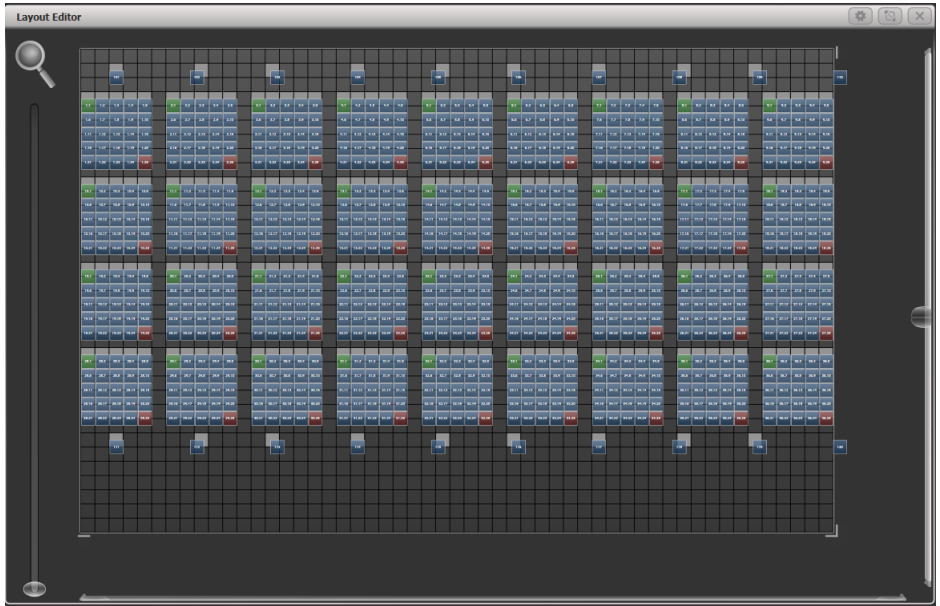
- The X-coordinate of the fixture layout is the same as the Fixture Order. Changing one will cause the other to change.

- When setting the grid size, think about leaving space between fixtures to more accurately match the real world layout, and make sure you have enough cells in the grid for all the cells of the fixtures you need to fit in.

- It is possible to accidentally overlay one fixture on another, making the bottom fixture hidden. To access overlaid fixtures, drag off the fixture which is hiding it, or select the hidden fixture and use the wheels to move it somewhere visible.

- You can use the Fan button to evenly spread fixtures in the layout.

- To move or rotate fixtures, select and drag, or use the wheels. You can click on the "up" and "down" areas in the wheel display to nudge the values up and down - 1 pixel for position and 45 degrees for rotate. If you press the @ button for the wheel, a window opens allowing you to type in the values numerically.

- If you click the context menu button [Position and Angle] it will change to [Scale] which allows you to spread out or compress the cells in a multi-cell fixture. This is useful to get cells located correctly if you have some fixtures with large cell spacing and some with small spacing.

- The Group Layout Editor is described in more detail with examples in the Pixel Mapper section (Abschnitt 9.4). There are also some features to help with Synergy/Ai mapping.

> You can temporarily randomize the fixture order when selecting fixtures using a group by holding down the group button and pressing [Random Order] which appears as a softkey option while the button is held.

7.5 Layouts

When you are selecting fixtures for control, it's often useful to refer to a plan of where the fixtures are positioned to help you identify them. The Layouts window allows you to make one or more control screens

with freely-positioned fixture mimics. You can also import a lighting plan on which the fixtures can be over-laid. As well as allowing you to select fixtures, the fixture mimics also show the current intensity, colour and gobo being output by the fixture (where applicable to the type of fixture.)

You can also include playback, group and macro buttons on a layout to give you a quick way of selecting these items without having to change the workspace view.
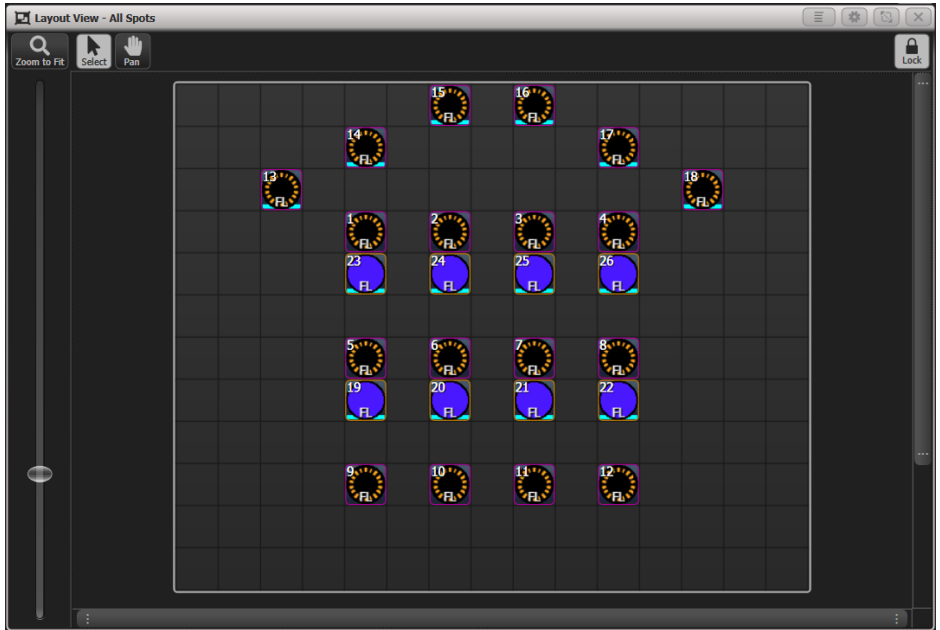
7.5.1 Creating a layout

You can create any number of different layout screens and store them in handles on the Layouts window.

1. Select the fixtures you want to be included in the layout (if no fixtures are selected you can add them later).
2. Double tap the <Open/View> button and select [Layouts].
3. Press an empty handle button on the Layouts window.
4. Enter or draw a legend for the Layout.
5. Press the handle button again or [Record Layout].
6. Now the Layout handle has been created, press it again to open the Layout View window.

If you used Groups to select the fixtures to be included, the group layout will be used to initially position the fixtures. See Adding fixtures from group layouts using Record (Abschnitt 7.5.2.2) below for more details.

> If you only have one screen, you may find it useful to create a workspace for the Layout Editor window so you can swap between windows while copying fixtures from the Fixtures window.

Fixture mimics

On the layout, fixtures are represented by a square "element" which uses the fixture halo colour (Abschnitt 5.2.5).

- The fixture number is shown in the top left corner and the intensity at the bottom.
- The centre of the fixture shows the current colour and gobo (if it has gobos, and if the fixture personality includes the gobo patterns). This can be disabled using the *Show Fixture Mimics* setting in the Elements tab of the Layout View options (press the {Options} context button).
- If the fixture is in the programmer, a cyan highlight is shown at the bottom.
- If an effect is running on the fixture a tilde symbol is shown in the top right corner.
- If a dimmer effect is running the intensity value will be shown in yellow.
- An arrow is shown indicating the front of the fixture.

For a dimmer, the mimic will normally show as white. You can change the mimic colour to match the gel colour of the dimmed fixture by selecting the fixture(s) then set [Wheels=Visualiser] on the root menu, then select the Colour attribute bank and change the Red, Green, Blue colours to your desired setting.

Layout View functions

The Layout View can be locked or unlocked using the {Lock} button in the top right corner.

- To position items in the layout, select **unlocked** - you can move items around the screen by clicking on the item then dragging it, or using the wheels but you can't select fixtures for control.

- To use the layout to select fixtures, select **locked** - you can select fixtures for control by clicking on them but items can't be moved. Playback/Group/Macro buttons only work in locked mode.

The Layout View can be zoomed in or out using the zoom slider on the left of the window, or you can set it to fill the screen using the {Zoom to Fit} button.

The {Select} and {Pan} buttons set whether dragging on the screen will draw a marquee box to select fixtures or will pan the screen view.

7.5.2 Adding items to the layout

There are several ways to add items to the layout. Items can be deleted by pressing <Delete> then selecting the item(s).

Adding fixtures using Copy

Press <Copy>, select fixtures, then touch in the Layout View where you want the selected fixtures to be placed. - The fixtures will be placed in a row starting at the position you touched - you can rearrange them later.

Adding fixtures from group layouts using Record

If you select fixtures using groups, and you have set up a layout for the group (see Group Layout), then the group layout will be used to position the fixtures.

Select fixtures using groups, press <Record>, then press a Layout handle. Pick one of the options from the softkeys: - [Replace] will remove all items from the layout and replace them with the selected fixtures. - [Merge] will add the selected fixtures to the layout. - [Update Fixture Positions from Programmer] will reposition selected fixtures using the layout information stored in the group.

Fixtures will be placed starting in the top left corner of the grid. If groups don't have a stored layout or if you select fixtures individually, then the fixtures will be added in a row in the order you selected them.

Adding playbacks, groups and macros to the layout

You can include buttons for playbacks, groups and macros on a layout to give you a quick way of selecting these items without having to change the workspace view.

Press <Copy>, select the playback, group or macro, then touch in the Layout View where you want the button to be placed. You can select multiple items to be copied.
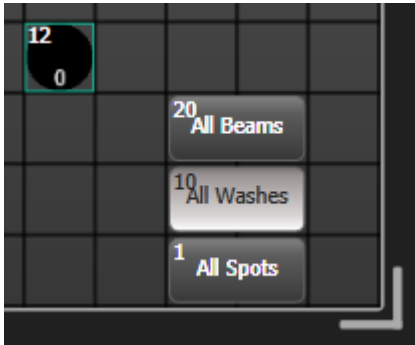
- When the layout is in *Unlocked* mode, press <Delete> then the button in the Layout View to remove the button. This will not affect the original handle.

7.5.3 Arranging elements in the layout

You can arrange the items on the layout manually, or using a variety of automatic tools. The positioning works for both fixtures and group handles.

Arranging elements manually

Select one or more elements, then drag them to the desired position on the grid. Elements will always snap to the grid.

You can also use the wheels to position selected elements and rotate them. Wheel positioning can be disabled using the context menu option {Position & Angle} (which toggles with {No Wheel Control}).

When using the wheels to position, you can move elements off the grid by toggling the context menu option {Wheels Move Full Pixel} / {Wheels Move Sub Pixel}. Once elements are offset from the grid they will keep their offset when moved in Full Pixel mode or by dragging, until you set them back on the grid using the wheels or the context menu option {Snap Selected Elements to Grid}.

When rotating elements, if the {Wheels Move Full Pixel} option is enabled then the elements will rotate in 45 degree increments, otherwise you can set any angle. If you have selected multiple elements for rotation, the context menu toggle {Wheels Rotate Individual Elements} / {Wheels Rotate Selection} sets whether each individual item will rotate on its own centre or whether the whole selection will rotate about the centre point of the selection.

Arranging elements using shapes

You can automatically arrange elements into a rectangle, circle/oval or triangle:

1. Press the context menu button {Arrange Elements}.
2. Select the context menu option {Shape}.
3. Choose whether to arrange all elements or only selected elements by toggling the softkey option [All Elements] / [Selected Elements].
4. Select the shape you want (rectangle, oval or triangle) using the softkey [Shape=].
5. Set the number of rows / columns you want to have using the softkeys [Width=] and [Height=].
6. Choose whether elements should be placed across then down, or down then across by toggling the option [Arrange in Rows] / [Arrange in Columns].
7. Press [OK].

Arranging fixtures using visualiser layout

If you have fixtures set up in the onboard Capture visualiser, you can use the visualiser positions to arrange fixtures in the layout.

1. Press the context menu button {Arrange Elements}.
2. Select the context menu option {From Capture}.
3. Choose whether to arrange all elements or only selected elements by toggling the softkey option [All Elements] / [Selected Elements].
4. Choose which view/projection to use from Capture (Top, Front, Side) using the softkey [Projection=].
5. If necessary adjust the [Scale=] option for best results (to prevent having overlapping fixtures).
6. Press [Apply] to preview the changes.
7. When the layout is OK, press [Apply and Exit] to save the changes.

Grid options

The grid displayed on the layout screen can be extended to allow more fixtures, and can be hidden.

To extend or shrink the grid area, drag the corner handles (while in Unlocked mode). The context menu {Crop Grid} button can be used to shrink the grid area so that it just encloses all the fixtures with no spare space.

To show or hide the grid, from the context menu select {Options} then go to the Layout tab and set the {Show Grid} toggle.

Loading a lighting plan

You can import a lighting plan image to show behind the fixtures.
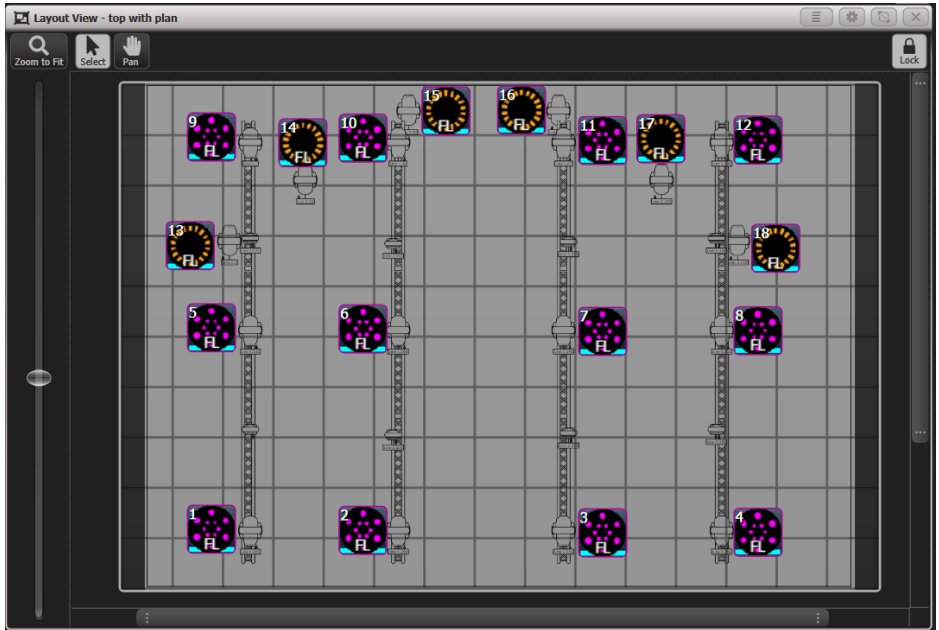
1. Save your plan as an image file (png, bmp, jpg - not PDF).
2. From the context menu {Options}, go to the Layout tab.
3. Click on the Background Image to open the image browser.
4. Select the image you want to use.

Click on Background Image and Use the softkey [Scaling Mode] to select - None (image displayed full size, overflow will be lost) - Letterbox (Fit the largest of height or width, fill other side with black bars) - Fill (Fit the smallest of height or width, the other side will overflow and be lost) - Stretch (stretch to fill height and width without preserving the aspect ratio of the image)

You can set the opacity of the image if you want to fade the plan into the background, by entering a number in the Opacity option on the Layout tab, or use Wheel A. 0% = fully transparent, 100% = fully opaque. The fixture mimics are always overlaid on top of the background.

7.5.4 Swapping layout views

You can change to a different layout view either by selecting another handle in the Layouts window, or by using the {Open Layout} context menu button - this shows a list of available layout views on the softkeys for you to select.

7.6 Fixture Advanced Options

7.6.1 Fixture macros and Lamping fixtures on and off

Many fixtures have a control channel which allows you to perform functions like lamp on, lamp off, fixture reset, and so on. This can be useful to shut down fixture lamps at the end of a show while the fans continue to run, or to reset a fixture which has gone haywire.

The console allows you to access these functions using Fixture Macros (not to be confused with keypress macros).

1. Keep pressing <Exit> until you are at the top level menu (or <Avo><Exit> takes you straight to the top).
2. Select the fixtures you wish to control. Macros may not work across groups of fixtures from different manufacturers so it's best to do each type of fixture separately.
3. Press <Macro> then [Fixture Macros] (for consoles with <ML Menu> button you can also find the [Fixture Macros] function there).
4. The softkeys show a list of the functions available. Press the one you want to action.

- Some macros involve timed sequences and can take up to 30 seconds to execute.

7.6.2 The ML Menu button

Some consoles have a button labelled <ML Menu>. When the console is at the top level menu, this button opens the Moving Light Actions menu which contains options to Locate Fixture (same as the Locate button) and to run Macros on fixtures such as Lamp On, Lamp Off, Reset etc. The Align Fixtures and Flip functions as described above are also in this menu.

On the Pearl Expert and Tiger Touch 1, this button also latches the current menu when the console is not at the top level menu. Press <Exit> to get back to the top menu so that you can access the Moving Light menu. On other consoles there is a dedicated <Latch Menu> button.

8 Palettes

8.1 Palettes

When programming a show you will find that you frequently use certain positions, colours, etc. The console lets you store these settings so you can recall them at the touch of a button rather than having to find them on the wheels every time. This is very useful for rapid programming and when busking a show.

When you use a palette to record a cue (Abschnitt 10.2.2), the console stores a reference to the palette, rather than the actual value. This means that if you program your cues using palettes, you can easily change all the positions in your show just by reprogramming a few palette entries rather than having to reprogram all the cues. This is handy if you are touring and have to cope with different stages or truss heights every show.

Palettes can be **nested (Abschnitt 8.2.3)** so you can use palettes in other palettes. If you change a master palette, the changes will track through to all the palettes in which it is used.

Palettes are stored and selected using the buttons in the **Colours**, **Gobos/Beams** and **Positions** windows. You can also store palettes on Macro/Executor buttons or store and recall numerically from the keypad.

You can set a legend (Abschnitt 8.2.5) for each button so that you know what you're going to get.

If the **Colours**, **Positions**, **Gobos & Beams** windows are not shown, open the workspace [Groups and Palettes] to show all three windows.

8.2 Creating Palettes

8.2.1 Which Attributes are Stored in Palettes

Although each palette entry could store all attributes of a fixture, it's easier to operate the console if you create some palettes which only set positions, some for colour, some for gobo and so on. The console helps you with this by providing separate windows for **Colour** palettes, **Position** palettes, and **Gobo/Beam** palettes.

When you store a palette, it will only contain what's in the programmer (the attributes you have changed since you last pressed <Clear>). For example to create a colour palette you would just set the colour, and not change any other attribute. You can also make palettes which contain effects such as shapes and pixel mapping. If fade or delay times are programmed for fixtures or attributes, these will also be stored in the palette, and you can also create palettes which contain only time information (Abschnitt 8.2.7).

If the programmer contains more than one attribute, you can set a mask to restrict which fixture attributes will be stored in the palette.

Palette information may be **Global**, **Shared** or **Normal**:

- **Global** palettes work on any type of fixture.
- **Shared** palettes apply the same value to all fixtures of the same type - *for example when setting colours, the "Red" palette would set the same colour values for "Red" to all MAC 2000 fixtures*.
- **Normal** palettes are used when each fixture requires its own value - *for example when programming positions, each fixture will have a different setting*.

It is possible, by merging information into palettes, to create a palette which contains global, shared and normal attributes.

Available attributes for Global palettes are Dimmer, Pan, Tilt and Colour. When creating a global palette for a colour mixing fixture, both CMY and RGB attributes are calculated and a special "dynamic" value is added to colour wheel channels, the console will attempt to match the closest fixed colour wheel colour to the selected mix colour.

There is a User Setting "Minimum Palette Mode" (Abschnitt 8) which can force the console to record palettes in **Shared** or **Normal** mode.

8.2.2 Storing a Palette

This is how you save a palette value to one of the palette windows: *If the palette windows are not shown then press the [Groups and Palettes] workspace button.*

1. Press <Clear> to clear the programmer.
2. Select the fixtures for which you want to store palette values.
3. Using the attribute buttons and wheels, set the attributes you want in the palette entry. *You can store any or all attributes of a fixture in each palette entry*.
4. Press <Record> then <Palette> (or <Palette> then [Record Palette])
5. If you wish, set the palette mask - this sets which attributes will be recorded in the palette. Select attributes using the Attribute Bank buttons - anything lit up will be saved. [Set Mask] and [Record by] softkeys also control the Mask (see below).
6. Touch a button in one of the palette windows to store the palette (if you touch a used button you will be given further options). Or enter a palette number and press [Store].

- Using Quick Record (Abschnitt 3.5.1) you can skip steps 4 and 5 - just double tap a blank palette button and the palette will be stored with the palette mask set automatically to match the window - Positions only includes P, Colours only C and Beams includes IGBES.

If you want to record to a physical button, press <Record> then <Palette>. All buttons where you can store the palette will then flash, press one to store.

To record a palette select some fixtures, edit user number and legend, then hit store or a preset flash button

User Number =

1

Provide a legend

Shared Palette

2/2

Set Mask
I P C G B E S

Record By
Group In
Programmer
2/4

Store

Record Palette
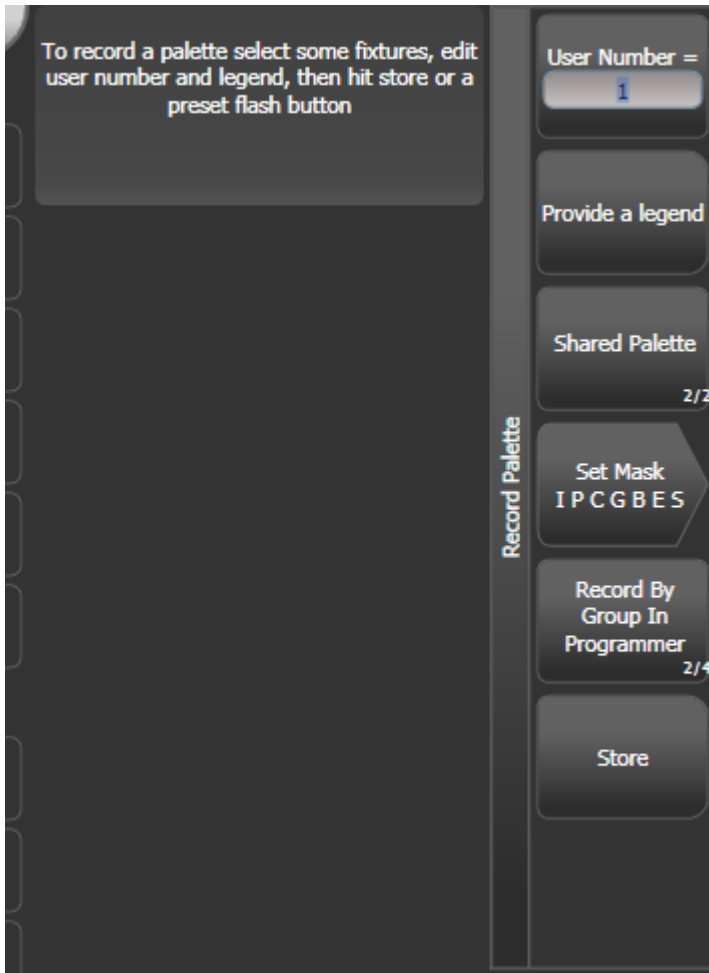
- The console will automatically set the palette as Global, Shared or Normal (by checking if the values to be stored are the same across all fixtures of the same type). You can override the setting by pressing [softkey C]. See below for more details of how this automatic choice works.

- [Set Mask] allows you to specify which attribute groups will be included in the palette. You can also use the Attribute Bank buttons by the wheels to set the mask.

  An attribute group is included when the softkey is inverted (like the Colour group in the picture) and when the LED is lit on the Attribute Bank button. The mask can only be set if you use the <Record> button to record the palette, if you use Quick Record then it is set automatically (see above).

- Press the <Attribute Options> (or <Options> on newer consoles) button to toggle all mask groups between Include and Exclude.
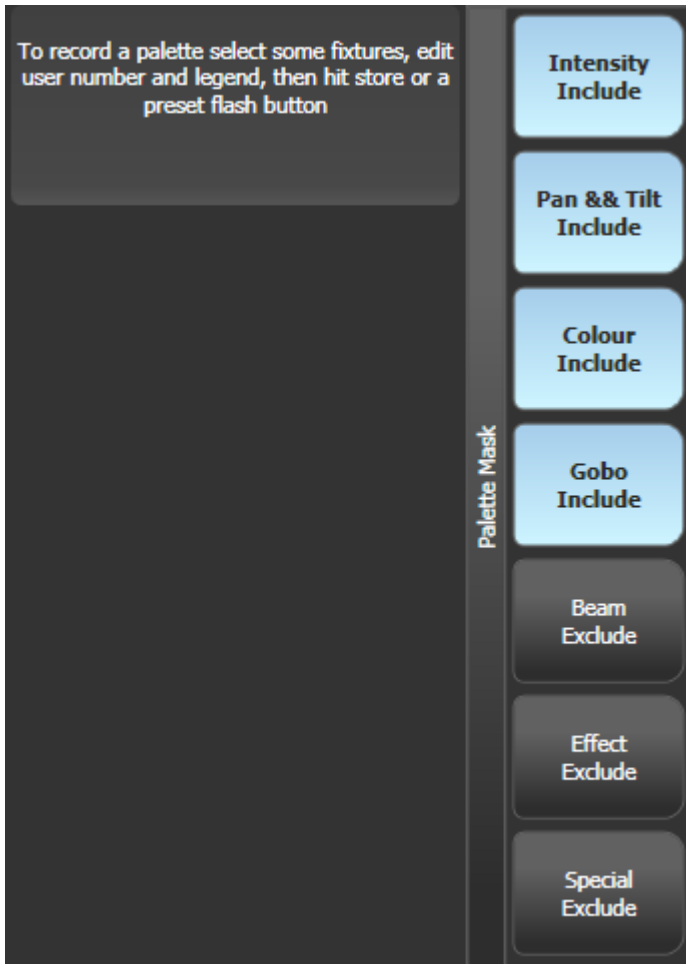
- [Record By…] allows you to control how the mask is used when saving the palette. The options are:

  - [Channel in programmer] records only channels which are in the programmer (ones which you have changed)
  - [Group in programmer] records all channels in any attribute group which has one or more channels in the programmer. *For example if Cyan is in the programmer, all colour channel settings will be recorded even if not in the programmer.*

- – [Group in mask] records everything included by the mask set on the attribute buttons
- – [Mixed] records by attribute group for **Position** and **Colour** but by channel for all other controls.

• The console will automatically create a legend for your palette (unless the User Setting (Abschnitt 8) **Auto Legend** is set to Off).

- – **Colours:** a coloured icon is used to show the selected colour. If the palette contains fixtures set to different colours, a coloured bar will be shown for each.
- – **Gobos:** show the gobo image (if available in the personality - you might need to update the patched personalities (Abschnitt 6.3.10)).
- – **CITP (media server)**: show the media thumbnail.
- – **Pan and tilt**: show a default legend.
- – For **other** attributes the legend is set to the value of the attribute you last changed.

• You can also manually set a legend for the palette while you are saving it using [Provide a legend]. See Setting Legends for Palettes (Abschnitt 8.2.5).

• If you select a Palette button which is already used, the console offers you options to [Cancel], [Replace], [Merge] or [Quick Merge] the existing palette.

- – [Replace] will erase the palette and save only the latest changes you have made.
- – [Merge] will combine your changes with the palette.
- – [Quick Merge] will merge only the attributes which are currently stored in the palette - the button shows you which attributes.

This allows you to add settings for additional types of fixtures to a shared palette or to update the existing fixture settings. Pressing the palette button again will automatically merge using Quick Merge.

• The console will select **Global** mode if the programmer contains the same values for all selected fixtures and one or more of the attributes is suitable for Global. If the values are the same but none of the attributes are suitable for Global the console will select Shared. If some attributes are suitable and some aren't, the console will record the suitable ones as Global and the others as Shared. If the values are different the console will select Normal. You can prevent the console from using Global and/or Shared modes using the **Minimum Palette Mode** option in the Palettes tab of User Settings (Abschnitt 8).

8.2.3 Nested Palettes

Palettes can contain references from other palettes. For example an odd/even colour palette could be created using two other colour palettes as the masters. If you wanted to change the colours, changing the master colour palettes would also change the odd/even colours.

The [Record/Don't Record Nested Palettes] option in the Record Palette menu sets whether nested palettes are recorded *(default)* or whether the attribute values are recorded instead.

If you've created a new palette using nested palettes, you can switch the palette to be non-nested (to use the values which were set at the time it was recorded). This can be useful if a palette was recorded as nested, but then you need to break the link to the source palettes so you can change them without changing the new palette.

1. Press [Options].
2. Press the handle of the palette.
3. In the [Palette] tab switch off the option [Fire Nested Palettes].
4. Now when you fire the palette, it will use the values which were set when you recorded it, rather than the current values in the nested palettes.

- You can reinstate the link by switching the [Fire Nested Palettes] option on again.

8.2.4 Quick Record

The palette windows allow you to quickly record a new palette. Just touch the button where you want to record - the button will turn red with a + sign. At this point you can enter a legend for the new palette or change mask settings. A second press on the button will save the palette.

When using Quick Record, the palette mask is automatically set to match the window - the **Position** window only stores **P**, the **Colours** window only **C**, and the **Gobos and Beams** window stores **IGBES**. This does not happen if you use the <Record> button.

Quick record also works for groups and workspaces.

> If you want to load a show from a **Pearl Expert** onto another Titan console, use the **Groups and Palettes workspace window** to access the fixtures/palettes on the blue/grey preset buttons on the Pearl. See Compatibility Windows for Pearl Expert Shows (Abschnitt 5.2.11) for more details.

8.2.5 Setting Legends for Palettes

You can enter a legend for each palette to tell you what it is. Titan will automatically create helpful legends when you create the palette.

> 1. Press [Set Legend] at the top level menu
> 2. Press the palette button for the palette you want to legend
> 3. Type the legend on the keyboard
> 4. Press <Enter> when you have finished

On touch buttons, the palette number is shown top left. The **IPCGBES** attribute groups contained in the palette are displayed below your legend, so for example **Position** palettes will show a **P**, **colour** palettes a **C** and so on. In the top right corner is shown **G** for **Global**, **N** for **Normal** or **S** for **Shared** palette.
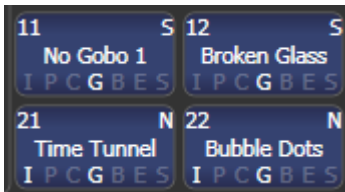
You can create a picture legend for your palette which could for example represent the colour or gobo it will create. After pressing [Set Legend] and the palette button, press [Picture]. The picture editor will open.
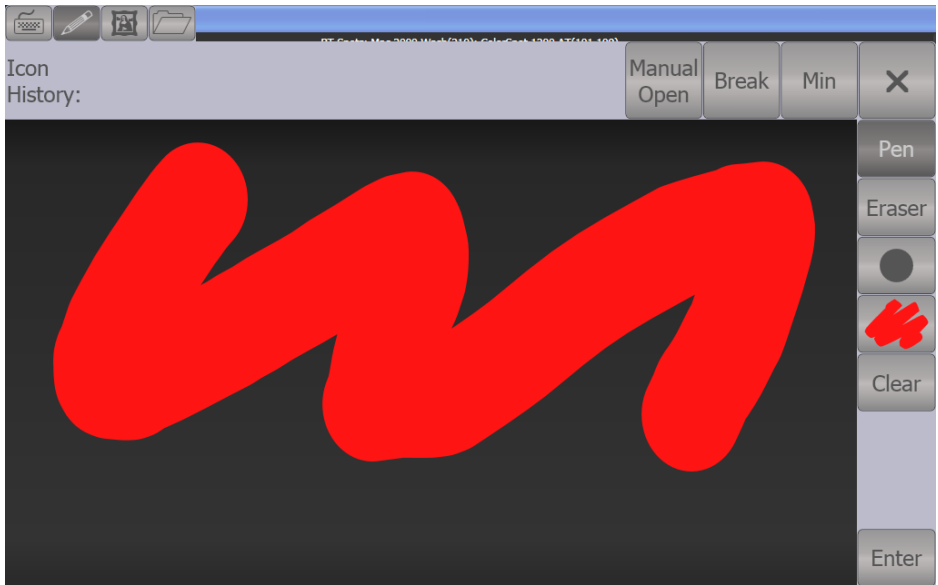
The tab buttons on the top left allow you to select Keyboard entry (legend reverts to text), Draw, Icon Library, or Load File. On the right you can choose Pen or Eraser, set the pen/eraser size, set the colour (white in the above picture), **clear** the whole picture, and **Enter** the legend. The **Min** button top left reduces the editor to a smaller size.

If you select Library you can choose a picture from a wide range of pre-programmed pictures. The pictures are sorted into various folders which are listed on the left.

8.2.6 Creating an Effects Palette (Shape or Pixel Mapper)

Speed up your programming by creating some palettes which apply shapes or pixel mapping effects (Abschnitt 9.1). You can't save a key frame shape to a palette.

For an effects palette to be useful, it needs to contain only effect settings (for example, for a pan/tilt circle you want it to move the fixtures around their current set position, not to change the position as well). To achieve this you can either use the FX mask when saving the palette, or you can just remember not to set any other values when programming.

1. Press <Clear>, select some fixtures and <Locate> them. *If you need to move them so you can see what's happening, you can do that, and the position can be removed later*.
2. Press [Shapes and Effects], [Shape Generator] and choose a shape to start. See *Shape Generator (Abschnitt 9.2) for more information about shapes*.
3. Alter the parameters of the shape as you require.
4. Press <Record> then <Palette>*You cannot use Quick Record to store shape/FX palettes*.
5. If you moved the fixtures in **step 1**, press [Set Mask] and exclude everything except **FX**.
6. Press a palette button to store the shape palette.

You can't use an effects palette as a **Quick Palette (Abschnitt 8.3.4)** (this is when you recall a palette with no fixtures selected). You must have some fixtures selected when you recall an effects palette.

8.2.7 Creating a Time Palette

You can create palettes which contain only **time** information. These can be used to set cue times and fixture attribute times without needing to set times manually. Using a time palette also means that you can go back and change the times once in the palette, and the changes will automatically apply to all cues which use the palette.

1. Press <Clear>, select some fixtures and <Locate> them. *If you need to move them so you can see what's happening, you can do that too.*
2. Press <Time> (*May be labelled <Set> on Mobile/Sapphire/Quartz, and <Next Time> on Expert/Tiger*).
3. Change Fade time to 2 sec. This sets the global fade time into the programmer.
4. Press <Record> then <Palette>.
5. If you moved the fixtures in step 1, press [Set Mask] and exclude everything except **Time**.
6. Press a palette button to store the Time palette.

8.3 Using Palettes

8.3.1 Recalling a Palette Value

Recalling From a Button

To recall a palette value from a button:

1. Select the fixtures to be changed. Shared palettes can be set to any fixture of the same type. Normal palettes will set individual values to each fixture. If no fixtures are selected, the palette will apply to all fixtures it is relevant to.
2. Press the Palette button you want to recall. The palette will be set to the selected fixtures.

- You can make palettes fade over a time when you recall them, see Timing with Palettes (Abschnitt 8.6).

- When a palette is used in the programmer, the touch button will light up to indicate this (you can disable this in the User Settings (Abschnitt 8)). This makes it easier to see which palette you have selected.

Recalling From the Keypad

You can also recall a palette by its number by typing the number on the numeric keypad.

> 1. Select some fixtures.
> 2. Press <Palette> above the numeric keypad.
> 3. Type in the number of the palette you want to recall.
> 4. Press <Enter> or [Apply Palette].

The [Apply Palette] softkey shows the legend of the palette which will be applied.

> If you want to recall multiple palettes simultaneously you can use the Blind to Live function. Put the console into Blind mode (either press the <Blind> button if provided, or hold <Avo> and press [Blind Inactive]. Select the palettes you want to use. Enter a fade time in seconds on the keypad (or 0 to snap), then press <Blind> again. The palettes will fade to the live output.

8.3.2 Palette Pages

If you have stored palettes on physical buttons on the console, the <Page+>/<Page-> buttons will change to a different page of palettes.

If you want a palette to be locked on its handle and not change when the page is changed, you can set a lock or transparent lock on the palette handle. See Handle Paging (Abschnitt 10.6.1.1) for more details about locks.

Each of the palette windows can either display pages of palettes, with page buttons on the left, or a continuous scrolling window of palettes. To change between pages and scrolling, touch the **Pages Show/Hide** context menu button, then change pages using the page buttons to the left of the palette buttons.

8.3.3 Only Showing Relevant Palettes

If the User Setting (Abschnitt 8) **Filter Relevant Palettes** is enabled, when you select fixtures any palettes which are not applicable will grey out. This is very useful to see which palettes are available for the fixtures you are working with.

8.3.4 Quick Palettes with no Fixtures Selected

If you press a palette button when no fixtures are selected, the palette will be set to all the fixtures the palette applies to. This is called a **Quick Palette**.

For example if you've got some colour palettes programmed for your MAC 2000s, pressing one of the palettes when no MAC 2000s are selected will set the colour to all the MAC 2000s.

> Effects palettes can't be recalled as Quick Palettes.

8.3.5 Setting Palettes to All Fixtures in a Playback

You can apply a palette to all fixtures in a particular playback. Hold the palette button and press the **Select** button of the playback which the palette is to apply to.

An alternative way to do the same thing is to hold down the **Flash"** button of the playback then press the palette button you want to use.

8.4 Editing Palettes

8.4.1 Viewing and Editing the Content of Palettes

You can view the contents of a palette in the **Palette View window**. This lists all fixtures in the palette and the attribute values stored for them. A context menu button allows you to switch to displaying **Times**.

Press <Open/View>, then the button of the palette. The **Palette View window** will open.

Palette - Palette 1

Attributes: All | I | P | C | G | B | E | S

Attributes	Number	Order	Colour Macros	Colour Func	Colour	White	CTO	Cyan	Red	Magenta	Green	Yellow	Blue	CMY Macros
BB7	-	1							100		0		0	
BB4	-	1							100		0		0	
R600 LED W	-	1	Open			0	0		100		0		0	
Robin600ES	-	1		Fixed	Open		0	0		100		100		Open

Fixture Type
- All Fixtures
- BB7
- BB4
- Robin 600 LED Wash
- Robin 600E Spot

You can filter which attributes are shown using the **All/IPCGBES** buttons in the top corner, or which fixtures are shown using the fixture type buttons below that.

To edit an attribute value, touch/click on it in the window. The softkeys will give you a list of available settings for this attribute or you can type in a numerical value.

You cannot **Delete** a value from a palette, but you can disable it by selecting the value and pressing the [Off] softkey or <Off> button. If you select a value which shows '[Off]', the softkey will show [On], and would re-enable the previous value.

- When the palette contains other palettes, the context menu option [View/Hide Nested Palettes] sets whether or not the view shows the actual attribute value or just the name of the nested palette.

- When the palette contains shapes, the context menu option [View Shapes] will open the Shape View showing all the shapes with their parameter. Clicking **View** will open the **Shape Fixture View** which lets you edit the fixtures running the shape; the **Add Fixtures** menu button will add selected fixtures into the shape.

- When the palette contains effects (Pixel Mapper) the context menu option [View Effects] will open the **Effect View window** to let you edit the effect.

- The softkey option [View Playbacks Using Palette] shows you which playbacks reference the palette you are viewing.

8.4.2 Changing the Content of Palettes

To edit a palette entry, press <Edit> (<Update Palette> on Pearl Expert and Tiger Touch 1), then select the palette to edit. For Normal palettes this will automatically select the fixtures used in the palette; for Shared palettes the first fixture in the palette will be selected. Next, make the changes you want, then press the [Update Palette x] softkey to save the changes.

The <Edit> button also allows you to change the palette name and number.

You can also load the palette into some fixtures, modify the attributes and record the new information back on top of the existing palette entry. The console will give you options on the softkeys to **Replace**, **Merge** or **Quick Merge** the palettes. If you select **Merge**, anything you haven't changed will not be affected, values you have changed or added will be amended. **Quick Merge** will only update the attributes stored in the original palette and ignore others *(for example if you are merging with a position palette, but have also modified the colour attributes, the colour attributes would not be merged in)*.

When double clicking a palette button to update, the default option is **Quick Merge**.

- You can set the console to **Always Merge** (so it doesn't ask you) using the User Settings (Abschnitt 19.5.4). You can also press the palette button a second time to select the **Merge** option.

- You can add settings for additional fixture types to a palette without affecting existing ones.
  For example, if you have colour palettes for Mac Auras, you can add colours for your Robe BMFLs without affecting any previously recorded values in the palette.

- You can remove attributes from palettes using the <Off> button as described above.

- When editing a palette the state of the programmer will be preserved; when the modified palette is saved, your original programmer contents will be restored and the programmer will be left in the same state as when you started editing the palette.

8.4.3 Identifying Playbacks Which Use a Palette

If you are going to edit a palette it can be useful to check which playbacks reference that palette. You can do this by viewing the palette as described above, then select the context menu option [View Playbacks Using Palette]. This will open the **Referencing Playbacks** window showing all the playbacks which include the current palette.

8.4.4 Updating Palettes Used in a Playback

If you need to quickly update a palette during a show, for example you fire a green cue and the Green palette used turns out to be not quite the right colour, the <Update> function lets you automatically update the palette used in the cue.

1. With the cue fired, select the fixtures and change them to the settings you want to store.
2. Press <Update> (on Pearl Expert, <Record Cue>, [Update]).
3. The cues and palettes which relate to the cue and can be updated are shown on the softkeys.
4. Select the items you want to update and press <Update> again.

8.5 Copying⬚ Moving and Deleting Palettes

8.5.1 Copying or Moving a Palette

Using the <Copy> and <Move> buttons you can make a copy of an existing palette or move it to a new button. You can copy or move multiple palettes in one operation. You cannot link palette buttons like you can with cues.

Move is useful for tidying up the console.

1. Press <Copy> or <Move> (if the console does not have a **Move** button, you can get this function by holding <Avo> and pressing <Copy>).
2. Press the **Select** button of the palette you want to copy/move. You can select multiple palettes - use the <Thro> and <And> buttons to add more to the selection - hold down <And> to keep adding them.
3. Press the empty button where you want it to go.

- The <Menu Latch> button latches the **Copy/Move/Link menu**, so you can keep copying, moving or linking things without having to keep pressing <Copy>. Press <Menu Latch> again to unlatch.

- [Retain Layout] or [Bunch Up] is used when copying a group of palettes with empty handles in the group - you can either keep the empty handles, or bunch up the used handles together.

- When in Copy mode, option [Copy Legends] can be changed to [Don't copy legends] so that the copied palettes are given default legends.

- When in Move mode, [Swap Items if Required] will attempt to reposition any existing handles which are in the way of the move. This is useful when rearranging buttons on a page which is nearly full.

8.5.2 Deleting Palettes

You can delete a palette by pressing <Delete>, then pressing the button of the palette to be deleted. Press the palette button again to confirm the deletion. For palettes stored on physical buttons you can delete a range of palettes in one go by holding down the first one while pressing the last one.

Other ways to delete a palette:

- If the console has an <Update Palette> button, press it, then select a palette, then use the [Delete] softkey option

- Press the <Palette> button above the numeric keypad and use the [Delete] option in the [Palette Utilities] menu

- Press <Delete> then [Palette], type the palette number, press <Enter>

> If you have playbacks which use the deleted palette, they will go back to the values which were stored in the programmer when the playback was recorded.

8.6 Timing with Palettes

Palettes may be created with timing information, or you can manually override the timing when recalling the palette.

8.6.1 Palettes with Saved Times

If you have saved a timed palette (Abschnitt 8.2.7), the times will be used in any playback which is recorded using this palette. So if you programmed a 2 second fade into this palette, every playback with this palette will have a 2 second fade.

By default these times are **not** used when the palette is called directly, to allow for fluent programming. You may however turn this on (which further enhances busking with palettes (Abschnitt 3.5.2)) using the palette key setting in the Key Profile (Abschnitt 19.4). You can set [Palette Is Fired With Its Times] or [Palette Is Fired Ignoring Its Times].

8.6.2 Manually Overriding Palette Times

Being able to recall palettes with a manual fade allows easy "busking" of shows. When a palette is recalled in this way, a time is added and the palette fades in over that time.

> 1. Select some fixtures.
> 2. Type in the fade time for the palette on the numeric keypad.
> 3. Press a palette button to recall the palette.

- This overrides any timing stored in the palette itself.

- You have to re-enter the time each time you recall a palette. To use the same fade every time, you can set a Master Time (Abschnitt 8.6.4).

- Palette fading can be very useful when recalling a palette live during a show, as you can smoothly move fixtures to a new position or change colour slowly (on colour mixing fixtures).

8.6.3 Manual Fixture Overlap when Recalling Palettes

You can set a Fixture Overlap (Abschnitt 10.5.1) when recalling a palette, which means that the palette will be applied in sequence to each fixture in the group. This is a very quick way to busk complex effects.

100% means that all fixtures will change together.

0% means that each fixture must complete its fade before the next will start its fade.

- You need to also have a fade time set, otherwise Overlap has no effect.

1. Type in the overlap percentage for the palette on the numeric keypad.
2. Press [Set Overlap].
3. Type in the fade time if fade is also required.
4. Press a palette button to recall the palette.

- You have to re-enter the overlap each time you recall a palette. To use the same overlap every time, set a Master Overlap (Abschnitt 8.6.4).

- Fixture Overlap always requires a fade time in order to have a visible effect.

When using Fixture Overlap with global palettes without fixtures selected (Quick Palette) bear in mind that Fixture Overlap may be performed on a large number of fixtures which may lead to unwanted results.

8.6.4 Master Time and Overlap for Palettes

Option [Master Time] on the Palette menu (press the <Palette> button above the numeric keypad) allows you to set a default fade time. This fade time will be used for all palettes unless you manually type in a different time. This can be useful when "busking" a show with palettes. Set Master Time to zero to disable.

The [Master Overlap] option similarly sets the default Overlap for palette recall. Set Master Overlap to 100% to disable it.

You can create macro buttons to set different palette fade times. Press <Macro>, [Record], press a button to store your macro on. Then press <Palette>, [Master Time], <3> (for 3 sec), <Exit>, <Macro>. Repeat these steps to create a Palette Snap button (0 sec), or a 1 sec fade button, and so on.

A number of macros for various fade times ([Palette Fade x s]) and overlaps ([Palette Overlap y%]) are available in the macro library. To open this press <Macro>, then the softkey [View All]. Macros from the library can be copied onto buttons using <Copy> as usual.

9 Shapes and Effects

9.1 Shapes and Effects introduction

The **Shape Generator** in Titan (sometimes known as an Effects Generator on other consoles) allows you to quickly create exciting light shows using lots of movement and changes, with the minimum of programming. A range of speed controls allow you to modify how the shapes appear at show time giving you a whole range of effects from a few basic stored cues (Abschnitt 10.1).

You can use the conventional Shape Generator (Abschnitt 9.2) with preset patterns, or the Key Frame Shape Generator (Abschnitt 9.3) which allows you to create your own custom patterns.

The Pixel Mapper (Abschnitt 9.4) is used to generate animated textures using the colour or intensity of a group of fixtures (often LED battens, starcloths or LED web type fixtures). When viewed at a distance the effect becomes clearly visible.
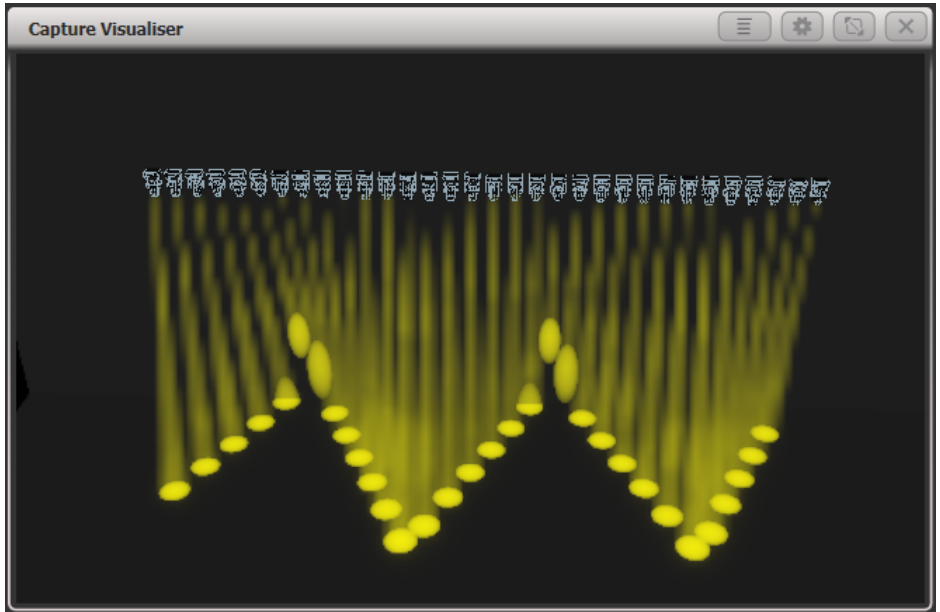
9.2 Shape Generator

A shape is simply an automatic sequence of values which modify a particular attribute of a fixture. A circle shape, for example, applied to the pan and tilt attributes, would cause the fixture to move its beam in a circular pattern around its current position. You can set the size of the circle and the speed of the circle movement.

Shapes are most useful when used with a group of fixtures. You can then choose to either apply the shape identically to all the fixtures, or offset them so that the shape runs along the fixtures creating *"wave"* or *"ballyhoo"* type effects (called the **Spread** or **Phase** of the shape). This allows you to very quickly create impressive light shows.

In addition to position shapes, there are a large number of other shapes available in Titan. The shapes are defined for a particular attribute such as colour, dimmer, focus and so on.

Titan also has a **Mask FX** function which lets you mask out certain shapes, preventing them from appearing on the lights. For example, if some fixtures are running a Circle shape, and then a playback is fired which has a Position Mask Shape programmed for some of the fixtures, those fixtures will stop running the circle shape. This can be very useful to modify playbacks at show time. See the Mask FX (Abschnitt 9.2.7) section below for details.

9.2.1 Creating a Shape

When you create a shape, it will be applied to all selected fixtures.

1. Select the fixtures (Abschnitt 7.1.1) the shape is to be applied to.
2. At the main menu press [Shapes and Effects] then [Shape Generator].
3. Press [Create] to start a new shape

. 4. Press a [softkey] to select the attribute type to use in the shape or press [All] for a full list. 5. Press a [softkey] to select a shape, or touch the desired shape in the **Shapes window**. You can type a search word on the keyboard to search for a particular shape. 6. The shape will be applied to all selected fixtures.

- If you open the Shapes window, it will remain open for instant selection of shapes (you don't need to select [Shape Generator]). The window will only show shapes which are possible on the selected fixtures. Pressing attribute buttons will filter the Shapes window to show only shapes for that attribute. Press the <Dimmer> attribute button to show all shapes.

- Shapes are based on the current settings of the fixture, so for example *a position circle would move around the current pan-tilt position of the fixture.*

- You can change the base value of a shape (e.g. the centre of a circle) by changing the attributes using the wheels in the usual way. You can reduce the Size to zero (see next section (Abschnitt 9.2.2)) to help you see what the base value actually is.

- You can run more than one shape at a time by repeating the above procedure. You can run several shapes on one fixture and the output will combine in interesting ways.

- Press [Shapes and Effects], [Shape Generator] then [Edit] to show what shapes are running.

- If you apply the same shape to two different groups of fixtures, the shape will appear twice on the shape list. You can edit the two shapes separately to give different directions, speeds etc (see later (Abschnitt 9.2.2))

- If the selected fixture has sub-fixtures (cells) then you will be given the option to run the shape on the main fixture, keeping all cells identical, or spread across the sub-fixtures/cells. The options are:

    – [Run on Super Fixtures] - cells are ignored, fixture operates as one block
    – [Run on Sub Fixtures (Linear)] - the cells are used in numerical order
    – [Run on Sub Fixtures (Group)] - the layout of the cells is used as programmed in the Layout Editor (Abschnitt 7.4.2) for the group

- Each shape is designed to work on a particular attribute. Obviously if the fixtures don't have the attribute, you will not see any effect if you use the shape.

- Each shape has a default size and speed setting *(defined in the shape file)*.

> When using a Rainbow colour shape, to get the full range of colours you need to set the CMY or RGB attributes to **50%**.

9.2.2 Changing Size and Speed of a Shape

It is easy to change the size and speed of a shape after it has first been created. If the display above the wheels is showing Spread and Offset rather than Size/Speed, press [Adjust Speed, Size and Spread].
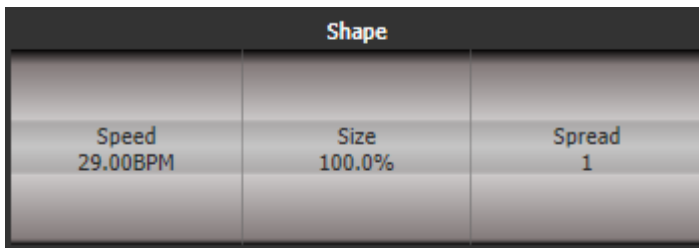
- Control the speed of the shape using the left hand wheel
- Control the size of the shape using the middle wheel
- The size and speed is shown above the wheels on the display

Other things to know about size and speed of shapes:

- If you have more than one shape running, the controls operate on the most recent one. You can edit the parameters of any shape that's running using the Edit Shape function, see Editing a Shape in a Cue Using Include (Abschnitt 9.5.3).

- The minimum size is zero. This will *"hide"* the shape, and the fixture will resume its previous settings. The shape is, however, still active.

- Once a shape is saved in a playback, you can use the playback fader or a separate Speed or Size master (Abschnitt 10.3.5) to control the speed and size.

9.2.3 Changing the Spread of a Shape Across Multiple Fixtures

Shapes get more interesting (and look more impressive) when you apply them to multiple fixtures. You can control how a shape is spread across several fixtures. You can also control Phase, which is a different way of selecting the same thing.

The sequence of the shape across the fixtures is controlled by the order in which you selected the fixtures when you created the shape. You can edit the order by selecting [Fixture Order] in the Shape Edit menu.

1. If the right hand wheel isn't showing Spread, press [Adjust Speed, Size and Spread]
2. Control the **Spread** of the shape using the right hand wheel, or to set in terms of Phase, press [Adjust Spread, Phase and Offset] and use the middle wheel.
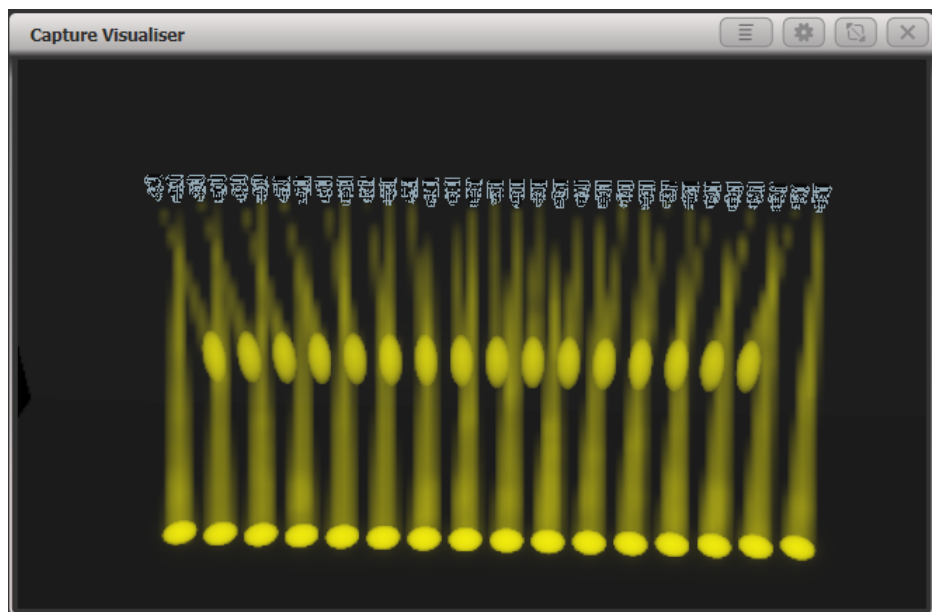
Spread = **12** *(Phase = 30 degrees)*:
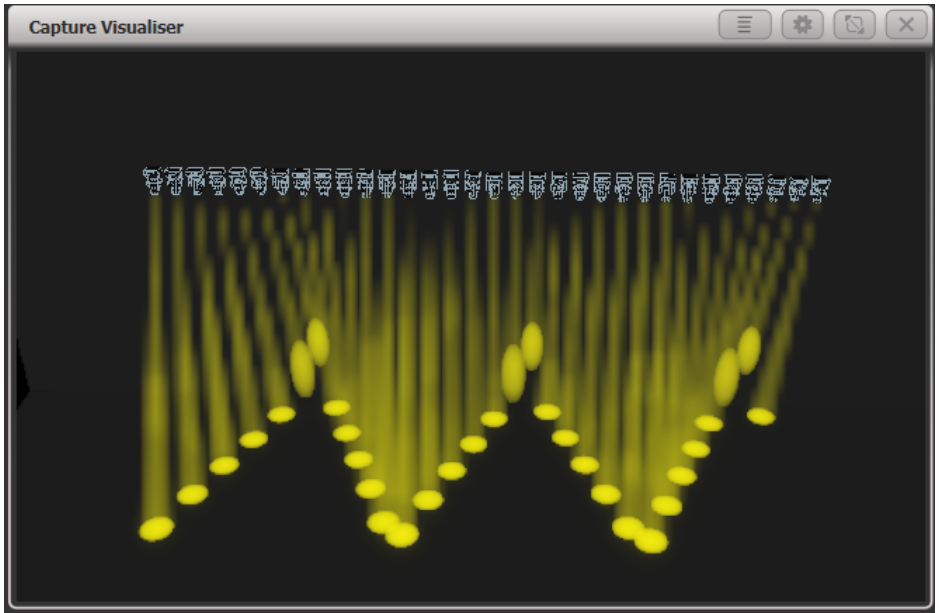
Spread = **6** *(Phase = 60 degrees)*:
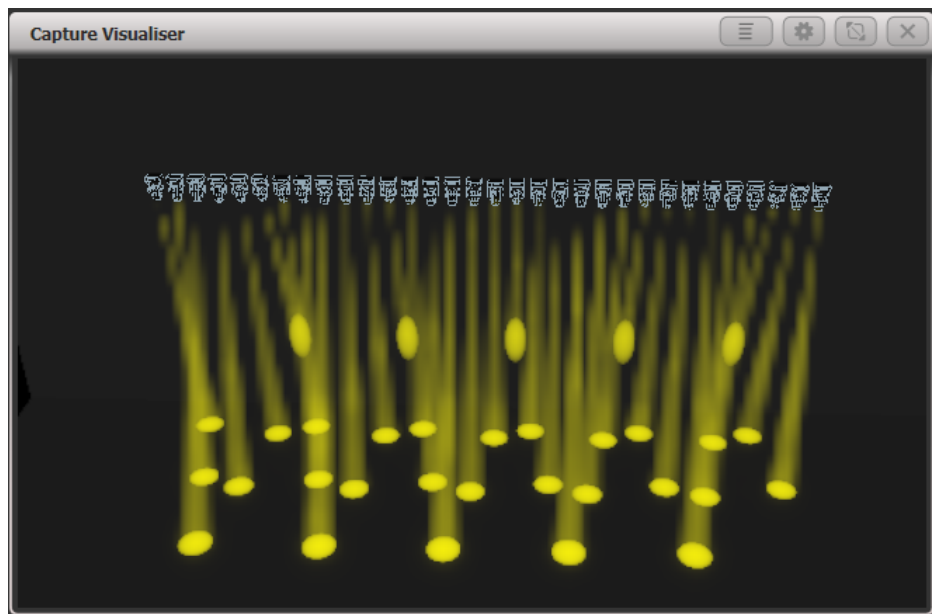
Spread = **2** *(Phase = 180 degrees)*:

In **Phase** mode, the display above the wheel shows the phase in degrees. For example, 180 degrees repeats every 2 fixtures, 90 degrees repeats every 4 fixtures, 60 degrees repeats every 6 fixtures, and so on.

The **Offset** function allows you to set the starting phase of the shape, when more than one shape is running. *For example, if you were running a Cyan shape and a Magenta shape to create a mix of colours, you would probably want to start them with Cyan at full and Magenta at zero to give the full range of colours. In this case you would set one of the shapes to have a Phase Offset of 180 degrees.* Without the phase offset, both shapes would reach full at the same time.

> After adjusting offset or phase, it is useful to **Restart** the shape so you can see how it will look when fired from a cue. Press [Restart Shapes] on the shape Edit menu.

9.2.4 Shape Direction

The [Direction] softkey opens a menu allowing you to set a direction for the shape. If you have defined a 2D layout for the group (Abschnitt 7.4.2) this allows you to have shapes that visibly move in particular directions.

You can keep the shape direction menu open using the <Menu Latch> button, to allow you to try different options and see the effects.

9.2.5 Beat and Cycles

The [Adjust Beat and Cycles] option lets you set on the wheels how the programmed speed will trigger the shape, and how many times the shape will run.

Beats

The Beats option defaults to [Beats=1] which makes the shape run at normal speed. Higher numbers will divide the count, for example [Beats=4] will make the shape run at quarter of the speed. This is really useful to synchronise different types of shapes which are running together.

Clicking the middle of the wheel roller image on screen or pressing <@A> for **Wheel A** allows you to type in a number for the Beats parameter, and also shows two further options for Beats: [Match to Spread] sets the beat count to be the same as the current Spread setting for the shape. This is useful when using dimmer shapes with movement shapes as it will make each fixture turn on for a full cycle of the movement shape. The [Custom] option resets the [Value] option to the last entered value.

Cycles

The cycles option sets how many times the shape will run. By default this is set to infinity (∞) which means the shape will continue to run until you stop it. If you set a fixed number, the shape will stop by itself after that number of cycles.

You can type in a number instead of using the wheels by clicking the middle of the wheel roller image on screen or pressing <@B> for **Wheel B**. If you are typing in a number you can enter part cycles, for example 1.5.

9.2.6 Using Shapes in Cues

When you save a shape into a cue, you can set the playback fader to control the size and/or speed of the shape in playback Options (Abschnitt 10.6) to give you more options at show time; you can also control the size and speed from separate Size Master and Speed Master faders (Abschnitt 10.3.5). For Dimmer shapes, the fader controls the shape size by default.

You can use shapes in a cue list, see Shape Tracking in Cue Lists (Abschnitt 12.2.3) on how the shapes will behave as you go from cue to cue.

You can adjust a running shape at playback time, see Editing a Live Running Shape (Abschnitt 9.5.1).

Shape Overlay or LTP behaviour

When a shape or key frame shape is running in a playback it can behave as **Overlay** (default - always over-rides the programmed attributes) or **LTP** (shape can be overridden by more recent playbacks) by setting the **Shape Behaviour** option.

A global setting for Shape Behaviour is in the User Settings (Abschnitt 10.6.5.3), but you can also set the mode individually for each playback using the playback Options (Abschnitt 10.6.5.3).

- In [Overlay] mode (default) the shape will have control of the programmed attributes regardless of whatever else you do. For example if a shape is controlling fixture colour, firing another playback, recalling palettes or changing colour using the wheels will have no visible effect. Once the shape is stopped, the changes you made will become visible. This means that if you want to you can preset what will happen when you stop the shape.

- In [LTP] mode, changes of the same or higher priority will override the shape output. For example if your shape is set to normal priority, firing a playback with normal priority will block the shape output. Killing the playback will restore the shape output. Quick Palettes and manual changes (the programmer) have High priority. Setting the shape priority to **"Very High"** would prevent the programmer taking over (see Priority (Abschnitt 10.6.2.3) in playback Options).

9.2.7 Masking shapes using Mask FX

It is often useful to be able to partially or completely stop a running shape, for example to freeze the look at the end of a song or to modify the look for different moments.

The [Mask FX] softkey on the Shapes and Effects menu allows you to record a mask which will stop shapes (both normal shapes and key frame shapes). The mask can be set to stop all shapes on all fixtures, or only

shapes controlling certain attributes. You can also select certain fixtures for the mask and leave other fixtures unaffected.

To create a mask:

1. Press [Mask FX] on the Shapes and Effects menu (Diamond 9 and Diamond 7 have a dedicated <Mask FX> button - press twice to turn all attributes on in the mask).
2. The Attribute Bank buttons (Position, Colour etc) will flash. Choose which attributes you want to mask by toggling the buttons on and off.
3. If no fixtures are selected the mask will apply to all fixtures. If you only want it to apply to certain fixtures, select them now.
4. Press [Create Mask Shape]. (The [Create Mask FX] button will mask both shapes and pixel map effects.)
5. You should see the mask taking effect on the output - if you store it in a playback, the playback will stop the shapes it's set to mask while it is active.

- The [Clear mask from programmer] button will remove any mask shapes or mask effects from the programmer for all fixtures.

- This function replaces the **Block Shapes** function of previous versions. Shows containing Block Shapes from previous versions will load and work as expected, but the block shapes will be renamed "Mask".

9.2.8 Storing Shapes in Palettes

You can create palettes containing shapes. This is really useful to quickly call back shapes pre-configured with different spread and speed settings. See Creating an Effects Palette (Shape or Pixel Mapper) (Abschnitt 8.2.6).

9.3 Key Frame Shapes

Key frame shapes allow you to create your own shape sequences. You store a series of attribute settings as key frames and the shape fades between them.

9.3.1 Creating a Key Frame Shape

A key frame shape is created a bit like a chase (Abschnitt 11.1), but the shape is more flexible because you have lots of control over the way the attribute changes between key frames, and you can change the way it spreads across multiple fixtures. It's also *(unlike chases)* easy to save in cue lists (Abschnitt 12.2.3).

You can create the key frames either in **Channel Mode** by manually setting up a state and pressing [Add Frame], or in **Quick Build** mode by selecting palettes (Abschnitt 8.1) or cues (Abschnitt 10.1) which will be automatically saved as a frame as you select them. Use the [Record Mode] softkey to select the mode.

In this example we'll create a colour shape, but you can create key frame shapes for any attribute or mixture of attributes. If you create key frames using palettes (Abschnitt 8.1), the key frames will update if the palette is changed.

1. At the main menu press [Shapes and Effects] then [Key Frame Shapes]
2. Press [Create] to start a new shape
3. Select fixtures (Abschnitt 7.1.1) and set the colours for the first key frame
4. Press [Add Frame]. An automatic legend for the first key frame will show above the first playback fader. *(Press [Playbacks Display Visible/Hidden] to return the playback faders to normal, if you want to select one in Quick Build mode).*
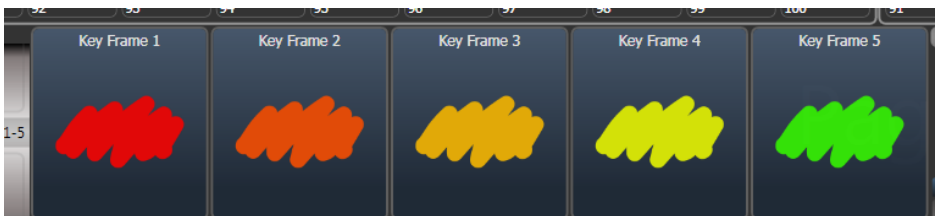
5. Continue to set colours and press [Add Frame] until you have created all the steps you want
6. Press [Finish Recording Frames] when you've finished
7. Use the Effect Editor window to change the Spread, Overlap (see below)
8. Save the shape to a cue if you want to use it in a show *(see Saving a Key Frame Shape to a Cue (Abschnitt 9.3.3))*

- You can also use the <Unfold> button to switch the playbacks between normal mode and key frame display mode.

- Setting the [Frame Number] softkey to an existing frame number allows you to [Replace] or [Delete] a frame. Clicking the frame legend or the select button of the playback will also set the current frame number.

- If the shape is not visible because fixtures are not lit up, the locate dimmer {Sun} button at the bottom will light up fixtures used in the shape.

9.3.2 Changing Shape Parameters in the Effect Editor

Once you have finished creating a key frame shape it will be shown in the Effect Editor window.
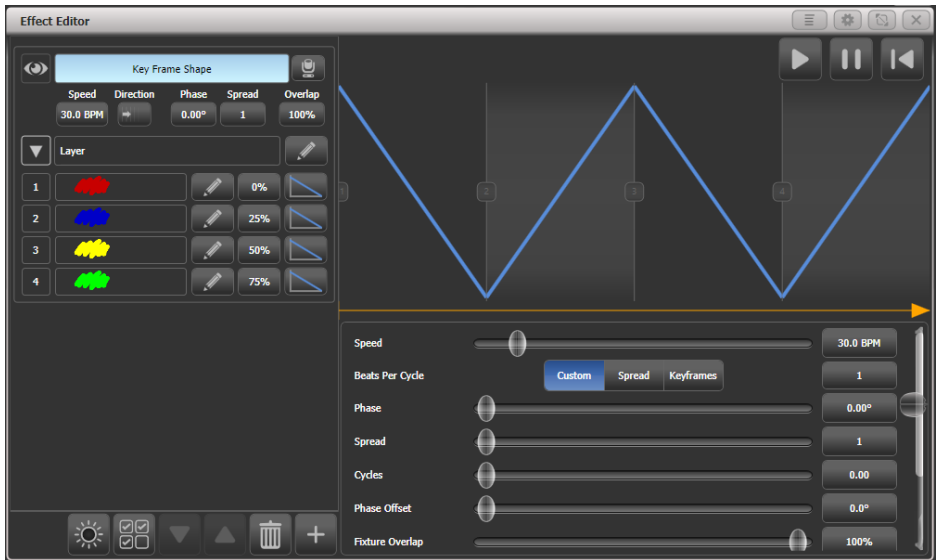
The controls at the top of the left hand pane are the global shape properties which affect the whole shape, controlling speed, direction (using 2D group layout (Abschnitt 7.4.2)), phase/spread (Abschnitt 9.2.3) and fixture overlap (Abschnitt 10.5.1).

The **eye** icon in the top left corner *"collapses"* the shape preview in the effect editor window, this allows you to expand only the shape you want to work on if you have created multiple shapes. The **fixture icon** button on the right allows you to change the fixtures the key frame shape shape applies to.

The top of the main area shows a graphical version of the fades in the shape, which you can drag around to change the timings. The yellow arrow shows the phase offset (start position) for the layer, you can drag this to change the start point of the shape relative to other layers *(or use the Phase Offset slider below)*.

Shape/Layer Controls

To start with *(or when you click on the Layer name)* the sliders to the right of the main area are independent controls for the layer.
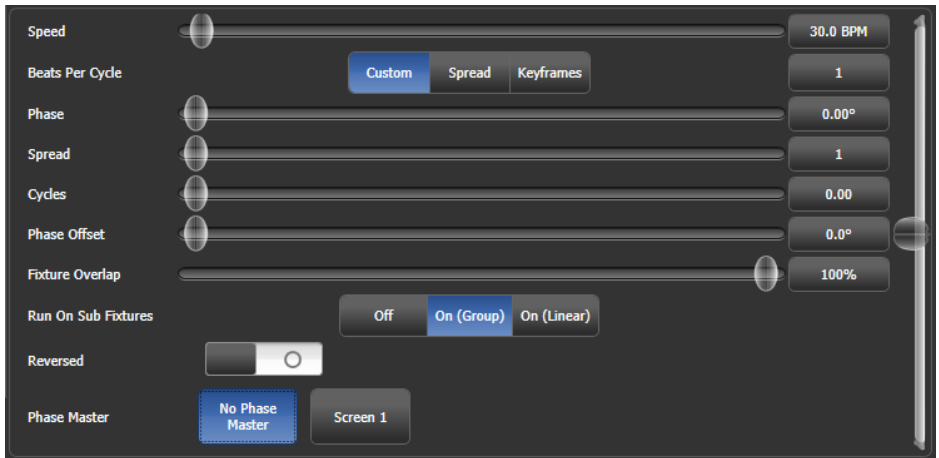
You can click on the buttons to the right of the sliders to enter values from the keyboard, and when the button is clicked on the wheels can also be used to adjust the value. A [Reset to default value] softkey is also provided when you click the buttons, or double-clicking the buttons will reset to default value.

The **Beats per Cycle** control lets you set how the programmed speed will trigger the shape. It defaults to 1 which makes the shape run at normal speed. Higher numbers will divide the count, for example 4 will make the shape run at quarter of the speed - useful to synchronise different types of shapes which are running together.

[Spread] sets the beat count to be the same as the current Spread setting for the shape. This is useful when using dimmer shapes with movement shapes as it will make each fixture turn on for a full cycle of the movement shape.

[Key Frame] sets the beat count to match the number of key frames in the shape.

[Custom] resets the [Value] option to the last entered value. > Each key frame and each layer can have its own **Beats per Cycle** setting.

The **Cycles** option lets you create a shape which runs for a set number of cycles then stops. By default this is set to 0, which means the shape will not stop. You can set this either for the whole shape, or for individual layers - if you set it while the whole shape is selected, then all layers will be affected, but if you set it while only one layer is selected, then the cycles will be set for the selected layer only. *This means you can have individual layers running continuously or for different numbers of cycles.*

Key Frame shapes can run across **sub-fixtures** (cells). This is turned [Off] by default, but you can select [On (Group)] which uses the layout set for the group (Abschnitt 7.4.2), or [On (Linear)] which ignores the layout and just uses the cells in numerical order.

The Phase Master option lets you control the phase of the shape using the intensity of a video layer from an Ai server. See Phase Control of Key Frame Shapes from Ai (Abschnitt 15.3.6) for more details.

Parameters for Individual Frames

By clicking on individual key frames on the left, you can change parameters for each individual frame:
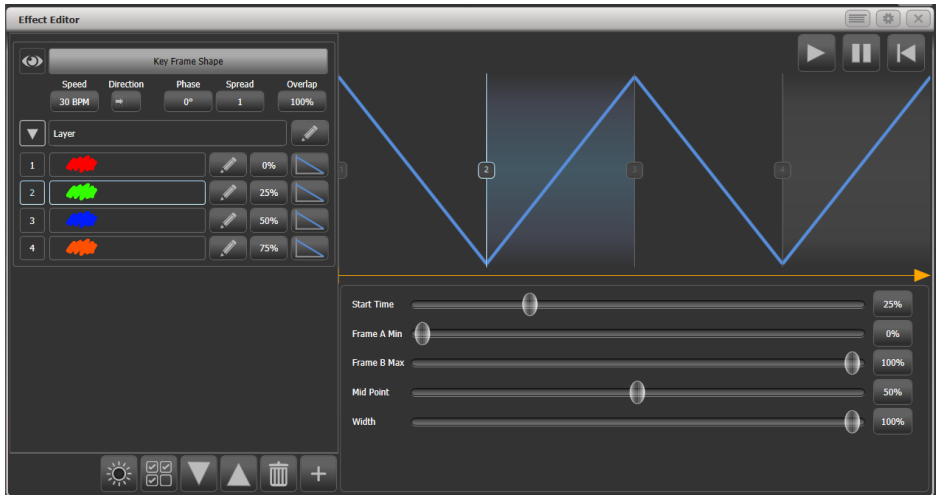
- **Timing**: use the Start Time slider or drag the step positions in the window

- **Frame A Min** / **Frame B Max**: Sets how close the attribute gets to the programmed value. *For example if you've saved a dimmer flash at 100% you could make it only flash to 80%.*

- **Mid point**: sets where the mid point of the fade is

- **Width**: sets how much of the frame time is taken up by the fade. For example you could fade in 20% of the frame time then hold for the remaining 80%

You can change the style of the fades between steps by clicking the curve button to the right of each step. The new curve will be shown in the fade graphic in the main window.

Editing Frames

You can also edit the sequence of the key frame shape using the Effect Editor window.

- To **add** more frames to a key frame shape click the {Pencil} button to the right of the **layer name**.

- To **edit** a key frame click the {Pencil} button to the right of the **frame name**.

- To **delete** a key frame select the frame in the list then click the {Rubbish Bin} at the bottom

- To **change the order** of the frames, select a frame then use the up and down arrows at the bottom.

- To **change multiple** key frames at the same time, click on the multi-select button at the bottom of the window, or you can drag a selection box over the frames.

Multiple Effects

Key frame shapes can have multiple layers where different effects run simultaneously. To add another layer, click the {+} button at the bottom, then select **Layers**. The new layer will appear in the list on the left.
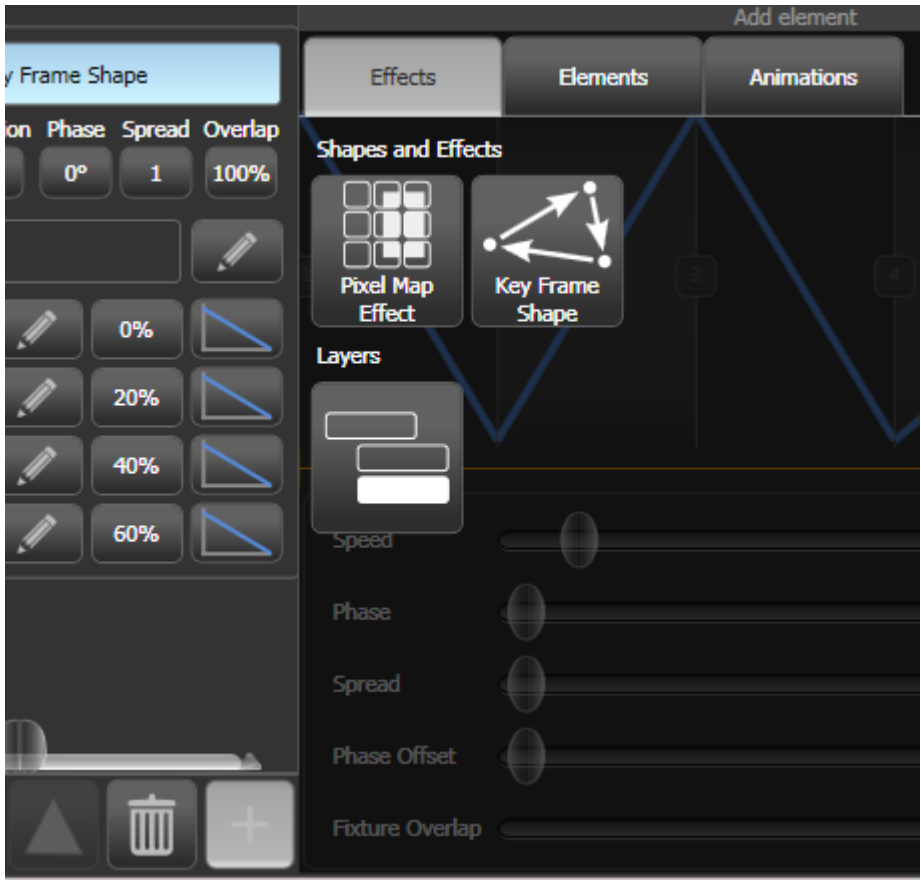
You can also add a completely separate key frame shape or a pixel map effect (Abschnitt 9.4). Pixel map effects will be shown at the top of the shape list on the left, you can use the **eye** icon to hide the pixel map effect when you want to work on the key frame shapes.

9.3.3 Saving a Key Frame Shape to a Cue

By default when a key frame shape is saved to a cue, the playback fader will fade the shape size. If the playback is set to have Speed on Fader (Abschnitt 10.6.5.2), the fader will master the speed of all layers in the shape.

For details of how Shapes behave when you go from cue to cue in Cue Lists, see Shape Tracking in Cue Lists (Abschnitt 12.2.3).

- If you create a Mask Shape using the Mask FX function (Abschnitt 9.2.7), this will also stop Key Frame Shapes.

- When a shape or key frame shape is running in a playback it can behave as Overlay (overrides the programmed attributes) or LTP (shape can be overridden by more recent playbacks). See Shape Overlay or LTP behaviour (Abschnitt 9.2.6.1).

9.4 Pixel Mapper

9.4.1 Creating Pixel Mapper effects

The Pixel Mapper works on a group of fixtures, which you have set up using the Group Layout function (Abschnitt 7.4.2). This tells the console where the fixtures are physically located on the stage. The console then maps the fixtures as pixels and uses them to output a 2D effect.

> At the end of this section there are a number of step-by-step examples (Abschnitt 9.7) of creating effects with the pixel mapper. It's much easier to get to grips with if you can work through some examples.

You create effects with the Pixel Mapper as follows:

1. Select the group of fixtures
2. From the top level menu select [Shapes and Effects] then [Pixel Mapper]
3. Select [Create effect]. The Pixel Mapper Editor will open with a blank background. You can overlay your fixture layout on the window, to help you see where your fixtures are, by clicking on the [Fixture Overlay 50/50] context menu button.
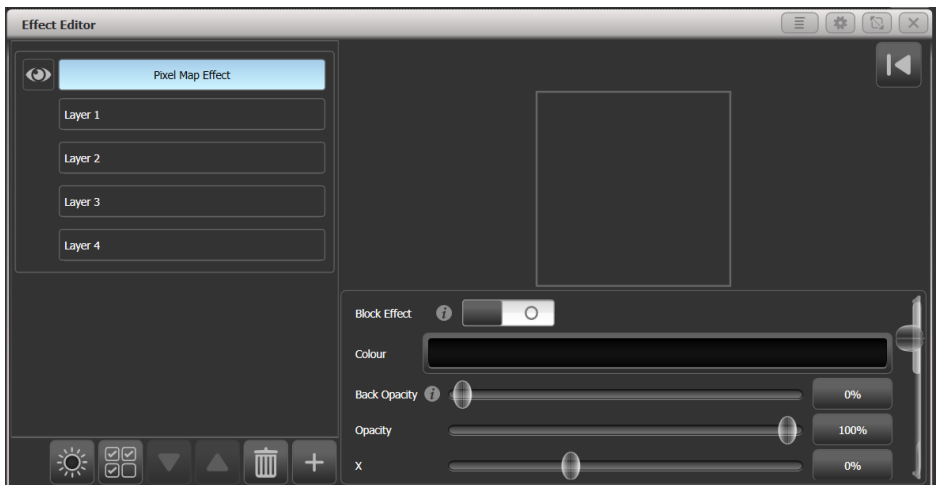
Elements

Click on the {+} button at the bottom to add an effect, and choose a graphic element. You can **remove** elements by selecting them and clicking on the {Rubbish Bin} button. The graphic buttons as shown below provide the following elements to animate:

- Square
- Circle
- Triangle
- Star
- Fan
- Spiral
- Text
- Scribble *(you draw an image on the touch screen)*
- Image/bitmap *(loaded from disk)*
- Synergy content (Abschnitt 15.3.4) from Ai media server or Prism Zero
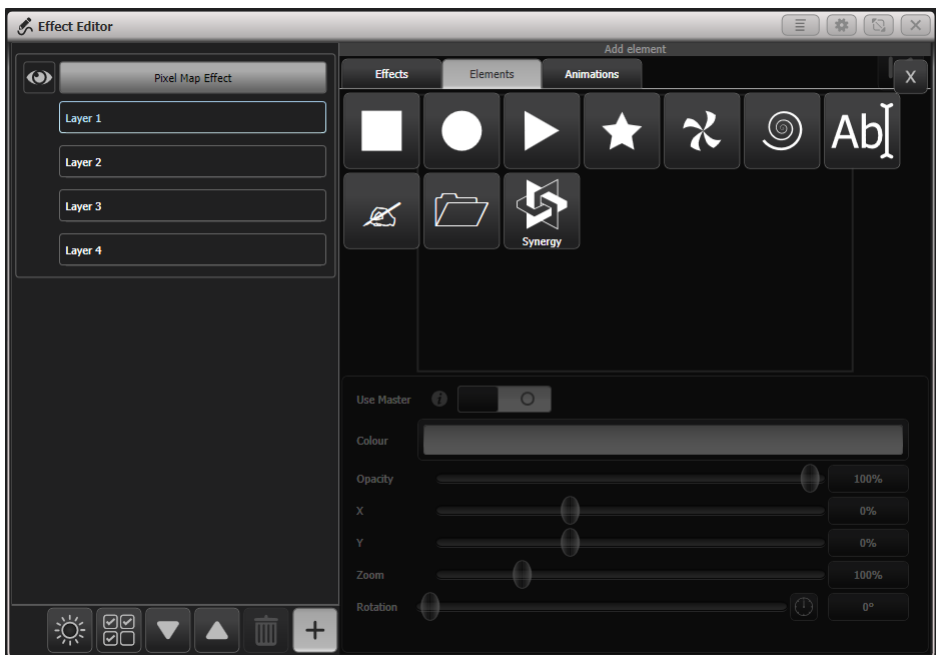
The graphic element will appear in the top part of the window and will be output to the fixtures. You can change it using the sliders below, which will vary depending on the shape but may include:

- Opacity

- X, Y position
- Width, height
- Zoom
- Rotation
- Border width

> To change the **colour**, click on the **layer name**

Animations

Then with the graphic element selected on the left hand side, click on the {+} button again and choose an **Animation** (how your graphic element will move or change) or **Visual Effect** (which change the appearance of the element). The animated effect will show in the black window and be output to the fixtures You can add multiple animations which will combine to give the overall effect.
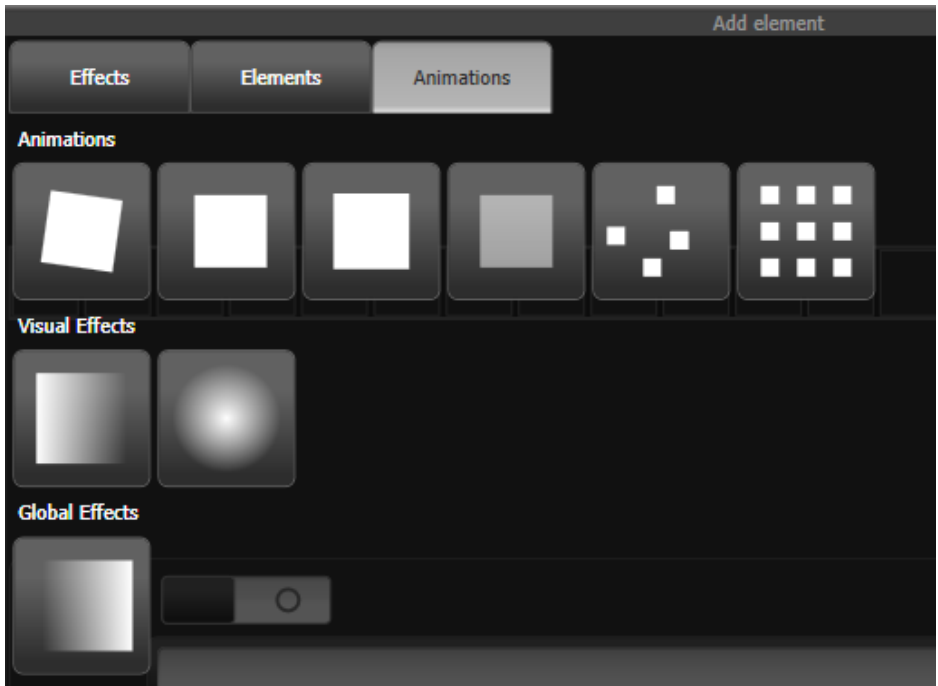
Available animations are:

- Rotate
- Slide
- Zoom
- Opacity/Fade
- Random
- Grid Fit *(elements will accurately align with the pixel grid)*
- Linear gradient
- Radial gradient
- Motion blur *(adds a trail to objects)*

The animation will move or transform the element. It can also "spawn" or create new copies of the element.

You can edit what the animation does by selecting the name on the left hand side. Sliders are provided to configure the animation, the sliders may vary depending on the particular effect but may include:

- Speed *(speed of the movement)*
- Speed Random *(adds a random factor to the speed of each element)*

- Spawn Rate *(sets the rate at which new elements are created)*
- Spawn Random *(adds a random factor to the spawn rate)*
- Spawn For *(sets how many elements will be spawned, after this no more will appear)*
- Run For / And Then *(for each element, sets how many cycles it runs for, and what happens to it after that - freeze or kill)*
- Direction / Direction Random *(for movement effects only)*
- Start Angle / End Angle *(for rotation effects only)*

Some points about animations:

- For **Grid Fit** you need to specify the number of rows and columns in the grid.

- For the **gradient animations** you set the start and end opacity and the offset between them; you also set the Spread which can be Pad (single gradient), Reflect (repeats the gradient in and out) or Repeat (snaps back to start then repeats the gradient fade)

- If you specify **Spawn For** or **Run For**, the simulation will stop after the specified number of cycles. To restart the simulation, click the **reset** button on the top right of the Effect Editor window.
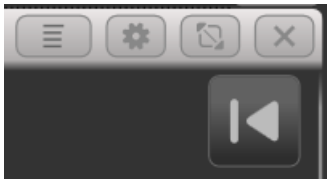
- For an effect with a **start point** and **end point**, the number of cycles is the number of times it goes between the start and end points. For an effect with no end point the number of cycles is based on the master clock and animation speed.

Pixel Mapper Preview Window

If you don't have fixtures connected, you can see how the effect will look on the fixtures using the Pixel Mapper preview window - open it by double pressing <Open/View> then press [Pixel Mapper Preview] from the window select buttons. A real life view of each effect currently running is shown in a button at the bottom of the screen, you can select each of these by pressing the button.
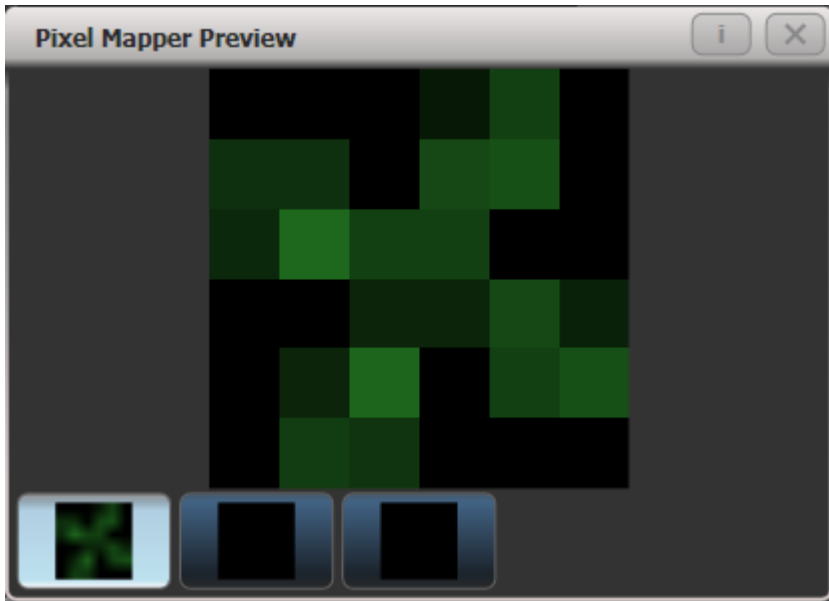
General Use

If you wish you can overlay further layers on the effect. Once you have an effect you like, you can save it to a playback.

> When adjusting the parameter sliders, as well as using click/drag on the screen you can also use the wheels or type in a numerical value. To assign a slider to the wheels or for numerical input, click the value box to the right of the control. Double click the value to reset it to its default, or use the +/- softkey to change the sign of the value.

- You can **reorder** the Pixel Mapper layers by selecting the layer to move and clicking on the up/down arrow buttons.

- You can **copy** or move layers, elements and animations by pressing Copy or Move, then select an element, then select a destination to copy or move it to.

Effect Master Parameters

Each effect you create also has master parameters which affect how it will combine with other effects. Click on the effect name top left to set these parameters:

- The **Block Effect** switch allows you to create a pixel map effect which will block out any pixel maps running on the selected fixtures (according to the priority setting (Abschnitt 10.6.2.3)). This lets you create a cue which will temporarily stop a pixel map effect (similar to Block Shapes).

- **Colour** sets the background colour of the effect (Will have no effect if **Back Opacity** is 0)

- **Back Opacity** sets whether other effects will show through in the background of this effect. By default this is 0, so other effects will show through.

- **Opacity** sets how much other effects show through the foreground of this effect.

- **X/Y/Zoom/Rotation** let you modify the position and size of the effect

- **Master Speed** sets the overall speed of the effect, this controls animation speeds and cycle counts

- **Pre-Spool** makes the effect start mid-flow as if it has already been running for a time. This lets you start slow-building effects in their full glory.

- **Run For** / **And Then** sets how many cycles the effect will run for, and what will happen at the end (**Freeze**, **Kill** or **Stop Spawning**). **Run For** defaults to **"Forever"**.

9.4.2 Pixel Mapper Layer Masters

You can assign each of the four layers to a master. The master allows you to adjust the layer controls in real time. When the master is assigned to a fader handle using <Record>, [Create Master], [Pixel Mapper], selecting [Layer 1] through [Layer 4] and finally pressing a handle select key, the fader will control opacity of the layer.

This means you can create cues and palettes which can manipulate the layer settings of effects which are running in other cues.

To enable the layer master, turn on the **Use Master** switch in the effect editor window.

> Layer masters may require an updated personality file

9.4.3 Stopping pixel map effects with Mask FX

Using the Mask FX function you can create a playback which will stop the pixel map effect on all fixtures or on a group of fixtures.

To create a Mask Effect:

1. Press [Mask FX] on the Shapes and Effects menu.
2. If no fixtures are selected the mask will apply to all fixtures. If some fixtures are selected the mask will only apply to those fixtures.
3. Press [Create Mask Pixel Map]. (The [Create Mask FX] button will mask both shapes and pixel map effects.)
4. You should see the mask taking effect on the output - if you store it in a playback, the playback will stop all pixel map effects while it is active (on the fixtures it was programmed for).

- The [Clear mask from programmer] button will remove any mask shapes or mask effects from the programmer for all fixtures.

- This function replaces the **Block Effect** function of previous versions. Shows containing Block Effect from previous versions will load and work as expected, but they will be renamed "Mask".

9.5 Editing Shapes and Effects

9.5.1 Editing a Live Running Shape

You can change the speed, size and spread of a live running shape by pressing <Connect/Cue> then <Shape> (which will flash if any shapes are active). The softkeys will show a list of the currently running shapes, and the cue they are coming from or the programmer.

> If the console does not have a <Shape> button you can access this function using [Shapes and Effects], [Shape Generator], [Edit]
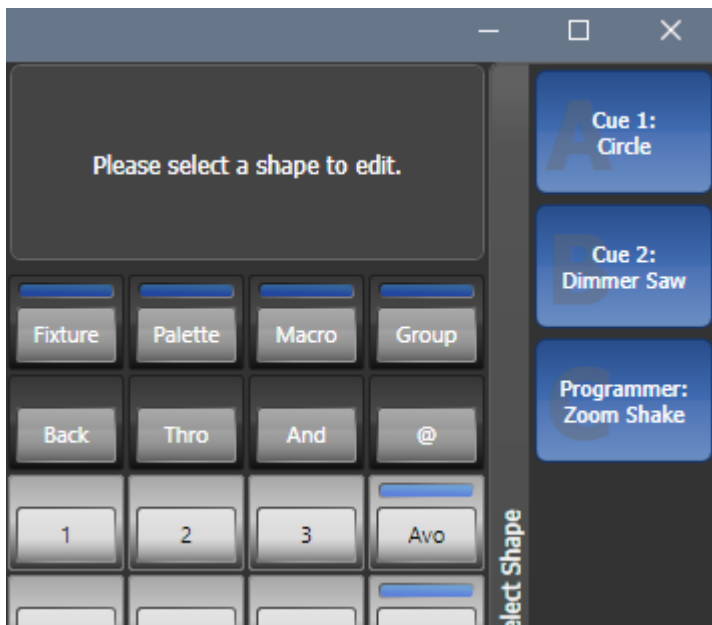
By default all shapes are selected. Choose the shapes to control and press <Enter> or <Shape> to connect the shapes to the wheels to change the speed, size and spread. If there are more than 3 parameters to control, [Softkey G] will change the wheels to different options.

- If the shapes are in a cue, changes you make here will be automatically stored in the cue (like speed and crossfade are when you are running a chase (Abschnitt 11.3.3)).

- To control other attributes using the wheels while in this mode, press an attribute button. To get back to shape mode press <Shape> or select the FX attribute in the wheels display.

9.5.2 Editing Shapes and Effects in Cues

Shapes and pixel mapper effects stored in cues can be edited from the Cue View window.

Playback View - Cue 'Fast Dim Shape'

	Delay In	Fade In	Fade Out	Fixture Overlap	MiD Delay	MiD Fade	Curve	View Cue	View Shape	View Pixel Effect
0	0	0	Disabled	100%	0	0	Linear	View	Dimmer Pulse 1:1	

To view and/or edit the parameters of the shape or effect, click on the **View Shape** or **View Pixel Effect** button. If more than one shape or effect is stored, the button will show […]. A **Shape View window** or **Pixel Mapper Effect View window** will open, listing the shapes or effects in the cue. You can then edit parameters of the shape or effect by clicking on the parameter and editing on the softkeys.

In the Shape or Effect View window you can click on **View Fixtures** to open a window showing a list of the fixtures on which the shape or effect is programmed.

9.5.3 Editing a Shape in a Cue Using Include

You can only edit shapes which are in the programmer; if you fire a cue with a shape in it, the shape will not show up in the list of editable shapes. To get the shape into the programmer you need to use the Include function (see Using Parts of Existing Cues - the Include Function (Abschnitt 10.4.4)).

Once the cue is loaded into the programmer using <Include>, if more than one shape is running in the programmer, you can select which one is connected to the control wheels using Shape option [Edit].

1. If you are not in the Shape menu, press [Shapes and Effects] then [Shape Generator] at the top menu.
2. Press [Edit].
3. Press [Select shape]
4. By the softkeys is a list of the currently running shapes.
5. Press a softkey to make the shape active. The active shape is highlighted.
6. Press <Enter> to get back to the Shape Generator menu.

If you applied the same shape several times to different fixtures, you can change each copy of the shape independently.

9.5.4 Resynchronise Shapes

The [Restart Shapes] option in the Shape Edit menu allows you to restart all running shapes, this is useful if you have multiple shapes in a cue and you need to see how they will start up when the cue is fired.

9.5.5 Changing Fixture Order in a Shape

The way a shape spreads across a number of fixtures is set by the order in which you selected them when you create the shape. You can change this order using the [Fixture Order] function in the [Edit] menu. The current fixture order is shown in in the fixture touch keys . See Fixture Order and Fixture Layout in Groups (Abschnitt 7.4.2) for details on how to change the fixture order.

9.5.6 Shapes Linked to Groups

If a shape is created from a group of fixtures, the fixture order or 2D layout (Abschnitt 7.4.2) in the group will be used when generating the shape. The shape will contain a link to the group and any changes later made to the group such as changing the fixture order or layout will affect the shape.

If you need to add fixtures to the group without breaking the group link, select the fixtures then press <Record>, **Group handle** button, [Merge]. To change the fixtures to a new selection, select them then press <Record>, **Group handle** button, [Replace]. You can also use <Group>, [Edit Groups].

If you want to change the fixture order for a particular shape without changing the order in the group, which might affect other shapes, then you can break the link to the group using the [Break Group References] button in the [Edit], [Edit Fixtures/Groups], [Fixture Order] menu.

See Fixture Order and Fixture Layout in Groups (Abschnitt 7.4.2) for how to edit the fixture order or layout.

9.5.7 Removing or Adding Fixtures

You can add or remove individual fixtures from a shape using the [Add/Remove Fixtures] option in the [Edit] menu, or use the context menu button in the Shapes Fixture view window. All fixtures currently included in the shape will be selected. You can select or deselect fixtures to add or remove them from the shape.

If a fixture group was used to create the shape, removing fixtures from the shape using this option will break the link to the group. A [Remove Fixtures] confirmation softkey will be shown to warn you of this.

9.5.8 Reversing a Shape

You can reverse the direction of a shape by pressing [Reverse Selected Fixtures] from the shape menu. The shape will be reversed only on fixtures which are selected, allowing you to run the shape forward on some fixtures and backwards on others.

9.5.9 Deleting Shapes

You can delete a running shape by pressing [Delete] from the shape menu, then pressing the [softkey] for the shape you want to delete.

9.6 Advanced Options

9.6.1 Fading Shape Size and Speed

When a shape is stored in a cue (Abschnitt 9.2.6), you can set how the shape fades in using the Edit Times and the playback Options (Abschnitt 10.6) settings.

To set the shape size and/or speed from the fader position, press <Options> (or [Options] softkey from the main menu) then press the select button of the playback.

Using the [Fader], [Shape Size] and [Shape Speed] buttons you can set the shape size and speed to be fixed (how you programmed them) or to grow larger/speed up as the fader is pushed up. You can also allocate a Speed or Size Master to control the speed or size, see Speed and Size Masters (Abschnitt 10.3.5).

To set a fixed fade in time for the shape size, press [Edit Times] from the top menu, then the **playback select** button, then set the Delay/Fade times you want.

The Fade Mode (Abschnitt 10.6.4.1) allows you to set mode 0 (fade in), mode 1 (fade in and out) or mode 3 (crossfade). Mode 2 links fade times to the fader position, however we recommend you use the playback Options listed above to do this for shapes, and do not use Mode 2.

If a new cue is fired which controls the same attributes (for example, a second shape controlling the same fixtures as a currently running shape), the new shape will crossfade from the running shape.

9.7 Pixel Mapper Examples

9.7.1 Randomising Effects

This example shows you how to use the pixel mapper to create an effect where random dimmer cells turn on. This effect will overlay any existing intensities.

1. The fixtures you want to use need to be recorded into a group, *do this first if they are not already in a group*
2. Adjust the layout of the fixtures in the group using [Shapes And Effects], [Pixel Mapper], [Edit Group Layout], *(select group)*
3. Start creating an effect by selecting the group then [Shapes And Effects], [Pixel Mapper], [Create Effect]
4. In the Pixel Mapper Effect Editor window toggle the context menu option [Fixture Overlay] until it reads [Fixture Overlay 50/50] *This will allow you to see the relationship of your fixtures to the effect as you create it*
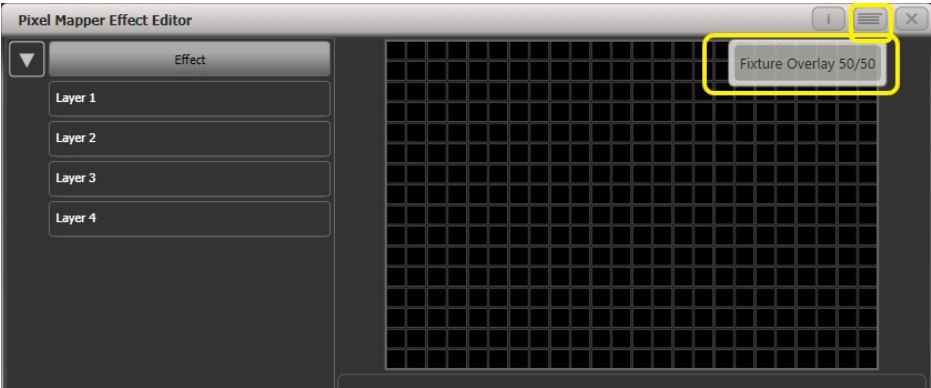
5. Select [Effect] and drag **Background Opacity** slider to **0%** *This will allow the whole effect to overlay any related intensities*
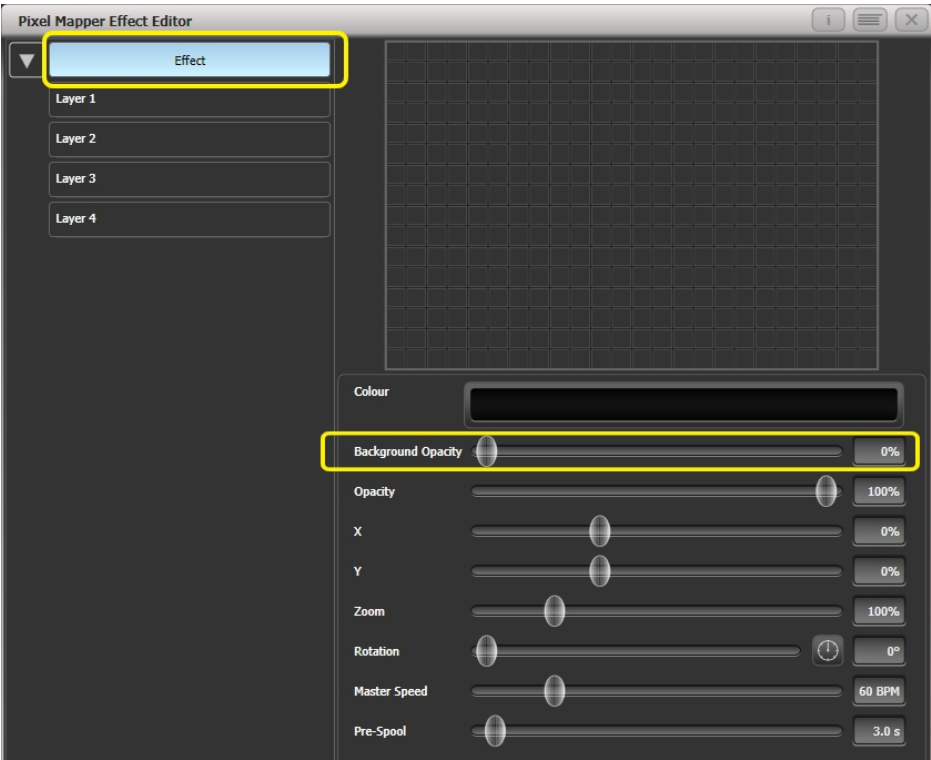
6. Select [Layer 1], click {+} at the bottom of the screen and then choose **Circle** from the elements that appear
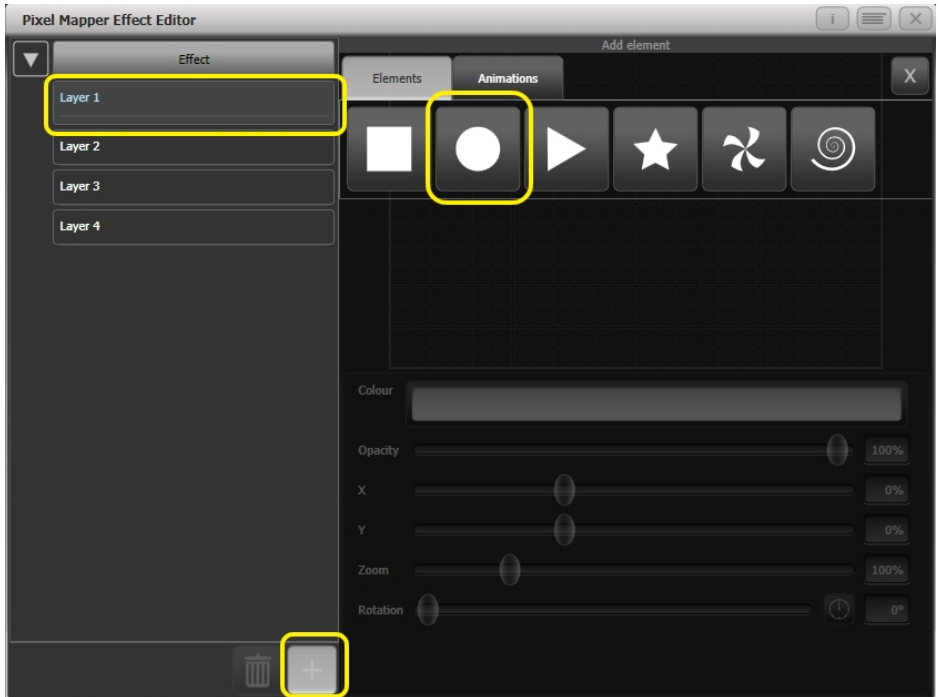
7. Drag the **Zoom** slider until the circle covers approximately one cell. You can also use the **Width** and **Height** sliders to turn the circle into an oval if that helps.
    Then drag the **X** and **Y** sliders to position the circle roughly in the centre of your fixtures if it is not already.
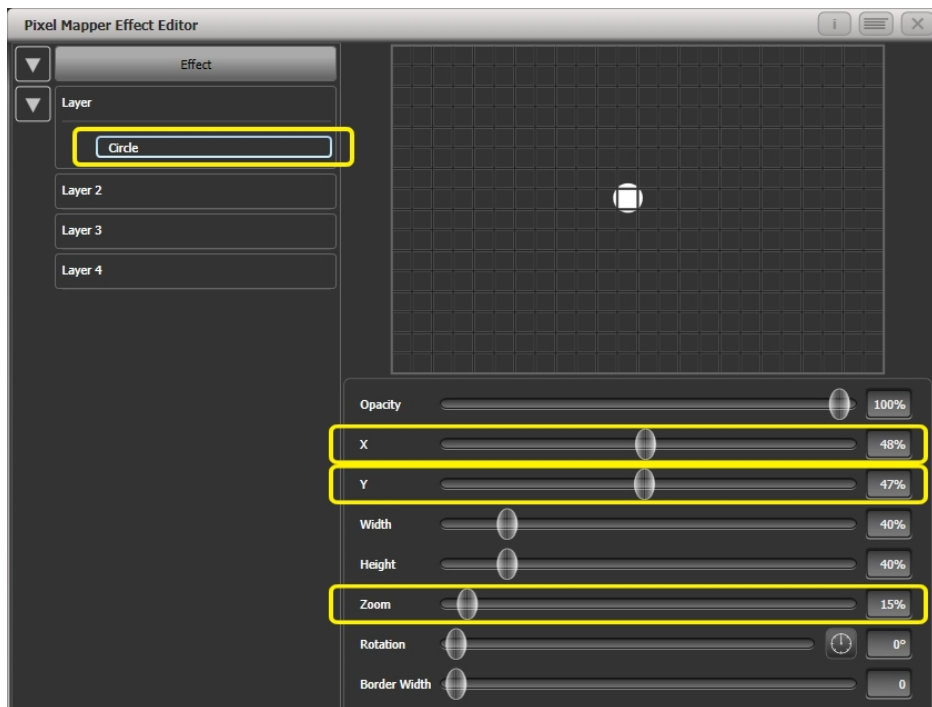
8. Select {+} again and choose **Displacement** from the animations that appear (this is represented as a few static blocks)
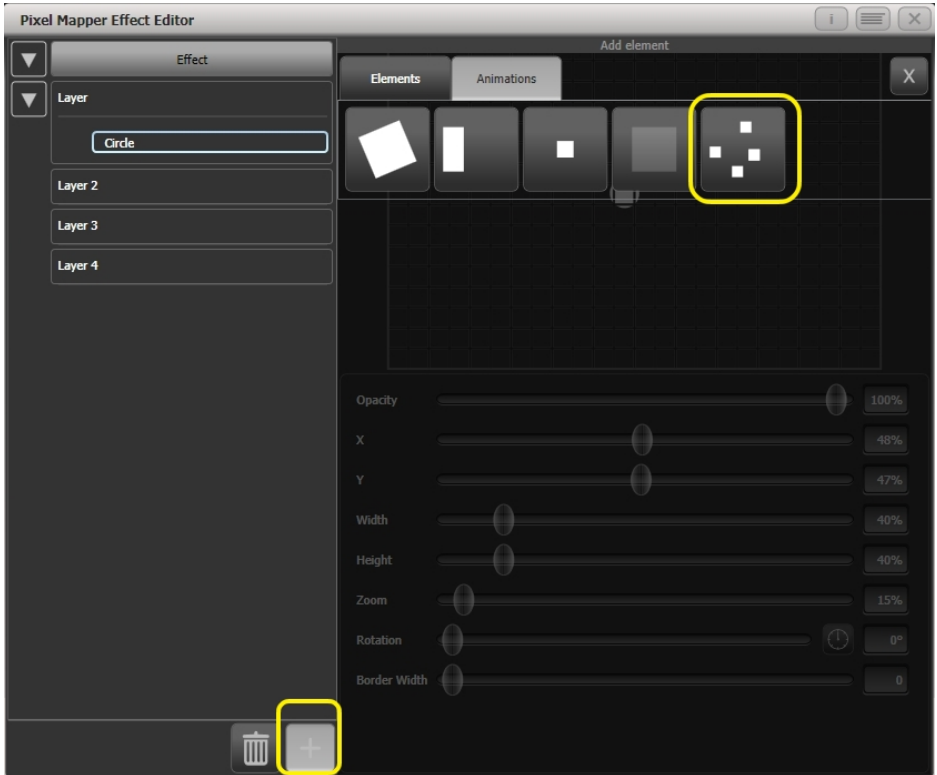
Note that nothing changes yet 9. Select {+} and this time choose **Opacity** animation (represented as a block fading in). 10. Modify the effect:

The displacement acts on the opacity animation causing it to appear at random locations each time it is drawn.

Drag the **In Time** and **Out Time** sliders to 0%. (This will cause the effect to snap on/off instead of fade.)

Increase the **Speed** and **Spawn Rate** settings to make the effect run quicker and with more circles respectively. (High spawn rates are particularly useful for small randomised elements like this.)
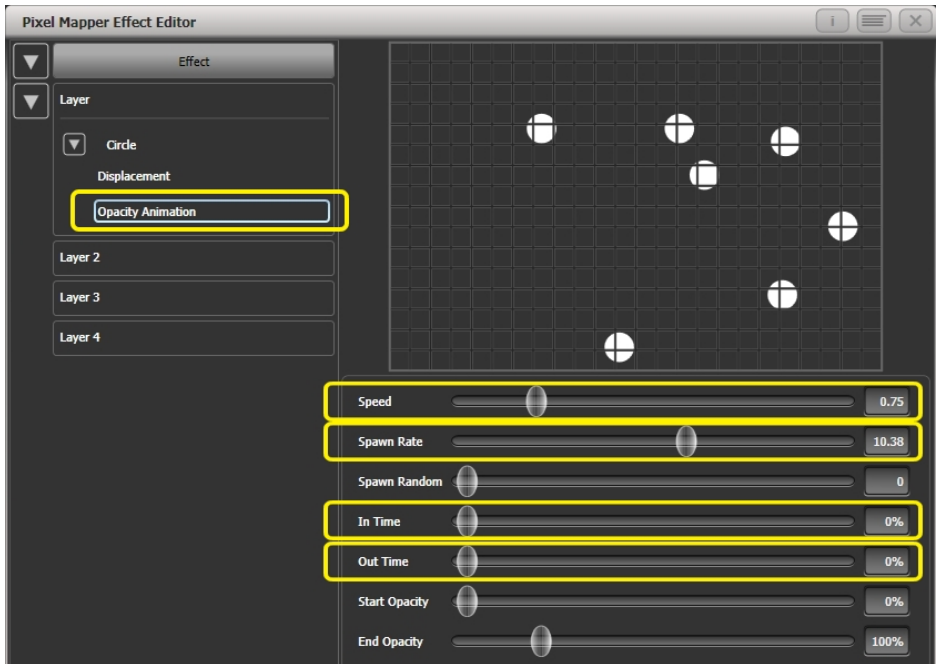
> 11. <Record> to a playback

9.7.2 Overlaying Effects

This example shows you how to create a diagonal white wipe with a rotating red fan on top.

> 1. Select a group containing a fixture layout as described in previous example (Abschnitt 9.7.1)
> 2. Start creating an effect by selecting the group then [Shapes And Effects], [Pixel Mapper], [Create Effect]
> 3. Select [Layer 1], click {+} at the bottom of the screen and then choose Block from the elements that appear.

Drag the **Rotation** slider to the right to angle the element at approximately 25 degrees.

Drag the **Width** slider to the left to make a thinner block.

Drag the **Height** slider to the right until the block fills the height of the entire window.

Drag the **X** slider to the right until the block is just off the screen.
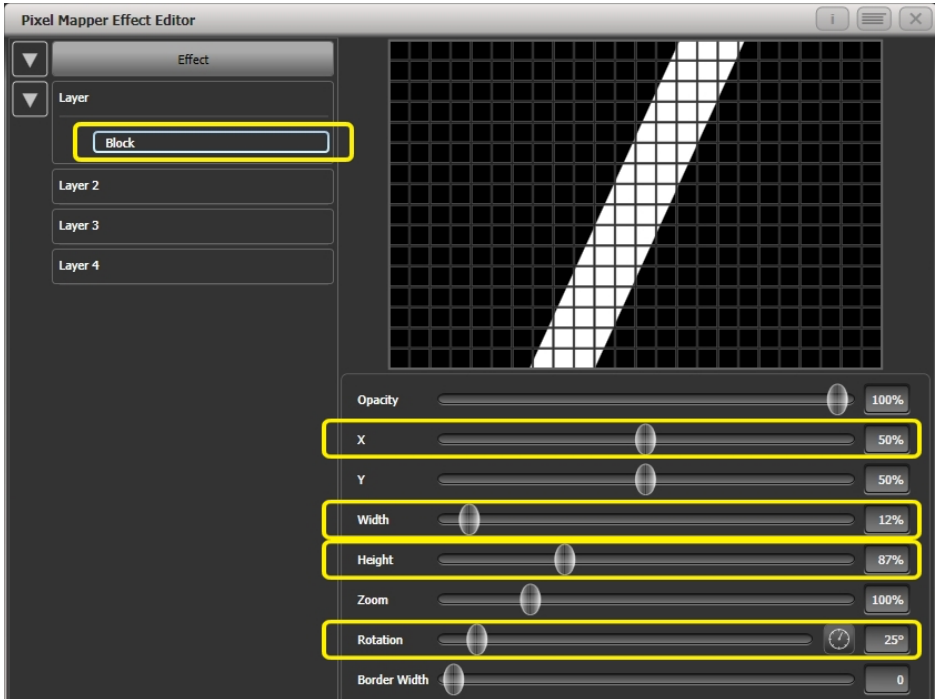
4. Click {+} again and choose **Linear Movement Animation** (represented as a block moving left to right).

On the right side of the **Direction** slider there is a compass button. Click on this four times until the direction reads 270 degrees. (By default the animation is set to 90 degrees or left to right. Because we placed the block on the far right of the screen we want it to move the other way. The compass gives shortcuts to the more common directions in 45 degree increments.)

Reduce **Spawn Rate** until only one stripe is on screen the same time. For this type of effect the value will usually need to be quite low - approximately 0.2.

You might want to reduce **Speed** slightly at this point. (Note that a higher speed was initially useful for getting the correct spawn rate above.)
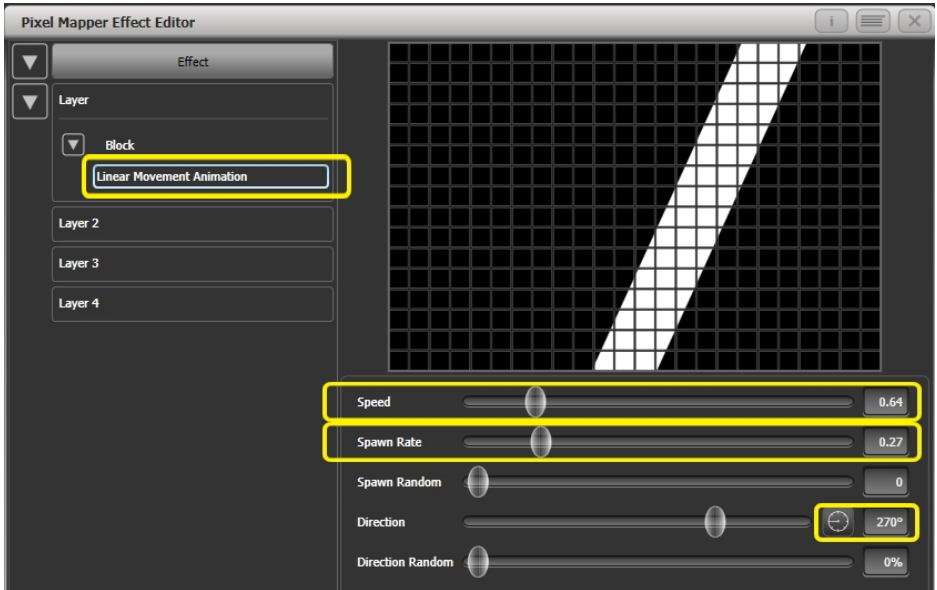
5. Click on [Layer 2], select {+} and select the Swirl element (represented by a **fan** shape with four arms).

Increase **Zoom** until it is as large as will fit in the screen.

Set **Bend** to 0% for nice straight fan blade edges.

Set **Points** to 3 (minimum) for a three bladed fan.

Set **Thickness** to 50% for evenly sized segments.

Increase **Border Width** to a low value so that we just have an outline.
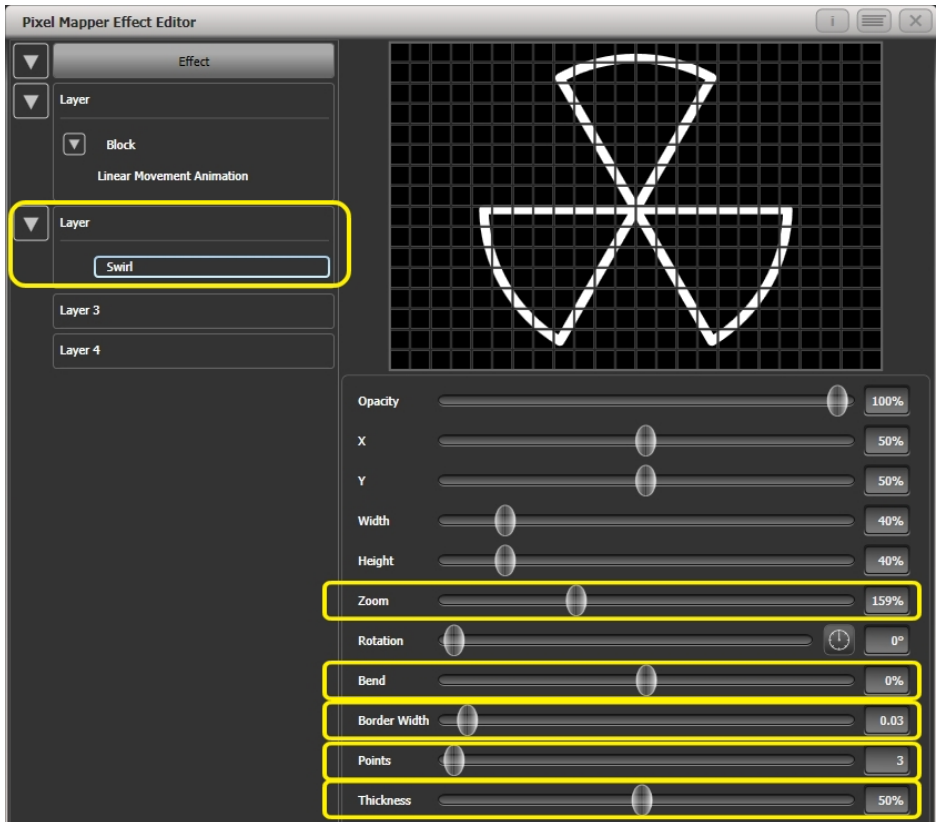
> 6. Click on {+} and add a spin animation.

Reduce the speed until it just causes a light breeze.

> 7. Click in the top of this layer to get the layer controls.

Click on the colour bar to open the colour picker.

Click and drag to the top left of the picker window to get a strong red.
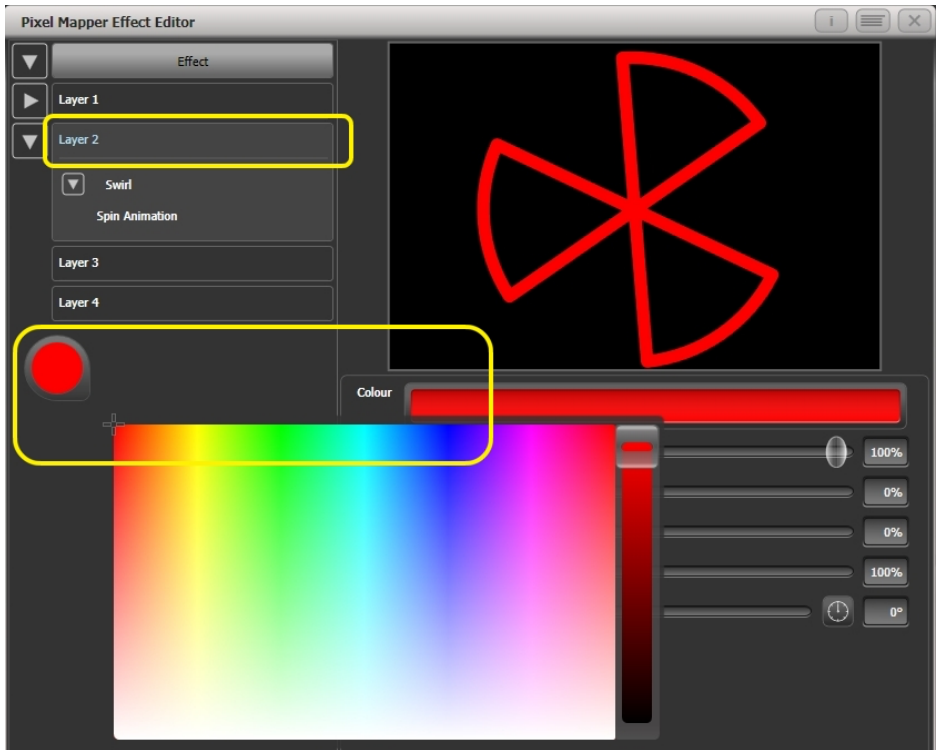
8. Click on [Effect] at the top left to access the global controls.

Drag **Pre Spool** to the left until it reads 0s. *(This is to ensure the wipe begins off screen where we placed it when it is fired.)*

9. <Record> to a playback

Note how the red fan sits on top of the white bar when they interact. This is because the white is on a lower layer. A higher layer number has priority over a lower number.
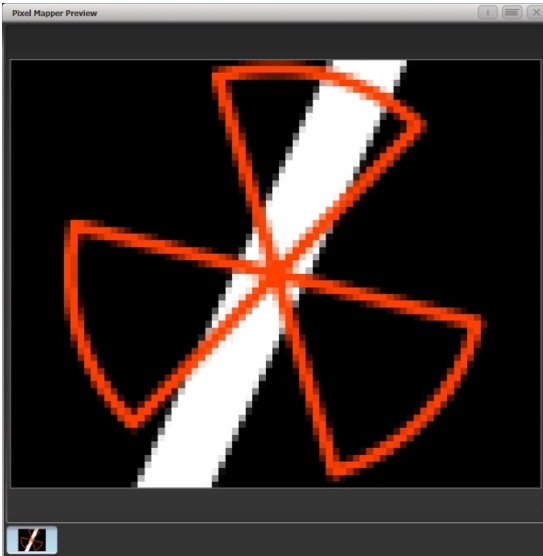
9.7.3 Creative Use of Group Fixture Layouts

Because each fixture group can contain a different group layout it is possible to create more than one arrangement of the same fixtures for pixel mapping.

By arranging fixtures in certain layouts you can easily achieve complex effects.

Example 1: Odd/Even

1. Select your fixtures
2. Open the Selection Pattern menu by pressing the <All> key
3. Choose [Odd] from the softkey options. *This will select all the odd numbered fixtures according to fixture order.*
4. Record a group.
5. Press <+1> (or <Next>) key. *This will select all the even numbered fixtures.*
6. Merge this into the first group
7. Open the Layout Editor [Shapes And Effects], [Pixel Mapper], [Edit Group Layout], (**select group**).

By doing the above you should be able to see how we have quickly created a layout where the all the odd fixtures are arranged together on the left followed by all the even fixtures on the right.

This arrangement could be used as it is. A block element animated to run horizontally left to right will run across all your odd fixtures followed by all the even fixtures.

An alternative goal might be a vertical **cascading** effect:

1. Click on the **vertical resize tool** and drag down until the grid is at least twice the original height.
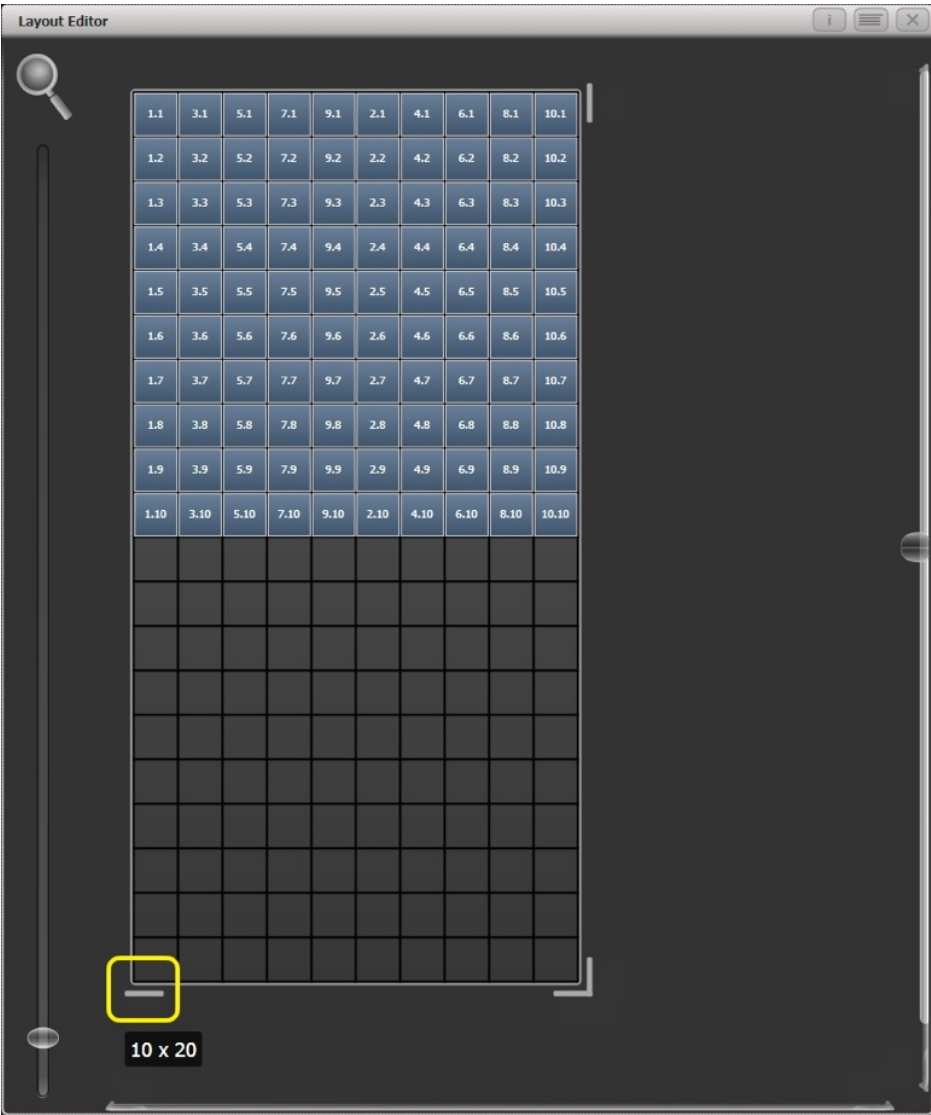
2. Drag a marquee select across the **even fixtures**
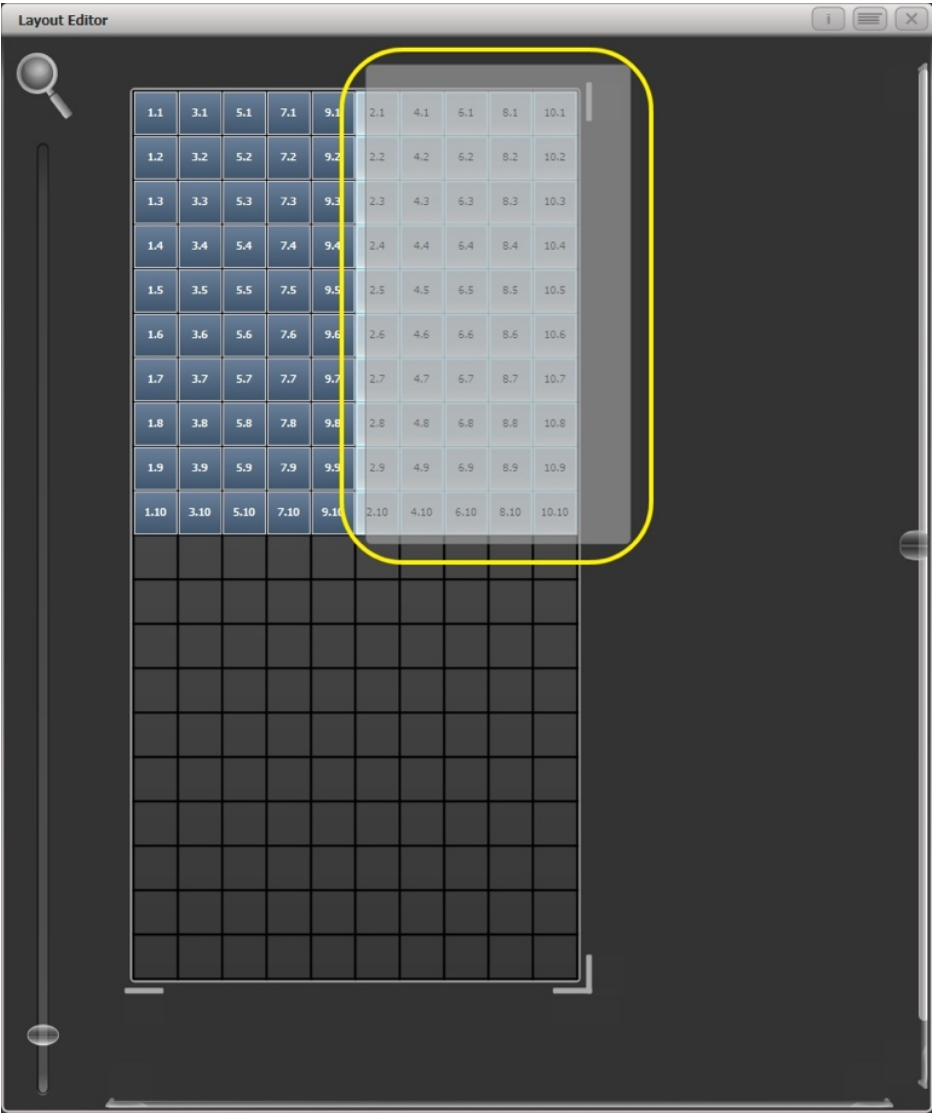
3. Drag the selected fixtures so they sit directly under the odd fixtures.
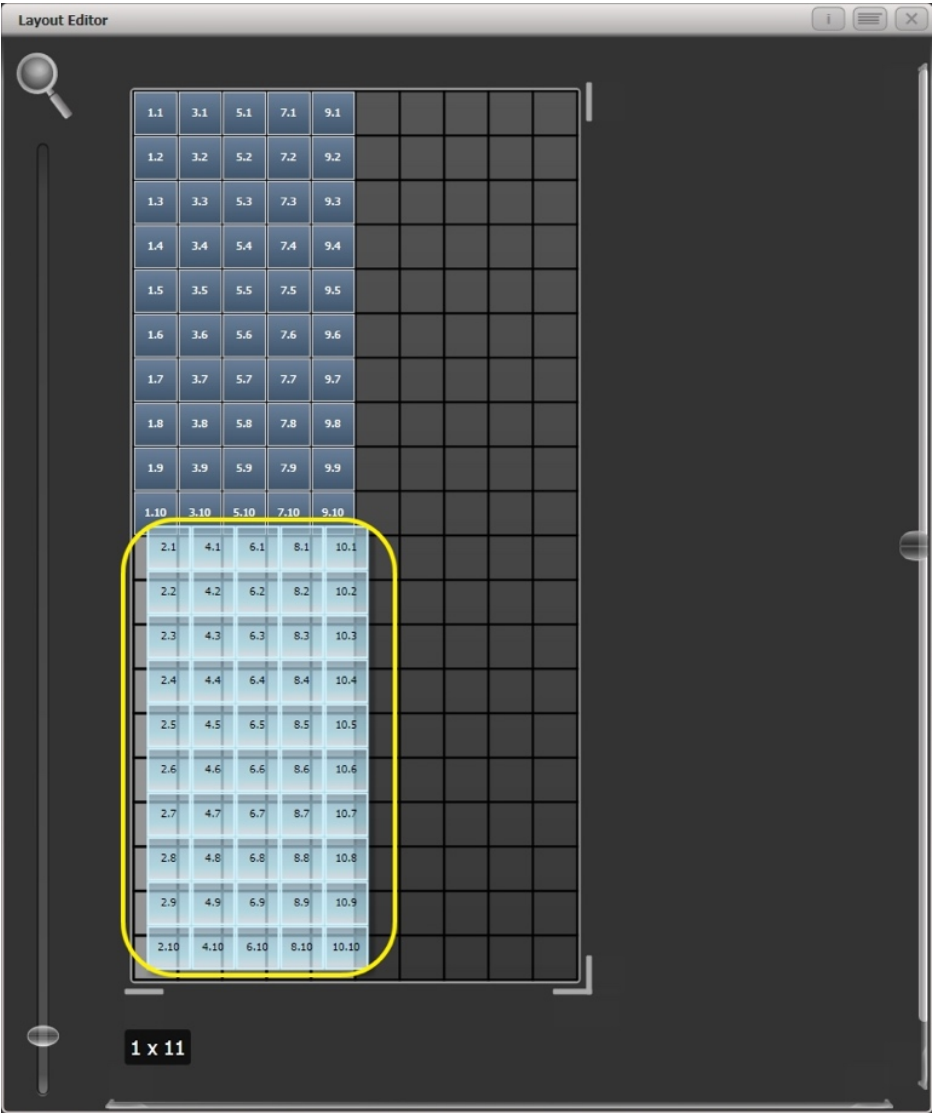
4. Select **Crop Grid** from the Layout Editor context menu. (This will get rid of the unused pixels.)

Now a block element animated to run vertically from top to bottom will run down the odd fixtures followed by the even fixtures.

Example 2 - Pseudo Random

1. Select your fixtures and create a group.
2. Open the Layout Editor.
3. Click on the vertical resize tool and drag down until the grid is at least twice the original height. Note that to help with creation and manipulation of larger grids you can use the zoom control on the left-side of the window. Clicking on the magnifying glass gives a quick shortcut to zoom in/out.
4. Select the group again. (This will quickly select everything in the layout.)
5. Press <+1> key. **This will select the first fixture**
6. Use the wheel to adjust **Position Y**
7. **Repeat steps 5 and 6** until all the fixtures are at different heights in relation to one another
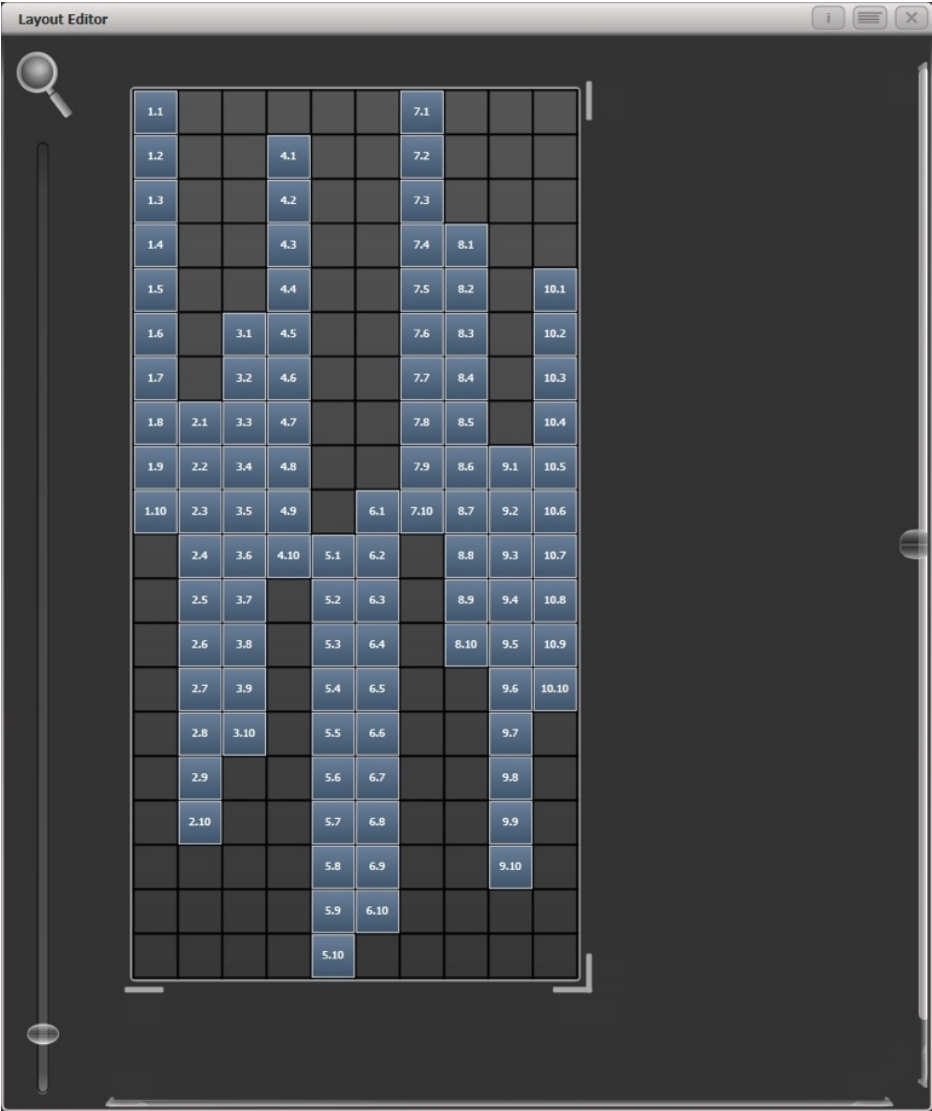
If you create an effect using this group it will appear to be random. Adjustments can be made to the layout at any time to fine-tune the end result.

Example 3 - Angles (or "when straight just isn't good enough…")

Sometimes we like to hang fixtures at artistic angles to look pretty. By default the software assumes you have hung them vertically but fear not - Titan has a solution:

1. Select your fixtures and create a group
2. Open the **Layout Editor**
3. Select the fixture(s) that you want to angle and use the appropriate wheel to control.

If wheels are not assigned to control the cell layout you can toggle this on/off using the context menu item **Wheel Control**. Also, on the Pearl Expert you may need to select **Adjust Angle** and to return wheels to controlling position select **Adjust X,Y**.
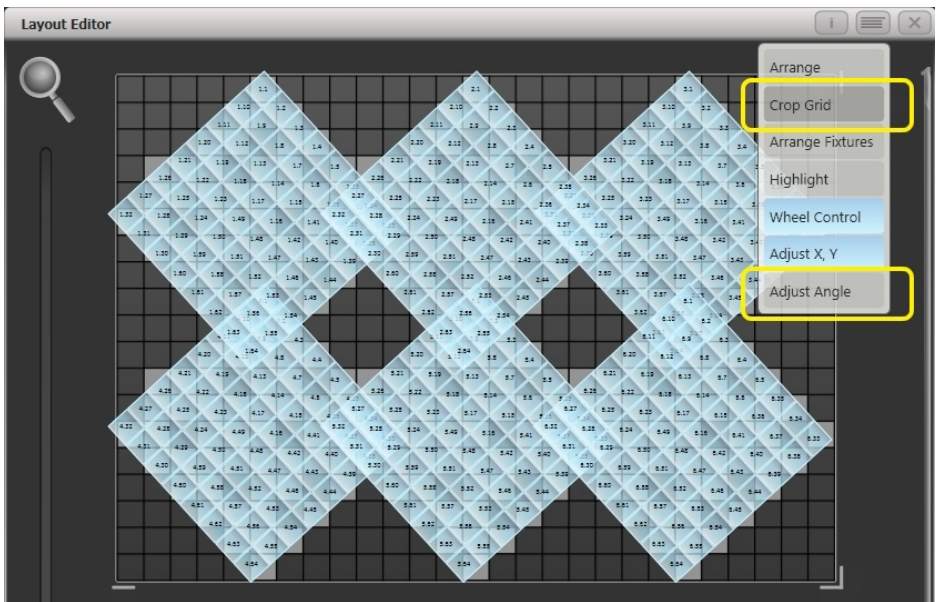
Note that underneath the visual representation of the fixtures the actual cells used are shown in light grey.

If any of your fixtures have been naughty and ended up beyond the bounds of the grid after rotating you can use context menu item **Crop Grid** to make them behave.

When using the wheels to move fixtures, you can click on the "up" and "down" areas in the wheel display to nudge the values up and down: 1 pixel for position and 45 degrees for rotate. If you press the <@> button for the wheel, a window opens allowing you to type in the values numerically.

9.7.4 Other Layout Editor Tools

The Layout Editor's context menu has some useful tools for laying out fixtures quickly.

Arrange Fixtures: This is a very useful tool to quickly layout fixtures in a grid. For example you might have 20x colour blocks across four towers, each with five blocks.

1. Select the fixtures and create a group
2. Open the **Layout Editor**
3. Select **Arrange Fixtures** from the context menu
4. Select the [Height] softkey and type <5>. *Width will automatically be calculated*.
5. Toggle [Crop Grid to fixtures] so that it is highlighted. *This will make the grid adjust to fit*.
6. Toggle [Arrange in…] to **Columns** or **Rows Rows** will arrange fixtures left to right and **Columns** will arrange top to bottom.
7. The [Shape] option allows you to arrange in Rectangle, Oval or Triangle
8. Select [OK] to complete

Highlight: When enabled this will highlight selected fixtures live on stage. This can be useful to see which fixture you are positioning in the layout.

Position & Angle/Cell Scale: When set to 'Position & Angle' the wheels move and rotate the fixtures. When set to 'Cell Scale' the wheels change the size of the fixture by spreading out its cells. This is useful to get the correct layout if you have some large fixtures with widely spaced cells and others with cells close together.

Arrange/Select Only: When set to **Arrange** you can move fixtures by clicking and dragging on the screen. When set to **Select Only** fixtures are locked in position on the grid and cannot be dragged around. This provides an alternative way of selecting fixtures to edit while preventing accidental movement.

If you find you suddenly cannot move anything around this is probably the reason!

For either setting you can still use the wheels to move and rotate the fixtures.

Wheels Move Full Pixel/Sub Pixel: Allows you to position fixtures across pixel boundaries when using the wheels. The **Snap** option centres the fixture on the nearest cell.

Wheels Rotate Individual Fixtures/Selection: Sets whether individual fixtures rotate, or whether the whole selection rotates.

Media options: Shows a sub menu with useful options when you're using Synergy/Ai to play back media on the fixture. These options are described in Layout Editor with Ai Server.

9.7.5 Playback Order and Priorities

Suppose you wished to create a white pulsating oval on one playback and a blue spiral on a second playback. Normally these effects would layer differently depending on the order you fire the playbacks, but you can use playback priorities to make them always layer the same way

To create first effect:

1. Select a group containing a fixture layout as described in previous example and go to [Create Effect]

2. Select [Effect] to access the global effect controls and change **Background Opacity** to zero. *This will allow it to overlay the other playback*

3. Double-Click [Layer 1] (or press {+}) and choose **Circle** from the elements that appear. *Double-click is a shortcut to elements and animations.*
   Reduce height to make a rugby ball (or American football if you insist)
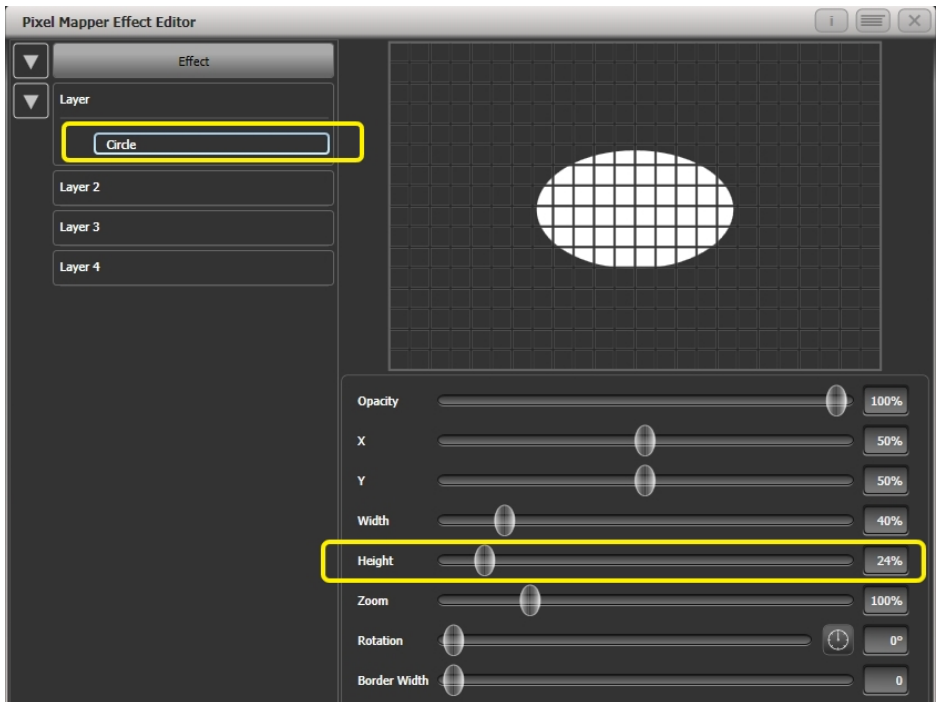
4. Double-click on [Circle] (or press {+}) and select the **Zoom** animation

Drag **In Time** to 0% and **Out Time** to 100%. (This will make the effect start large and finish small. Alternatively the same effect can be created by making **Start Zoom** larger than **End Zoom**.)

Increase **End Zoom** until the element begins by filling the whole window.

5. Double-click on [Zoom Animation] (or press {+}) and select the **Opacity animation**

Reduce **Spawn Rate** to zero. (This will ensure the opacity only works on the zoom animation.)

Drag **In Time** to 0% and **Out Time** to 100. (This will make the effect snap on and fade out as it reduces in size. As with zoom you can achieve much the same thing by inverting the opacity controls instead. Using opacity values greater than 100% will create a delay before fade.)
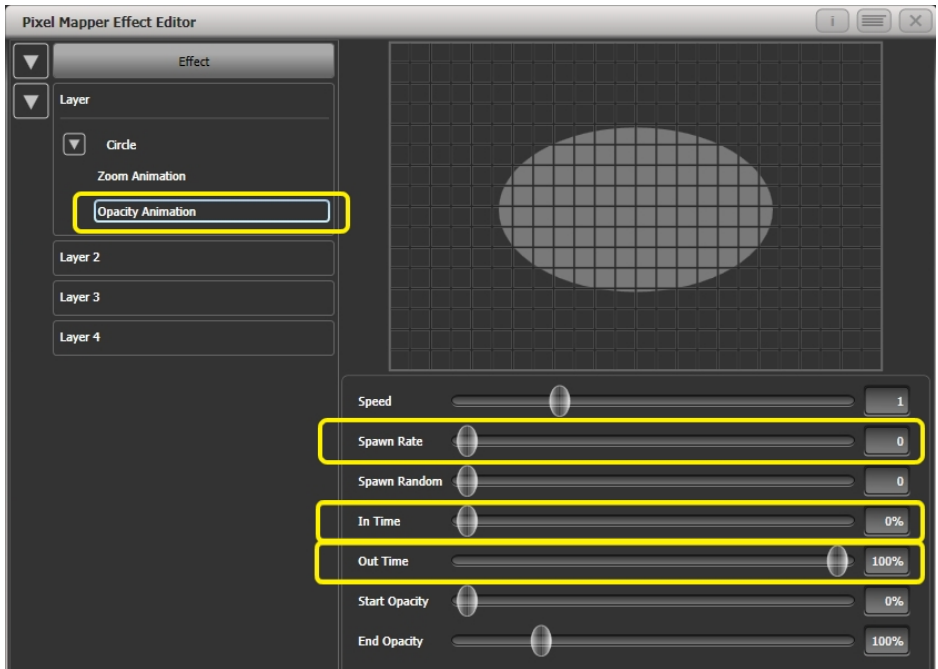
6. Click on [Effect] again and reduce **Master Speed** to your preference. (Adjusting the global speed control ensures the zoom and opacity animations are synchronised instead of having to manually match the individual values.)
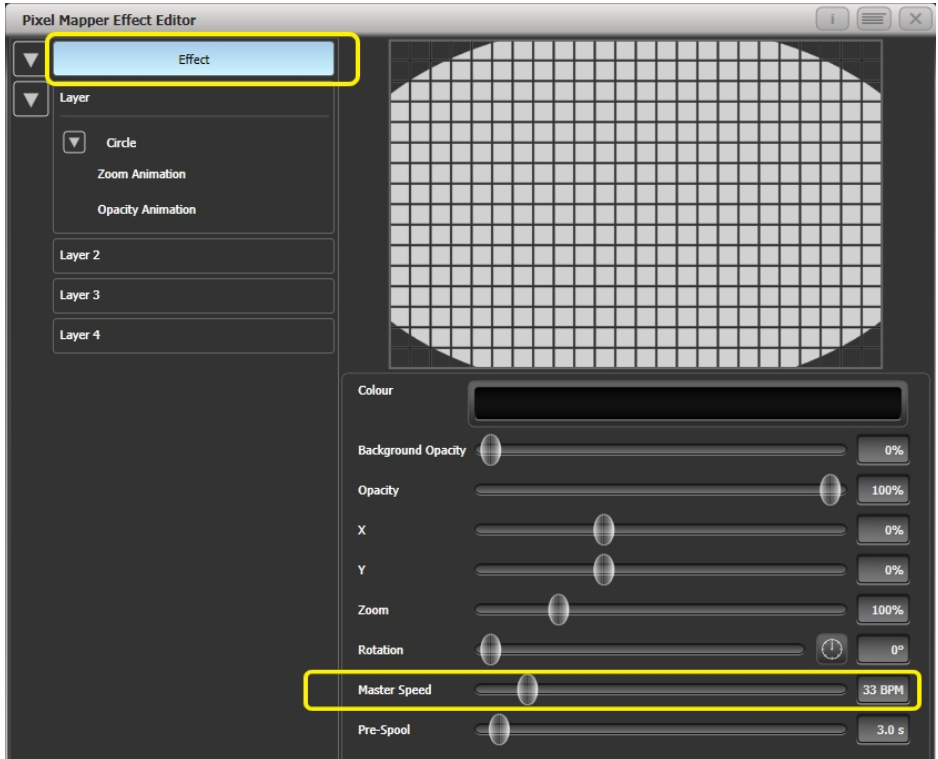
7. <Record> to a playback

Next we will create the second effect:

1. Select the same group as used for the first effect and [Create Effect]

2. Select [Effect] and change **Background Opacity** to zero.

3. Select [Layer 1] and this time add a **Spiral** element

Increase **Zoom** so that it's nice and big.

Drag **Thinning** until it is at **0%**. (This will make the lines of the spiral stay the same width. A negative value means the spiral gets thinner towards the outside; a positive value means it gets thinner towards the inside.)

Reduce **Turns** so we can make a more bold effect. Approx. 3 should work.

Increase **Thickness** to **50%** for chunky lines.

Increase **Exponent** to around **25%**. (This causes the spiral to **expand** at a faster rate.)
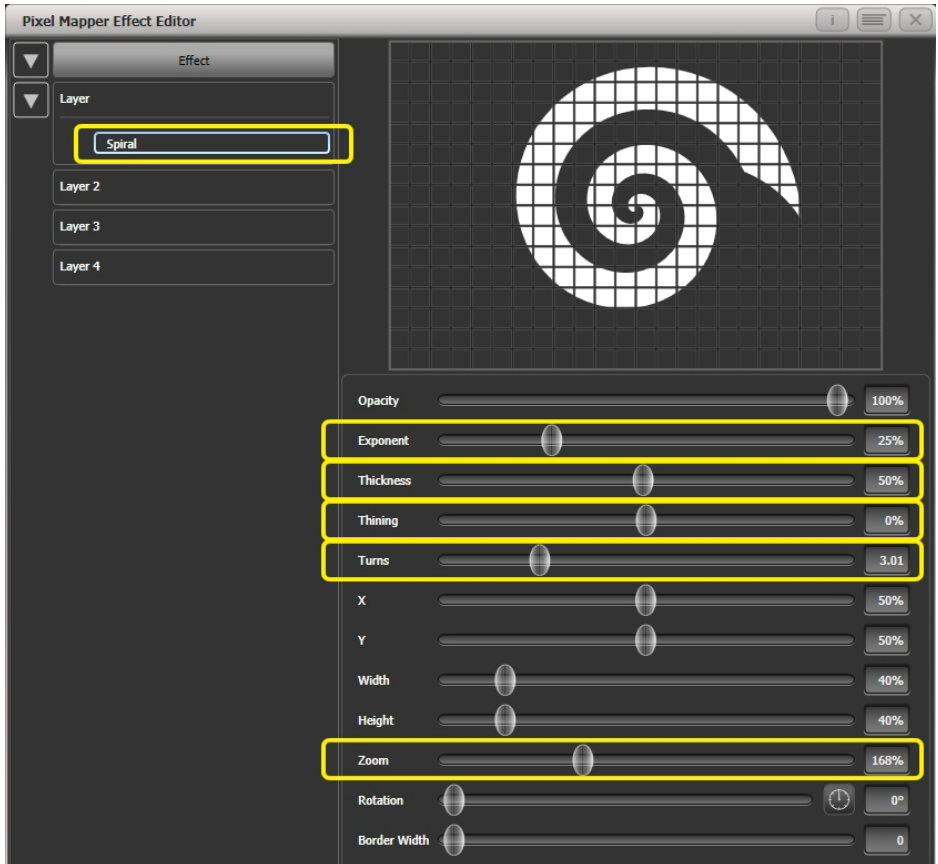
4. Add a **Spin** animation for genuine psychedelic effect.
   Adjust speed until you are unable to look away from the screen.

5. Select the Layer to show the layer controls and change the colour to blue using the colour picker.
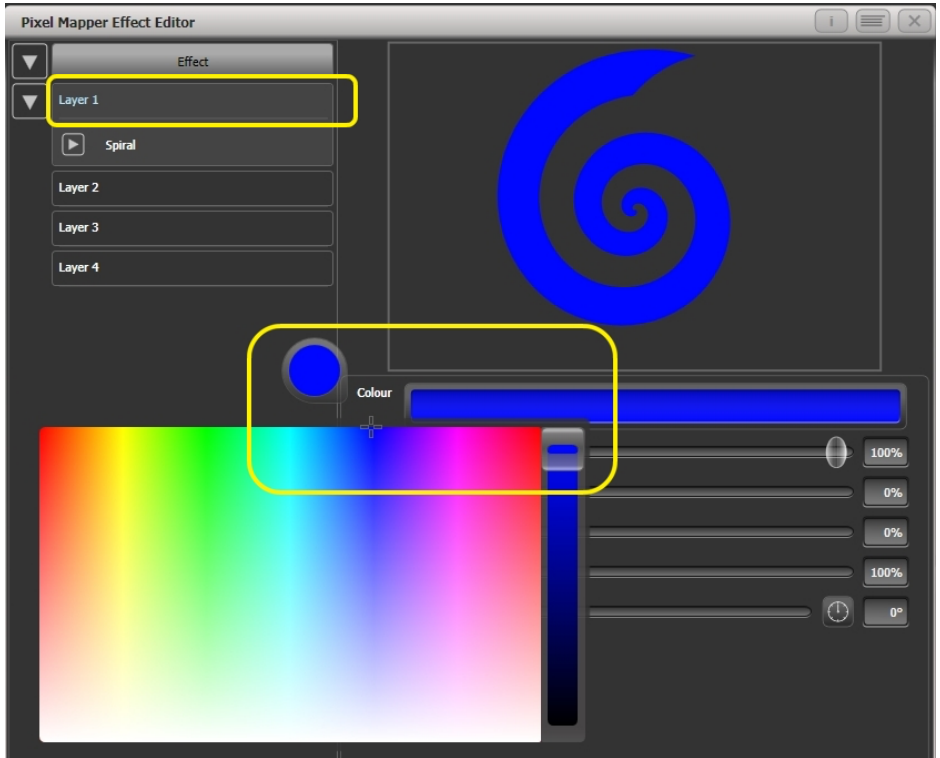
6. <Record> to a playback

Now let's look at how they interact on the playbacks:

- Fire the blue spiral effect

- Fire the white pulse

Notice how the white takes priority over the spiral. The blue spiral only appears as the white oval fades out and gets smaller.

- Kill both effects

- Fire the white pulse

- Fire the blue spiral

This time the blue spiral sits on top of the white pulse. That is because the playbacks are following a **latest takes precedence** rule (LTP).

To guarantee the blue spiral always sits on top you can set it to be a higher priority:

1. Kill both effects

2. Press <Options> (or [Options] from the top level menu) - see Playback Options (Abschnitt 10.6)

3. **Select** the blue spiral playback

4. Press [Previous] or [Next] until you can see [Priority Normal] on the softkeys. Press this to toggle it to [Priority High].

5. Now fire the blue spiral followed by the white pulse.

Even though you fired them in the same order as the first example the blue spiral now sits on top of the white pulse because it has a higher priority.

9.7.6 Displacement and Layer Properties

In this example we create random flashing bars, and use layer controls to make global adjustments to the whole effect.

1. Create a group and adjust the group layout as described in previous examples

2. Select this group and begin creating an effect

3. Select [Layer 1] and add a **Block** element.

4. Adjust the **width** and **height** sliders until we have a thin strip that covers at least one cell vertically and the whole grid horizontally.
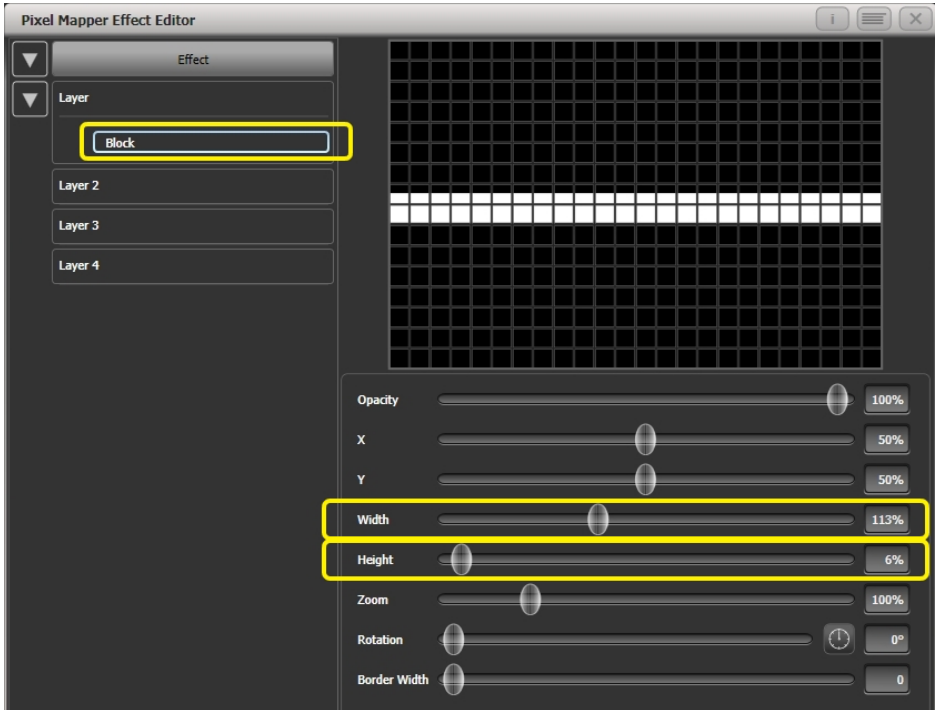
5. Reduce **Y** until the bar disappears off the top of the grid. (This is in preparation for adding a displacement animation.)

6. Add a **Displacement animation**. By default this will offset the original position by anything up to 30% distance. This is because the default value for **Distance** is set to a maximum of 30% and **Distance Random** is set to 100% meaning it can use any random value between zero and 30%. Similarly **Direction Random** is set to 100% meaning it can offset in any direction.

Temporarily set **Distance Random** to 0%. (This is in order to see exactly what the displacement is doing.)

Set **Direction Random** to 0 degrees. (In this example we do not require a random direction.) Now the bar will disappear because it is being displaced upwards in the default settings.

Set **Direction** to 180 degrees. Click on the compass button four times to get there quickly. Now the bar should reappear on the screen because it has been offset vertically down from the our off-screen position by the default 30%.

Increase **Distance** until the bar is approximately in the centre.
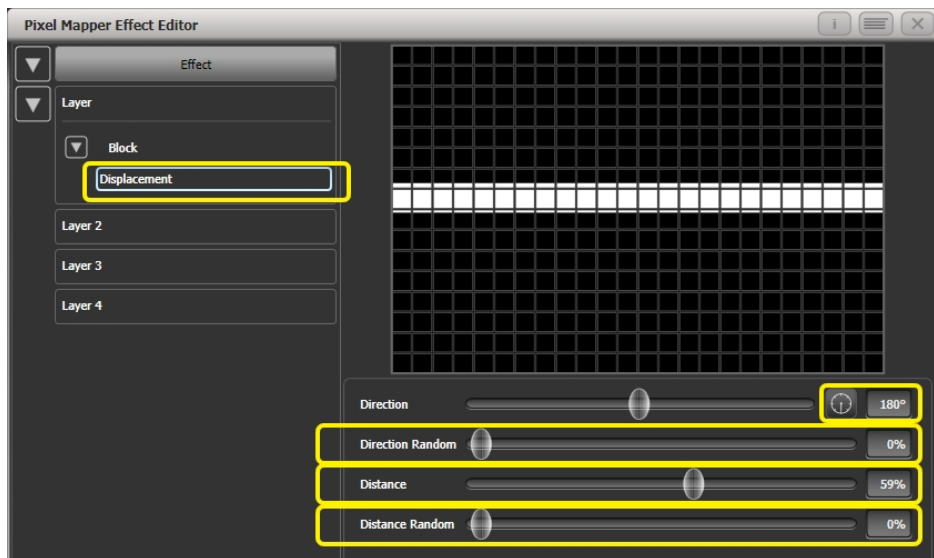
7. Add an **Opacity animation**

Reduce **In Time** and **Out Time** to create a snapping effect.
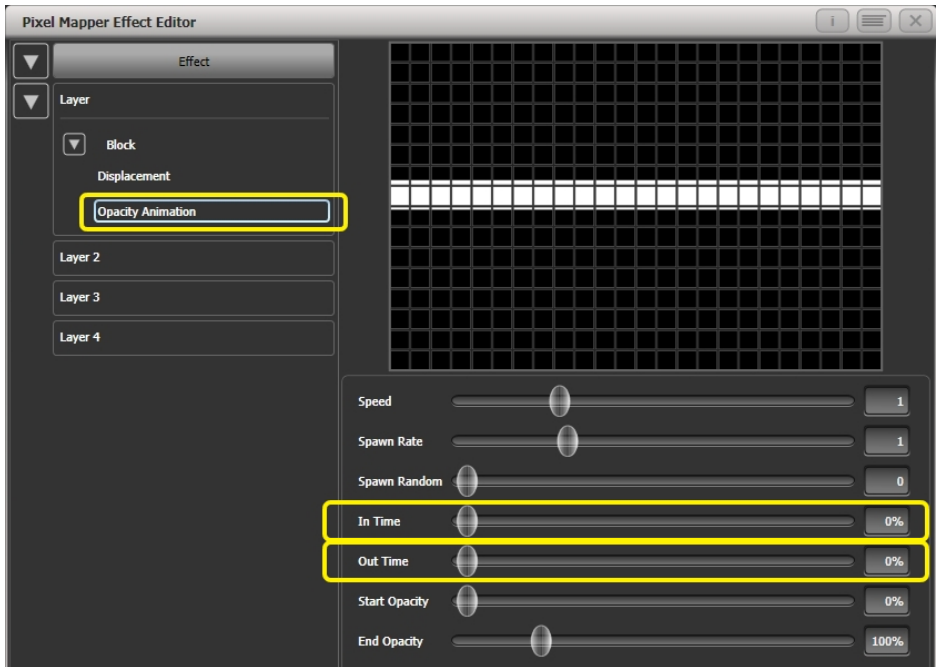
8. Click on **Displacement** in the Layer to get back to the controls for this animation again.

Now increase **Distance Random** to 100%. (This will make the bar draw at a random offset around the **Distance** setting, in this case making it anywhere within the grid.)
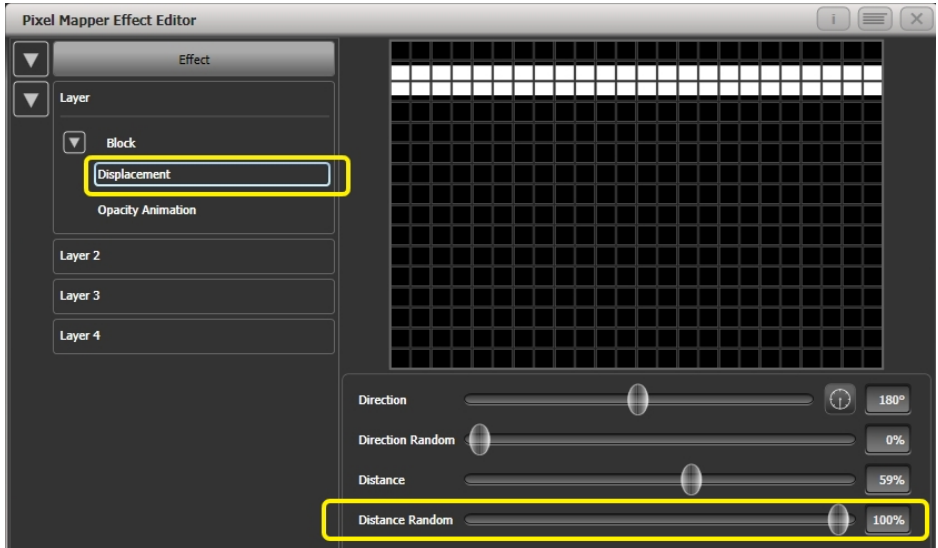
9. Return to the **Opacity animation** controls and increase speed until you're happy.
    At this point you may decide actually the effect would be better if it was a vertical bar. To make this easy we can make adjustments on the layer controls rather than on the individual element and animations:

10. Select [Layer 1] to bring up the layer controls.

11. Change **Rotation** to 90 degrees by clicking on the compass button twice.
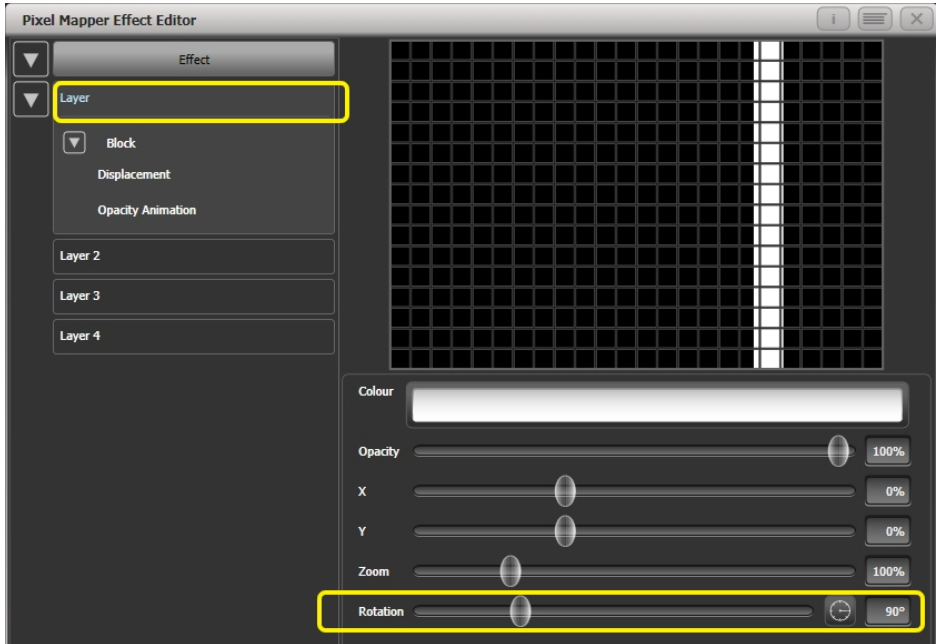
Now you have a vertical bar that draws randomly using a horizontal displacement. Similarly you can use the [layer] or [effect] controls to make global changes to **X/Y position** and **Zoom** allowing quick manipulation of entire effects.

9.7.7 Spawn and Pre-Spool

The director has asked for lots of animated spinning shurikens that slowly move across a backdrop while pulsating. It is a mystery why, but you know how it is with directors.

1. Select a group with an appropriate layout

2. Add a **Star** element

Change **Points** to 4 for a classic shuriken.

Reduce **Zoom** so that we can fit lots of baby shurikens in the grid.
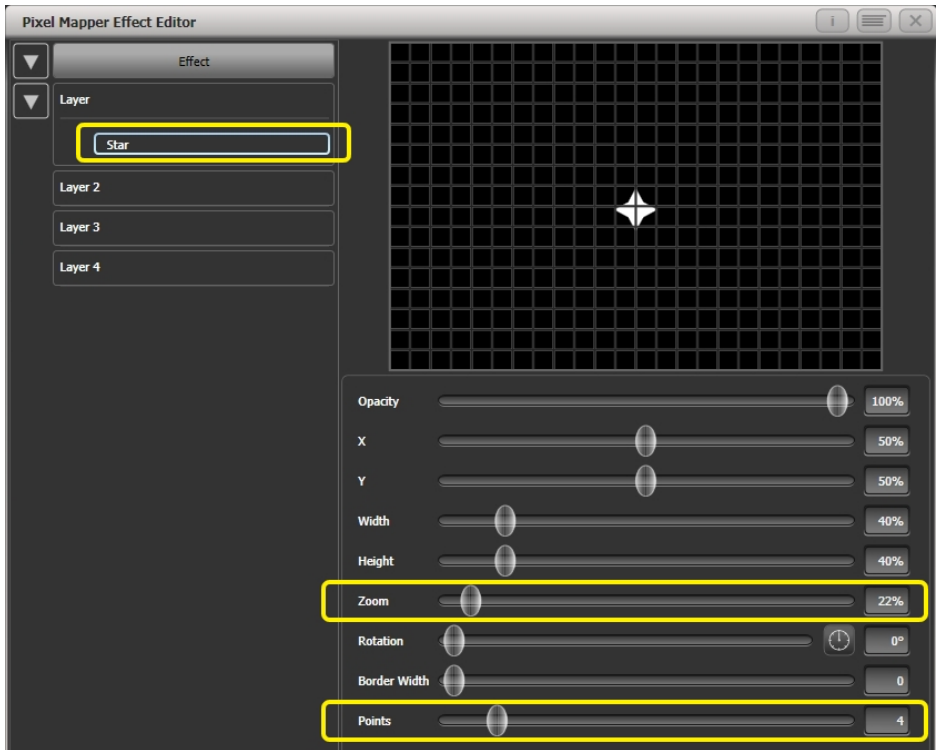
> 3. Add a **Spin animation**

Reduce **Speed** so they are relatively harmless.

> 4. Add a **Linear Movement animation**

Slow it down so it looks like it is rolling along.

> 5. Select the Star element again and change **X** so the shuriken starts further from the left and rolls along the whole grid.
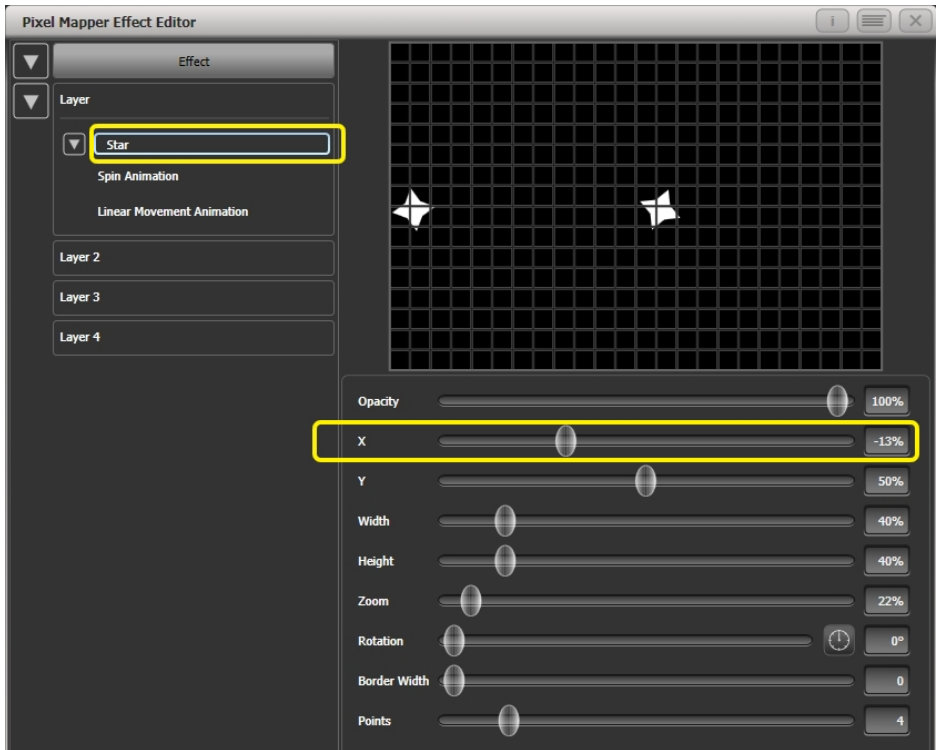
> 6. Add a **Displacement animation**

Now each new shuriken starts rolling at a different height on the grid.

> 7. Go back to the Linear Movement animation and increase **Spawn Rate** so that more shurikens are on screen at once. (This determines how frequently a new element appears.)

Increase **Direction Random** slightly. (This will allow a random variation in the direction of travel based upon the **Direction** value.)
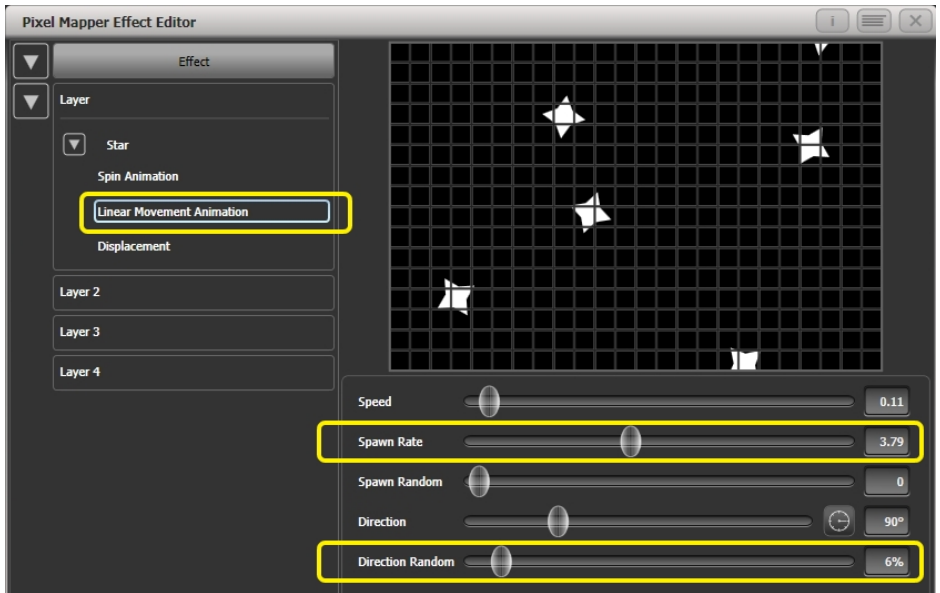
8. Add a Zoom animation

Reduce **Spawn Rate** to 0%. (This is a special setting that will allow the zoom animation to run continuously during the life of a shuriken. If the rate is set to 1 it will only run once and the shurikens will quickly disappear as a result.)

Increase **Out Time** to 100%. (This will make the shurikens pulse in and out with a **bounce** type effect. I have no idea why they would be doing this in reality.)

Slow the zoom down a bit.
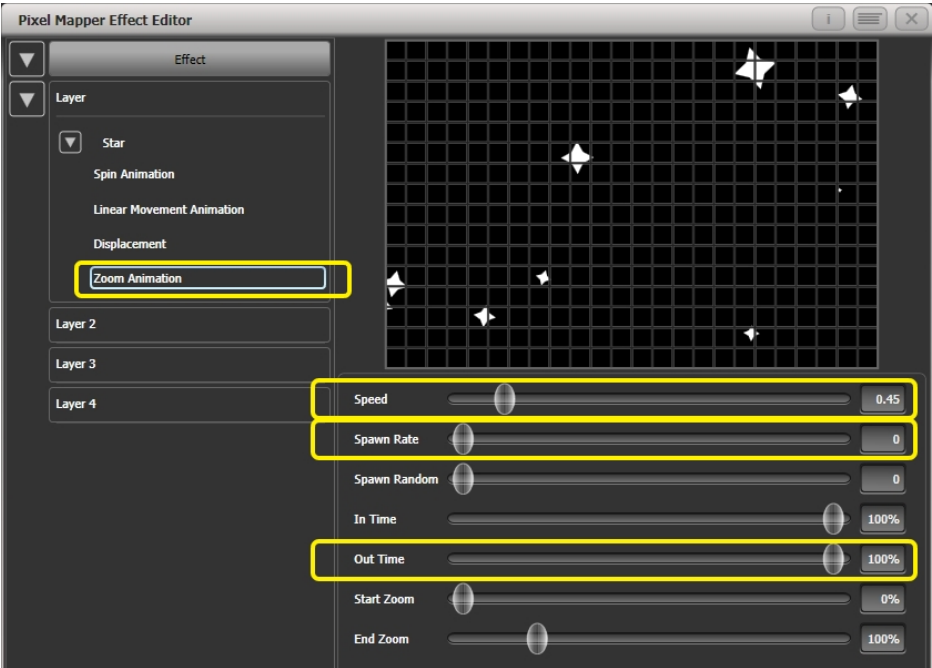
9. Click on [Effect] and set **Pre-Spool** to 0%. *This is to demonstrate the purpose of the property.*
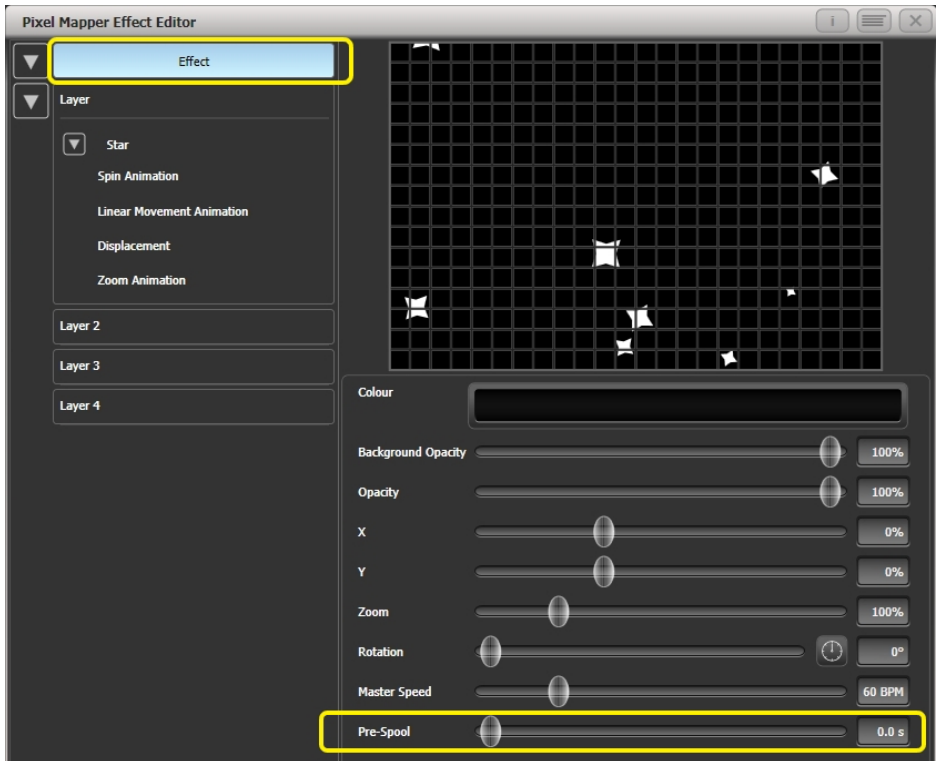
10. <Record> to a playback

11. Press clear, open the **Pixel Mapper Preview** workspace and fire the cue

You will notice that initially there are no shurikens on the screen and it takes a while to build up to a nice random collection. To fix that we can use **Pre-Spool**.

12. <Include> the cue and open the **Effect Editor** workspace if it is not already open

13. Select [Effect] and increase the **Pre-Spool** value to around 20s. (This means the software will pretend 20 seconds has already elapsed when the effect is started.)

14. <Record> to a playback, <Clear>, fire and view again in the **Pixel Mapper Preview**

This time there should already be plenty of shurikens on screen. Pre-Spool is particularly useful for animations that rely on high spawn rates but run at a low speed.

10 Cues

10.1 Cues

So you've set up a great look on the stage, and you want to save it to use in your show.

There are four ways of recording your lighting on Titan.

Cue: This is a single look. It may contain movement in the form of shapes, and have fade in and fade out times.
Chase: This is a timed sequence of cues, often used for an individual effect.
Cue List: This is a linked sequence of cues, usually used to store and replay an entire show or an element of a show from a "go" button.
Timeline: This is a timed sequence of playbacks which would usually be used to replay a complex cue sequence to a piece of recorded music or a timecoded show.

Chases (Abschnitt 11.1), Cue Lists (Abschnitt 12.1) and Timelines (Abschnitt 13.1) are covered in more detail in the following chapters.

When a Cue, Chase or Cue List is stored on a control, the control is called a **Playback**. You can store in several places:

- On any **fader handle** - the fader controls the intensity of fixtures (you can make the fader control other things using playback Options (Abschnitt 10.6)).

- On a **Virtual fader** in the Virtual faders (Abschnitt 16.2.8) window on the touchscreen. This works exactly like a physical fader.

- On a **touch button** in the Playbacks window - you can set whether the button latches or flashes the cue using Key Profiles (Abschnitt 19.4)

- On a **Macro/Executor button** - again you can use Key Profiles (Abschnitt 19.4) to set latch or flash

If you run out of faders to store playbacks, fader wings (Abschnitt 4.13) are available for all consoles to add more faders.

Titan's cue functions are very powerful; the first part of this section explains the basics of how the console uses cues.

10.2 Creating a Cue

10.2.1 How Titan Works When Programming

When you select one or more dimmers or fixtures for control, they are loaded into the **Programmer**. You can then use the wheels (Abschnitt 7.2.1), palettes (Abschnitt 8.1) and effects (Abschnitt 9.1) to change the attributes on the fixture and your changes will be stored in the Programmer.

The order in which you selected the fixtures is also stored, and is used with effects (Abschnitt 9.1) and the Fixture Overlap (Abschnitt 10.5.1) function.

When you record a cue, the contents of the Programmer are saved into the cue. This might be different to what you see on stage as you are only saving your changes, not the output of the console. See **Record Mode** in the next section for different options of what gets saved.

If another fixture is selected after you have changed some attributes then the current list of fixtures in the Programmer is emptied and a new list is started, but any attributes you've changed remain in the Programmer.

When you press <Clear>, the Programmer is emptied. This makes sure you don't record fixtures you don't want. You also need to press <Clear> when you finish programming, because intensity attributes in the programmer will override playbacks.

Fixtures which are in the programmer are shown in mid blue on the touch buttons (Abschnitt 7.1.1). Attributes in the programmer (the things you have changed) are shown in cyan on the attribute displays (Abschnitt 7.2.1).

Firing a cue does not place the values from the cue in the programmer, so you can't just turn on a playback and record what you see to another cue *(although the Include function lets you do this, see Using Parts of Existing Cues - the Include Function (Abschnitt 10.4.4). You can also use Record Stage mode to record what you see on stage)*.

10.2.2 Creating a Cue

1. Press <Clear> to clear the programmer. *This ensures that you are starting with a clean slate.*
2. Set up the look using the fixtures. You can save shapes in a cue. Remember that only fixtures which are selected or have been modified will be saved in the cue (in [Record by Fixture] mode).
3. Press the <Record> button.
4. Press the **Select** button of an empty playback to record the cue. The handles where you can record the cue will flash. You can also record a cue onto a touch button in the Playbacks window.
5. Press <Clear> to clear the programmer

Other useful things to know about recording cues:

- Cues can be recorded to any fader, the macro/executor buttons or the on-screen Playbacks window.

- [Record Mode] lets you select:

    - [Record By Fixture] - All attributes of any modified or selected fixture are saved

    - [Record By Channel] - Only modified attributes are saved

    - [Record Stage] - All fixtures with a non-zero dimmer channel are saved

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– [Quick Build] - see next section (Abschnitt 10.2.3)

- [Record By Channel] is useful if you want to layer multiple cues to create an effect.

- If you are recording a lot of cues, you can press <Menu Latch> to keep the Record Cue menu active. Press <Menu Latch> again to unlatch the Record Cue menu, press <Exit> to leave the menu.

- The screen immediately above each fader shows a legend for the playback. To set this, from the top-level menu press [Set Legend], then the playback **Select** button, then enter a legend on the keyboard or draw a picture legend. Press <Enter> to store it.
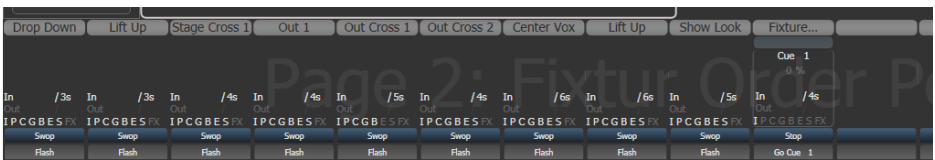
On the Diamond 9 and Diamond 7, setting \[Halo\] in the Legend menu will set the illu of the playback fader.

- A **Static Playbacks** workspace is available to show the contents of the macro/executor buttons and (on the Tiger Touch) the 10 static playback faders.

10.2.3 Quick Build Cues

Setting [Record Mode] to **Quick Build** allows you to build a cue, chase or cue list from existing playbacks or palettes (you can also use the Include function to do this).

1. Press Record.
2. Press [Record Mode] and set the mode to Quick Build.
3. Select whether you want to create a Memory, Chase or Cue List using the softkey options.
4. Press the **Select** button of an empty playback where you want to store the item.
5. Fire the playbacks or select palettes that you want to be part of the cue.
6. If saving a Cue/Memory, press [OK] once you have selected all the playbacks or palettes required to store the cue. If recording a chase or cue list press [Append] once you have set up the state for each step/cue then repeat from 5, press <Exit> at the end.

- To insert specific fixtures from a palette or playback, select the fixtures first and then select the palette or playback.
- Quick Build mode is automatically reset back to Record By Fixture once you have finished the recording.

10.2.4 Using Shapes/Effects in Cues

As you would expect, any shapes or Pixel Mapper effects (Abschnitt 9.1) you have set up will be saved as part of the cue.

You can create a cue which contains a shape with no base reference values; a shape cue like this can then be fired with other cues to overlay the shape on the cue and give you instant effects based around the settings in that cue. When recording the cue, use **Record by Channel** mode or use the "Off" function (Abschnitt 10.4.5)

to remove the other attributes from the programmer.

10.2.5 Blind Mode

Blind mode allows you to program cues without affecting the current look on the stage. This can be very useful for making changes during a live show. Your changes are still shown in the Visualiser window (Abschnitt 14.1).

To put the console into blind mode, just press the <Blind> button *(on consoles without a dedicated button, hold down <Avo> and toggle the option between [Blind Inactive] and [Blind Active])*.

If you want to preview a playback on the visualiser without affecting the stage, playbacks can be set to Blind mode using [Playback Options]. To quickly set a playback to blind mode, hold <Blind> and press the playback **select** button. Repeat to make it Live again.

You can fade your blind state to the live output by typing in a fade time number then pressing <Blind>. This allows you to recall several palettes together, or create a live state to be output without needing to save it to a cue.

10.2.6 Recording Cue with a Mask

You can set a mask when recording a cue so that only certain attributes are recorded, the same as you can when recording a palette (Abschnitt 8.2.2). In the Record menu, select the [Set Mask] option.

There is an additional option [Clear Record Mask], if this is enabled the mask will automatically be cleared after this record operation. This is good to stop you accidentally leaving the mask set and causing havoc with future cues.

10.2.7 Convert Cue to Chase or Cue List

If you want to convert an existing cue into chase (Abschnitt 11.1) or cue list (Abschnitt 12.1) by adding further steps, press <Record>, select the cue, then select [Convert to Chase] (or Cue List). The existing cue will become cue 1 and the contents of the programmer will become a new cue 2.

10.3 Cue Playback

Because it's possible to play back a large number of cues at the same time, the console has to have rules on how it combines the output from different cues. These are called **HTP** and **LTP** rules.

10.3.1 Combining Cues with HTP and LTP

Control channels are handled in two ways:

- Dimmer or intensity channels work on the principle of **"Highest Takes Precedence" (HTP)**. If an HTP channel is active at different levels in several cues, the highest level will be output. When you fade out a cue, the HTP channels fade out with it.

- All other channels work on the principle of **"Latest Takes Precedence" (LTP)**. The latest change takes over from any other values, so the most recent cue to be turned on is the one which is output. When you fade out a cue, LTP channels retain their values until changed by another cue.

10.3.2 Playing Back a Cue

To fire (play back) a cue, raise the fader. (Make sure there are no values in the programmer by pressing the <Clear> button, because anything in the programmer will override the playback).

- You can fire several cues at once.

- The HTP levels in the cue will be mastered by the fader level; for example if you set the fader at 50% then all HTP levels will be 50% of their programmed values.

- LTP channels are triggered as soon as the fader goes above 0%. If a fade time is programmed the LTP channels will start to fade; if there is no fade time they will snap to position *(unless the cue is set to Mode 2 in which case they fade with the fader position; see the timings section Fader Modes (Abschnitt 10.5.1.1) for details of modes).*

- You can **Flash** the cue by pressing the Flash button. You can **Swop** (solo) the cue by pressing the Select button (all other active cues will turn off while the button is pressed). This assumes you haven't reassigned the function of the buttons using Key Profiles (Abschnitt 19.4), see below.

- You can **Preload** the cue by assigning the Preload function to one of the handle buttons using Key Profiles (Abschnitt 19.4). Preload sets the attributes of fixtures in the playback which are not currently active in any other playbacks. *This is useful to avoid the fixtures visibly moving into position or changing colours or gobos when you raise the fader of the cue.*

To assign Preload, hold <Avo> and press [Edit Key Profile], then press the button you want to assign (also see Key Profiles (Abschnitt 19.4)). Note that this will assign the function to all buttons of the same type.

- You can fire a one-shot cue with timings by assigning the Go function to one of the handle buttons using Key Profiles (Abschnitt 19.4). This allows you to fire the cue without needing to hold down a button while the timing completes. You can also fire the cue again without needing to release it.

- You can set playbacks to high **priority** if you do not want them to be overridden by other playbacks using the same fixtures. For example, if you have a couple of fixtures acting as a spotlight, but they are also programmed into some colour washes, you probably want the spotlight cue to take priority over the colour washes. See Priority (Abschnitt 10.6.2.3) in playback Options (Abschnitt 10.6).

10.3.3 Changing Playback Pages

The console allows multiple pages of playbacks. Page buttons are provided near the faders or you can also touch the top and bottom of the roller graphic on the screen. If you touch the middle of the roller graphic you can jump to a page number by entering the number.

> If you have stored cues on the touch select buttons, you select different pages using the Playbacks page touch buttons.

If you change to a new page while some playbacks are fired, the playbacks on the old page remain active. The way playback faders behave across different pages can be set with the [Playback Paging] user setting (Abschnitt 19.5.4). The settings are [Always Hold] or [Never Hold], and these options work differently depending on whether your console has motorised faders or not.

Consoles without Motorised Faders

- The default mode is [Always Hold]. If you want to fire a cue on a fader which is already up from a previous page, lower the fader to zero then raise it again. The cue from the previous page will stop and the cue from the new page will fire.

- If changed to [Never Hold] then you can have active faders on multiple pages by level matching the fader. To fire a playback on a new page you have to return the fader to zero (the playback on the old page will continue). When you raise the fader, the playback on the new page will fire. If you return to a page with an active playback, the fader will not resume control of the playback until it matches the current level of the playback. This prevents the playback level jumping when the fader is first moved. If a playback is active from another page the display area is purple and shows the page number at the top in light blue.

The setting [Normal] gives the default state, for consoles without motorised faders this is [Always Hold].

**Consoles with Motorised Faders**

- The default mode is [Never Hold]. When you change pages the playback faders will move to show the state of the playbacks on that page and you can directly control all playbacks on the page. If you want to kill a playback on a previous page you need to return to the page it is on and lower the fader back to zero. If a playback is active from another page the display area is purple and shows the page number at the top in light blue.

- If changed to [Always Hold] then each fader can be active only on one page at any time - so the console behaves as if it did not have motorised faders, see above.

The setting [Normal] gives the default state, for consoles with motorised faders this is [Never Hold].

- You can set a legend for each playback page. The legend is shown on the 'Pages' roller on the screen. Use [Set Legend] from the main Program menu then [Page Legends]. While in this menu you can change the page to set legends for different pages.

- If your console features the 20 executor buttons on the top right of the console, they can be paged using two of the macro buttons. The page change macros are part of the fixture library; if you do not see the macros, download and install the latest library. The same applies to the 10 static playback faders on the Tiger Touch.

10.3.4 Viewing Active Playbacks

The Active Playbacks window shows details of which playbacks are active. When you have a number of layered playbacks with different effects, this provides an easy way to see which playback is causing which effect. Each button shows the playback legend, which page they are from and which attributes are affected. To show the window double press <Open/View> then press [Active Playbacks] from the window select buttons which pop up.
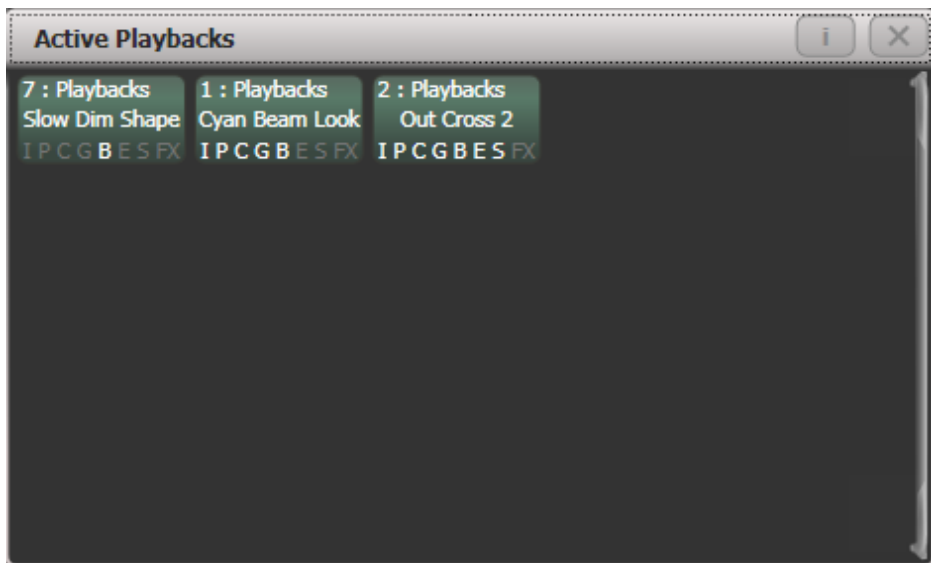
Click on a playback to instantly **kill** it. You can also press [Options] followed by the playback in this window to change parameters of the playback.

10.3.5 Speed and Size Masters

Playbacks can be assigned to Speed and Size Masters which allow you to modify the speed and size of shapes or effects (Abschnitt 9.1) stored in a cue using a separate master fader (or in the case of chases, to modify the speed of the chase (Abschnitt 11.5.4)). *This is really useful to modify the look when several playbacks are running at the same time.*

You can also assign the fader of the playback the effect is stored in to control shape speed or size using the Fader Settings (Abschnitt 10.6.4) in playback Options (Abschnitt 10.6).

See Speed and Size Masters (Abschnitt 10.3.5) for more details.

10.3.6 Release

Normally when you kill a playback by lowering the fader, the LTP attributes will be left in the last state set by the playback. Sometimes you don't want this, for example if you have a strobe cue, you don't want the strobing to carry on when you kill the cue. The **Release** function lets you set how attributes will return to their previous values.

You can set a mask so that some or all attributes will automatically release from the playback when the playback is killed - see Release Mask (Abschnitt 10.3.7) below. For a cue this will happen when all fade

times have completed, unless you change the Kill Point (Abschnitt 10.6.4) option in the cue options.

Attributes will go back to the state set in the most recent previous playback until no playbacks are left to be released. If the [Release to Home] setting on the Release menu is Enabled, channels will go to the power-on state, which you can program (see Programming the Release / Power On State (Abschnitt 10.3.9)). If the option is disabled, channels will remain in the state of the last playback.

You can also configure the key profile so that the handle buttons can be used to release the playback using Key Profiles (Abschnitt 19.4).

Channels will always release with a fade time, this defaults to 2 seconds but you can change it using [Master Release Time] in the Release menu. You can also set an individual release time for the playback from the Release tab (Abschnitt 10.6.6) of playback options.

- You can kill a playback by pressing <Avo> + the **Select** button of the playback, which has the same effect as pulling the fader to zero. For a cue, the fade out times will still apply and the cue will release when the fades are completed. This can also be useful for Cue Lists which (depending on their options) may stay fired even when the fader is lowered to zero.

- You can instantly release a running playback by pressing <Release>, then the **Select** button of the playback to be released. This uses a Temporary Release Mask (Abschnitt 10.3.7.3) as described below. Fade out times of cues will be ignored and the release will start immediately, but will use the set release time.

- You can **Release All** running playbacks by double pressing <Release>. The user setting Release Priority (Abschnitt 10.3.6) sets which playback priority levels will be released. You can protect against unintended Release All by setting the Release Priority to Low - this would only release playbacks with Low priority, if you had any set up.

- Playback handles will highlight in yellow during the time they are releasing, to show that they are still affecting the output.

10.3.7 Release Mask

You can configure which attributes will release from a playback when it is killed using the **Release Mask**. There is a **Global** release mask which is the default setting, or you can set a **Local** release mask which overrides the global mask for a particular playback. If you start a release using the <Release> button then a **Temporary** release mask is used which just affects the current release operation.

Global Release Mask

If no local release mask is set for the playback, attributes release according to this mask when the playback is killed. The default is for no attributes to release, so all LTP attributes will remain at their last value.

Set the Global Release Mask from the **Release Menu** by pressing <Release> then [Global Release Mask]. The softkey and the lit Attribute Bank buttons show which attribute groups are enabled - use the Attribute Bank buttons or the softkeys to enable or disable attribute groups.

There are also separate Timeline release settings which override the normal release settings (including the Local release mask) when playbacks are being fired by a timeline. These are set in the options for the timeline (Abschnitt 10.6.6).

Local Release Mask

Set a local release mask if you need to have specific settings for that playback. The mask for a playback is set in the Release tab (Abschnitt 10.6.6) of the playback options.

Temporary Release Mask

If you are releasing a playback (or the programmer) using the <Release> button then a temporary mask is used. This starts off with everything set, so all attributes will release. Press the Attribute Bank buttons to set a different mask - when you press the first button all the other attribute groups will clear.

- You can type a release time on the keypad before you press <Release> to override the global release fade time.

10.3.8 Other release operations

Releasing a page of playbacks

You can use the Release function to release a whole page of playbacks in one operation. Press <Release> then the <Goto Page> button, or touch the current page in the playbacks view. You will get the following options:

 [Release this Page] - releases all active playbacks on the current page and playback fader group

 [Release Playbacks Not On This Page] - releases any active playback on the same fader group from another page

 [Release All Playbacks In This Group] - releases any active playback in the fader group.

The release will use the Temporary Release Mask (Abschnitt 10.3.7.3) as described above.

> **"Fader Group"** refers to a particular area of the console, for example the main faders below the screen on a Tiger Touch or the top row on the left hand side of the Arena.

Releasing the programmer contents

You can release the programmer contents by pressing <Release>, then set the attributes you want to release in the temporary mask, then press <Clear>. You can type a release time on the keypad before you press <Release> to override the global time.

You can release a single attribute on a wheel from the programmer by pressing <Release> then the <Wheel @> button. This can be useful during programming if you accidentally set a value you didn't want, or when busking a show to gently remove a temporary fixture change you made.

Releasing a master

You can reset a master to default state by pressing <Release> then the **Select** button of the master. You can reset all masters to default state by pressing <Release> then [Release all Masters]. This will set the level of the master so that it has no effect (full for intensity masters, 100% for speed masters, and so on).

10.3.9 Programming the Release / Power On State

You can program the state which fixtures will go to at power on, or when all playbacks are released. It can be useful to program this as a general lighting state so that there is some light on the stage when the console powers up, or when all playbacks are released.

The release state can be programmed in Shared mode or Individual mode. In Shared mode you just have to set the desired state for one of each type of fixture, and that state will be used for all fixtures of that type. In Individual mode, the state of each fixture will be recorded individually as you have set it.

> 1. Set up the look you want.
> 2. Press <Record>, then <Release>.
> 3. Select [Shared values] or [Individual values].
> 4. Press the [Record] softkey.
> 5. The Release state is saved.

> To test, fire some playbacks, then release them by pressing <Release> followed by the select button of the playback. The fixtures should return to your programmed release state.

10.3.10 Turning Off Individual Fixtures

You can turn off individual fixtures or certain attributes of them using the **Off** menu. The programmed values will remain in the playback but will not be applied when the playback is recalled. You can, however, re-enable the values in the cue view.

Press <Off> button followed by a playback to open the 'Off Playback with Mask' menu. Select the fixtures to be turned off, set mask as required and then press [Off] to turn the fixtures/attributes/shapes off.

On Titan consoles that do not have separate <Release> and <Off> buttons, pressing <Off> followed by a playback will release it which is not what you want. On these select the softkey [Off Playback Values] then select the playback.

10.3.11 Playback Groups

Playbacks can be assigned to groups. This allows you to create a set of playbacks which automatically switch off other playbacks in the same group. This can be useful when you have playbacks setting colours on executor buttons so only the most recent playback stays active, or to make life easier when busking so you don't end up with lots of playbacks fired which have superseded each other.

This is described in detail in the chapter on Running the Show, see Playback Groups (Abschnitt 10.3.11).
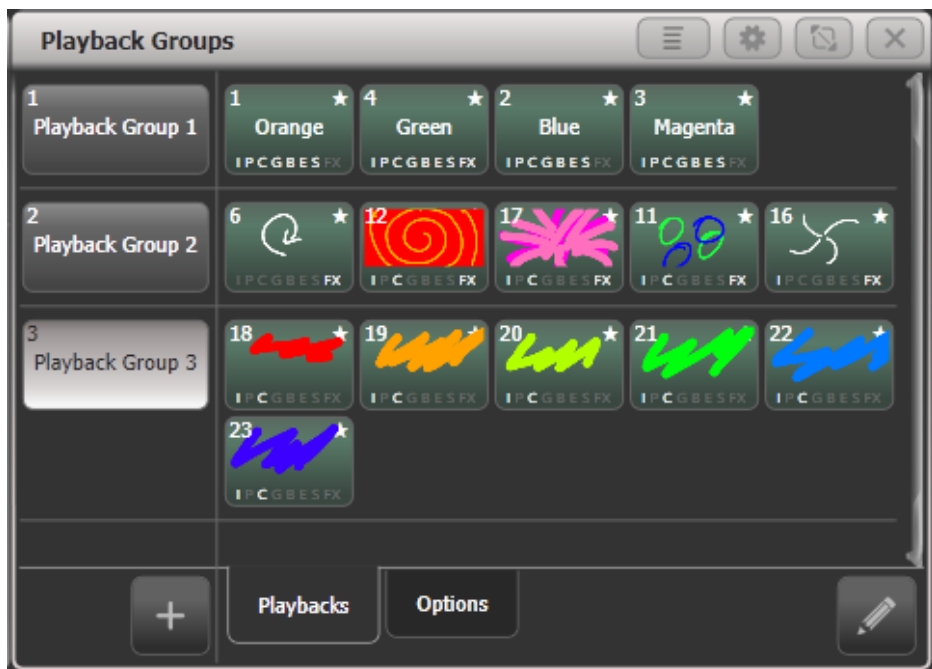
10.4 Editing Cues

10.4.1 Editing a Cue by Merging

You can edit any part of a cue you have already saved simply by making the changes and saving the new information on top of the cue.

1. Press <Clear> to empty the programmer.
2. Fire the cue you want to edit, so you can see what you are doing.* Kill all other cues to avoid confusion.*
3. Select the fixtures you want to change, and make the changes.
4. Press <Record>.
5. Press the playback **Select** button for the cue you are editing.
6. Press [Merge] *(the cue being edited is highlighted on the screen)*.
7. The console will merge the existing cue with your changes. Unchanged information is not affected.

- If you want to overwrite the cue entirely, use the option [Replace] at step 6 - but remember that unless you are in **"Record by Stage"** mode, any fixtures you haven't changed won't be saved.

- To speed up editing, you can set the console to "Always Merge" the cue. This option is set in the **Handles tab** of User Settings (Abschnitt 19.5.4) (press <Avo> and select [User Settings]).

- You can also press the **Select** button for the cue a second time to select the **"Merge"** option (quicker than selecting the softkey [Merge] option).

10.4.2 Updating Stored Values and Palettes used in a Cue

If during a show you need to quickly update a cue, or a palette used in a cue *(for example you fire a green cue and the fixtures turn out to be not quite the right colour)* the <Update> function lets you quickly update either the cue itself or the palettes used in the cue.

For instant update of a fired cue, change the fixture settings and press <Update> twice.

1. With the cue fired, select the fixtures and change them to the settings you want to store.
2. Press <Update> *(on consoles without an Update button press <Record Cue>, [Update])*.
3. Press <Enter> to immediately store the new values to the cue.

Alternatively, the softkeys show a list of palettes (Abschnitt 8.1) and playbacks which can be updated. Select or deselect these as required.

If you have used the softkey options, press <Enter> to complete the update.

- You can also select which palettes will be affected by pressing the palette's button twice.

- If you manually set an attribute in the cue which was set by a palette, then press <Update> <Update>, the palette will be removed from the cue. If you want to update the palette, use the softkey options or press the palette button.

- If you change an attribute using a different palette, the new palette will be stored instead.

10.4.3 Playback and Cue View

To see the current timings of the cue, touch the playbacks display for the fader, or press <Open/View> then the **Select** button of the playback you want to view. The screen will show details of the delay, fade, overlap and curve settings for the cue. You can touch each item to enable editing.

If a shape or pixel map effect (Abschnitt 9.1) is stored in the cue, you can view or edit the effect by clicking the button in the appropriate column.

The **Effect Speed** column allows you to set a multiplier or divider for the speed of effects in the cue.

The **Times** button on the left removes some of the columns, showing only timing related information.
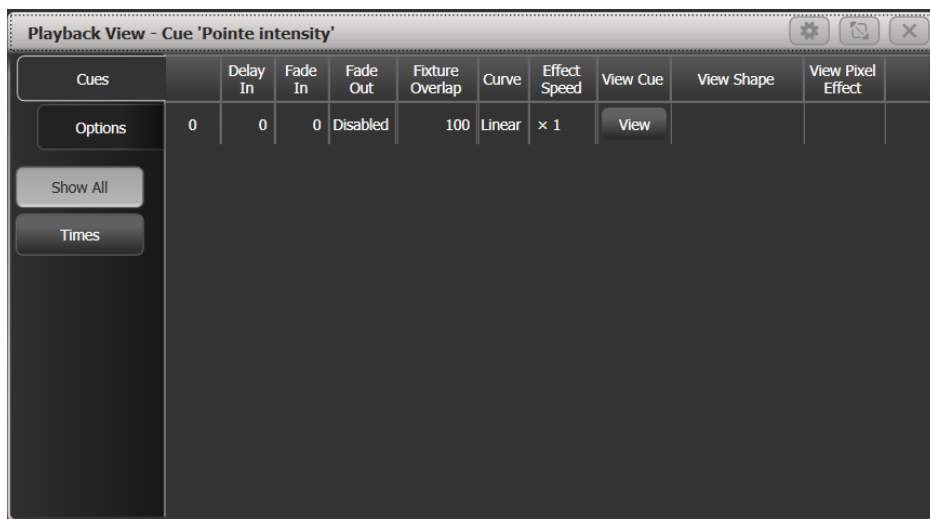
Filter Columns

You can configure which columns are shown in the Playback View using the [Edit Columns] context menu button. Once you have set a view you can save it to a filter button which appears below the Times button on the left.

1. Press [Edit Columns] on the context menu.
2. Using the softkeys, enable or disable the columns to get the view you want.
3. Press <Record>. An [Add] button will appear at the bottom of the screen.
4. Press the [Add] button to create a filter button for this view.
5. You can set a legend and colour halo for the filter button using the normal [Set Legend] function.
6. You can delete filter buttons by pressing <Delete> then the button.

Cue View

If you touch the View button at the right hand end of the row or the [View Cue] context button, the Cue View window opens, showing you details of the settings individual timings for all the fixtures in the cue.

The Cue View has four different views: **Levels**, **Palettes**, **Times** & **Shapes**. Views are selected using the context buttons to the left of the menu buttons.

- The **Levels** view shows the individual attribute values for each fixture.

- The **Palettes** view shows which palettes have been used to record the cue. Palettes are shown by their legends. Where an absolute value was saved rather than a palette, the value is shown instead. Again you can edit or remove the values.

- The **Times** view shows individual attribute timings for fixtures. If global timings are set, no times are shown in the cue view.

- The **Shapes** view shows which attributes of each fixture are running shapes.

Filter which **attributes** you are shown using the All/IPCGBES buttons in the top left corner.

Filter which **fixtures** you are shown using the fixture type buttons on the left.

Edit Values in Cue View

You can **edit** or **remove** one or more individual control values in the cue:

1. Touch or drag over the required control values in the grid to select them - *they will be highlighted in blue*
2. The softkeys then give you available settings for that control value, or you can directly edit values by typing numeric values and pressing <Enter>
3. You can turn attributes On and Off using the <Off> button and the [On] softkey. Off temporarily removes a value from the cue, it can later be restored using [On].
4. You can remove a fixture completely from the cue by selecting the fixture then pressing the [Remove Fixtures] softkey.

Any changes take immediate effect.

10.4.4   Using Parts of Existing Cues - the Include Function

The Include function lets you load selected parts of a cue back into the programmer. (Normally, only manual changes to fixtures are put in the programmer). You can then use this to make a new cue. This is useful if you want to make a cue which is similar to one you already have, or to build a new cue from various parts of other cues. It's also useful when editing shapes in cues.

There are two modes, **Quick Include** and **Advanced Include**. Quick Include simply reloads the whole cue. Advanced Include allows you to specify which attributes of which fixtures you want to load into the programmer. So, for example, if you have a cue which contains position, colour and gobo information for 8 fixtures, you can use the include function to load only the colour information for 4 of the fixtures into the programmer. You could then Include position information from another cue into the programmer, and build up a new cue using information from several existing cues.

If you Include a chase (Abschnitt 11.1) or cue list (Abschnitt 12.1), the screen shows you a list of the cues within it, and you select the one you want to Include using Wheel A or by touching the cue. You can also type in the cue number to Include.

1. Press <Include>.
2. Press [Quick Include] or [Advanced mode] if you want to change the mode.
3. Press the **Select** button of the cue you want to include into the programmer. If you are in **Quick Include** mode, this Includes the cue and finishes.
4. If you are in **Advanced Include**, all fixtures in the cue will be selected. If you don't want them all, deselect the fixtures you don't want. The fixtures in the cue are highlighted on the screen and on the fixture buttons.
5. Use [Set Mask] or the Attribute Bank buttons to select which Attributes you want to include *(all are included by default - [Softkey C] turns them all off and [Softkey D] turns them all on)*. [Softkey E] lets you include or exclude Shapes from the cue.
6. Press <Enter>. The selected attributes of the selected fixtures will be loaded into the programmer.
7. **Repeat steps 2 - 6** to include other attributes from the same fixtures, or **repeat steps 1 - 6** to include other fixtures.

In **Quick Include** mode, you can set a mask for the include by pressing one or more of the attribute bank buttons before you select the cue to include.

10.4.5 Deactivate Attributes from Cues Using "Off"

The <Off> button allows you to temporarily deactivate an attribute which has been stored in a cue, as if you'd never recorded it. You can activate it again later.

For example, suppose you recorded a cue which had fixtures at a certain position, with the colour set to green. If you later decide that you don't want a colour recalled at all with this cue, so that the playback will position the fixtures but leave the colour set by previous playbacks, you can set the colour values to Off in the programmer, which when saved will deactivate those values in the cue. You can also use the Off function to deactivate complete fixtures in a cue.

Setting an attribute to **Off** is not the same as recording an attribute at zero, since this would change the attribute when the cue was fired. You are just marking this attribute as deactivated, so the attribute will remain unchanged when the cue is fired.

1. Press <Off>, then [Off Playback Values] followed by the **Select** button of the playback to be changed.
2. All fixtures in the playback will automatically select. If you only want to change some fixtures to **Off**, change the selection.
3. By default the attribute mask is set so all attributes will be changed to Off. Press [Set Mask] to choose which attributes will be set to **Off**.
4. Press the [Off] softkey

You can also use <Include> to set values to Off.

1. Use the **Quick Include** function (described in previous section) to load the cue you want to change into the programmer.
2. Press <Off> to display the Off menu.
3. All fixtures in the cue will be selected. If you don't want to change them all, deselect the fixtures you don't want.
4. Use the Attribute Bank buttons to toggle which attributes you want to change. Then press the [Attributes Off] softkey to set them to Off. The bottom softkeys also give options such as [Dimmer Off].
5. Press <Record>, press the **Select** button of the cue, then select [Replace] to update it.

- To turn off all attributes of all selected fixtures, press <Off> then [Selected Fixtures Off].

- You can **merge** *"Off"* attributes into a cue without including it first.

- You can also remove attributes from palettes using the **Off** function.

- Another way to remove attributes is from the Cue View window (Abschnitt 10.4.3.2).

• Attributes set to **Off** can be restored to their previous value using the **On** function. Set the attribute to **On** and **merge** it into the cue.

10.5 Cue Timing

The console allows a wide variety of timing functions for each cue.

10.5.1 Fade Times and Fixture Overlap

When programming a cue, you can set a delay, fade in and fade out time for each attribute of each fixture, or globally for the cue. Shapes in the cue will also be affected, depending on the fade mode (Abschnitt 10.5.1.1).

> If you enter times more than 60 seconds, Titan will automatically split the time into minutes and seconds, for example enter **115** to set **1:15** *(1 min 15 seconds)*. Entering more digits will set hours, minutes, seconds.

You can delay the fade times between fixtures in a cue so that the cue is applied sequentially to each fixture. This is called **Fixture Overlap** and can create *"peel off"* or *"roll"* style effects.

In the graphic below, the top diagram shows how the LTP channels change when used with delay, fade and fade out times. The second diagram shows how the HTP channels change. The third and fourth diagrams show what happens to the LTP channels when fixture overlap and attribute fade are used.
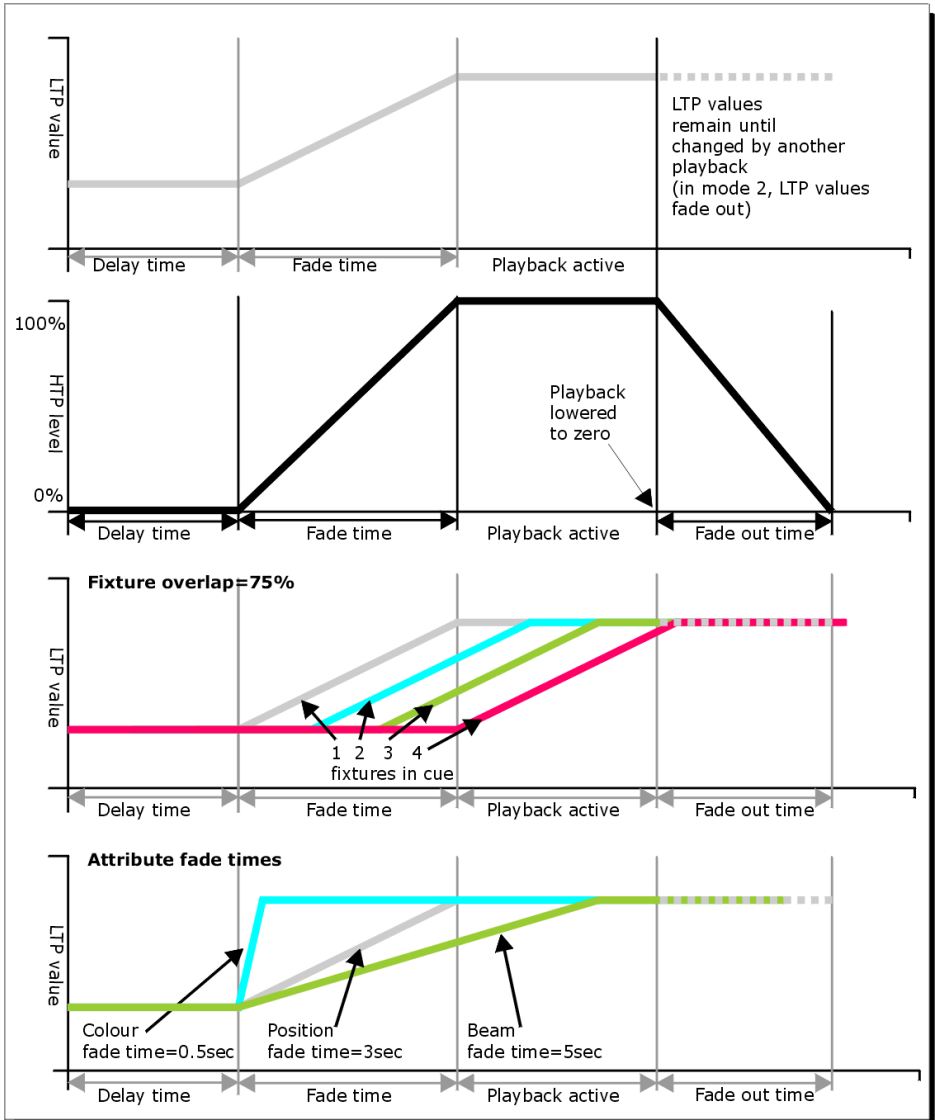
All times which you have set while programming the fixtures/dimmers will be recorded when you save the cue.

You can also edit times of a cue you have already saved like this:

1. Press [Edit Times] at the top level menu
2. Press the **Select** button of the cue
3. Press [Fade Mode x] to set the cue mode. *This sets how the times are used, see below (Abschnitt 10.5.1.1).*
4. Press [Delay time] to set the delay before the cue starts, [Fade time] to set the fade-in time of the cue, and [Fade out time] to set the fade-out time of the cue.
5. Type the new time (in seconds) using the numeric keypad and press <Enter> to save it.
6. Press [Fixture Overlap] to change the overlap, then enter **0 - 100** on the keypad.
   100% means all fixtures fade together.
   0% means that the first fixture will finish its fade before the next one starts.
   50% means that the 2nd fixture will start fading when the first one is half way through its fade.

The order of the fixtures is set by the order you selected them *(but you can change this, see Changing Fixture Order (Abschnitt 10.5.2))*.

7. Press <Exit> to get out of Edit Times mode.

- You can also set independent times for the **IPCGBES** attribute groups, and for each individual attribute, *(see Setting Attribute Fade Times for a Cue (Abschnitt 10.5.3) for details of this)*.

- You can quickly set times from the keypad using the <Time> button, e.g. <Time> <5> <And> <2> sets 5 sec fade in and 2 sec fade out. *(The Time button is the button previously labelled <Set> on Titan Mobile and Sapphire Touch, and <Next Time> on Tiger Touch and Pearl Expert)*.

Fade Modes

The times you enter are affected by the cue mode which is set using the [Fade Mode] option. This option can also be set from playback [Options], [Fader]:

- [Mode 0] - Channels will fade in as set by the fade time. The Fade Out time is ignored. If times are set to zero, the HTP channels fade in with the 0-100% position of the playback fader and the LTP channels will snap.

- [Mode 1] - Channels fade in as set by the fade time. HTP channels fade out as set by the fade out times (LTP channels remain as set in the cue). If times are set to zero, the HTP levels will fade in and out with the fader and the LTP channels will snap when the cue is fired.

- [Mode 2] - Channels will fade in as set by the fade time. The Fade Out time is ignored. However, the fade will stop when the fader position is reached, so if the fader is set to 50%, the attributes will stop half way to their programmed position. You can reverse the fade back to the original position by moving the fader back. If times are set to zero, both HTP and LTP channels are controlled by the fader position.

  In this mode LTP channels revert to their previous settings when the cue is deactivated.

Mode 2 is useful when used with a pan/tilt cue for manually tracking a spot across a stage or down a catwalk using the fader position, or for colour mixing using RGB fixtures.

- [Mode 3] - Crossfade cue. All channels, including intensity channels, will fade to the settings in the new cue. All other cues fade out and all other active playbacks become inactive; if you need to re-fire a playback, take the fader to zero and put it up again.

> If the cue includes shapes, then the shape will change with fade times. The changes will be timed for a [Mode 1] cue and controlled by the fader position for a [Mode 2] cue. This allows you to create a shape which gets bigger or faster as you push up the fader.

10.5.2 Changing Fixture Order

You can change the order of the fixtures stored in a cue. Normally this is set to the order in which you selected the fixtures when the cue was created, or the order stored in the group if you selected a group, but you might want to change this *(for example to pair up fixtures so they move together when using Fixture Overlap (Abschnitt 10.5.1))*.

1. Press [Edit Times] at the top level menu
2. Press the **Select** button of the cue to be changed
3. Press [Fixture Order]
4. Set the sequence number to start from by pressing [Step Number]
5. If you want the sequence number to increase automatically, set [Autoincrement] to **On**. If you want some fixtures to have the same sequence number, set it to **Off**.
6. Touch the **Select** buttons of the fixture(s) you want to place in that position in the sequence. The sequence number is shown in green in the top right hand corner of the fixture select touch buttons.

7. Press <Exit> to finish.

- You can set several fixtures to have the same sequence number. This means, for example, when used with Fixture Overlap (Abschnitt 10.5.1) they will all do the same thing at the same time.

- You can remove a fixture from the sequence by turning off [Autoincrement] and pressing the fixture button twice. The fixture sequence will show X. Touch the button again to put it back in the sequence.

10.5.3 Setting Attribute Fade Times for a Cue

You can set individual fade times for each attribute group (such as Position). If you set a time, it overrides the normal times.

To set an attribute group fade time:

1. Press [Edit Times] at the top level menu
2. Press the **Select** button of the cue to be changed
3. Press the Attribute Bank button (IPCGBES buttons, or attribute keys on the right hand side on older consoles) for the attribute you want to change
4. Press [Delay =] to set delay time or [Fade =] to set fade time
5. Type the new time using the numeric keypad and press <Enter> to save it, or delete the time using the <Back> button to return to the Global time setting.
6. Press <Enter> to save the changes.

You can take this even further and set individual fade times for each fixture. When you select the cue to be changed, you will see that all the fixtures in the cue are selected. To set attribute times for only certain fixtures, change the fixture selection using the fixture buttons.

The Cue View window (Abschnitt 10.4.3.2) will display when editing cue timings to help you see what you are editing. You can touch fixtures or attributes in the grid to select which items are going to be edited.

Press the <All> button to select all fixtures in the cue.

When you are in the Set Attribute Times menu you can only select fixtures which are in the cue you are editing.

10.5.4 Editing Times in the Programmer

You can check and edit the times which are set in the programmer before saving a cue. You can also set times into the programmer and merge (Abschnitt 10.4.1) them into cues as a quick way of updating times, just like you would with attribute values.

Press the <Time> button to access this menu or the [Set Times] softkey on the top level menu.

> On Titan Mobile and Sapphire Touch, the Time button is the key above <Clear> (previously labelled <Set>). On Pearl Expert and Tiger Touch it is the key previously labelled <Next Time>.

The menu allows you to set cue times, or times for all attributes of a fixture, attribute groups or individual attributes.

Using the <Time> button there are various quick shortcuts to setting times.

- <Time> <5> = 5 sec fade in

- <CUE> <3> <Time> <5> = 5 sec fade in on connected playback's cue 3

- <Time> <FIXTURE> <5> = 5 sec fade in for all attributes of selected fixtures

- <Time> <FIXTURE> <G> <5> = 5 sec fade in for gobo attribute group of selected fixtures

- <Time> <FIXTURE> <@B> <5> = 5 sec fade in for attribute connected to wheel B on selected fixtures

- <5> <@> <3> = 5 sec fade in, 3 sec delay

- <5> <AND> <2> = 5 sec fade in, 2 sec fade out

- <1> <THRO> <10> = times spread across fixtures according to selection order

Individual attribute times can also be set from the wheels, using the [Wheels] softkey option on the root menu.

Using the <Options> button while showing the times allows you to set the **Speed**, **Effect Multiplier**, **Speed Multiplier** and **speed source** in the programmer. Speed and Speed Multiplier would only do anything if you create a chase (Abschnitt 11.1) and would have no effect in a cue.
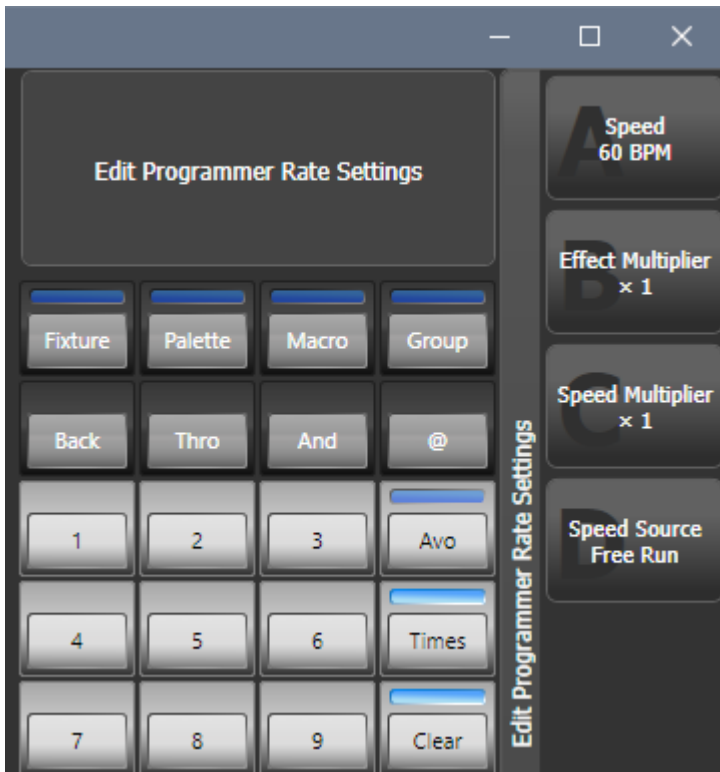
10.6 Playback Options

To set options for a cue, chase or cue list, press <Options> (or the [Options] softkey on the top level menu), then press the **Select** button of the playback to be edited. The Options window will open allowing you to

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set a wide range of options for how the playback will work, including Times. (You can also set the options using the softkeys.)

You can also set Times for the playback (Abschnitt 10.5), using the <Time> button or the [Times] softkey rather than Options.

The options are split into different categories using tabs down the left hand side. Click on the [i] button for a help window on each setting. The options shown below in the pictures are for a normal cue, for cue lists and chases the options are different (and are described in the Cue List chapter and the Chases chapter).

> You can select multiple playbacks if you want to set the options the same on all of them. If the current option settings are the same on all selected playbacks, then the display shows the current option selected; otherwise a star is shown next to the options and no option is shown selected.

10.6.1 Handle Tab
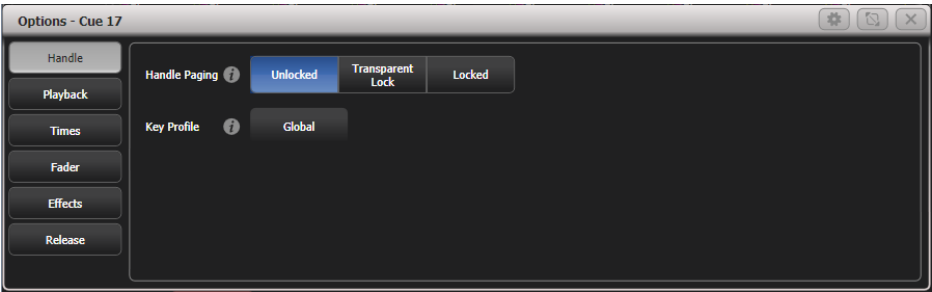
Handle Paging

Allows you to lock the playback on a handle so that it always appears on that handle no matter what page is selected. This is useful if you have some general playbacks you want on every page, without having to copy the playback onto each page.

Setting	Action
Unlocked	This playback will change with the pages as normal
Transparent Lock	This playback will appear on all pages where the handle is unprogrammed
Locked	This playback will appear on all pages. Playbacks programmed on this handle on other pages will not be accessible.

Key Profile

Sets the key profile (Abschnitt 19.4) individually for this playback. Global sets the back to the global default setting for playbacks. A shortcut to change the key profile for a playback is to hold the <Options> button down while pressing the handle select.

10.6.2 Playback Tab

Blind

Sets this individual playback to **Blind** mode. The playback will then output only to Visualiser, not to the stage. This can be very useful if you need to program and test a cue during a live show.

Cross Fade HTP

If on, makes the HTP (dimmer) channels in this cue override other HTP channels, obeying the priority (Abschnitt 10.6.2.3) settings. Normally if a dimmer channel was up in another cue, the highest dimmer setting would continue to be output, but this option lets you create a playback that will override this behaviour, so if you specifically need some fixtures to be at 50%, this option will let you do that.

Priority

Allows you to configure how playbacks will behave if you turn on two playbacks controlling the same fixture. The priority can be set to **Low**, **Normal**, **High**, **Programmer** or **Very High** (*Programmer* gives the same level as manually set attributes in the programmer). If a fixture is being controlled by a playback and you turn on a playback of the same or higher priority, then the new playback will take over. However, if the new playback is set to lower priority than the first playback, the fixture will not change.

This is useful if, for example, you've programmed looks using all your fixtures, then you decide you want a couple of them to spotlight a singer. If you set the spotlight playback to be high priority, then while it is active no other playback will affect the spotlight fixtures.

> Priority is useful when using **Swop** buttons for strobe-type effects where you want to black out everything else. If you have a position shape running on other fixtures, you don't want that to stop during the Swop, or it will look messy when you release the Swop button. So set the shape playback to have a higher priority than the strobe playback, and it will keep going during the strobe and continue smoothly when you release the Swop button.

Attributes set by manually applying a palette to a fixture will override all playback priorities except Very High.

Run On Startup

Sets this playback to run when the console powers on. This can be globally disabled by the **Run Startup Playbacks** option in the **General** tab of User Settings (Abschnitt 19.5.1) *(turned on by default)*.

This can be very useful for unattended applications to set up an initial lighting state.

Power on playbacks show a Power symbol watermark in the playback information area above the fader. If you open the Show Library window (Abschnitt 5.7) there is a context button to Show Startup Playbacks which allows you to list all the playbacks which are set to run on startup.

To be sure that your Power On Playbacks always run successfully, you may also want to load a default/standard show on power up in case a previous user has loaded another show. You can do this using the **Start Up Show** option on the Disk menu, see Setting a show to load on start up (Abschnitt 5.8.7).

10.6.3 Times tab
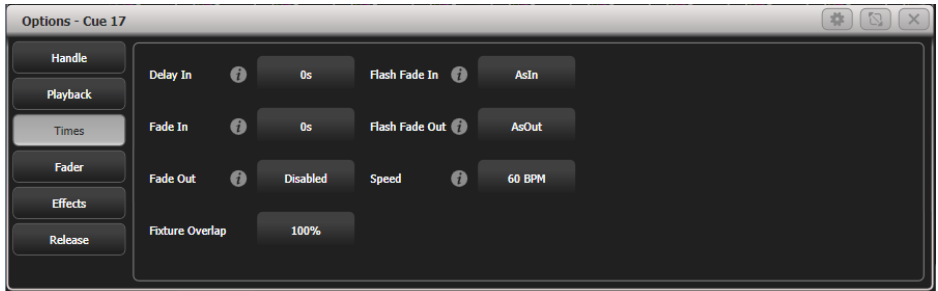
Delay In / Fade In / Fade Out

Sets the delay time before fade, and the fade in and fade out times for the playback. These times can also be set using the <TIME> button.

Fixture Overlap

Fixture overlap creates an effect where the fixtures in the cue are changed in sequence rather than all at the same time. This is described in more detail in Cue Timing (Abschnitt 10.5.1).

Flash Fade In / Flash Fade Out

Sets the fade in/fade out time for this playback when it is fired using the flash button. By default these are set to *"As In"* and *"As Out"* which will use the fade time set for the playback in the Times menu (Abschnitt 10.5). This option allows you to set a different flash action for the playback. *Note that the Key Profile (Abschnitt 19.4) for the flash button must be set to* **Timed Flash** *for this to work.*

Speed

Default speed for shapes/effects in this playback in BPM. This can be overridden by a Rate or BPM master (Abschnitt 10.3.5).

10.6.4 Fader Tab
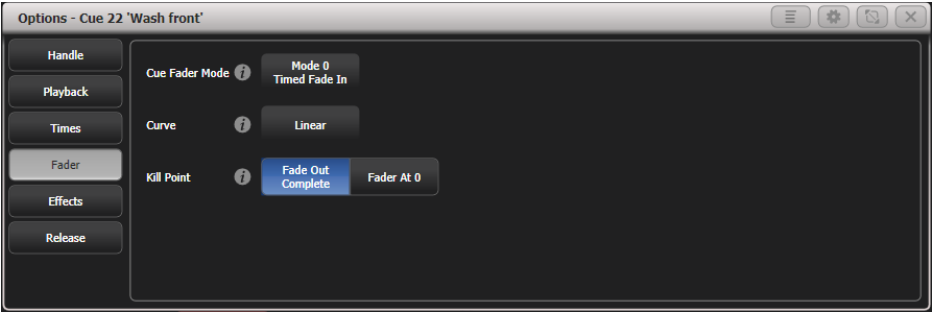
Cue Fader Mode

Sets how the fader position affects the cue output.

Setting	Action
Mode 0	Channels fade in as set by the fade time. The Fade Out time is ignored. If times are set to zero, the HTP channels fade in with the 0-100% position of the playback fader and the LTP channels will snap.
Mode 1	HTP channels fade in and out as set by the fade out times (LTP channels fade in but then remain as set in the cue). If times are set to zero, the HTP levels will fade in and out with the fader and the LTP channels will snap when the cue is fired.
Mode 2	Both HTP and LTP channels follow the fader position. *Useful when used with a pan/tilt cue for manually tracking a spot across a stage or down a catwalk using the fader position or for mixing colours on RGB fixtures.*
Mode 3	Crossfade cue. All channels, including intensity channels, will fade to the settings in the new cue. All other cues fade out and all other active playbacks become inactive; if you need to re-fire a playback, take the fader to zero and put it up again. *Useful for setting a video playback state.*

This is the same as the Fade Mode (Abschnitt 10.5.1.1) option in the [Edit Times] menu.

Curve

Allows you to set a different curve shape for this playback - curves are listed on the softkeys. The various curves are illustrated in the Curves (Abschnitt 19.7) section.

Kill Point

Sets where the console will start the Release process on this cue, causing LTP channels to be released back to their previous state. Normally this is set to happen when all fades have completed so the fixture won't change until it has dimmed to zero.

Setting	Action
Fade Out Complete	The cue is killed when all fades have completed.
Fader at 0	The cue is killed when the fader reaches zero.

10.6.5 Effects Tab
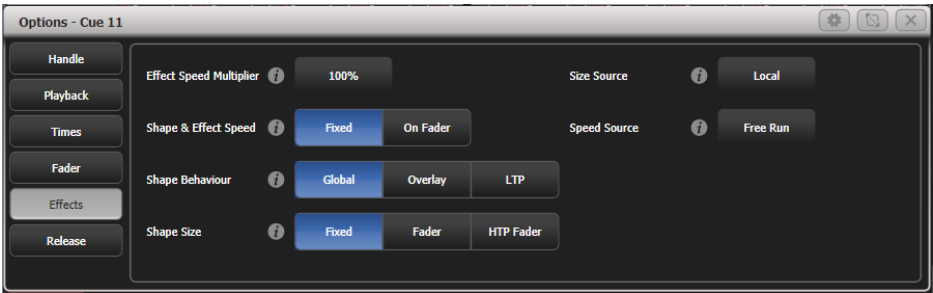
Effect Speed Multiplier

Lets you modify the speed of the effects programmed into this playback.

Shape & Effect Speed

Sets whether the fader position modifies the speed of shapes in this playback. If set to [On Fader] then the speed will change from 0 with the fader at 0, up to the programmed speed with the fader at full. You can use the multiplier option above to get faster speeds than the programmed speed.

> If you have a cue which contains only shapes to overlay on other cues, set the cue to [Size on Fader] and allocate a Speed Master (Abschnitt 10.3.5). You can then create lots of different looks out of the shape by varying the size and speed at show time using the playback fader and the speed master.

Shape Behaviour

Controls the behaviour of Shapes and Key Frame Shapes in this playback:

Setting	Action
Global	Use global setting from User Settings (Abschnitt 10.6.5.3)
Overlay	Shape continues to run over changes to attributes
LTP	If attributes are changed, the shape will stop running on those attributes

Shape Size

Sets whether the fader position modifies the size of shapes in this playback

Setting	Action
Fixed	No effect
Fader	Size of all types of shape set by fader position (from 0 up to the programmed size)
HTP Fader	Only dimmer shapes are controlled by fader position

Size Source

Allows you to allocate a Size Master (Abschnitt 10.3.5) to control the size of shapes running in this playback.

Speed Source

Allows you to allocate a Speed Master (Abschnitt 10.3.5) to control the size of shapes running in this playback.

10.6.6 Release Tab
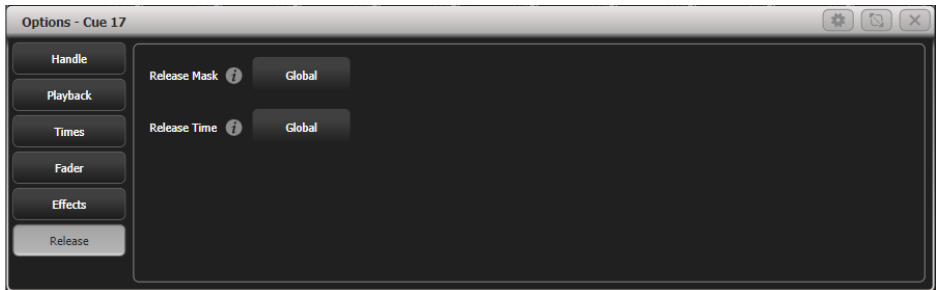
Release Mask

Lets you specify which attributes will be released to their previous state when this playback is killed (you lower the fader to zero).

Normally using the LTP rules, attributes will stay in their last state when you kill a playback. This is not always what you want (for example with a strobe cue, you don't want the strobing to carry on when you kill the cue).

Click the {Global} button to toggle the mask to {Local}, then select which attribute types you want to release. You can also use the Attribute Bank buttons to set the mask.

Global release uses the Global Release Mask (Abschnitt 10.3.7.1).

> Release mask is useful when creating a temporary strobe effect on a playback. Set **Mask** to **Local** then **Intensity** to **Include**. Now when you turn off the playback the shutter channel will release to its previous state and the strobe will stop.

You can also use Key Profiles (Abschnitt 19.4) to allocate one of the handle buttons to release this playback.

Release Time

Sets a release fade time for this playback. Enter a blank time to return to global (Global release time (Abschnitt 10.3.6) is set in the User Settings.)

10.7 Copying⊠ Moving⊠ Linking and Deleting a Cue

10.7.1 Copying a Cue

Using the <Copy> button you can make a **copy** of an existing cue, or create a new playback which is **linked** to the existing playback. You can **copy** multiple playbacks (which may be cues, chases (Abschnitt 11.1) or

cue lists (Abschnitt 12.1)) in one operation.

Linked cues are handy if you want a cue to appear on more than one page for ease of operation; also the linked cue can have different timings (Abschnitt 10.5) and playback Options (Abschnitt 10.6) from the cue it's linked to.

1. Press <Copy>
2. If you want to make a linked copy, press <Copy> again or press the [Link] softkey.
3. Press the **select** button of the cue you want to **copy**. You can select a range of playbacks by holding the first button while pressing the last in the range, or use the <Thro> and <And> buttons to add more playbacks to the selection - hold down <And> to keep adding them.
4. Press an empty select button where you want it to go, or if you are copying multiple playbacks, where you want them to start.

- The <Menu Latch> button latches the **Copy** menu, so you can keep copying things without having to keep pressing the button. The latched menu will stay active until you press <Menu Latch> to unlatch it.

- [Retain Layout] or [Bunch Up] is used when copying a group of cues with empty playbacks in the group - you can either keep the empty playbacks, or bunch up the used playbacks together.

- The option [Copy Legends] can be changed to [Don't copy legends] so that the copied cues are given default legends.

10.7.2 Moving a Cue

The <Move> button allows you to move one or more cues to a different playback handle. **Move** is useful for tidying up the console after programming to put similar cues together or move them onto different pages.

Again you can move multiple cues by holding down the first playback button while pressing the last in the range or using the <Thro> and <And> buttons as described above and latch the **Move** function using the <Menu Latch> button.

- On older consoles which do not have a hardware button for Move, hold <Avo> while pressing <Copy> to obtain the **Move** function (as printed on the console panel).

- When moving a block of cues, [Swap Items if Required] will attempt to reposition any existing playbacks which are in the way of the moved block. This is useful when rearranging playbacks on a page which is nearly full.

10.7.3 Deleting a Cue

To delete a cue:

1. Press the <Delete> button
2. Press the **select** button of the cue you want to delete
3. Press the **select** button again (or press <Enter>) to confirm the delete

- Instead of deleting the cue you can select [Unassign], this will remove the cue from the handle but retain it for future use. Go to the Show Library (Abschnitt 5.7) to reuse unassigned cues.

- Press <Menu Latch> to keep the delete mode active. You can keep deleting using **steps 2 and 3** without having to keep pressing the <Delete> button. Press <Menu Latch> to exit latched delete mode.

11 Chases

11.1 Chases

As well as being used to store static cues (Abschnitt 10.1), the playback faders can also be used to store chases (sequences of cues). You can also store chases on touch buttons in the Playbacks window.

Chases can run once or repeat continuously. You can set individual fade time for each cue (Abschnitt 11.5.2) in the chase and unlink cues (Abschnitt 11.6.2.2) so that the console waits for you to press Go before the chase continues.

> If you are programming patterns with a lot of fixtures, consider using Key Frame Shapes (Abschnitt 9.3) in place of chases, as they give you more facilities to vary the look.

11.2 Creating a Chase

11.2.1 Programming a Chase

To program a chase, you have to set up the look for each cue in the chase, then save it.

You can either set all the fixtures and dimmers manually for each cue in the chase, you can use Quick Build (Abschnitt 11.2.2) to create a state from palettes (Abschnitt 8.1) and cues (Abschnitt 10.1), or you can use <Include> to load in cues (see Include section (Abschnitt 10.4.4)).

1. Press <Record> then select [Chase]. *(Some consoles also have a <Record Chase> button)*.
2. Press the **Select** button of the playback where you want to store the chase *(you can also store chases on touch buttons in the Playbacks window)*.
3. Set up the look for the first cue, either manually or by using <Include> on existing cues.
4. You can change the number given to the step using [Step Number]
5. Press the **Select** button of the playback to store the programmer contents as a step of the chase. You can also press [Append Step] on the menu.
6. Press <Clear> *(unless you want to re-use the contents of the programmer)*, then repeat steps 3 - 5.
7. Press <Exit> to finish when you have stored all the cues you want.

- [Record Mode] lets you select:

    - [Record By Fixture] - all attributes of any modified or selected fixture are saved

    - [Record By Channel] - only modified attributes are saved

    - [Record Stage] - all fixtures with a non-zero dimmer setting are saved

    - [Quick Build] - see next section (Abschnitt 11.2.2)

- The cue number currently being saved, and the total number of cues, is shown on the top line of the display.

- Press <Clear> when you have finished recording the chase, otherwise when you try to play it back the programmer will override the chase and you won't see the chase properly.

- You can record shapes (Abschnitt 9.1) in a chase. If the same shape is saved in subsequent cues it will continue from step to step and if not it will stop at the end of the cue. *(The shape is the same if you didn't press <Clear> after the previous step, and didn't change the speed, size or phase of the shape from the previous step; or if you used <Include> to reload the shape from the previous step and have not modified it)*

- You can set a legend for the chase by pressing [Set Legend], then pressing the **Select** button for the chase and entering the legend, as with cues.

- There is no limit to the number of steps in a chase.

11.2.2 Creating a Chase with Quick Build

Quick Build mode, as the name suggests, allows you to build a chase very quickly from existing palettes and playbacks.

Start recording a chase as described in the previous section, set [Record Mode] to Quick Build.

Select any palette (Abschnitt 8.1) or playback to insert that item as a step in the chase. If you select multiple palettes by selecting a range of buttons, each palette will be added as a separate step.

To insert specific fixtures from a palette or playback, select the fixtures first and then select the palette or playback.

11.3 Chase Playback

11.3.1 Playing Back a Chase

To fire a chase, raise the fader of the playback. *(You can also use the pushbuttons to **Flash** or **Swop** the chase).* The chase will start to run. The bottom line of the screen relating to the playback fader shows the current cue number and speed of the chase.
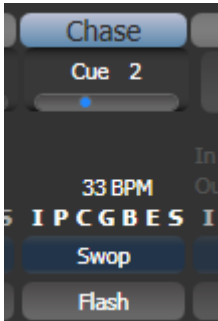
The HTP (intensity) channels in the chase will be controlled by the fader; if fade times (Abschnitt 11.5) are programmed, the fade will stop at the fader level. The other channels (LTP) will be set as soon as the fader moves above zero according to the fade times programmed in the chase.

While the chase is running, the area of the screen above the wheels shows details of the chase steps:
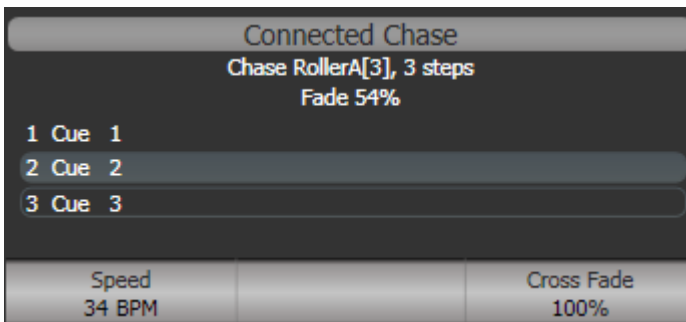
You can temporarily pause the chase by pressing the <Stop> button near the wheels. Press <Go> to resume playback.

There are many options (Abschnitt 11.6) you can set to determine the way the chase runs and these are described in the rest of this chapter.

11.3.2 Connecting a Playback for Control

When you fire a chase or a cue list, the wheels and <Stop>/<Go> buttons are automatically allocated to control the playback - this is called **connecting** the playback. For a chase, the wheels control Speed and Crossfade. If you have more than one playback running, you can choose which one is connected to the controls using the <Connect/Cue> button (this button may also be labelled <Connect> or <Cue> depending on the console).

- Connect a different playback to the controls by pressing <Connect/Cue> then the Select button of the playback you want to control.

- Disconnect a playback from the controls by double pressing <Connect/Cue>.

- You can turn off the **Auto Connect** option in the **Wheels** tab of the User Settings (Abschnitt 19.5.16) if you don't want to connect to a playback when you fire it. You will have to use the <Connect/Cue> button to manually connect the playback for control if you do this.

- There is a further option **Auto View on Connect** in the **Wheels** tab of the User Settings (Abschnitt 19.5.16) which will automatically open the view window (Abschnitt 11.4.1) for a playback when you fire it. *This is useful to keep the correct view open as you swap between chases.*

> Normally if you change the speed or crossfade of a chase on the wheels, the new setting is saved. However you can set this change to be temporary, so that when the show is reloaded the speed and fade will go back to the previously saved settings. Go to User Settings (Abschnitt 19.5) (<Avo> + [User Settings]), in the **Times** tab of User Settings (Abschnitt 19.5.7)set the option **Connected View Sets** to **Temporary Speed**. You can still save a temporary speed by pressing [Save Temporary Speed] in the Set Times menu.

11.3.3 Setting Speed and Crossfade for a Chase

The left wheel is assigned to control the speed of the chase it is connected to. The speed is shown in Beats Per Minute (BPM) on the display. You can also enter a speed from the keypad as described below. The last speed you set on the wheel is always remembered, you do not have to tell Titan to save it.

Crossfade is the "slope" between cues; with a crossfade of 0, the fixtures snap instantly to the next cue, but with a crossfade of 100, the fixtures spend the whole cue time fading to the next cue. With a crossfade of 50, the fixtures delay for half the cue time and fade for the other half of the time.
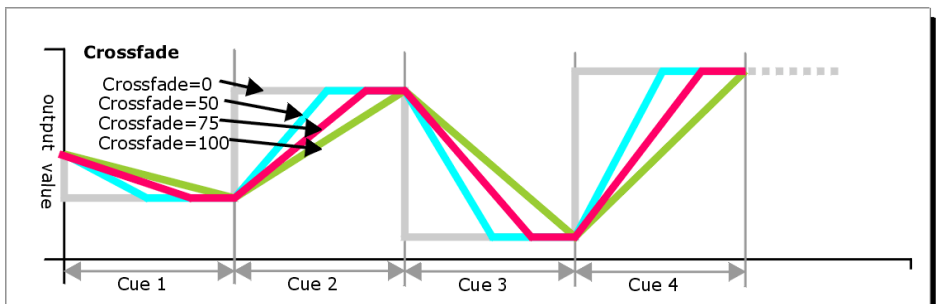
You set the crossfade and speed as follows:

1. Press [Edit Times] from the top level menu then the **Select** button of the chase.
2. To set the **crossfade**, press [XFade] and type the fade from **0 - 100**. *0 = no fade (the chase will "snap"), 100 = max fade (the chase will move continuously from step to step).*
3. To set the **speed**, press [Speed], type the new speed, then press <Enter>. *The speed can be set in Beats Per Minute (BPM) or seconds depending on the* **Tempo Units** *setting in User Settings (Abschnitt 19.5.7).*

There are other options you can set for the chase from this menu including Fixture Overlap (Abschnitt 10.5.1), which are described in the Chase Timing (Abschnitt 11.5).

You can set individual times for each cue in a chase and unlink cues from each other so they wait for you to press the Go button. This is done using the Playback View (Abschnitt 11.4.1), or the <Unfold> function which is described in Editing a Chase (Abschnitt 11.4.2).

You can select whether the chase speed is displayed in seconds or in Beats Per Minute (BPM). Press <Avo> and [User Settings], then press [Tempo Units] to set the option to [Tempo Units Seconds] or [Tempo Units Beats Per Minute (BPM)].

You can also allocate a Speed Master (Abschnitt 10.3.5) to the chase which will allow you to modify the chase speed during playback, see Speed and Size Masters (Abschnitt 10.3.5).

11.3.4   Manually Controlling the Steps of a Chase

You can pause a chase, if the chase is connected to the wheels, by pressing the <Stop> button next to the wheels. Press the red <Go> button to resume playback of the chase.

While the chase is stopped you can use the <Prev Step>/<Next Step> buttons *(← and → on some consoles)* next to the <Connect/Cue> button to move to the next or previous step. The programmed fade time will be used when moving between steps, unless you enable the option **Chase Snap** in the **General** tab of User Settings (Abschnitt 19.5.1), or press <Snap> button if the console has one.

You can also configure the blue and grey buttons of the playback handle to be Stop and Go. This uses the Key Profiles function (Abschnitt 19.4).

1. Hold <Avo> and press [Edit Current Key Profile].
2. If you are using the default Key Profile (Abschnitt 10.6.1.2) which is not editable, you will be prompted to add a new profile.
3. Press [Chases] then choose either the Blue key or the Grey key.
4. Select [Go] or [Stop] from the list of functions. Then press <Exit> and set the function for the other key if required.
5. Press <Exit> to continue using the console.

11.3.5 Changing Chase Direction

The <Prev Step>/<Next Step> (← and → on some consoles) buttons next to <Connect/Cue> set the direction of the connected chase. *If fitted*, the ↔ double-ended arrow button sets **bounce** mode where the chase will run to the end then reverse. The <Review> key sets the chase to **random**.

11.3.6 Jumping to a Step

You can jump directly to a step in a chase by pressing <Connect/Cue>, then typing in the desired step number, then pressing <Enter> or softkey A. Alternatively at the top level menu you can type the step number then press <Connect/Cue>.

11.4 Editing a Chase

11.4.1 Opening a Chase for Editing

You can open a chase for editing by pressing <Record> then the **Select** button of an existing chase. This does not affect any existing cues in the chase. You can then save new cues at the end by pressing the Select button just like normal recording.

To see a list of the cues in the chase, use Playback view (touch the playback display above the fader or press <Open/View> then the **Select** button of the playback). To edit any of the time settings in each cue, select the setting to be modified by touching or dragging in the grid, then use the softkey options to change the setting.

Playback View - Chase 'PRESS GO'

	Legend	Delay In	Fade In	Fade Out	Fixture Overlap	Link	View Cue
1	Cue 1	Global	Global	= As In	Global	After Previous	View
2	Cue 2	Global	Global	= As In	Global	After Previous	View
3	Cue 3	Global	Global	= As In	Global	After Previous	View
5	Cue 5	Global	Global	= As In	Global	After Previous	View
6	Cue 6	Global	Global	= As In	Global	After Previous	View
7	Cue 7	Global	Global	= As In	Global	After Previous	View
8	Cue 8	Global	Global	= As In	Global	After Previous	View

11.4.2 Editing a Chase Using Unfold

Unfold provides another way to edit chases. The <Unfold> button places each cue in a chase on one of the playback faders, allowing you to fire and edit each cue individually as if it was a stand-alone cue. Unfold also allows you to set individual timing for cues in the chase.

1. Press the <Unfold> button, then the **Select** button of the chase to be edited.
2. The first 10 or 15 cues of the chase (depending how many playback faders your console has on each page) are loaded into the playback faders.
3. Raise a playback fader to output the contents of that cue *(fade times will operate as programmed)*.
4. Various Unfold options are available, the details are below.
5. Press <Unfold> again to get out of unfold mode.

- To **edit** the contents of a cue: Press <Clear> to empty the programmer, raise the fader to output the cue, make the changes, press [Record Step], then the **Select** button for the cue number.

- To **insert** a cue between two other cues, set up the look for the new cue, press [Insert Step], then type the cue number for the new cue (such as 1.5 to go between 1 and 2). If this cue number already exists it will be merged with the look you have created. Otherwise a new cue is inserted.

- To **insert** a new cue at the end of the chase, set up the look for the new cue, press [Insert Step], then press the **Select** button of the first free playback.

- To **merge** the programmer into the live step, double tap [Record Step].

- To change individual times for the cue, press [Edit Times], then the **Select** button for the cue (or type the cue number), then set the times. This is described in detail in Chase Timing (Abschnitt 11.5).

- If the chase has more steps than there are playback faders, you can go between pages using the [Previous Page] and [Next Page] buttons.

11.4.3 Extracting a step from a chase with Include

You can reload a single cue/step from a chase into the programmer using Include. Press <Include>, select the chase, then enter the step number to be included, then press [Include Cue].

This is useful if you want to reuse a state from a cue in another chase or as a stand-alone cue. It is also useful if you want to edit shapes/effects in a step, although you can also do this from the Playback View window (Abschnitt 11.4.1).

11.5 Chase Timing

11.5.1 Global Timings for Chases

When a chase is first programmed, each cue in the chase has identical timing. This is called the global timing for the chase. If you want you can then set each cue to have its own timings using the Playback View window (Abschnitt 11.4.1) or Unfold (Abschnitt 11.4.2). This is described below in Individual Cue Times in Chases (Abschnitt 11.5.2).

1. Press [Edit Times] from the top level menu then the **Select** button of the chase.
2. Set the **Crossfade**, **Speed**, **Fixture Overlap** and **Attribute Overlap** settings, as described below.
3. Press <Exit> to finish.

- To set **speed**, press [Speed] then type the new speed, then press <Enter>. The speed can be set in Beats Per Minute (BPM) or seconds depending on the user settings.

- To set **crossfade**, press [XFade] then type the fade from **0 - 100** and press <Enter>.

  0=no fade (the chase will "snap"), 100=max fade (the chase will move continuously from cue to cue).

- You can assign either of the handle buttons to be a **tap tempo** button using the Key Profiles (Abschnitt 19.4) option.

Fixture Overlap

Fixture overlap creates an effect where the fixtures in the cue are changed in sequence rather than all at the same time. This is described in more detail in Cue Timing (Abschnitt 10.5.1).

11.5.2 Individual Cue Times in Chases

You can configure each cue in a chase to have its own timing information. You can use the Playback View window, or the Unfold function to set individual times for cues in chases.

> It is easier to use a Cue List rather than a chase if you need a lot of different timings or link/unlinks. See Cue Lists (Abschnitt 12.1).

Using the Playback View Window

1. Touch the playback display relating to the fader, or press <Open/View> then the **select** button of the playback. The Playback View window will open.

Playback View - Chase 'PRESS GO'

	Legend	Delay In	Fade In	Fade Out	Fixture Overlap	Link	View Cue
1	Cue 1	Global	Global	= As In	Global	After Previous	View
2	Cue 2	Global	Global	= As In	Global	After Previous	View
3	Cue 3	Global	Global	= As In	Global	After Previous	View
5	Cue 5	Global	Global	= As In	Global	After Previous	View
6	Cue 6	Global	Global	= As In	Global	After Previous	View
7	Cue 7	Global	Global	= As In	Global	After Previous	View
8	Cue 8	Global	Global	= As In	Global	After Previous	View

2. In the grid, touch the times you want to edit.
3. Use the softkey options to change the times or settings.
4. Repeat steps 2 - 3 to change other times or settings.

> You can change a range of cues all at once by dragging across the grid to select multiple cells, or you can use **wheel B** to select multiple cells for editing.

Using Unfold

1. Press <Unfold> then the **Select** button of the chase to be edited.
2. Press [Edit Times] then the **Select** button of the unfolded cue you want to edit.
3. Set up the timing options as required. The options are described below.
4. Press <Unfold> to get out of unfold mode.

Timing Options

Initially all the timing options are set to Global. You can cancel any individual timings and set the time back to global timings by pressing the softkey for the option then deleting the time using the <Back> button (or backspace if you have a keyboard connected).

The timing options for the cue are:

- Delay

- Fade (in)

- Fade Out

- Fixture Overlap

- Link with previous step

- Attribute times (see next section (Abschnitt 11.5.3))

Linking can be set to [Link After Previous] (the chase will run automatically) or [Link Wait For Go] which will stop the chase until you press <Go>.

11.5.3 Setting Attribute Fade Times for a Cue in a Chase

For each cue in a chase, you can set individual fade times for each attribute group (such as position). If you set a time, it overrides the normal times. You can use the Cue View window, or the Unfold function to set attribute times.

To set an attribute group fade time:

1. Press <Open/View> or <Unfold>, then the **Select** button of the chase to be edited.
2. Press [Edit Times] then touch the cue you want to edit in the Playback View, or if using Unfold, press the **Select** button of the unfolded cue you want to edit.
3. Press the **Attribute Options** button (right hand side) for the attribute you want to change.
4. Press [Delay] to set delay time or [Set fade] to set fade time.
5. Type the new time using the numeric keypad and press <Enter> to save it, or delete the time

> using the <Back> button to return to the Global time setting.
>
> 6. Press <Enter> to save the changes.

11.5.4 Rate and BPM Masters

Rate or BPM masters can be allocated to chases, allowing you to control the speed from a separate master fader. You set this by pressing [Effects] then [Speed Source] in the Options (Abschnitt 10.6) for the chase. See Speed and Size Masters (Abschnitt 10.3.5).

11.5.5 Speed Multipliers

Speed multipliers allow you to modify the chase speed, either faster (for example "x4") or slower (for example "/4"). This is useful when running multiple chases together.

Press [Speed Multiplier] In the Edit Times menu for the chase, or use the [Speed Multiplier] option in the Times category of the Options (Abschnitt 10.6) for the chase. Use the [Multiply or Divide] softkey to swap the value between multiply and divide.

11.6 Chase Options

To set options for a chase, press <Options> or [Options] on the root menu, then press the **Select** button of the playback to be edited. Options will be shown on the softkeys. You can also set options from the Chase View window, press <Open/View> then the **Select** button of the playback, then click the Options tab.
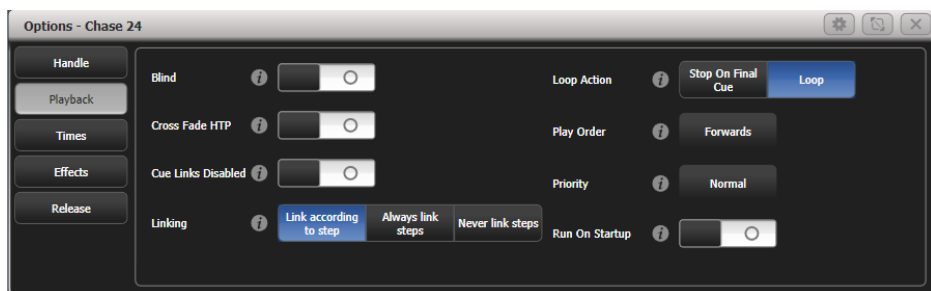
Most of the options are the same as for Cues (see playback Options (Abschnitt 10.6)), only the additional Chase options are described here.

11.6.1 Handle Tab

All options are the same as for a cue. See Handle (Abschnitt 10.6.1).

11.6.2 Playback Tab

Blind (Abschnitt 10.6.2.1), Cross Fade HTP (Abschnitt 10.6.2.2), Priority (Abschnitt 10.6.2.3) are described in the Cues chapter.

Cue Links Disabled

Unlinks all the steps in the chase so you need to press the Go button to move to the next step.

Linking

Sets how the cues in the chase are linked. The options are:

 [Link according to individual steps] - Each step in the chase will obey its individual link settings which are set using the Playback View window (Abschnitt 11.4.1) or the Unfold function (Abschnitt 11.4.2).

[Always Link Steps] - The chase will run on its own using the times

[Never Link Steps] - The chase will pause after every delay/fade time for the user to press <Go>

> When a chase is unlinked, raising the fader does not fire the first cue, which can be a problem. To get round this, if the chase is not looped, simply link the first cue to the previous one. If the chase is looped, add a dummy step at the end with 0 sec fade, 0 sec delay and link the first step to this one.

Loop Action

Sets what happens at the end of the chase:

[Stop on Final Cue] - Chase stops at the end

[Loop] - The chase will loop back to the beginning

Play Order

Sets the direction of the chase.

11.6.3 Times tab

Flash Fade In, Flash Fade Out and Speed are described in the Cues chapter. Chase speed can also be set using the left hand wheel if the wheels are connected to the chase. See Setting Speed and Crossfade for a Chase (Abschnitt 11.3.3) for more details.

Speed multiplier

You can set a speed factor here to speed up or slow down the chase independently of the speed setting.

XFade

Sets chase crossfade between steps. If the wheels are connected to the chase, the right hand wheel changes the crossfade and the value set will be shown here.

11.6.4 Effects tab

All options here are the same as for cues - see Effects (Abschnitt 10.6.5).

11.6.5 Release Tab

Release Mask and Release Time are described in Release (Abschnitt 10.6.6).

Cue Release

If turned on, after each step in the chase fixtures which are not programmed in the next step will be released.

This allows you to create an overlay chase with gaps in it where the fixtures will return to their previous state.

For example you could create a chase where every alternate cue sets the fixtures to white, with the in between cues being blank. If this option is on, the fixtures will bump to white then return to the colour set from a previous look.

11.7 Copying⊠ Moving⊠ Linking and Deleting a Chase

11.7.1 Copying or moving a chase

Using the <Copy> and <Move> buttons, chases can be copied or moved to a new playback, or you can create a linked copy of a playback. Move is useful for tidying up the console. Linked chases are handy if you want a chase to appear on more than one page for ease of operation; also a linked chase can have different timings and playback options.

This operation is exactly the same as for Cues and is described in Copying, Moving, Linking and Deleting (Abschnitt 10.7).

11.7.2 Deleting a chase

You can delete an entire chase by pressing <Delete> followed by the **Select** button of the chase to delete. Press once more to confirm.

11.7.3 Deleting a step from a chase

To delete a single step from a chase:

1. Press <Delete> button.
2. Press the **Select** button of the chase.
3. The steps in the chase are listed on the screen. Use **Wheel A** to select the step you want to delete, or type in the number of the step to be deleted.
4. Press [Delete Cue x] to delete the step.
5. Press [Confirm] to confirm the delete.

Alternatively you can use the <Unfold> function (see Unfold (Abschnitt 11.4.2)) to delete a step from a chase.

12 Cue Lists

12.1 Cue Lists

Cue Lists (sometimes known as stacks or cue stacks) allow you to record a sequence of cues (Abschnitt 10.1), each of which can have its own timings (Abschnitt 12.5) and can be triggered by the Go button or run automatically to the next cue (Abschnitt 12.3). This allows you to build a complete show in a single list and is ideal for theatrical shows (Abschnitt 12.8) where the show must be exactly the same each time. Cue lists can also be useful in busked shows, especially on consoles with a small number of playback faders, to offer a number of different looks on one fader.

Cue lists differ from chases (Abschnitt 11.1) in the way the console handles changes between cues. Cue lists **track** fixture state from previous cues and will only change the fixture state if you have modified that fixture in the cue; if there are no changes stored for the fixture, it will remain in the same state. Chases (Abschnitt 11.1) on the other hand would crossfade between cues, fading out all fixtures which have no stored information in the new cue.

You can change the tracking behaviour of cue lists using the tracking option (Abschnitt 12.3.3) for each cue: Block, This Cue Only and Solo - see Tracking in the Cue List Playback (Abschnitt 12.3) section).

To view the contents of a cue list, touch the playback screen relating to the fader or press <Open/View> then the **Select** button of the playback.

12.2 Creating a Cue List

12.2.1 Programming a Cue List

Programming a cue list is similar to recording a chase (Abschnitt 11.2).

You need to set up the look on the stage for each cue and then add it to the cue list. If you want to set fade times, you can either set them while saving the cues or later (Abschnitt 12.5).

1. Press <Record> then [Create Cue List].
2. Press the **Select** button of the playback where you want to store the Cue List *(you can also store cue lists in the Playbacks window)*.
3. Select the Record Mode (Abschnitt 12.2.1.1) of the console: by Fixture, Channel, Stage or Quick

Build; if you are using tracking, [Record Mode Channel] is best as you are sure to only record the attributes you have explicitly set, but you do need to make sure you have changed all the things you want to be recorded so they are in the programmer.

4. Set the default Fade and Delay times, and automatic cue linking, using [Set Times]. These settings will be allocated to every new cue.

5. Set up the look for the first cue, either manually or by using <Include> (see Include Function) on existing cues. You can use the Shape Generator (Abschnitt 9.2) and the Pixel Mapper (Abschnitt 9.4).

6. If you require a **legend** for the cue, set it now using [Legend]. You can also change this later using Unfold (Abschnitt 12.4.4) or Set Legend (Abschnitt 12.2.2) (see next section).

7. Press the **Select** button of the handle or [Append Cue] to store the programmer contents as Cue 1 of the cue list.

8. Repeat steps 5 - 7 for additional cues. Do not press <Clear> in between cues, unless you want levels to track through from previous cues, as any faders moving to zero will not be stored. If you do press clear, you must make sure that all channels you want to record are selected or in the programmer (inverted display).

9. Press <Exit> to finish when you have stored all the cues.

- You can reopen the cue list (Abschnitt 12.4) to add more cues by repeating the procedure above; this does not affect any cues already stored in the cue list.

- To add more cues to the end of the existing cues press [Append cue].

- To edit an existing cue, press [Cue Number=] and type the cue number to edit. Make the changes then press [Update Cue x].

- To insert new cues, see Editing Cue Lists (Abschnitt 12.4).

- The **Advanced Options menu** allows you to renumber all the cues, and to change the number of an existing cue.

- There is no limit to the number of cues in a cue list.

- Cue lists offer a **Move In Dark** function which will move fixtures to the correct position for their next cue while they are set to zero intensity. See the Move In Dark (MID) (Abschnitt 12.3.4) functions section.

- You can change the tracking mode (Abschnitt 12.3.3) of each cue.

Record Mode

The [Record Mode] softkey lets you select **Record By Fixture** (all attributes of any modified or selected fixture are saved), **Record By Channel** (only modified attributes are saved), **Record Stage** (all fixtures with a non-zero dimmer channel are saved) or **Quick Build** (allows you to build a cue from other playbacks or palettes; select the playbacks/palettes you wish to use and press [OK]).

> **Record By Channel** is useful if you want to layer this cue list with other playbacks to create an effect.

12.2.2 Changing Legends for Cues in a Cue List

You can set a legend for each cue, which is shown on the screen when running the cue list and can be helpful for keeping track of where you are.

1. Press [Set Legend] in the top level menu. If you are setting legends for several cues, press <Menu Latch> to latch the Set Legend menu.
2. Press the **Select** button of the Cue List.
3. The cues in the cue list are shown on the screen. Touch the list or use Wheel A to select which cue is to be renamed.
4. Press [Cue Legend] and type the legend on the keyboard, then press <Enter>.
5. If you latched the menu, you can continue to set legends for other cues, or press <Exit> to finish.

12.2.3 Shape Tracking in Cue Lists

Shapes can track between cues in cue lists. If shape tracking is enabled, a shape started in a cue will continue through following cues. Shape tracking is enabled using the [Shape Tracking] option in the playback Options for the cue list - see Cue List Options (Abschnitt 10.6.2).

Cues containing shapes have a button for each shape.
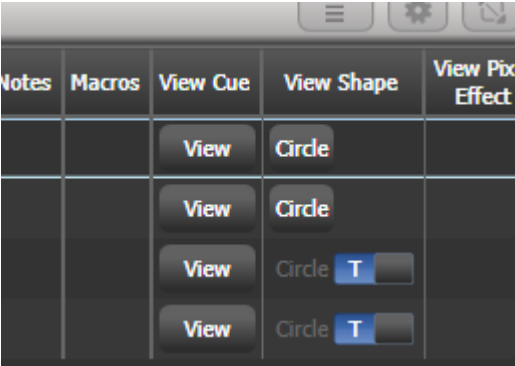
In the following cues where shapes are tracking, an option switch is shown for each active shape:

Setting	Action
T	Allows the shape to track to the next cue
B	Blocks the shape so it will not appear in following cues

The cue itself can also have options set to block all shapes, see Cue List Options (Abschnitt 10.6.2).

You can also block attributes for shapes independently during recording using the **@** menu. Select the Attribute** using the attribute bank buttons, press <@> then the <FX> group button. The softkeys will then give the options [Block Shape] and [Unblock Shape]. If an attribute is set to **Blocked** the wheel display will show a *"Blocked"* watermark.

If the **Shape Tracking** option in Cue list options (Abschnitt 10.6.2) is not enabled, shapes in each cue are independent from each other. If an identical shape (with the same size and speed) is saved in a following cue then the shape will continue running rather than restarting.

12.2.4 Autoloading a Playback within a Cue List

You can program a cue within a cue list to automatically load one or more playbacks when the cue fires. The playback can be a single cue, a chase or another cue list. This can be a useful way to trigger chases or effects from the cue list.

You can either automatically save active playbacks as **Autoloads**, or you can manually allocate **Autoloads** to cues.

To automatically record active playbacks as Autoloads:

1. After selecting **Cue List Record**, turn on [Autoload Live Playbacks] in the [Advanced Options] menu of the cue list record screen.
2. Turn on the playbacks you wish to load for this cue.
3. **Save the cue**. Active playbacks will be saved as Autoloads.

To manually edit autoloads use the playback view for the cue list:

1. Press <Open/View>
2. Press the **Select button** of the Cue List.
3. The cues in the cue list are shown on the screen. Click on the **Autoload** you wish to change.
   (You will need to set the window to full screen size or scroll across to see the Autoload column. If the Autoload column is not shown, click on the Show All button on the left of the window.)

4. Press the **Select button** of the playback which is to be loaded. The playback legend appears on the softkeys.
5. You can continue to add Autoloads to other cues, or press <Exit> to finish.

The Autoloaded playback will be fired when the cue starts, and killed when the cue list moves on to the next cue, unless you have also loaded the playback into the next cue.

You can set options for each Autoloaded playback by pressing the softkey where the Autoloaded playback is shown.

For a cue, the only option is [Remove this Autoload].

For a chase or cue list, **softkey B** lets you select whether to load the playback from the *start*, to start at a *specific cue*, or to press *Go* on the target playback.

In the Autoload Times column you can set fade in, fade out and delay times for the autoloaded playback. Normally the autoload will use the times set for the cue, but you can also select [Use Individual Target Times] which will use the times set in the autoloaded playback, or you can set independent times yourself.

12.2.5 Running a Key Macro from a Cue List

You can program a cue within a cue list to trigger a key macro. This allows you to set up custom actions which can be performed when a cue in a cue list fires; for example you may want to lamp on your fixtures as the first cue in the cue list.

1. Press <Open/View> then the **Select** button for the cue list to open its Playback View window.
2. In the **Playback View window**, find the cue you want to add a macro to.
3. Scroll across to the **Macros** column and click on the Macros grid cell for the appropriate cue.
4. Press the button(s) for the macro(s) you want to attach to the step, or press [Add] and choose an action from the list.
5. The **Macros** column shows the macros you have added.

You can remove macros by selecting the cue, pressing the softkey for the macro you wish to remove and then pressing [Remove Link].

12.2.6 Keyboard Shortcuts/Syntax for Cue Lists

The following keyboard syntax can be used for fast cue list recording and editing. These commands work for the selected or currently connected playback where **n** is the cue number. See also the Theatre Programming (Abschnitt 12.8) section and the Titan Quick Reference (Abschnitt 22.1) section.

Shortcut	Action
<Record>, <Connect/Cue>, **n**, <Enter>	Record cue **n**
<Copy>, <Connect/Cue>, n	Copy cue **n**
<Delete>, <Connect/Cue>, n	Delete cue **n**
<Include>, <Connect/Cue>, n	Include cue **n**
<Connect/Cue>, n, <Go>	Go cue **n**

12.3 Cue List Playback

12.3.1 Running a Cue List

Raise the fader of the cue list and press the <Go> button to run the first cue. The wheel display section of the screen shows the cue list status; the current cue is highlighted and the next cue has a grey box around it (On Diamond 9 the cue list status is shown at the bottom of the Editor screen).
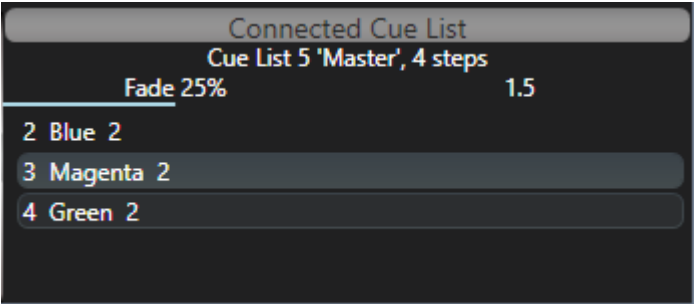
Also the playback legend display for the cue list shows information about the cue list. The current cue is shown at the top in light blue, with the next cue below in dark blue. Fade progress of the cue is shown in a bar graph in the light blue bar. Below this the times for the next cue are shown - in time with up arrow and out time with down arrow, d for delay and f for fade. If the cue list is set to manual crossfade a red 'M' is shown.
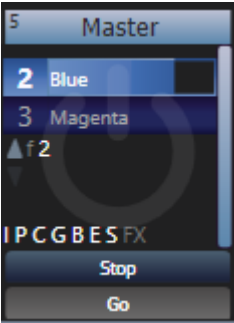
You can also open the Playback View window to show more details of the cue list by clicking the Cue List legend area or press <Open/View> then the **Select** button of the playback. This shows all the timings, links and tracking status and is very useful when running a theatre show (Abschnitt 12.8) on a cue list.

The option **Auto View On Connect** in the **Wheels** tab of User Settings (Abschnitt 19.5.16)) if enabled will automatically open the relevant Playback View window when you fire a cue list.

When times are in progress on a cue, green progress bars are shown in the Playback View window - the left hand column shows overall progress, and each timing section shows its own progress.

The Playback View will autoscroll to keep the active cue on-screen. You can change the way the autoscroll works using the view options (click the {Cog} button at the top of the window).

- The HTP levels of cues in the cue list are mastered by the fader level.

- You can **pause** a fade by pressing the <Stop> button above <Go>. Press <Go> again to resume the fade.

- You can **skip** to any cue in the cue list by selecting a "next" cue using Wheel A, or using the left/right arrow keys. When you press <Go>, the cue list will run that cue next. If you decide you don't want to skip, you can reset the cue list (so the next cue will be the cue after the current cue) by pressing the <Prev Cue> and <Next Cue> buttons together.

- You can go back to the previous cue following fade times by pressing <Stop> while the cue list is paused.

- You can snap back to the previous cue by pressing the <Snap Back> button *(not on all consoles)*.

- Turning on the <Snap> button will cause the <Prev>/<Next> buttons to snap immediately to the cue rather than going to the previous/next cue using the programmed times. There is also an option **Chase snap** in the **General** tab of User Settings (Abschnitt 19.5.1) which enables this mode on consoles which don't have the button.

- You can jump directly to a cue by pressing <Connect/Cue>, then typing in the desired cue number, then pressing <Enter> or softkey A.
  Alternatively at the top level menu you can type the cue number then press <Connect/Cue>. (This button may be labelled <Connect> or <Cue> depending on the console).

- You can use Key Profiles (Abschnitt 19.4) to set the buttons of the playback to have various functions including **Go**, **Stop**, **Connect**, **Next Cue**, **Prev Cue**, **Cut Next Cue To Live**, and **Snap Back**, see Key Profiles (Abschnitt 3.4.4).

- When you lower the fader for a cue list, the HTP channels will fade out, but the cue list will remain active. The section below details how to kill the cue list (Abschnitt 12.3.2).

- You can use **timecode** to play back a cue list automatically. See section Cue List Timing (Abschnitt 12.5.5).

- You can change the time for the next cue by entering the time on the keypad then pressing <Go>. You can jump to another cue and set a different time by typing the cue number then press <Connect/Cue>, then type the time and press <Go>.

12.3.2 Killing a Cue List

Once a cue list is fired, it remains active until you kill it. You do this by holding down the <Avo> button and pressing the **Select** button of the cue list's handle.

You can change this in the playback Options (Abschnitt 10.6) to make the cue list automatically clear when the fader reaches zero (press <Options> or the menu button [Options] at the program menu, then press the **Select** button of the cue list, then select [Fader] [Fader Mode Intensity Kill At 0].

You can also use Key Profiles (Abschnitt 3.4.4) to configure one of the handle buttons to release the cue list.

> While the cue list remains active, any shapes/effects stored in the current cue will run even if the fader is at zero. If you are working with a cue list and have unexplained shapes occurring, check all cue lists have been killed.

12.3.3 Tracking

By default, cue lists run in tracking mode. Only changes in attributes are stored, everything else just continues at the level it was previously set to. Tracking mode is usually used for theatrical performances (Abschnitt 12.8) because it makes editing much easier; if you need to adjust a dimmer level at the start of a scene, you don't have to go through and change the level on every cue for that scene, the change just tracks through the other cues until a new level is stored.

You can enable or disable Tracking mode globally for the whole cue list, or each cue can have Tracking mode set individually from the Playback View window (or Options, [Cue Options]).

Settings are:

Setting	Action
[Global] *(default)*	Obeys the global setting for the cue list.
[Track]	The cue will track
[Block]	The cue will not take tracking states from previous cues. All subsequent cues will track from the Block cue.
[Solo Excluding Shapes]	No states are tracked into or out of the cue, but shapes will track into the cue, except for dimmer shapes which will not track. This lets you have a cue that solos all levels but allows non-dimmer shapes to continue.
[Cue Only]	Changes in this cue will not track to subsequent cues. Tracked values from previous cues will be restored in subsequent cues.
[Solo]	No states are tracked into or out of a solo cue. States from previous cues will track to subsequent cues but will not appear in the solo cue.
[Block Shapes]	Any tracked shapes will stop from this cue. Other attributes will continue to be tracked. This lets you create a point where you can guarantee all shapes will stop.

You can view and edit how levels track between cues using the Tracking View (Abschnitt 12.4.5).

12.3.4   Move In Dark (MID) Functions

When using moving lights in theatre, often you would like them to be positioned ready for the next cue so that you do not see them moving. The Move In Dark function does this by automatically positioning the fixture for the next cue when it is not lit.

Move In Dark options can be set either for the whole cue list or for individual cues.

Options for the whole cue list are set by pressing <Options> (or the [Options] softkey on the top level menu) then the select button for the cue list, then [Playback].

Setting	Action
[Disabled]	Prevents Move In Dark functions for all cues in the cue list regardless of the individual cue settings
[Early]	Will attempt to position a fixture as soon as possible unless overridden in an individual cue
[Late]	Will position the fixture as late as possible
[Off] *(default)*	Turns off Move In Dark unless enabled in individual cues

For individual cues the options are set using the Playback Window.

Setting	Action
[Global] *(default)*	Uses the cue list's global setting
[Cue Number]	Specifies a cue where you would like the move to occur
[Cue Offset]	Specifies a preferred number of cues in advance
[Disabled]	Prevents Move In Dark for this cue
[Early]	Will move as early as possible
[Late]	Will move as late as possible

Move In Dark delay and Move In Dark fade times can be set for the whole cue list or for each cue using the Set Times menu. Each cue also has a Move In Dark Inhibit option which prevents any movements during that cue (useful if you need to prevent fixture noise at a particular point).

If the fixture has its intensity above zero or Move In Dark is inhibited when the Move In Dark is supposed to

occur, the console will attempt the movement in the nearest suitable cue instead.

12.3.5 Key Profile Options for Cue Lists

Using Key Profiles (Abschnitt 19.4), you can assign different functions to the buttons of the playback handle. (*The Sapphire Touch also has an additional black button*). If the cue list is stored on a touch button you can assign a function to that. See Key Profiles (Abschnitt 3.4.4) for a full list of functions.

12.4 Editing Cue Lists

This section describes how to edit cues within a cue list. To copy, move or delete an entire cue list see the section Copying, Moving, Linking and Deleting (Abschnitt 12.7).

- To edit cues using keypad syntax commands, see Theatre Programming (Abschnitt 12.8).

12.4.1 Playback View Window

The easiest way to edit a cue list is using the Playback View window (press <Open/View> then the **Select** button for the cue list to open it). This shows a grid with each cue and allows you to change most features of the cue. Select the item you want to change in the grid, and the softkeys will offer you options for what you can change.

To change multiple cues at once, draw a box across the items you want to change.

Also, the Intensity View window (Abschnitt 7.3.2) is useful for seeing the state of all fixtures.

12.4.2 Editing Values in Cue View Window

You can edit the value of every fixture in each cue using the Cue View window. Press the **View** button in the column *View Cue* at the right hand end of the Playback View window (Abschnitt 12.4.1).

Cue View - Cue 2

Attributes	Number	Order	Tracking	Dimmer	Pan	Tilt	Colour Func	Colour	Red	Green	Blue	Gobo 1 Fun	Gobo 1
Rb Pointe	1	1		0	53.01	1.4	Fixed	Magenta					
Rb Pointe	2	2		0	51	1.4	Fixed	Magenta					
Rb Pointe	3	3		0	49	1.4	Fixed	Magenta					
Rb Pointe	4	4		0	46.99	1.4	Fixed	Magenta					
LEDBm 150	5	0	Tracked		70.19	46.78			100	0	100		
LEDBm 150	6	0	Tracked		65.18	46.78			100	0	100		
LEDBm 150	11	0	Tracked		40.25	46.78			100	0	100		
LEDBm 150	12	0	Tracked		35.24	46.78			100	0	100		
e8 Bm 1RE	13	1		100	44.29	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	14	2		100	45.93	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	15	3		100	47.56	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	16	4		100	49.19	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	17	5		100	50.81	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	18	6		100	52.44	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	19	7		100	54.07	67.11	Fixed	Colour 9				Fixed	Gobo 10
e8 Bm 1RE	20	8		100	55.71	67.11	Fixed	Colour 9				Fixed	Gobo 10

Left panel: All | I | P | C | G | B | E | S | Fixture Type | All Fixtures | Robin Pointe | Robin LEDBeam 150 | clumen8 Beam 1RE

You can then click on the values you want to change and edit them using the softkeys.

- The context menu buttons allow you to view levels, shapes, effects and times for each attribute of each fixture in each cue.

- You can remove values from fixtures by selecting the value(s) in the grid and pressing the [Off] softkey. Values set to **Off** can be restored later by pressing [On].

- You can remove fixtures from the cue by selecting the fixture(s) in the left hand column and pressing [Remove Fixtures].

- If levels are set from a palette, the {View Palettes} context menu button either shows you the palette used, or the underlying value.

- Values have different colours to show their tracking status. Use the Tracking View window to edit how values are tracking between cues.

    - **White** means an unchanged hard (untracked) value.
    - **Green** means a hard value where the level has reduced.
    - **Cyan** means an initial value or a hard value where the level has increased.
    - **Magenta** means a tracked value (The *Tracking* column will also show *Tracked*).
    - **Red** means a block.

- You can hide tracked values using the {Show/Hide Tracked Values} context menu button.

12.4.3 Moving, Copying and Deleting Individual Cues

There are several ways to copy or move cues within a cue list. You can also move cues to other cue lists.

You can use **Unfold** (as described in the next section (Abschnitt 12.4.4)).

To move a cue you can either click and drag the cue in the Playback View window (Abschnitt 12.4.1), or click on the cue number and use the [Change To] softkey to enter the new cue number - once you have changed the number the cue will move to its correct position in the list.

To delete a cue press <Delete>, select the cue in the window, and tap the cue again, or press <Enter> or [Confirm] to confirm.

You can also use a command-line style series of keypresses:

- **{fader select}** is a playback fader select button, **n** is the cue number and sections in square brackets are optional. The <@> button is the one by the numeric keypad.

Keypresses	Action
<Copy> {fader select} **n** <@> **m** <Enter>	Copy cue **n** as new cue **m** in the same cue list
<Move> {fader select} **n** <@> **m** <Enter>	Move cue **n** to cue **m** in the same cue list
<Copy> {fader select} **n** <@> <@>	Copy cue **n** as new cue at end of same cue list
<Delete> {fader select} **n** <Enter> <Enter>	Delete cue **n**
<Copy> {fader select} **n** {fader select} **m** <Enter>	Copy cue **n** as new cue **m** in a different cue list
<Copy> {fader select} **n** {fader select} <Enter>	Copy cue **n** as new cue at the end of a different cue list

- For the **copy** commands, you can use <Move> in place of <Copy>to **move** cues. For consoles which don't have a <Move> button you can press (<Avo) and <Copy>) together to get Move.

- You can change multiple cues using <Thru>, <And> and [Not]. For example to copy cues 3, 4 ,5 ,7, 10 into a new block of cues starting at cue 20 you could do

  <Copy> {fader select} 3 <Thru> 7 [Not] 6 <And> 10 <@> 20 <Enter>

- You can press <Enter> instead of <@> if you are more familiar with that key sequence, for example to copy a cue onto the end of a cue list you can do <Copy> {fader select} **n** <Enter> <Enter>

12.4.4 Editing a Cue List using Unfold

As an alternative way of editing a cue list, the <Unfold> button places each cue of the cue list on one of the playback faders. This allows you to fire and edit each step individually as if it was a stand-alone cue.

1. Press <Unfold>, then the **Select** button of the cue list to be edited.
2. Cues are loaded into the **playback faders**. The display shows the cue numbers and legends *(go to the next or previous set of cues using softkeys F and G)*.
3. Raise a **playback fader** to output the contents of that cue *(fade times will operate as programmed)*.
4. *Various Unfold options are available, detailed below.*
5. Press <Unfold> again to exit unfold mode.

- To **edit** the contents of a cue: Press <Clear> to empty the programmer, raise the fader to output the cue, make the changes, press [Record Step], then the **Select** button for the cue number.

- To **merge** the programmer into the live step, double tap [Record Step].

- To change the times or cue linking for the cue, press [Edit Times], then the **Select** button for the cue, then set the times (see Cue List Timing (Abschnitt 12.5))

- To **insert** a new cue, set up the look for the new cue, press B [Insert Step], then press the playback button where you want the new cue to go. All following cues will be shifted on by one and the new cue will be given a number in between the two existing cues *(for example, if you press playback 3, your new cue will be 2.5)*.

- To **move** or **copy** a cue, press the <Move> or <Copy> button, press the **select** button for the cue you want to move or copy, then press the **select** button where you want it to go.

- To **delete** a cue, press the <Delete> button then the **select** button for the cue you want to delete. Press the **select** button again to confirm.

- To change the **cue legend**, press [Set Step Legend] then the playback **select** for the step you want to change.

- If the cue list has more cues than there are playback faders, you can swop to the next page using softkeys F and G.

12.4.5 Editing tracked cues using Tracking View

The Tracking View window allows you to see and edit how dimmer levels and other attributes are tracked between cues in a cue list. This is really useful to tidy up a show after a frantic programming session if you've saved hard values accidentally instead of using tracking, or to work out where an incorrectly tracked value is coming from.

To show the Tracking View, use the context menu in the Playback View to select {View Tracking}.

- You can also double-press <Open/View> and select Tracking View from the workspaces menu, but then you need to select which Cue List you want to view, from the list on the softkeys.
- You can select a different cue list to view using the context menu {Select Cue List} option.

The cues are listed in the grid showing the attribute values stored in each cue. The tracking state is shown by colour: - **White** means an unchanged hard (untracked) value. - **Green** means a hard value where the level has reduced. - **Cyan** means an initial value or a hard value where the level has increased. - **Magenta** means a tracked value. - **Red** means a block.

On the left side of the window, you can filter the fixtures and attributes shown in the grid to show only: - one of the IPCGBES attribute banks, or All - the current attribute bank as selected on the console buttons - the currently selected fixtures - a particular type of fixture patched in the show.

By selecting one or more values in the grid, you can do the following from the softkey options. Press <Exit> to deselect all values in the grid.

- [Select Function] gives a submenu with various levels or fixture functions.
- [Tracking] gives a submenu where you can change the tracking mode.
- [Set Hard Value] will record the values in the selected cells as hard values.
- [Delete] will remove all hard (untracked) values in selected cells. Has no effect on tracked values.
- [Delete Redundant] will remove hard values if the same value would have tracked into the cue. You can use this to delete hard values and return cues to being tracked in multiple columns / rows by selecting the column / row headers.

- [Off] Set selected attributes to Off.
- [On] Set selected attributes to On (for more information about On/Off see Off (Abschnitt 10.4.5)).

If any fixture or attribute has been set to non-global, then a letter after the value shows T (Track), B (Block), C (Cue Only) or S (Solo).

Tracking View display options

Using the window appearance menu button {Cog} you can change the following display options for the Tracking View:

- {Column Size} can be set to Small, Normal, Large, Super Size.
- {Window Scroll} can be set to automatically scroll on the {Next Cue}, or require {Manual} scrolling.
- {Scroll offset from top} sets how many past cues are visible above the current cue.
- {Palettes} sets how attributes display when a palette has been stored. You can choose {Hidden} (displays value only), {Legend Only} (shows the palette legend), or {Legend and Value} (shows legend, and also value if the column is wide enough).

You can also show or hide various parts of the display to make more space in the window: - {Attribute Filters} - {Selection Filters} - {Fixture Filters} - {Tracking Column} - {Legend Column} - {Fixture Legends} - {Scroll Bars}

In the Context menu for the Tracking View screen there are Sort and Filter options: - {Attributes} can be sorted in IPCGBES Bank Order or by Current Bank First where the selected attribute bank shows first, followed by the others. - {Fixtures} can be sorted by User Number, Last Selected and DMX Address. - The sort order can be set as {Fixtures then Attributes} (each fixture listed with all its attributes) or {Attributes then Fixtures} (same attributes listed together).

For the Filter options - {Bank Selection} links the Attribute filters to the currently selected attribute bank (also changing the attribute bank filter in the Tracking View window will change the attribute bank for the wheels when this option is enabled). - {Fixture Selection} links the window to currently selected fixtures when enabled.

12.4.6 Using Update to Change Tracked Cues

Because fixture settings in a cue list are tracked (Abschnitt 12.3.3) through from previous cues, if you want to edit a setting you need to find the cue where it was originally stored as a hard value.

The **Update** function will go back through the cue list from the currently fired cue and automatically update the correct cue.

1. With the cue list fired, select the fixtures and change them to the settings you want to store.
2. Press <Update> *(<Record Cue>, [Update] if the console doesn't have an Update button)*.
3. Press <Enter> to immediately store the new values to the cue list.

Alternatively, the softkeys show a list of palettes and playbacks which can be updated. Select or deselect these as required.

If you have used the softkey options, press <Enter> to complete the update.

If the attributes you have changed were tracked (Abschnitt 12.3.3) through from a previous cue, Update will update that cue rather than the current one.

12.4.7 Editing a Cue List Which is Running

You can also edit cues in a cue list while you are running it without using Unfold (Abschnitt 12.4.4).

1. **Fire the cue list** by raising its fader.
2. Use **Wheel A** to select the cue number you want to change then the <Go> button to jump to it. *(On Pearl Expert/Tiger Touch 1 press the white ↔ button above the Snap Back button instead of <Go>)*
3. Press <Clear> to make sure the programmer is empty.
4. Make the changes that you want to the current step.
5. Press <Record> then <Connect/Cue>, then select [Replace], [Merge] or [Insert After] to save the changes. *(On Pearl Expert and Tiger Touch 1 use the Rec Step button)*
6. Press the <Go> button *(on Pearl Expert and Tiger Touch 1 the white ↔ button)* to jump on to the next step.

- You can merge your changes into the current live cue by pressing <Record> <Connect/Cue> <Connect/Cue>.

12.4.8 Edit Times of a Running Cue List

You can edit the times for a cue using the <Live Time> and <Next Time> buttons *(not on all consoles)* as follows:

1. **Fire the cue list** by raising its fader.
2. Use **Wheel A** to select the cue number you want to change then the <Go> button to jump to it (on Pearl Expert and Tiger Touch 1 the white ↔ button)
3. Press <Live Time> to set the times for the current step, or <Next Time> for the next step. The Live and Next step numbers are shown on the display above the controller wheel.
4. Use the softkeys to set the times, linking and overlap settings you want (see Cue List Timing (Abschnitt 12.5) for a description of the times). If you set the link option to [Link With Previous

---

> Cue] or [Link after Previous Cue] then this cue will not wait for the <Go> button but will start automatically.
>
> 5. Press the <Go> button *(on Pearl Expert and Tiger Touch 1 the white ↔ button)* to jump on to the next step.

- The <Review> button lets you test the live step with the new timings.

You can also use <Unfold> to set the times as described in the

12.4.9 Editing a Cue List While Recording

You can edit cues while you are in the Record Cue List menu.

> 1. Press [Cue Number=x] and type the cue number to be edited.
> 2. The console will jump to the cue and show the output.
> 3. Make the changes that you want to the programming of the current step, or to the timings using [Edit Cue x Times].
> 4. Press [Update Cue x] or the Rec Step button to save the changes.

Update Mode

The [Update Mode] softkey allows you to set how changes in the cue will be tracked.

Update Mode	Action

Forwards
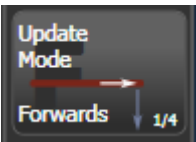
Updates the channels in the current cue and tracks following cues until the channels are next changed. The values in cues before this one will not be changed.

Backwards
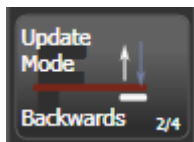
Updates the current cue and tracks backwards through cues until the channels were last changed.

Both
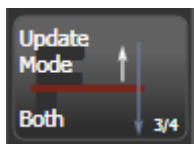
Updates the current cue, tracking backwards through previous cues from the previous change and forwards through following cues to the next change.

Cue Only
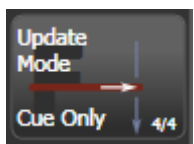
 Just sets the current cue.

> You can't change the cue number using this menu - if you press [Cue Number] this will change the cue you are editing. Use [Advanced Options] to change cue numbers.

12.4.10 Updating Values in a Range of Cues

You can **merge** or **replace** values in a range of cues in a cue list (or a chase). This can be done either from the keypad or from the Playback View (Abschnitt 12.4.1).

From Playback View (Abschnitt 12.4.1), press <Record> then select a cue or range of cues by touching and dragging over the required cues. Select [Merge] or [Replace] (or press <Enter> to merge). The current programmer will be merged into all of the selected cues.

From the keypad, connect the cue list (or chase) and press <Rec Step>. Then use the syntax **n** <THRU> **m** to select a range or **n** <And> **m** to select cues which aren't together. The selected cues will highlight in red in the Playback View (Abschnitt 12.4.1) if you have it open. When you have selected all desired cues press <Enter>, then select [Merge] or [Replace] (or just press <Enter> again to merge).

12.4.11 Disabling a Cue

You can temporarily disable a cue using the **Disable** option at the right hand end of the Playback View window (Abschnitt 12.4.1). Tick the **Disabled** checkbox and the softkeys let you set [Cue Disabled Yes]. When a cue is set to **Disabled** it will be skipped. This can be a useful way to remove a cue, but still be able to put it back in later.

12.4.12 Extracting a Cue from a Cue List with Include

You can reload a single cue out of a cue list into the programmer using the Include function (Abschnitt 10.4.4). Press <Include>, select the cue list, enter the cue number to be included, then press [Include Cue].

If you want to do this from the currently connected cue list, Press <Include>, <Connect/Cue>, type the cue number, [Include Cue].

This is useful if you want to reuse a state from a cue list in another playback. It is also useful if you want to edit shapes/effects in a cue, although you can also do this from the Playback View window (Abschnitt 12.4.1).

12.4.13 How Merged values are stored into cues

When merging into a cue containing the same fixtures, that information will always be recorded "by channel" regardless of what the record mode is set to. Otherwise merging into a cue would overwrite all the values you have for a fixture so instead it just merges the attributes that are tagged in the programmer. You can keep the console in "Record by Fixture" mode when editing cues and let the console handle it with Tracking Record.

Fixtures that do not exist in the cue already will be recorded "by fixture", this is usually best for theatre programming as it ensures that fixtures have all their attributes set to defaults (even if they are changed later or by another playback).

12.5 Cue List Timing

12.5.1 Time and Fade Options for Cue Lists

The easiest way to set timing options for cues in cue lists is using the Playback View grid display (press <Open/View> then the **Select** button of the playback). Tap on the value you want to change, or drag to select multiple values to change. You can also select the *active cue* using **Wheel A** or by pressing [Select Cue Number] softkey in the **Edit Times** menu for the cue list. You can select a range of values using **Wheel B**.

Once you have selected values to change, the softkeys show you what you are setting.

Cues		Legend	Delay In	Fade In	Delay Out	Fade Out	Fixture Overlap	Link	Link Offset
Options	1	Tab warm	0	0	As In	As In	100	Wait For Go	Disabled
	2	Cue 2	0	2	As In	As In	100	Wait For Go	Disabled
Show All	3	Blackout	0	0.5	As In	As In	100	Wait For Go	Disabled
Times	4	Cue 4	0	1	As In	As In	100	Wait For Go	Disabled
	5	Cue 5	0	2	As In	As In	100	Wait For Go	Disabled
	6	Cue 6	0	2	As In	As In	100	Wait For Go	Disabled
	7	Cue 7	0	0.5	As In	As In	100	Wait For Go	Disabled

Playback View - Cue List 7

For each cue you can independently set fade times for fixtures which are fading in (to a higher dimmer level) and fixtures which are fading out/down (to a lower dimmer level). The fade-out times are normally set to be "As In", so the "Fade In" time will be used for all fixtures.

LTP channels (all attributes other than brightness) will fade using the "Fade In" time.

- [Fade In] sets the fade time of fixtures which are fading to a higher dimmer level than in the previous cue, and also fade time of LTP channels. If the Fade/Delay Out times are set to "As In" (default) then this will also set the fade time of fixtures which are fading to a lower dimmer level. Type a time in seconds and press <Enter>.
- [Delay In] sets the delay time between pressing <Go> (or other cue trigger) and the start of the fade-in.
- [Fade Out] sets the fade time of fixtures which are fading out/down to a lower dimmer level than in the previous cue. It is set by default to be "As In", the same as the fade in time. To go back to "As In", delete the time and leave the box blank.
- [Delay Out] sets the delay time between pressing <Go> (or other cue trigger) and the start of the fade-out. It is set by default to be "As In", the same as the delay in time. To go back to "As In", delete the time and leave the box blank.

12.5.2 Cue Linking & Link Offset

Cues in cue lists may be linked together, allowing you to build up complex self-timed sequences. The link options are set using the softkeys and are:

Link Option	Action
[Link Wait For Go]	The cue waits for the Go button to be pressed then fires immediately. *Link Offset is disabled.*

Link Option	Action
[Link After Previous Cue]	The cue fires when the previous cue has finished its delay in and fade in times. A Link Offset can be set to add a delay between the previous cue finishing and this cue firing. The offset can be given as a time in seconds, or as a percentage of the fade time of the previous cue.
[Link With Previous Cue]	The cue fires at the same time as the previous cue fires. A Link Offset can be set to add a delay between the previous cue firing and this cue firing, set either in seconds or as a percentage of the fade time of the previous cue.
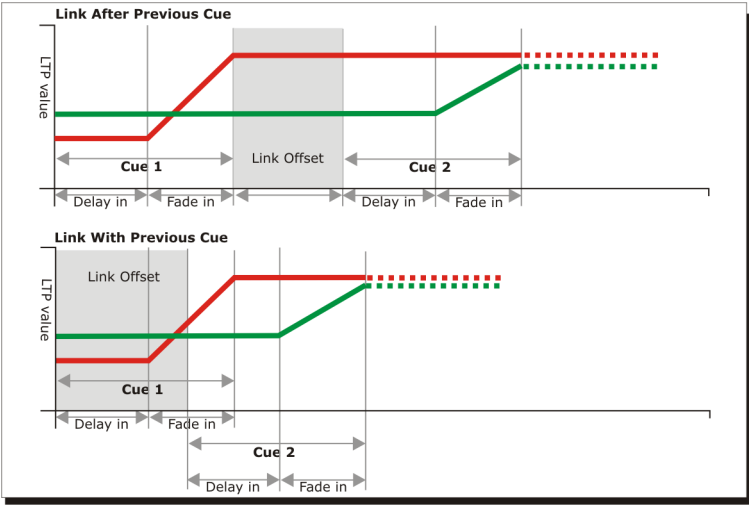
These options allow you to create complex self timed sequences by building up simple steps. For example if you wanted the following effect:

- <Go> is pressed, fixture one starts fading up over 20s
- After 10s fixture two fades up over 15s
- Both lights stay on for 5s
- Both lights go off in 3s

You could program

- **Cue 1** - Fixture 1 @ 100%, Fade In 20s, Link Wait For Go

- **Cue 2** - Fixture 2 @ 100%, Fade In 15s, Link With Previous, Link Offset 10s
- **Cue 3** - Fixture 1 AND 2 @ 0%, Fade Out 3s, Link After Previous, Link Offset 5s

> To obtain the effect which was called *"cue overlap"* in previous versions of software, use [Link With Previous Cue] and set a percentage Link Offset time. Link Offset of 100% is equivalent to Cue Overlap of 0% and vice versa.

12.5.3 Individual Attribute Fade Times

You can set individual fade times for each **IPCGBES** attribute group. You can also select which fixtures this is applied to. For example you can make the position change take 2 seconds, but the colour change take 10 seconds.

Additionally you can set individual times for each attribute so you could make the pan fade over a different time to the tilt.

To set times for an attribute group, first select the [Edit Times] menu and go to the cue you want to set as described above (Abschnitt 12.5.1), then press [Next] to go to the second page of options.

> 1. Press [Attribute Group Times].
> 2. All fixtures in the cue will be selected. *If you don't want to change the times for any fixtures, deselect them now.* You can press the <ALL> button (below Next Time) to select all fixtures in the cue or <Avo> + <ALL> to deselect all fixtures.
> 3. Press the softkey for the attribute group you want to change.
> 4. Press [Delay] to set the **delay time**, or press [Fade] to set the **fade time**. If a time is set you can return to the Global time setting by deleting the time using the <Back> button or by pressing [Use Global].

> You can use [Individual Attributes] to set times for one attribute within the group, for example just Pan from within the Position group. You can also use the Cue View window (Abschnitt 12.4.2) to set times for individual attributes.

12.5.4 Fixture Overlap

For each cue you can set a fixture overlap, which creates an effect where the fixtures in the cue are changed in sequence rather than all at the same time. This is described in more detail in Cue Timing (Abschnitt 10.5.1).

12.5.5 Running a Cue List to Timecode

The console can run a cue list automatically to a timecode. This is very useful for complex performances which must be exactly the same time every time, or for unattended operation. Each step in the cue list is assigned a time at which it will run.

> See also Timelines (Abschnitt 13.1) which offer a more streamlined way of producing a show to time-code.

The console can have up to 4 separate timecode sources. For each, the timecode can be read from the system clock, from an internal timecode source, from MIDI, SMPTE or from the Winamp player which is installed on the console. Internal timecode is useful for programming a sequence which will later be triggered by an external timecode source.
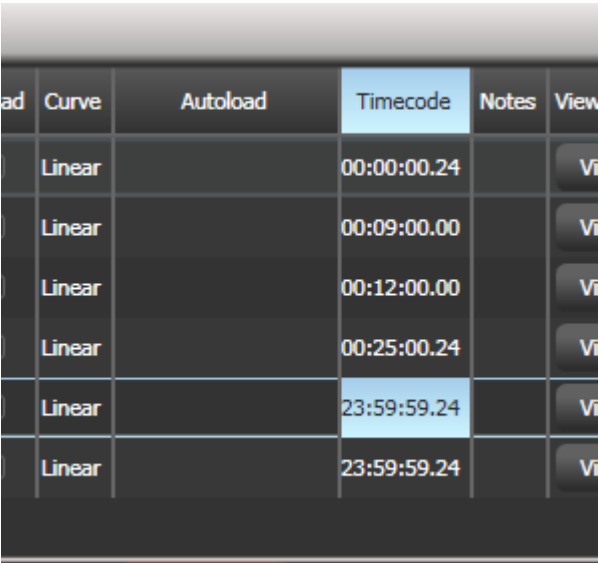
> For Winamp timecode, use WAV tracks rather than MP3 tracks as Winamp sometimes generates incorrect or offset timecode when playing MP3. If you pre-program a show using Winamp MP3 then switch to external timecode for the show, your trigger points may end up out of place.

1. **Connect** the cue list for which you want to set timecode.
2. Press [Timecode] on the top-level menu.
3. Press **softkey A** to select Timecode 1-4, and **softkey B** to select the desired timecode source.
4. Press [Record].
5. Start the timecode source. *If using internal timecode, press [Play] to start it.*
6. Press the red <Go> button to step each cue at the time you wish the cue to start.
7. Press [Record] when you have finished.

To play back a timecoded cue list, press [Connected Cue Lists] on the Timecode menu and select the cue list which is to be played. Then press [Timer Disabled/Enabled] to enable the timecode input. Note that the **Timer Disabled/Enabled** toggle affects all four timecode streams as it is a general timecode switch. If you just want to disable a specific timecode stream then set its source to **No Timecode** at Step 3.

When you start the timecode source (or press [Play] if using internal timecode), each cue will fire as the timecode matches its programmed time.

In order to edit a cue's timecode, select the cue's timecode cell in Playback View and enter the correct time, or - using the menu buttons - press [Edit Times], enter the cue number, toggle to the 3rd page of this menu with [Next], click [Timecode =] and enter the new timestamp.

ad	Curve	Autoload	Timecode	Notes	View
)	Linear		00:00:00.24		Vi
)	Linear		00:09:00.00		Vi
)	Linear		00:12:00.00		Vi
)	Linear		00:25:00.24		Vi
)	Linear		23:59:59.24		Vi
)	Linear		23:59:59.24		Vi

While editing a time you can also use **Wheel B** to select multiple cues, and use the softkey options to enter a value to change the time of all the cues: [Timecode =] sets the timecode directly while a value set with [Offset =] can be used in [Add +] or [Subtract -], to shift all selected timestamps by this timespan.

You can open a timecode display window for each of the four possible sources to show you the incoming timecode - double press <Open/View> then press [Timecode x] (where x is 1 to 4) from the workspace select buttons.
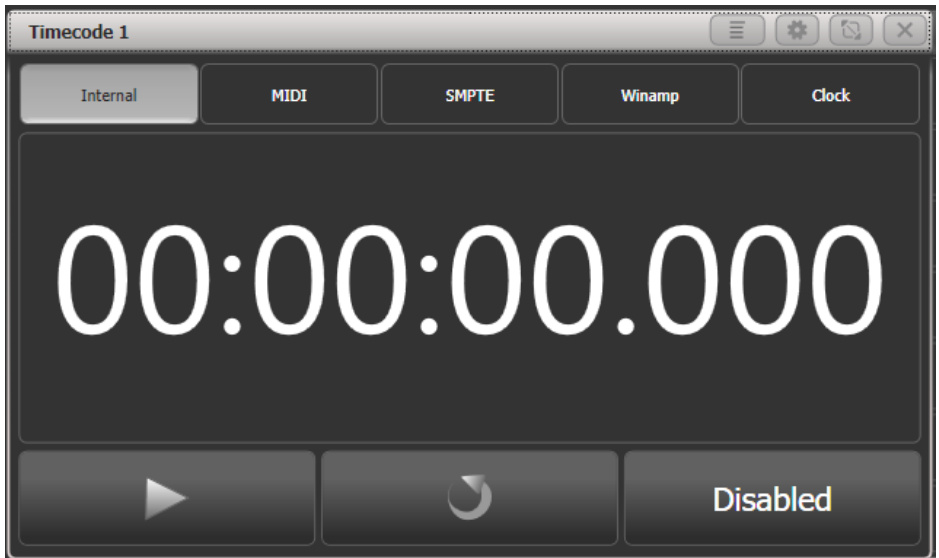
12.6 Cue List Options

Cue list options are set from the playback Options (Abschnitt 10.6). Press <Options> (or the [Options] soft-key on the top level menu) then the **Select** button for the cue list you wish to edit.

You can also set the cue list options from the Cue List View window by pressing <Open/View> then the **Select** button of the cue list, then click the **Options** tab.

The Cue List options are mostly the same as for Cues (Abschnitt 10.6) and Chases (Abschnitt 11.6), only the additional Cue List options are described here.

12.6.1 Handle Tab

All options are the same as for a cue, see Options (Abschnitt 10.6.1).

12.6.2 Playback Tab

Blind, Cross Fade HTP, Priority, Run On Startup are the same as for a cue and described in Playback (Abschnitt 10.6.2).

Cue Links Disabled

Unlinks all the cues in the cue list even if they are programmed as linked, so you need to press the Go button to move to the next cue.

Loop Action

Sets what will happen at the end of the cue list

Setting	Action
Stop on final cue	Cue list will stop advancing once it reaches the last cue.
Loop	Cue list will go back to first cue after the last. *If Move in Dark is enabled, this will also loop.*

Move In Dark

Sets the mode for the whole cue list *(see Move In Dark (MID) Functions (Abschnitt 12.3.4))*.

Setting	Action
Off	Obeys settings for individual cues *(default option)*
Disabled	No move in dark even if set in cues
Early	Moves as soon as fixture intensity is 0
Late	Moves in the last cue before the fixture is needed

Shape Tracking

Sets how shapes are tracked between cues.

Setting	Action
Off	Shapes will stop when the next cue starts
On	Shapes will track until stopped or changed in a cue
Local	Follows the tracking option above *(default option)*

Timecode Source

Allocates which timecode source will be used by this Cue List.

Tracking

Enables or disables Tracking mode (where unchanged settings persist from the previous cues). *Enabled by default.*

12.6.3 Times Tab

All options are the same as for cues, see Times (Abschnitt 10.6.3).

12.6.4 Fader Tab

Cue List Fader Mode

Sets how the cue list fader behaves.

Setting	Action
Fader Mode Intensity Kill With Off	The fader masters the overall HTP level and the cue list remains active (connected) even when the fader is lowered to zero.
Fader Mode Intensity Kill At 0	The fader masters the overall HTP level and the cue list is killed when the fader is lowered to zero.
Manual Crossfader	The fader behaves as a manual crossfade control, and the cue list will automatically step on to the next cue when the fader begins travel from top or bottom.

When the fader is in **Manual Crossfader** mode: - A running fade can be "captured" onto the fader for manual control by matching the fader position. - When firing a cue list in manual crossfade the intensity snaps to full when the fader leaves zero. - Shapes (Abschnitt 9.2) and Pixel Mapper (Abschnitt 9.4) effects will fade in with the manual crossfade, but when the fader returns to 0 they are not removed so may still affect the output. - Autoloads (Abschnitt 12.2.4) in the cue list will use their programmed fade times, regardless of the manual crossfade performed by the fader. - Partially completed crossfades can be completed by pressing <Go>.

Fire First Cue

Sets whether the first cue automatically fires when the fader is raised, or if you need to press the <Go> button after raising the fader to fire it.

If you have selected a particular cue in the cue list (using Next Cue / Prev Cue buttons on a connected cue list or by keypad syntax) then the "Fire first cue" option will fire the selected cue rather than the first one when the fader is raised.

12.6.5 Effects Tab

All options are the same as for cues, see Effects (Abschnitt 10.6.5).

12.6.6 Release Tab

Release Mask and Release Time are described for cues, see Release (Abschnitt 10.6.6).

Cue Release

Sets fixtures to release when moving to the next cue, if they are not programmed in the next cue. This can be useful for creating some effects.

> The **Cue Options** which could be set here in previous versions are now set using the Playback View window, press <Open/View> then the select button for the playback. You can edit cue settings directly in the grid.

12.7 Copying⊠ Moving⊠ Linking and Deleting Cue Lists

This section describes how to copy, move and delete entire cue lists. The Editing Cue Lists (Abschnitt 12.4) section describes how you copy, move and delete individual cues within a cue list (Abschnitt 12.4.3).

12.7.1 Copying or Moving a Cue List

Using the <Copy> and <Move> buttons, cue lists can be copied or moved to a new playback, or you can create a linked copy of a playback. Move is useful for tidying up the console. Linked copies are useful if you want the same cue list to appear on different playback pages.

This operation is exactly the same as for Cues and is described in Copying, Moving, Linking and Deleting (Abschnitt 10.7).

12.7.2 Deleting a Cue List

You can delete a whole cue list by pressing <Delete> then the **Select** button of the playback to be deleted. Confirm the deletion by pressing the select button again, or the [Confirm] softkey, or <Enter>.

12.8 Theatre Programming Quick Guide

If you are used to programming other theatre-style consoles, you will be more familiar with using a key-pad/syntax style interface, rather than the Titan touchscreen. But fear not because you can program a theatre show on Titan using keypad syntax and this is how you do it.

- Labelled buttons on the console are shown like this: <Enter>.
- For commands with a + you hold down the first button while pressing the second. For example <Clear> + <All> means hold down <Clear> then press <All>.
- The <@> button is the one next to the numeric keypad, not the ones near the wheels.
- The <Cue> button is labelled <Connect> or <Connect/Cue> on some consoles.
- The <Through> button is labelled <Thro> on some consoles.
- The <And> and <Through> buttons are not provided as fixed buttons on some consoles, softkey [And] and [Through] options are provided instead.

Each Fixture (or dimmer channel) has a User Number *(which is equivalent to the Channel Number on other consoles)*, shown in the top left corner of the fixture button. This is the number **n** shown in the keypad commands below. You can change this number using the [Set Legend] softkey, see section Changing the Patch (Abschnitt 6.3.5). Groups also have a User Number.

- Commands can be joined together, until you press <Enter> which executes the command. So you can for example select fixtures and then set an intensity level on them in the same command.
- Once fixtures have been selected you can continue to make changes to them until you press <Clear> or select different fixtures.
- Intensity values are normally set as a 2-digit percentage (so "50" for 50%) but you can change this to single-digit mode in the Formatting tab of the User Settings (Abschnitt 19.5.10)

12.8.1 Selecting Fixtures to be controlled

Keypresses	Action
n <Enter>	Select fixture n for control
n <Through> **m** <Enter>	Select fixtures **n** through **m** for control
<Group> **n** <Enter>	Select fixture group **n** for control
n <Through> **m** <And> **p**	Select fixtures **n** through **m** and **p** for control
n <Through> **m** <And> **p** <Through> **q**	Select fixtures **n** through **m** and **p** through **q** for control
n <Through> **m** <Not> **p**	Select fixtures **n** through **m**, but miss out fixture **p**

- If fixtures have cells or subfixtures (for example, pixel bars) you can individually select cells using the "dot" notation, for example **n** <.> 1 <Through> 4 <Enter> would select the first 4 cells of fixture **n**. See Celled Fixtures (Abschnitt 22.1.1.1).

12.8.2 Setting Fixture intensity levels

Keypresses	Action
<@> **v** <Enter>	Set the currently selected fixtures to **v%** *(see note above about 2-digit %)*
<@> <@>	Set the currently selected fixtures to 100%
n <@> **v** <Enter>	Set fixture **n** to **v%**
n <@> <@>	Set fixture **n** to 100%
n <Through> **m** <@> **v** <Enter>	Set fixtures **n - m** to **v%**
n <And> **m** <And> **p** <@> **v** <Enter>	Set fixtures **n**, **m**, **p** to **v%**
<Group> **n** <@> **v** <Enter>	Set fixtures in group **n** to **v%**

12.8.3 Setting Other Attributes of Intelligent Fixtures

Keypresses	Action
<@> **b** </> **v**	Set gel colour **v** from library **b** to selected fixtures. (1=Library L, 2=Library R, 3=Library G)
<Gobo> (Turn Wheels)	Set gobo values of selected fixtures as shown above the wheels.
<Gobo> <Wheel @> [Gobo 1]	Set gobo values of selected fixtures as shown on the softkeys. (This uses the <Wheel @> button next to each wheel)

- For setting gel colours, if the console does not have a hardware </> button you need to use an external qwerty keyboard or the touch keyboard. See Selecting gel colours (Abschnitt 7.2.4.6).

12.8.4 Clear functions

Keypresses	Action
<Clear>	Snap clear the programmer - this will clear the programmer, returning edited intensity/HTP channels back to programmed state and deselecting fixtures *(similar to Sneak on ETC but only acting on intensity channels)*
<Release> + <Clear>	Release the programmer - this will clear the programmer, release edited channels (HTP and LTP) back to programmed state and deselect fixtures *(like Sneak on ETC)*
t <Clear>	Clear edited channels fading over time **t**
<Clear> + <All>	Deselect all fixtures, but keep edited values in the programmer

- The Clear function can be changed to operate in a 2-step mode where the first press deselects fixtures, then the 2nd press clears edited values, or the other way around. See Action Precedence (Abschnitt 19.5.12) option in the Clear tab of User Settings.

While you hold down <Clear>, other functions are available on the softkeys, allowing you to clear the edited values from only selected fixtures, or to clear values using a mask. See Clear button hold down options (Abschnitt 7.1.3.1)

12.8.5 Programming Cues

Titan can have multiple cue lists. To start a cue list press <Record> then select [Create Cue List] from the touch screen. Then press a **Select** button above the fader where you want to store the cue list.

When programming, Titan uses a concept called "the Programmer". This keeps track of the dimmers/fixture attributes which you have manually changed (or changed with a palette) since you last pressed <Clear>.

The [Record Mode] softkey lets you choose the following ways of programming changes:

- **Record by Channel** will record the individual attributes of fixtures which are in the programmer. So if you have a fixture where you have only changed the pan/tilt, only the pan/tilt will be recorded and the other attributes will not be affected by the cue. This is best for cues which are used to modify other cues (for example a colour-changing cue).

- **Record by Fixture** will record the complete state of fixtures which have any changed attributes in the programmer. So if you have a fixture where you have only changed the pan/tilt, all the other attributes of the fixture will be recorded as well. This is best for cues where you want to be sure that the fixture looks like it was when you programmed it, regardless of its previous state.

- **Record by Stage** will ignore the programmer and record everything which has its intensity set above zero.

Note this means that *if you put up another playback, that won't get recorded* unless you are using "Record by Stage" mode, since the playback isn't in the programmer (see Creating a Cue (Abschnitt 10.2.2)). You can use the Include (Abschnitt 10.4.4) function to get a playback into the programmer for recording elsewhere.

In addition to the above, if you have Tracking Mode (Abschnitt 12.3.3) enabled for the Cue List (the default setting) then the console will not record dimmers/attributes unless they have changed from the previous cue in the Cue List. This is the normal operation of theatrical lighting consoles and makes editing cues easier, since you only have the change the cue where the attribute was originally set.

Keypresses	Action
<Record> [Create Cue List] {fader select}	Start recording a new cue list on this fader
<Record> {fader select} {fader select}	Record the next cue onto the end of the cue list on this fader
<Record> <Cue> **n** <Enter>	Record cue **n** *(will prompt for merge/overwrite if it exists already)*
<Time> **t** <Enter>	Set fade time into programmer *(does not affect stored cues; will save with the next cue you record)*
<View> {fader select}	Show the list of cues on screen, click on individual times in the grid to edit them

Copy, Move and Delete commands

Keypresses	Action
<Copy> <Cue> **n** <@> <Cue> **m** <Enter>	Copy cue **n** to new cue **m**
<Copy> <Cue> **n** <@> <Enter>	Copy cue **n** onto the end of the cue list
<Delete> <Cue> **n** <Enter> <Enter>	Delete cue **n** *(2nd <Enter> confirms)*

- For the **copy** commands, you can use <Move> in place of <Copy>to **move** cues. For consoles which don't have a <Move> button you can press (<Avo> and <Copy>) together to get Move.

- You can select multiple cues using <Through>, <And> and [Not]. For example to copy cues 3, 4 ,5 ,7, 10 into a new block of cues starting at cue 20 you could do

  <Copy> {fader select} **3** <Through> **7** [Not] **6** <And> **10** <@> **20** <Enter>

Block and Follow-On cues

Use the Cue List window to set Block or Follow-On cues (using <View> {fader select}).

- To make a **Block** cue (changes from previous cues do not track), in the Tracking column click the cell for the cue you want to change and select [Block] from the softkeys.

- To make a Follow-On or linked cue so they automatically run after each other, click on the "Link" cell (which normally shows "Wait For Go". Then select from the softkeys [Link After Previous Cue] or [Link With Previous Cue]. For Link After, set the "Delay Out" time to set how long the cue will remain before the next cue starts.

12.8.6 Running Cues

Push up the fader of the cue list to make it active. Titan calls this the *connected* cue list and the control buttons such as Go will operate on this cue list.

Keypresses	Action
<Cue> {fader select}	If another cue list is active, connect this cue list as the current list
<Go>	Run next cue with programmed times
<Cue> **n** <Go>	Go cue **n** with programmed times
t <Go>	Next cue go with fade time **t**
n <Cue> **t** <Go>	Jump to cue **n** with fade time **t**

- If you want moving fixtures to automatically position themselves ready for the next cue, enable the [Move In Dark] option, see Move In Dark (Abschnitt 12.6.2.3). This option is Off by default.

12.8.7 Updating Cues

You can update a single cue with the contents of the programmer, or add the same changes to a range of cues.

Keypresses	Action
<Record> <Cue> **n** <Enter> <Enter>	Update cue **n** by merging the contents of the programmer and track forwards *(will add the cue if it does not already exist)*.
<Record> <Cue> **n** <@> <@>	Update cue **n** only by merging the contents of the programmer, no forward tracking.
<Cue> **n** <Time> **t** <Enter>	Set fade time of cue **n** to **t** seconds
<Record> <Cue> **n** <Through> **m** [Merge]	Merge the contents of the programmer into cues **n** to **m** inclusive. *(Will add any whole number cues which are missing in that range)*
<Update> <Cue> **n** <Through> **m** [Update]	Updates cues **n** to **m** inclusive with the contents of the programmer *(Will not add any cues, or any attributes which were not originally in the cue - see note below about Add Channels option)*
<Record> <Update> <Cue> **n** <Through> **m** [Update]	Updates cues **n** to **m** inclusive with the contents of the programmer *(Will not add any whole number cues which are missing, but will add attributes which were not originally in the cue)*

- For the **Update** commands you can decide whether or not you want to add attributes which do not already exist in the cues using the [Add Channels] option. If this is set to On, then new attributes will be added to the cue, otherwise only pre-existing attributes will be updated. The **Record Update** command overrides this option to "On".

12.8.8 Updating the current live cue

Often you need to make changes to a cue while the cue is active in a running show. Press <Clear> before you make your changes in the programmer, to be sure that the programmer does not contain any unwanted previous changes.

Keypresses	Action
<Record> <Cue> <Cue>	Update current live cue by merging the contents of the programmer and track forwards.
<Record> <Cue> <@> <@>	Update live cue only by merging the contents of the programmer, no forward tracking.
<Update> <Cue> <Cue>	Update currently existing values in live cue with the contents of the programmer and track forwards *(for tracked values, will go back through cues to find the most recent hard value and update that)*.

Keypresses	Action
<Update> <Cue> <@> <@>	Update currently existing values in the live cue only, don't track forwards *(for tracked values, will go back through cues to find the most recent hard value and update that)*.
<Record> <Update> <Cue> <Cue>	Update live cue with the contents of the programmer and track forwards *(will add attributes which were not originally in the cue, and go back through cues to update tracked values at the source cue)*
<Time> **t** <Enter> <Record> <Cue> <Cue>	Set fade in time of current cue (You can also edit this in the Cue List Window).

12.8.9 Advanced Time options

Keypresses	Action
<Time> **t1** <And> **t2** <Enter>	Add fade-in time **t1** and fade-out time **t2** to programmer, ready to record.
<Time> **t1** <And> **t2** <Enter> <Record> <Cue> <Cue>	Set fade-in time **t1** and fade-out time **t2** of currently active cue.
<Time> <Fixture> **t** <Enter>	Set fade-in time **t** of currently selected fixtures, ready to record.
<Time> **t1** <@> **t2** <Enter>	Add fade-in time **t1** and delay time **t2** to programmer, ready to record.
<Time> <Fixture> **t1** <@> **t2** <Enter> <Record> <Cue> <Cue>	Set fade-in time **t1** and delay time **t2** of currently selected fixtures.

12.8.10 Effects/Shapes

You can't select Effects/Shapes from the keypad on Titan, but it's still easy:

1. Select fixtures for control

2. At the top level menu press [Shapes and Effects], [Shape Generator], [Create]

3. Select the type of shape [Dimmer], [Pan/Tilt] etc

4. Select a shape from the softkeys *or from the Shapes window which appears*

> 5. Set the *Speed*, *Size*, *Spread* using the wheels

Shapes will record into cues, and will track through subsequent cues until you stop them. You can stop tracked shapes in the Cue List View window using the **T/B** switch in the View Shape column, see Shape Tracking in Cue Lists (Abschnitt 12.2.3).

12.8.11 Macros

You can record a sequence of keypresses as a *Macro*, so that the console can automatically replay your actions. See Macros (Abschnitt 5.4.3).

You can include macros in Cue Lists by clicking on the Macros column in the Cue List View window.

13 Timelines

13.1 Timelines introduction

Timelines allow you to create a precisely timed sequence which you can either run from the console's internal timer or synchronise to an external timecode source. This can be useful for an opening sequence for a corporate event, a complex song in a show where the song is pre-recorded or run to a click track or timecode, or a multimedia event run to a playback track. You can also use it to create complicated one-shot effects (Abschnitt 10.6.4) for busking.

> You can also create timed shows by creating timecoded cues in cue-lists (Abschnitt 12.5.5), but Timeline recording allows much easier creation and editing of a timed show.

Timelines are stored on a handle using the <Record> button in a similar way to a cue or cue list - they can be built either from playbacks you have already recorded, or by creating new playbacks as you go along. You can record actions in real time by operating the console or by adding them manually at specific times. You can think of a timeline as an automatic replay system to push the faders and buttons on the console. The actions recorded in a timeline are called **triggers**.

Once you have recorded a timeline there is a **Timeline View** window to show and edit the triggers - press <Open/View> then the **select button** of the handle containing the timeline, or tap the playback legend area above the fader. The view also opens automatically when you record a new timeline.
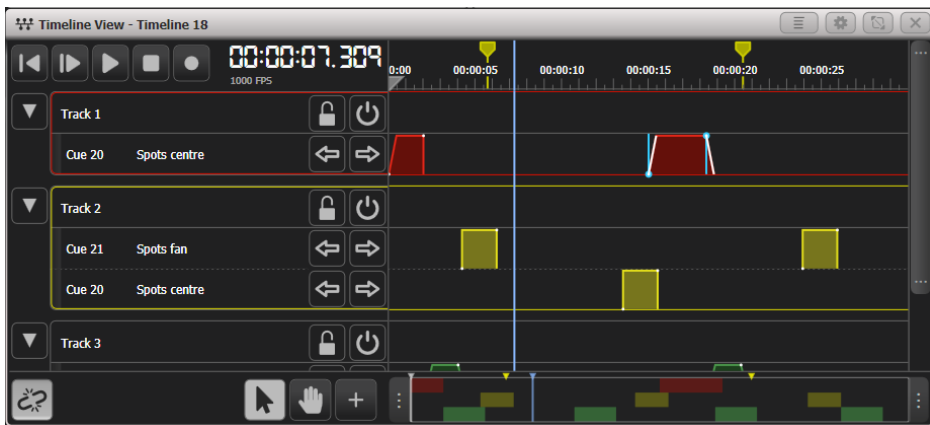
13.1.1 Triggers

To program a timeline you record actions at specific times which can then be replayed by the console with the same timing. These are called **Triggers**.

The following types of trigger can be created. You can record these actions in real time using **Live Record** or enter them as manual triggers at specified times using the touch screen.

Trigger	Action
Set Level	Fades up a playback to a set level over a time. This has the same effect as you pushing up a fader. If the playback has fade times programmed these also run.
Go to cue	Go to a cue in a cue list. You can either specify a cue number or just record a *Go* trigger to run the next cue. The cue will follow the fade times programmed in the cue list.
Flash	Flash a playback (see Flash and Swop (Abschnitt 16.2.6))
Timed Flash	Flash a playback with programmed fade times
Timed Flash and Go	Timed flash followed by Go action, for a cue list
Swop	Swop a playback (see Flash and Swop (Abschnitt 16.2.6))
Preload	Preload the LTP values of a playback over a number of seconds (see Preload (Abschnitt 16.2.6))
Marker	Mark a point in the timecode for information
Wait for go	Pause the timeline until you press <Go> to resume (only on internal timecode)

- **Wait for go** triggers are useful when you have a timed sequence followed by an unknown delay, for example a win/walk-up sequence for an awards ceremony when you don't know how long the winner will take to reach the stage. Shapes will continue to run while the timeline is paused. The timeline needs to be connected for the <Go> button to work, if the timeline is not connected you can use the {Play} transport button to resume the timeline.

13.1.2 Tracks

The timeline is split into **Tracks** which can be used to organise triggers into different groups or sections. Each different playback in the timeline gets its own row in the track. - You can mute tracks to prevent them playing back using the {Mute} button. - You can lock tracks to prevent accidental changes to sections you've finished using the {Lock} button. - Tracks can be collapsed so they take up less room on the screen, using the arrow button to the left of the track name. See more details (Abschnitt 13.3.2.9) here.

13.1.3 Selecting timecode source

You can select one of the four available timecode sources to control your timeline from the Timeline Options (Abschnitt 13.4.6).

To set up and enable each of the timecode sources as Internal, MIDI, Clock or SMPTE use the [Timecode] softkey at the top level main menu or double press <Open/View> and open the appropriate **Timecode window**.

13.1.4 Timecode linking and local timecode controls

The {Link} button at the bottom left of the Timeline View window can be used to temporarily unlink the timeline from its timecode source.

When using external timecode, often the timecode source will be sent to you from elsewhere in the show and will not be under your control - in this situation it's useful to be able to temporarily control the timecode yourself when recording and editing. When this button is set to unlinked, you can control the timeline playback using the transport buttons in the top left corner of the Timeline View window as you would with an audio player.

- If you are using Internal Timecode or Winamp as a timecode source then these buttons will also operate the local Timecode source while linked (and will play/pause Winamp if that is the timecode source).

- {Rewind} sets the live timecode back to zero.
- {Play from cursor} starts playing from the cursor (or the start time if the cursor is not within the start/end times).
- {Play} and {Pause} are play / pause controls.
- {Stop} stops playing and sets the live timecode back to zero.
- {Record} enters live record mode but doesn't start timecode playback.

When you are linked to a timecode (except Internal Timecode and Winamp), the first four buttons are replaced by the timecode source name and only the Record button is shown.

If timecode is disabled in the **Timecode** menu or the Timecode windows, the time is shown in red.

If the timecode time is within the start and end times (Abschnitt 10.6.3) but the timeline is not active, the time is shown in orange.

- If your timecode source starts at a big number, you can set a time offset to allow you to use zero-referenced times on your timeline. You can also add or subtract a few frames for synchronisation if the timecode source is slightly off. See Time Offset (Abschnitt 13.4.7).

13.1.5 The overview bar

The overview bar at the bottom of the screen gives you a view of the whole timeline from start to end. Triggers and markers are shown in miniature on the bar. You can make the main view zoom in and out by dragging the end markers of the bar to enclose a particular section. It's a good way of moving quickly around the timeline. See Using The Overview Bar (Abschnitt 13.3.2.4) for more details.

13.1.6 Moving around the timeline view with the wheels

Using the context menu option {Timeline Wheels} you can set the wheels to control your view, when no triggers are selected. The wheel functions are - Wheel A: Horizontal scroll - Wheel B: Vertical scroll - Wheel C: Zoom

If any triggers are selected, the wheels control Time, Level and Fade of the selected trigger(s).

13.1.7 Cursor

The grey cursor on the Timeline View sets the entry position for new triggers. It can also be used as a "play head" to manually move the play position along the timeline while testing. You can position the cursor by tapping the screen in the ruler area at the top of the Timeline View.

Tapping on the arrow at the top of the cursor, or using the {Select Cursor} context menu option sets **Wheel A** to control the cursor position.

13.1.8 Selection tool types

The {Select} and {Pan} buttons let you choose different selection tools for editing. - {Select} is for marquee editing, where you select items by drawing a marquee selection box around them (or direct clicking). - {Pan} allows you to drag the timeline left and right or select by direct clicking.

You can also select the tool using the {Tool Pan}/{Tool Select} context menu button.

13.1.9 Table view

Using the {Open Table View} context menu button, you can open the timeline as a **table** which shows details for each trigger in time order, in the same format as a cue list. Buttons down the left hand side allow you to filter which tracks are shown in the list. See Table View (Abschnitt 13.1.9).

- You can show both the Timeline Table View and the graphical Timeline View at the same time.

13.2 Creating a Timeline

You can create a timeline by using Live Record mode, by entering triggers manually at specified times, or a combination of the two.

13.2.1 Programming a Timeline using Live Record

Live record is useful to capture a busked show, where you are operating the playbacks manually in time with music or other live cues. You can do a live record multiple times on the same timeline to build up a more complex show.

> Live record does not record the following elements:
>
> Recall of **Palettes** will not be recorded. You need to save looks to a playback to use them on a timeline.
>
> The state of **Masters** is not recorded, so Group, BPM, Size, Rate and Intensity masters will be recorded as if at 100%. If you play back the timeline after changing masters then it could look different - you can release all masters (Abschnitt 10.3.8.3) before recording the timeline to see what is actually being recorded. Masters can then be used to modify the timeline playback for live/busking use.
>
> Actions triggered via the **Scene Master** are not recorded.

This is how you program a timeline using Live Record, from playbacks which you have previously programmed:

1. If you have external timecode source selected but want to use internal timecode for recording, tap the "Timecode Disconnect" {Link} button so it shows a broken link.
2. Press <Record>, [Timeline], then the **Select** of the blank fader where you want to store the timeline. The Timeline View window will automatically open.
3. Press the {Record} button in the top left of the Timeline View window.
4. Select which track on the timeline you want to record onto using the [Track] softkey or tap on the flashing dotted area of the track you want to use. You can add triggers to an existing track or create a new track by tapping on the blank area at the bottom. Or if you just press {Record} again then recording will start using the current track selection.

5. Tap again on the track to start recording (or press the [Start Live Record] softkey). The workspaces will be outlined in red but recording will not begin until the timecode is started.
6. For internal timecode source, press the {Play} button in the top left of the timeline window to start the timecode running. If you are using an external timecode source, start it.
7. Now when you make any of the above trigger actions on the console, you will see a trigger record-

> ing appear on the timeline. The time range you have recorded is highlighted in red on the timeline view.
>
> 8. When you have finished recording press the {Record} button again and stop the timecode.

You should now see all the triggers you have created laid out on the timeline.

- To add more triggers to an existing timeline you can repeat the live record by pressing <Record> then the **Select** button of the timeline fader.

- When using internal timecode, pressing {Record} then {Play} will automatically start Live Recording.

- To quickly add live record triggers to a particular track you can press {Record} then tap on the track you want to use in the Timeline view.

- While you are in Live Record, the console will follow the Timeline Release settings as you've programmed them in the Timeline Options - Release tab (Abschnitt 10.6.6), which may make playbacks behave differently to how they are programmed. A warning is displayed in the system prompt area to show you what release settings are in effect. This is because the Global Release Mask and and Global Release Time are per-user settings, and Timelines execute as their own "user", so have their own settings.

Auto Simplify

Normally while you are recording, the [Auto Simplify] softkey option is enabled. When you stop the recording, this will simplify your fader movements to a few trigger points with linear fades rather than a large number of points which are difficult to edit. If you really need to capture an exotic fader movement you can turn this option off, but to help keep your timeline easy to edit you should leave it on where you can.

Trigger with multiple points during Live Record:
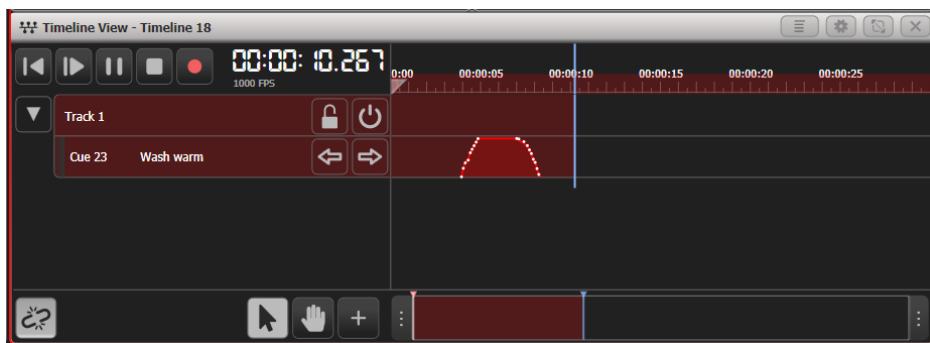
The same trigger after Auto Simplify:
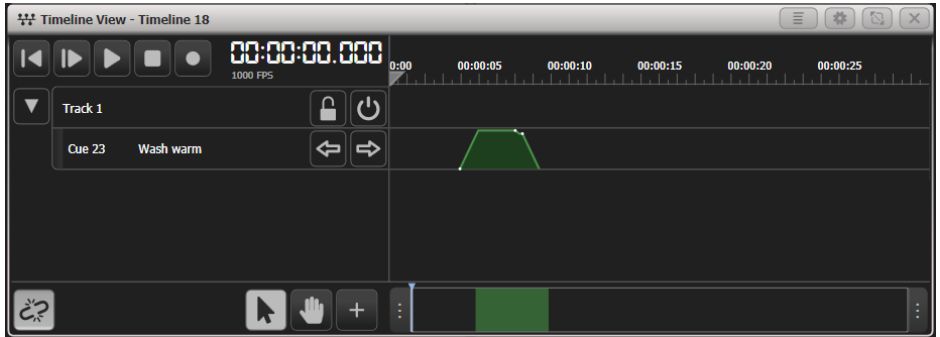
- You can simplify triggers after recording by selecting the triggers (draw a marquee box over them) then using the {Tools} - {Simplify Selected Triggers} context menu option.

- You can also make a smooth fade between adjacent triggers by selecting the triggers and using the {Tools} - {Smooth Selected Triggers} context menu option. The picture below shows triggers before and after the smooth function has been used.
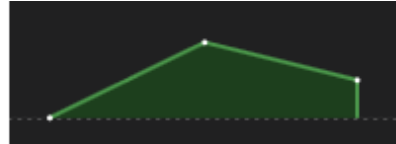
13.2.2 Adding manual triggers

If you are programming a show where you have been given a list of timecodes for each cue point, you can enter the triggers manually at those specific times.

1. Press <Record>, [Timeline], then the **Select button** of the fader where you want to store the timeline. The Timeline View window will automatically open.

2. Press the {+} button at the bottom of the timeline tracks.
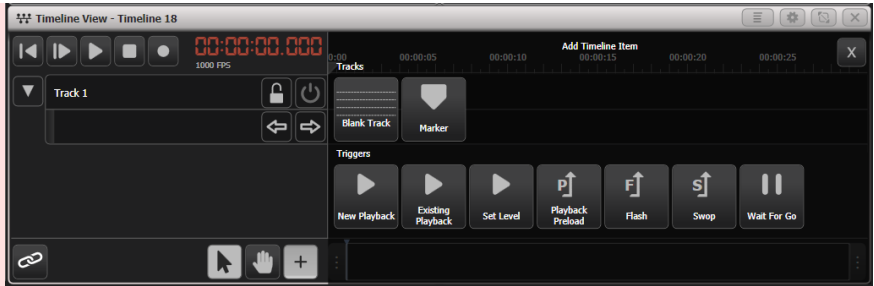
3. Select the type of trigger you want to add.

• **New Playback** will create a playback from the current programmer contents and trigger it at 100% for 2 seconds then off.
• **Existing Playback** lets you select a playback you've programmed previously, and inserts it at 100% for 2 seconds then off.
• **Set Level** inserts a trigger to set an existing playback to a specified level.
• See the Triggers (Abschnitt 13.1.1) section for details of the other types of trigger.

4. If you are using an existing playback, press the **Select** button of the playback you want to fire. (You can skip step 3 and just select a playback straight after pressing the {+} button - Titan will behave as if you pressed **Existing Playback**.)

5. Set the time you want the trigger to fire at. There are several ways to do this:

• Type in the time using the [Reference at hh:mm:ss.fff] softkey and press <Enter>. Use the <.> button as a separator, for example typing "1 . 05" will enter 00:01:05:000 or "2 . 2 . 20" will enter 02:02:20.00. You can also use the arrow buttons to move between fields in the time display.
• Use the current Live Time (blue cursor position) using the [Reference at Live Time] softkey.
• Tap on the Timeline View on the screen at the place where you want the trigger (you can adjust this later).

6. Repeat from Step 2 to add more triggers.

• You can directly add a playback by pressing <Copy>, the **select** button of the playback, then tapping on the Timeline track where you want the trigger to be.

• Existing Playbacks added to the timeline will be referenced (linked) copies of the playback. If you want to create a playback that you can edit separately, use the softkey option [Create New Playbacks] after you select the playback to be added.

• The Table View (Abschnitt 13.1.9) can be easier to work with than the graphical timeline when entering timecodes manually as it lets you see the numbers you have entered.

Importing markers

Using the context menu option {Tools} - {Import Markers} you can import markers from an audio editor. This can help you position triggers when programming to a track.

- When creating the exported markers file, ensure the audio editor is set to export Hours:Minutes:Seconds:Frame and not beats or measures.

This is an example of how to load markers from the audio editor software **Reaper**:

1. In Reaper, set the timeline to be displayed in HH:MM:SS:FF.
2. Load the audio track and create your markers as needed.
3. Open Region/Marker Manager.
4. Right-click in Region/Marker manager and select Export Project Regions/Markers, save as CSV.
5. Copy the CSV file to a USB stick and load the file using the Titan {Import Markers} context menu option (On Titan PC Suite copy the file to Documents\Titan folder).

13.3 Running and Editing Timelines

13.3.1 Running a timeline to timecode

The HTP (intensity) of fixtures in the timeline is controlled by the fader level of the handle. The console will automatically fire the timeline playback to full when timecode is received within the range of the timeline settings.

You can disable the automatic activation, or set it to fire at zero intensity, using the option Activate in Range (Abschnitt 13.4.6). If you disable automatic activation, you must manually fire the timeline by pushing up the playback fader, otherwise no triggers will operate.

1. Ensure the **timecode link** button (bottom left of the timeline view) is set to **Linked**.
2. Start the timecode source. (You will need to push up the timeline fader if you have disabled the **Activate in Range** option described above).
3. The triggers in the timeline will fire when the timecode reaches their programmed times.

- On consoles with motorised faders and on virtual faders, the playback faders will move as programmed in the triggers.

- If you are using internal timecode you can set the timecode to run automatically when you raise the fader, and/or to stop when you lower the fader. See Timeline Options - Fader (Abschnitt 10.6.4).

- You can set the timeline to loop (when using internal timecode), see Timeline Options - Timecode (Abschnitt 13.4.6).

- If you start the timecode at a point part way through the timeline, any active triggers will fire, but the state of LTP attributes on fixtures might be different because previous triggers have not fired in the usual sequence - this might result in a different look to what you programmed. You can use the Timeline Options - Release (Abschnitt 10.6.6) settings to help make this more predictable.

Testing a timeline

You can test a timeline without running the timecode source by setting the **timecode link** button to **Unlinked**. You can then use the Play/Pause/Rewind buttons in the Timeline View window to run the timeline sequence. This can be useful when you don't have control of the timecode source.

13.3.2 Timeline Editing

Selecting triggers

To edit a trigger, you need to select it. There are several different ways to do this. - Tap on a playback block to select all the trigger points within the block. You will see selection handles appear. Tap again on a selected playback block to step through the trigger points within the block.

- Tap on more triggers to add them to the selection.

- Draw a selection marquee box over the trigger points you want to select. Only the trigger points enclosed by the selection box will be selected, so if you want to select all points in a block they all need to be inside the box. This is a quick way to select one trigger point without having to "multi-tap" on a block.

- To clear all selection use the context menu button {Clear Trigger Selection} or tap in an empty area of the Timeline View.

Using arrow buttons to move trigger selection

The left/right arrow buttons for the track will move your selection to the previous trigger point or the next trigger point.

- Left arrow - moves selection to the previous trigger point on the track.
- Right arrow - moves selection to the next trigger point on the track.

If nothing is selected, the right arrow will select the first trigger on the track and the left arrow will select the last.

Using the wheels to edit triggers

When you have one or more trigger points selected, the wheels control the timecode time, target level and fade time of those triggers (some types of trigger do not have all these parameters).

- Wheel A sets the timecode time
- Wheel B sets the target level
- Wheel C sets the fade time

You can change multiple triggers at the same time by selecting them all and using the wheels.

Using the overview bar

The **Overview Bar** at the bottom of the Timeline View gives you a miniature view of all the events in the track.
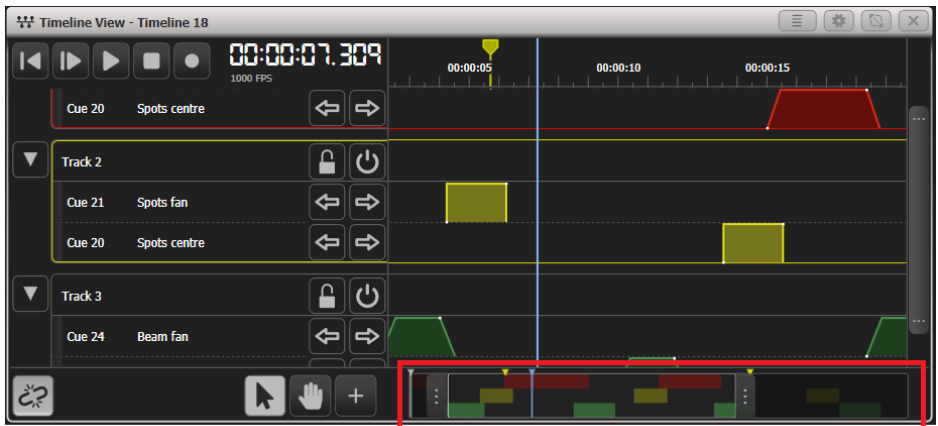
- The handles at the left and right of the Overview Bar set the start and end points of the main view above. This gives you an easy way to zoom in on a particular area.

- When you are zoomed in you can drag on the zoomed area in the bar to move the main view (the same as using the Hand tool and dragging on the main view).

- The edit cursor is shown in grey.

- The current live time is shown in blue.

Copying and moving playbacks in a Timeline

You can move playback blocks to a different time or a different track in the Timeline View: 1. Press <Move>. 2. Select the playback block(s) you want to move, by tapping on it or drawing a marquee selection box. 3. Tap in the Timeline View at the time and track where you want to move the selected playbacks - the relative timing of the triggers will be kept.

- You can move individual triggers within the same track by selecting them then using Wheel A to move them to the desired time.

You can also copy playback blocks within the Timeline View. Copied playbacks will be a reference (linked copy) of the original, unless you change this using the softkey option [Create New Playbacks]. 1. Press <Copy>. 2. Tap on the playback block to copy, or draw a marquee selection box over the playbacks to be copied 3. Choose whether you want to have referenced/linked copies, using the softkey options [Create New Playbacks] and [Use Referenced Playbacks]. 4. Tap in the Timeline View at the time and track where you want to copy the selected playback(s).

Deleting playbacks in a Timeline

You can delete playback blocks by pressing <Delete> then tapping on the block you want to delete, or drawing a marquee selection box over the triggers to be deleted.

You can also delete tracks or delete playback rows from tracks using the <Delete> button.

Setting track legends and halo colours on tracks

To help you identify different tracks, you can set halo colours. This colour outlines the track and also sets the colours of the trigger blocks which makes them easier to see in the overview bar.

If a halo colour is set for a playback, that colour will be used in the Timeline View as shown in Track 2 in the picture below. You can set the playback halo colour from the Timeline View by tapping on the playback row in step 2.

1. Press [Set Legend] at the top level main menu.
2. Tap on the Track legend or the playback row in the Timeline View.
3. Change [Legend] to set the track legend or press [Halo].
4. Select a halo colour from the colour picker.

- You can remove a halo colour by pressing [Remove Halo] at step 4.
- You can also set legends on markers using the [Set Legend] button.
- You can set a halo colour for a **Wait for Go** trigger by tapping on it at step 2.

Snap options

Using the context menu option {Snap Options} you can configure whether new triggers will snap to existing objects when you enter them by clicking on the Timeline View. The snap options are: - Snap To Triggers - Snap To Markers - Snap To Cursor

Collapsing track view

If you have a lot of tracks, you can collapse them to a smaller height to show more tracks on the screen, by clicking the arrow button to the left of the track name.

There are two levels of collapse: - On the first click the arrow button moves to 45 degrees, any triggers which don't overlap with another playback are shown on a single row. Triggers which would overlap are shown in separate rows. This lets you see more tracks but is still easy to edit. - On the second click the arrow becomes horizontal and all of the triggers are combined into a single row whether they overlap or not.

Table view

You can show a table version of the Timeline using the {Open Table View} context button. This shows details for each trigger in time order, in the same format as a cue list. Buttons down the left hand side allow you to filter which tracks are shown in the list. You can have the Table View and the Timeline View open at the same time.

Tracks	Time	Track	Referenced Playback			Action	Value	
All Tracks	00:00:00:000	Track 1	Cue 20	Spots centre	View	Set Level	100.0% over 0.43s	
Markers	00:00:02:000	Track 1	Cue 20	Spots centre	View	Set Level	0.0% over 0s	
Track 1	00:00:02:000	Track 3	Cue 24	Beam fan	View	Set Level	100.0% over 0.5s	
Track 2	00:00:04:000	Track 3	Cue 24	Beam fan	View	Set Level	0.0% over 0.5s	
Track 3	00:00:04:227	Track 2	Cue 21	Spots fan	View	Set Level	100.0% over 0s	
	00:00:05:700	Markers				Marker		
	00:00:06:227	Track 2	Cue 21	Spots fan	View	Set Level	0.0% over 0s	
	00:00:09:874	Track 3	Cue 25	Beam down	View	Set Level	100.0% over 0.5s	
+	00:00:11:874	Track 3	Cue 25	Beam down	View	Set Level	0.0% over 0.5s	

- You can edit any of the settings, except the trigger Action type, by clicking on the grid and using the softkey options to change the settings.
- You can add new triggers using the {+} button.
- You can delete triggers by pressing <Delete> then the table row you want to delete.

13.4 Timeline Options

Timelines have a number of options which set how they operate. Press <Options> (or the [Options] softkey on the top level menu) then the **select** button for the timeline you wish to edit. The default setting is shown in **bold**.

13.4.1 Handle Tab

All options are the same as for a cue, see Options (Abschnitt 10.6.1).

13.4.2 Times Tab
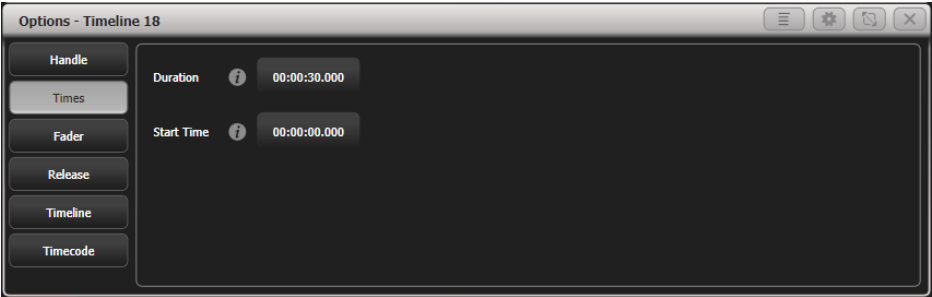
These options let you set the duration and start time of the timeline. These set the loop points when you are using the Loop function (Abschnitt 13.4.6) or are used to fire the timeline automatically when the timecode is in the correct range. They can also be used to set limits on the timeline so you can be sure nothing will happen if you get sent some wayward timecode.

13.4.3 Fader Tab
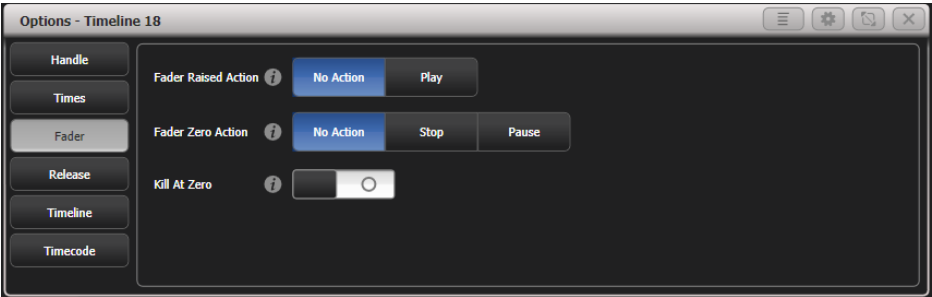
Sets what happens to an internal timecode source when the playback fader containing the timeline is raised or zeroed. If an external timecode source is being used then this option has no effect.

Option	Action
Fader Raised Action	**No Action**: The internal timecode source is not changed. Play: The internal timecode source is started.
Fader Zero Action	**No Action**: The internal timecode source is not changed. Stop: The internal timecode source is stopped. Pause: The internal timecode source is paused at the current time.

Option	Action
Kill At Zero	**Off:** Timeline will remain active when the timeline fader is zeroed. On: Timeline will be killed when the timeline fader is zeroed.

This option is useful for creating a complicated one-shot effect for busking. Create the effect as a timeline using internal timecode and set these options to **Play**/**Stop** - you can fire your effect just by raising the fader and when you lower the fader to zero the effect will reset. Timecode must also be unlinked to create a one-shot effect.

13.4.4 Release Tab

Sets what happens to LTP attributes in playbacks which are killed by the timeline. This can be useful to make the output more predictable when you are skipping around the timeline, otherwise you can get confusing LTP values persisting from previous playbacks.

Option	Action
Override Playback Release	**Off**: The playback's own release settings are used. On: The Timeline-Global release settings override the playback settings.
Release Playbacks to Home	Off: LTP attributes are left when when killing playbacks. **On**: Attributes will return to home if no previous LTP values are set.
Timeline-Global Release Mask	Sets the Global Release Mask for playbacks triggered by the timeline (default **no attributes released**). Overrides your normal Global Release mask for items triggered by timeline - a warning is shown in the system prompt.

Option	Action
Timeline-Global Release Time	Sets the Global Release Time for playbacks triggered by the timeline (default **2 seconds**). Overrides your normal Global Release time for items triggered by timeline.

13.4.5 Timeline Tab
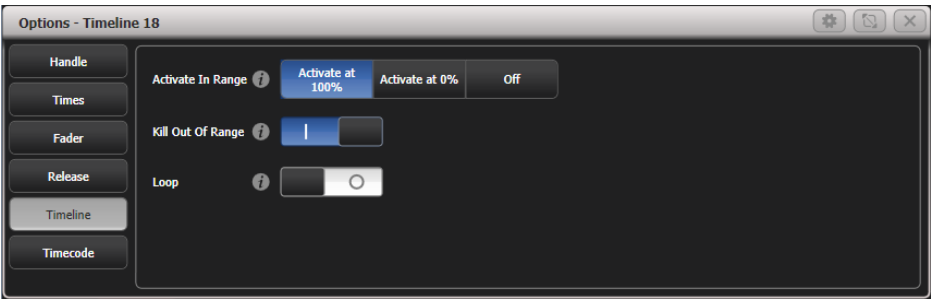
Option	Action
Activate In Range	**Activate at 100%**: Timeline will be fired automatically at 100% level when timecode comes within the Start/End time range. Activate at 0%: Will be fired automatically but at 0% level (zero intensity) Off: Timeline will not be activated until manually fired.
Kill Out Of Range	Off: Timeline will remain active when the timecode goes outside the Start/End time range. **On:** Timeline will be killed when the timecode goes outside the Start/End time range.
Loop	**Off**: Internal timecode source does not loop when it reaches End Time On: Internal timecode source will loop back to Start Time when it reaches End Time.

- The Loop option only operates when timecode is set to an internal timecode source.

13.4.6 Timecode Tab
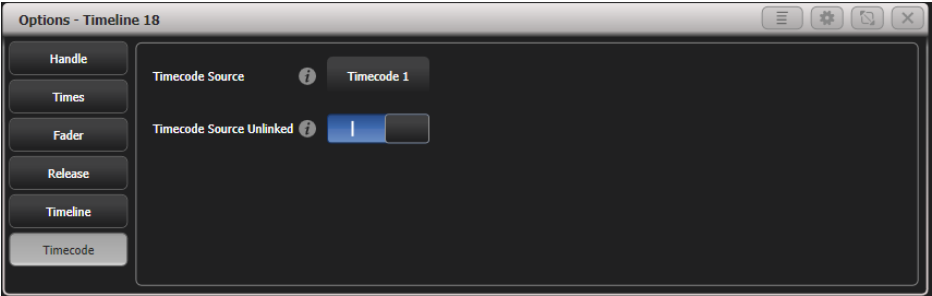
Option	Action
Timecode Source	Sets the timecode source for the Timeline from 1-4 (see Running a Cue List to Timecode (Abschnitt 12.5.5))
Timecode Source Unlinked	This is the same as the Link button in the timeline view - see Local timecode controls (Abschnitt 13.1.4)

13.4.7 Time options

You can also set some options from the Edit Times menu - press <Time> (or the [Edit Times] softkey on the top level menu) then the **select** button for the timeline you wish to edit.

Set Offset

If the timecode you are using has a large offset or you have been given cue timings that don't match up with the timecode source, you can set an offset to make the cues match up instead of having to change all the timings. You can also enter small offsets of a few frames if the lighting cues are not quite synchronised properly.

1. In the Edit Times menu press [Set Offset].
2. Using the [Nudge Amount] softkey enter a time amount to change the offset by.
3. Press the [Add] or [Subtract] softkeys to change the current offset by the amount you set.
4. The current offset time is shown in the prompt area while you are setting it.

Once an offset has been set it is shown below the main timecode display in the Timeline View. In the picture below a small offset of 45 seconds is set.
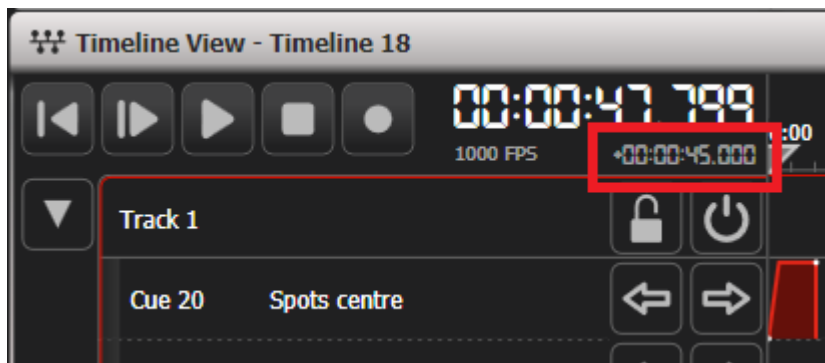
Start Time & Duration

These options are a different way of setting the Duration / Start Time options in the Options - Times tab (Abschnitt 10.6.3).

14 Capture Visualiser

14.1 Capture Visualiser Introduction

The Capture visualiser engine is integrated into the Titan consoles. This can provide a realistic simulation of your lighting which is really useful for pre-programming or making changes in blind mode during a show.

This chapter also has a section on linking the console to an external full version of Capture (Abschnitt 14.5) which can be useful if you need to visualise a set or a full venue, as the internal Capture engine has limited modelling facilities.

To open the visualiser, select [Capture Visualiser] from the [Open Workspace Window] menu (see Open Workspace Window (Abschnitt 5.2.1.1)).

> Always **pre-program using palettes**, because things never quite line up the same in a visualiser as they do in the real world. Using palettes means that you just need to reprogram a few palettes when you get onto the real rig, rather than having to change lots of cues separately.

14.2 Setting up the Rig

14.2.1 Setting up the Stage and Rigging

To help you see what your rig will really look like you can add fixed elements of staging and rigging.

Open the Capture Visualiser Settings window by double pressing <Open/View>, then select Visualiser Settings from the window select buttons (or you can use the {Open Settings} context button in the Capture window.) Click the **Stage** tab.

"Floor" and **"Back Wall"** are provided by default. You can add other objects by clicking the {+} button at the bottom of the list.

Click on the object in the list on the left hand side to position and angle the object using the controls on the right. You can either type exact numbers by clicking on the buttons down the right hand side or use the sliders. You can set a legend and colour for each object.

14.2.2 Setting up Fixtures

Fixtures are automatically placed into the visualiser when they are patched if the Auto Update switch in the Capture Settings (Abschnitt 14.2.1) **"Show"** tab is set to On.

If you load a Titan show (Abschnitt 5.8.2) from a previous version, or have some patched fixtures which are not placed in Capture, use the [Edit Fixtures] [Update Personality] option on the Patch menu (Abschnitt

6.3.1) to place missing fixtures into the visualiser. The Exchange Fixtures (Abschnitt 6.3.9) function may also be used to help with this situation.

Fixtures are positioned using the wheels. Select one or more fixtures using the Fixture select or Group buttons (Abschnitt 7.1.1) and turn them on by pressing <Locate> (Abschnitt 7.1.2). Press the {Position - Orientation} context menu button to switch the wheels to Visualiser mode *(or press Softkey G at the top level menu until the display shows Wheels-Visualiser)*.

Select <Position> attribute, then use the wheels to change the X/Y/Z position of the fixture(s). If you select multiple fixtures, pressing the {Scale-Fan} context menu button or the <Fan> button allows you to evenly spread out the fixtures. The Fan curve/group/split options (Abschnitt 7.2.10) also work.

Touch above or below the wheel value to nudge the setting up or down by one step. For rotation this will be 45 degrees.

If you are viewing the stage from the front then:

Axis	Action
X	moves left and right
Y	moves up and down
Z	moves towards and away from you

Press <Position> a second time to switch the wheels to Orientation mode. The wheels will now pivot the fixtures in the X/Y/Z axes. Again you can use the Fan (Abschnitt 7.2.10) button to give a spread of angles on multiple fixtures.

The X/Y/Z rotation operates like a 3-axis camera gimbal - imagine the fixture within three pivoting rings (see left hand picture below). In some orientations, the X and Z rotation will seem to do the same thing and some rotations seem to be impossible to achieve - this is called gimbal lock and happens when two of the "rings" are lined up with each other (right hand picture below). Change the Y rotation by 90 degrees to enable you to achieve other angles.
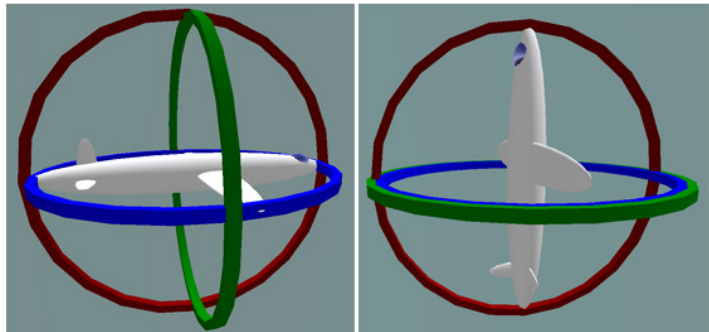
Illustration by MathsPoetry

Press <Position> a third time to switch the wheels to Rotation mode. Rotation mode only works if you have multiple fixtures selected, and the fixtures rotate as a group about the middle fixture.

- For rotating single fixtures you need to select **Orientation** mode. **Rotation** mode only works when multiple fixtures are selected, it does nothing when a single fixture is selected.

> It's easier to see what position fixtures are in if you change the tilt angle so they aren't pointing straight down (or up). It's always useful if you can have an actual fixture of each type connected to help you get them pointing the right way, but you can change this later if not.

Setting Fixture Options

You can set some options within the visualiser which control how the simulated fixture works. Different options are available depending on the type of fixture.

To set these options, press the bottom softkey at the top level menu until the option shows [Wheels=Visualiser], or press the {Position-Orientation} context menu button. Then select one or more fixtures to set and use the wheels to adjust the settings.

Dimmers (generic fixtures)

Attribute	Wheel	Function
Colour	A/B/C	RGB light colour - Allows the colour of the light to be set (if the real-life fixture has a colour filter fitted)
Beam	A	Zoom - Sets simulated beam angle from 5 to 90 degrees

Attribute	Wheel	Function
"	B	Focus - Sets simulated focus
"	C	Throws Light (see note below)
Effect	A	Horizontal Frost - spreads the beam horizontally
"	B	Vertical Frost - spreads the beam vertically

Other fixtures

Attribute	Wheel	Function
Beam	A	Throws Light
"	B	Invert Pan
"	C	Invert Tilt

- The *Throws Light* option can be useful with pixel/eye-candy type fixtures to reduce rendering load on the console - only the illumination of the fixture itself is shown, the light cast by the fixture is not shown.
- The *Invert Pan / Tilt* options can be used to change the simulated fixture so it responds in the same directions as the real fixture.

14.2.3 Setting up Cameras (Views)

Four cameras (selectable views) are provided by default but you can add more.

The context menu buttons provide camera options.
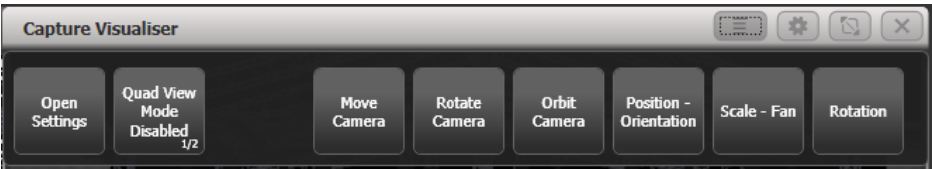
Camera controls are in the Capture Visualiser Settings window (Abschnitt 14.2.1) which you can open by double pressing <Open/View> to show the workspace window buttons, or using the {Open Settings} context button.

The view buttons across the top select the four default views *(shown below)*. Press the {+} button at the right hand side to add a new view.

The top button on the left toggles between single view or quad split mode. If quad split is selected, the other 4 buttons select which view you are controlling.
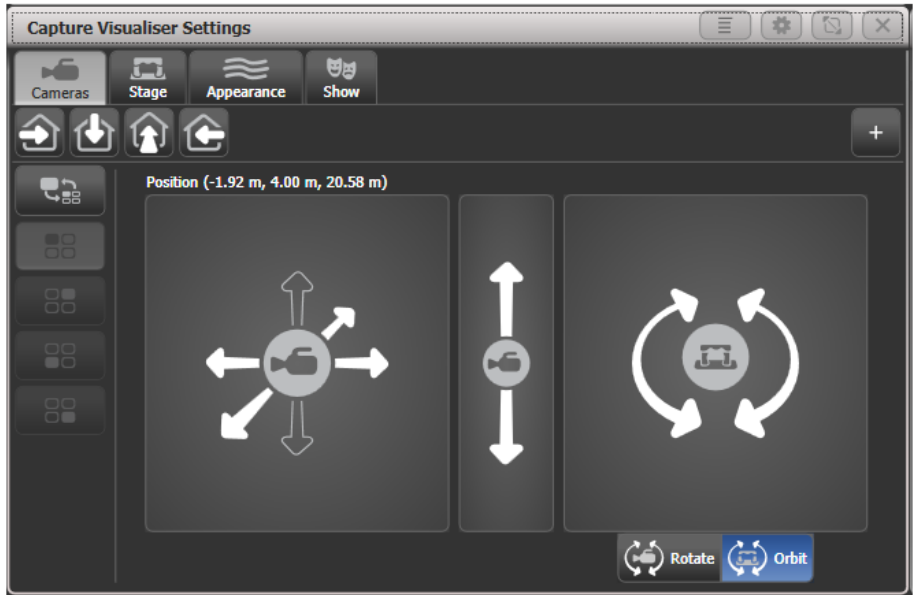
The left hand pad moves the camera **left and right**, and towards and away from the stage.

The middle pad moves the camera **up and down**.

The right hand pad can be set to rotate or orbit mode

- **Rotate:** turns the camera to face left, right, up, down

- **Orbit:** orbits the camera around the stage in a circular path keeping it pointed at the same object.

Press the {Move Camera} context button to link camera movement to the wheels. This also opens the **Set Coordinates** menu with softkeys allowing you to enter numeric camera positions.

Press the {Rotate Camera} or {Orbit Camera} context buttons to link camera rotation or orbit to the wheels and allow numeric entry on the softkeys.

14.2.4 Capture Appearance options

The Appearance tab of the Settings window (Abschnitt 14.2.1) allows you to set the following parameters:

- **Ambient lighting** (background light level)
- **Smoke density** (called Atmosphere in full Capture))
- **Smoke variation** (also called Atmosphere contrast - mix between haze and moving smoke effects - 0%=all haze, 100%=all smoke)
- **Smoke speed** (also called Atmosphere speed - rate of change of moving smoke effect)
- **Exposure adjustment** (camera brightness control)
- **Bloom amount** (visible halo around lights)
- **Rendering settings detail** (this affects the refresh rate of the simulator. If you have a lot of beams visible you may need to change this to Low to improve the refresh rate).

14.3 Visualising using Capture

Mostly you don't have to do anything special with Capture once you have it set up. Just operate the console as normal and Capture will show you what would be happening on the stage.

> If you use the visualiser a lot, it's very handy to have an external monitor to show it on. Otherwise you constantly have to switch between the workspace windows and the visualiser window.

14.3.1 Fixture Selection

If you select fixtures (Abschnitt 7.1.1) on the console, the fixtures will highlight in Capture so you can see where they are in real life.
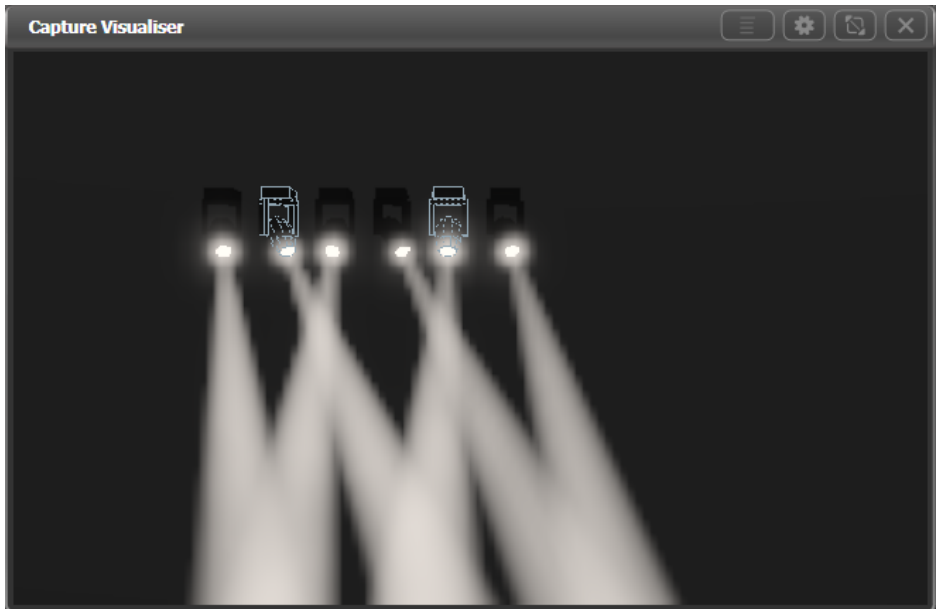
14.3.2 Camera Views

Capture lets you can see how the lighting will look from any seat in the house. Even if you're in the venue with the full rig in front of you this means you can see the look without having to run all over the venue.

Set up multiple cameras as described in the previous section (Abschnitt 14.2.3) and you can either click between them or show the 4 standard camera views as a quad split.

14.4 Capture Show Files

The Capture stage is automatically saved within the Titan showfile. The Capture stage can also be exported and imported separately from the Titan show. This allows standard stages or rigs to be transferred between Titan shows, or to be loaded into the full version of Capture for further editing.

Select the **Show** tab in the **Capture Visualiser Settings** window to export and import shows.

14.4.1 Exporting Shows

Exported Capture shows can be loaded into other Titan shows or into the full version of Capture for producing documentation.

14.4.2 Importing Shows

Shows can be imported from the full version of Capture, this can be useful to import existing stage structures or rigging designs.

For Titan to list your Capture show files for import, you need to have them in either of the following locations: - Titan show file folder (normally `Documents\Titan\Shows`). - The root directory of a USB drive.

> The internal Capture engine uses the Capture 2020 version *(in Titan v13 and v12, Capture 2018 was used; in Titan v11 and below, Capture Atlas was used).* You will not be able to import files from newer versions of Capture - use the **"Export for Capture 2020"** function in the File menu of the full version of Capture to save the file as a version which can then be imported.

When importing shows from full Capture you need to ensure that all fixtures in the show have been correctly patched in Capture to match the patch on the console. There is no way to edit an externally created Capture patch on the console.

You will need to turn off the **Auto Update** option in the Capture Settings window on Titan, otherwise Titan will move all the fixtures about according to layout settings in the Titan show.

- Some fixture types and other Capture elements may not work when you import a show that has been created in full Capture. You can use the auto-patch function (Abschnitt 6.2.4) to allow the console to patch fixtures into an imported Capture show, but you will then need to manually position them using the Titan controls.

14.4.3 Clearing the Capture Show

The Wipe button at the bottom of the Show tab will clear the current Capture show.

If the **Auto Update** option is set to **On** (the default setting) then the Capture show will be repopulated with the fixtures in the Titan show.

You can manually reload patched fixtures from your Titan show into Capture by selecting the [Edit Fixtures] [Update Personality] option on the Patch menu (Abschnitt 6.3.1). This is particularly useful if a capture representation is added to fixtures which previously weren't available in Capture but are already patched in Titan.

14.5 Linking the Console to Stand☒Alone Capture

Sometimes the extra capabilities of the full version of Capture are needed, and the console is linked to a PC running full Capture. The fixture patch details and fixture selection will sync between the console and Capture.

When the PC is connected to the same network as the console, you should be able to see the console listed at the bottom of the **"Universes"** tab in Capture. The console should link automatically, but if not or if there are multiple Titan consoles on the network, you can manually select one from the list.

You need to have Art-Net or sACN output enabled on the console universes that you want to see in Capture. See Configuring DMX Outputs (Abschnitt 19.6.1).

For linking/sync to work properly the external Capture version must be 2020, 2018 or the last version of Nexum. Older versions of Capture will only partially work.

While Capture is connected, the console will attempt to keep its show synchronised to the Capture show. If you add a fixture or change patch details in Capture the changes will automatically be made on the console. If you add a fixture or make changes to the patch on the console, then Capture will update. Selecting a fixture on one will select the fixture on the other. If you don't want this to happen you can turn off the **"Console Link"** function in Capture - simulation will continue to operate whether the console is linked or not.

14.5.1 Patching Console Fixtures into Capture

When you first connect the console to Capture, or if you load a show (Abschnitt 5.8.2) on the console or patch a new fixture (Abschnitt 6.2), the Console Patch dialog will be shown in Capture. This contains a list of the fixtures which are on the console and need inserting into the Capture show.

You have to drag the fixture(s) from the Console Patch window to one of the Capture viewports to place it in the Capture show, the DMX address will be set from the Titan show. You can select and drag multiple fixtures.
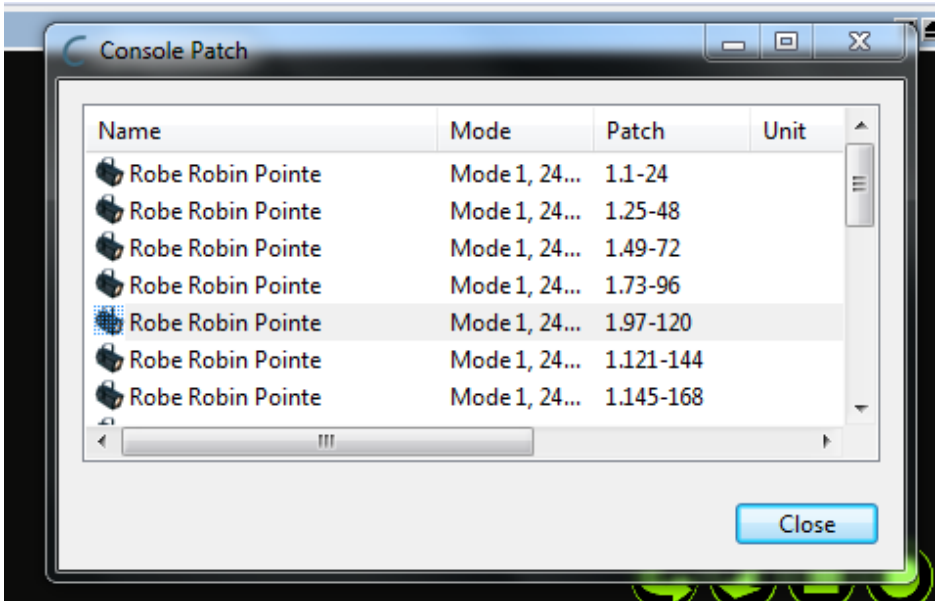
Fixtures already placed in the internal Capture simulator will appear in the same position and orientation in the stand-alone Capture. Changes to position, orientation, legend and user number will sync between the console and stand-alone Capture.

> Fixture Legend in Titan links to the **"Unit"** property on the Capture fixture, and User Number in Titan links to the **"Channel"** property in Capture.

14.5.2 Patching Capture Fixtures onto the Console

If fixtures have already been added in Capture before the console was linked, you can patch them on the console using Active Fixtures like this

> 1. Press <Patch>, [Active Fixtures].
> 2. Select [CITP Visualisers].
> 3. You should see the Capture computer as a softkey option, press it.
> 4. Select an empty handle to start patching, or press [Patch Capture @ …] to patch automatically.

> If any fixtures can't be patched (unsupported fixture type, or duplicate user number) then a blank handle will be left and a warning softkey will be shown at the end; clicking this will show a list of problems found.

To fix duplicate user numbers, edit the value in the **"Channel"** field in Capture to be a unique number. To fix unsupported fixtures, first try updating your Titan fixture library (Abschnitt 20.1.2). If this doesn't help, you

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can submit a personality request (Abschnitt 20.1.4) on the Avolites website and select "Capture Visualiser (.c2o)" from the Desk Type options.

14.5.3 Creating playback legends from Capture screenshots

You can grab a screenshot from Capture to use as a legend for a playback/palette using the CITP link. This can give you a quick reference to the look you stored in the playback without having to try to describe it in words.

Create a picture legend as normal and change to the "network" tab in the legend editor. On this tab will be a thumbnail image of the Alpha view within Capture, you can select this image to set it as a legend.

15   Synergy

15.1   Linking to media with Synergy

Titan includes Avolites Synergy software which allows you full control over one or more networked Ai media servers or the Avolites Prism Zero media application. Not only can you control playback of media and effects, but also upload new media with automatic transcoding, create new screen fixtures and new layers on AI servers, and preview multiple media streams in the Titan workspaces.

For shows which include video content, this gives you a much smoother workflow when creating and running the show.

> Ai refers to media outputs as "Screen Fixtures". To avoid confusion with Titan fixtures, Titan doesn't use "Fixture" and refers to them as **"Screens"** (and in some places **"Surfaces"**).

15.2   Setting up Synergy

15.2.1   Connecting up an Ai server

The Ai server(s) need to be connected by Ethernet to the Titan console. Media previews (Abschnitt 15.3.2) use NDI streams which along with copying of large media files can place a heavy demand on the network, so you should follow these tips for setting up a suitable network:

- Use at least gigabit network equipment

- Have a dedicated network for Synergy if possible

- If you are using Titan PC Suite (Titan Go / Simulator), make sure Windows Firewall is turned off

> The Ai server(s) must have the correct version of Synergy installed to match your Titan version. To upgrade Synergy on the Ai server, download the Synergy Upgrade Installer from the Avolites Download page and run it on the Ai server. You don't need to do anything extra on the console as the Titan installer will automatically install the latest version of Synergy on the console.

If you have problems getting Titan and Ai to recognise each other, make sure they are on matching software versions, and both in the same IP address subnet range such as `2.0.0.1` and `2.0.0.2` - read more about Networking the Console (Abschnitt 21.1).

15.2.2 Setting up the Ai Show

A simple Ai system involving a single screen or projector can be set up by following the Synergy setup (Abschnitt 15.2.4) instructions in the next section. You just need to open a blank show in Ai and you can add Screens and Layers from the Titan console.

For more complicated requirements, create suitable screen fixtures in the Ai show - see the Ai manual for more details on how to do this. You can create and rename Layers from the Titan console. The screen fixtures you have created in Ai will then become available as Surfaces in Titan.

15.2.3 Connecting up Prism Zero

You can connect to Prism Zero software running on any device connected to the same network as the console.

In the Prism Zero settings screen (File - Settings or click the menu icon in the top left corner), go to the Synergy option and turn on the **Enable Synergy** switch. Ensure the **Synergy Version** drop down box is set to match the version of Titan you have installed. Prism Zero will start the Titan Media node which is a Titan node designed to interface with Prism. When the Titan Media node is running, the Connection Status will change to "Connected". These settings are remembered next time you start Prism Zero.
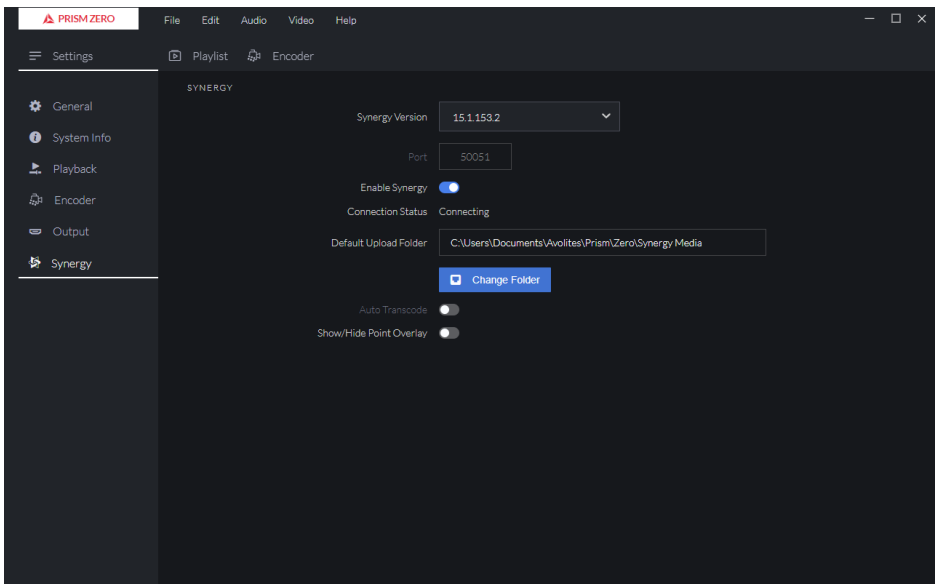
Once connected, the Titan Media node will be discoverable by TitanNet and you can use the Prism Zero output as a media surface in Titan by following the next section.

- If the version box does not show a matching version, you need to install the correct version of Titan Media node from the Avolites website.

15.2.4 Synergy Setup

In Titan, open the **Synergy Settings** window using the Workspace button provided on new shows, or use the option in the Open Workspace Window menu.

This window is a little like the DMX settings screen (Abschnitt 19.2.2): it lets you set up how the Titan console is linked to the various outputs on the Ai server(s) or to Prism Zero. Also, for Ai servers it lets you add or remove layers from each Ai surface and add complete new surfaces to the server (though you may need to configure these further on the Ai server itself).
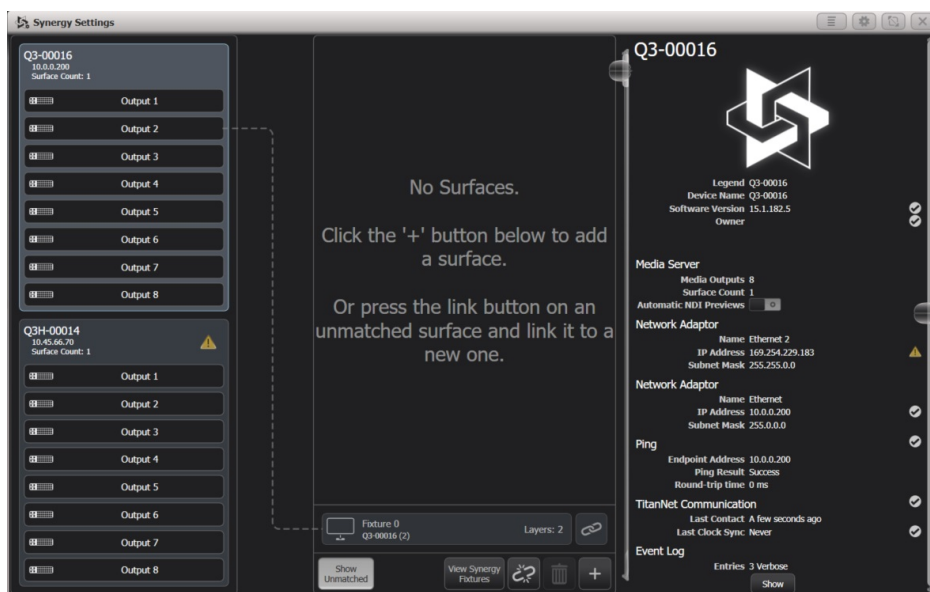
On the left of the window the available Ai servers or Prism Zero instances are shown. In the centre of the window, the Surfaces and Layers configured in Titan are shown. Connection lines show how the Titan Surfaces will control the different outputs of the media servers. At the bottom are Surfaces which are already configured on the connected media servers but are not yet linked to Titan, these are called unmatched surfaces.

Click on the {+} at the bottom and select a Screen or Prism surface from the pop up to add a new surface. This will appear at the top; an Ai surface by default has two layers but you can change this later. A Prism Zero surface only has a single layer.
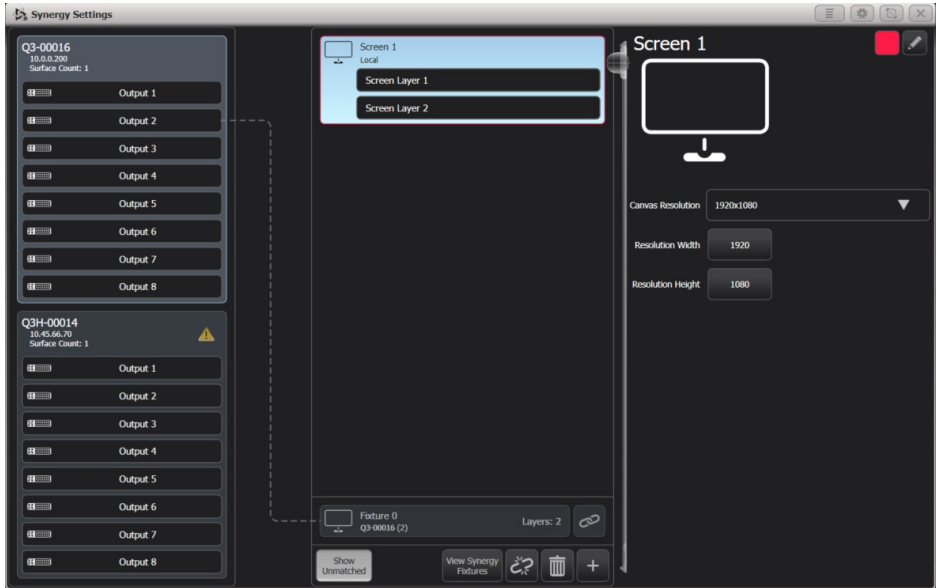
Clicking on the top part of a Surface will show options on the right for the surface. These options allow you to set the canvas resolution which can either be picked from a list of common resolutions, or entered numerically; at the top right the display halo colour of the surface can be set, and the {Pencil} button allows you to change the name (you can also do this with the [Set Legend] button).

Clicking on a Layer within a Surface shows layer options on the right. This allows you to allocate a Rate or BPM master to the layer for speed control.

When no Surfaces or Layers are selected, the right side of the window shows general information about the system. There is a switchable option "Automatic NDI Previews" to enable or disable NDI streams - if you are using the media preview window, you will need to turn this on. If not leave it turned off, as it causes a lot of network traffic.

Once you have created a surface in Titan, you need to match it to the desired Ai surface or Prism Zero. Click on the {Link} button on the unmatched surface at the bottom, then click on the Screen 1 surface at the top (or you can click **"Link to new Surface"** to automatically create a new surface and link to it).
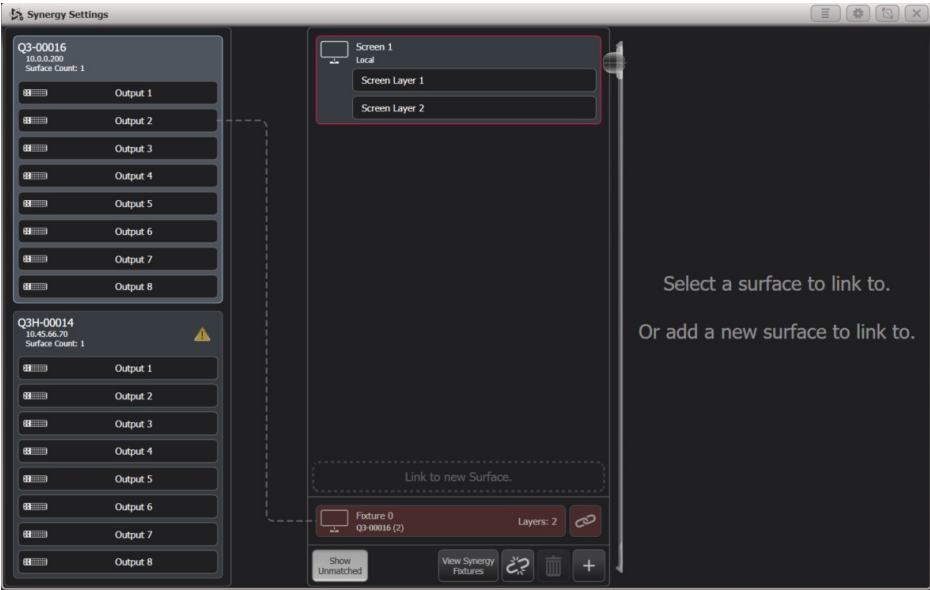
The Screen 1 Surface will now show that it is linked to the Ai server or Prism Zero and the unmatched server at the bottom disappears.
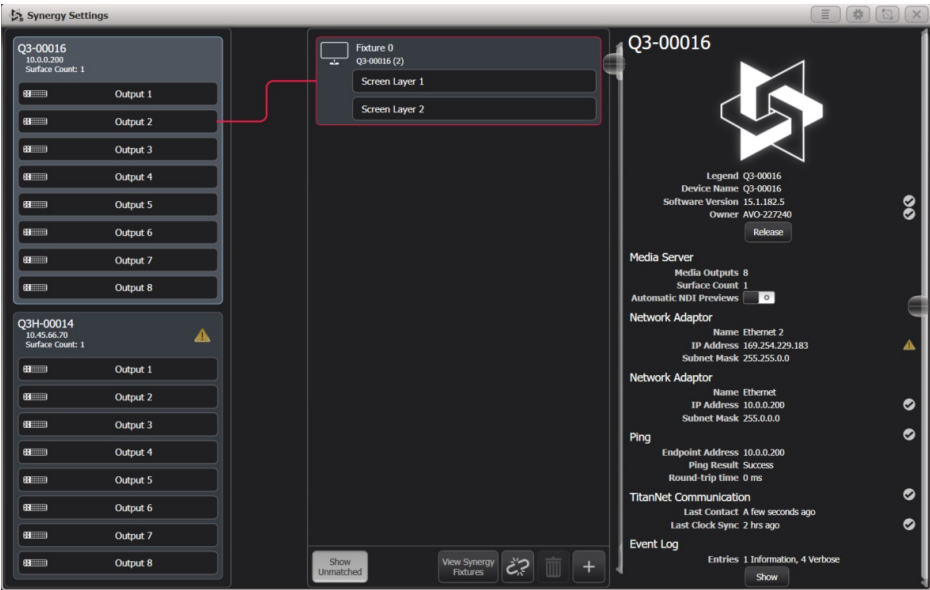
On an Ai server you can link the Screen 1 Surface to one or more different physical outputs by clicking the screen, then clicking the output to connect on the left, for example if you want to show the same media on several screens.

Once an Ai layer is linked, if you open the layer properties in Ai the **"Synergy Control"** box will show *"Enabled"*. Now you cannot control the screen using Ai, only from the Titan console.
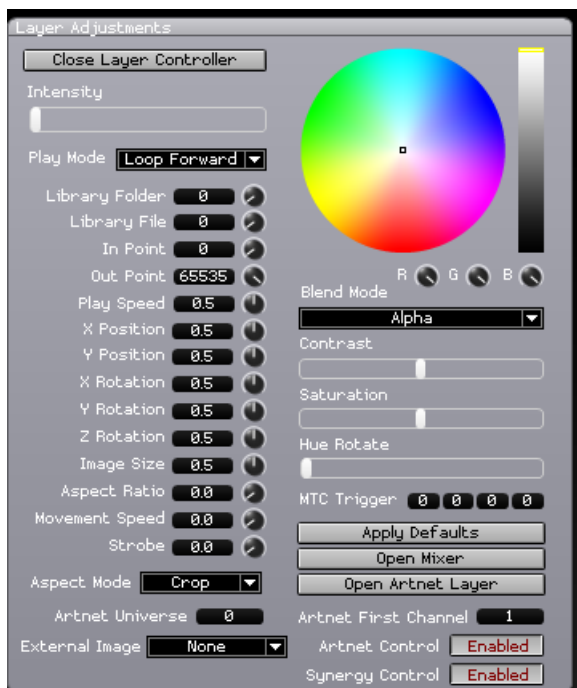
To add a layer on Ai, click on the surface, then the {+} button at the bottom and select **Layer** from the popup.

To delete a layer or surface, select the item then click the {Rubbish Bin} button at the bottom, or press <Delete> then click the layer/surface. If linked to Ai, this will also delete the layer/surface in Ai.

15.2.5 Synergy Fixtures Window

Every Prism Zero layer or Ai server layer appears as a button in the Synergy Fixtures window. You can display this using the button at the bottom of the Synergy Settings window (Abschnitt 15.2.4) or by double tapping <Open/View> and then selecting it from the window select buttons.

You use these buttons to select one or more layers for control, just as you would select lighting fixtures to control. Once selected, use the Attribute Editor or wheels (Abschnitt 7.2.1) to control the media playback and effects. You can then store palettes (Abschnitt 8.2) and playbacks (Abschnitt 10.2.2) as with any other lighting fixture. This is described in the next section, Operating Synergy (Abschnitt 15.3).

> The Synergy layers are shown in their own window to keep them together and help you find them quickly. However if you prefer you can move the layer buttons into the normal Fixtures window.

15.3 Operating Synergy

Once Titan and the Ai server(s) or Prism Zero applications are linked up (Abschnitt 15.2), you can start controlling them from the console.

15.3.1 Uploading Content with the Media browser

The Media Browser allows you to upload media content directly to the Ai server or the machine running Prism Zero from the Titan console. You can also create new media banks on an Ai server. Media content will be automatically transcoded to the AiM codec as required by the Ai system. This is very handy when you are handed a last-minute media file at the front of house position.

As with other windows, the media browser window is opened from the Workspace Window select buttons (double press the <Open/View> button to show).
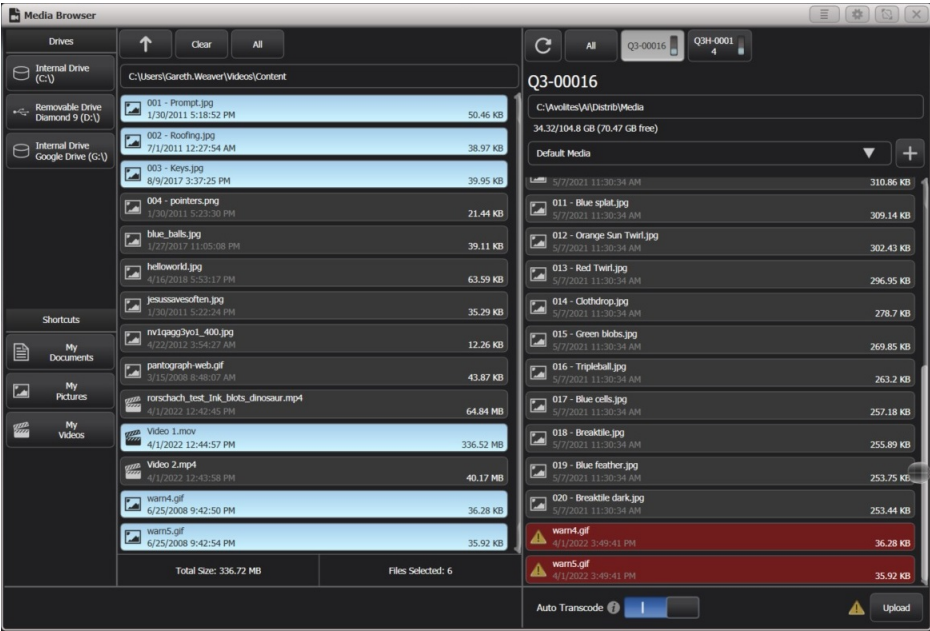
On the left hand side of the window, local disks available on the console are listed. If you plug in a USB drive it will be shown here. Shortcuts to commonly used folders are also provided.

In the second column, the files/media clips available on the selected local disk are shown. You can navigate into folders and use the up arrow at the top to go back up a folder level.

On the right of the window, the media banks on the Ai server are shown. Clicking on the bank name will drop down the list of media clips loaded in the bank. Click the {+} button at the side of the bank name to add a new bank. At the top of this column, the available disk space and the path on the Ai server where the media is being stored is shown.

To copy media files to the Ai server or Prism Zero, select the files you want to transfer in the middle window, then click on the bank you want to transfer them to on the server.

If the server already has files on it with the same names as files you have selected for transfer, the files will be highlighted in red as a warning.
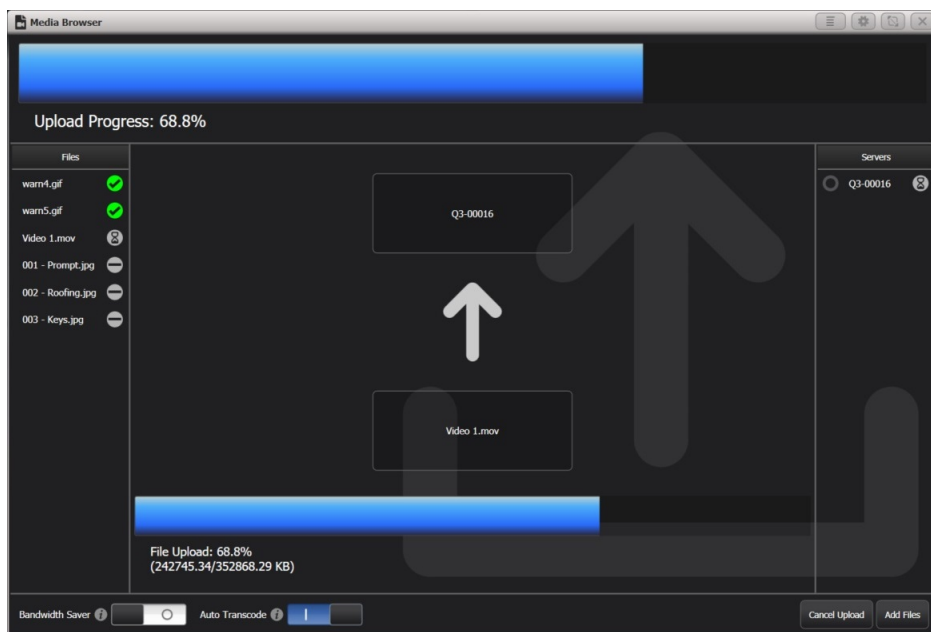
Synergy will attempt to transfer the files as fast as it can and will show you a progress dialog. This may slow down the network; if this will be a bad thing, turn on the **"Bandwidth Saver"** switch at the bottom of the window to throttle the file transfer and leave capacity on the network for other traffic (obviously this will slow down the file transfer).

You can also turn off the automatic transcoding to AiM codec, but normally we would recommend that this option is left on. Once the files are uploaded, any requiring transcoding are added to a queue in Ai or Prism Zero. You can see the progress of the transcoding by viewing the clips in the Attribute Editor, see below.

15.3.2   Media Viewer

The Video Multi View window allows you to view any of the layers being produced by the Synergy layers, or any of the combined surface outputs on an Ai server. In addition you can view any other NDI streams available on the network, so for example at a broadcast event the broadcaster could feed you the program output or individual cameras to check lighting levels.
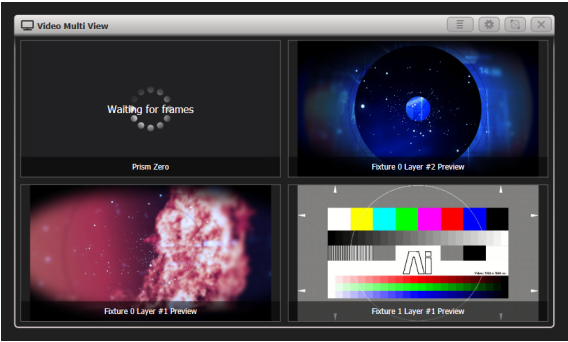
To add a stream, click on a view in the window (blank views show a plus symbol). A dialog will pop up showing you all available streams on the network - either direct views of the layers, or a view of the output screen with the layers combined.
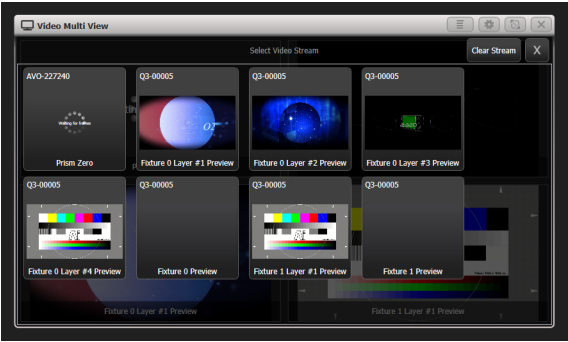
The context button [Change Layout] gives you various possible layouts of multiple screens. The [Titles Shown] button toggles to show or hide the stream titles at the bottom of the views.
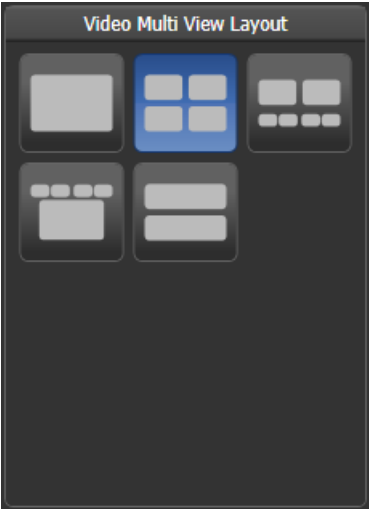
You must have the **"Automatic NDI preview"** option enabled for the Ai server in the Synergy Settings (Abschnitt 15.2.4) window for this to work.

The NDI streams used for video preview can use a lot of network bandwidth which limits how many streams you can receive at one time. The data rate varies depending on the detail/movement in the video but a rough guide is:

Format	Data Rate
1920x1080p30	120Mbps
1920x1080p60	200Mbps
3840x2160p30	280Mbps
3840x2160p60	480Mbps

15.3.3 Attribute Editor for Controlling Synergy Layers

Once you have selected one or more media layers to control from the Synergy Fixtures window (Abschnitt 15.2.5), the Attribute Editor lets you play back and manipulate media on those layers (you can also use the wheels and Attribute Bank buttons.

> The most important attributes are **Intensity**, which set the output level of each layer, and **Media Selection** which lets you choose the Bank and Clip to play. But you can also control all other functions of Ai server such as adding FX and colour, or the smaller range of functions on Prism Zero layers.

In the Media selection window, in the Clip tab, if you click on the **T** button *(top right)* or the caption at the top of the tab, this will toggle the clip name display on and off. This can be useful for long names which obscure the picture; on the other hand if you have lots of clips which look similar, the name display can be useful.

Some of the attributes, such as FX Select, have a large number of options which initially are shown in a vertical column of buttons requiring a lot of scrolling to see all the buttons. If you click in the header above the buttons, the column will expand to fill the window, making selection easier.

In the FX attributes, the effects names are pulled live from the Ai server. This means the names you are shown will always match what's on the server. It's also good for generative plugins where you define the FX names.

> If you select layers then press <Locate>, the layer intensity will be set to full but all media and FX will be cleared. This is useful to get a layer back to a known state, but you don't get any output. **To get some output you will need to then select a media clip**.

The Clip selection window also shows you the progress of clips being transcoded by the Ai server.

Currently being transcoded	In the queue awaiting transcoding	Transcoding failed
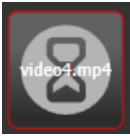
You can create palettes (Abschnitt 8.2) to control Ai, just like with any other fixture. So colour, zoom, position and so on can be stored in a palette and used to quickly modify the appearance of the media. Palette fade times (Abschnitt 8.6) will also operate as you would expect.

15.3.4 Lightmap: Pixel Mapping Media Content

Often you might want to output video content to lighting fixtures patched on the console (for example if you have LED screens with fixtures around or in between them). The pixel mapper can directly play back media clips from the Ai server or Prism Zero. On an Ai server these can be sourced from individual layers or from surfaces (combined layer outputs). The surface outputs do not need to be connected to a physical output on the media server.

> Use the Layout Editor (Abschnitt 7.4.2) to tell the console where the fixtures are positioned in the physical space so it can map the correct part of the video to each fixture, which is described in the next section.

> 1. Using Attribute Editor, **start a media clip playing** on the surface you want to use.
> 2. Select [Shapes and Effects], then [Pixel Mapper].
> 3. Select a **group of fixtures (Abschnitt 7.4)** to play back on.
> 4. Add an effect using the {+} button.
> 5. Select Synergy feed using the **Synergy** button.
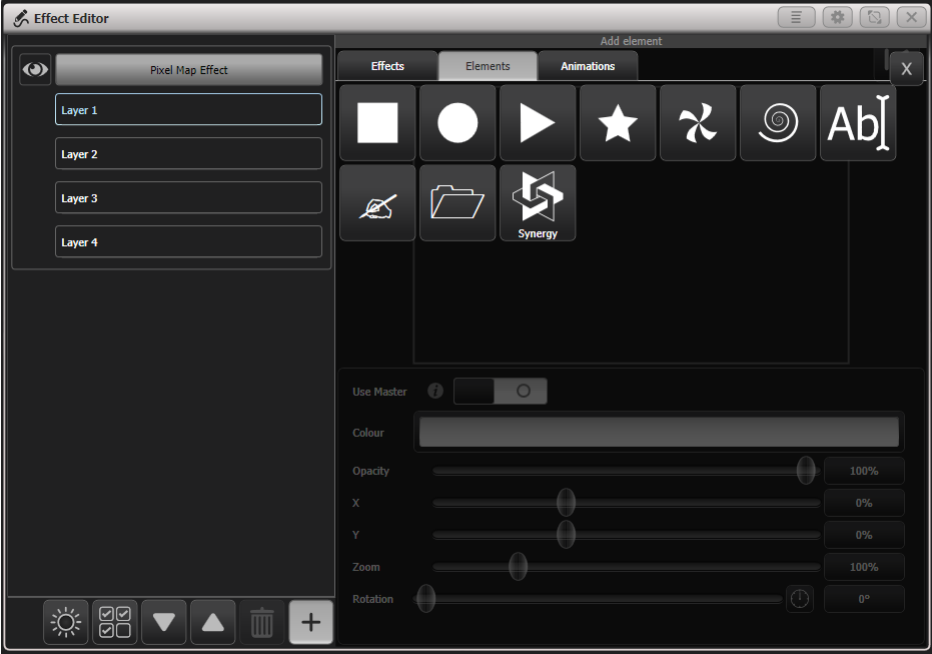
6. Select the surface you want to take the media from using the **Source Surface** option. You can also adjust the colour balance using the **Red/Green/Blue sliders**.
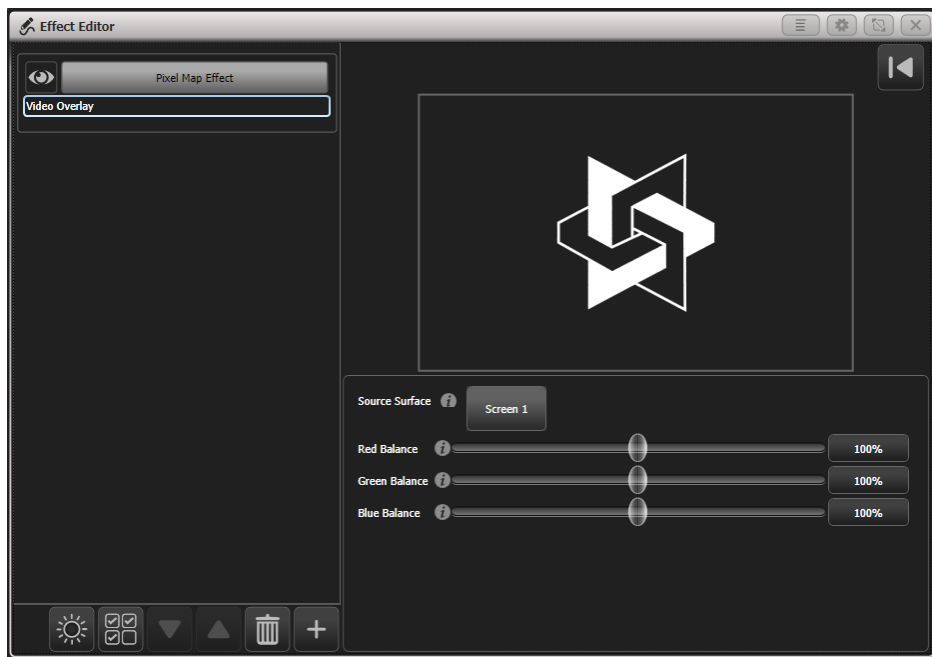
The media clip selected in step 1 should now be playing back over the fixtures you selected. The pixel map effect is now linked to the Synergy surface so you can change the clip which is playing using Attribute Editor or from programmed cues and you will see the change on the fixture outputs.
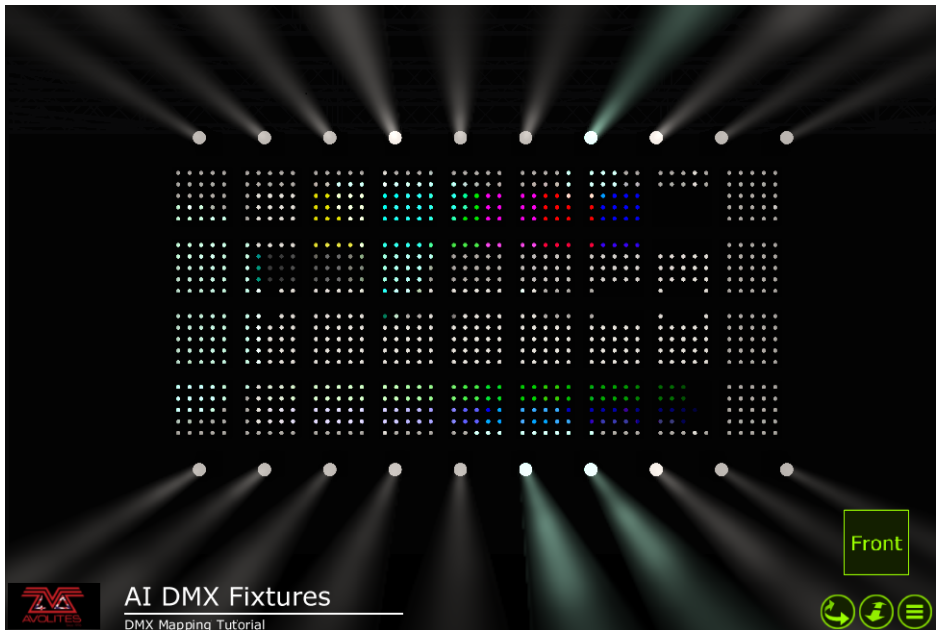
15.3.5 Layout editor with Synergy

The basic operation of the Layout Editor is described in Fixture Order and Fixture Layout in Groups (Abschnitt 7.4.2).

The layout editor has some additional functions in the [Media Options] context menu which are useful when setting up group fixture layouts for use with media content.

Show Video Overlay

This option will overlay the media output on the group fixture layout grid to help you see where fixtures need to be positioned. You need to select which layer or surface you want to overlay.
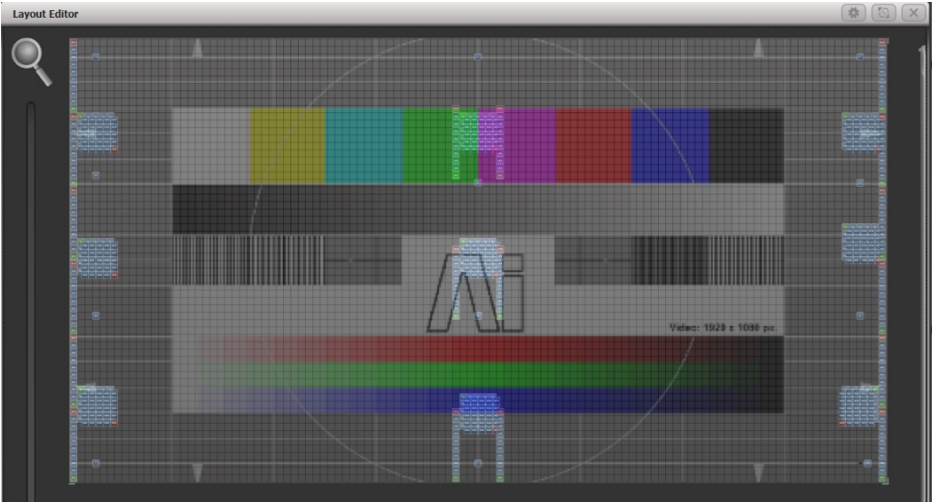
Sample Region Overlay

If the AI output has sample regions defined, for example when areas of LED screen are interspersed with fixtures, this option displays the sample regions overlaid on the layout grid.
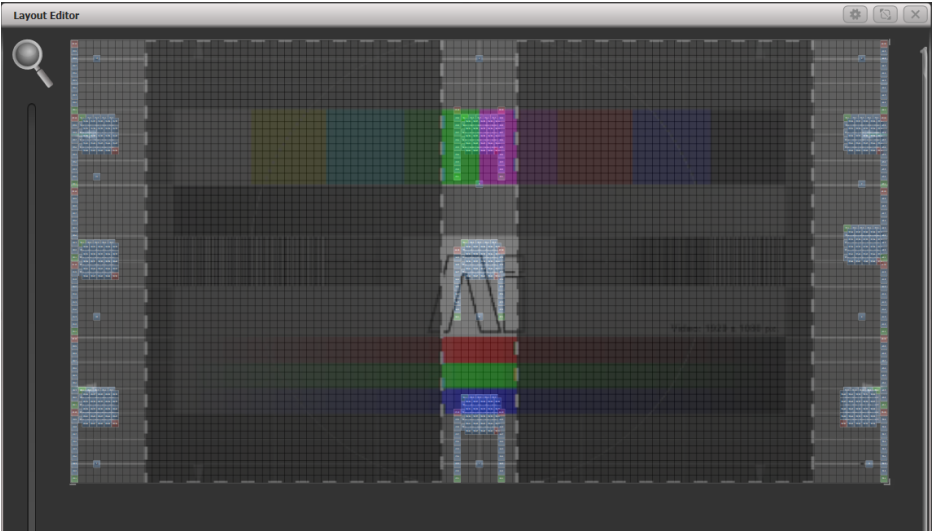
Position Overlay

With this option turned on, when you select a fixture in the layout editor, cross-hairs will be displayed on the actual media output. This helps you to accurately position the fixture in the layout editor to match where it is in real life.
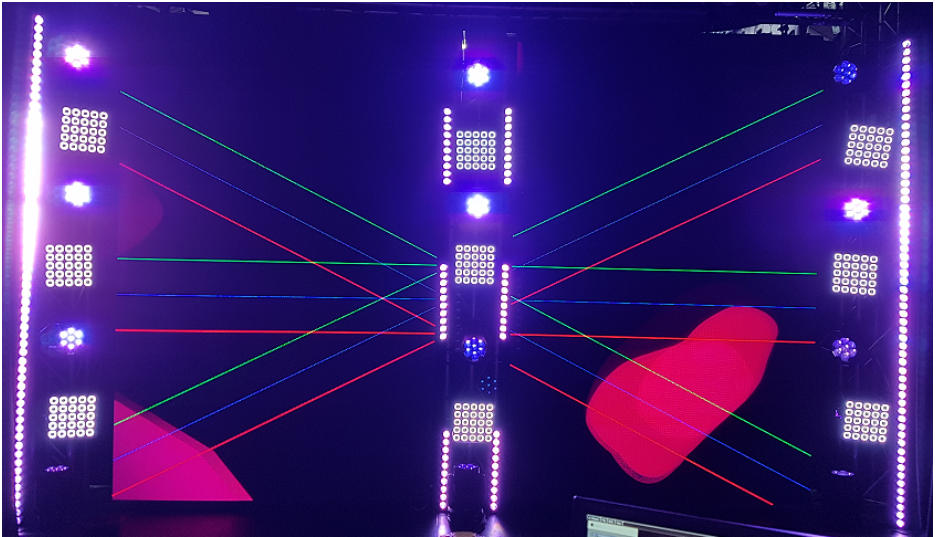
Match Surface Resolution

Allows you to match the layout grid to the resolution or aspect ratio of a surface. When you click this, you will be shown a list of the Ai surfaces available. Select one of these and softkeys will be shown for [Width] and [Height], set to the canvas resolution of the surface. You will not normally want to set the layout grid to match the video pixels 1:1 as fixture pixels are usually much larger than video pixels. But if you change the Width or Height, the other value will be automatically set to preserve the aspect ratio of the surface, so this function is useful to change the grid while keeping the correct ratio.

You can also scale fixtures in the Layout Editor to reflect real life size, as the default cell layout from the fixture's personality might not match other fixtures. Toggle the [Position and Angle] context menu button until it shows [Fixture Scale]. If a multi-celled fixture is scaled down to minimum size, the cells will disappear and it will act as a single cell.

15.3.6 Phase control of Key Frame Shapes from Ai

You can control the phase of Key Frame Shapes using the intensity of a video layer from Ai. This allows you to create some weird and wonderful effects as you can make the lights do pretty much anything in response to the video signal. The phase is controlled from 0-360 degrees as the video intensity where the fixture is located goes from 0-100%.

Once your Key Frame Shape is created (Abschnitt 9.3.1), go to the Phase Master option (Abschnitt 9.3.2) at the bottom of the shape options window and select the Ai screen you want to use as the video source.
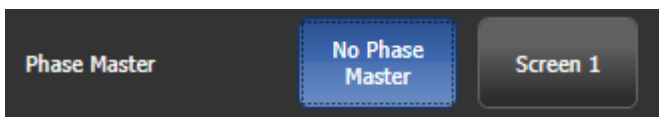
15.3.7 Special function bank/clip numbers

When selecting banks and clips in the attribute editor, some bank numbers have a special function which allows you to access other screens and layers on the Ai server. This is sometimes useful to obtain other media sources such as live camera feeds without having to process them onto a new screen.

Bank/Clip	Function
Bank 240 - 255	Selects a Surface/Screen Fixture from 1-16
Clip 0 - 200	Selects layer number 1-201 on that surface.
Clip 255	Selects the surface output (the composite of all layers)

16   Running The Show

16.1   Useful functions

Titan has many features to make it easier to run your show or event.

16.1.1   Back up the show

At regular intervals while you are programming, and when you have finished programming (or you've run out of time) and it's show time, the most important thing is to save the show (Abschnitt 5.8.1). It is wise to also make a separate copy of show by saving it to a USB drive, enabling you to swap to a different console if there are problems.

16.1.2   Label the console

When you are running your show you will need to know where everything is. Most handles have an associated display area for you to use the Set Legend function (see Legends and picture legends), or you can't beat the low tech method of marker pen and tape.

16.1.3   Saving screen layouts using Workspaces

You can save different **Workspaces** which store the layout of the various windows displayed on the console screen(s). This allows you to quickly recall different setups. Workspaces are stored and recalled from the touch buttons to the left of the menu buttons (or down one side of the screen for Diamond 9, Diamond 7, Sapphire Touch, Titan Go, and on external screens). You can also store workspaces to any executor button on the console.

Workspace buttons can recall a screen layout for each individual screen, or can reconfigure all screens with a single button press.

Double press <Open/View> to show the window select buttons. See Saving workspace layouts (Abschnitt 5.2.2) for more details about saving screen layouts using the Workspace buttons.

You can also create a Set List (Abschnitt 16.3) which will automatically recall a workspace layout for each song.

16.1.4   Locking the console

The console controls can be locked to prevent unwanted tampering with it while you're not there. You can set a background image to show while locked. You can also show a workspace when locked to allow basic controls for non-technical staff, this is called *Venue Mode*.

While the console is locked, all functions are disabled except the DMX outputs and currently running play-backs.

1. Hold down <Avo>
2. Press [Lock]
3. Type a password (numbers from the keypad, or letters if you have a keyboard connected).
4. Press [Lock]
5. To unlock, enter the same password again.

After a few seconds, the "Enter password" prompt will fade out from the lock screen but will appear again if you press buttons or touch the screen.

You can set a saved **Programmer Password**, to save typing a password each time, by pressing [Set Saved Password] at step 3 (you can also set this from the Lock tab of User Settings). If you have a Programmer Password set then you can skip step 3 and just press <Avo> [Lock] [Lock] to lock the console.

You can always unlock the console using the Avo master code "68340".
Locking / password does not protect or encrypt your show file in any way. This is just a simple operational lock to prevent unwanted tampering with the controls on the console.

Setting a background image for Lock screen

You can set a background image for the lock screen from the **Lock Screen Background** option in the **Lock** tab of User Settings (hold <Avo>, press [User Settings]). The image can be either loaded from a picture file (using the folder tab of the image selector) or drawn using the touch screen.

If you load a picture file, the softkey [Scaling Mode] sets how the picture will be scaled to fill the screen:

- None: Image is displayed 1:1
- Letterbox: scales the image until it fills either the width or height of the screen, leaving black bars on the other edges of the screen.
- Fill: scales the image until it fills the whole screen, keeping the aspect ratio
- Stretch: scales the image until it fills the whole screen, ignoring the aspect ratio

The [Clear] softkey will remove the image.

To fill the screen without scaling, the background image needs to be sized as follows:

Console	Screen
D9 (-330 / -215)	1920 x 1080
D7 (-330 / -215)	1920 x 1200
Sapphire Touch	1366 x 786
Arena	1366 x 786

Console	Screen
Tiger Touch II	1366 x 786
Quartz	1280 x 800
TNP	800 x 480

Setting a Venue Mode workspace for basic controls while locked

You can designate a workspace to be displayed on the screen when the console is locked, this is called a
Venue Mode workspace. This lets you provide a selection of playbacks or other controls on the lock screen,
allowing basic controls for non-technical staff when the lighting operator is not present. You can set the
console to boot into venue mode when switched on (see below).

1. Save a workspace to be used for Venue Mode showing only the controls you want to be accessible
   (for example use the Playbacks window to provide buttons to turn on a basic lighting state, or
   the Virtual Faders window to give more control.)
2. Go to **Venue Mode Workspace** in the **Lock** tab of User Settings (hold <Avo>, press [User Settings])
   and select your workspace from the list on the softkeys.
3. If you want the console to power up in venue mode, ensure a **Programmer Password** is set, and
   set **Lock on Startup** to **Venue mode** (see below).
4. Lock the console as described above. The workspace you selected should be shown.
5. To unlock the console into normal mode, click the [Programmer Mode] button at the top right
   of the screen and enter the password you used.
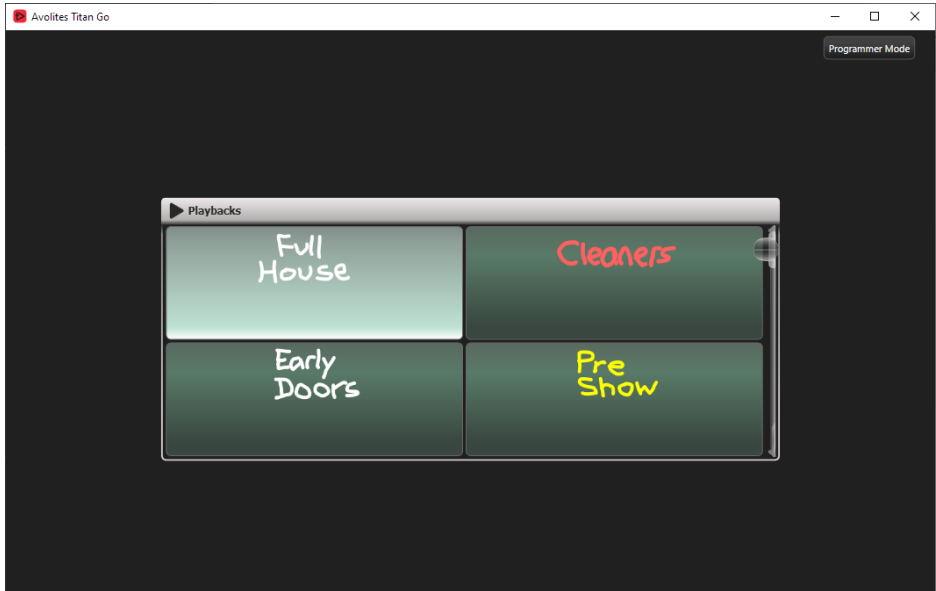
All hardware controls are disabled in this mode. Only the following workspace windows will show: - All Handle Windows (Colours, Playbacks, Media, etc.) - Active Playbacks - Audio Triggers - Capture Visualiser - Channel Grid - DMX - Event Log - Intensity View - Pioneer DJ - Pixel Map Preview - Playback Groups - Time-code Windows - Video Multi View - Virtual Faders

Fixture selection is disabled, but quick palettes will still function.

Menu changes are disabled in Venue mode - this means that user macros which press menu softkeys or which change to a particular menu won't work in Venue mode, because when you record a menu softkey the macro also automatically records a command to open the correct menu (in case you run the macro when you are in a different menu). This also means that double-press button functions won't work in Venue mode since these operate by opening a menu with the first press then activating a menu option with the second press (for example double pressing <Release> for Release All wouldn't work in Venue mode.)

Setting the console to power up in Venue Mode

Using the **Lock on Startup** setting in the **Lock** tab of User Settings (Abschnitt 19.5.3) you can set the console to power up into Locked mode or Venue Mode. This lets you ensure that staff can gain an appropriate level of control even if the console was not turned off in a locked state. - If you want the console to start up in Locked mode or Venue Mode, you must set a **Programmer Password** to be used.

If the console is in a publicly accessible location you can also lock the venue mode screen using the **Venue Mode Password** on the **Lock** tab of User Settings. To lock the screen press [Lock] in the top right hand

corner. This will show the normal lock screen. When you unlock using the Venue Mode Password, the console will go back to showing the Venue Mode workspace. This allows venue staff to be able to secure the console without having full programming access.

You may also want to load a default/standard show on power up in case a previous user has loaded another show. You can do this using the **Start Up Show** option on the Disk menu, see Setting a show to load on start up (Abschnitt 5.8.7).

16.1.5 Tidying the console with the Move function

If the layout of the fixture buttons, palettes or playbacks has become a bit mixed up during programming, you can use the Move function to move recorded items around and produce a better layout. When an item is moved, all links to other recorded items are retained.

1. Press <Move> to select Move mode (if the console does not have a **Move** button, you can get this function by holding <Avo> and pressing <Copy>).
2. Press or touch the **Select** button(s) of the item(s) to move.
3. Press or touch the **Select** button of the destination.

When moving a range, it is possible to select a range containing different types of items, and there can be gaps between them. If you want, you can set [Bunch Up] mode to have all of the gaps in the range removed.

 [Swap Items if Required] will attempt to reposition any existing handles which are in the way of the move. This is useful when rearranging handles on a page which is nearly full.

- If there is not enough space, (there is an item in the way or there is not enough space before the end of the page) then the action will not be completed.

- Press <Latch Menu> to keep Move mode active if you have a number of things to move around.

16.1.6 Blind mode

If you want to program palettes or cues using the visualiser (or in your head) without affecting the look on the stage, you can set the console to Blind mode. Just press the <Blind> button (on consoles which don't have a dedicated button, hold down the <Avo> button and select [Blind]). While in Blind mode, changes on the console will have no effect on the stage but active playbacks will continue. The <Blind> button will be lit and the console will show **BLIND MODE** in the status display area.

To return to Live mode, press <Blind> again.

You can preview a playback on the visualiser without affecting the stage by setting the playback into Blind mode - hold the <Blind> button and press the playback select button. Repeat this to restore the playback to Live mode. You can also set Blind mode in the playback's Options.

You can convert the Blind output to the Live output with a fade. This is useful to set up a live state in blind mode then output it without having to save to a playback. It also allows you to select multiple palettes then fade to them all at once - though Scene Master (Abschnitt 16.2.5) is probably a better way of doing this.

To convert blind to live, type a number to set fade time then press the <Blind> button.

- If any attribute fade times have been set in the programmer, these will be used instead of the fade time you type.

16.2 Playback controls

16.2.1 Grand Master fader and assignable masters

Any playback fader on the console can be assigned to act as a master fader, which allow you to set the overall intensity of various areas of the console. Different types of master fader are available:

- **Grand Master** controls the intensity of all output from the console.

- **Swop and Flash masters** control intensity of the swop/flash buttons

- **Preset master** controls intensity of the preset faders

- **Playback master** controls intensity of all playbacks.

To assign master faders:

1. Press <Record>.
2. Press [Create Master].
3. Press the **Select** button for the fader you want to use as a Master.

By default, master faders are stored on the fader page where you created them and will not be accessible from other fader pages. It is often useful to set the master to have a lock or a transparent lock, which makes the master fader remain in position even when the playback page is changed. You can set this from the Options screen for the master, see Handle Paging.

You can also assign masters from the **System** menu by selecting [Assign Masters].

- If you store a fixture group on a fader handle, the fader becomes a Group Master for the intensity of that group.

- On the Diamond 9, the rotary encoders at the sides of the touchscreen (or on the Arena the rotary encoders beside the Mini Screen) are very useful as speed masters or group masters - press the encoder to select it as a master. Press the Display button below the encoders to show legends for the encoders on the screen if they are not already shown (there are 4 display modes to cycle through).
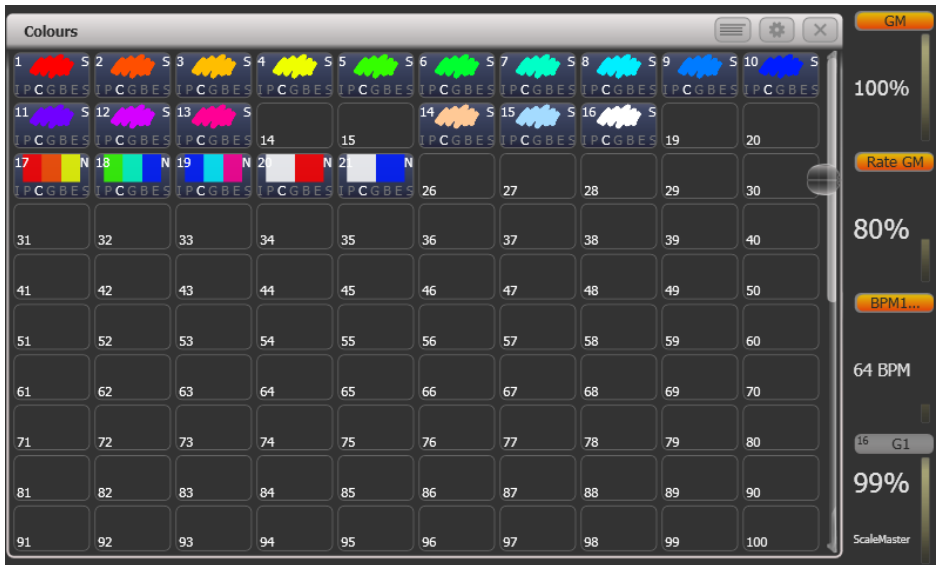
> If you assign a master to a handle with an LED, the LED will flash if the fader is at zero… just as a reminder to help you work out why no lights are coming on.

- Some consoles are fitted with a designated Grand Master fader. This is disabled by default in a new show to prevent confusion over why nothing is lighting up. It can be enabled in the Handles section of the User Settings if required.

- The Pearl Expert has additional master faders: Swop and Flash masters control intensity of the swop/flash buttons; Preset master controls intensity of the preset faders; Playback master controls intensity of all playbacks.

16.2.2 Speed and Size Masters

Playbacks can be assigned to a **Speed Master** and/or a **Size Master** which allow you to control the speed and size of shapes or effects stored in a cue (or in the case of chases, to modify the speed of the chase).

There are twelve possible Speed Masters and four Size Masters which allow you to separately control the parameters of different playbacks, if you need to – for example Rate Master 1 could be assigned to control position shapes, Rate Master 2 to dimmer shapes, and so on.

A playback is assigned to a Speed/Size Master by pressing [Effects] then [Speed Source] or [Size Source] in the playback Options. The following speed sources are available:

- Free Run (default - no Speed Master. Effect runs at programmed speed)

- BPM 1-8 (override the local speed with a fixed value from the master)

- Rate 1-4 (proportionally modify the local speed using the master)

- LocalClock - the playback is set to Tap Tempo mode and all other speed settings are ignored. Using Key Profiles you can assign one of the playback buttons to [Tap Tempo] mode, and then set the effect speed by tapping the button. Effects will synchronise to the tap.

There is also a **Rate Grand Master** which, if used, proportionally controls the speed of any effect or chase (whether or not they have a BPM or rate master assigned).

To use Speed or Size Masters you will need to assign some handles on the console to act as the Master faders:

1. Press <Record>.
2. Press [Create Master].
3. From the softkeys select the type of master you want to create.
4. Press the **Select** button of the handle you want to be the master.

- Special key profile options are available to set what the buttons do on Speed Masters, BPM Masters default to Tap Tempo.

Speed or Size masters can have various scales, 0-100%, 0-200% and so on. A 0-200% scale would allow you to slow down and speed up the speed to double the programmed setting. Scales are set in normal (non-system) mode by pressing <Options> (or [Options] softkey) then press the Select button of the master.

BPM master options

BPM masters can have multipliers or dividers set which allows you to vary how the tapped speed relates to the effect speed. To modify the options, press <Options> (or [Options] softkey) at the top level menu then press the **Select** button of the BPM master.

Normally the BPM master fader sets the BPM, and the multiplier is shown below. Tapping the **Select** button will also set the BPM or you can enter BPM on the keypad and press the **Select** button of the master to set it. This is how a BPM master looks with the BPM set by the fader:
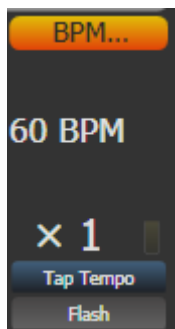
The [BPM On Fader]/[Multiplier on Fader] option sets the master so that the fader now controls the multiplier and the BPM is set by tapping. This is how the master looks when set to Multiplier on Fader:
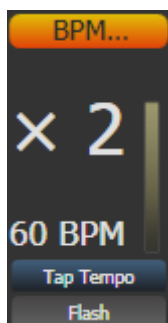
The [Multiplier Scale] option now allows you to set the range of multipliers/dividers which can be set on the fader – from x2-/2 to x32-/32.

The [Keep Multiplier On Tap]/[Reset Multiplier On Tap] option sets whether the multiplier should be reset to "x1" when a new speed is tapped.

In the Times tab of User Settings, there is an option "Compensate for Rate Grand Master" which comes into play if you have assigned a Rate Grand Master set to less than 100%. If the option is On (default), a tapped tempo will come out at the speed you tapped and will not be scaled by the Rate Grand Master. If the option is Off, when you tap a tempo, it would then be scaled down by the Rate Grand Master.

Adjusting masters using the wheels

You can adjust Intensity, Size, Rate and BPM masters from the wheels by pressing <Connect> followed by the **Select** button of the master. This is useful for making fine adjustments to the setting of a master. For a BPM master you can also adjust "Edge Sync" which allows you to nudge the synchronisation forwards or backwards.

While a wheel is connected you can touch up or down in the wheel display area to nudge the value up or down. Pressing the <@> button for the wheel opens a softkey menu where you can input a numerical value or [Release] the speed and multiplier to default values.

> Using Key Profiles (Abschnitt 19.4) you can set one of the buttons of the master to act as the "Connect" button.

16.2.3 Playback Groups

Playbacks can be assigned to groups. This allows you to create a set of playbacks which automatically switch off other playbacks in the same group. This can be useful when you have playbacks setting colours on executor buttons so only the most recent playback stays active, or to make life easier when busking so you don't end up with lots of playbacks fired which have superseded each other.

On a console with motorised faders, the faders for the killed playbacks will return to zero. Otherwise the LED in the playback's select button will go out to show that the playback is now inactive.

Creating a Playback Group

First open the Playback Groups workspace by double pressing <Open/View> then press [Playback Groups] from the window select buttons.
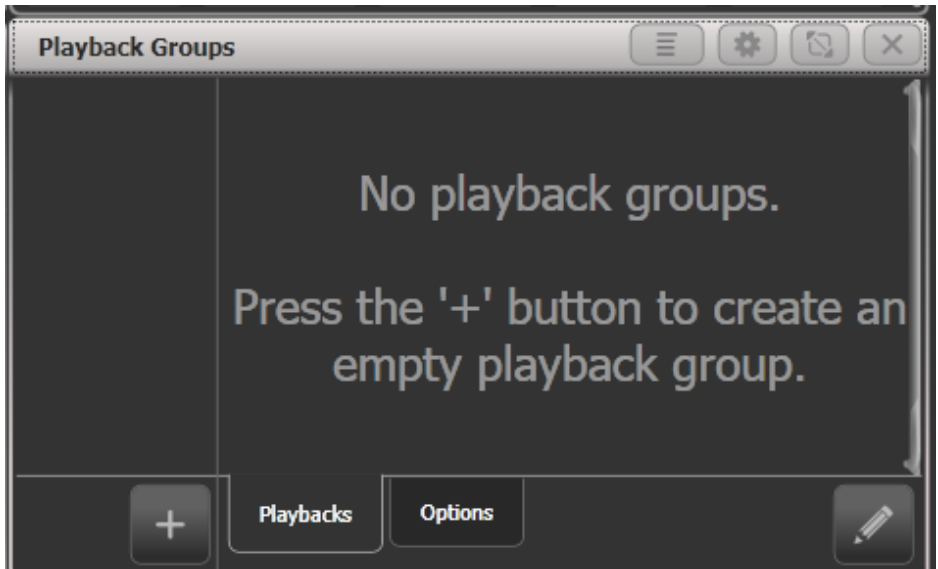
1. Press the {+} button. This creates a new empty playback group in the left pane.
2. Press the new group button (if this is your first group it will be [Playback Group 1])
3. Press the {Pencil} button at the bottom right of the window to place the group into edit mode.
4. Select the playbacks to include in the group by pressing their select buttons once. The playbacks will appear in the workspace as you select them.
5. Press <Exit> when you have finished adding playbacks.
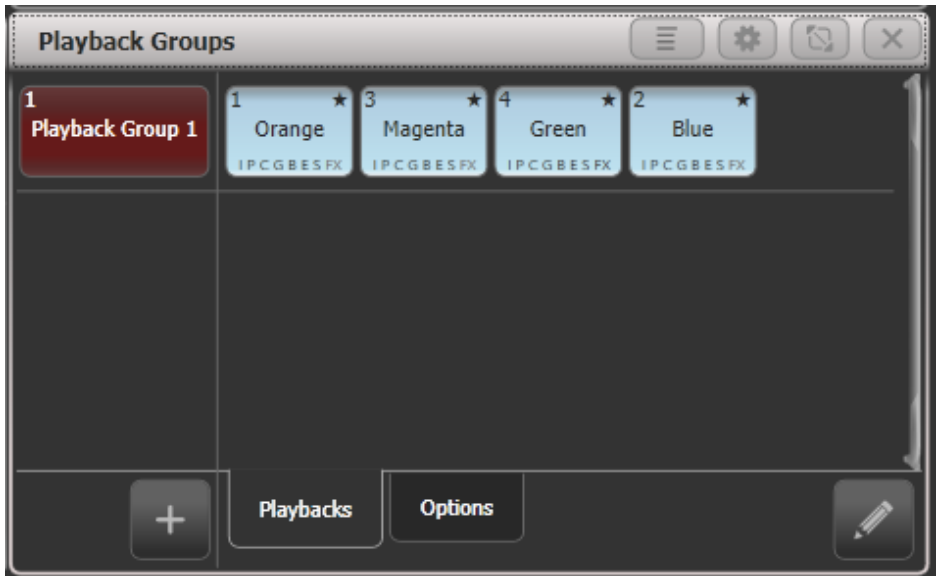
- The playback selection toggles while in edit mode so you can remove a playback by pressing its select button again. You can also remove a playback by pressing its button in the groups window while in edit mode.

- You can also create a playback group using the <Group> button – press <Group>, [Playback Groups], [Record playback group]. Then select the required playbacks which will highlight, then press [Store].

- You can set the legend or halo for a playback group by pressing the [Set Legend] softkey then the group button in the left pane of the workspace.

- You can fire playbacks (when not in edit mode) by pressing the playback buttons in the Playback Groups window.

When a playback is part of a group, an asterisk * is shown at the end of the playback legend to help you remember which playbacks are in groups.

Editing Which Playbacks are in a Playback Group

From the Playback Groups workspace, select the group to be edited on the left then press the {Pencil} button bottom right to edit it.

The playbacks in the group highlight and you can toggle them in and out of the group using their select buttons.

There are also softkeys to set the User Number and Legend for the group.

- To delete the entire playback group, press <Delete> then the group button in the left hand pane of the workspace. To confirm click the group button again, or click [Confirm] or press <Enter>.

Playback Group Options

For each group you can set how playbacks in the group will behave. From the Playback Groups workspace, select the group to be edited on the left then press the Options tab at the bottom of the workspace.
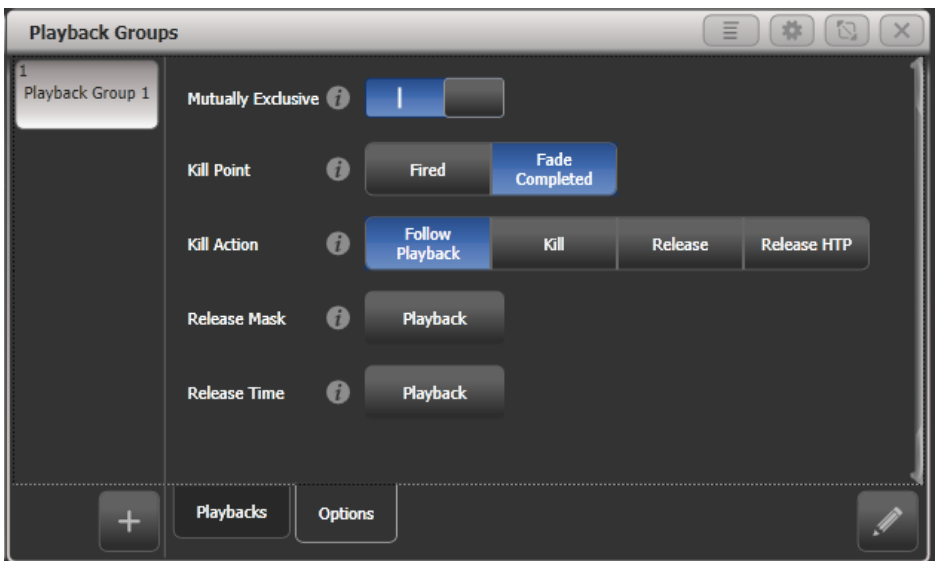
- **Mutually Exclusive** switches the exclusive mode on and off. This allows you to temporarily disable the exclusive action of a group without deleting the group.

- **Kill Point** sets when other playbacks in the group will be killed when you fire a new playback:
  [Fired] - as soon as the playback passes the trigger point
  [Fade Completed] – when the new playback has completed its fade in time.

- **Kill Action** sets whether the playbacks being killed will use Release rules or not.
  [Follow Playback] - each killed playback uses its own settings for release.
  [Kill] - playbacks are always killed without any release.
  [Release] – playbacks are always released using the settings in the mask and time below
  [Release HTP] – HTP channels are released but LTP channels are killed.

- **Release Mask**, **Release Time** allow you to override the release settings for killed playbacks. If set to the default of [Playback] then the playback's own settings are used.

Playback Group Workspace Display Options

Using the workspace options menu ({Cog} button at the top of the window) you can set three different display modes for the Playback Groups workspace:

 [View Mode All] – 2 panes with group buttons on the left and all the playbacks in each group shown on the right

[View Mode Single] – 2 panes with group buttons on the left, but only the playbacks in the currently selected group are shown on the right. Handy if you have groups with a lot of playbacks in each one.
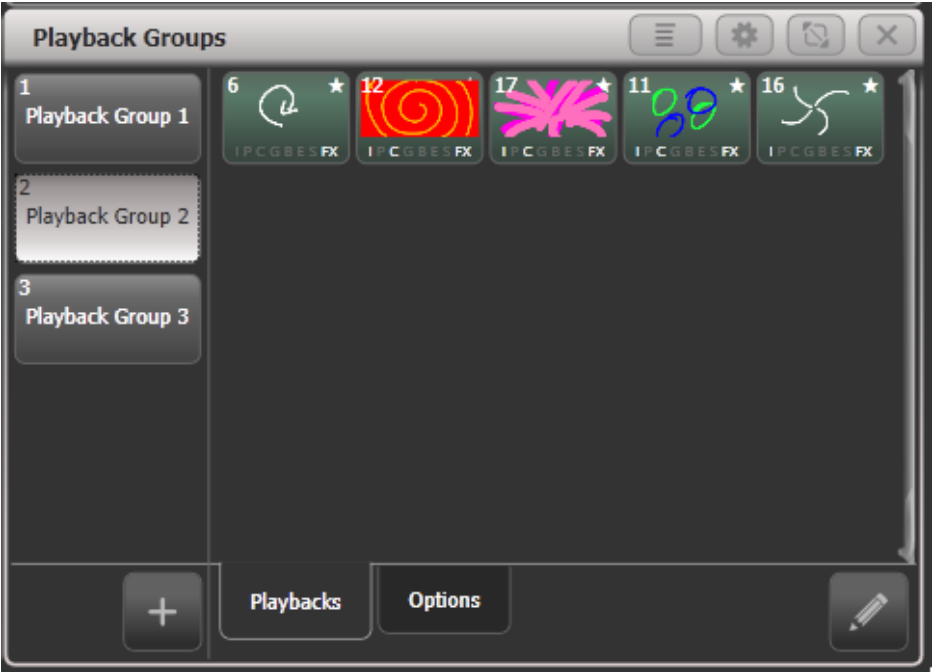
[View Mode Playbacks Only] – Single pane with just the playbacks for each group shown.
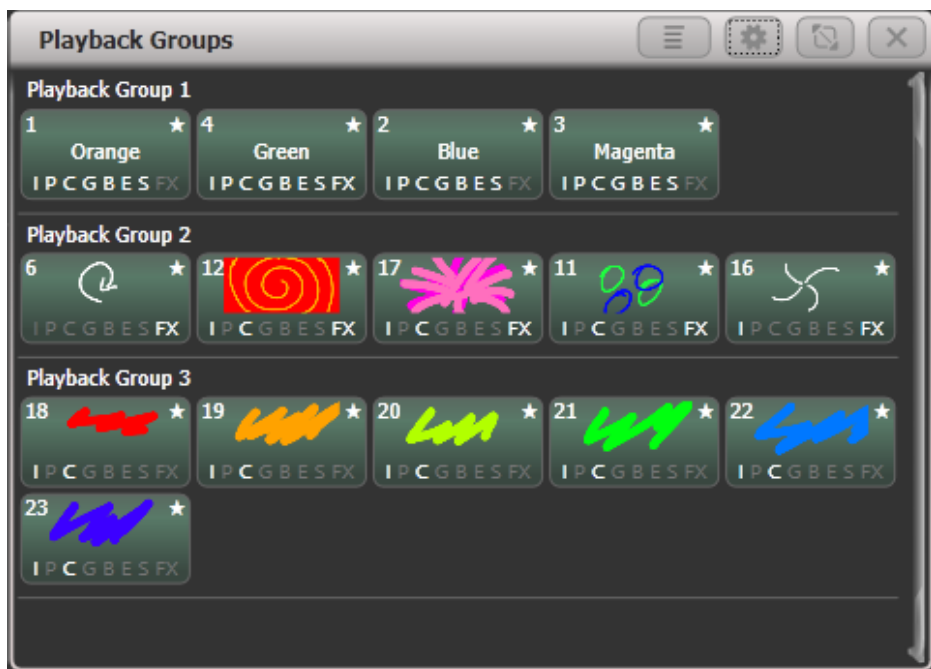
16.2.4 Fixture Group Masters

You can assign a fader to control the master intensity of each fixture group. To do this you simply save (or move) the group button to a handle with a fader.

Press <Options> (or [Options] softkey) and then the **Select** button above the fader to set the fader mode to the following: - Scale master (proportional control). Scale masters can be set to variable scales of 100%, 200%, 400%, 600% and 1000%. The higher settings allow you to increase an intensity above its recorded level. - HTP (override level if higher than current output) - Limit (sets hard limit) - Take Over (place fixture and its intensity in programmer when level matched) - Disabled (ignore fader)

If the playback fader has a display area on the screen, the level and mode of the master will be shown.
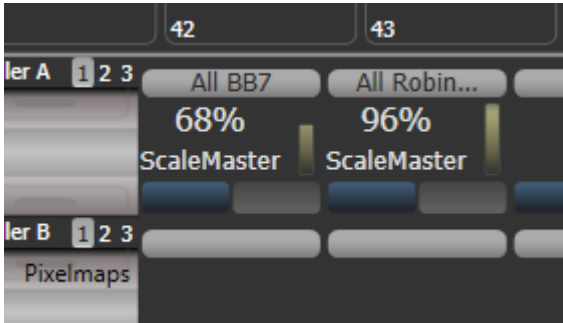
When a group master is set to disabled or moved to a handle without a fader, it will become locked at the current fader level. Re-enable or move back to a fader to adjust the level.

Using Key Profiles (Abschnitt 19.4), you can set different behaviour for the buttons of a group master – the Select and Flash buttons if it is on a fader handle, or the touch button if it's on screen. - Flash Fixtures – flashes the dimmer level of fixtures in the group to the level set by the group master fader, while the button is held - Timed Flash – as above, but fade in and out using fade times set using the "Edit Times" option for the group master - Flash Master – flashes the group master fader to full - Timed Flash Master – as above, but fade in and out using fade times - Swop fixtures – like Flash Fixtures, but turn off all other fixtures that aren't in the group

If a Flash Master is configured, this will also master the group flash.

> You can release all masters by pressing <Release> then [Release All Masters]. This can be useful if something is being controlled by a master but you are not sure where it is.

16.2.5 Scene Master

The Scene Master allows you to preset an output state by firing a number of playbacks or making live changes, using the visualiser to see the effects but without anything happening on stage. When you are ready for the new state, you fade the Scene Master fader to the other end of its travel and the new state is output.

You assign a handle to be Scene Master by pressing <Record> then [Create Master] (or from the [Assign Masters] button on the **System** menu).

The Diamond 9 has a dedicated T-bar control and buttons for Scene Master, with an associated display to show the status.

The Scene Master is set to Live mode by default which means that all changes are immediately output as usual.
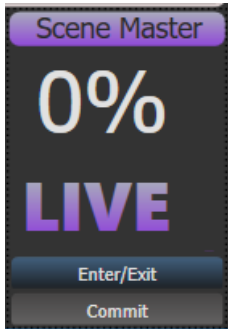
To **enter** preset mode, press the **Select** button of the Scene Master (or <Enter/B> below the T-bar on the Diamond 9). The display above the master will show "Preset" and the background turns purple. To **exit** preset mode and return to normal live operation, press the **Select** button again (or <Exit/A> below the T-bar on the Diamond 9).
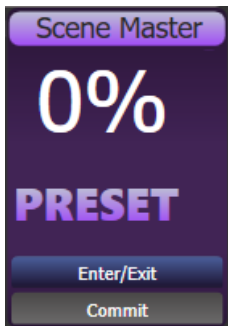
Once you have entered preset mode, any changes you make - firing playbacks, stepping cue lists, applying palettes and so on - will only be shown on the visualiser and won't change the output. Everything you change for the preset will also turn purple on its display.

You can now smoothly fade all your preset changes to the output by fading the Scene Master to the other end of its travel. If times are programmed for cues or palettes they will also run. Once the fader has reached the end of the travel, the new state is "committed" to the output, or you can press the flash button (<Commit> on Diamond 9) to manually commit the new state. The Scene Master will remain in Preset mode until you change back to Live mode.

Normally the Scene Master will auto-reverse so you can just keep presetting new states, moving the fader alternately up and down. You can also set it to require you to move it back to zero each time - press <Options> (or [Options] softkey) then the **Select** button of the master to change the options:

- [Auto Commit and Invert] Commits the changes once the fader has reached the end of travel. You can then preset a new state and fade the fader the other way to output it.

- [Auto Commit] You always have to fade from 0 to 100% to output the new state. The changes are committed at 100% and you then have to lower the fader to 0% to preset the next state.

- [Manual Commit] The new state does not commit at 100% and if you move the fader back to 0 the output state will go back to what it was before. You need to manually commit the changes using the flash button (the button can be changed using Key Profiles).

On the Diamond 9, there are additional Scene Master buttons <Reset> which clears all preset changes back to the current live state, and <Preload> which acts like a normal preload button for the preset changes, loading the LTP attributes.

A Scene Master can also be set on executor buttons or touch buttons in the Playbacks workspace. In this case, hold <Avo> (or Release) and press the button to enter or exit preset mode, and press the button on its own to commit the preset to the output, You can view the state of the Master by opening the Static Playbacks workspace.

You can assign the handle buttons to do different things using Key Profiles - the options are Exit scene mode, Enter scene mode, Commit changes, Commit changes and exit scene mode, Enter or Exit scene mode, Enter or commit scene mode.

- On Pearl Expert and Tiger Touch 1, you set a handle to Scene Master by switching to System mode using <Avo> and <Disk> together, then select [Assign Masters].

16.2.6 Flash and swop buttons

Normally the Flash and Select buttons on a playback are set up so that pressing Flash will flash, and pressing Select will swop (solo) the playback.

- Flash adds the playback into the current output
- Swop turns off all other intensity output

The Flash button can also be set to Timed Flash which will use the pre-programmed timings of the cue when flashing – for normal flash mode the timings are ignored.

You can reallocate the functions of the Flash and Select buttons on the console using Key Profiles (Abschnitt 19.4). A useful alternative function is Preload which allows you to pre-position the attributes of the fixtures before you raise the playback fader, which is handy for avoiding unwanted movements (any fixtures which are already active in another playback will not change when you use Preload). You can also allocate Go and Stop buttons for cue lists and chases. To quickly change the key profile, hold <Avo> and press [Edit Key Profile]. The Sapphire Touch also has a configurable Black button for each fader, and a virtual fader (on the touch screen) can also have a black button.

The screen relating to each playback fader shows the allocated function of the Select and Flash buttons.

16.2.7 Playback priority

You can set playbacks to high priority (Abschnitt 10.6.2) if you do not want them to be overridden by other playbacks using the same fixtures. For example, if you have a couple of fixtures acting as a spotlight, but they are also programmed into some colour washes, you probably want the spotlight cue to take priority over the colour washes.

16.2.8 Virtual faders

If you need more playbacks and you're happy to operate them on a touchscreen fader, you can use the Virtual Faders workspace window (double press <Open/View> then press [Virtual Faders] from the window select buttons). This provides 10 more paged faders which work exactly the same as the hardware playback faders. A roller display at the left side allows you to select different pages.

Press the {Cog} button at the top of the screen to

- Show or hide the page select roller

- Show or hide the blue, grey and black buttons

- Set how many faders are shown per page. This can be set to 5, 10 or 15 to match the playback fader layout on the console hardware.

16.2.9 Preset playbacks (Tiger Touch only)

On the Tiger Touch, as well as the 10 playback faders across the bottom of the console, there are 10 further playbacks on the top right of the console. These are not affected by the playback page buttons and so are useful for memories you use a lot, such as par can washes, basic stage illumination or smoke machines.

You can switch to different pages for the preset playbacks using a factory-preloaded macro in two of the Macro/Executor buttons. This macro is loaded with the Personality Library, if you do not see the page macros you need to update the library.

16.2.10 Locking a playback onto the same handle on every page

Sometimes you might want to keep a playback accessible on a handle no matter which page you are on. The [Handle Paging] option in the [Options] menu lets you do that without having to copy the playback onto multiple pages.

- [Locked] ensures the playback always appears on that handle no matter what page is selected. Any other playbacks programmed on that handle on other pages will not be accessible.

- [Transparent Lock] means the playback will appear on the current page only if the handle is empty on that page. If the handle is in use on the new page, then that playback will appear instead of the locked one. This can be useful if you only need the locked playback to appear on certain pages but wish to reuse the handle on other pages.

You can also lock Palettes stored on the grey handle buttons (Pearl Expert only), and macros stored on the macro/executor buttons which is useful with the Macro page change buttons.

Lock options are also available for master faders.

16.2.11 Viewing active playbacks

The Active Playbacks window shows details of which playbacks are active. This provides an easy way to see what is currently running. To open this window double press <Open/View> then select [Active Playbacks], or use the shortcut <Open/View> + <Off>.

The top line of the button shows the page number and tells you where on the desk the playback is stored. The second line shows the legend, and the third line shows which attributes are affected by the playback.
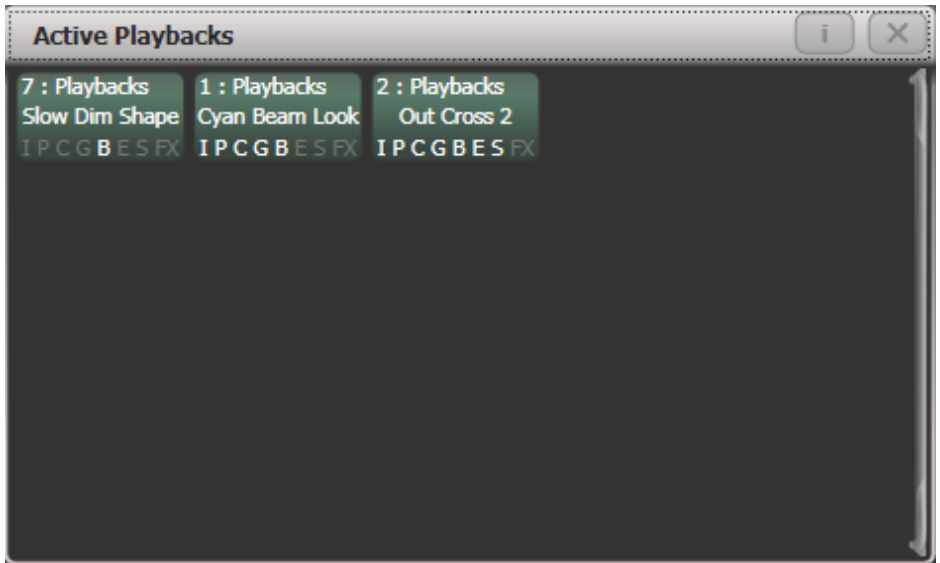
Click on a playback to instantly kill it. You can also press [Playback Options] followed by the playback in this window to change parameters of the playback.

16.2.12 Busking with palettes

If you have not had as much programming time as you would have liked, you might need to make up some additional effects during the show. This is sometimes called "busking", and is where the fun starts!

You can create instant variations by recalling palette values to modify your existing cues. Palette values can have fade times saved with them, or you can set a fade at show time for added effect.

1. Select some fixtures which are already in use on stage.
2. Type "2" (or any time, in seconds) on the numeric keypad.
3. Touch a Palette button to recall a palette.
4. The selected fixtures will change to the new palette over a time of 2 seconds.

If the palette contains programmed times, you can change the Key Profile of the palette button to set whether the programmed times will be used or not. (Press <Avo> + [Key Profiles], then [Palettes] to set the key profile). Options are [Palette is fired ignoring its times] or [Palette is fired with its times]. A time entered manually as above will always override a programmed time.

When a fade time is entered on the numeric keypad, you can also change the Fixture Overlap (Abschnitt 10.5.1) using the [Overlap] softkey. This allows you to create "roll" or "peel" effects when using a series of fixtures. With overlap=100%, all fixtures change at the same time. If overlap=50%, the second fixture will

not start its fade until the first fixture is half way (50%) through fading. The order of the fixtures is set by the order in which you selected them.

If a fade time or an overlap are set this way they are applied only to the immediate next palette recall. If you want to use a certain time or overlap for the next few palette recalls then set the values in the **Palettes menu**: press <Palette>, and set [Master Time] and [Master Overlap] with the softkeys. Also factory macros are provided for some most common values, see Master Time for Palettes (Abschnitt 8.6.4).

If you apply a palette as a "Quick Palette" (i.e. without selecting any fixtures) then it will be overridden by the next cue (so if you fade to green using a Quick Palette, then fire a cue which sets those fixtures blue, they will go blue). If you apply a palette after selecting fixtures, it will go into the programmer and override any subsequent cues until you press <Clear>.

When programming your palettes, group all the colour palettes in one area of the console, position palettes in another area, and so on. This helps you to find them when the show is running and the pressure is on.

If you are lighting a band, make position palettes for every person on stage so you can spotlight them for those unplanned solos.

You can use the Off (Abschnitt 7.2.12) function when programming to set some cues to only affect position, and other cues to set colours, gobos, add shapes, and so on. By combining two or more cues you can produce a much wider range of effects than if all your cues set all the attributes. However, for this to work well you need to make sure you know what attribute is going to be affected by each cue; as if you fire two "colour only" cues then nothing is going to light up.

16.3 Set List Window

The Set List window is a handy way of linking playback pages to songs/events in your show which you can then easily step through. You can also make notes, handy for avoiding bits of paper lying around. You can have multiple set lists in a show.

To open the Set List window, double press <Open/View> then press [Set List] from the window select buttons which pop up. Or from the top level menu press [Open Workspace Window] then [Set List].

The Set List feature works best if you arrange your playbacks to have a page of playbacks for each song in the show.
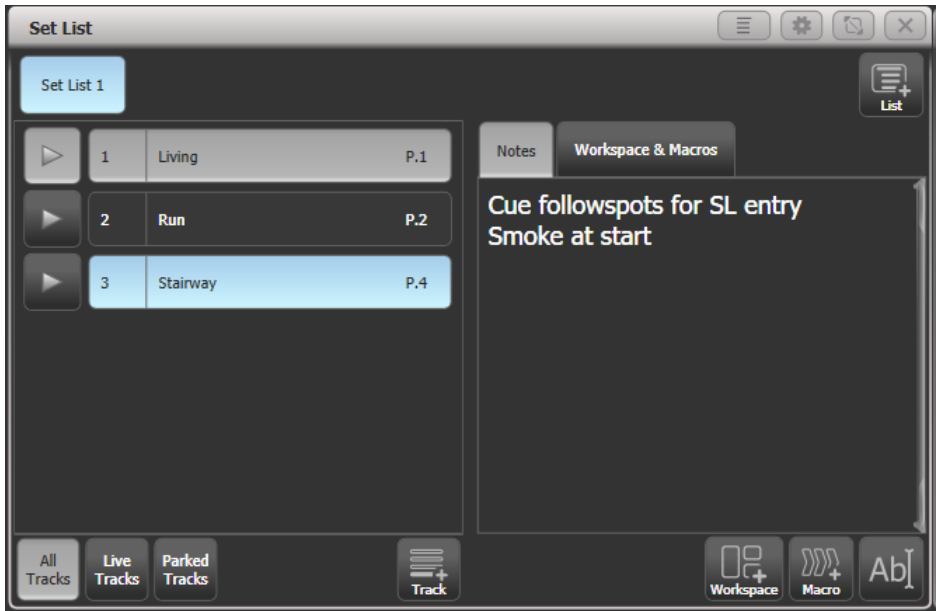
A set list is made up of tracks. When a track is added it automatically links to the current page. Pressing the Play button [>] to the left of the track name will automatically select the correct playback page (except on Pearl Expert, because the rollers cannot be moved automatically).

16.3.1 Creating a Set List

To create a Set List, click the {+} button *in the top right corner* of the window. You can choose **Empty**, **Pages**, and **Build**: - Pages will automatically create a set list using the legends of your existing playback pages, one page per track. - Build allows you to select the pages in the order you want them. - Empty: your start with an empty list and can manually add tracks using the {+} button *below the track list*.

16.3.2 Configuring Tracks

Enter notes by selecting a track and clicking the text entry button, bottom right, or the Edit Note context menu button.

- You can temporarily remove a track from the set list using the Park Track context menu button.

- If you prefer to operate by using the <Page+>/<Page-> buttons, you can change the function of these buttons to step through the tracks in the set list window, using the Page Mode context menu button. When Page Mode is set to Set List, the <Page+>/<Page-> buttons are reassigned to step through tracks

in the Set List, and the playback pages will automatically change as programmed in the Set List. Set Page Mode to Normal to restore normal operation. (Not available on Pearl Expert).

- You can copy, move and delete tracks using the appropriate function buttons on the console.

- You can change the legend of the Set List or of individual tracks using the [Set Legend] option.

16.3.3 Track Workspace and Macro links

You can trigger macros and workspace shortcuts from tracks using the [Workspace] and [Macro] buttons in the bottom right hand corner of the window.

To add a workspace link to the current track, click [Workspace], then either click a workspace shortcut or press the [Record Workspace] softkey to save the current workspace.

Macros can be added either to the whole Set List or just to the current track. Set List macros will fire every time a new track is selected, this is useful for setting the console to a preset state at the start of every song. Track macros will just fire for that individual track.

To view or edit the workspace links and macros, click the Workspace & Macros tab on the right hand half of the window. The window will then show a button for each programmed link.
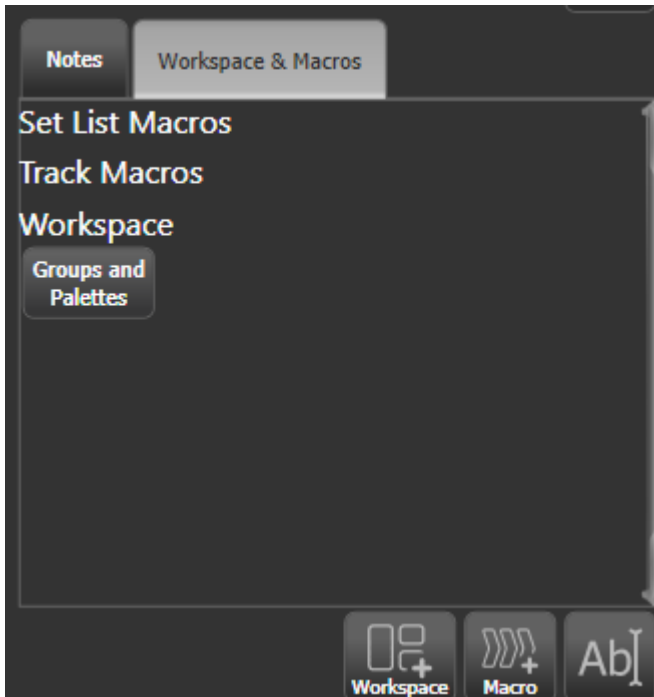
You can fire the macro or Workspace shortcut by clicking on the link button. Delete the button by pressing <Delete> then clicking the button, then press [Remove].

16.3.4 Playback Control Macros

Key Macros (Abschnitt 5.4.3) allow you to record a sequence of actions on the console then play them back (either instantaneously or as a timed sequence). This can be very useful for reducing a complex sequence of actions to a single button push.

Some special preset macros are available to help with controlling playbacks when used with a Set List.

Macro	Action
[Fire First Playback]	Fires the first playback on the current page.
[Fire First Playback Page 1]	Fires the first playback on page 1, regardless of current page.
[Fire Playback 1]	Fires the playback with user number 1.
[Kill First Playback]	Kills the first playback on the current page.
[Kill First Playback Page 1]	Kills the first playback on page 1, regardless of current page.
[Kill Playback 1]	Kills the playback with user number 1.
[Release First Playback]	Releases the first playback on the currently selected page.
[Release First Playback Page 1]	Releases the first playback on page 1, regardless of current page.
[Release Playback 1]	Releases the playback with user number 1.
[Release Me]	Releases the associated playback (cue list).
[Goto My Cue 1]	Go to cue 1 of the associated cue list.

16.4 External triggering

You can set up the console to allow most features to be triggered by external events. This is very useful in complex shows or when using in an automated setup.

The following types of trigger are available:

- Audio (not on all console hardware)
- DMX
- GPIO (not on all console hardware)

- MIDI (except T1)
- Streaming ACN

> Audio trigger (sound to light) requires special hardware which is not fitted on Sapphire Touch, Tiger Touch, Titan Mobile, T1, T3 and Pearl Expert. You can plug a T2 into these consoles to provide audio triggering. The motherboard "line in" socket can't be used for audio trigger.

GPIO trigger is available on Diamond 9, Diamond 7, Arena, Tiger Touch II and Sapphire Touch.

16.4.1 Connecting External Trigger Sources

Audio input is connected to the dedicated audio in jack (not the line in jack on the motherboard) – see information box above for consoles which provide this.

DMX inputs are connected to one of the DMX output connectors using a DMX male to male gender changer cable. (This is a simple plug to plug cable with all pins wired straight through, i.e. 1-1, 2-2 and 3-3).

GPIO uses a contact closure for trigger which is connected using a dedicated jack socket, currently only on the Diamond 9, Diamond 7, Arena, Tiger Touch II and Sapphire Touch consoles. The Diamond 9 and Diamond 7 additionally have a 15-pin D connector for GPIO trigger. The TNP can optionally have a GPIO input fitted, contact Avolites.

Most console hardware has a standard 5-pin MIDI connector, also USB-MIDI devices supporting the DirectX MIDI driver may be used on all consoles except T1. For the T2 this allows you to connect a MIDI fader controller to give you real playback faders.

sACN is connected using the normal Ethernet connection on the console.

- You can link a networked PioneerDJ system to Titan to automate BPM masters; this is described . This replaces the old "Pro DJ Tap" function.

16.4.2 Setting up External Triggering

Go to the **System** menu (<Avo> + <Disk>) and select [Triggers]. The Triggers window will open.
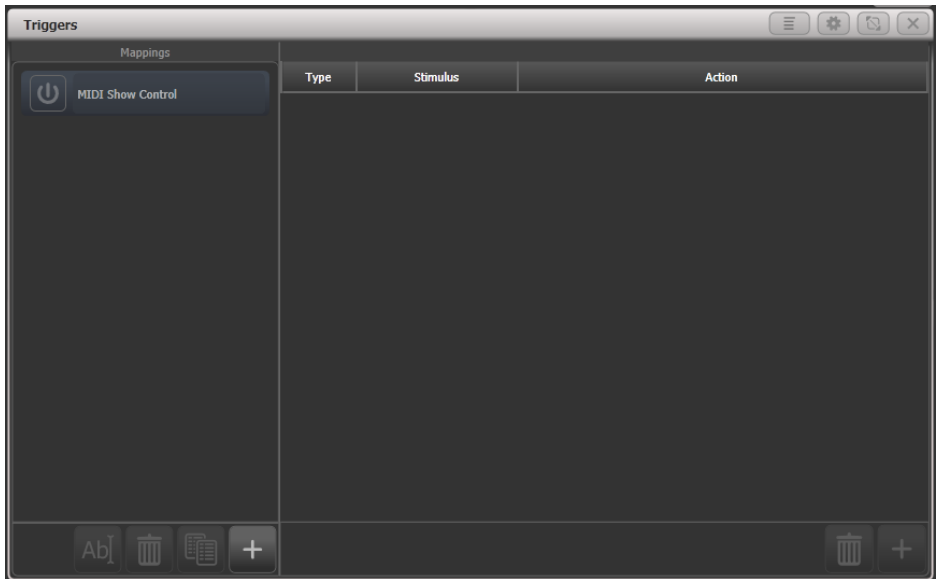
The left hand side of the window has a list of trigger Mappings, where each mapping can contain one or more trigger setups. A default set is provided for MIDI Show Control which includes standard show control messages (see next section for details).

Each trigger mapping can be enabled or disabled using the "power" button at the left hand end of the mapping name. This allows you to configure the console to react in different ways and easily swap between them.

This is how you set up a trigger:

1. Add a new mapping using the {+} button at the bottom of the *left hand* column, and enter a name for it.

2. Add a trigger to the mapping using the {+} button in the *right hand* column or softkey [Add trigger].

3. Select [Trigger Type] as [Hardware] or [Item].

- **Hardware** triggers a physical or touch button, or fader move, and will use the key profile set for the button/fader, just as if the user pressed the button or moved the fader.
- **Item** triggers a programmed item, such as a cue or chase, but you can select what action happens to it when it is triggered.

4. Press the button or move the fader to be triggered, or containing the item to be triggered. The

status area of the screen will update to show you what has been triggered. For Item triggers you can select what action the trigger will cause, using the [Action] softkey:

- Set Level (sets playback level to trigger level - but see Level Match below)
- Fire At Level (like Set Level but ignores Level Match and will "kill at 0" if used with a cue list)
- Re-Fire at Level (any level change will re-fire the LTP values in the playback - see below)
- Flash (like pressing Flash button)
- Swop (like pressing Swop button)
- Preload (fires only the LTP values in playback)
- Latch (latches the playback on)

The [Level Match] option sets what happens if the playback has already been fired by the user when the trigger happens. If set to **On** then the trigger must match the current playback level before it will take effect. If **Off** (default) the trigger will override the playback at any level.

5. Press [OK]. You have now set up the console action which is to be triggered.

6. Now you need to set up the external stimulus which will cause the trigger. Select [Trigger Type] as Audio, DMX, GPIO, MIDI or Streaming ACN.

7. By default the [Learn] option is set to On, so you can generate the stimulus from your device (for example play the MIDI note, or turn on the DMX channel) and the console will automatically detect it and set the correct values.

    Or you can enter the trigger details using the softkey options.

- For Audio, set the [Band] (frequency band) for the trigger (see Audio Control (Abschnitt 16.4.4))

- For DMX, press [DMX Port] to select which DMX port you are using for DMX input. As soon as a DMX port is used for triggering it is switched to Rx (Receive) mode. Set the DMX address to act as trigger using the [Address] button.

  If you want to use it as output (Tx mode) again you need to re-assign it in DMX settings (Abschnitt 19.6).

- For GPIO, you can [Invert] the trigger (to trigger on contact open rather than close). The Pin option allows multiple GPIO inputs but currently no consoles support this, so it should be set to 1.

- For MIDI, set the MIDI channel, MIDI Command, Value, and Level (velocity) ranges

- For sACN, select the [Universe] and [Address] for the trigger.

8. Press [Add] to add the trigger to the list.

9. The window will show the trigger stimulus and the action to be carried out.

You can continue to add other triggers to the mapping.
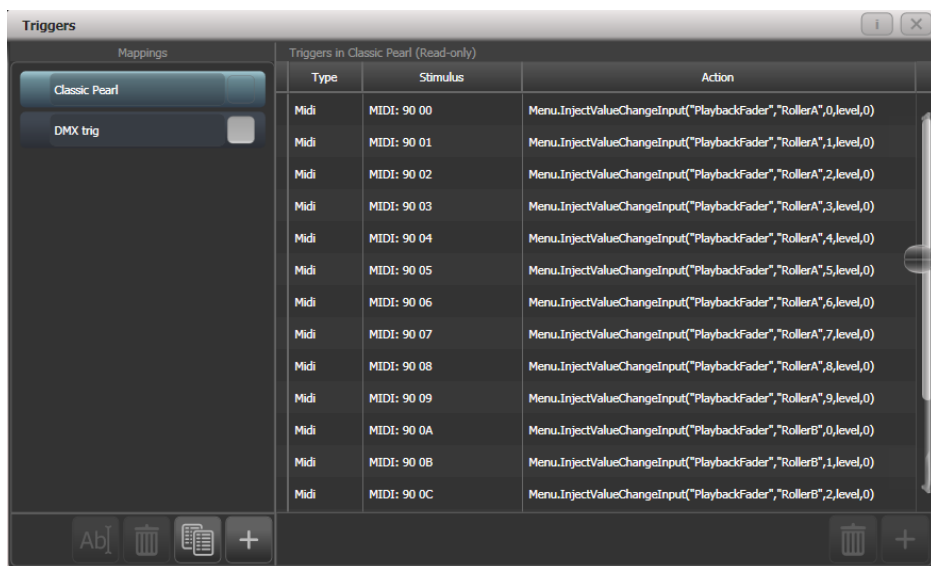
- To delete a trigger from the mapping, select it in the list and press the {Rubbish Bin} button at the *bottom of the right hand column*.

- To delete a complete mapping, select it and press the {Rubbish Bin} button at the *bottom of the left hand column*.

- The **Re-Fire At Level** action will cause the playback to be re-fired when the trigger level changes, so any LTP values in the playback will be set again. So for example if the playback sets fixtures to red, but then another playback changes the colour to white, the Re-Fire action would set the fixtures back to red when the trigger level changes, but the Set Level / Fire At Level actions would leave them at white and just change the intensity.

Setting up a MIDI fader controller with T2

This is how to set up a MIDI fader controller to act as playback faders on T2. Ensure your MIDI device is connected and recognised by Windows (you can use a utility such as Midi-OX to test it).

1. From the **System** menu select [Triggers].
2. Add a new mapping using the {+} button at the bottom of the left hand column, and call it "T2 playbacks".
3. Add a trigger to the mapping using the {+} button in the right hand column or softkey [Add trigger] – by default this is set to the correct Trigger Type of [Hardware].

4. Move playback fader 1 on Titan Go.
5. Click [OK]
6. Move the first fader on your MIDI controller. Titan Go should recognise the MIDI commands and display the trigger in the prompt area.
7. Click [Add]. The trigger for playback 1 is added to the list on the right.
8. Repeat from **step 3** to add the other 9 playback faders.

16.4.3 MIDI Show Control

The following MIDI Show Control messages are supported:

Command	Action
GO	Fire the specified playback or cue
STOP	Pause the specified playback or cue
RESUME	Un-pause the specified playback or cue
LOAD	Set the playback level to full
ALL OFF	Release all playbacks
RESET	Same as ALL OFF
GO OFF	Same as resume

Playbacks/Cues are identified by their User Number. To set the user number, press [Set Legend] then the select button of the cue, then [User Number].

MIDI show control devices are identified by a device ID. To set Titan's device ID select [User Settings] from the **System** menu, then go to the [Timecode] tab. The default setting is 0.

16.4.4 Audio Control (Sound to Light)

On supported consoles the audio input is divided into frequency bands which can be used to provide the trigger. The [Band] option selects which of the bands is being used.

Band	Sound frequency
1	50Hz
2	140Hz
3	380Hz
4	875Hz

Band	Sound frequency
5	2400Hz
6	6200Hz
7	14000Hz

Audio triggers are adjusted in the Audio Triggers workspace which also shows the levels in the different bands of incoming audio.
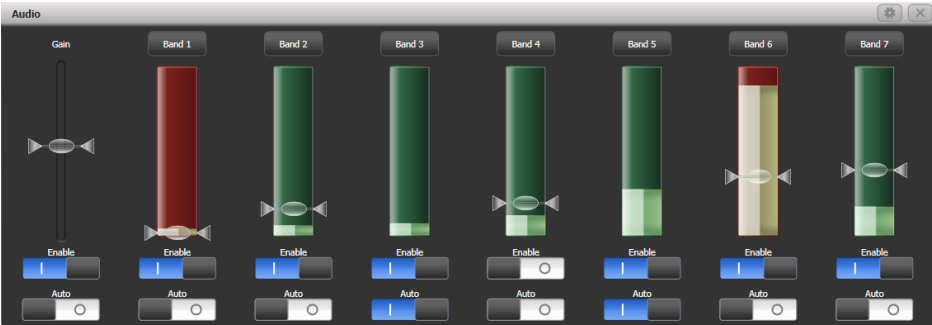
If the console does not have suitable hardware a warning message is displayed (see top of page for list of audio-enabled consoles).

- The Enable switch below the gain slider disables all audio triggers

- The left hand gain slider sets the overall input gain, which can be used to boost weak signals

- Auto gain will automatically adjust the gain, this disables the slider from manual changes

- The Enable switches below each band disable triggers on that particular band

- Trigger level sets the threshold for triggering on each band. The band shows red when triggered.

- The Auto switches on the bands automatically adjust the trigger level on each band when no triggers are occurring.

You can quickly allocate a playback to a trigger by clicking the top Band button above the trigger, then select the playback to be triggered.

On the Arena and Quartz consoles, the Audio LED (just above the power switch) will flash when audio is received. Note that the headphone socket on these consoles is linked to the motherboard audio output and can't be used for monitoring the audio trigger input.

16.5 Linking PioneerDJ System to Titan

Using the Pioneer Pro DJ Link Bridge software you can automate BPM masters on the Titan console from a network-equipped Pioneer DJ system. You can either run the bridge software on the console itself or on an intermediate laptop.

> Pioneer DJ integration is compatible with the following Pioneer hardware:
> CDJ-TOUR1
> DJM-TOUR1
> CDJ-2000NXS2
> DJM-900NXS2
> CDJ-3000 (added in v15.1)

16.5.1 Connecting Titan to the Pioneer System

You need to get the console and the Pioneer equipment connected to the same network. The Pioneer equipment has some limitations with its network IP address - it either needs to be assigned an address using DHCP or it uses an automatic address in the range 169.254.*.* - which means that if you are already using networking to control the lights (Art-Net or sACN) things can get a bit complicated as many lighting products cannot use that address range.

Pioneer Bridge running on the console

If you aren't using networking, or your console has two network interfaces, or you can adjust your lighting to a suitable address range, then you can run the Pioneer Bridge software on the console itself. If your console includes an Ethernet switch, you can connect the "Extension" Ethernet socket on the Pioneer equipment directly to the console, otherwise you need to go through an external switch.

Run the Pro DJ Link Bridge software from the **Tools > Additional Programs** menu on the console.

- You can set the Bridge software to run automatically when the console powers up using the **Tools > Control Panel > Run on Startup** menu option. This is useful in club environments where the console is always linked.
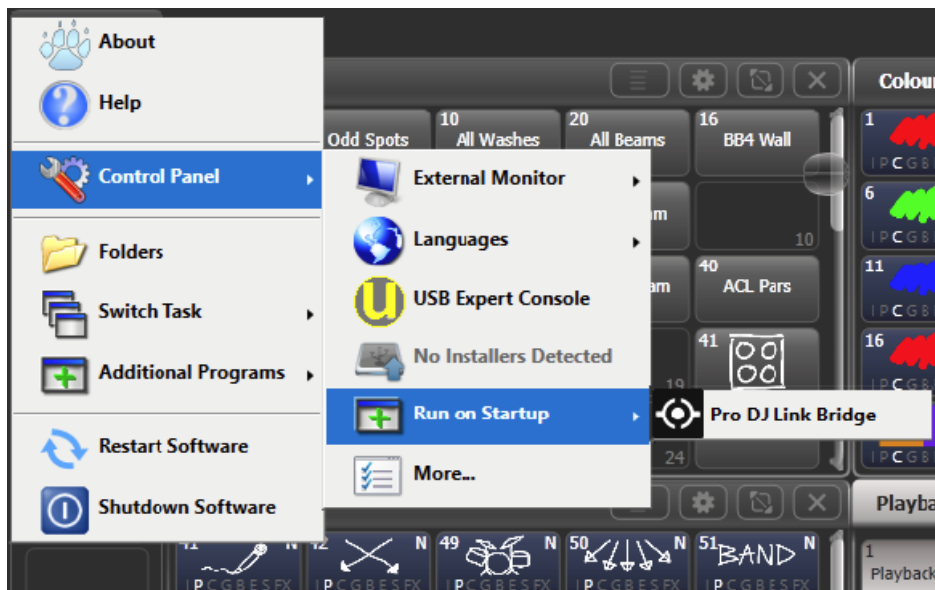
Look at the Interface tab of the bridge software to see what IP address is being used by the Pioneer equipment. You need to set the network interface on the console to use an IP address in the same range – if it is using DHCP, just set the console to DHCP as well, or if using the automatic addresses set a fixed address. For example if the bridge is set to 169.254.225.212 as in the image below, set the console to 169.254.225.1 (assuming nothing else on the network is using that address).
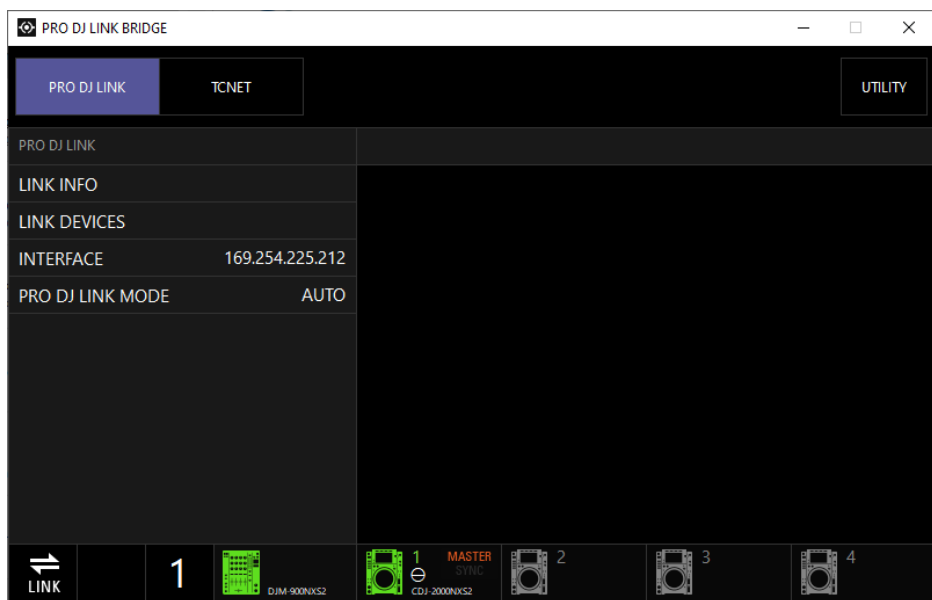
- Once you have everything connected up and have got all the IP addresses right, the bridge software should show connections for both the Titan console and the DJ mixer.
- Some Art-Net / sACN equipment can be configured to run on the 169.254.*.* address range, in which case you can run everything on the same network.
- It may be necessary to toggle 'Node Mode' in the 'TCNet' settings from 'Client' to 'Auto'. For more information please see the PRO DJ LINK Bridge Manual (external link).

Pioneer Bridge running on separate computer

If you need to keep the Pioneer network separate to the lighting network and your console only has a single network port, or if you just prefer to have the bridge separate from the console, then you can download the bridge software from the Pioneer website and run it on a separate computer.

If you need two separate address ranges then your computer will need two network interfaces.

Once you have everything connected up and have got all the IP addresses right, the bridge software should show connections for both the Titan console and the DJ mixer.

16.5.2 Pioneer Workspace window

Open this window the usual way by double pressing <Open/View> and selecting [PioneerDJ] from the window select buttons.
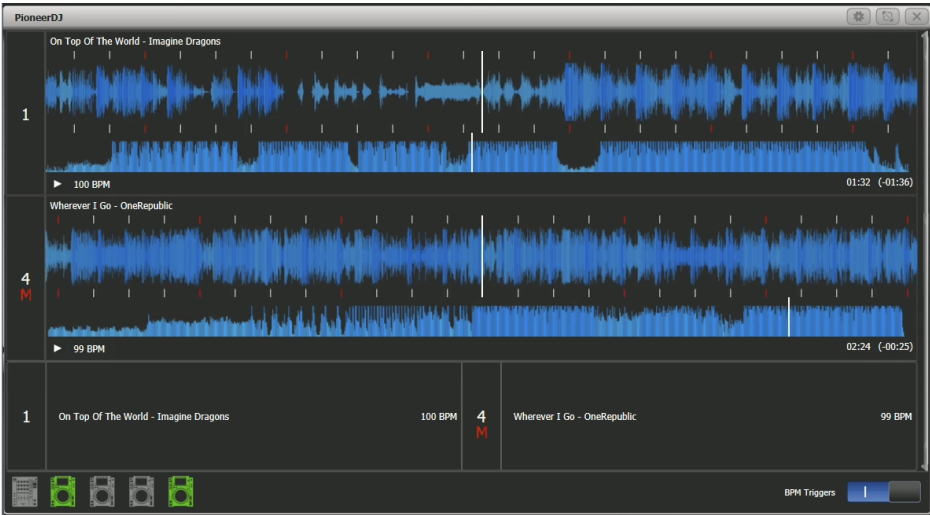
The top of the window shows a big (detail) waveform and a small (full track) waveform for the current track. Multiple tracks can be shown one above the other.

Below that, details of the current track playing on each device is shown.

At the bottom, the connection status of the Pioneer equipment is shown – green when connected.

You can select which track is currently the Master by pressing the track number on the left or in the detail area at the bottom. A red "M" shows which track is the master. If you assign your trigger as "Master" this lets you quickly change which track is controlling the BPM.

Context menu buttons allow you to show or hide the big and small waveform displays, the track details and the status bar. The other elements of the window will change to fill the space.
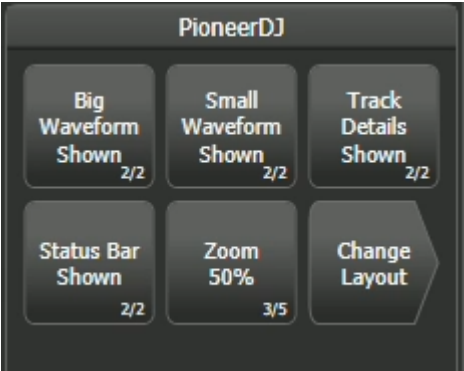
- The [Zoom] button allows you to set the scale of the big waveform.

- The [Change Layout] button allows you to select the view in the workspace. This is useful if you want a smaller window:

    - [Full] – shows all the currently playing tracks

    - [Master] – shows only the waveform of the master track

    - [Condensed] - shows details of all the tracks at the bottom, but only shows the waveform of the master track. You can change the master track by pressing the track number in the Track Details area.

16.5.3 Setting up BPM triggers from Pioneer

You will need a fader on the console configured as a BPM master which will be automatically controlled by the track BPM playing on the Pioneer devices. See BPM Master (Abschnitt 16.2.2.1) section for how to set up a BPM master.

Go to the **System** menu (<Avo> + <Disk>) and select [Triggers]. The Triggers window will open. 1. Add a new mapping using the {+} button at the bottom of the *left hand* column, and enter a name such as "Pioneer". 2. Add a trigger to the mapping using the {+} button in the *right hand* column or softkey [Add trigger]. 3. Select [Trigger Type] as [Item]. 4. Press the button for the BPM master you want to control. 5. The [Action] button will show [PioneerDJ] as this is currently the only action for a BPM master. Press [OK]. You have now set up the console action which is to be triggered. 6. Now you need to select which Pioneer deck will control the BPM. Select [Deck=] as Master, 1, 2, 3, 4. [Master] will use the track you have currently selected as Master (red M displayed). The 1-4 options let you fix the control to one of the decks. 7. Press [Add]. The trigger should now appear as shown below.
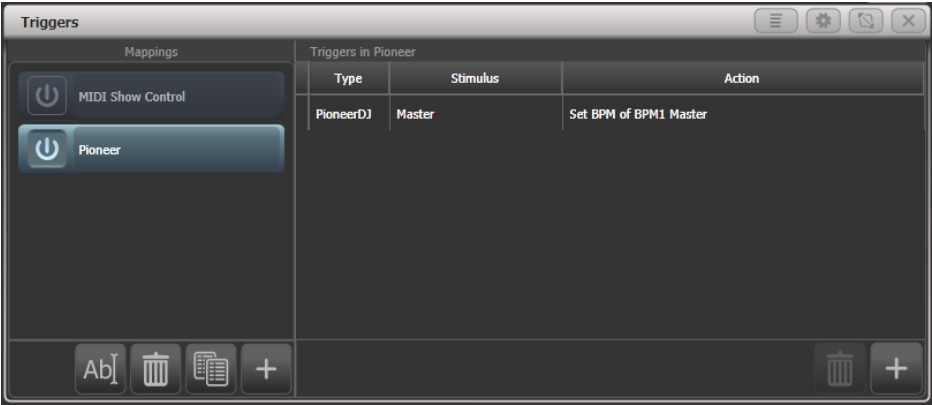
Now you should see the BPM master automatically change to match the BPM of the track playing which you have selected as Master (or on the selected CDJ player if you selected a fixed player number).

- To regain local control of the BPM master, switch off the "BPM triggers" switch at the bottom of the PioneerDJ workspace window.

16.6 Linking Consoles for Multi⊠User or Backup

On large shows it is sometimes necessary to have multiple operators programming or running different aspects of the show. The Titan system allows a number of consoles to be connected together to give an integrated system with multiple control surfaces.

In addition, on many shows it is important to have a backup console running in case the main console fails during the show. Titan allows you to run a second console over the network which it keeps synchronised with the main console. Should the worst happen, a single keypress can transfer control to the backup console.

> Linked consoles must be running the same version of Titan. If using PC Suite (Titan Go or Simulator) you may need to disable any firewalls on the PC.

16.6.1 Setting Up Consoles for Multi-User

Titan consoles may be connected to each other for collaborative programming or show operation. See the Multi-User Operation (Abschnitt 5.5) section for more information.

16.6.2 Setting Up Consoles for Backup

Any Titan console can act as backup for any other console, they do not have to be the same model. For example you could run a laptop with T3 as backup. You can also in an emergency use the screen on a TNP to operate.

However do plan ahead and think about what parts of your show will become inaccessible if the backup device has less faders/handles than the main console.

1. Connect both consoles to the same network and ensure they are set to the same IP range. See the networking section (Abschnitt 21.1) for more information.
2. On the console which will be the Backup, press <Disk>, [TitanNet Sessions], [Backup].
3. Consoles available for backup will be listed in the softkeys.
4. Selecting a console will place the console you are working on into backup mode and sync the show to the selected console.
5. The backup console will show a display indicating the backup status and show name.

In backup mode the backup console screen displays the current connection and sync status including current show name.
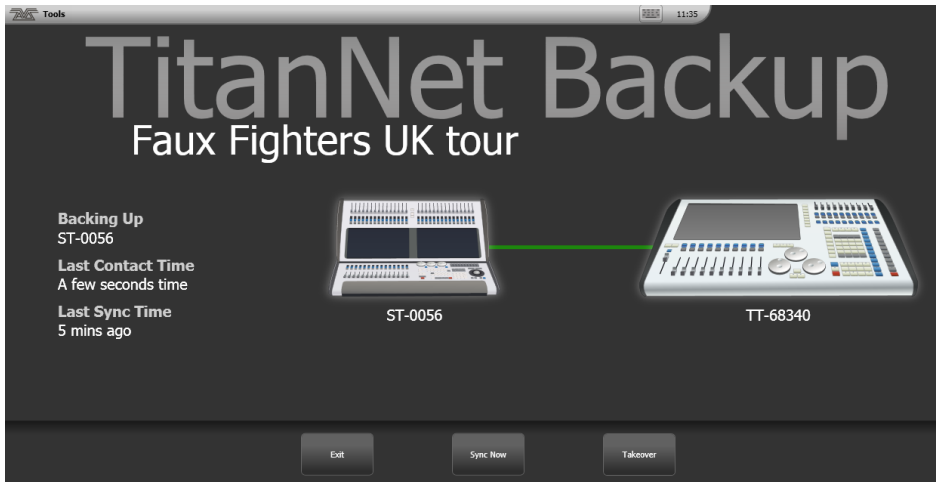
A green line between consoles represents a good connection. If a red line is shown there is a problem with the network connection. A blue line will appear during sync operations.
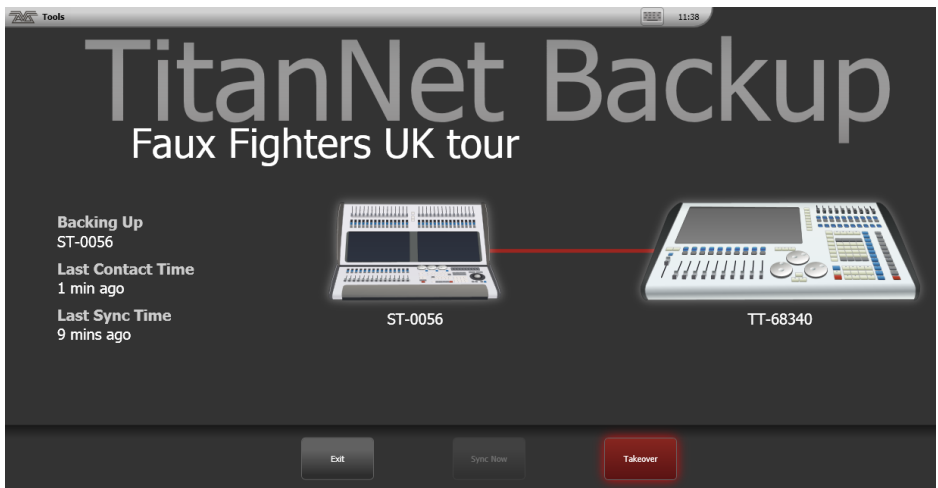
- Shows will automatically sync whenever a show is saved on the main console (including autosave). You can also choose to sync at any time by selecting [Sync Now].

- Pressing [Exit] will abort backup.

- [Takeover] will enable control on the backup console and disable DMX output on the main console. A prompt will appear on the main console to warn that DMX has been disabled. On touch consoles

touching on this prompt will open the 'Exit Safe Mode' menu with a softkey option to re-enable output. On the Pearl Expert you can re-enable DMX output via the <Avo> menu.

17 Remote Control

17.1 Remote Control

If you connect the console to a wireless network, you can use the **Titan Remote** app on an Android or iOS mobile device such as a smartphone or tablet for wireless remote control. This can be really useful when rigging, testing and focusing. Also from the remote, you can run and store palettes and playbacks.

The **Titan Remote** app can be downloaded from the Google Play Store or Apple App Store.

> In previous versions, the remote app had a version number which had to match the console software version. This is no longer the case and the app does not have a version number in its name.

You can connect multiple remotes to the console and the console itself remains functional while the remote is connected. Each remote runs like a multi-user system with a **separate programmer** so an operator can continue to work on the console while another user programs or updates palettes on the remote.

- To clear all changes from a remote, hold <Clear> on the console and select [Clear all programmers].

17.2 Setting up the Remote

The console needs to be connected to a network with WiFi. As with all networks used for lighting we would recommend that you use an isolated network which is not connected to the internet or other IT equipment.

At its simplest this can just be a WiFi Access Point plugged into the console.

You should position your Access Point so that you have line of sight to it when you are using the remote.

You will need to set suitable IP addresses on the console and on the Access Point - read more about Networking the Console (Abschnitt 21.1).

17.2.1 Connecting the mobile device

Both Android and Apple devices will show warnings when you connect to a network which does not have an internet connection. Apple devices will show a continuous spinning icon next to the network name which can be ignored. Android devices will ask you if you really want to connect - select "Always Connect".

If your network does not have DHCP enabled (which automatically gives addresses to network devices) you will need to manually set an IP address on the mobile device which needs to be in the same IP range as the console (see Networking the Console (Abschnitt 21.1)). For Android devices you need to set a Network Prefix Length instead of the subnet mask - 255.0.0.0 is 8, 255.255.0.0 is 16 or 255.255.255.0 is 24.

17.2.2 Selecting the console connection

Once you have your mobile device connected to the network, open the Titan Remote app and a list of connected consoles should be shown. At the bottom of the screen, details of your network connection are shown which can be useful when troubleshooting.
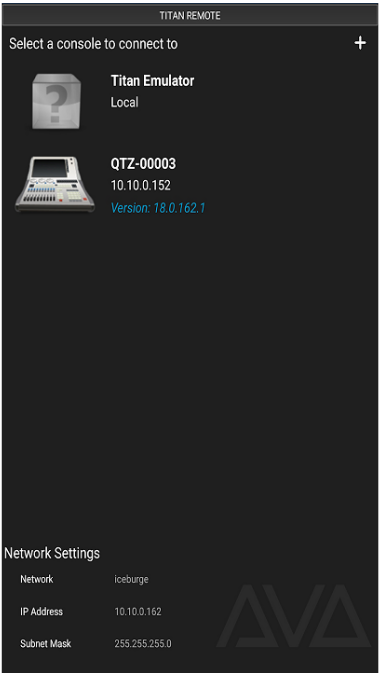
The Titan Emulator can be used to test or demonstrate the remote when no real console is connected.

In some network situations your console might not be found by the discovery messages. If your console does not show up in the list, you can enter its IP address manually by clicking the + button in the top right hand corner of the screen. The console will then be shown in the list. To remove manually added consoles from the list, swipe left then select the Delete button.

17.3 Operating the Remote

The previous section Setting up the Remote (Abschnitt 17.2) takes you through the steps for getting a mobile device connected to the console.
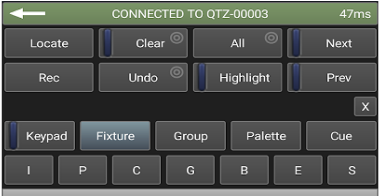
The app title bar shows the network connection status: - green: good connection. The response time from

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the console is shown on the top right. - red: you have a very slow connection to the console or have lost connection (response time more than 1 second). - orange: you have a slow connection to the console (response time more than 250ms).

> If you are seeing a red or orange bar, move closer or reposition your WiFi point so that you have a clear line of sight to it.

Choose what you want to control using the **Keypad / Fixture / Group / Palette / Cue** buttons near the top of the app. The Keypad button enables or disables the numeric pad (the keypad overlays some other screens, so you will need to turn it off to see the others).

Some buttons have a circle icon, this shows that holding down the button will give additional options.

The layout of the screen may vary depending on the screen size of your device. On tablets and devices with larger screens, you can see multiple windows at the same time.

Phones are locked to portrait mode. Android tablets will lock to the current orientation of the device when the app is opened. iPads can be rotated while in the app. The app will follow the dark/light display mode of the device.

17.3.1 Keypad

The keypad screen lets you do most common tasks in the way a programmer's remote normally works. You can turn on/Locate fixtures and dimmers either individually or together.
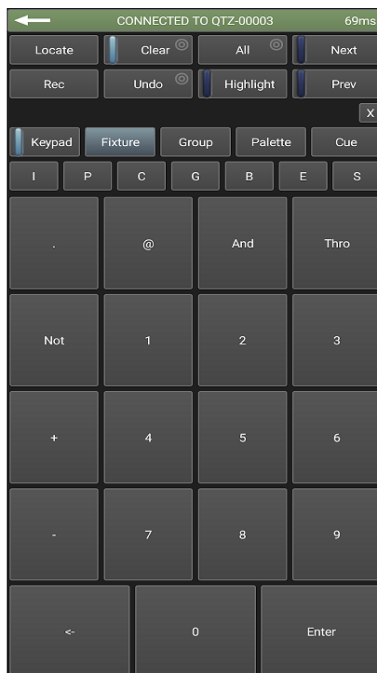
The User Number of the fixture or dimmer (as shown in the top left corner of the fixture button) is used for control. For example to turn on dimmer 3 at 50% you would press:

`3 @ 5`

To turn on dimmers 1-10 at 80% you would press:

`1 Thro 10 @ 8`

For 100% you just press @ twice, for example:

`1 Thro 10 @ @`

> To Locate selected fixtures, press Locate instead of the @ button.

You can select multiple ranges of dimmers or fixtures using the And button, for example:

`1 Thro 10 And 20 Thro 30 @ 6`.

17.3.2 Selecting Fixtures

The **Fixture** or **Group** screen allows you to select fixtures exactly as you would on the console. If you have a lot of fixtures, it is much easier to use Groups and step through the fixtures using the **Highlight**, **Prev** and

Next buttons. Press the **All** button to reselect all fixtures. Hold down the **All** button to step through various selection patterns (odd, even etc).

You can scroll the screen up and down by dragging the window. To view the fixture or group pages, drag the title bar of the window downwards.

17.3.3 Controlling Attributes with wheels

Use the **IPCGBES** buttons at the top to select the group of attributes you want to control, and scroll wheels will be shown for the available functions.

For continuous attributes like Pan and Tilt or Colour mix, you can adjust the wheels by dragging up and down, or the arrows on the wheels will go to 0% or 100%. You can "pinch zoom" the wheel to fan the attribute across selected fixtures (always uses Line curve for the fan).

For attributes with ranges like colour wheels or gobo wheels, the wheel will show the colour or gobo name. The up/down arrows will move to the previous or next range.

If there are more than three attributes to adjust, touch the appropriate **IPCGBES** button again to step through the other attributes.

Press the **Clear** button to clear the selection and all changes in the remote programmer. Hold down the **Clear** button to clear all programmers (for example if someone has been doing something on the console at the same time, this will clear the console's programmer too).

- When you have finished using the remote, press **Clear** to remove changes from the remote programmer, or your changes will continue to show on stage, overriding the console. You can clear remote programmers from the console by holding <Clear> on the console and selecting [Clear all programmers]. When another programmer is controlling fixtures, the attribute displays show a cyan dot.

From the remote's **Cue** screen you can play back cues from the touch buttons in the Playbacks workspace window. Hold down a playback button to kill or release an active playback.

- You can't play back cues from playback faders or executor buttons from the remote, if you want to do this, make a copy of the cue in the Playbacks window.

17.3.4 Recording Palettes, Groups and Cues

You can record palettes, groups and cues using the **Rec** button on the remote, then click a workspace button as normal. You can also hold down an empty button to quick record.

When you record an item you can set a text legend or a picture legend. You can hold down a button to edit its legend.
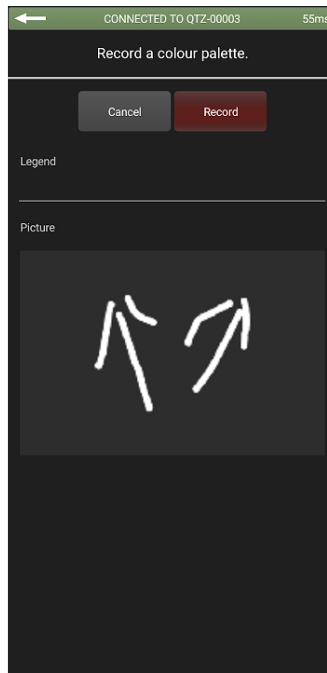
If you record to a used palette button, you are given options on whether to merge or replace the palette.

When recording cues, the Record Mode (Record By Fixture, Record By Channel etc.) currently set on the console will be used.

18 Titan Net

18.1 Titan Net Processor Operation

A TNP (TitanNet Processor) unit can operate either as a slave unit, producing additional DMX lines for a console, or as a simple console for stand-alone operation. In console mode you can prepare a show on a full console, then load it into a TNP for operation, using power-on playbacks (Abschnitt 10.6.2.4), or you can connect an external touchscreen to the TNP and operate it using the Titan Go interface screen.

Select the operation mode from the toolbar at the top of the screen, using the Switch Software Versions option:

Mode	Meaning
TNP	Slave Mode

Mode	Meaning
Console	Console Mode

18.2 TNP Slave Mode

Normally the TNP screen shows the "Home screen" which displays the connection status and IP address of the two Ethernet ports on the device. Buttons across the top allow you to configure the device. The <Exit> button always takes you back to the previous menu.
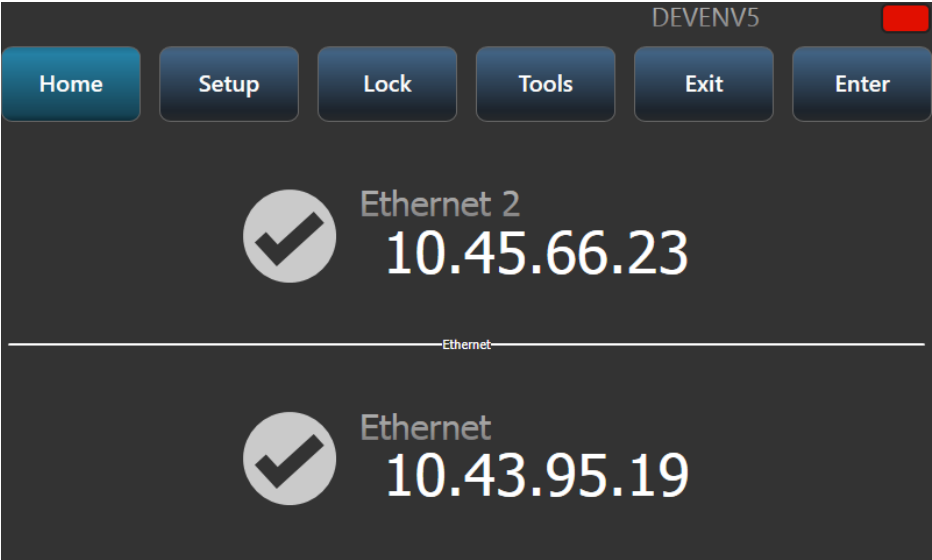
18.2.1 Setup

The setup screen allows you to configure network port settings, and node settings for the overall device by tapping [Network Settings] or [Node Settings].

Network Settings

To edit the TNP's network settings:

1. Select which **Ethernet** port you want to configure
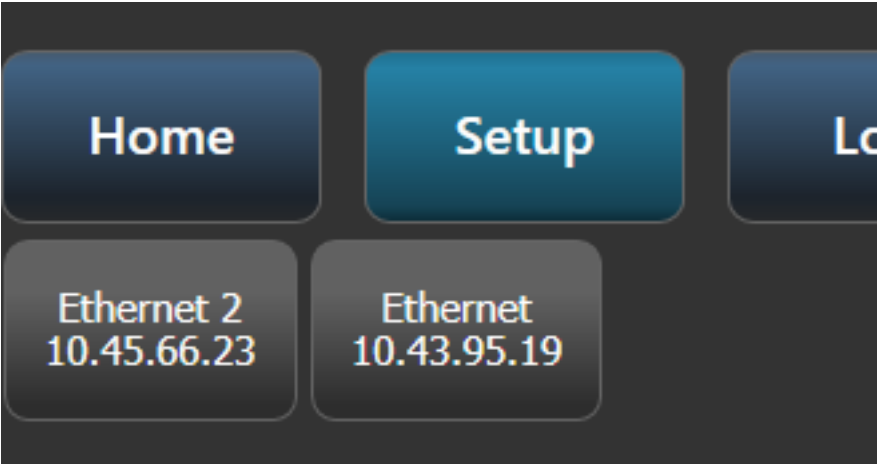
2. You can then enable or disable DHCP, set IP address and Subnet mask using the number buttons, or set a fixed (automatically generated) 2.*.*.* or 10.*.*.* IP address.
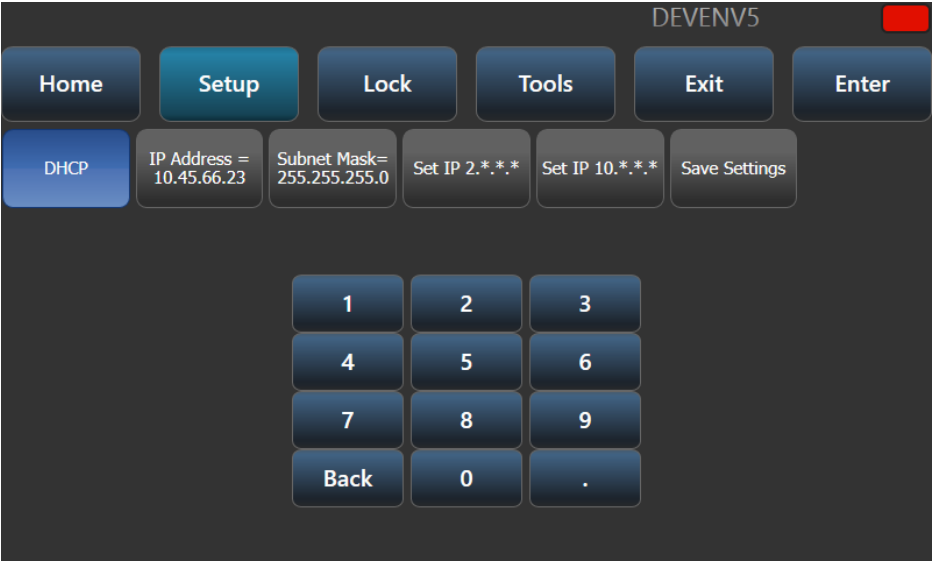
3. Tap [Save Settings] button to store the changes.

Node Settings

For **Node Settings** you can change the legend of the device and the line colour. This is shown on the top line of the device and on all TitanNet pages on connected devices. It helps you identify the device when you use the TitanNet overview on the console.
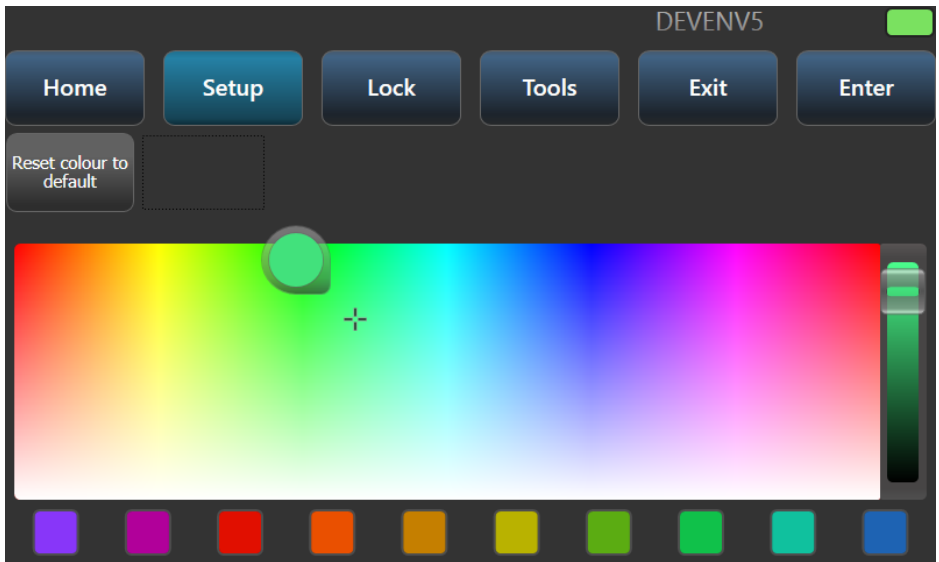
18.2.2 Locking the TNP

The Lock screen displays a keypad and asks you to enter a lock code. When the device is locked, the screen shows "Locked" and shows a keypad to unlock.
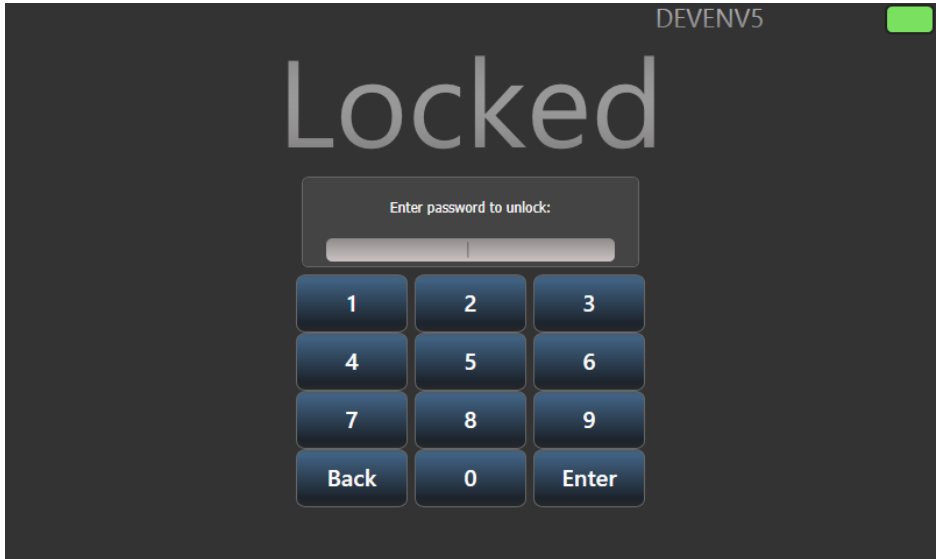
18.2.3 Tools

Currently there is only one option on the Tools screen, "Monitor". This allows you to monitor the processing load of the device. You can select to monitor either cycle time or render time.
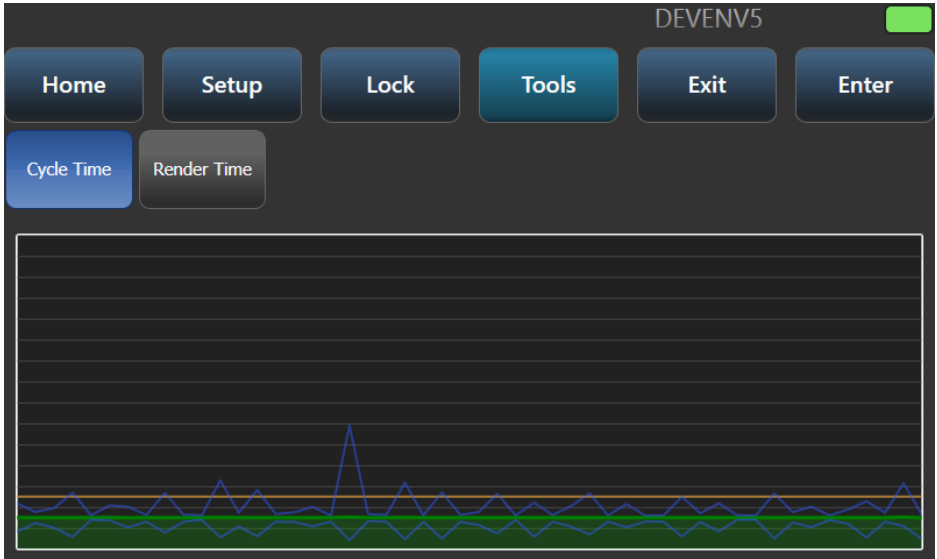
18.3 TNP Console Mode

TNP console mode allows you to use a TNP to run an unattended show, or to act as an emergency backup. You can create a show on a full console then load it into the TNP for operation, or you can connect a console in multi-user mode to create programming on the TNP itself.

18.3.1 Running Playbacks

Use the View command (see next section) to select Playbacks Grid mode.
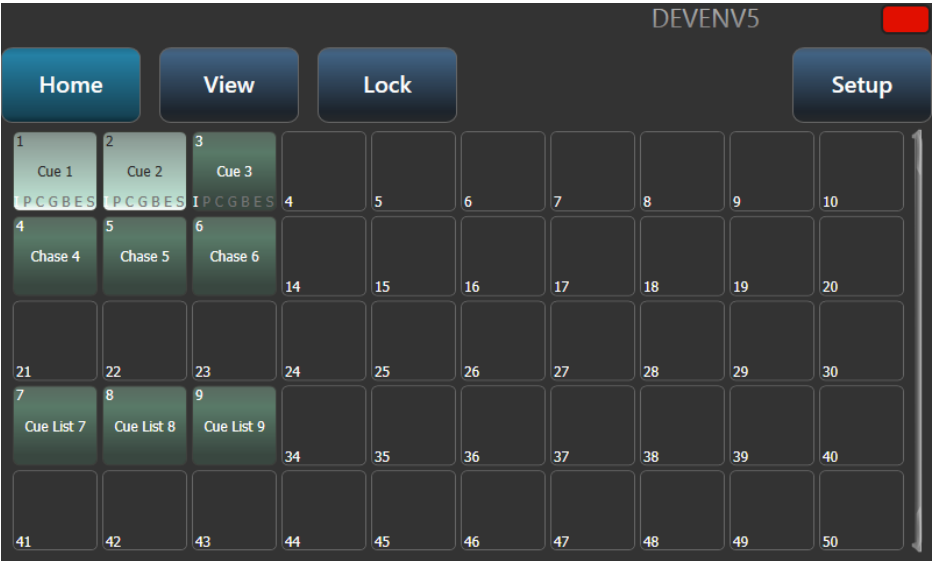
You can then run playbacks from the standard Titan playbacks window by touching the buttons.

18.3.2 Setting the View

In Console mode, the Home screen can be set using the View button to display either Network Adapters (like in slave mode), Playbacks Grid or Session View.
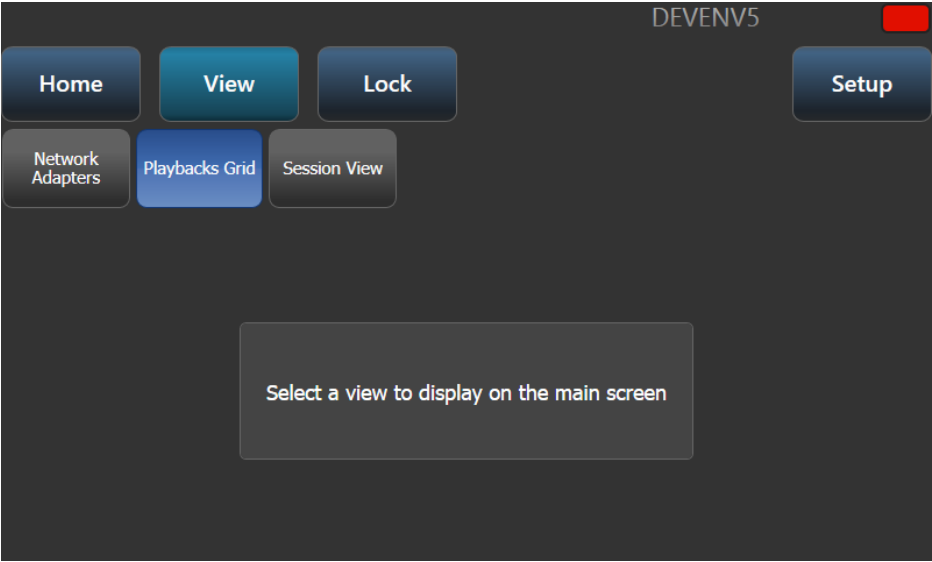
Session view shows how the TNP unit is connected to other Titan devices on the network.
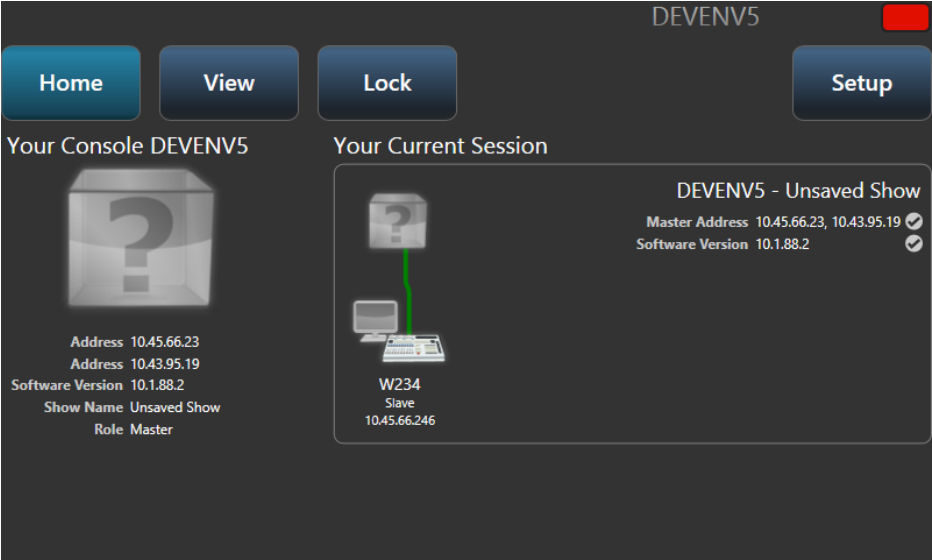
18.3.3 Locking the panel

The selected view will also be shown when the console is locked using the Lock button. If the playbacks screen is shown, the only action available is to fire and kill the playbacks on the screen. Touch the Show Keypad button to display the numeric keypad for unlocking.

18.3.4 Loading and saving shows, and other Setup

Setup mode allows you to load and save Titan shows. You can also change Network Settings, Node Settings and set Monitor mode (see Slave mode above for details).
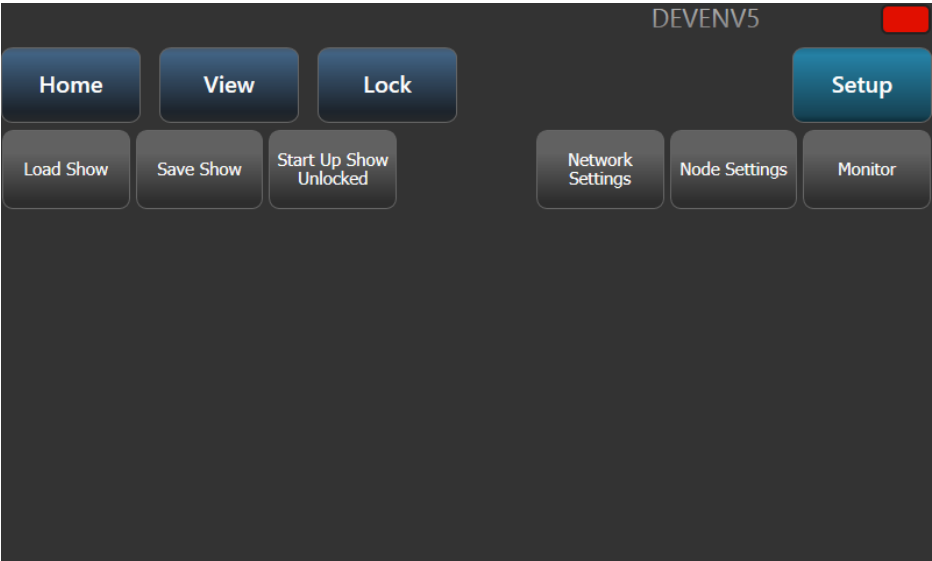
Load show presents the standard Titan loading screen (Abschnitt 5.8).
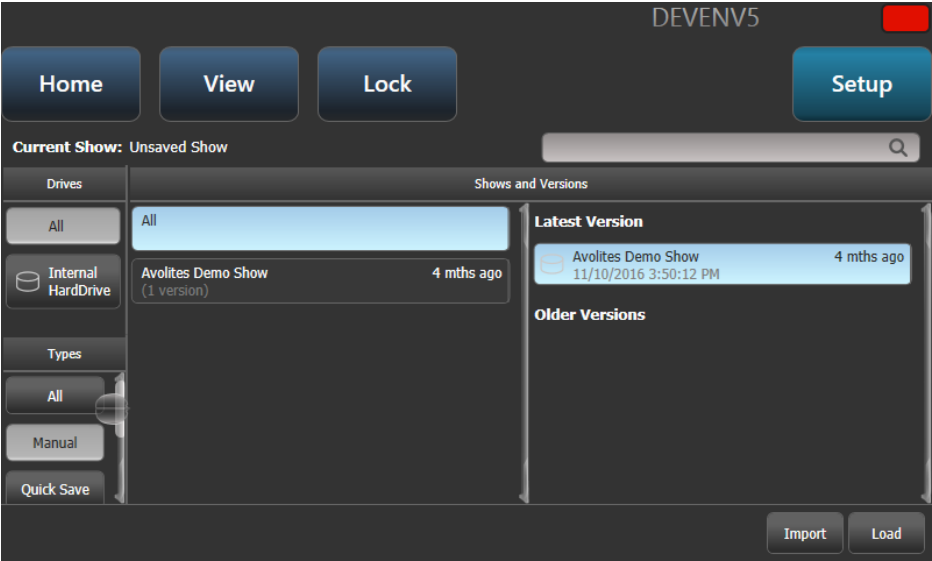
Save Show allows you to save a show which you have modified on the TNP using a remote console.
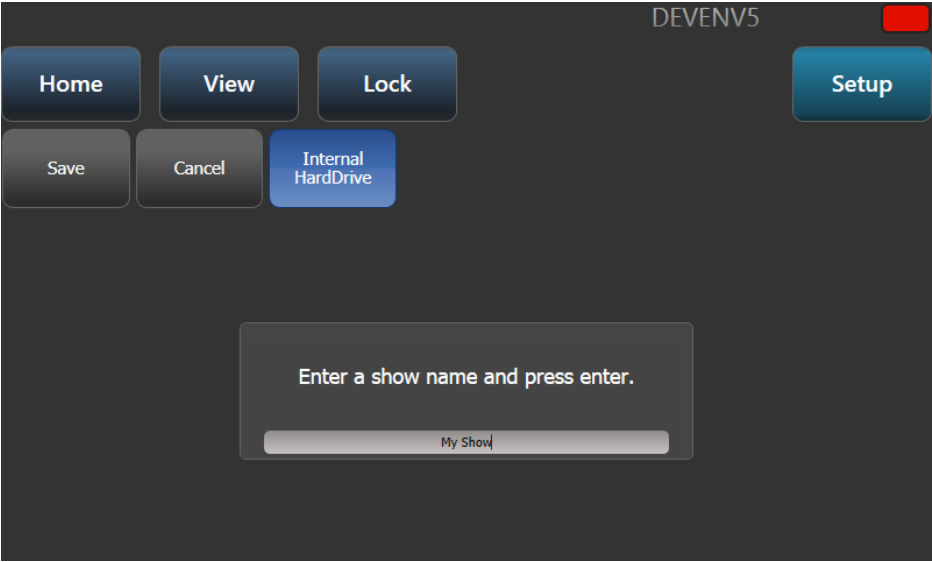
19   System Settings

19.1   System Menu and User Settings

The console has a large number of options to help you set it up just the way you like it. Commonly used options can be set from the User Settings menu which is available on a softkey when you hold down the <Avo> button.

The System menu itself allows you to set up the console hardware including physical DMX outputs, network ports, external monitors and so on.

In this chapter there is also information on how to upgrade the Titan software.

19.2   The System Menu

The System menu is accessed by holding <Avo> and pressing <Disk>, or on Titan Go you can press the <System> button. Some older consoles are also fitted with a key switch or mode switch to get the System menu.

The options in this menu are separated from the other options on the console because you would normally only change them occasionally, or because they can have serious effects on the way the console works and you wouldn't want to change them accidentally.

19.2.1   Network Settings

This option sets up networking parameters for the Ethernet ports on the console - further details on how to control fixtures over a network (Abschnitt 21.3) are in the networking section (Abschnitt 21.1).

19.2.2   DMX Settings

Allows you to configure how the console outputs DMX. This option is described in detail later in this chapter, in the DMX Output Settings section (Abschnitt 19.6.1).

19.2.3   Network DMX Node Settings

Allows you to select how DMX will be output across multiple consoles or processing nodes - read more about Network DMX Node settings (Abschnitt 19.2.3).

19.2.4   Synergy Settings

Sets up the Synergy software for linking to an Ai server, see the Synergy setup section (Abschnitt 15.2.4).

19.2.5 TitanNet Security

This option sets how the console communicates with other Titan devices as a backup console, for more information see the Linking consoles for multi-user or backup (Abschnitt 16.6) section.

19.2.6 User Settings

The User Settings menu may also be accessed from Program mode: hold down the <Avo> button and press [User Settings]. See the User Settings (Abschnitt 19.5) section.

19.2.7 Key Profiles

Allows you to modify the functions of some buttons. See section the Key Profiles (Abschnitt 19.4) section.

19.2.8 Wipe

The Wipe menu erases the current show. This is the same as the [New Show] option on the Disk menu, but is provided here for old fashioned Avolites users who are used to it being on the System menu.

19.2.9 Triggers

Sets up the console for external triggering such as MIDI or DMX-in. This option is described in detail in the MIDI, DMX or audio triggering (Abschnitt 16.4) section.

19.2.10 Assign Masters

This option allows you to assign any playback fader to be a master fader. Various different types of master fader may be assigned. See section Grand Master fader and assignable masters (Abschnitt 16.2.1) for more information.

19.2.11 Console Legend

Lets you set the legend of the console, this is displayed in networking screens when you are linking the console to others.

19.2.12 Titan Telemetry

To help Avolites with software development and bug fixing, the console will report anonymous information to Avolites. This includes details about faults that occur, statistics on how long certain functions take, and usage of functions. This information is really useful for improving the software, however if you would prefer to disable it, click the [Telemetry Enabled] button to switch it to [Telemetry Disabled]. Telemetry information will only be sent in any case if the console is connected to the internet.

19.2.13 Display Setup

This option gives you a menu for enabling and disabling external monitor(s) (Abschnitt 19.3). If you don't have a monitor connected, set this option to "Disabled" to improve the performance of the console.

19.3 External Displays

For extra workspace you can connect external monitors to the monitor ports provided on the console (HDMI on Diamond 9, DisplayPort on Diamond 7, DVI on other consoles, except Pearl Expert and Tiger Touch 1 which are VGA). The Diamond 9, Diamond 7 and Sapphire Touch can have two external displays, all other consoles can have one. You can use touch screens, we advise using Windows Touch compatible monitors to avoid driver issues.

For Titan PC Suite (Titan Go / Titan Simulator) you can connect whichever external displays your computer will support, Titan can use up to three of them.

An external display is disabled by default and will show a 'disabled' message. To enable, go to the **System** menu (press <Avo> + <Disk>) and select [Display Setup] then press [External Display Disconnected]. The option will change to [External Display Connected] and the display will be enabled.

> For best performance of the console, disable display outputs you aren't using.

Titan should configure its output to match your monitor. However if this does not work for any reason, on a console you can manually set the resolution from the toolbar. Click 'Tools' at the very top of the touch screen and select 'Control Panel', then 'External Monitor', then select the option to match the resolution of your monitor.
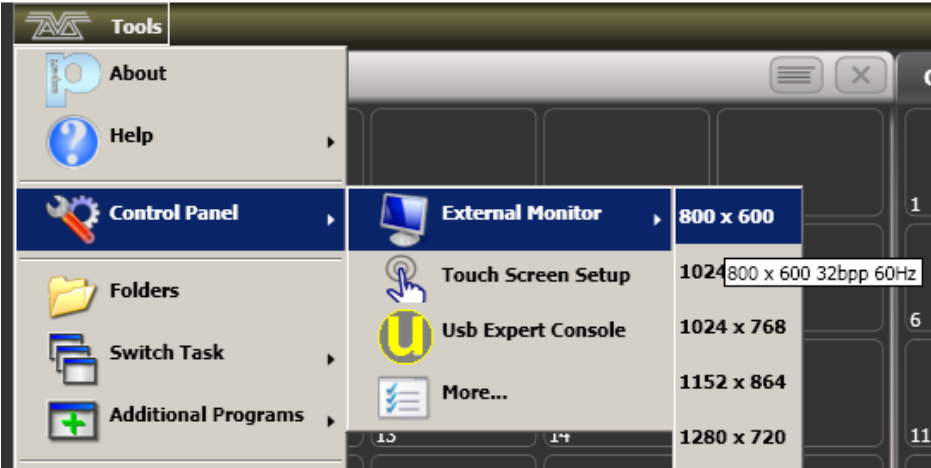
19.4 Key Profiles

The console allows you to reconfigure how the front panel buttons work to suit your method of working. You can save your settings as a Key Profile. Different profiles can be selected for different users or to enhance the operation of the console for a particular use.

There are standard Key Profiles for Run mode, Takeover Run mode, Program mode, Theatre mode and Nightclub mode. These standard profiles cannot be edited, so you always know how they will behave. You can create your own editable profiles using one of the standard profiles as a starting point.

The current settings of the playback buttons are shown on the screen related to each playback fader.

19.4.1 Creating and editing key profiles

To create or edit a profile, go to the **System** menu (press <Avo> + <Disk>) then select [Key Profiles]. You can then use the Manage Profiles menu to View, Edit, Add, Delete or Rename profiles.

You can also create or edit key profiles in the [Handle] tab of playback Options.

Key Profiles can also be viewed from the Show Library window as described in Show Library (Abschnitt 5.7.4) section.

When Adding a new profile, you can select an existing profile to copy settings from.

You can also edit Key Profiles from Program mode by holding <Avo>, then selecting [Edit Current Key Profile]. If the current key profile is one of the non-editable system ones, you are prompted to add a new profile or select an existing editable profile.

For historical reasons the buttons are referred to as Black, Blue, Grey and Touch/Executor buttons. (On Diamond 9 and Diamond 7, the Blue buttons are the Select buttons and the Grey buttons are the Flash buttons). The current actions for the buttons are shown on the left side of the screen. Once you select a key type from the menu, the screen shows actions available for that type of button. Only the Sapphire Touch has Black buttons, but Virtual Black buttons can be used with the faders in the Virtual Fader window.
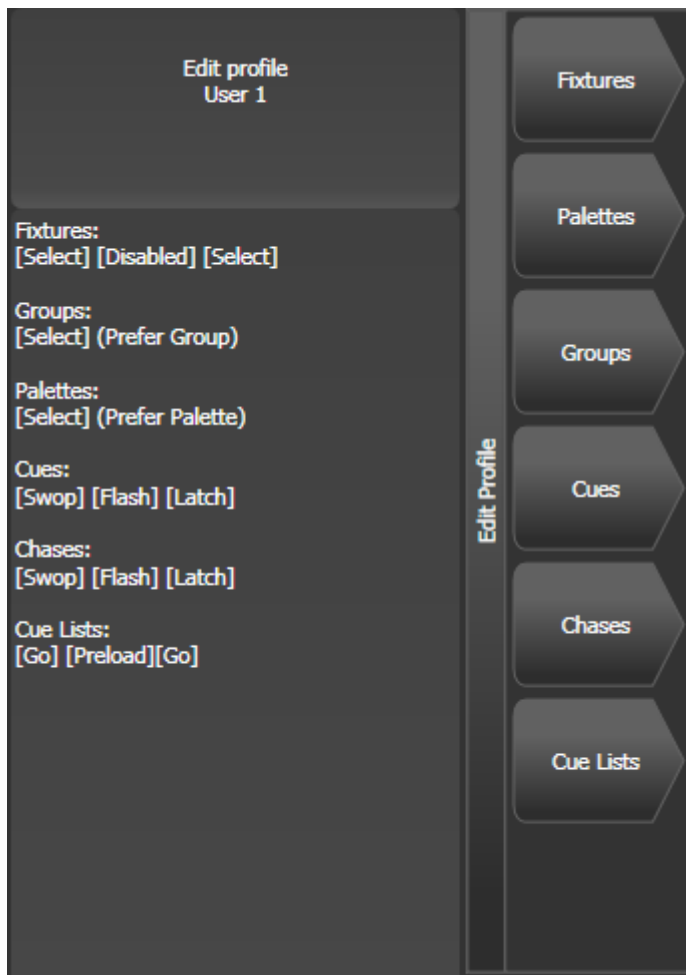
19.4.2 Actions for Buttons

The groups of keys you can set are as follows. The blue or grey fixture/palette buttons only exist on the Pearl Expert, on other consoles these settings will not do anything.

Fixtures

The blue, grey or touch key can be allocated to **Disabled**, **Select**, **Flash**, **Swop**, **Latch**.

> The "Latch" function is equivalent to putting the fader to full for that fixture and touching again returns the fader to 0.

Groups

The blue, grey or touch key can be allocated to **Disabled**, **Select Group**, **Flash Fixtures**, **Timed Flash**, **Flash Master**, **Timed Flash Master**, **Swop Fixtures** - see Fixture Groups (Abschnitt 7.4) for more details.

> The option **Group/Flash takes precedence** only applies to the Pearl Expert where it is possible to program a playback on a fader handle and use its flash button as group selector.

Palettes

The palette key or touch button can be allocated to **Disabled** or **Select Palette**.

With **Palette is fired ignoring/with its times** you select whether to take palette times into account when selecting a palette, see Timed Palettes (Abschnitt 8.6). This setting is particularly useful when Busking with palettes (Abschnitt 3.5.2).

> The option **Palette/Flash takes precedence** only applies to the Pearl Expert where it is possible to program a playback on a fader handle and use its flash button as palette selector.

Cues

Keys and buttons can be allocated to **Disabled**, **Flash**, **Timed Flash**, **Swop**, **Latch**, **Preload**, **Go**, **Tap Tempo**, **Release**, **Select If**.

Chases

Keys and buttons can be allocated to **Disabled**, **Flash**, **Timed Flash**, **Swop**, **Latch**, **Go**, **Stop**, **Preload**, **Connect**, **Tap Tempo**, **Release**, **Select If**.

Cue Lists

These affect playback of cue lists (Abschnitt 12.3) and can be assigned to the handle's buttons:

Setting	Action
Disabled	The button will do nothing
Flash	All dimmer levels in the cue will flash to programmed level, when released the levels will return to previous level
Flash and Go	*As Flash*, but when button released the cue list will advance to the next cue
Timed Flash	*As Flash*, but fade in and out times will follow the cue times set
Timed Flash and Go	*As Flash and Go*, but cue list will advance on release
Swop	*As Flash*, but all other fixtures will black out
Latch	*As Flash*, but dimmers will remain active until button pressed again
Go	Cue list will advance to next cue using times
Stop	Stops all fades in the cue list at their current point
Preload	LTP channels of non-illuminated fixtures will move to positions in next cue
Connect	Connects this cue list to controls *(same as pressing <Connect/Cue> then select button of cue list)*
Tap Tempo	Set speed parameter by tapping the button
Next Cue -	Press repeatedly to select the next cue to be output, going backwards
Next Cue +	Press repeatedly to select next cue to output, going forwards
Review Live Cue	Replays the current cue using fade times
Cut Next Cue to Live	Fire the next cue ignoring its times
Snap Back	Cue list will snap back to previous cue without times
Go Back	Cue list will go back to previous cue using fade times
Release	Release the playback using programmed release time
Select If	Press to select all fixtures used in the current cue

Macros

Can be set to **Select** or **Disabled**.

> The option **Macro/Flash takes precedence** only applies to the Pearl Expert where it is possible to program a playback on a fader handle and use its flash button as macro selector.

Options

Allows you to disable the quick record function (double tap on empty handles).

Masters

You can set different button options for [Standard Masters] and [Scene Master].

For Standard Masters the options are **Disabled**, **Selection**, **Flash**, **Latch**, **Connect**, **Tap Tempo**, **Nudge Up**, **Nudge Down**, **Release**, **Reset Multiplier**, **Multiplier x2**, **Freeze**.

Some of these options only operate with particular types of master - the Multiplier options are only for BPM masters, see the BPM Master Options (Abschnitt 16.2.2.1). Freeze can be useful to temporarily pause shapes or chases, or does a blackout if used with an intensity master.

For Scene Master the options are **Disabled**, **Preload Scene Mode**, **Exit Scene Mode**, **Enter Scene Mode**, **Commit Changes**, **Commit Changes and Exit Scene Mode**, **Enter or Exit Scene Mode**, **Enter or Commit Scene Mode**,**Reset Scene Mode**. See Scene Master (Abschnitt 16.2.5).

19.4.3 Changing the Key Profile

To quickly change the Key Profile, hold the <Avo> button and press [Select Key Profile]. This changes the global Key Profile used for all handles, unless they have an individual Key Profile set as described below.

19.4.4 Individual Key Profiles for playbacks

Each playback can have an individual Key Profile allocated to it. This allows you to customise the panel button functions differently for each playback. The Key Profile for the playback is selected using the [Handles] option on playback Options. If the playback Key Profile is set to [Global], the default global profile for Cue / Chase / Cue List is used.

You can quickly set the Key Profile for a playback by selecting the handle while holding the <Options> button down.

19.5 User Settings

The User Settings menu may be accessed from the [User Settings] softkey on the **System** menu. You can also get it directly from any other menu by holding down the <Avo> button and pressing [User Settings].
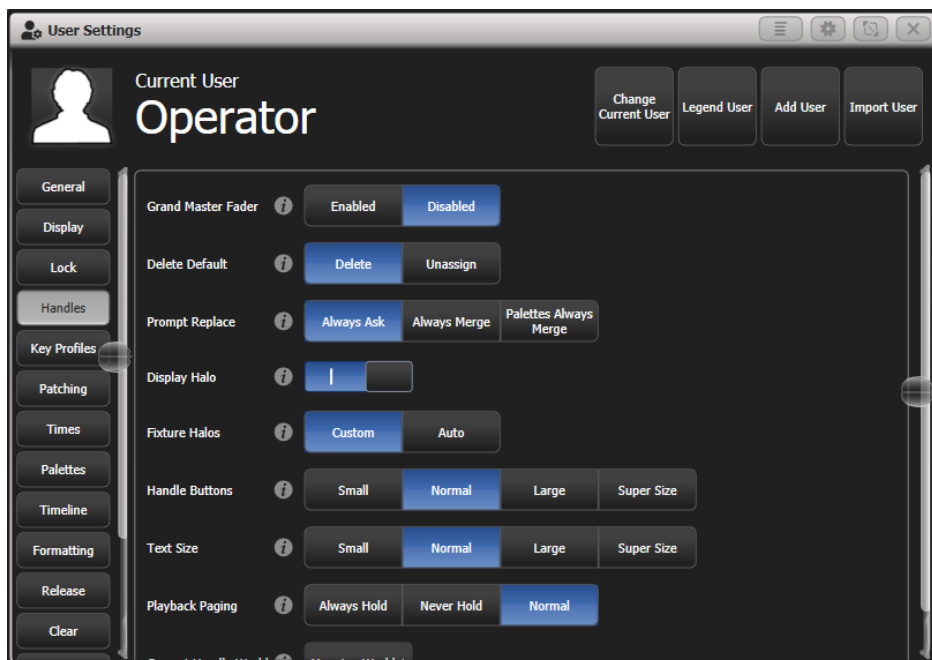
A window will open showing the user settings, or you can also set the same options using the softkey options. User Settings are individual for each User and you can change the User from this screen.

> Click on the {i} button for a help window on each setting.

Options are divided into categories on the softkeys or in the tabs down the left hand side. The default setting is **_shown in bold_**.

19.5.1 General

Option	Action
Chase Snap	*On:* the <Next Step> and <Prev Step> buttons will snap to the new state in chases *Off:* programmed fades will be shown This is the same function as the <Snap> button which features on some consoles.
Cue List Snap	*On:* the <Next Step> and <Prev Step> buttons will snap to the new state in cue lists *Off:* programmed fades will be shown.
Clear Record Mask	*On:* the record mask is cleared back to All Enabled when you enter the Record function *Off:* the record mask remains as you previously set it.
Copy Cues	*Copy Tracked Values:* tracked values will copy when you copy a cue from a tracked cue list. *Don't Copy Tracked Values:* only the values from the cue itself will be copied
Run Startup Playbacks	*On:* Playbacks set to Startup in Options will run on startup. *Off*: Disables startup playbacks from running. This option allows you to globally disable startup playbacks.
System Render Rate (Hz)	Sets the output rate of DMX frames from 1-44 frames per second *(default 40)*. You can reduce this if processing of a complex show is slowing down the console.

19.5.2 Display

Option	Action
External Display	*On:* External display is enabled *Off:* External display is disabled.
External Screen Workspace Shortcuts	*On:* Each screen has its own Workspace Shortcut buttons (shown down the side of the screen on external screens). This allows you to recall different window layouts separately on each screen rather than changing all screens. *Off:* The Workspace buttons on the main screen control all screens.
Virtual Hardware	*Auto:* Titan Go will automatically hide the virtual control buttons if a T3 or Titan Mobile is connected *Enabled:* The virtual control buttons are always shown *Disabled:* The virtual control buttons are always hidden.

Option	Action
Fullscreen Mode	*On:* The Titan Go application will be displayed fullscreen ***Off:*** The Titan Go application will be displayed in a window.

- The bottom two options are only shown when using the Titan Go application.
- These options can also be set from **System** menu, in the **Display Setup** option.
- You can also press F11 to change the Titan Go application to full screen display.

19.5.3 Lock

Option	Action
Lock Screen Background	Sets a picture to be displayed when the console is locked.
Venue Mode Workspace	Selects workspace (from softkeys) to be shown when console is locked.
Venue Mode Password	If set, allows staff to unlock the console into Venue Mode from fully locked
Programmer Password	If set, fully unlocks the console. "68340" will also always unlock the console.
Lock on Startup	***Shutdown state:*** Console will start up in the lock state it was in when shut down. *Locked:* Console will always start up fully locked *Venue Mode Workspace:* Console will start up showing Venue Mode workspace. (Programmer Password must be set for Lock on Startup to work)

19.5.4 Handles

Option	Action
Grand Master Fader	*On:* Grand Master fader is enabled (some consoles do not have this fader). ***Off:*** Grand Master fader is disabled. This can be handy if it gets broken or if you wish to disable it to avoid confusing inexperienced operators.

Option	Action
Delete Default	**Delete:** Items are deleted when you press Delete and double tap them. *Unassign:* items are released from the handle and become unassigned - can be reassigned from the Show Library.
Prompt Replace	When you try to save to a handle or playback which is already used **Always Ask:** the console will always prompt Cancel/Replace/Merge *Always Merge:* the console will never prompt and will just merge *Palettes Always Merge:* the console will prompt Cancel/Replace/Merge unless you are saving a palette when it will just merge
Display Halo	**On:** Coloured halos are shown on buttons. *Off:* Halos are not shown.
Fixture Halos	*Custom:* Fixture buttons show user-defined halo colours if defined, otherwise no halo. **Auto:** Fixture buttons are coloured using automatic fixture colours. See Halo (Abschnitt 6.3.6)
Handle Buttons	Sets the default size of the touch buttons to *Small*, **Normal**, *Large* or *Super Size*. This can be overridden separately in any window.
Text Size	Sets the default size of the text used in touch buttons to *Small*, **Normal**, *Large* or *Super Size*. This can be overridden separately in any window.
Playback Paging	Sets how the playback faders behave when you change page with a playback active. *Always Hold:* - sets the standard behaviour for non-motorised faders where the fader keeps control of the active playback when the page is changed and has to be lowered to zero before a playback on the new page can be fired. *Never Hold:* - the standard behaviour for motorised faders where the fader always relates to the current page. To regain control of a playback from another page you have to go back to that page and level match the fader (which is done automatically by motorised fader). **Normal:** sets the normal mode for the console type. When a playback is active from another page the display area goes purple and the page number is shown at the top in light blue.
Current Handle World	Sets the handle world - read more about Handle Worlds (Abschnitt 5.5.2).

19.5.5 Key Profiles

Allows you to select and edit key profiles using the softkeys. See Key Profiles (Abschnitt 19.4) for more info.

19.5.6 Patching

Option	Action
Warn Before Parking Fixtures	Sets the console action when you patch a fixture which overwrites the DMX channels of another fixture. This causes the overwritten fixture to be "parked". **Always:** console will warn you. *Never:* console will park the fixture without warning you. See Parked fixtures (Abschnitt 6.2.8)
DMX Address	Sets whether the DMX address of fixtures is shown in the fixture touch buttons.
Auto Groups	Sets whether the console will automatically create new groups for fixtures when you patch. See Auto Groups (Abschnitt 7.4.1.3).
Preset Palettes	Sets whether preset palettes should be created when fixtures are patched. You can also turn this on when patching using the [Create Preset Palettes] softkey. **Do Not Create:** no palettes will be created. *Create On Workspaces:* palettes will be created in Colour/Gobo/Position workspace windows. *Create On Presets:* palettes will be created on preset buttons. This option only works for Pearl Expert.

19.5.7 Times

Option	Action
Tempo Units	Sets the units for displaying tempo, *Seconds* or **Beats per Minute**.
Connected View Sets	Sets the console action when you change the speed of a connected chase. **Speed:** The console will modify the saved speed of the chase. *Temporary Speed:* The console will not save the modified speed, and the next time the chase is fired it will go back to its programmed speed.

Option	Action
Preload Time	Sets a fade time for the Preload function, default 2 seconds. This value would normally be set for quiet fixture movement.
Times Format	Selects between **HH:MM:SS** format and *Seconds* format. In *HH:MM:SS* format the console will convert any number you enter into hours minutes and seconds.
Compensate for Rate Grand Master	**On:** When a tempo is tapped on a BPM master it will not be affected by the Rate Grand Master being set to less than 100%. *Off:* Tempo will be scaled by Rate Grand Master.

19.5.8 Palettes

Option	Action
Quick Palettes	**On:** Enables the Quick Palette recall function which sets a palette to all applicable fixtures if nothing is selected - see Quick Palettes (Abschnitt 8.3.4). *Off:* Quick Palettes are disabled. If no fixtures are selected, recalling a palette does nothing.
Minimum Palette Mode	Sets what type of palettes can be created when recording palettes. **Global:** All palettes are stored as Global. *Shared:* all palettes are stored as Shared. *Normal:* All palettes are stored as Normal.
Add New Palette Channels	**On:** new channels added into palettes will output in playbacks using those palettes. *Off:* new channels will not output. You can use this to force palettes to output in its original unedited state.
Auto Legend	**On:** New items will automatically have legends generated for them (colour scribbles for colours or descriptive legends for other functions). *Off:* New items are given numeric legends.
Highlight Active Palettes	**On:** Active palettes are shown as highlighted in the workspace windows. *Off:* Active palettes are not highlighted.
Filter Relevant Palettes	**On:** Palettes which do not contain settings for the currently selected fixtures will be greyed out. *Off:* Palette buttons are not greyed out.
Master Palette Time	Sets the default fade time to be used when recalling palettes live. See Master Time for Palettes for more information.

Option	Action
Master Palette Overlap	Sets the default overlap to be used when fading palettes.
Record Nested Palettes	**On:** Palettes containing other source palettes will be updated when you change the source palette. *Off:* Nested palettes are not updated. See Nested Palettes (Abschnitt 8.2.3) for more detail.
Preset Palettes	This is the same as the option in the Patching section, see above (Abschnitt 6).

19.5.9 Timeline

Option	Action
Default Playback Length	Sets the default duration of a playback when first added to the timeline.
Timeline Skip Length	Sets the amount of time the "skip forward" and "skip back" actions will jump by.
Display Frame Rate	The framerate to be used for displaying timecode time. **"Follow Source"** sets the framerate to match the incoming timecode source.
Auto-Simplify	**On:** Triggers will be automatically simplified after a live record *Off:* Triggers will not be simplified. See Auto Simplify (Abschnitt 13.2.1.1) for more detail.
Auto-Open View	*None:* No view will be opened when recording a new timeline **Timeline:** The timeline graphical window will open *Timeline and Table:* The graphical and table view windows will both open.

19.5.10 Formatting

Option	Action
Channel Levels	Sets how you enter channel levels when using numeric entry of levels *Set In Tens:* enter one digit for the channel level, 5 = 50%. **Set in Units:** enter two digits, 50 = 50%.

Option	Action
Number Style	Sets how channel values are displayed in Cue View and Palette View. *Precise:* will include all decimal places. *Rounded:* round to nearest whole number. **Dynamic:** show decimals where appropriate, remove trailing zeros.

19.5.11 Release

Option	Action
Release To Home	**On:** when the last active playback is released fixtures will return to home values. *Off:* LTP channels will remain set.
Master Release Time	Sets the default release time.
Release Priority	The playback priority used with the Release menu or when running Release macros - *Low*, *Normal*, *High*, **Programmer**, *Very High*. Playbacks with priority below this level will be released by the *Release All* function (double press <Release>).

- Setting Release Priority to **Low** can be useful to protect against accidentally turning off all playbacks by an unintended double press of <Release> - with this setting only playbacks set to Low Priority (if you had any running) would be released.

- These settings can also be changed from the Release menu.

19.5.12 Clear

Option	Action
Auto Reset Mask	**On:** The Clear Mask will reset to include all attributes after every clear. *Off:* The Clear Mask will remain how you last set it.
Zero Preset Fader Levels	**On:** Intensity levels set on fixtures patched to fader handles will be zeroed and removed from the programmer when clear is pressed. *Off:* Intensity levels will be will remain set but will be removed from the programmer.

Option	Action
Release to Playback Values	*On:* LTP channels will release to the values set in the last playback when Clear is pressed. ***Off:*** LTP channels will not change when Clear is pressed.
Clear Cue Times	***On:*** Cue times in the programmer are reset to defaults when Clear is pressed. *Off:* Cue times set in the programmer will remain.
Clear Rate Settings	***On:*** The rate settings in the programmer are reset to default when Clear is pressed. *Off:* Rate settings set in the programmer will remain.
Clear Direction	***On:*** Direction in the programmer is reset to default when Clear is pressed. *Off:* Direction set in the programmer will remain.
Clear Selected Fixtures	*On:* Only fixtures which are currently selected will be cleared from the programmer when Clear is pressed. If no fixtures are selected then all fixtures are cleared. ***Off:*** All fixtures are cleared from the programmer whether any are selected or not.
Action Precedence	Sets a two-stage action for presses of the Clear button: ***Selection With Programmer***: Any press of the button clears both the fixture selection and all fixture changes in the programmer *Selection Then Programmer*: If any fixtures are selected, fixture selection is cleared on button press. If no fixtures are selected then the programmer is cleared. *Programmer Then Selection*: If there are any changes in the programmer, then the programmer is cleared on button press. If there's nothing in the programmer then fixture selection is cleared.

- These settings can also be changed from the Clear menu if you hold down the <Clear> button.

19.5.13 LEDs

Option	Action
Fixture LEDs	Sets how the button LED behaves when a fixture is patched to a fader handle. **Show Occupation:** The LED shows handle patched (dim) and selected (bright) state. *Mimic Intensity:* The LED shows fixture intensity level. **The options below only function when *Show Occupation* is selected**
LED Empty Level	Sets level for unpatched handle.
LED Occupied Level	Sets level for occupied but unselected handle.
LED Programmer Level	Level if fixture is in the programmer.
LED Selected Level	Level if fixture is selected.

19.5.14 Effects

Option	Action
Swop Shapes	Sets how shapes react to another playback being fired in Swop mode. **All Shapes:** All running shapes from other playbacks are stopped. *Intensity Shapes:* Only intensity shapes from other playbacks stop.
Shape Behaviour	Sets how Shapes and Key Frame Shapes combine with other playbacks. **Overlay:** Shapes / Key Frame Shapes will overlay all other values. *LTP:* Shapes / Key Frame Shapes will work in LTP mode where later changes will override the shape. See Saving a key frame shape to a cue (Abschnitt 9.3.3).

19.5.15 Timecode

Option	Action
Kill Out of Range Playbacks	*On:* Kills the playback if the incoming timecode is outside the timecode values included in the playback. *Off:* The playback will remain active.
MIDI Device ID	Sets the Device ID when using MIDI show control commands.

Option	Action
MIDI Glitch Detection	*On:* Enables the glitch options below. *Off:* Glitch detection is disabled.
MIDI Glitch Tolerance	Sets the maximum amount of time a MIDI timecode can jump by without being seen as a glitch.
MIDI Glitch Timeout	Sets the amount of time the console should ignore MIDI timecode for after a glitch has been detected.

- Read more about MIDI Triggers (Abschnitt 16.4)

19.5.16 Wheels

Option	Action
Wheel Sensitivity	Set the sensitivity of the encoder wheels using **Wheel A**. Default **50%**.
Pan & Tilt Threshold	*On:* Enable Pan/Tilt threshold options below. *Off:* Disable Pan/Tilt threshold options below.
Pan Threshold	Sets the sensitivity of the Pan control if above option enabled. Larger numbers make Pan work slower. Default **5s**.
Tilt Threshold	Sets the sensitivity of the Tilt control if above option enabled. Larger numbers make Tilt work slower. Default **4s**.
Auto Connect	*Off:* Chases and Cue Lists will not auto-connect to the wheels when the playback is fired. *Chases:* Chases will auto-connect. *Cue Lists:* Cue Lists will auto-connect. ***Chases and Lists:*** Chases and Cue Lists will auto-connect.
Auto View on Connect	***Off:*** Chases and Cue Lists will not open their Playback View window view when fired. *Chases:* Chases will open their Playback View. *Cue Lists:* Cue Lists will open their Playback View. *Chases and Lists:* Chases and Cue Lists will both open their Playback View window when fired.
Press and Hold Fan	*On:* Changes the Fan function so that it only works while the Fan button is held down. This avoids the common user error of leaving Fan turned on accidentally. ***Off:*** The Fan button toggles on and off as normal.

19.6 DMX Output Mapping

Control data from the console may be output from the XLR sockets on the console, and by Art-Net or sACN universes over Ethernet.

All consoles can control up to 64 universes except **T1** which is limited to one single universe (fixed at universe 1), **T2** to two universes (fixed at universes 1-2) and **T3** to sixteen universes (fixed at universes 1-16 - expandable with optional extra licence).

The console itself will generate DMX output for up to 16 universes (32 for D9 and D7), above that you can network the console to one or more Avolites TitanNet Processing (TNP) nodes (Abschnitt 18.1). This offloads the DMX processing, allowing the console to control up to 64 universes of DMX in total (a TNP will not increase the number of universes available from T1 / T2 / T3).

> Apart from T1/T2/T3, the software does not enforce the console limit, but performance of the console may be degraded depending on the complexity of the content and the number of fixtures patched. A warning will be shown in the processing load section of the TitanNet overview.

19.6.1 Configuring DMX Outputs

From the **System** menu (press <Avo> + <Disk>) select [DMX Settings].

The window will initially show the node tab relating to the console itself. It shows a list of available DMX *nodes* (places where you can send the DMX to) on the left, and a list of the available DMX *lines* (outputs generated by the console) on the right. Each DMX line can send data to one or more nodes. If you assign more than one node to a line, those nodes receive duplicated data. If you have Art-Net/sACN nodes or TNP units connected they will show on the left hand side.

On the right hand side, under each DMX line there is a list of which nodes are linked to that line. The default setting on a new show is for the physical DMX outputs on the console to be linked to the first DMX lines.
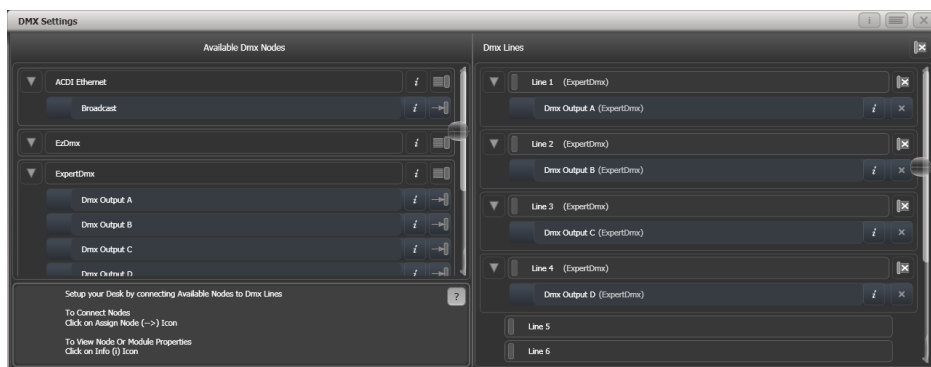
To assign a node to a line, click on the node on the left hand side (e.g. on **Expert DMX A**) and then on the line (right hand side) you want this node to be assigned to. The node will be removed from the pane on the

left hand side as it is not unassigned any more, and will appear on the right hand side under the line it is assigned to.
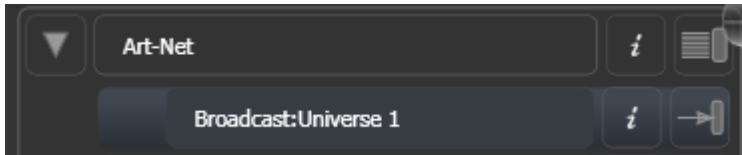
To delete a node from the DMX lines, click on the {X} button. To delete all nodes from a line, click on the **Group delete button** (the {X} button on the DMX line). To delete all nodes from all lines, click on the {X} button close to the header DMX lines.

In order to change the assignment, i.e. to assign a node to a different line, you need to delete it from the line it is assigned to (by clicking on the {X}) first - the node now appears as unassigned on the left hand side - and can now assign it to a different line.

When patching Art-Net and sACN nodes you can patch a number of universes in one go: select the first node you want to assign (i.e. sACN: Universe 1) on the left hand side enter values for [Universe] and [Quantity] with the softkeys, and then click on the line from which on you want to assign this. Titan will then patch the number of universes on consecutive lines.

You can show information about the DMX nodes once they are assigned, or the DMX output modules, by clicking the {Cog} button. For Ethernet/network type nodes, this allows you to set detailed properties such as IP address ranges and net masks.
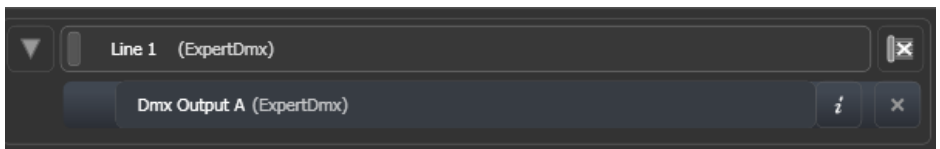
If you have TNPs (Abschnitt 18.1) connected, these can be individually configured using the tabs across the top of the screen.

> When transferring shows between different console types, and especially when you have used the simulator, it's a good idea to check the DMX output settings to make sure the settings are what you expected. If you created a new show on the simulator, no outputs will be connected.

19.6.2 Module Properties

A module is a method of sending DMX (such as Art-Net, or sACN) and can be thought of as a collection of nodes.

You can set properties for DMX512 outputs, Art-Net or sACN by going to the DMX Settings window (from the **System** menu (press <Avo> + <Disk>) select [DMX Settings]). The left-hand side of the DMX Settings window

lists the possible output nodes on this console, split into different module types. Click the {Cog} icon at the right hand side of the module type (DMX Output, Art-Net, Streaming ACN or Visualiser).

This allows you to adjust settings for each module, and for the network protocols to select which network adapter to use to output the protocol. All consoles except Quartz and Expert have two network adapters, Quartz has one, and on Titan PC Suite (Titan Go / Simulator) this depends on your computer; many laptops will have a wired network adapter and also a WiFi (wireless) adapter, both of which will be shown.

DMX Output Properties
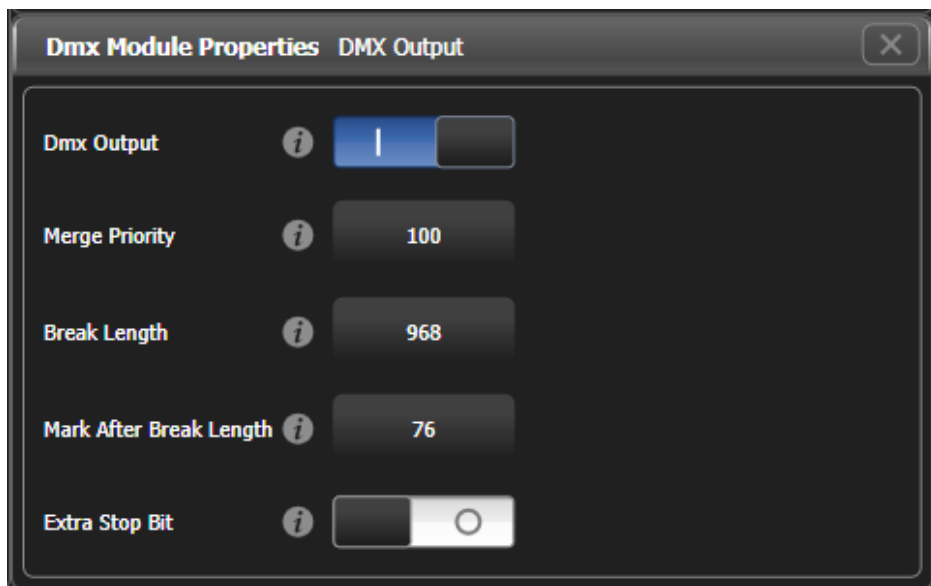
DMX output: Allows you to temporarily disable the output

Merge Priority: A value between 0 and 200 where higher numbers have priority, 100 is default. For this DMX output, sets the priority of the DMX from this Titan console over incoming sACN being merged from other sources. You also need to set up DMX Merge using Network DMX Node Settings (Abschnitt 19.2.3).

Break Length: Adjusts the DMX spacing which can be helpful for slow fixtures. If fixtures or dimmers show an occasional glitch try increasing this number. Some dimmers will require this to be 4000us in order to work smoothly. Default 968uS.

Mark After Break Length: Usually this will not need to be adjusted, but it can be increased to give fixtures a bit more time to receive the first DMX channel. Default 76uS.

Extra Stop Bit: Enabling this adds an extra Stop Bit to each byte which gives slow fixtures a bit more time to receive the DMX data. This option can sometimes solve issues where fixtures can be seen regularly glitching.

sACN Properties

DMX output: Allows you to temporarily disable the output

Merge Priority: A value between 0 and 200 where higher numbers have priority, 100 is default. Sets the sACN priority parameter of this sACN universe being output from Titan. The priority is used on devices receiving multiple sACN streams to determine which data is output.

> This is often used to connect a backup console into a system by giving it a lower sACN priority setting than the master.

Block RDM: If enabled, RDM traffic is blocked on this module.

Synchronization Address: If not zero, sets the universe used to synchronise the DMX frames sent from the console. Listening devices will receive all DMX frames and then wait for a packet on the synchronisation universe before using or retransmitting the DMX frames. Synchronous sACN reduces tearing effects which can result from non-synchronised universes. If set to zero, synchronisation is disabled.

Ethernet xxx: Selects whether you want this protocol outputting on this Ethernet adapter. If there are multiple adaptors in the system you can select more than one, and identical information will be sent out on each one.

Art-Net Properties
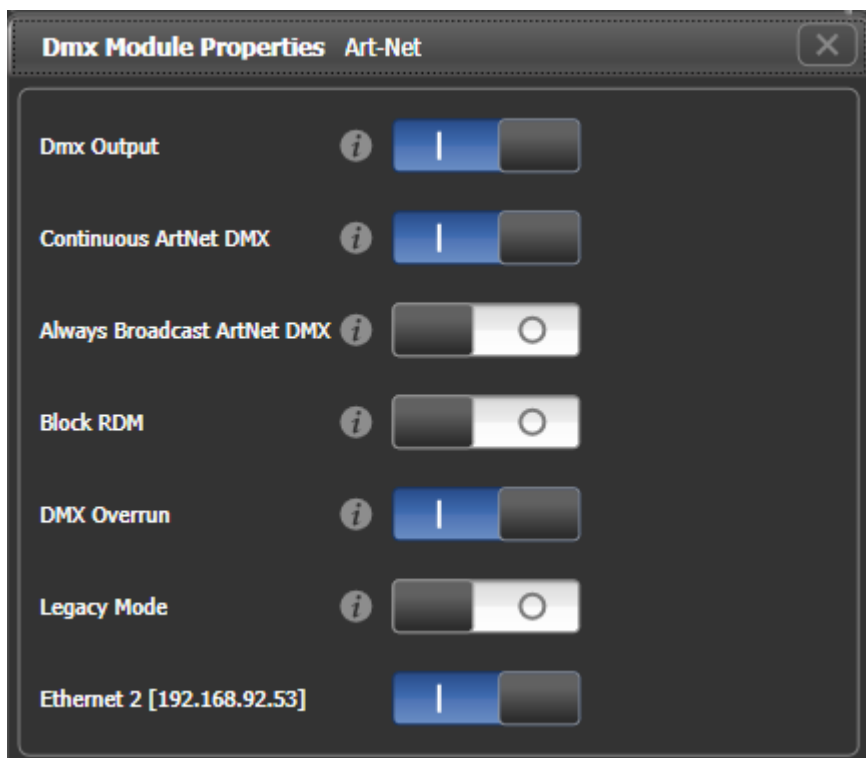
DMX output: Allows you to temporarily disable the output

Continuous Art-Net DMX: The Art-Net specification allows the console to only send out changes in the DMX. This setting makes the console send the Art-Net packets continuously even if there is no change.

Always Broadcast Art-Net DMX: Sets all Art-Net packets to Broadcast mode, meaning they are sent to all nodes. Otherwise the packets are addressed to the specific node they are intended for, which reduces network traffic but requires more careful setting up of network addresses.

Block RDM: If enabled, RDM traffic is blocked on this module.

DMX Overrun: Some Art-Net nodes ignore changes until they are sent more than once. If this option is enabled then at least 3 packets are sent for every change

Legacy Mode: If enabled, Art-Net is broadcast continuously from the console at a high rate. May affect console performance.

Ethernet xxx: Selects whether you want this protocol outputting on this Ethernet adapter. If there are multiple adaptors in the system you can select more than one, and identical information will be sent out on each one.

> ArtPoll messages can be disabled via a registry setting. This is occasionally needed for Art-Net fixtures which don't support ArtPoll. If you need to do this or if ArtPoll messages aren't being sent when they should be, contact Avolites Support for instructions on how to change this.

19.6.3 DMX Overview

If you select the DMX Overview tab at the top of the window, you can see all the TNPs (Abschnitt 18.1) which are connected and which output lines they are allocated to.
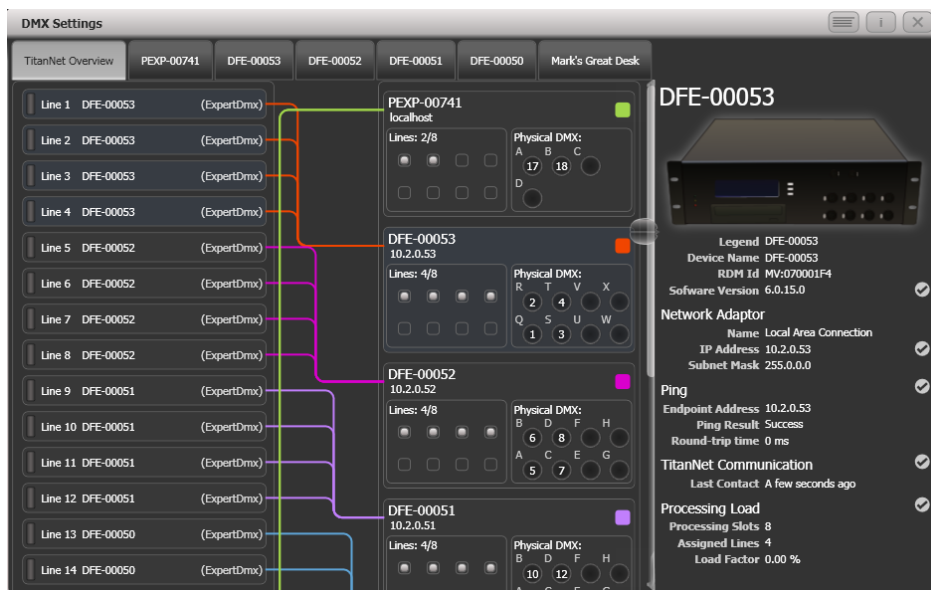
The left side of the window shows the 64 possible DMX output lines on the console. To the right of this are the processing nodes which are connected, the top one being the console itself. Each node shows how the lines are allocated to the physical outputs on the device. Clicking this area will open the detail tab for the node.

Clicking any one of the nodes will show detailed information about that node on the right, including the IP address, number of available processing slots, number of lines assigned, status of the connection with the node, and the processing load of the device. If more lines are assigned than the maximum number of slots, a warning will be displayed.

If a show is loaded that had fixtures and lines assigned to processing nodes which are no longer found on the TitanNet network, a dialog will appear listing nodes in use and available nodes, giving you the option to reassign the lines.

19.6.4 Network DMX Node Settings

The Network DMX Node Settings window allows you to set up how the local Titan output will combine with sACN universes from other sources in a system where you have multiple consoles or processing nodes connected. From the **System** menu (press <Avo> + <Disk>) select [Network DMX Node Settings].
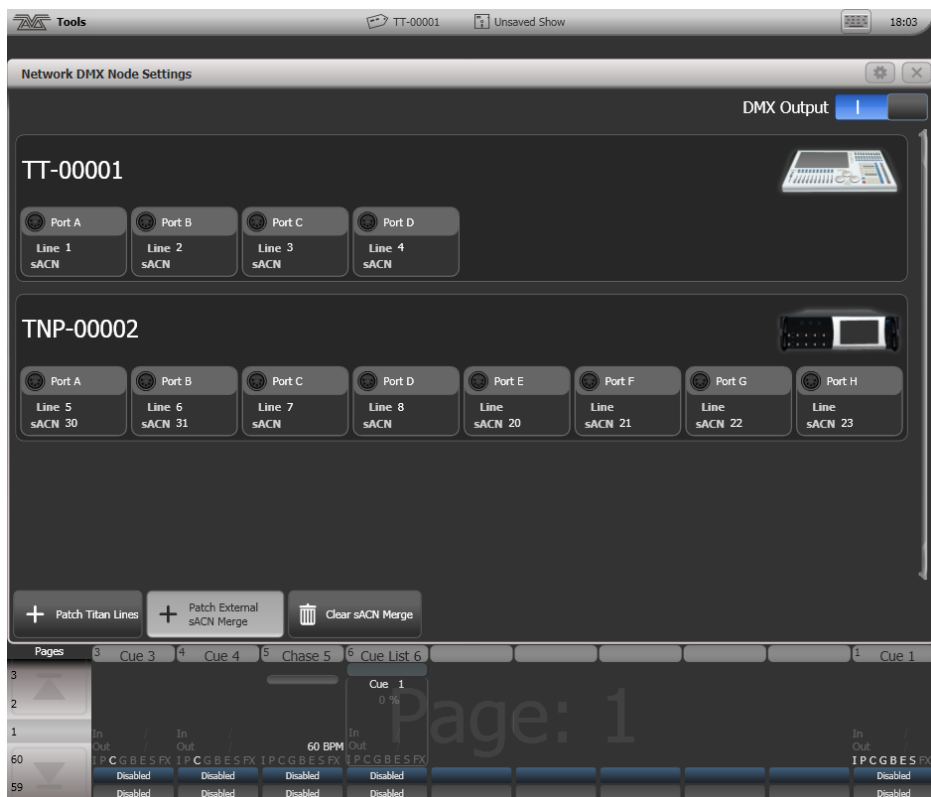
To assign a universe to an output port, click on **Patch Titan Lines** or **Patch External sACN Merge**, set [Universe] number then click on a port to assign.

To remove an assignment, click on **Clear sACN Merge** then select a port.

- For local DMX outputs, you can set the priority of the Titan output vs. the sACN stream using the Merge Priority option on each node, see DMX Output Properties .

- The DMX Output switch can be used to disable all DMX output.

19.7 Curves

The console provides a variety of curves which set how the console tracks fades in playbacks; either the same speed all the way (linear), or starting and ending gently but faster in the middle, and various other options. Curves are used in various places in the console, one example is in the playback [Options] menu - see Playback options (Abschnitt 10.6).

255

Output   S-Curve 2

0

0   Input   255

255

Output

Cubic 1

0

0   Input   255

255

Output   90% Linear

0

0   Input   255
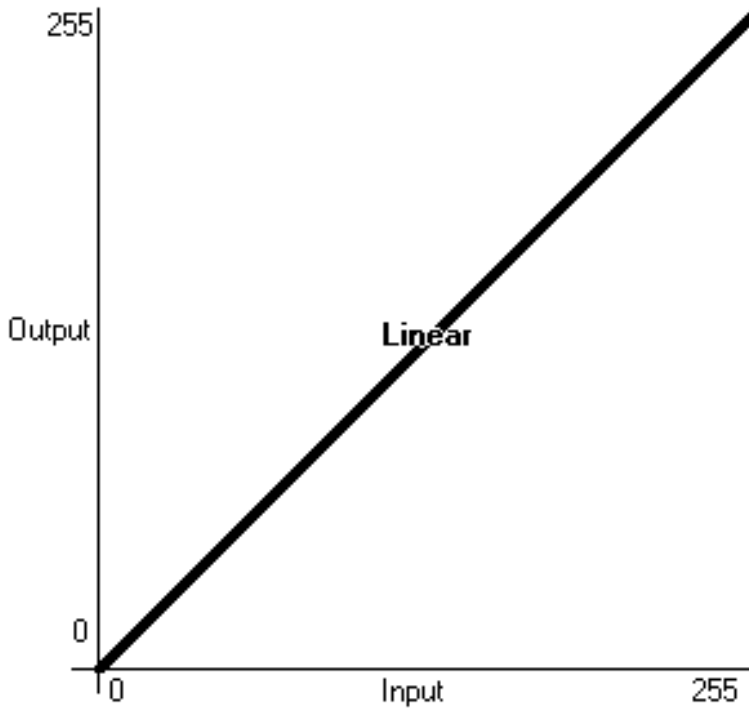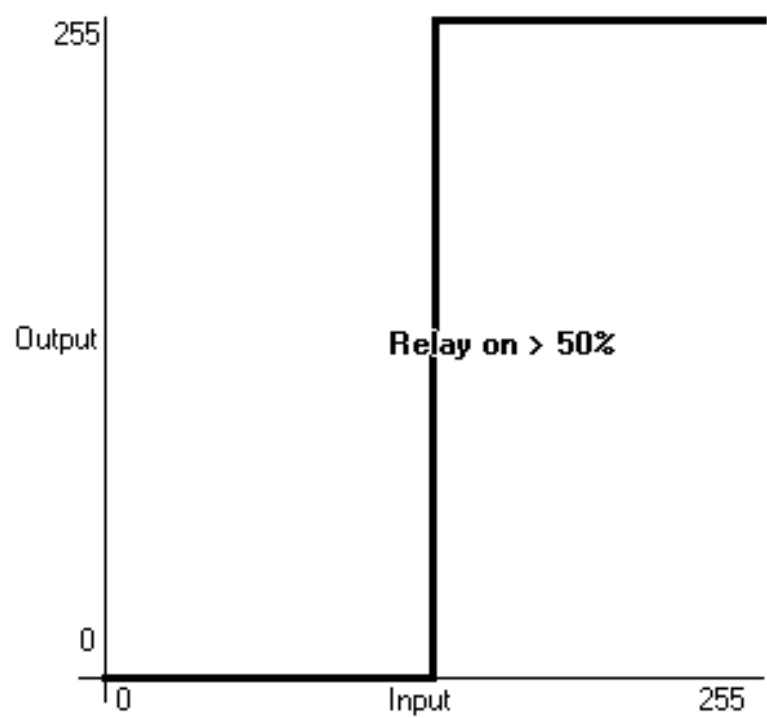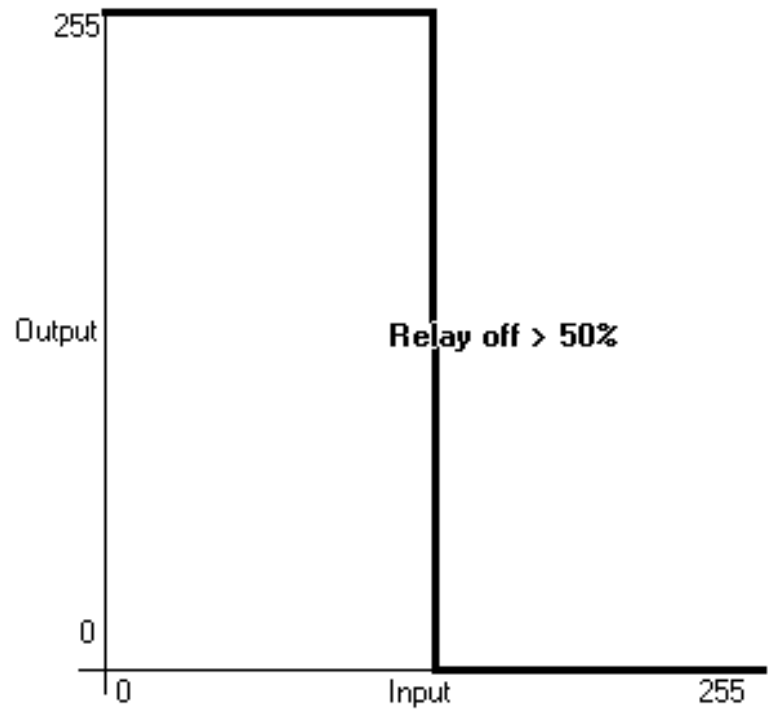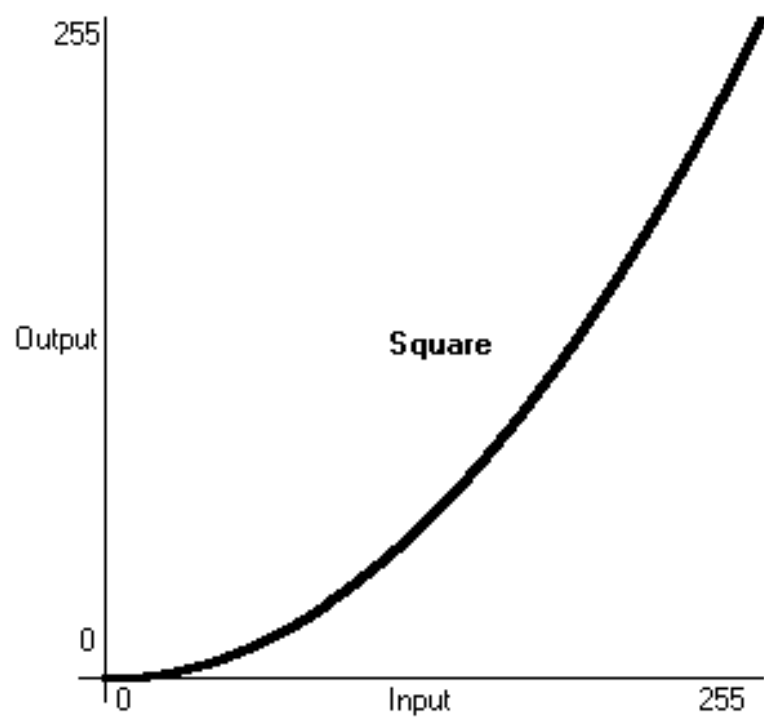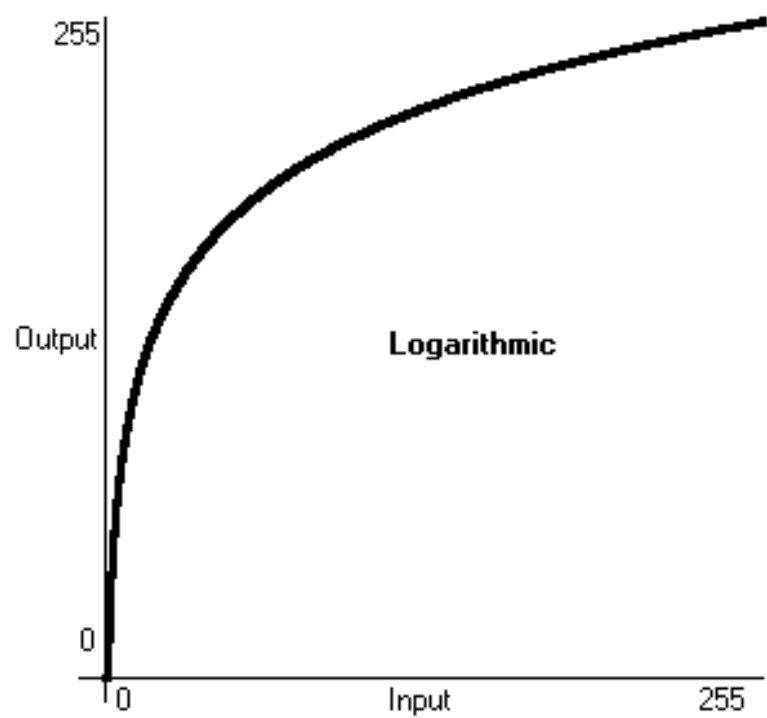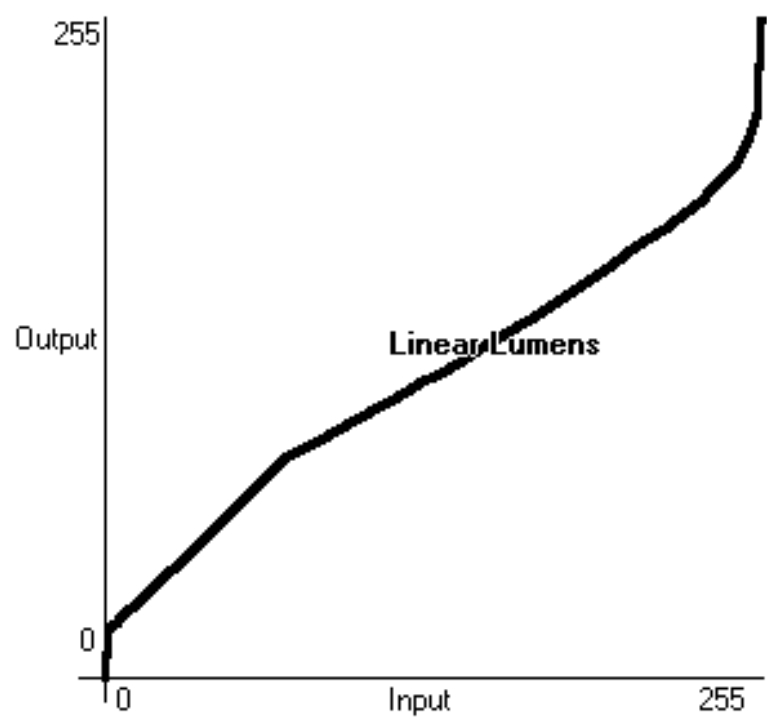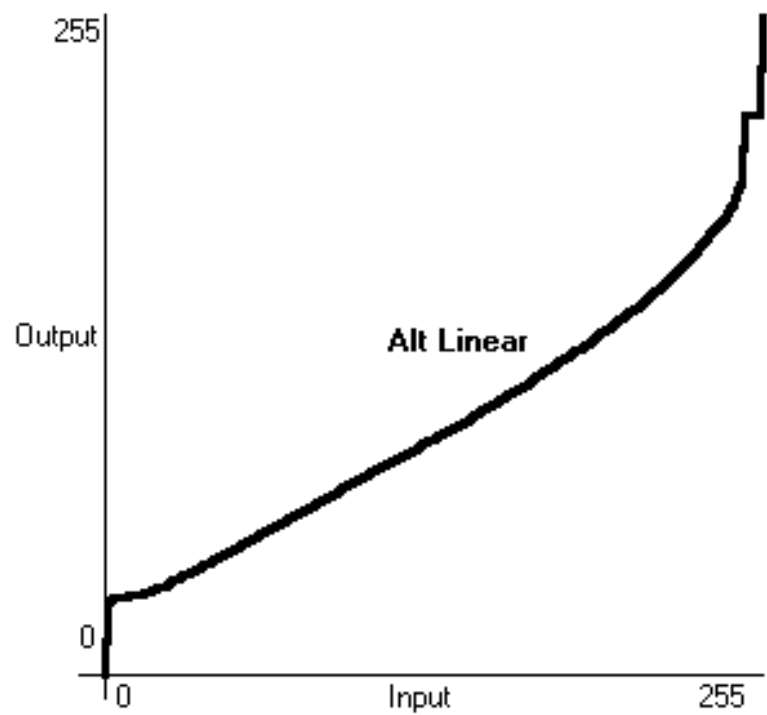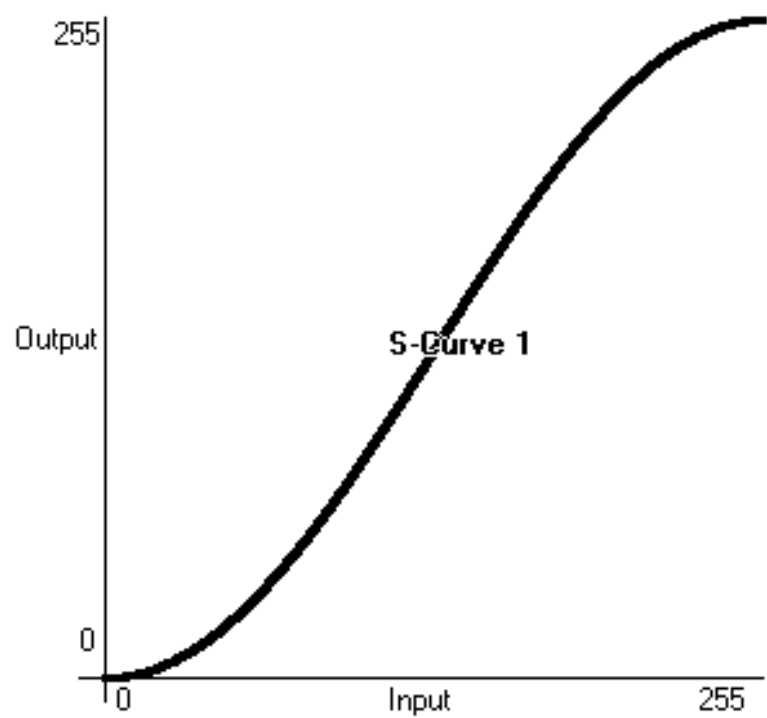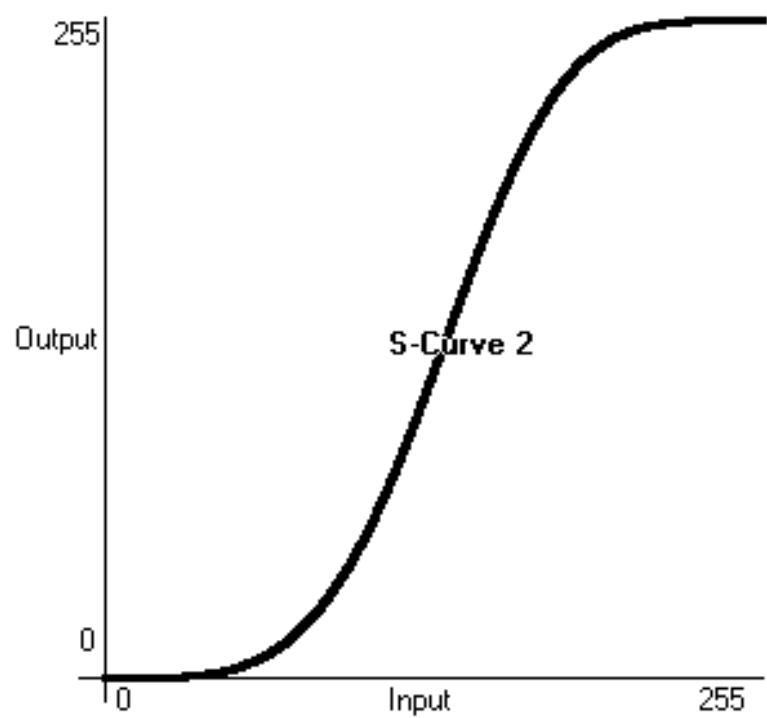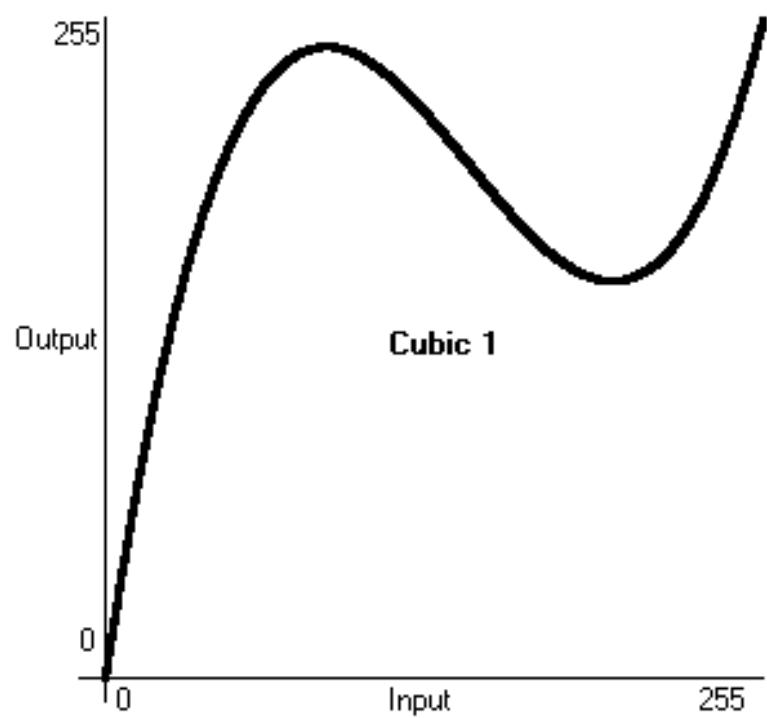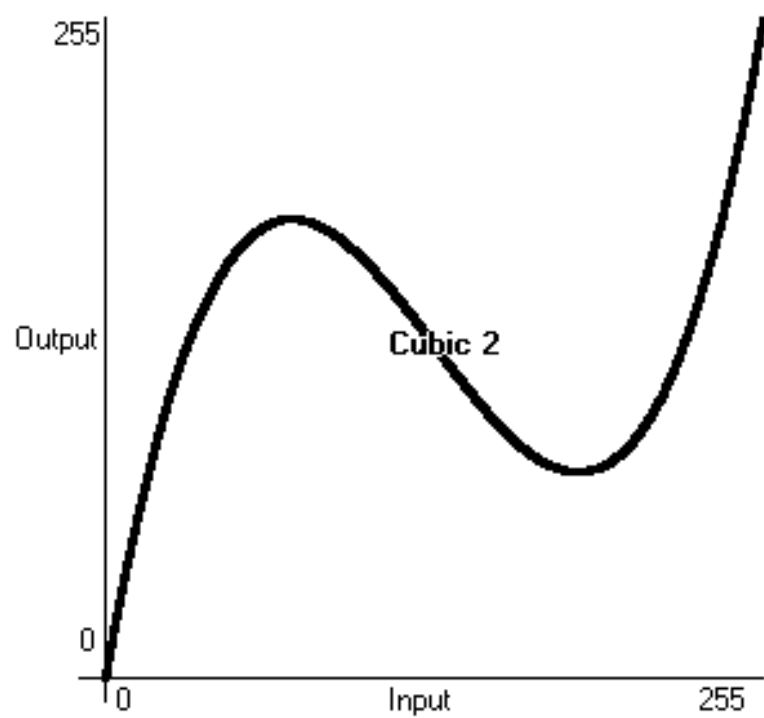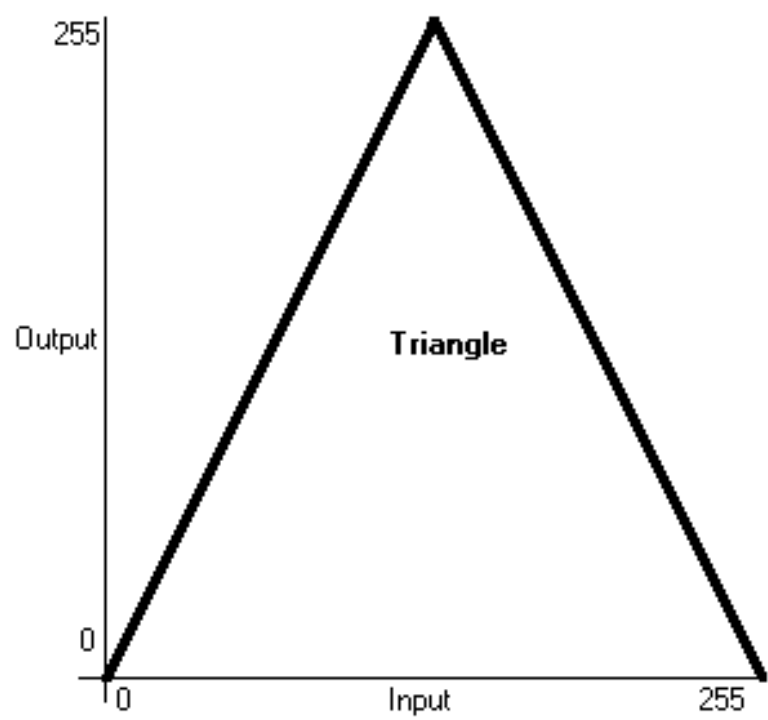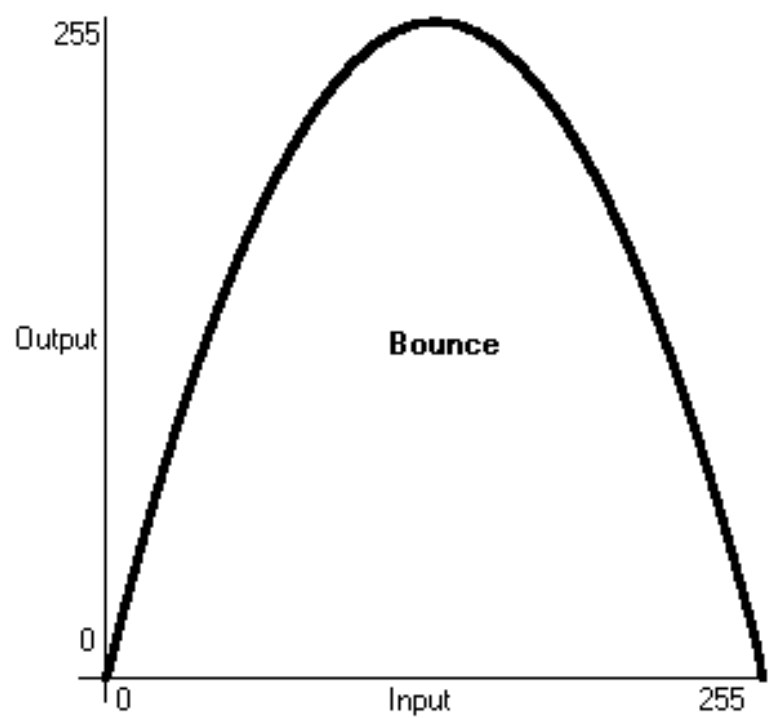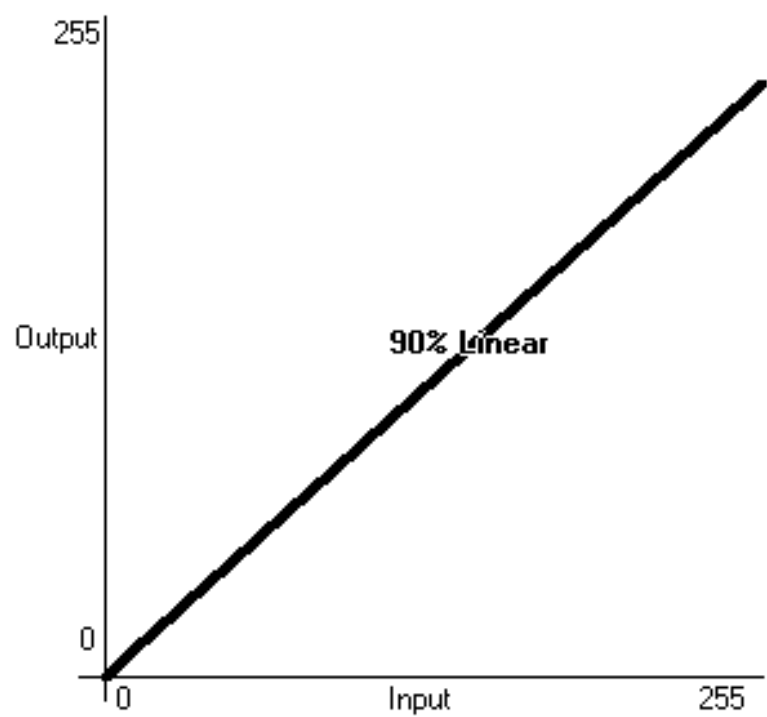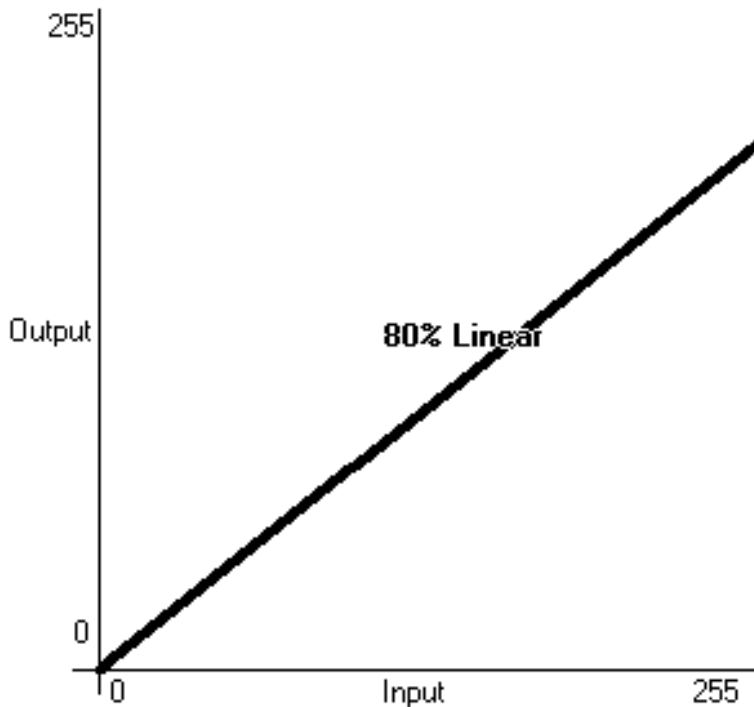
19.8 Upgrading the Software

The console operating software is under constant revision by the Avolites team. You can always download the latest version of the software from the Avolites website: http://www.avolites.com.

> From v10 it is possible to keep the older versions of Titan installed on a console when you install a new version, which is useful for backwards compatibility if you need to load a show created in an older version. To swap between versions go to Switch Software on the Tools menu.

- The Titan PC Suite software, used for T1, T2, T3, Titan Mobile and Titan Simulator, is installed simply by running the "PC Suite" installer program as with any other Windows application. Please ensure you have exited the Titan software before running the installer. The "Titan Go" application is now used with all hardware (there is no longer a separate Titan Mobile application).

- If you are upgrading the software from a version earlier than v12, you will have to obtain an AvoKey USB dongle from Avolites and license the software. See the Software Licensing (Abschnitt 19.9.2)

section for details of how to do this. Once the console is fitted with a licensed AvoKey you do not need to re-license it when upgrading to subsequent versions.

- It can take some time to install new software, especially if you have to do a recovery install, so this is not a job for a show day!

- Always make a backup of your show files before upgrading the console software.

Software upgrades for consoles are installed from a USB drive. Depending on the updates included in the new version, and which version you are updating from, it may be necessary to use a separate PC or laptop to create a "Recovery Installer" USB drive. The instructions on the Avolites website will tell you whether you can do an **Upgrade** or whether you need to make a **Recovery Installer**. Please contact Avolites Support if you need help with this. There is also a link to the **Recovery Creator Guide** at the bottom of the downloads page.

19.8.1 Console Update Procedure (Recovery Installer)

1. Go to the Downloads page on the Avolites website and select your console. Download the Recovery Creator software to your PC.
2. Insert a blank 16GB USB drive into your PC and run the Recovery Creator software to create a bootable Recovery Installer drive. (see the **Recovery Creator Guide** on the website for more details).
3. Insert the USB drive into the console and power on the console. The console should boot into a "Recovery Environment".
4. Select the "Standard Recovery" option and follow the instructions on screen.

19.8.2 Console Update Procedure (Upgrade File)

1. Go to the Downloads page on the Avolites website and select your console. Check if an Upgrade installer is available to upgrade from your current version - if not, use the Recovery Installer procedure above.

2. Download the Upgrade Installer file and copy to a USB drive, then insert into the console.

3. Click the **Tools** menu on the toolbar, then **Control Panel**, then **Titan Installers**. This will list all installers - software and personalities - found in the root directory of the stick (provided you haven't changed their filename).

4. Click the software version to install, and follow the instructions.

   If for whatever reason Titan doesn't show the file in the *Titan Installers* submenu you can find and double-click it through Tools -> Folders.

5. When the installation has completed, a prompt will be shown to restart the console and it will

start back up into the version installed.

19.8.3 Titan PC Suite (Titan Go or Titan Simulator Procedure)

1. Ensure Titan software is not running on the computer.
2. Locate the downloaded file **Avolites Titan PC Suite Setup** and double click on it to run it.
3. Click **OK** on the Windows User Account Control warning box.
4. When the installation has completed, a prompt will be shown to restart the computer.

19.8.4 Upgrading panel firmware with USB Expert

After upgrading the software it is sometimes necessary to upgrade the firmware in the various panels which make up the console control surfaces. You can do this using the Avolites USB Expert application which is installed on the console.

Sometimes the USB Expert application might be opened automatically after completion of a software upgrade, to prompt you to upgrade panel firmware.

Use the following steps to upgrade panel firmware:

1. In the screen **Tools menu**, click on **Control Panel** and select the **USB Expert Console** option. For a PC-based device or panel such as T1, T2, T3 or Titan Mobile, run **USB Expert Console** from the start menu.
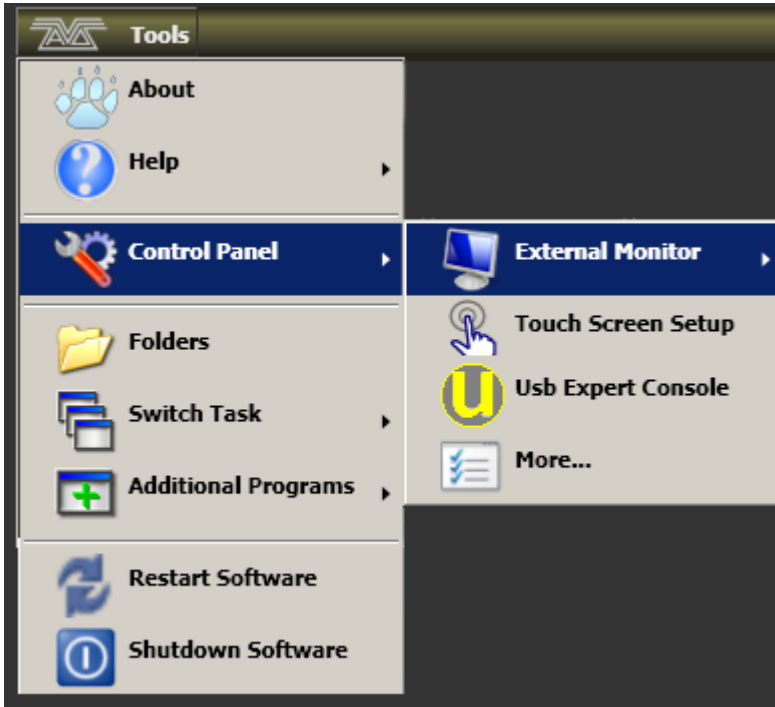
2. You should see a list of the panels on the console in the left hand **Connected Panels** window (the list will vary depending on the console type).
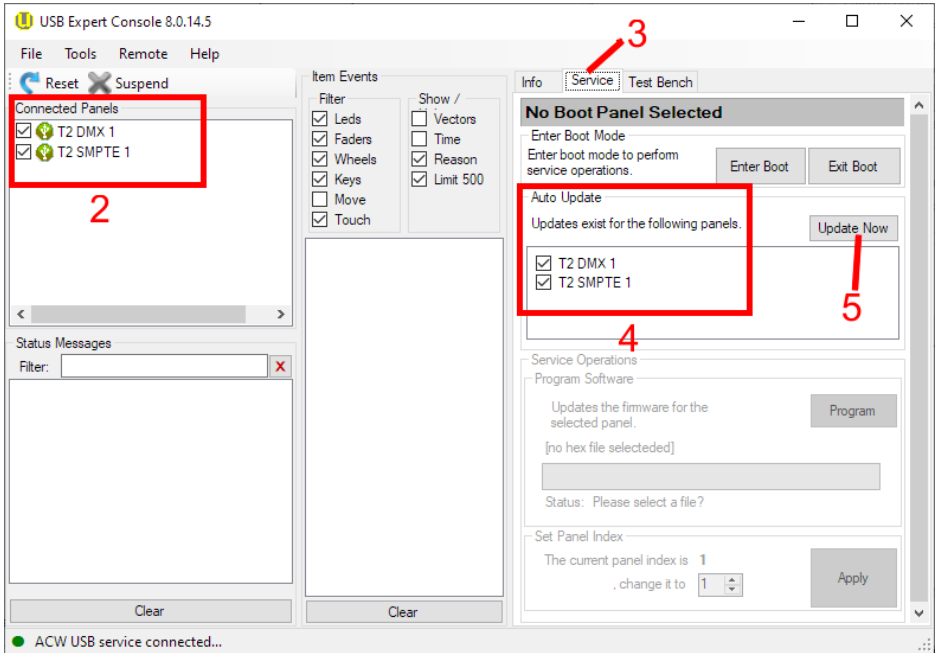
3. On the right hand side of the window select the **Service** tab.

4. In the **Auto Update** box on the right hand side, any required firmware updates will be listed. The list may vary depending on the console type and the updates available - sometimes no updates might be found or needed.

5. If updates are needed, click **Update Now** to start the process and the system will update the panels one by one. A green progress bar will be shown in the bottom part of the window.

6. When the Auto Update box is empty, close USB Expert, shut down the console using the power button, then restart it.

- You can check the status of all panels using the **Connected Panels** window.

- If you are updating a PC-based panel such as Titan Mobile, T1 or T2 and no panels are listed in the Connected Panels window, click on Tools, then Acw Service, then Start.

- You can test the function of all front panel controls using the **Item Events** window in the middle - pressing a button or moving a fader/encoder should show event messages in the window.

- If the panel update has not completed after 10 minutes, press **Exit Boot** regardless and wait for all panels to reappear in the **Connected Panels** window. Then repeat from step 3 to check whether all panels have in fact been updated.

19.9 Recovering and Reinstalling the Console

The console runs on an embedded PC system, and like all computers, there is a possibility of system failure. The console software can be reloaded using the recovery USB stick provided with the console, or you can download a recovery disk creator application from the Downloads section of the Avolites website which will automatically create a recovery stick.

> It may take up to 60 minutes to reinstall the software on the console.

There are three types of recovery available:

Recovery	Version installed	Shows	Personalities	Licence
Standard Recovery	Two most recent	Preserved	Preserved	Preserved
Factory Restore	Recovery version + most recent	Deleted	Recovery version	Preserved
Full Erase	Recovery version	Deleted	Recovery version	*Deleted/Preserved*

> With software version 12 or above the licence is stored on the AvoKey, and even a Full Erase Recovery doesn't delete it, see below (Abschnitt 19.9.2).

> Using **Factory Restore** or **Full Erase** will delete all settings and files from the console including show files and user personalities. Any files should be saved to a USB stick before continuing.

Detailed instructions on creating and using a recovery stick can be found with the recovery creator on the Avolites website; depending on the variety and age of your console there are a number of different methods required. The basic procedure is as follows:

19.9.1 Installation Instructions

1. **If recovering a version earlier than v11.1**, you will need to set the console to boot from USB *(see instructions on the Avolites website, which vary depending on your console)*

2. Start console and wait while the memory stick boots up, this can take up to 3 minutes.

3. Once the memory stick has booted, the touch screen will display 'Welcome to (Console Name)', touch **Next** to continue.

4. Please read to the bottom of the licence agreement then touch **Agree** to accept.

5. Select the type of recovery you want to perform *(see table above)*

6. On the next screen check the serial number of the console - this is the number written on the back of the console and should be already filled in for you.

7. Touching **Install** will then begin the recovery

8. Once complete unplug the memory stick and touch the **Restart** button.

After starting the console will install all the software and drivers required to run. This takes approximately 30 minutes to complete during which the console will reboot a number of times. Please do not switch off the console during this process.

19.9.2 Software Licensing

From v12, the software is licensed using an AvoKey USB device.

The Authenticator wizard will take you through the steps to license the software on your console or computer. Once the license is stored on the AvoKey, you should not need to repeat the licensing. For Titan PC Suite (T1/T2 devices, T3 control surface, Titan Mobile control surface), this allows you to use different computers without relicensing as long as the Avolites hardware is connected.

For more details see https://www.avolites.com/avokey

19.10 Cleaning the console

Disconnect the console from the mains supply before cleaning.

To clean the laminated panels, use a non-alcoholic disinfectant solution: - use a damp cloth or cleaning rag and clean the surfaces - prevent excess fluid building up on the edges near switches and faders

> We recommend you don't use alcohol-based cleaners as the lacquer layer on the laminate may lose its shine when exposed to concentrated alcohol-based fluids.

To clean touch screens: Either use the same non-alcoholic disinfectant or a 70% alcohol - 30% water mixture.

- Prevent moisture build up near the edge of the screens as this may impair the touch sensor while it is wet.
- If the touch sensor is affected by moisture, use clean dry paper to dry out the junction between the top of the glass and the foam gasket, by sliding the paper in approximately 6mm and running it around the whole edge of the screen. This may need to be repeated twice with dry paper to get the desired result.

19.11 Release Notes

The Release Notes contain details about features added, improvements, bugs fixed and known issues in each release of the console software.

Release notes for the version of software running on your console can be found by clicking the **Help**, then **Release Notes** option on the toolbar.

The most up-to-date version of the Release Notes can be found on the Avolites website.

20 Fixture Personalities

20.1 Fixture Personalities

For each type of fixture, the console has a *"personality"* file which tells it how to control the fixture, which channel is the dimmer (HTP) channel, and a large amount of other fixture-specific information. When you patch each fixture, you tell the console which personality to use for it.
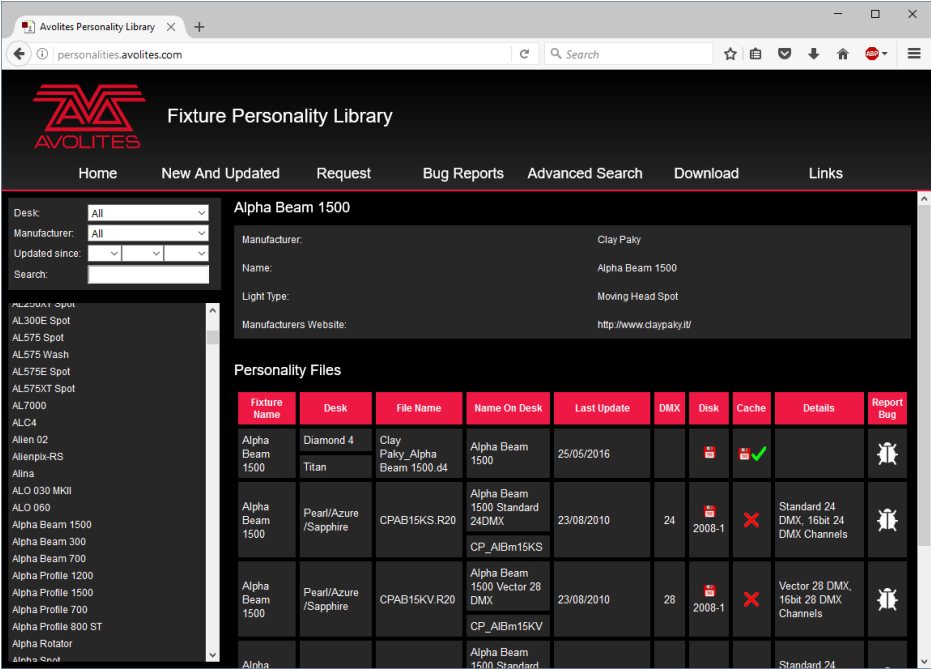
The console holds a personality library containing all commonly used fixtures, but new fixtures are appearing all the time and Avolites are constantly updating the library.

We recommend that you should update the library from time to time to take advantage of new fixtures, as well as receiving bug fixes for personalities and new features which may be added such as sub-fixtures.

20.1.1 Downloading fixture personalities from Avolites

The Avolites website lists all fixtures for which personalities have been created. You should look here first if the console does not contain a personality for your fixture. The address is http://personalities.avolites.com

[

](https://personalities.avolites.com/)

All available fixture personalities are listed down the left side of the screen. You can use the boxes on the top left to filter the list to show fixtures from specific manufacturers, or fixtures available for a certain console, or to search for a specific fixture name.

Click on the fixture name to open the details in the right hand window. This shows all the personalities available for that fixture type (if you have entered the console type on the top left, only personalities for that console will be displayed).

If the personality is included in the standard library (cache) then the column will be ticked.

If there is a personality listed for your fixture, the simplest thing to do is to update the complete personality library as described in the next section.

20.1.2 Updating the Personality Library on the Console

Download the current Titan personality library by clicking on **Titan Fixture Library** at the personality website home screen. Alternatively you can get this file by clicking on the **Download** link at the top of the screen, then clicking on **Titan Fixture Library**.

There are different library installers depending on the **version of Titan you are running**. This is to ensure you get the right version of the Capture library, the actual personality library is identical in each version.

- The console caches the FixtureLibrary folder into memory when the Patch option is first used, so after updating you need to restart the console software (from the Tools menu) to ensure new fixture personalities are loaded.

- Once a fixture is patched, its personality is embedded in the show file. Any updates to the fixture library will not affect fixtures patched in the show. You can use the [Update Personality] option in the patch menu to update patched fixtures if you need to (see Updating Patched Personalities (Abschnitt 6.3.10)).

> Updating will overwrite any custom personalities you have stored in the library. To avoid this, store your custom personalities in the user personalities folder (see next section for details).

Console Update Procedure

1. Copy the downloaded file **TitanFixtureLibrary.exe** onto a USB stick and plug in to the console.
2. Click the **Tools** menu on the toolbar, then **Control Panel**, then **Titan Installers**. This will list all installers - software and personalities - found in the root of the stick (provided you haven't changed their name).
3. Click the **TitanFixtureLibrary.exe**, and follow the instructions.
   If for whatever reason Titan doesn't show the file in the *Titan Installers* submenu you can find

and double-click it through Tools -> Folders.
4. Shut down and then restart the console *(using the Restart Software button on the screen Tools menu is OK)*.

Titan PC Suite Procedure (T1/T2/T3/Titan Mobile/Titan Simulator)

1. Locate the downloaded file **TitanFixtureLibrary.exe** and double click on it to run it. Windows may show a warning about an unrecognised file
2. Click **Ok** on the Windows User Account Control warning box.
3. When the installation has completed, shut down and then restart the Titan software.

20.1.3 User/Custom Personalities

Using the Personality Builder application installed with the console software, you can create your own personality if you wish to modify the behaviour of a standard personality or you have a fixture the console has never heard of and need to get it working quickly.

> The console loads the fixture library into memory when the Patch option is first used, so after creating a new personality you need to **restart the console software** from the **Tools** menu or it will not show up.

You can incorporate your custom personality into the standard fixture library on the console, however there is a danger that it will be overwritten when you next update the Fixture Library from Avolites.

To avoid this the console provides a special folder for user-provided personalities located at `D:\Personalities`

If you are using Titan PC Suite, the folder is located at `\Documents\Titan\Personalities`

When patching fixtures, this folder is searched first before the library. If a suitable Fixture Personality is found, the console will use it rather than using the library. This folder is not affected when the personality library is updated.

20.1.4 Requesting a New Fixture Personality

If a personality does not exist for your fixture, Avolites will create one for you. Click on the request link on the personalities site to submit your request. A list of current requests is shown, so you can check if someone else is asking for the same personality.

Your new personality will be incorporated into the library – to install the new personality, download and install the latest personality library as described above (Abschnitt 20.1.2).

20.1.5 Reporting a Personality Bug to Avolites

If you find a problem with a fixture personality, Avolites would like to know about it so it can be fixed. Search for the personality on the website then click on the **Report Bug** icon on the right of the screen. If you click on the Bug Reports tab at the top of the window, a list is shown of currently outstanding problems, so you can check if someone else has already reported the problem.

20.1.6 In an emergency

The console contains a selection of "Generic" fixtures which you can use in an emergency if you need to operate a fixture with no personality. When patching, go through the manufacturer list until you find [Generic]. In this section (among other fixtures) are the following:

Multi-DMX: Has up to 10 DMX channels, all channels are LTP. You can select from 1-10 channels on the Mode screen. Press Attribute Bank and use the softkeys to select channels.

Generic RGB: Allows you to control an RGB fixture such as LED colour changers. This offers 5 modes: - 1: **Dim**, 2: **R**, 3: **G**, 4: **B** - *VDim*, 1: **R**, 2: **G**, 3: **B** - 1: **R**, 2: **G**, 3: **B**, 4: **Dim** - *VDim* + 4x **RGB** - 4x **RGB**

> ***VDim*** is a virtual overall dimmer channel for fixtures without a DMX dimmer control. When you use the Dimmer attribute the console will adjust the RGB levels accordingly.

21 Networking Consoles

21.1 Networking Consoles

There are a number of ways for the console to communicate with lighting fixtures beyond the traditional DMX sockets, and these are described in this chapter.

If the console has multiple network ports, DMX will be output on all ports. You can set this from the DMX module properties (Abschnitt 19.6.1) in the DMX Settings window, each port is listed with a switch to enable or disable it.

You can also connect to networked processing nodes (Abschnitt 18.1), which allow you to control up to 64 universes of DMX.

The console may also be networked with other Titan consoles for multi-user control, and for backup.

At the end of the chapter is a section which aims to cover the basics of IP addressing (Abschnitt 21.6), which is essential for various features on the console such as Art-Net.

> Lighting networks need to transfer of large amounts of data. For best reliability you should use network wiring which is dedicated to the lighting system and physically isolated from other networks, and uses simple hubs rather than intelligent switches.
>
> Connecting to an existing network with other network traffic is possible but can lead to problems both with the lighting equipment and with other IT equipment on the network. Managed Ethernet switches may drop or block lighting data. If you need to do this please read about the IP addresses you should use in the IP addressing guide (Abschnitt 21.6).

21.2 Connecting consoles to a network

All Avolites consoles may be connected to an Ethernet network to allow control of fixtures by Art-Net or sACN, for multi-user setups and remote control, or to connect to a visualisation system.

For T1, T2 and T3 which are used with a laptop or PC, the network connection of the laptop or PC is used. (WiFi connections should not be used for control of fixtures as you will not get reliable and smooth operation.)

Consoles other than D9, D7 and Arena have one or two direct Ethernet connections which may be used for network setup.

The D9, D7 and Arena consoles are different to the other Titan consoles because they have a built-in network switch and (for D9 and Arena) an optical network connection. **The rest of this section applies only to the Diamond 9, Diamond 7 and Arena consoles.**

> See the next section for details of how to configure the console for network operation, including
> how to set up IP addresses and how to patch network-connected fixtures.

21.2.1 Optical Connections (D9 and Arena)

The optical network connector is a Neutrik opticalCON which uses multimode fibre. On the Arena the connector is a Duo, a single connector is fitted as standard, but a second can be fitted on request. On the Diamond 9 the connector is a Quad with one of the two pairs populated as standard - if the optional 10GbE Ethernet is fitted then the second pair is populated with a 10GbE fibre.

The stage end of the connection normally plugs into the Avolites TitanNet Switch (TNS) rack unit which provides standard wired Ethernet connections. If you want to connect to a different optical switch you should contact Avolites for advice.

21.2.2 Wired Ethernet Outputs

The Diamond 9 console has an in-built 1Gb Luminex network switch; the Diamond 7 and Arena consoles have an in-built 1Gb TitanNet switch (TNS). These are directly connected to the console Main board on network connection 1. The network switch has 4 ports available on the back of the console.

The mainboard Network Connection 2 is available on a separate etherCON connector at the back of the console and marked as "secondary Ethernet" on the back. We recommend that this should only be used if you need to connect to two different networks, for example the show network and a media network or WiFi for the remote. Make sure that this port is not set to the same IP range as the switch, because this will cause problems.

The Diamond 9 can be fitted with a 10GbE port as an optional extra.

21.2.3 Changing settings on the D9 Luminex switch

In normal use you will not need to change the settings on the Luminex switch, but if you have a complex network setup you can use Luminex's Araneo software to connect to the switch and configure it. (External link) https://luminex.be/products/software/araneo/

> On the D9 you can reset the Luminex switch to its default settings by holding the Reset button next
> to the four etherCON sockets for 5 seconds. The lights will flash red and the switch will be reset to
> its default IP address (which is printed on a sticker on the switch inside the console).

21.2.4 Changing the IP address of the D7 or Arena's Titan Network Switch (TNS)

For Arena the network switch and the controller for the switch both use an IP address. When the controller IP address is set, the network switch will use the next one (for example controller `10.19.0.50`, network switch becomes `10.19.0.51`).

For D7 the network switch has a single IP address.

In normal use you will not need to change these IP addresses unless they are already used by other devices on the network. The factory default is `10.19.aa.bb` where `aa.bb` is the serial number of the console *(e.g. `10.19.01.124` is serial number **379** or **255+124**)*.

To change the IP address of the network switch in the console:

1. Open **USB Expert Console** from the **Tools** menu.
2. Select the TNS panel
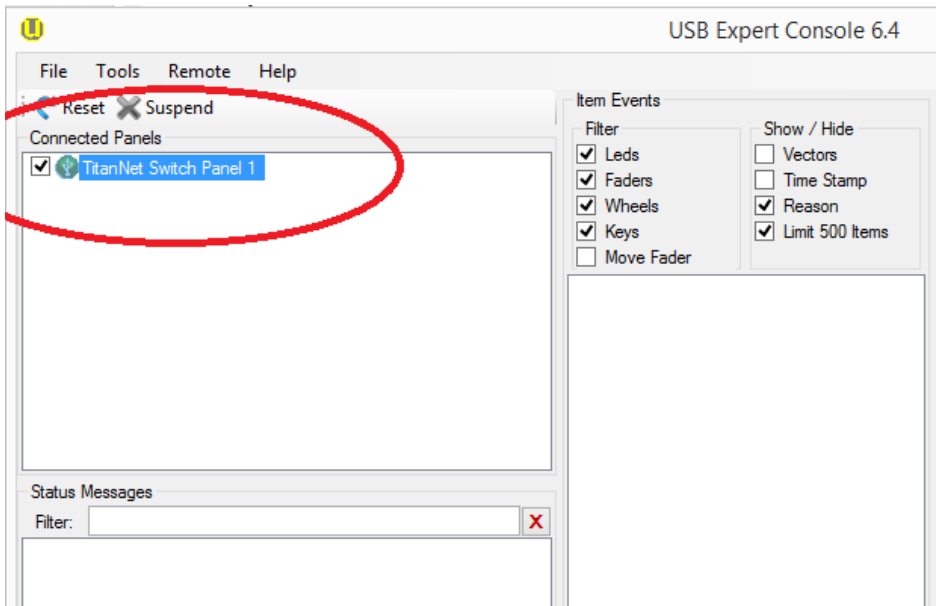
3. In the **IP Address Dialog**, set the new IP address.
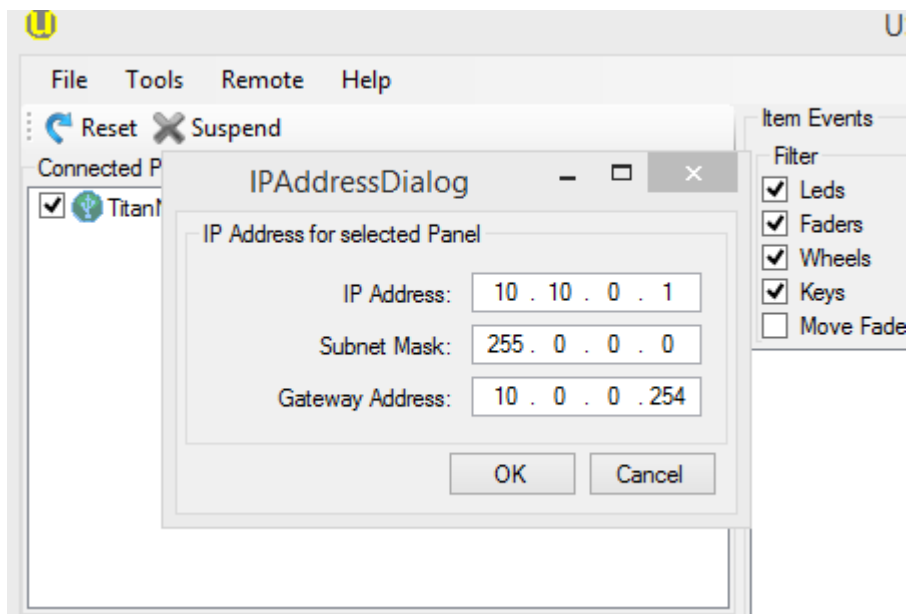
21.2.5 Power and UPS behaviour

The network switch in the console runs from the same UPS as the console itself, so if power fails the switch will continue working.

When you power down the console, the UPS will continue to power the internal switch for about 5 minutes, or until mains power is removed. This is to allow you to restart the console without interrupting the network (for example if you have connected a backup console via the inbuilt switch).

21.3 Controlling Fixtures over a Network

Before the console can talk to another device over the network, it has to be given a unique network address. This is called its "IP address".

21.3.1 Setting the console's IP address

We recommend that you use the console's automatic IP setting function. However, if you need to you can also set a manual IP address. See Setting your IP address for details of how IP addressing works.

1. Go to the **System** menu (press <Avo> + <Disk>) and press [Network Settings]
2. Press [Local Area Connection] (some consoles have more than one network connection, so you may have different connections to choose from)
3. Check [Subnet Mask] is set to 255.255.255.0
4. Press [Set IP 2.*.*.*]
5. Press [Save settings]
6. Press <Exit> to leave the system menu.

• Some Art-Net equipment may operate on a fixed IP address range of 2.*.*.* or 10.*.*.*, in which case you will need to also set the console within the same range, but most equipment can be set to any address.

• If you need an address range other than 2.*.*.* or 10.*.*.* you can press [IP Address = …] and enter the address with the numeric keypad.

If the console has more than one network adapter, make sure they are set on different IP ranges (for example set one to 2.*.*.* and the other to 10.*.*.*). If they are both in the same range this will cause problems with Art-Net and sACN.

21.3.2 Setting up DMX outputs

Titan can control 64 DMX universes (see DMX Output Mapping (Abschnitt 19.6) for details), except when used with T1 / T2 / T3 hardware when it limited to one, two, and sixteen universes respectively. The Titan Go software (with AvoKey) will output one universe over Art-Net or sACN. The Titan Simulator software (with AvoKey) will output all universes over Art-Net or sACN, but periodically random DMX values will be sent down all DMX outputs as a "spoiler".

Within the console, you patch fixtures to one of 64 output lines. You connect console output lines to network universes using the DMX Settings menu (Abschnitt 19.6.1). Often you will simply allocate console line 1 to network universe 1, line 2 to universe 2 and so on, but there are times (for example if using a house rig with a touring show) when you might need to allocate the lines differently.

21.3.3 Example of a simple Art-Net system

There are two main systems for sending lighting control information over a network, Art-Net and sACN. Titan supports both; in this section we will describe how to set up a system using Art-Net.

Art-Net is not specific to one range of products, and is recognised and implemented by a growing number of manufacturers. Many products (such as Dimmers and Moving lights) can accept the Art-Net signal directly, so there is no need to convert the signal to DMX. Most people will, however, need to output DMX to their equipment and this can be done using an Art-Net to DMX converter (often called a **Node**).

In the following diagram, an Art-Net compliant Console (such as a Titan console) is connected via a network switch to an Art-Net compatible dimmer and a rackmount DMX conversion node.
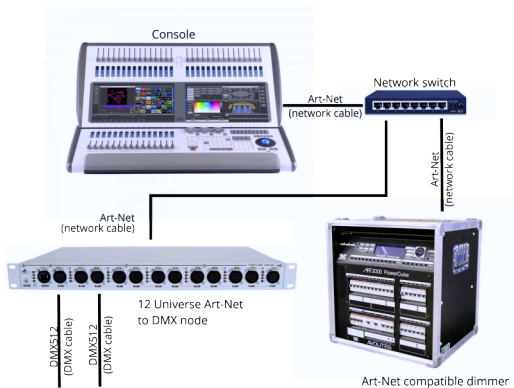
Once the system is connected together, the devices can be configured.

- On the Dimmer, set the start address of 1.001 (Address 001 on universe 1)

- On the DMX node, set start at universe 2 so it will convert universes 2-13 to DMX512 on its 12 outputs

The DMX Settings menu (Abschnitt 19.6.1) on the console is used to set which DMX line on the console is output to each Art-Net universe (1-256). Each console line may be output to multiple universes (including the physical connectors on the console) depending on how your devices are connected.

If everything is connected right, you should see each universe of the Dimmer and the DMX node show up as connectable devices on the left hand side of the DMX Settings window. The devices will tell the console what universe they are set to receive.

So we do the following:

- Click on the first universe of the dimmer on the left of the window, then click Line 1 on the right to connect it.

- Click on the first universe of the DMX node on the left of the window, then click Line 2 on the right to connect it.

- Click on the second universe of the DMX node on the left of the window, then click Line 3 on the right to connect it.
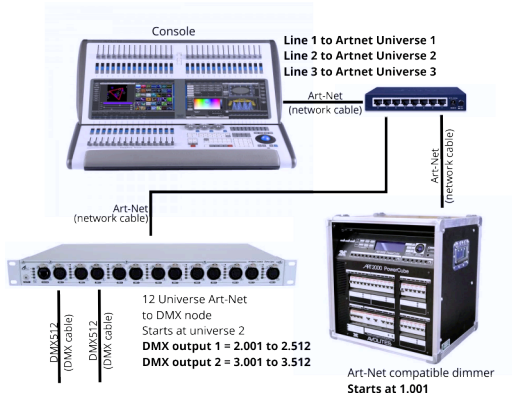
Now on the console when you patch, you will patch the dimmer channels on addresses 1.001 - 1.024, the fixtures on the first output of the 12-way DMX node will be on addresses 2.001 - 2.512 and the fixtures on the second output will be on addresses 3.001 - 3.512.

- Press the small {Cog} button on the Art-Net device to show a properties window. See Art-Net settings (Abschnitt 19.6.2.3) for an explanation of the settings.

"Unpolled" and "unknown" devices may appear as Art-Net nodes.

- An unpolled device is a 'rolling extra' which allows more than 4 connections to be made to a particular Art-Net device. The Art-Net specification only allows each device to advertise a max of 4 universes so if you need to add more the console has to invent the 5th, 6th, etc universes.

- An unknown device is one which doesn't format an Art-Net poll reply properly so the console doesn't known if it is an input or output device.

21.3.4 Additional Art-Net Resources

To find out more information about Art-Net please refer to the Art-Net Standard published by Artistic Licence.

21.4 Using Active Fixtures with CITP

CITP is a standard system allowing lighting devices to communicate and share information. This is often used with media servers to allow the console to get media thumbnail images and layer information from the server. The thumbnail images can then be used on the console to select media clips.

This section does not apply to Ai media servers which use the Synergy system to communicate with Titan consoles.

21.4.1 Example CITP setup

This example shows how to set up a Hippotizer with Titan.

1. Connect the console and Hippotizer to the network. (You can connect the Hippotizer directly to the console, if no other devices are being connected, using a crossover patch cable).
2. Set up the IP addresses and subnet masks of the console and Hippo so that they are on the same address range, for example `192.168.0.1` and `192.168.0.2`.
3. If you are using Titan PC Suite (Titan Go or Titan Simulator) ensure the firewall on your PC is disabled. Also ensure the Hippo machine is not running a firewall.
4. Run the Hippo system. Make sure the CITP component is running.
5. Go to the **System** menu (<Avo> + <Disk>) and select [DMX Settings].
6. On the left hand side under Art-Net you should see the Hippo with its IP address. Click on it and then on the right hand side click on the DMX line you want to use it with.
7. On the assigned Hippo node on the right hand side, click the {Cog} button and set the Universe number to match the universe setting on the Hippo.
8. Press <Exit> to go back to the default menu.
9. Restart the console software using the option on the Tools menu (for Titan PC Suite (Titan Go or Simulator) just close and restart the Titan software).
10. Go into Patch mode and select [Active Fixtures]. You should see the Hippo with its IP address as a softkey option.
11. Select the Hippo, then set the DMX line to match the line you set in Step 6.
12. Press an empty fixture handle to patch. The console will automatically patch the required layers and master layer as a series of fixture buttons.
13. Now if you select a fixture and open the Attribute Editor window you should see the media thumbnails.

The next time you start the system, ensure the Hippo is powered up before you start the console.

If you decide to re-patch to a different DMX address you will need to re-start the Hippotizer software. You will also need to reset the Art-Net nodes if you are moving across DMX lines.

21.5 Network Ports used by Titan

Titan uses the following ports over the network. If your network includes firewalls you might need to know these so you can set up rules for them.

Protocol	Port	Address	Notes
TitanNet	TCP 808	All available adapters	Titan Remote, TNPs, multi-user and backup.
HTTP	TCP 4430	All available adapters	WebApi

Protocol	Port	Address	Notes
SLP	UDP 427	Multicast 239.255.255.253	Used to discover TitanNet devices on the network.
Ping	ICMP echo	Any adapters that are in use	Monitors connection to TitanNet devices.
Art-Net	UDP 6454	By default all wired adapters	
sACN	UDP 5568	Multicast 239.255.0.0-239.255.249.255	
CITP	UDP 4809/TCP	Multicast 224.0.0.180	Used for communication with Capture Visualiser and media servers. Discovery done by multicast UDP then negotiates TCP connection
RDMNet	UDP 5569		
ProDJ Tap	UDP 60000-60002, 65023-65535		Protocol for getting data from Pioneer DJ equipment by software now known as TC-Supply
LiveDMX	UDP 5584	Multicast 239.184.0.0-239.184.249.255	Used for internal Visualiser DMX data
NTP	UDP 1234	Between TitanNet hosts	Non-standard NTP port
NDI	UDP 5353	Multicast between NDI sources and Panel	mDNS for NDI source discovery
NDI	UDP 49152-65535	Between NDI sources and the Panel	NDI video streams

21.6 A quick guide to IP addressing

Every device on a network must have a unique IP address. IP addresses have the format w.x.y.z where w, x, y and z are numbers between 0 and 255, for example 192.168.0.1. The address can be set manually (this is called a **Static** IP address) or can be automatically allocated by the network (using a system called

DHCP). In lighting networks static addressing is normally used, it takes a bit more time to set up but you then know for sure what the address is for each device.

For devices to be able to "see" each other on the network, they must be in the same **Subnet** - this is the first part of the IP address. Each device has a **Subnet Mask** which sets the parts of the IP address which must match for the devices to be able to see each other, and which parts must be different.

Subnet Masks are often set to `255.255.255.0` which means that the w x and y numbers must match but the z number must be different. So if the console was set at `192.168.1.1` then the subnet would be `192.168.1.z` and all the other devices would be `192.168.1.2`, `192.168.1.3` and so on.

If your IP address is allocated by DHCP then the Subnet Mask is set automatically. Subnet masks are sometimes referred to as `/24` or `/8`, this is the number of bits set to 1 in the mask. Each number in the mask is 8 bits so `255.255.255.0` can also be called `/24`, or `255.0.0.0.` would be `/8`.

21.6.1 Choosing an IP address and Subnet Mask

This is the hardest part of setting up a network as a suitable IP address totally depends on what you are using on the network and what IP addresses you can and cannot change. Some older Art-Net equipment is fixed to the address range `2.x.y.z` or `10.x.y.z` which means everything else has to use that range as well. But if none of your equipment is fixed, the address range `192.168.1.x` is often used.

Below are a number of example scenarios for standard lighting networks using a Titan console and what IP addresses should be set. *These aren't guaranteed to work but try them if the scenario matches your network.*

Titan and TNP with all output operating as standard DMX

Device	IP Address	Subnet Mask
Titan Console	`192.168.1.30`	`255.255.255.0`
TNP	`192.168.1.31`	`255.255.255.0`

Titan outputting over Art-Net Fixtures (and DMX)

Device	IP Address	Subnet Mask
Titan Console	`10.100.100.100`	`255.0.0.0`
Art-Net Fixtures	`10.x.y.z` *	`255.0.0.0`

(the `2.x.y.z` range can also be used for Art-Net if required but see section on Private Address ranges

below).

* *Where a combination of x, y and z are unique for these fixtures.*

Titan and TNP outputting over Art-Net (and DMX)

Device	IP Address	Subnet Mask
Titan Console	`2.100.100.100`	`255.0.0.0`
TNP	`2.100.100.101`	`255.0.0.0`
Art-Net Fixtures	`2.x.y.z` *****	`255.0.0.0`

Alternatively:

Device	IP Address	Subnet Mask
Titan Console	`10.100.100.100`	`255.0.0.0`
TNP	`10.100.100.101`	`255.0.0.0`
Art-Net Fixtures	`10.x.y.z` *****	`255.0.0.0`

* *Where a combination of x, y and z are unique for these fixtures.*

> It's best to avoid using 255 in the IP address because if the unmasked part of an IP address is set to 255, this acts as a broadcast address (for example `192.168.1.255` would be a broadcast address if the mask is `255.255.255.0`, or `10.255.255.255` would be broadcast if the mask is `255.0.0.0`).

21.6.2 If your network is connected to the internet

If at all possible you should use a dedicated network for lighting with no external connections. However if your network has to be connected to the internet it is important to use one of the following ranges of **private** IP addresses. These are special IP addresses that will not be routed onto the internet. They are:

Start Address	Final Address	Subnet Mask
`10.0.0.0`	`10.255.255.255`	`255.0.0.0` (/8)
`172.16.0.0`	`172.31.255.255`	`255.240.0.0` (/12)
`192.168.0.0`	`192.168.255.255`	`255.255.0.0` (/16)

For Art-Net, the 10.x.y.z range may need to be used if you have devices which are fixed to this address range.

22 Titan Reference

22.1 Titan Commands Quick Reference

Please note that some commands may require <Enter> to complete the command. In this reference <Enter> has always been omitted for clarity.

[Softkey] formatting means a softkey on the console.

< Button > formatting means a physical labelled button

{ } means a handle button, e.g. {Cue} means the **Select** button on a cue playback handle

Numbers are typed on the numeric keypad

The available buttons may differ depending on which console you are using. If your console doesn't have the button, a softkey is also provided with the same function.

Some of the buttons in this guide have changed names and so here is a list of the old button names and their new equivalents.

Old Name	New Name
Connect	Cue
SET	TIME

22.1.1 Fixtures

<Fixture> 1 <Through> 10

Select fixtures 1 through to 10.

<Fixture> 1 <Through> 10 <And> 20 <And> 25

Select fixtures 1 to 10 and 20, 25

<Fixture> 5 <@> <@>

Put fixture 5 at full intensity.

<Fixture> 1 <Through> 60 <@> 75

Put fixtures 10 to 60 at 75% intensity.

<Group> 2 <@> <@>

Put group 2 at full intensity.

<Group> 2 <@> 75

Put group 2 at full intensity.

Celled Fixtures (Sub Fixtures)

<.> m

Select cell m in the selected fixtures.

<.>

Select all the cells in the selected fixtures.

n <.>

all sub-fixtures of fixture n

1 <Through> 5 <.> 2

Select the second cell of fixtures 1 to 5

<.> <Through> <.> j

<Through> <.> j

Select cells 1 to j of all selected fixtures

<.> m <Through>

Cells m->last of all selected fixtures

<.> m <Through> <.>j

<.> m <Through> i

sub-fixtures m->j or all selected fixtures

n <Through> i<.>

all sub-fixtures of fixtures n->i

n <Through> i<.>j

sub-fixture j of fixtures n->i

n <Through> <.>j

sub-fixture 1->j of fixture n

n <.> <Through>

all sub-fixtures of fixture n->last consecutive of type n

n <.> <Through> i

sub-fixtures 1->i of fixture n

n <.> <Through> i<.>j

sub-fixtures 1->j of fixtures n->i

22.1.2 Select If

<Select If> <@><@>

Select all fixtures above 0% intensity.

<Select If> <@> <Through> 50

Select all fixtures above 50% intensity

<Select If> <@> 50 <Through>

Select all fixtures below 50% intensity

22.1.3 Record

<Record> {Cue list} {Cue list} Append cue at the end of the list.

<Record> <Cue> <Cue>

Merge the live cue of the connected cue list with the programmer.

<Record> <Cue> 90.1

Merge cue 90.1 of the connected cue list with the programmer. If this cue doesn't exist it will be created.

<Record> <Cue> 1 <Through> 10 <And> 20

Record/merge programmer contents into cues 1 to 10 and 20 (select copy/merge/replace from softkeys or double press <Enter> to merge.)

<Record> <Position> <Cue> <Cue>

Merge only position from the programmer with the live cue.

<Record> <Options> <Position> <Cue> <Cue>

Merge only position from the programmer with the live cue.

- See Updating Cues (Abschnitt 12.8.7) in the Theatre Programming section for more information about editing Cue Lists and recording/merging multiple cues in Cue Lists.

22.1.4 Copy, Move in cue list

<Copy> {Cue list} n <Enter>

Copy cue n and append at the end of the cue list.

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <@> n

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <Enter> n <Enter>

Copy or move cues 1,2,3,4,6,7,8,9,10,20 from {Cue list} and insert after cue n.

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <@> <@>

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <Enter> <Enter>

Copy or move cues 1,2,3,4,6,7,8,9,10,20 and insert at the end of the cue list.

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <@> {target playback} n

<Copy>/<Move> {Cue list} 1 <Through> 10 [NOT] 5 <And> 20 <Enter> {target playback} n <Enter>

Copy or move cues 1,2,3,4,6,7,8,9,10,20 and insert at cue n in the target playback.

22.1.5 Delete

<Delete> <Cue> n

Delete cue n from the connected cue list.

22.1.6 Include

<Include> <Cue> n

Include cue n into the programmer from the connected cue list.

22.1.7 Times

<Time> 5

5 sec fade in

<Cue> 3 <Time> 5

5 sec fade in on connected playback's cue 3

<Time> <Fixture> 5

5 sec fade in for all attributes of selected fixtures

\<Time\> \<Fixture\> \<Gobo\> 5

5 sec fade in for gobo attribute group of selected fixtures

\<Time\> \<Fixture\> \<@\> \<B@\> 5

5 sec fade in for attribute connected to wheel B on selected fixtures

\<Time\> 5 \<@\> 3

5 sec fade in, 3 sec delay

\<Time\> 5 \<And\> 2

5 sec fade in, 2 sec fade out

\<Time\> 1 \<Through\> 10

times spread across fixtures according to selection order

22.1.8   Cue Lists

\<Cue\> n \<Go\>

Go to cue n (in connected cue list)

5 \<Go\>

Run the next cue with 5 sec fade instead of the programmed cue time

\<Cue\> 3 \<Enter\> 5 \<Go\>

Jump to cue 3 with 5 sec fade instead of the programmed cue time

22.2   Button reference

This section lists all the physical buttons and tells you what they do. The **links** take you to the section of the manual where the function is explained in more detail. Some consoles may not have all these buttons.

\<n\> means to type in a numeric value on the keypad.

\<View\> \<Colour\> indicates to press a sequence of buttons.

\<Avo\> + \<Clear\> with a plus symbol means to hold down the first button while pressing the second button.

{Select} means to press a playback select button.

\<@\> (by numeric keypad) Allows numeric entry of attribute values on selected fixtures. Can also be used with \<Fixture\> or \<Group\> buttons to change selection state. For the \<@\> buttons next to the wheels see Wheel @.

Examples:

<Fixture> 1 <And> 5 <And> 7 <@> 75 <Enter> (Set fixtures 1,5,7 to 75%)

<Group> 5 <@> <@> (Set all fixtures in group 5 to full)

Buttons	Action
<@> <n> <Enter>	Set intensity of currently selected fixtures to <n> in the programmer. (<n> normally 0-99, optionally can be single digit 0-9, see Formatting (Abschnitt 19.5.10))
<@> <@>	Set intensity of currently selected fixtures to full in the programmer.

22.2.1 <@A> <@B> <@C>

For the <@> buttons next to the wheels see Wheel @.

22.2.2 <Align>

(D9/D7 and T3 only) Allows copying of attributes between fixtures. On other consoles this function is accessed using <ML Menu>. See Align Fixtures (Abschnitt 7.2.8).

22.2.3 <All>

Used to start and end pattern selection (such as odd/even) within a range of selected fixtures. See Selecting fixtures using a pattern (Abschnitt 7.1.6). (On D9/D7/T3 labelled <Pattern/All>)

22.2.4 <And>

Used when selecting multiple items using the numeric keypad, can be combined with <Through> and <Not>. See Selecting fixtures and dimmers by number (Abschnitt 7.1.5). Some consoles do not have this button, an [And] softkey is also provided.

Example: <Fixture> 1 <And> 5 <And> 7

Also when entering time or timecode values the <And> and <Through> buttons move the cursor between hours/minutes/seconds/frames.

22.2.5 <Assign>

(D9 and ST only) Allows you to reassign attributes controlled by the trackball and (on D9 only) intensity wheel. See Trackball (Abschnitt 5.2.7).

22.2.6 <Avo>

Acts as a "Shift" button when held down, giving access to different functions. Or a quick press shows a softkey menu with other functions.

Buttons	Action
<Avo> + <All>	Set zero intensity into programmer for unselected fixtures (same as <Rem Dim>), see Turn off unselected fixtures (Abschnitt 7.1.10). Also used when setting Attribute Times to deselect all fixtures, see Attribute Fade Times (Abschnitt 12.5.3).
<Avo> + <Back>	Undo, see Undo/Redo (Abschnitt 5.3.4).
<Avo> + <Close>	Close all workspace windows, see Workspace windows (Abschnitt 5.2.1.2).
<Avo> + <Copy>	Same as pressing <Move> (for consoles which don't have a Move button, but works on all consoles)
<Avo> + <Disk>	Enter System menu to set up the console, see System Menu (Abschnitt 19.2).
<Avo> + <Exit>	Exit menu structure back to the top level.
<Avo> + <Fix +>	Jump the pattern forward (or back with <Fix ->) in pattern select mode.
<Avo> + <Flash On>	Flash out (turn off) selected fixtures while held.
<Avo> + <Group> {Select}	Record group to handle, see Record a group (Abschnitt 7.4.1.1).
<Avo> + <Highlight>	Record the highlight state, see Highlight (Abschnitt 7.1.9)
<Avo> + <Macro> {Select}	Record macro to handle, see Key Macro buttons (Abschnitt 5.4.3).
<Avo> + <Min/Max>	Select a different workspace window to be the active window, see Workspace windows (Abschnitt 5.2)(../titan-basics/workspace-windows.

Buttons	Action
<Avo> + <Open/View> {Workspace button}	Record workspace layout, see Saving workspace layouts (Abschnitt 5.2.2).
<Avo> + <Release>	Release all playbacks by priority (same as double press <Release>). See Release (Abschnitt 10.3.6).
<Avo> + <Shape>	
<Avo> + <Size/Position>	Move the active workspace window to the next screen, see Workspace windows (Abschnitt 5.2.1.2).
<Avo> + <Time>	Preview Attribute fade time, see Attribute Times (Abschnitt 7.2.11).
<Avo> + <Undo> or <Avo> + <@>	Redo, see Undo/Redo (Abschnitt 5.3.4).
<Avo> + [Blind]	Toggle Blind mode, same as pressing <Blind>.
<Avo> + [Edit current key profile]	Reallocate the function of the Select and Flash buttons, see Key Profiles (Abschnitt 19.4).
<Avo> + [Lock]	Temporarily lock console controls, see Locking the console (Abschnitt 16.1.4).
<Avo> + [User Settings]	Enter the User Settings menu, see User Settings (Abschnitt 19.5).
<Avo> + {Scene Master}	Enter or exit preset mode when Scene Master assigned to Macro/Executor button or touch button, see Scene Master (Abschnitt 16.2.5).
<Avo> + {Master}	Releases the master to its default state (no effect on output), see Releasing a Master (Abschnitt 10.3.8.3).
<Avo> + {Playback}	Kill playback, see Release (Abschnitt 10.3.6).
<Avo> + Turn wheel	Wheel Turbo mode, 1 revolution goes through entire attribute range
<Avo> + 2/4/6/8	Cursor up, left, right, down

22.2.7 <Back>

Backspace key for numeric entry or command line inputs.

22.2.8 \<Beam\>

Selects the Beam attribute group so the wheels will control Zoom, focus etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.9 \<Blind\>

Switches the console into Blind mode which allows you to make programming changes using the visualiser (or in your head) while not affecting the stage output. See Blind mode (Abschnitt 10.2.5).

22.2.10 \<Block\>

(D9/D7 and T3 only) Not used yet.

22.2.11 \<Chan Grid\>

(Arena only) Opens the Channel Grid workspace window. See The Channel Grid Window (Abschnitt 7.3.1).

22.2.12 \<Clear\>

Clears the contents of the programmer and deselects fixtures. See Clearing the fixture selection and the programmer (Abschnitt 7.1.3).

Buttons	Action
\<Clear\>	Single press clears the programmer and deselects fixtures. (Optional 2-press sequence, see Clear Action Precedence (Abschnitt 19.5.12))
\<n\> \<Clear\>	Clears the programmer with a fade out time of \<n\>
\<Clear\> + \<All\>	Deselect all fixtures but keep changes in programmer
\<Clear\> + [Set Mask]	Clears only the attribute groups specified in the mask
\<Clear\> + [Clear Selected Fixtures]	Only clears the programmer for fixtures which are currently selected
\<Clear\> + [Individual Attributes]	Clear individual attributes from programmer (use softkeys to select)

Buttons	Action
<Clear> + [Clear All Programmers]	Clears programmers from other users and from the Titan Remote
<Clear> + [Clear Options]	Show user settings for Clear, see User settings - Clear (Abschnitt 19.5.12)

22.2.13 <Close>

Close the currently active workspace window.

Example: (Tap window to make it active) <Close>

22.2.14 <Colour>

Selects the Colour attribute group so the wheels will control colour, RGB, CMY etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.15 <Commit>

(D9 only) Commits the Scene Master change, as if you'd pushed the master to the end of its travel. See Scene Master (Abschnitt 16.2.5).

22.2.16 <Connect>

(Labelled Cue or Connect/Cue on some consoles) Connects the sequence controls (Go button etc) to a playback. Also used to select cues when recording or playing cue lists.

See Connecting a Chase for control, Running a Cue List (Abschnitt 12.3.1), Theatre programming (Abschnitt 12.8)

22.2.17 <Copy>

Used to make copies of items (fixtures, playbacks etc). Use <Latch> to keep the copy function active for copying multiple items. Press twice to make linked copy.

Example: <Copy> {Source Playback} {Destination Playback}

Buttons	Action
<Avo> + <Copy>	Same as pressing <Move> (for consoles which don't have a Move button, but works on all consoles)
<Copy> <Copy>	Selects Linked Copy, same as pressing <Copy> [Link]

22.2.18 <Cue>

Used when selecting cues in Cue Lists. Labelled Connect on some consoles, see Connect.

22.2.19 <Cue +>

(D9/D7 and T3 only) Moves the next cue in the connected cue list on by one - same as <Next Step>.

22.2.20 <Cue ->

(D9/D7 and T3 only) Moves the next cue in the connected cue list back by one - same as <Prev Step>.

22.2.21 <Custom (wheels)>

(D9 only - button to right of wheels) Not used yet.

22.2.22 <Delete>

Used to delete items. You usually need to press the item to be deleted a second time to confirm the delete, or press <Enter> to confirm. Use <Latch> to keep the Delete function active for deleting multiple items.

Example: <Delete> {Playback} {Playback}

22.2.23 <Direction>

(D9/D7 and T3 only) Used when setting direction of shapes. See Shape Direction (Abschnitt 9.2.4)

22.2.24 <Disk>

Shows disk functions such as Save Show etc. If pressed when <Avo> held, enters System menu. See Saving the show (Abschnitt 5.8.1) and The System Menu (Abschnitt 19.2).

Buttons	Action
<Avo> + <Disk>	Enter System menu
<Disk> <Disk>	Save the current show without asking any questions

22.2.25 <Edit>

Used when editing palettes. See Changing the content of palettes (Abschnitt 8.4.2).

22.2.26 <Effect>

Selects the Effect attribute group so the wheels control Prism etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.27 <Enter>

Completes or accepts many commands.

22.2.28 <Enter/B>

(D9 only) Enters Scene Master preset mode. See Scene Master (Abschnitt 16.2.5).

22.2.29 <Exit>

Leaves the current menu and goes one level back up the menu structure.

Buttons	Action
<Avo> + <Exit>	Exit menu structure back to the top level

22.2.30 <Exit/A>

(D9 only) Exits Scene Master preset mode and goes back to Live. See Scene Master (Abschnitt 16.2.5).

22.2.31 <FX>

(D9/D7 and T3 only) Selects the Shape/FX menu to run shapes, key frame shapes or pixel map effects. Also used to enable/disable FX attribute group when setting masks. See Shape menu.

Multiple presses followed by <Enter> will select the options in the Shape/FX menu - press twice then <Enter> to select Key Frame Shapes or three times then <Enter> to select Pixel Mapper.

22.2.32 <FX (wheels)>

(D9 only - button to the right of the wheels) Sets the wheels into FX mode to control shape size, speed, spread.

22.2.33 <Fade/Delay (wheels)>

(D9 only - button to right of wheels) Sets the wheels into Fade/Delay mode to control fade and delay times.

22.2.34 <Fan>

Starts Fan mode so the wheels spread out attributes rather than setting values. See Fan Mode (Abschnitt 7.2.10).

22.2.35 <Fix +1>

Selects the next fixture out of a range, used when programming to step through a range of fixtures one at a time. See Stepping through selected fixtures (Abschnitt 7.1.8).

22.2.36 <Fix -1>

Selects the previous fixture out of a range, used when programming to step through a range of fixtures one at a time. See Stepping through selected fixtures (Abschnitt 7.1.8).

22.2.37 <Fixture>

Opens the fixture/channel menu which is used when selecting fixtures from the keypad. See Selecting fixtures and dimmers by number (Abschnitt 7.1.5)

22.2.38 <Flash On>

Flashes selected fixtures while held.

22.2.39 <Go>

Runs the next cue of the connected playback, usually used when running cues from a cue list. See Running a Cue List (Abschnitt 12.3.1).

22.2.40 <Go page>

Type a number to jump to Page <n> of the associated fader bank (consoles with multiple fader banks may have several of these buttons). See also <Page +> and <Page ->. See Changing playback pages (Abschnitt 10.3.3).

Buttons	Action
<Go page> <n>	Switch fader bank to page n
<Release> <Go page>	Release whole page of playbacks. See Release Page.

22.2.41 <Gobo>

Selects the Gobo attribute group so the wheels control gobo select, rotation etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.42 <Group>

Opens the group menu for saving and editing fixture groups. See Fixture Groups (Abschnitt 7.4.1). Can also be used to set levels on a group, example: <Group> 5 <@> <@> sets all fixtures in Group 5 to full.

22.2.43 <Hi light>

Starts or ends Hi-light mode which visually shows the selected fixture(s) on stage by increasing intensity or setting a contrasting colour. Often used with <Fix +1> and <Fix -1> buttons. See Stepping through selected fixtures (Abschnitt 7.1.8).

22.2.44 <Include>

(followed by playback Select) Loads the contents of a playback back into the programmer for further editing or re-use. See Include Function (Abschnitt 10.4.4).

22.2.45 <Intensity>

Selects the Intensity attribute group so the wheels control Dimmer, Shutter etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.46 <Keyboard>

(D9 only) Shows the touch screen keyboard. On other consoles there is a button in the window title bars to open the keyboard. See Touch Keyboard (Abschnitt 5.2.6).

22.2.47 <Latch>

(D9/D7 and T3 only) Latches the current menu so that it remains active when you complete the action. <Latch Menu> on other consoles, see below.

22.2.48 <Latch Menu>

Latches the current menu so that it remains active when you complete the action. Useful for copy, move etc. Useful for copy, move etc. See The Menu/Softkeys (Abschnitt 5.3.1).

22.2.49 <Left>

(D9 / ST only) Left mouse button when trackball is in mouse mode.

22.2.50 <Legend>

(D9/D7 and T3 only) (followed by a Select button) Set legend on an item. On other consoles use the [Set Legend] softkey at the top level menu. See Legends and picture legends (Abschnitt 5.2.4).

22.2.51 <Levels (wheels)>

(D9 only - button to right of the wheels) set wheels to Levels mode for setting attribute levels.

22.2.52 <Level @>

(D9/D7 only) Opens the @ menu for the Intensity wheel.

22.2.53 <Library>

(Arena only) Opens the Show Library window. See Show Library (Abschnitt 5.7).

22.2.54 <Live Time>

Lets you edit timing information for the currently live cue in a cue list. See Edit Times of a running cue list (Abschnitt 12.4.8).

22.2.55 <Locate>

Sets selected fixtures to a "start" position with light coming out so you can program them. See Setting fixtures to a Start Position (Locate) (Abschnitt 7.1.2).

22.2.56 <Lock Axis>

(D9 and ST only) Not currently used.

22.2.57 <Macro>

Opens the Macro menu, which allows you to record sequences of keypresses for playback. See Key Macro buttons (Abschnitt 5.4.3).

You can also recall macros by number, example: <Macro> 5 <Enter>

22.2.58 <Mask FX>

(D9/D7 and T3 only) Opens the Mask FX menu which allows you to create masks to block running shapes. Also available as a softkey on the Shapes and Effects menu. See Mask Fx (Abschnitt 9.2.7).

Buttons	Action
<Mask FX> <Intensity>	Create Mask FX for intensity (same for any attribute group button)
<Mask FX> <Mask FX>	Create Mask FX for all attribute groups

22.2.59 <Menu Latch>

Latches the current menu so that it remains active when you complete the action. Useful for copy, move etc. Useful for copy, move etc. See The Menu/Softkeys (Abschnitt 5.3.1).

22.2.60 <Min/Max>

Changes current workspace window between minimum (quarter screen) and maximum (full screen) size. See Window Size (Abschnitt 5.2.1.2).

22.2.61 <ML Menu>

At top level menu, opens the Moving Light menu where you can run fixture macros and access the [Align] function. Also acts as Menu Latch if pressed while in a submenu. See The ML Menu button (Abschnitt 7.6.2). Not on D9/D7, use <Macro> to run fixture macros and <Align> to access Align function.

22.2.62 <Move>

Used to move items to different handles. Use <Latch> to keep the Move function active for moving multiple items.

Example: <Move> {Source Playback} {Destination Playback}

22.2.63 <Next Step>

Moves to the next cue in the connected cue list using programmed fade times. Labelled <Next Cue> or <Cue +> on some consoles. See Running a cue list (Abschnitt 12.3.1).

22.2.64 <Next Time>

Lets you edit timing information for the next cue in a connected cue list. See Edit times of a running cue list (Abschnitt 12.4.8).

22.2.65 <Not>

Used when selecting ranges of items. See Selecting fixtures and dimmers by number (Abschnitt 7.1.5).

Example: <Fixture> 1 <Through> 5 <not> 3 selects fixtures 1, 2, 4, 5

22.2.66 <Odd/Even>

Replaced by <All>. Used to start and end odd/even selection from a range of selected fixtures. See Selecting fixtures using a pattern (Abschnitt 7.1.6).

22.2.67 <Off>

Used to deactivate specific attribute values from fixtures or in playbacks. Attributes set to Off can later be restored to their previous values. See Deactivate attributes using Off (Abschnitt 10.4.5).

22.2.68 <Open>

(D9/D7 only) Open workspace window, like double pressing View.

(Quartz, Titan Mobile) Show details about item, or double press to open workspace window, see View (Abschnitt 22.2.100).

22.2.69 <Open/View>

(Sapphire Touch, Arena, Tiger Touch only)

Show details about item, or double press to open workspace window, see View (Abschnitt 22.2.100).

22.2.70 <Options>

Followed by **Select** button, shows options screen for item. Usually used with playbacks but can set options for other types of item. See Playback Options

22.2.71 <Page +>

Move to next page in the fader bank (consoles with multiple fader banks may have several of these buttons). See also <Go Page>. See Changing playback pages (Abschnitt 10.3.3).

22.2.72 <Page ->

Move to previous page in the fader bank (consoles with multiple fader banks may have several of these buttons). See also <Go Page>. See Changing playback pages (Abschnitt 10.3.3).

22.2.73 <Palette>

Opens the Palette menu which is used when recalling palettes by number. See Recalling palettes (Abschnitt 8.3.1.2).

22.2.74 <Patch>

Opens the Patch menu. See Patching new fixtures or dimmers.

<Pattern/All> (D9/D7 and T3 only) Used to start and end pattern selection (such as odd/even) within a range of selected fixtures. Same as <All> on other consoles, see All.

22.2.75 <Playback>

(Arena) Opens the Playbacks workspace window showing touch buttons for additional playback storage.

(D9/D7 and T3) If pressed after <View>, opens the Playbacks workspace window.

22.2.76 <Playback (wheels)>

(D9 only - button to right of wheels) Sets the wheels to playback control mode.

22.2.77 <Position>

Selects the Position attribute group so the wheels control pan, tilt etc. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.78 <Preload/Auto>

(D9 only) Preload the Scene Master preset state (loads the LTP values of non-illuminated fixtures so they don't visibly move when the state is faded in). See Scene Master (Abschnitt 16.2.5).

22.2.79 <Prev Step>

Moves to the previous cue in the connected cue list using programmed fade times. Labelled <Prev Cue> or <Cue -> on some consoles. See Running a cue list (Abschnitt 12.3.1).

22.2.80   <Record>

Enter Record mode to record playbacks or palettes. See Creating a cue (Abschnitt 10.2.2) and Storing a palette (Abschnitt 8.2.2). Press <Record> multiple times to step through Record Cue / Record Chase / Record Cue List / Record Timeline options.

Buttons	Action
<Record> {Select}	Record programmer state to cue
<Record> {Palette window button}	Record programmer state to palette
<Record> {Workspace select button}	Record current workspace state to workspace select button
<Record> <Highlight>	Record the highlight state, see Highlight (Abschnitt 7.1.9)
<Record> <Locate>	Record the locate state, see Locate (Abschnitt 7.1.2.1).

22.2.81   <Record Step>

Record the programmer into the current active cue in the connected cue list. See Editing a cue list while recording (Abschnitt 12.4.9)

22.2.82   <Release>

Used to override the LTP behaviour of attributes when a playback is killed. See Release (Abschnitt 10.3.6).

Can also be used to release various other items.

Buttons	Action
<Release> {Master}	Releases the master to its default state (no effect on output), see Releasing a Master (Abschnitt 10.3.8.3).
<Release> {Playback}	Release the playback (ignoring its priority). See Release (Abschnitt 10.3.6).
<Release> <Clear>	Release attributes in the programmer. See Release (Abschnitt 10.3.8.2).
<Release> <Go Page>	Release whole page of playbacks. See Release Page.

Buttons	Action
<Release> <Release>	Release all active playbacks by priority. See Release (Abschnitt 10.3.6).
<Record> <Release>	Record the release or power on state. See Power On State.

22.2.83 <Rem Dim>

Turns off all unselected fixtures. Not fitted on all consoles, can also be accessed by <Avo> + <All>. See Turn Off Unselected Fixtures (Abschnitt 7.1.10)

22.2.84 <Reset>

(D9 only) Clear the preset state of the Scene Master. See Scene Master (Abschnitt 16.2.5).

22.2.85 <Review>

Re-runs the fade times of the current live cue to allow you to see timing changes. See Edit Times of a Running Cue List (Abschnitt 12.4.8)

22.2.86 <Right>

(D9 / ST only) Right mouse button when trackball in mouse mode.

22.2.87 <Scroll>

Makes the wheels scroll the focussed zone up/down.

22.2.88 <Select If>

Selects all fixtures which are in a playback or have a particular intensity level, see Select If (Abschnitt 7.1.7).

22.2.89 <Set>

This button has become the <Time> button.

22.2.90 <Shape>

Selects attribute bank Shapes, and sets wheels to shape parameters (Speed, Size, Spread, etc.) See Shapes and Effects (Abschnitt 9.1).

22.2.91 <Size/Position>

Moves the currently selected workspace window around the different size and position options. If <Avo> held also, moves the window to the other screen.

22.2.92 <Snap>

Enables Snap mode which makes <Prev Step> / <Next Step> buttons snap through cues without using the programmed fade times in cue lists or chases. See Running a cue list (Abschnitt 12.3.1). Sets the Chase Snap (if a chase is connected) or Cue List Snap (if a cue list is connected) user setting in General user settings.

22.2.93 <Special>

Selects the Special attribute group so the wheels control fixture-specific functions like modes and macros. Also used for creating masks. See Changing Attributes using the Wheels (Abschnitt 7.2.1).

22.2.94 <Stop>

Stops/freezes the current cue fades. See Running a cue list (Abschnitt 12.3.1). If used when already stopped, goes back a cue.

22.2.95 <Through>

Used when selecting ranges of items. See Selecting fixtures and dimmers by number (Abschnitt 7.1.5).

Example: <Fixture> 1 <Through> 5 <not> 3 selects fixtures 1, 2, 4, 5

Also when entering time or timecode values the <And> and <Through> buttons move the cursor between hours/minutes/seconds/frames.

22.2.96 <Time>

Show the Times menu which is used to set cue timing. See Fade times (Abschnitt 10.5.1). Also used to set fade times directly. See Times (Abschnitt 19.5.7).

Buttons	Action
<Time> n	Set n second fade into programmer, will record with the next cue to be recorded
<Time> <Fixture> n	Set n second fade into programmer for all attributes of selected fixtures

22.2.97 <Undo>

Undo the last action (an Undo list is shown in the system prompt). See Undo/Redo (Abschnitt 5.3.4).

Buttons	Action
<Avo> + <Undo>	Redo (revert the last Undo change)

22.2.98 <Unfold>

followed by playback **Select**, splits out a cue list or chase onto the playback faders so each cue/step can be edited individually. See Editing a chase using unfold (Abschnitt 11.4.2).

22.2.99 <Update>

Updates the current cue by merging the contents of the programmer. See Updating Stored Values and Palettes used in a Cue (Abschnitt 10.4.2).

22.2.100 <View>

(D9/D7, T3, Titan Go, Pearl Expert, Tiger Touch 1)

Followed by **Select** button to show details about item, or double press to open workspace window. See Palettes (Abschnitt 8.4.1) and Cues (Abschnitt 10.4.3), or Opening Workspace Windows.

Also gives shortcuts to opening workspace windows and editing workspaces:

Buttons	Action
<View> <Beam>	Open Beam palettes view
<View> <Colour>	Open Colour palettes view
<View> <Connect>	Open Playback view for connected playback

Buttons	Action
<View> <Copy>	Copy workspace select button
<View> <Delete>	Delete workspace select button
<View> <Fixture>	Open Fixtures window
<View> <FX>	Open Shape palettes view
<View> <Gobo>	Open Beam palettes view
<View> <Group>	Open Groups window
<View> <Intensity>	Open Intensity View
<View> <Macros>	Open Macros window
<View> <Move>	Move workspace select button
<View> <Off>	Open Active playbacks window
<View> <Options>	Open Attribute editor
<View> <Patch>	Open Patch view
<View> <Playback>	Open Playbacks view
<View> <Position>	Open Position Palettes view
<View> <Release>	Open Active playbacks window
<View> <Shape>	Open Shape palettes view
<View> n <Enter>	Recall workspace with ID number n

22.2.101 <Visualiser>

Opens the Visualiser window. See Capture visualiser.

22.2.102 <Wheel @>

(The @ buttons next to the wheels) - Open the Wheel @ menu which lets you control the attribute which is currently allocated to the wheel.

22.2.103 <XYZ>

(D9 only - button to right of wheels) Sets the wheels to XYZ position mode for moving fixtures in Visualiser or Layout Editor.

23 Glossary

23.1 Glossary of Avolites terms

This section explains what common lighting terminology means in Avolites Titan. In cases where other lighting equipment manufacturers use the words to mean something else, this is listed in the text.

word	meaning
ADDRESS	The first DMX channel/slot of the set of channels occupied by an individual Fixture. This is set on the fixture somehow (by a menu or switches or remotely using RDM).
ALIGN	A means of copying Attribute characteristics from the first Fixture selected to other selected fixtures, resulting in those attributes of the fixtures being aligned to each other.
ART-NET	An Ethernet based system allowing multiple Universes of DMX to be sent over a network.
ATTRIBUTE	One function of a Fixture, such as "Colour Wheel" or "Focus".
ATTRIBUTE GROUPS	see IPCGBES.
AUTOLOAD	A Playback which is automatically fired by a Cue in a Cue List. Enables a chase to be fired by a cue list.

word	meaning
BACKUPS	Copies of a show stored to a storage device for safety.
BPM	Beats Per Minute. 60 BPM is equivalent to one step per second.
BLIND	When set to Blind mode, changes made on the console do not affect the DMX output. Useful for making programming changes during a show.
BUSKING	Operating the console live (usually for live music) when you do not have a complete show programmed, but instead creating effects as you go along using palettes etc.
CELL	Part of a Fixture which can be controlled separately within the larger fixture – for example an LED batten may have 12 cells each of which can be controlled separately, or all together. Also called Sub-fixture.
CHANNEL	Button allowing syntax / numeric style entry and operation of the console using the User Number of fixtures/dimmers.
CHASE	A sequence of one or more pre recorded steps which automatically run one after the other.

word	meaning
COLOUR MIX / CMY	A system of three filters (Cyan, Magenta, Yellow) that can each crossfade from white to a colour, or one colour to another. It is a feature of most Fixtures, which enables any colour to be created.
CONNECTED CHASE	A Chase which is linked to the Wheels by pressing the <Connect> button.
CUE	A single stage look programmed onto a Playback button or fader, or as part of a Cue List. Also known as MEMORY, STATE, SCENE, LOOK.
CUE LIST	A sequence of cues programmed onto a Playback button or fader. Each cue can have its own delay and fade times and can also start other cues or playbacks. Also known as a CUE STACK or STACK.
CUE MODE	A playback format programmed into a Cue which determines how the cue fades in and out. There are Cue Modes 0 - 3.
CURVE	A curve sets how fades and other changes on the console progress over time. A variety of different curves may be selected.
DEVICE	See FIXTURE.

word	meaning
DIMMER	Device used to control the intensity of an individual light.
DMX DMX512(1990)	a specification for communication between control desks and Fixtures, Originally for Dimmers it has been adopted as a control protocol for most Intelligent Fixtures. It can carry 512 different slots or channels of data per Universe, and Titan can output up to 64 universes (using additional network processors).
EXCHANGE	A way to swap a Fixture in a show to a different type of fixture while retaining most or all of the programming.
FADE	A continuous transition from one level to another.
FAN	A way of automatically spreading out Attributes around a central point to speed up programming.
FIXTURE	Any lighting instrument that is patched using a Personality. Generally refers to a moving light or colour changing light, not an individual Dimmer channel. Also called Intelligent Fixture, Device, Instrument, Moving Light.

word	meaning
FIXTURE GROUP LAYOUT	A way of telling the console where Fixtures are physically located in 2D space, for use with Shapes or the Pixel Mapper.
FLASH	Push button which adds a playback into the existing output of the console. Historically called the ADD button. See also SWOP.
FLIP	A function for use with Moving Head Fixtures. They have two possible Pan and Tilt settings for each position on stage by reversing the yoke, and FLIP will alternate between them.
FOCUS	The library of stored positions, colours etc which are called Focuses on some consoles, are called Palettes on Titan. See PALETTE. This term may also be used in connection with moving fixtures to focus (set the sharpness) of a gobo projection.
FX	Refers to effects created with the Shape Generator.
GENERIC	Refers to a lighting instrument which only has a dimmer/intensity control. See also FIXTURE.

word	meaning
GROUP	A Group is a pre-programmed collection of Fixtures that can be selected with a single button press. Playback groups can also be created where only one playback in the group can be active at any time.
HALO	A special colour shown around the rim of a touch button, used to quickly identify different types of button.
HANDLE	A control on the console where you can store things – may just be a programmable button, or may have a fader with one or more associated buttons.
HTP	Highest Takes Precedence, a mechanism for determining the output level of an attribute (nearly always Intensity) being controlled by more than one Playback. The playback outputting the highest value at any given time will determine the level of the attribute. Also see LTP.
INCLUDE	A means of transferring the contents of a Cue or Chase step back into the Programmer for further editing or programming.

word	meaning
IPCGBESFX	The Attribute groups, used by the console to conveniently group together similar attributes – stands for Intensity, Position, Colour, Gobo, Beam, Effect, Special, FX (shapes). For example the P(osition) group includes Pan and Tilt attributes.
KEY FRAME SHAPE	A self-programmed Shape where you program a set of steps which can then be spread in different ways over a set of fixtures.
KEY PROFILE	User setting which can be used to change the function of each type of button on the console.
LED	Light Emitting Diode, the source of light in many fixtures. May also refers to the small lights within the buttons on the console.
LEGEND	The text or image used to name a handle so you know what you stored in it.
LINK	Connection between cues in a Cue List or Chase enabling them to run on from one to another automatically.

word	meaning
LOCATE	Button which places selected fixtures into a default "ready" state – usually a central position with full intensity, no colour, no gobo, ready for programming.
LOCK	Handles can be Locked so that when you change to a different page, those handles do not change. The lock can be Transparent meaning that it is only locked if the new page doesn't have any programming on that handle. May also refer to the system for locking the console while left unattended.
LTP	Latest Takes Precedence, a mechanism for passing control of an attribute from one Playback to another on the basis that the latest playback changes take over control. Usually used for all attribute types except Intensity. Also see HTP.

word	meaning
MACRO	Has two meanings in Titan. May refer to a stored sequence of button presses which allow you to recreate a complex sequence of operations from a single button. Or may refer to functions programmed into a Fixture by the manufacturer for example to lamp On/Off a fixture or reset the motors – using DMX command sequences defined within the Personality.
MASTER	Fader or knob giving overall control of a number of different playbacks or attributes. Different types of Masters can be configured on the console.
MEMORY	The name for a Cue or playback on other consoles.
MIDI	A control system used for sending commands between equipment. Stands for Musical Instrument Digital Interface and originally for sending musical notes between keyboards/synths, it is now used for controlling and linking many types of equipment.

word	meaning
MENU	List of available functions on the Softkeys.
MENU LATCH	Holds the current menu active – normally a menu would close when the action is completed.
ML MENU	Provides additional functions for control of moving lights such as lamp on/off and other control functions.
MOVE IN DARK (MID)	Function of Cue List to pre-position a fixture while it is turned off so that it is correctly positioned for the next cue. Called "Mark" on other consoles.
ON and OFF	Any Attribute stored in a Playback can be On or Off. An attribute which is ON is changed by the playback when it is fired. An attribute which is OFF is stored in the playback for future re-use but has no effect when the playback is fired.
OVERLAP	Sets how the console allocates new values to a group of Fixtures. 100% means that all fixtures are updated simultaneously. 0% means that the fixtures will be updated one after the other.

word	meaning
PAGE	To provide more Handles for programming, you can change to a different Page. You can Lock handles so that they do not change when you change the page.
PALETTE	A term used to describe a referenced pre-defined state for an Attribute that can be recalled whenever required during programming. Each Fixture may be set to a different value in the Palette, the entries can be named, and recalled with a single button press. Called Focus by some other console manufacturers.
PARK	A Parked fixture is one which is patched to a handle but has no DMX Address set. This happens to a fixture when its DMX address is taken by another fixture during a later patching session; the fixture retains programming information and the Repatch function can be used to give it a new DMX address. Not the same as the "Park channel" function used to set a channel to a fixed value as found on other consoles.

word	meaning
PATCH	Set up of a show on the console, telling the console what fixtures are being used, what mode they are in, and what DMX address they are set to.
PERSONALITY	A description of what Attributes a particular Fixture has and how the console will patch and use these. It also determines which Wheel will control which attribute.
PIXEL MAPPER	Allows you to tell the console where fixtures are located in 2D space, and then to display patterns or media across those fixtures.
PLAYBACK	A programmed Cue, Chase or Cue List, stored on a Handle (button, touch button or fader).
PRELOAD	A playback button which sets the LTP channels in a cue but not the HTP channels. Used to pre-position fixtures before firing a cue. Also a cue list function which allows one cue to preload the LTP channels in another cue.
PRESET FOCUS	The old name for Palettes on previous Avolites consoles and other consoles. See PALETTE.

word	meaning
PROGRAMMER	The part of the console which contains Attribute information which has been changed by the user, prior to recording.
QUICK PALETTE	If you press a palette button with no fixtures selected, the console will apply the palette to all fixtures it has programming for. This is called a Quick Palette.
RANGE	If an Attribute on a fixture is split into certain zones for different effects, for example if the fixture has rotating gobos and e.g. from DMX 128-191 you fade through clockwise rotation then the attribute is said to have Ranges.
RDM	Remote Device Management, a way of configuring fixtures remotely from the console. Not all fixtures support this.
RELEASE	How a Playback leaves the LTP channels it was controlling when it is killed. Normally the LTP channels just remain in their last state, but you can use the Release settings to get them to revert to a previous state.

word	meaning
RGB / RGBW	A system of colour mixing using LED emitters of different colours. Often more emitter colours are provided in the fixture to allow better colour rendering or mixing of pale tints. Possible colours include Red, Green, Blue, White, Amber, Lime, Cyan, UV - so you may see RGBAL fixtures or RGBAWUV.
sACN	An Ethernet-based system allowing multiple universes of DMX to be sent over a network.
SELECT BUTTON	Blue button used to select a Handle when programming.
SELECTED	A Fixture that is under manual control.
SEQUENCE	Another name for a Chase on other consoles.
SHAPE	A preprogrammed effect available which is applied to an Attribute. It can then be customised and stored in a cue.
SHARED PALETTE	A Palette in which information is only stored for one Fixture, but is available to all fixtures of that type.

word	meaning
SOFTKEY	Menu buttons marked A-J down the side of the screen, which have different functions as shown on the adjacent part of the screen depending on the currently active menu.
SPREAD	How a shape or effect is output across a group of fixtures – if 1, all fixtures operate in synchronisation. In conjunction with Phase.
STACK	Another name for a Cue List.
SUBFIXTURE	See Cell.
SWOP	Type of flash button which turns on the output being flashed and turns off all other output while the button is pressed. Sometimes called "Solo". Also used for selecting fixtures or playbacks when programming. See also FLASH.
TIMECODE	An electronic timer signal which allows cue list playback to be synchronised to a soundtrack or other events.
TIMES	Many elements of programming can be timed to create effects, these together are referred to as Times.

word	meaning
TNP	Titan Network Processor, a rack mount unit to handle the processing of additional DMX Universes or to operate automatic shows.
TRACKING	Describes the operation of Cue Lists where attribute states follow through from previous cues unless changed by the user.
UNFOLD	A function that allows Chase steps to be laid out onto the playback faders for easy editing.
UNIVERSE	A full set of 512 DMX control channels/slots. Titan consoles can create up to 64 universes, 16 on the console and the rest remotely using network processing.
UPS	Uninterruptible Power Supply, fitted internally in some consoles, to keep the console running in case of power failure.
USER NUMBER	Each fixture / dimmer has a User Number which allows you to select them using the numeric keypad and <Through> button, as commonly used on other types of console.

word	meaning
USER SETTINGS	User definable desk settings. To change them, hold down the Avo button and select User Settings (Abschnitt 19.5).
VIRTUAL DIMMER	Used with LED colour mixing fixtures, these add an intensity function to the fixture which masters the RGB controls on the fixture when it does not actually have an intensity control channel.
VISUALISER	Software providing a lifelike 3D view of the stage and lighting, allowing virtual programming.
WING	An additional panel of faders or buttons which can be connected to the console to expand the number of Handles available.
WIPEALL	A process which clears the current show, providing a clean start. Does not affect previously saved shows.
WHEEL	Wheels are used on the console to set fixture Attributes and to control chases and cue lists.
YOKE	The U-shaped suspension mechanism for a moving head fixture.

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