ENGLISH USER GUIDE

KAJO • Lights

User manual

Programming, performance and connections



Version 2.4

88 topics • illustrated workflows • clickable contents

AUDION

17.11.2026

Using this manual

KAJO • Lights 2.4 (81) | 17.11.2026

This manual covers the KAJO desk, fixture programming and show operation. Start with the first-light workflow, or use the contents and your PDF reader search to find a feature.

Button names match the English labels in the app. The route below each title shows where to find the feature. Both the contents and PDF bookmarks are clickable.

Getting started	The desk, selection, patch, connections and guided stage alignment.
Programming	Programmer, colors and Color FX, cue record scope and cue editing.
Performance	Playback, Execute, TIME, Autopilot, performance lock and BLACK/PANIC.
Songs and control	Timeline audio, setlists, macros, MIDI, remote control and Performance Session.
Advanced topics	Pixel Map, ready-made tube runs, FX Builder, Undo/Redo and Console Tools.
Troubleshooting	Control sources, performance, common problems, platforms and glossary.

Screenshots and examples
Screenshots show actual application components with demonstration data. New workflows use 2.4 development components. Retained 2.3.x images state their original version in the caption. Camera examples illustrate the workflow rather than a real rig measurement. Follow the current chapter instructions.

Version and platform
This manual describes local development version 2.4 (81). It does not confirm a store release; older installers may lack the features described here. Check your app version. The platform overview lists MIDI, Link, USB, camera and background limits. The fixture manufacturer's DMX chart determines actual channel functions.

If a fixture behaves unexpectedly, check Control sources and What is stored where? first, then work through the troubleshooting table.

Contents

Click a heading to open its chapter. Your PDF reader bookmark panel provides another navigation route.

A · Getting started 7

01 Your first working light . . . 7
02 The desk and navigation . . . 8
03 Search the current show . . . 9
04 Save favorite controls . . . 11
05 Your own live surface . . . 13
06 What is stored where? . . . 14

B · Fixtures and connections 15

07 Connecting Art-Net . . . 15
08 sACN / E1.31 . . . 17
09 USB-DMX . . . 19
10 ArtDMX input: capture a look as a Cue . . . 21
11 RDM devices through an Art-Net gateway . . . 22
12 Adding fixtures and assigning patch addresses . . . 23
13 Profiles and fixture replacement . . . 25
14 GDTF, MVR and local profiles . . . 27
15 Selection, Grid, List and Plot . . . 29
16 Visualizer: 2D and 3D . . . 30
17 Home Position and calibration . . . 31
18 Guided Stage Alignment . . . 33
19 Align a queue of movers automatically . . . 37

C · Programmer 39

20 Programmer, VIS and LIVE . . . 39
21 Attributes: profile-aware controls . . . 40
22 Precision: absolute, relative and Fan edits . . . 41
23 Colors, primary colors and My Colors . . . 42
24 Color FX: choose the pattern first . . . 43
25 Dimmer run and stopping FX . . . 45
26 LED cells: all cells or animation . . . 47
27 Move and movement design . . . 49
28 Beam, gobo, prism and color wheels . . . 50
29 DMX channel editor and Release . . . 51

30 Inspect what is controlling a fixture . . . 52

D · Cues and playback 53

31 Record only the intended cue content . . . 53
32 Cue Contents and live editing . . . 54
33 Cue transition, duration and follow . . . 56
34 Cue Attribute Timing . . . 57
35 Playback and GO . . . 58
36 Playback fader roles . . . 60
37 TIME: override transition duration . . . 61
38 Move Dark: prepare positions in darkness . . . 63
39 Execute: live operation . . . 64
40 Execute Layout, links and groups . . . 66
41 Random Dips and Position Only . . . 68

E · Groups and effects 69

42 Fixture Groups and palettes . . . 69
43 The Effects library . . . 70
44 FX Builder . . . 71
45 Curves: Fade and FX . . . 73

F · Pixel Map 74

46 Pixel Map: turn the rig into a matrix . . . 74
47 Custom Pixel Map colors . . . 76
48 Pixel patterns, timing and media . . . 77
49 Ready-made runs and Tube / Strip patterns . . . 79

G · Songs and timing 80

50 Songs and Show Flow . . . 80
51 Audio, Song Timeline and Beat Snap . . . 81
52 Setlist and loading Playback . . . 83

H · Macros, MIDI and external control 84

53 Macros: triggers, conditions and actions . . . 84
54 MIDI Learn: Notes, CC and Program Change . . . 86
55 Direct MIDI controllers and feedback . . . 88
56 External tempo: MIDI Clock, Link and OSC . . . 90
57 StageTraxx: select and start a Song by MIDI . . . 92

58 Time Code and DJ Sync . . . 93

I · Autopilot 95

59 Autopilot: Live and explicit start . . . 95
60 Moods: choose the lighting character . . . 97
61 Perform: control movement and rhythm . . . 99
62 Prepare: rig, limits and policies . . . 101
63 Capture: record a run or save a look . . . 103

J · Live controls and output 105

64 Master, BLACK and PANIC . . . 105
65 BLINDER, STROBE and SMOKE . . . 106
66 Show Freeze: hold the lighting look . . . 108
67 Camera Guard and AR Focus . . . 109
68 AR Focus / Auto Hunt in practice . . . 111

K · Show files 113

69 Save, Save As and Rename . . . 113
70 Export, Import and setlist import . . . 115
71 Undo and Redo programming edits . . . 117
72 Lock the desk for performance . . . 118
73 Venue Memory and adapting the rig . . . 119
74 Transfer a show to a different rig . . . 121
75 Export the patch as PDF or CSV . . . 123

L · Remote connections 124

76 Phone Remote on the local network . . . 124
77 Cloud and KAAMOS connections . . . 126
78 Performance Session and background operation . . . 128

M · Advanced tools 131

79 Tracksheet and tracking . . . 131
80 Multitrack FX . . . 133
81 A synchronized backup device . . . 135

N · Settings and troubleshooting 137

82 Settings, Output Rate and Guide Mode . . . 137
83 Additional macOS windows . . . 140

84 Troubleshooting: dark or stuck lights 141
85 Troubleshooting: no effect or music response 142

O · Practical workflows **143**
86 Three practical show structures 143

P · Reference **144**
87 Platform feature map 144
88 Glossary 145

A · Getting started

01 Your first working light

Settings > Rig & venue > Fixture List / Patch; Settings > Connections > Output

Start with one fixture. Check its address, profile and connection separately before adding the whole rig. KAJO sends lighting data through a DMX network node or a supported USB-DMX interface.



KAJO desk with demonstration data. Earlier 2.3.5 screenshot; appearance may differ in 2.3.5.

STEP BY STEP

1. Choose the DMX mode and start address on the fixture itself and write them down.
2. Patch the same manufacturer, model and mode in KAJO. Set the universe and matching start address.
3. Open Connections. Choose Art-Net, sACN or USB-DMX and configure its destination.
4. Select the fixture in Programmer. Tap LIVE to enter the visualizer-only sandbox, indicated by VIS.
5. Raise Dimmer on Control to about 30% and select White on Colors. Check the preview.
6. Press and hold VIS / LIVE to send the selected fixtures to real DMX output. A red LIVE button indicates live output.

> **Note**
> The orange DMX button opens the channel editor. It does not enable Programmer live output.

> **Practical example**
> An RGBW fixture in a five-channel mode at universe 1, address 1 occupies channels 1-5. The next identical fixture can start at address 6. The receiving node must route the corresponding universe.

See also: 12 Adding fixtures and assigning patch addresses / 20 Programmer, VIS and LIVE / 31 Record only the intended cue content

A · Getting started

02 The desk and navigation

KAJO main desk

The desk keeps fixture selection, programming and show operation visible together. Drag the center dividers to resize the workspace. Both side rails stay fixed so the master and live controls remain accessible.



Selection and programming above, Playback and transport below; BLACK, Master and performance controls on the right. Earlier version 2.3.5 screenshot; appearance may differ in 2.4.

CONTROLS AND MEANINGS

PGM / Programmer	Select fixtures on the left and adjust their attributes on the right.
Execute	Live buttons, Layout editing and banks A-D.
Cues	The cue library, Songs, Setlist and Macros.
Groups	Fixture, Color and Position groups, plus Look Palettes.
Effects	Movement, color, LED and other effects, Pixel Map, FX Builder and curves.
Settings	A full-center settings workspace: task navigation on the left, search and page tabs above.
Bottom and right rails	Playback faders and transport at the bottom. BLACK is at the top right above Master; PANIC, BLINDER, STROBE and SMOKE occupy the lower right block.

Note
Center dividers remain draggable while the side rails stay fixed. Settings occupies the center and hides the Playback fader bank, while running sources continue. Master, BLACK, other performance controls and bottom transport remain available. Leave Settings by choosing PGM, Execute, Cues, Groups or Effects on the outer left main menu; there is no separate close cross. The inner Settings menu changes only the settings page. Find Landscape Lock under Guide & tools and the optional live surface under Live control > Custom live surface.

A · Getting started

03 Search the current show

Top bar > magnifier; Ctrl/Cmd+K

Search finds content inside the currently loaded show without firing it. Use it to inspect a cue, fixture, Execute slot or saved effect while the show keeps running.

READING THIS VIEW

Search	Search the current show; selecting a result only inspects it.
Filter	Limit by category, name, fixture ID, parameter or Execute slot.
Favorite	Star a supported control from its details to place it on Favorites.

A · Getting started

03 Search the current show: workflow

STEP BY STEP

1. Open the magnifier or press Ctrl/Cmd+K.
2. Enter a name, fixture ID, parameter or Execute slot such as B1. Use a category to narrow results.
3. Select a result to inspect its details. This does not start content, change your fixture selection or jump the workspace.
4. Use Refresh after changes if the results need updating.

CONTROLS AND MEANINGS

Search scope	Fixtures and supported parameters, cues, Execute slots, groups/palettes, Songs/Setlists, effects, Pixel Maps, macros and workspace/settings names.
Matching	All search words must match the same item. Names are case- and accent-insensitive; exact names and numbers rank higher.
Fixture library	The complete external profile library is not included; use Add Fixture for that search.

> **Note**
> Inspect the target before applying a favorite control. Merely opening a search result is not a cue or macro start.

A · Getting started

04 Save favorite controls

Top bar > star; Search & favorites > Favorites; Ctrl/Cmd+Shift+K

Favorites collects up to 64 frequently used controls in the current show. It stores control targets and names rather than copying cue values or an output snapshot.

READING THIS VIEW

Saved controls	Targets, labels and order are stored in the show.
Live adjustment	Read percent, BPM or DMX units and check the target is still available.
Programmer scope	Fixture edits follow Programmer LIVE/VIS and Rec Cue Selected/All settings.

A · Getting started

04 Save favorite controls: workflow

STEP BY STEP

1. Find an item with Search and star an available control in its details.
2. Open Favorites with the star icon, its tab or Ctrl/Cmd+Shift+K.
3. Adjust the horizontal fader and read its units: percent, BPM or a wheel channel's DMX value.
4. Rename, move up/down or remove controls as needed; save the show to keep them.

CONTROLS AND MEANINGS

Master / Tempo	Global live controls; changing them does not rewrite stored cue levels.
Execute level	A particular bank/slot's saved level. Adjusting it does not change banks or start/stop the pad.
Playback intensity	Targets a loaded cue by identity. It is unavailable if ambiguous or its fader role is no longer intensity.
Fixture attributes	Supported profile parameters use Programmer behavior. They do not change fixture selection or enable LIVE automatically.
Missing or changed target	The control is disabled with a reason. A deleted cue or rebound pad is not silently replaced by another target.

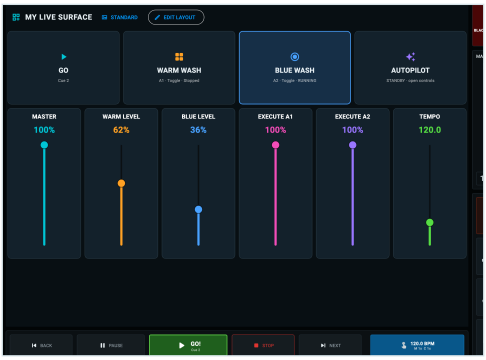
> **Note**
> For fixture edits, Rec Cue still follows Programmer Selected/All scope: select the fixture or deliberately use All. Performance Lock allows saved live level/tempo controls but blocks fixture programming and editing the Favorites list.

A · Getting started

05 Your own live surface

Settings > Live control > Custom live surface

The standard desk is the default. Enable Custom live surface on this device to build a compact performance page of buttons and faders. The layout is stored with the show; the switch that enables it belongs to this device.



Custom live surface: buttons and faders in a demonstration show. Open Edit Layout to edit. Captured from version 2.4.

STEP BY STEP

1. Enable Custom live surface, then choose OPEN LIVE SURFACE or its top-bar icon.
2. Enter Edit and add a button or fader. Search for the intended cue, Execute pad or supported control, then check its target.
3. Drag and resize tiles; choose names and colors that are easy to recognize during the show. Up to 48 controls can be placed. Use Undo/Redo for layout changes.
4. Leave Edit before performing. Test each target, held Flash/Bump control and release, and save the show.
5. Choose STANDARD to return to the standard desk. This retains your custom layout for later.

CONTROLS AND MEANINGS

Buttons	Playback cues, Execute pads and supported transport or Autopilot controls. The Autopilot button opens its live controls.
Faders	Master, tempo and supported Playback, Execute or fixture levels. Units and behavior follow the selected target.
Edit / perform	Editing a tile does not fire its target. Performance Lock blocks layout changes while allowing permitted live controls.
Changed targets	A missing cue or rebound Execute pad is disabled rather than silently controlling a different item.

> **Note**
> The normal safety, master and transport rails remain available. Opening a custom surface does not create a second Playback or Execute engine. Fixture faders follow Programmer LIVE/VIS and recording scope; the tile itself is not a stored look.

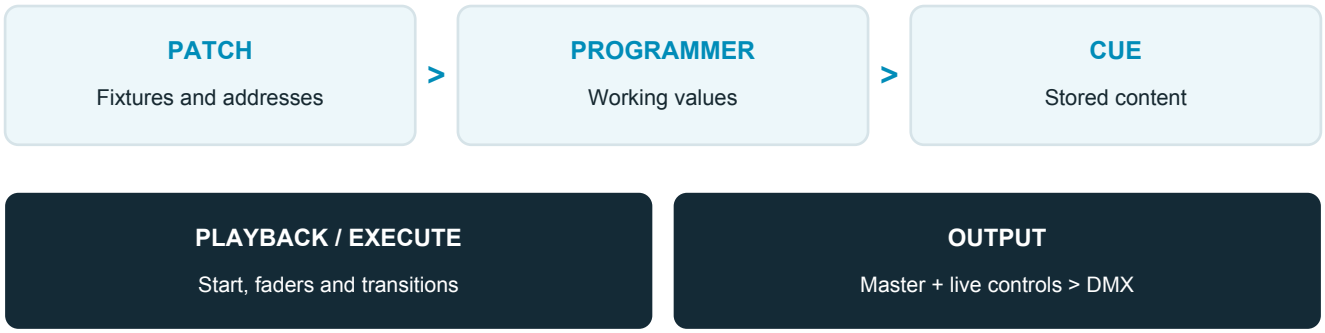
See also: 04 Save favorite controls / 39 Execute: live operation / 72 Lock the desk for performance

A · Getting started

06 What is stored where?

Show > Patch > Programmer > Cue > Playback / Execute

A show is the complete workspace. A cue is named, replayable content and may include only some fixtures and attributes. Playback and Execute use cues, but their current running state is separate from the saved library.



Patch defines channel meanings. Programmer builds content, cues retain it and playback sources produce output.

CONTROLS AND MEANINGS

Patch	The fixture identity, channel meanings and destination universe/address.
Programmer	Working values and generators. Selecting a fixture does not automatically record every attribute.
Cue	Recorded fixture/attribute content, effects and cue settings. Zero is a real stored value, not a missing value.
Playback	A running list, per-cue faders, order and GO / PAUSE / STOP.
Execute	A button linked to a cue, effect, Pixel Map, macro or another supported source.
Song / Setlist	A song groups cue links and timing; a setlist arranges songs for performance.
Show File	Save, reopen, transfer and back up the complete workspace.

Note
Programmer Clear does not delete the cue library. Clear Playbacks empties the running list while retaining the library, songs and setlists. BLACK and PANIC affect output; they do not replace saving your work.

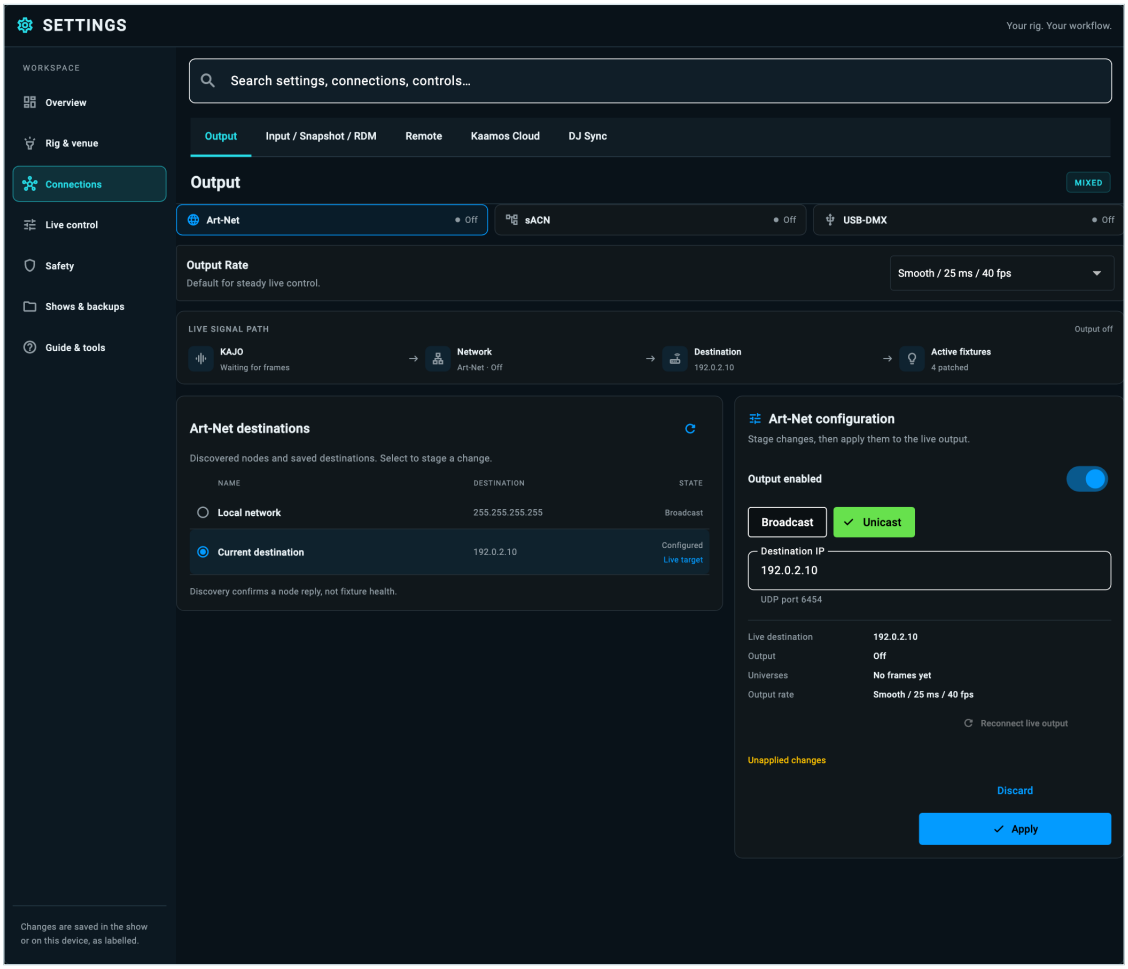
See also: 31 Record only the intended cue content / 39 Execute: live operation

B · Fixtures and connections

07 Connecting Art-Net

Settings > Connections > Output > Art-Net

Art-Net sends DMX universes over the local network to a node or compatible fixture. Match the controller, node and network settings. Addresses in the screenshots are examples.



Connections > Output > Art-Net: destinations and the local configuration draft. Apply commits the draft. Captured from version 2.4.

READING THIS VIEW

Upper tabs	Output, Input / Snapshot / RDM, Remote, Kaamos Cloud and DJ Sync share one level.
Output draft	Output enabled and destination changes reach output only with Apply. Discard abandons local edits.
Output Rate	Smooth, Fast and Eco are in the dropdown on the same Output page.

B · Fixtures and connections

07 Connecting Art-Net: workflow

STEP BY STEP

1. Connect the console and node to a suitable local network. Check the node IP address and subnet mask.
2. Open Settings > Connections > Output and choose Art-Net. Selecting the protocol alone does not enable its output.
3. Set Output enabled and Broadcast or Unicast. Choose a discovered or saved destination, or enter Destination IP.
4. Check Unapplied changes and commit the draft with Apply. Discard abandons it; leaving the page does not apply it.
5. Check the node universe-to-port routing and test one fixture at low brightness.

CONTROLS AND MEANINGS

Target IP / unicast	Send directly to a known receiver.
Broadcast	Send to the network broadcast address. Both the network and iOS permissions must allow it.
Universe	Normal patch selectors expose universes 1-16. Art-Net Port-Address is the raw wire value: KAJO U1 uses 1 by default. Check the node mapping; do not automatically subtract one.
Status, FPS, latency	Transmission diagnostics. They do not prove that a physical fixture has the correct mode or address.
Output Rate	The shared dropdown on Output offers Smooth, Fast or Eco. Changing rate does not apply an unfinished destination-address draft.

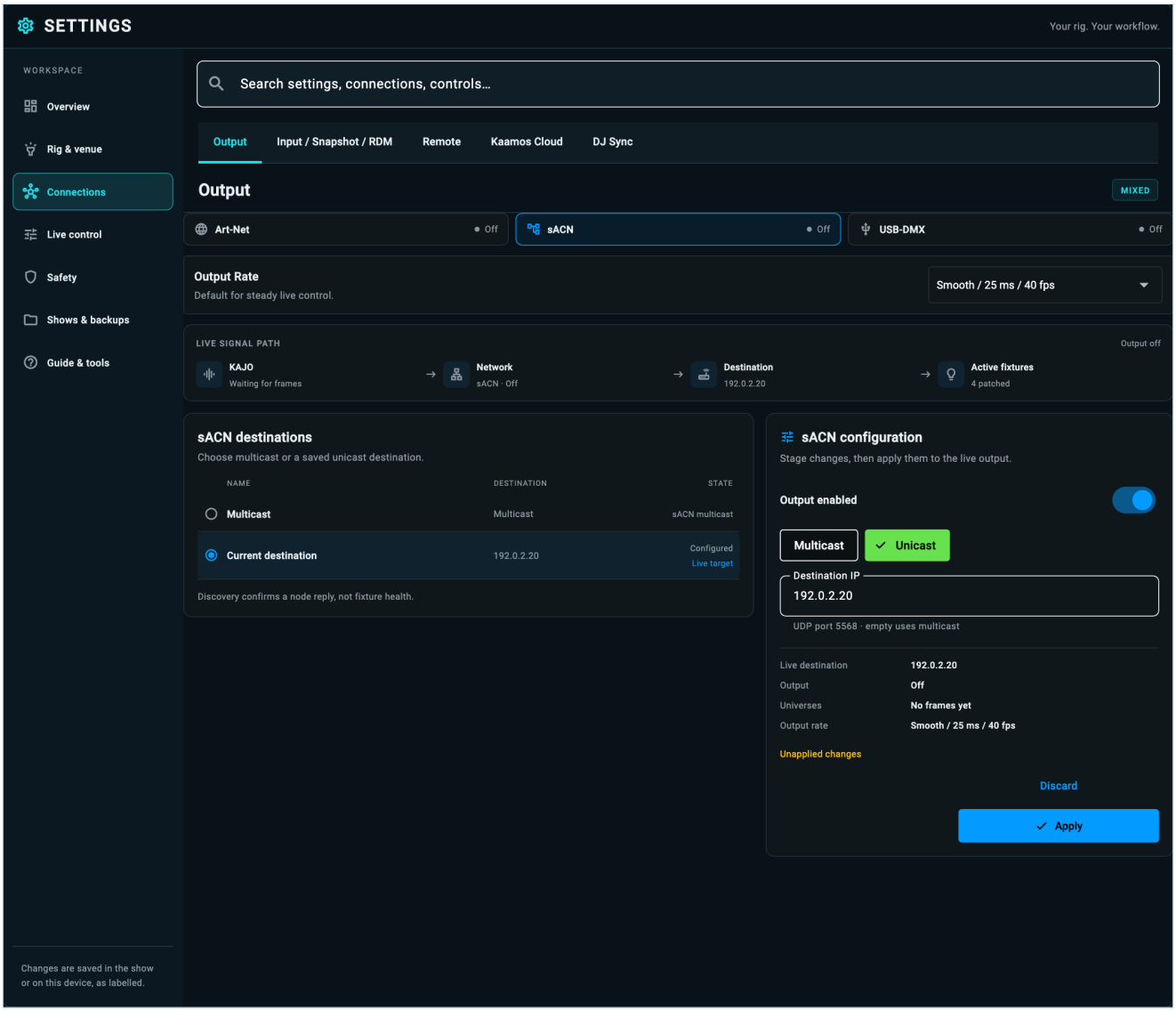
Note
iOS/iPadOS requires Local Network permission. Broadcast and multicast also require a correctly entitled application build. Changing a fixture address cannot fix network permissions. Art-Net, sACN and supported USB-DMX can run together with independent route recovery. Check DMX tools for each route; Partial means another enabled route is impaired while working routes continue.

B · Fixtures and connections

08 sACN / E1.31

Settings > Connections > Output > sACN

sACN is an alternative network DMX output. Use it when the receiving node or lighting network is configured for sACN. Choose the protocol deliberately and avoid conflicting controllers on the same output.



Connections > Output > sACN: choose the protocol within the same Output page. Captured from version 2.4.

STEP BY STEP

1. Open Settings > Connections > Output and choose sACN.
2. Set Output enabled and Multicast or Unicast, including the destination IP when required.
3. Commit with Apply or abandon with Discard. Match the patch universe to the receiver and physical port.
4. Test one universe and fixture before running the full show. Output Rate is on the same Output page.

CONTROLS AND MEANINGS

Multicast	The network must deliver traffic to the correct receivers. Router and Wi-Fi settings affect this.
Unicast target	Use the receiver IP when your setup uses direct targeting.
Multiple controllers	Check the node merge and signal-loss behavior. KAJO cannot determine a node's internal settings.

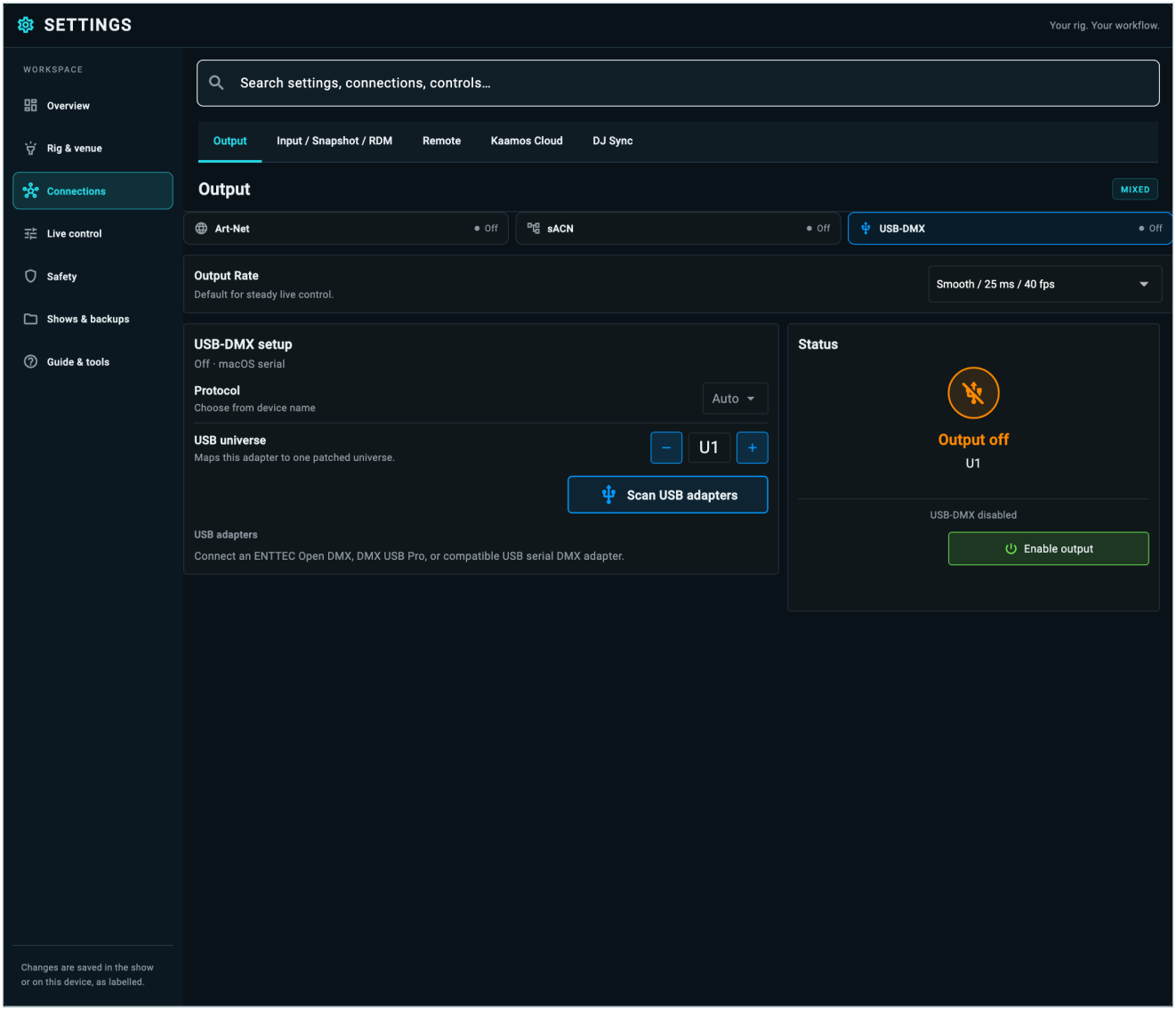
Note
If Art-Net works but sACN does not, check sACN universe and multicast settings separately. Do not assume that the same displayed universe number means the same destination in both protocols. Enable sACN independently of Art-Net or supported USB-DMX when using simultaneous outputs. All routes receive the same composed look; USB uses its selected universe.

B · Fixtures and connections

09 USB-DMX

Settings > Connections > Output > USB-DMX

USB-DMX uses a supported local interface instead of a network node. In version 2.3.4, serial USB output is available on macOS and Android USB host devices. This implementation does not support iPadOS USB serial output.



Connections > Output > USB-DMX: device, protocol and universe controls with the shared Output Rate selector. Captured from version 2.4.

STEP BY STEP

1. Connect a supported adapter. Open Settings > Connections > Output and choose USB-DMX.
2. Scan and select the correct port or device.
3. Choose Auto or the correct protocol: DMX USB Pro or Open DMX.
4. Select the universe routed to that interface, connect and run a small output test.

CONTROLS AND MEANINGS

DMX USB Pro	ENTTEC Pro-style framed serial protocol. A USB connector alone does not guarantee compatibility.
Open DMX	FTDI serial output with DMX break timing. The device and platform must support this operation.
Universe	An interface carries its selected universe. Sixteen patch universes do not imply sixteen physical USB outputs.
Status	Check the connection, transmitted frames and errors before a show.
Output Rate	The shared rate selector remains on Output when USB-DMX is selected.

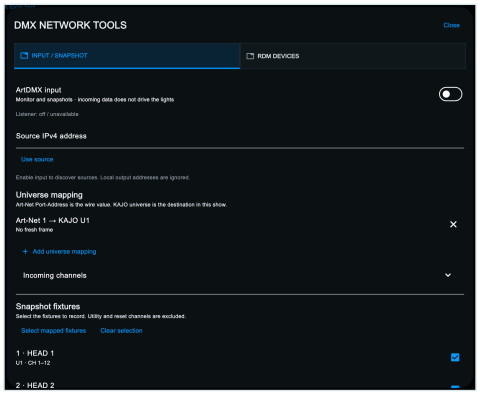
Note
MagicDMX output is not supported in this version. On iPad, use a compatible Art-Net or sACN node. Changing a fixture profile cannot establish a USB connection. Supported USB-DMX can run alongside network output. It remains unavailable on iPadOS.

B · Fixtures and connections

10 ArtDMX input: capture a look as a Cue

Settings > Connections > Input / Snapshot / RDM > Open DMX tools > INPUT / SNAPSHOT

Monitor one external Art-Net source and capture a static lighting snapshot for selected patched fixtures. Input is Off by default and never merges directly into live output.



DMX tools > INPUT / SNAPSHOT starts disabled. Select an external source and universe mapping. Captured from version 2.4.

STEP BY STEP

1. Enable ArtDMX input. Select the external console IP; after typing an address, press Use source. Local KAJO source addresses are ignored.
2. Add Universe mapping rows. Enter the raw Art-Net Port-Address and its destination KAJO universe. The default 1 → U1 matches KAJO output; a sender using wire address 0 must be mapped explicitly.
3. Inspect Incoming channels, packet age and channel coverage. Select the intended active fixtures in the Patch.
4. Choose Capture snapshot. Review the frozen source and fixture ranges, name the cue and choose Create Cue.
5. Start the new cue deliberately from Playback or Execute. Close the tool when input monitoring is finished.

CONTROLS AND MEANINGS

Numbering	Wire Port-Address is 0-32767; KAJO universe is 1-64. Input mapping does not alter output routing.
Complete data	Stale, short or conflicting input and overlapping patch ranges prevent capture. Each selected fixture must be fully covered.
Static snapshot	The cue stores supported static channel values, not the external console's effects or animation clocks. Utility/reset and unsupported channels are excluded.
Running show	Capture does not alter Programmer or running Playback/Execute. Creating the cue is one Undo step and does not start it.

> **Note**
> Reception needs the shared UDP port 6454. A busy port is reported; KAJO does not silently receive on a different port. Changing source clears previous input. Closing the tool or suspending the app stops reception.

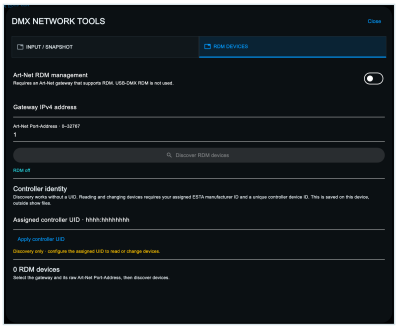
See also: 07 Connecting Art-Net / 31 Record only the intended cue content / 11 RDM devices through an Art-Net gateway

B · Fixtures and connections

11 RDM devices through an Art-Net gateway

Settings > Connections > Input / Snapshot / RDM > Open DMX tools > RDM DEVICES

Use a compatible Art-Net RDM gateway to discover root devices, read their details, identify a fixture or change its physical DMX start address.



RDM DEVICES separates discovery and physical device management from DMX snapshots. Captured from version 2.4.

STEP BY STEP

1. Enable Art-Net RDM management. Enter the unicast gateway IP and raw Art-Net Port-Address, then choose Discover RDM devices.
2. For device reads or changes, enter a unique Controller UID containing your assigned ESTA manufacturer ID, then choose Apply controller UID. Discovery alone does not need this UID.
3. Select a discovered device and choose Read device. Check its name, personality, footprint, address and Identify state.
4. Use Identify · 5 s to locate the fixture. Stop Identify ends it manually; check that OFF is confirmed.
5. For Set DMX address, check the exact gateway and device, review the fresh footprint and enter an address that fits within 512 channels. Confirm the readback, then update KAJO Patch separately.

CONTROLS AND MEANINGS

Controller UID	Configured explicitly and retained on this device, outside the show and Venue files. KAJO does not invent or borrow a manufacturer ID.
Identify cleanup	KAJO requests OFF and readback before closing or changing the endpoint. If the gateway disappears, an unconfirmed OFF remains visible.
Address change	Changes the physical device only; it does not rewrite the KAJO patch or cue programming.
Supported scope	Art-Net RDM gateway root devices; no USB-RDM, RDMnet, subdevices or extended ACK_TIMER/ACK_OVERFLOW exchange.

> **Note**
> Phone Remote and standby-console operation cannot make these physical device changes. Close DMX tools before Backup handover. A successful software request still needs a compatible gateway and device response.

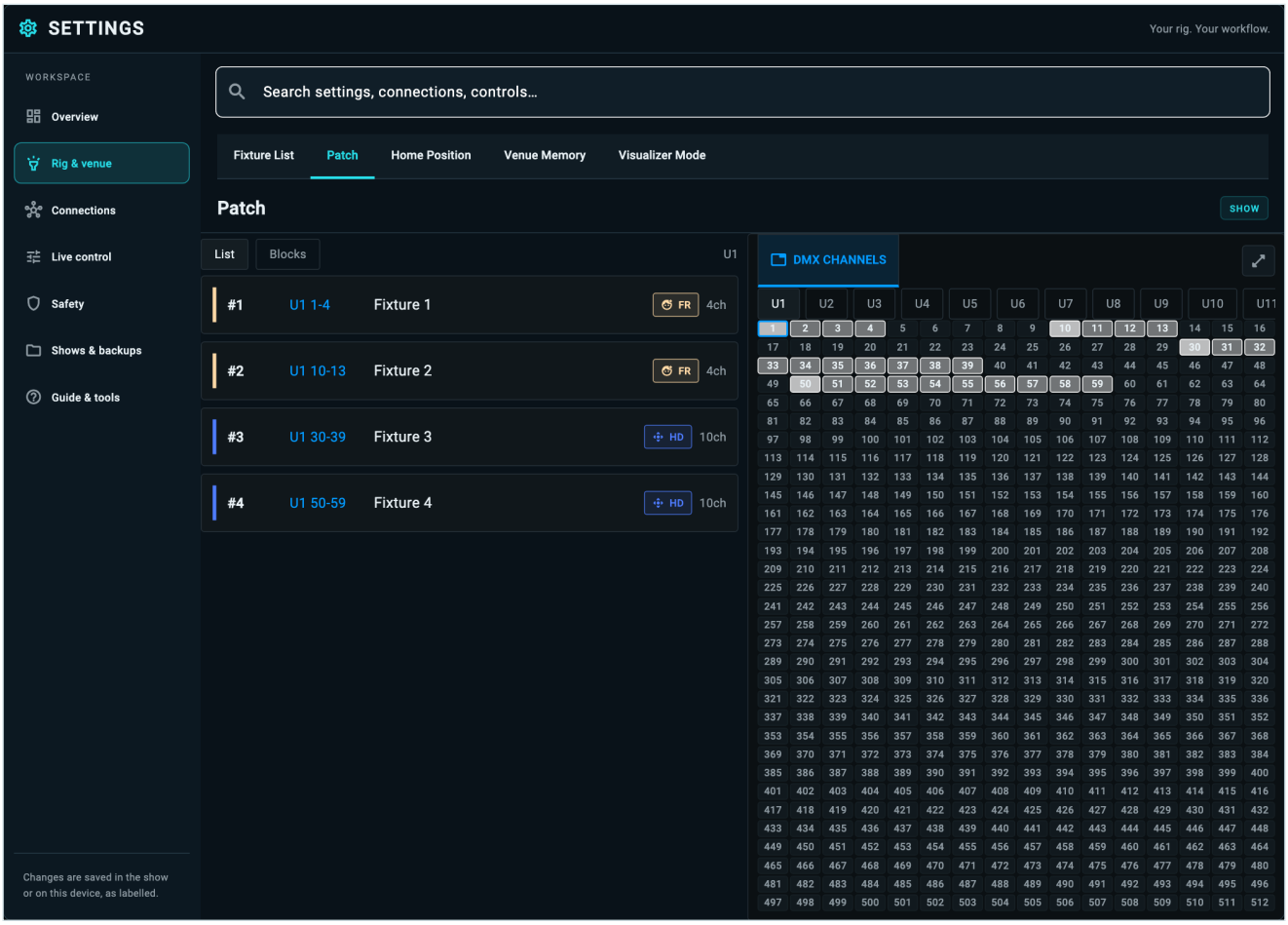
See also: 10 ArtDMX input: capture a look as a Cue / 12 Adding fixtures and assigning patch addresses

B · Fixtures and connections

12 Adding fixtures and assigning patch addresses

Settings > Rig & venue > Fixture List; Patch

A profile describes the function of each DMX channel. Its mode must match the mode selected on the fixture. A mismatch can make a color control move the head or trigger a built-in program.



Rig & venue > Patch: the address list and wider DMX CHANNELS grid sit side by side. Captured from version 2.4.

READING THIS VIEW

Patch	The left list and right DMX CHANNELS pane have equal width.
Fixture List	Choose the upper tab to add or manage fixtures. Navigation alone preserves Freeze.

B · Fixtures and connections

12 Adding fixtures and assigning patch addresses: workflow

STEP BY STEP

1. Open Settings > Rig & venue > Fixture List. Choose All or a U-number in the universe dropdown.
2. Tap the plus beside the dropdown. The existing ADD FIXTURE editor opens in the adjacent pane; the inspector ADD FIXTURE tab opens the same editor.
3. Use Search Fixture Profile to select the manufacturer, fixture and correct channel mode. Check its footprint against the fixture manual.
4. Set quantity, role, universe and start address. Check the entire channel range is free, then confirm the addition.
5. Choose the upper Patch tab to inspect addresses. The right DMX CHANNELS pane has the same width as the left patch list. Test one fixture on the output.

CONTROLS AND MEANINGS

Fixture ID	The identity used by cues, groups and effect targeting.
Universe 1-16	The output universe. Large rigs increase processing and network load.
Address	The first channel. The whole fixture footprint must fit inside the universe.
Role	For example head, beam or front light. A role does not change the real channel chart.

Note
All shows the whole fixture list. The dropdown includes the exposed U1-U16 choices and any additional universes already used by the loaded show. Filtering, sorting, selection and opening an add draft do not change output or release Freeze; a committed patch edit updates the rig. Pan the workspace horizontally in a narrow window.

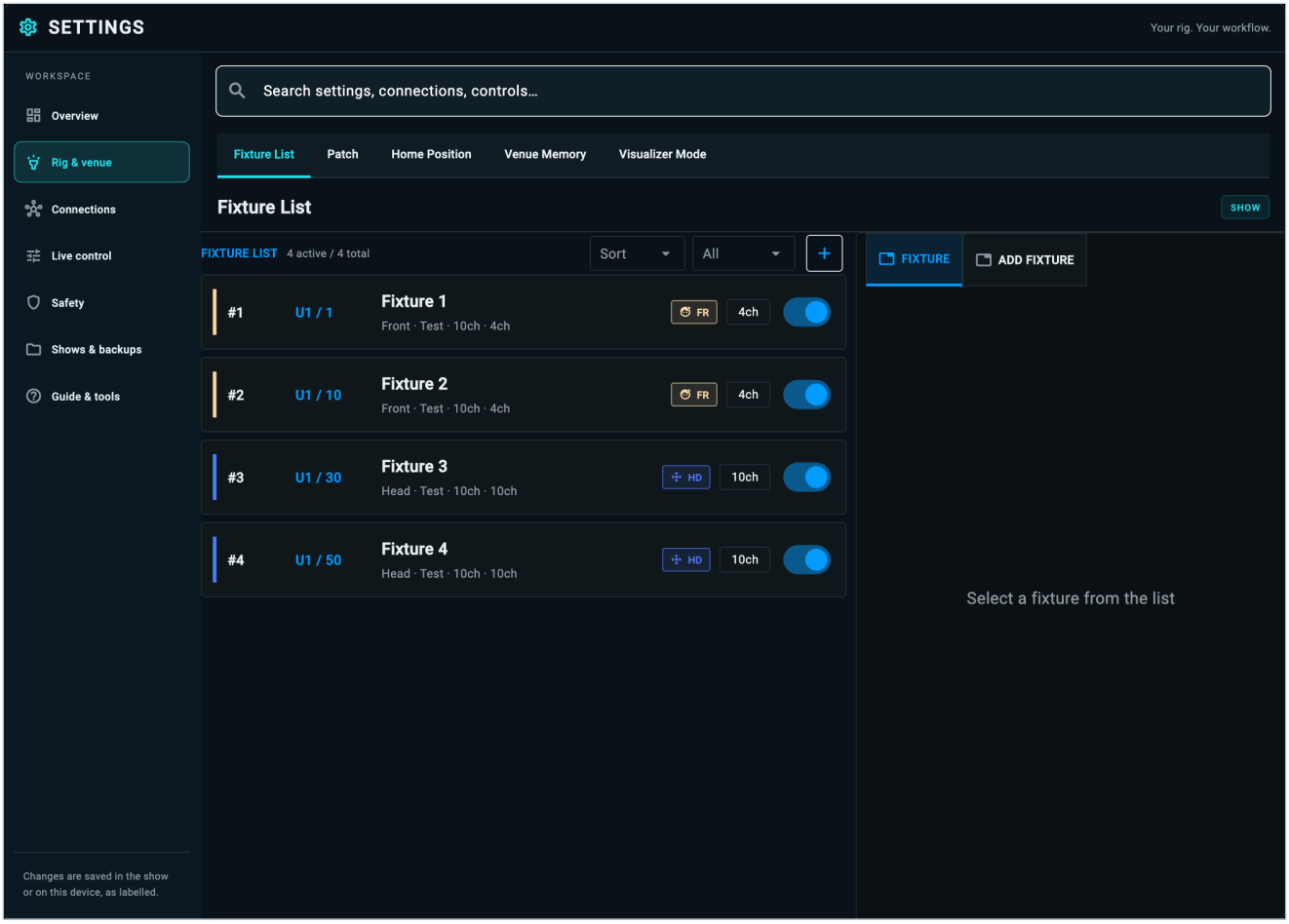
Practical example
A 25-channel fixture at address 101 occupies channels 101-125. The next identical fixture can start at 126. Fine channels are included in the footprint.

B · Fixtures and connections

13 Profiles and fixture replacement

Settings > Rig & venue > Fixture List > fixture > Edit

Profile tools are in the ADD FIXTURE editor beside Fixture List. There is no separate status-only Fixture Library settings page. Search, Download Online Registry, GDTF / MVR Import and Profile Builder help add fixtures. Replacing an existing fixture profile retains its fixture identity and compatible cue/group references.



Rig & venue > Fixture List: universe dropdown and plus opening the adjacent add-fixture editor. Captured from version 2.4.

STEP BY STEP

1. Save the show before a significant rig change.
2. Select the existing fixture and open Edit.
3. Choose the new profile, mode and address. Review the replacement preview and transferred channel data.
4. Accept only when the destination footprint is free. Check color/gobo wheels and utility commands carefully.
5. Test existing cues at low brightness. If needed, use toolbar Undo for the patch edit, or the separate complete-show fixture-replacement recovery.

CONTROLS AND MEANINGS

Retained references	Fixture ID, label, cue/group targets and compatible normalized attributes.
Raw channels	Only compatible, unambiguously identified channels transfer to the new chart.
Gobo and color wheel	Slot 3 may mean something different on another model. Verify each model's slots.
Profile import	Use the local profile and fixture exchange import tools, then verify the result before live output.

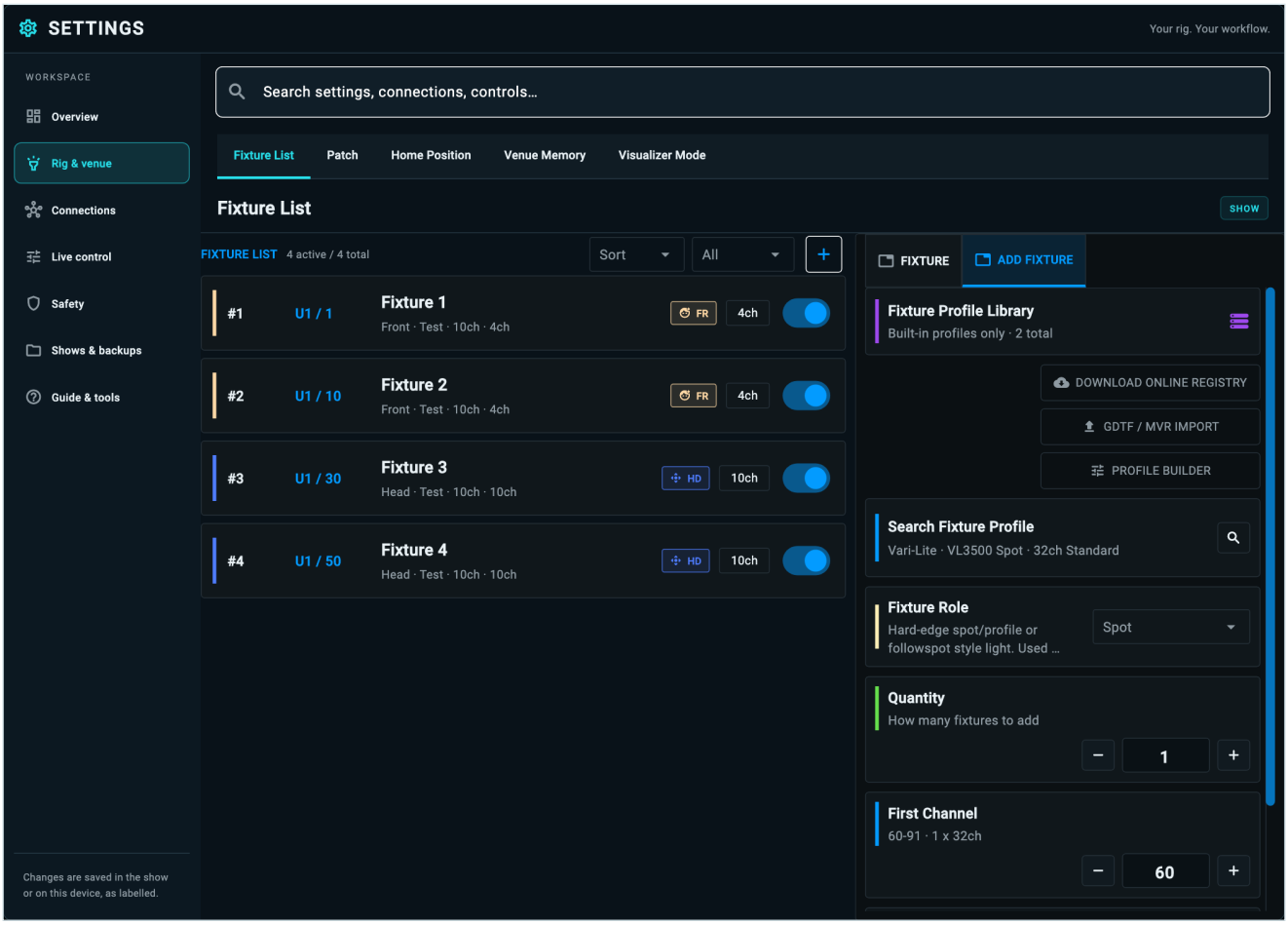
Note
Replacement cannot make different optics identical. Toolbar Undo restores the patch edit and affected saved data. The separate fixture-replacement recovery reloads an earlier complete show and stops live playback.

B · Fixtures and connections

14 GDTF, MVR and local profiles

Settings > Rig & venue > Fixture List > + > ADD FIXTURE > GDTF / MVR Import

Fixture exchange imports help move rig descriptions. GDTF describes a fixture; MVR can contain fixtures and associated GDTF data. Verify imported information before live control.



ADD FIXTURE opens beside Fixture List. Library search, import and Profile Builder are in this editor. Captured from version 2.4.

B · Fixtures and connections

14 GDTF, MVR and local profiles: workflow

STEP BY STEP

1. Open Settings > Rig & venue > Fixture List and tap the plus beside the universe dropdown. Choose GDTF / MVR Import in the adjacent ADD FIXTURE editor.
2. Open GDTF / MVR Import and choose the .gdtf or .mvr file.
3. Check the imported profiles, modes, channel counts and any patch targets.
4. Verify dimmer, color, pan/tilt and utility channels against the manufacturer DMX chart before live use.

CONTROLS AND MEANINGS

Modes	Different channel counts on one model are not interchangeable profiles.
Slot metadata	Names, DMX ranges, colors and defaults improve Attributes when correctly defined.
Missing information	KAJO cannot infer a reset range or gobo behavior from a filename.

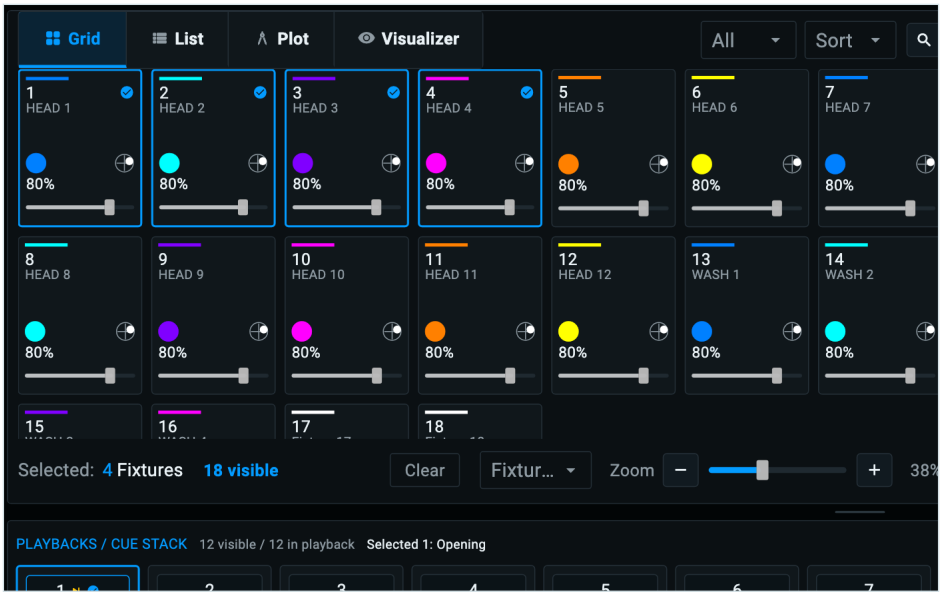
Note
Opening a file is not physical fixture validation. Check channel order, 16-bit pairs and wheel-rotation ranges especially.

B · Fixtures and connections

15 Selection, Grid, List and Plot

PGM > Grid / List / Plot

Selection determines the targets of your next edit. It does not stop running cues or effects. In a mixed selection, the same attribute may use different channels in each profile.



PGM > Grid / List / Plot - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Grid	Quick fixture-card selection for repeated fixture and group operations.
List	Fixture numbers, labels and rig details in rows; useful for checking one fixture.
Plot	Arrange fixtures on a stage map. Position helps you understand the rig but does not change DMX addresses.
Visualizer	View the current result and movement. Distinguish sandbox preview from live output.
Selection Clear	Deselect fixtures. This differs from Programmer Clear, which releases programming values.
Order	Affects effects that use fixture order. Check whether the pattern uses default or manual order.

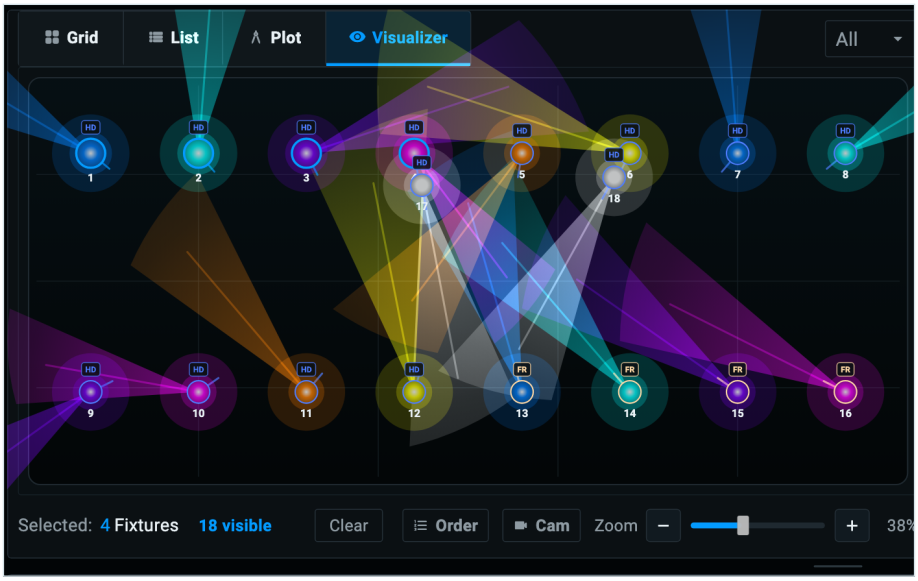
> **Note**
> The Color FX fixture row displays the actual target order as fixture IDs. Use that row to check direction rather than guessing from the colors alone.

B · Fixtures and connections

16 Visualizer: 2D and 3D

Settings > Rig & venue > Visualizer Mode; PGM > Visualizer

Visualizer is a live monitor and programming preview. It displays the computed result, not measurements of real fixture positions, mechanical speed or the physical color wheel.



Settings > Rig & venue > Visualizer Mode; PGM > Visualizer - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Choose 2D Plot or 3D Stage in Visualizer Mode.
2. Arrange fixtures and configure heights/orientations needed for 3D.
3. Choose a useful zoom and camera view. Check fixture IDs before editing.
4. Try movement in the VIS sandbox first. Enable live output only when the targets and movement range are correct.

CONTROLS AND MEANINGS

2D Plot	A lightweight view of fixture positions, colors and movement direction.
3D Stage	Stage space, heights, beams, zoom and camera rotation.
Next-cue preview	The eye icon on the left previews the upcoming look. It is not a GO command.
Real fixtures	Channel definitions, movement limits and calibration determine how closely preview matches the rig.

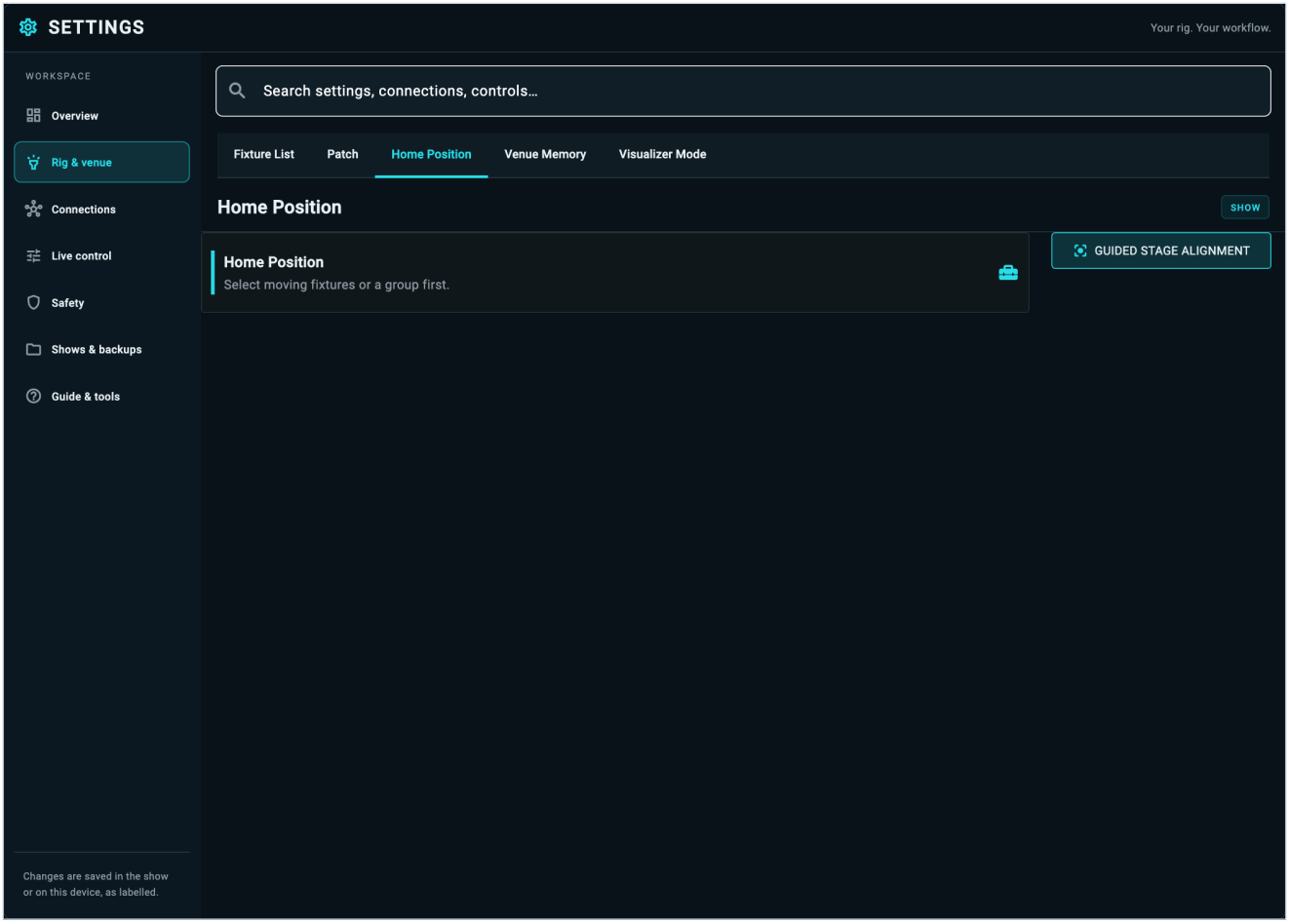
> **Note**
> If preview moves but the fixture does not, check LIVE, universe, address and pan/tilt channels. If both stutter, check effect speed and device/output load. Guided Stage Alignment uses the same physical mapping in 2D and 3D, with floor/hung markers, performer height and audience direction. Repeat alignment after rig changes.

B · Fixtures and connections

17 Home Position and calibration

Settings > Rig & venue > Home Position

Home is a software pan/tilt target, not a fixture hardware reset. Home Position also opens Guided Stage Alignment, which records a separate measured reference for each moving fixture. A measured fixture reference takes priority over the older shared profile center.



Rig & venue > Home Position: Home settings and Guided Stage Alignment in the rig task group. Captured from version 2.4.

STEP BY STEP

1. Select a moving fixture or group first. Open Settings > Rig & venue > Home Position.
2. Set the profile center position used by Home.
3. Test pan and tilt with small moves, adjusting inversion when required.
4. Check travel limits at the actual installation and save the settings. Guided Stage Alignment opens the separate guided aiming workflow.

CONTROLS AND MEANINGS

Profile Home	A shared fallback for fixtures using that profile.
Measured Home	A reference stored for one fixture; identical models can have different references.
Reverse pan / Reverse tilt	Direction settings used by the physical mapping; check each axis separately.
Autopilot limits	Explicit per-fixture limits still take priority. Alignment does not erase them.

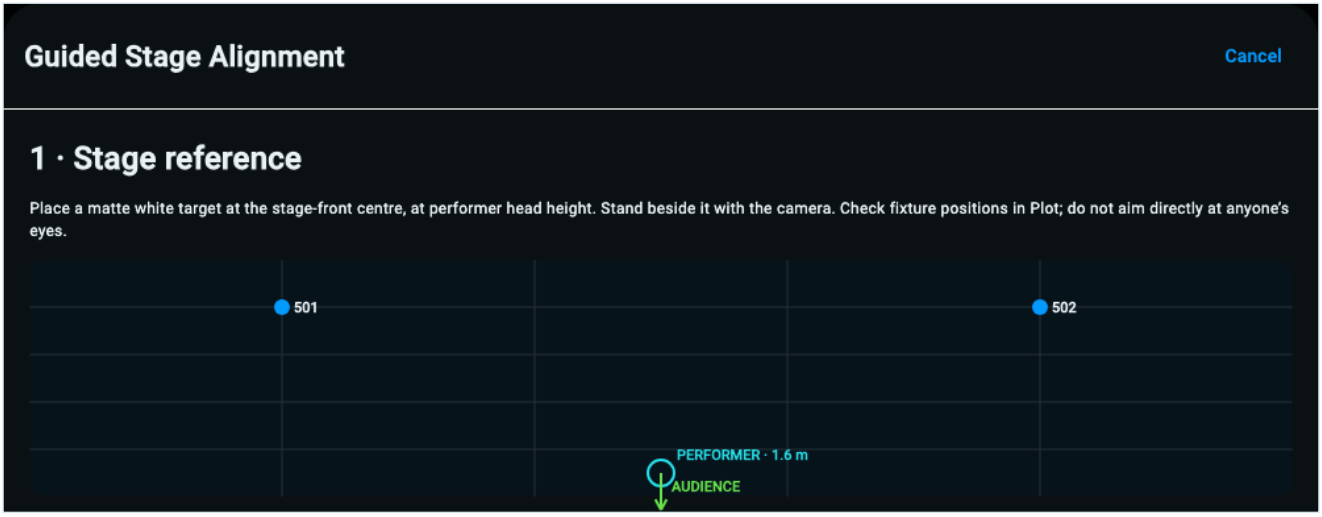
Note
Changing mounting, fixture position or travel settings can invalidate the measured reference. Repeat alignment after moving the rig. Autopilot fixture Reset is a separate action for its own limits and maximum brightness.

B · Fixtures and connections

18 Guided Stage Alignment

Settings > Rig & venue > Home Position > Guided Stage Alignment; Groups > POSITION GROUPS > Stage Alignment

Align moving fixtures to a shared stage-front reference so Home, movement directions and the Visualizer describe the same rig. Confirm mounting and geometry yourself: one camera target cannot infer whether a fixture is standing or hanging.



Guided Stage Alignment in version 2.3.4: stage-front reference, performer height and audience direction.

READING THIS VIEW

Stage reference	Set stage size, front-center target, performer height and audience direction.
One fixture at a time	Confirm Floor/Hanging, position, mechanical travel and each axis direction before aiming.
Find and confirm	Use a matte target and a stable camera image near a rough aim; verify the physical hit before saving.

B · Fixtures and connections

18 Guided Stage Alignment: workflow

STEP BY STEP

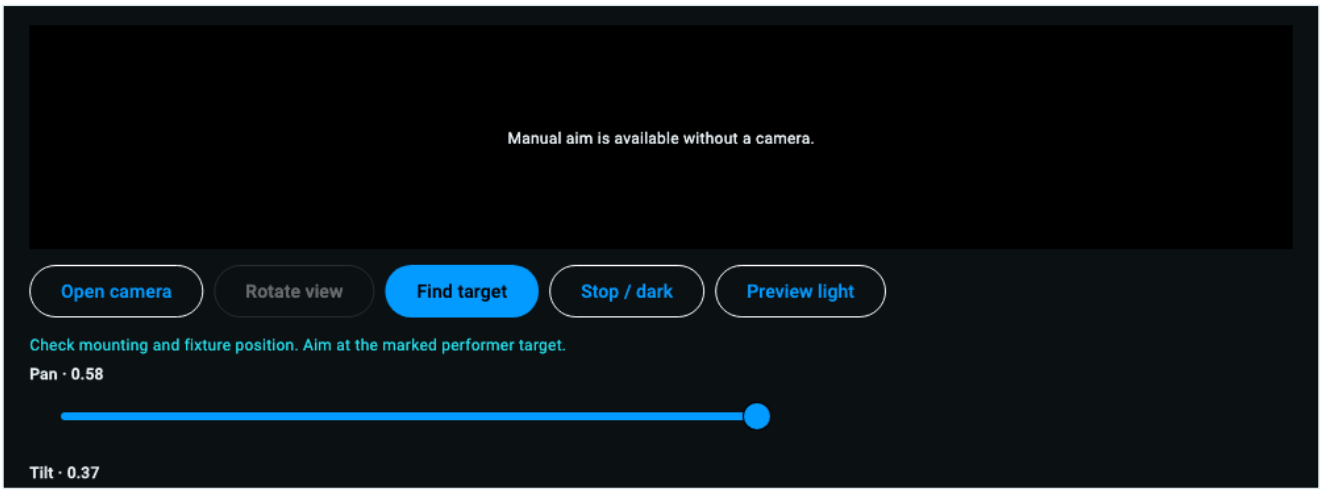
1. Enter stage dimensions, stage-front center, performer target height and audience direction; confirm the real fixture positions.
2. Choose one moving fixture. Confirm Floor or Hanging, its stage position/height, mechanical pan/tilt travel and axis directions. Hanging reverses the default control directions; use Reverse pan or Reverse tilt if the fixture requires it.
3. Place a matte white target at stage-front center at the chosen performer height. Stand beside it, open the camera and tap the target in the image. Keep the beam away from eyes.

B · Fixtures and connections

18 Guided Stage Alignment: workflow



Per-fixture step: Floor/Hanging sets the mounting and initial control directions. Also scroll the view to verify position and mechanical motion ranges.



Camera, bounded target search and Preview light controls. Manual Pan/Tilt aiming also works without a camera.

STEP BY STEP

4. For one-fixture work, roughly aim near the target and choose Find target. For a verified queue, use Align all automatically as described in the next chapter. Use manual aim if the camera cannot obtain a confident measurement.
5. Wait for a stable detected spot and check the physical hit yourself. Confirm the fixture, continue to the next one, then review and save.

B · Fixtures and connections

18 Guided Stage Alignment: controls and storage

CONTROLS AND MEANINGS

Camera detection	Compares fixture OFF and ON images and requires a stable changed light spot after movement settles. Ambient glare, moving images or ambiguous spots can prevent a result.
Temporary preview	Only the selected fixture is illuminated for alignment, normally at 25% before Master. It does not write Programmer, cue or Execute content. Cancel returns to the underlying run.
Safety controls	BLACK/PANIC and other live safety changes end the alignment preview. Resolve unsafe reset/auto/utility channels before illumination is allowed.
Saved reference	Stored per fixture in the show and Venue Memory. Measured Home takes priority over profile Home. Saved cue numbers are not rewritten, but calibration changes their logical-to-physical DMX interpretation.
Visualizer / Autopilot	2D and 3D use the same mapping and floor/hung markers. Autopilot centers its default range on the reference; explicit fixture limits keep priority.

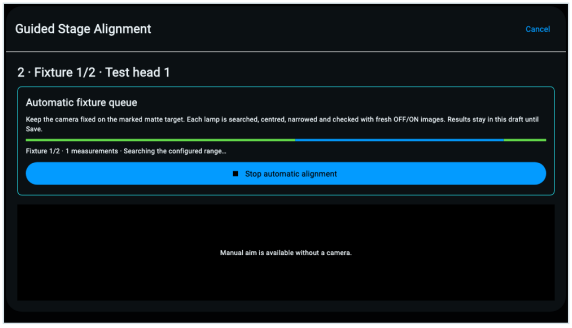
Note
Save a working show before calibration. Confirm floor/hanging and both axes rather than accepting an assumed mounting. Rig or travel changes invalidate the reference. Without a usable camera, continue with the offered manual aiming controls.

B · Fixtures and connections

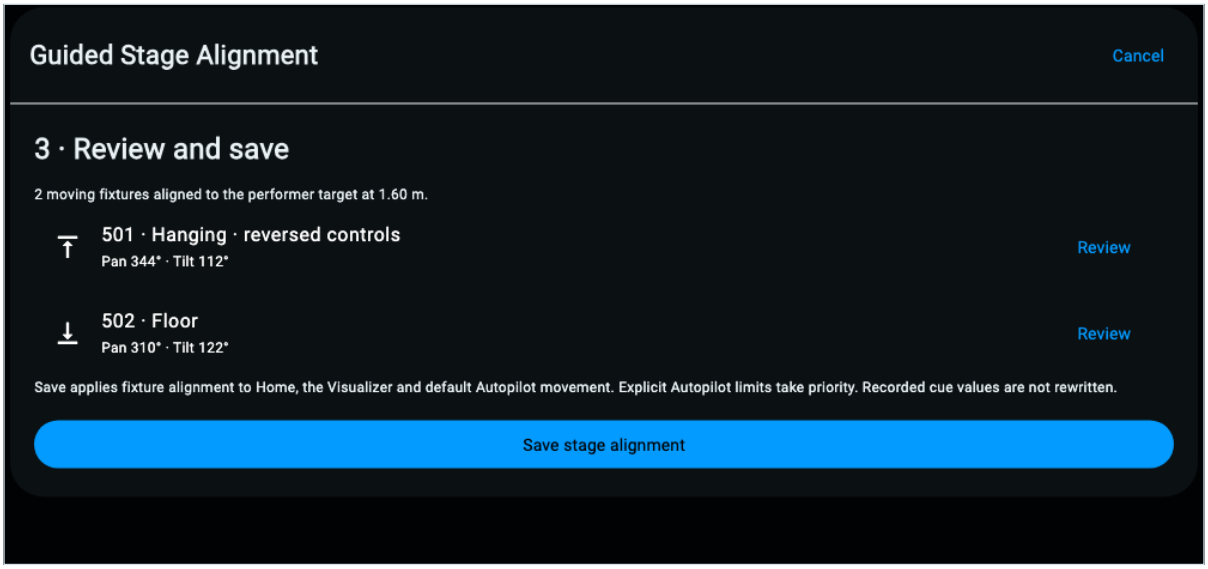
19 Align a queue of movers automatically

Settings > Rig & venue > Home Position > Guided Stage Alignment; Groups > POSITION GROUPS > Stage Alignment

Automatic alignment measures a shared stage reference one moving fixture at a time. Mark a matte target near the front-center reference point and keep the camera steady. The target and verified rig geometry remain inputs to the measurement.



Automatic alignment queue progress. The setup and measurements are interface demonstration data. Captured from version 2.4.



Review and save: verify completed measurements before accepting them. Save stage alignment commits the alignment.

STEP BY STEP

1. Check each queued fixture’s Floor/Hanging mount, axis direction and physical pan/tilt travel in Plot. Confirm these details before automatic movement.
2. Grant camera access, keep the camera still near the reference and tap the actual target in its preview.
3. Choose Fast, Balanced or Fine and a one-, three- or five-minute budget per fixture, then Align all automatically.
4. Watch progress. The tool searches the calibrated range, centers from measured camera response, narrows a supported zoom and verifies the result with fresh dark/light images.
5. Stop automatic alignment retains completed measurements as a draft. Choose Review completed measurements, retry unfinished fixtures or Check manually.
6. Inspect the physical aim and visualizer for each accepted result. Save stage alignment applies only accepted results; Cancel applies none. Save the show to retain them.

CONTROLS AND MEANINGS

One mover at a time	Other fixtures are masked and transit movement is dark. Settled OFF/ON measurements help reject unrelated static light.
Draft results	Changing the camera target or orientation clears the draft. Changing a measured fixture's aim or geometry invalidates that result.
Unfinished fixtures	Keep their previous alignment until a replacement measurement is accepted.
After saving	The visualizer and default Autopilot reference use the alignment. Explicit movement limits retain priority; saved cue positions and Execute links are not rewritten.

Note
The camera does not determine unknown mounting, physical angle limits or the audience's location. Verify Floor/Hanging yourself; hanging-fixture axis handling uses those settings without adding a second inversion. A bounded search can miss a hidden target or very narrow beam: widen acquisition zoom, increase search density or use manual aim.

See also: 18 Guided Stage Alignment / 17 Home Position and calibration / 16 Visualizer: 2D and 3D

C · Programmer

20 Programmer, VIS and LIVE

PGM > Programmer toolbar

Programmer is where you build your next cue. It can contain edited values while hardware output is off. Output state, recordable content and running cues are separate.



PGM > Programmer toolbar - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Tap LIVE	Arm the selected targets in the visualizer-only sandbox. The button reads VIS; sandbox edits are not sent to real DMX output.
Press and hold VIS / LIVE	Enable or disable real DMX output for the selected targets. Red LIVE indicates hardware output.
DMX	Open individual channel controls.
Rec Cue	Record content according to the current record scope.
Clear	Release Programmer values and its effects. Playback and Execute may still control the same fixtures.
Blind	Stage edits without replacing the already committed Playback/Execute output. A fade already on stage continues. Release Blind deliberately to apply the staged state.

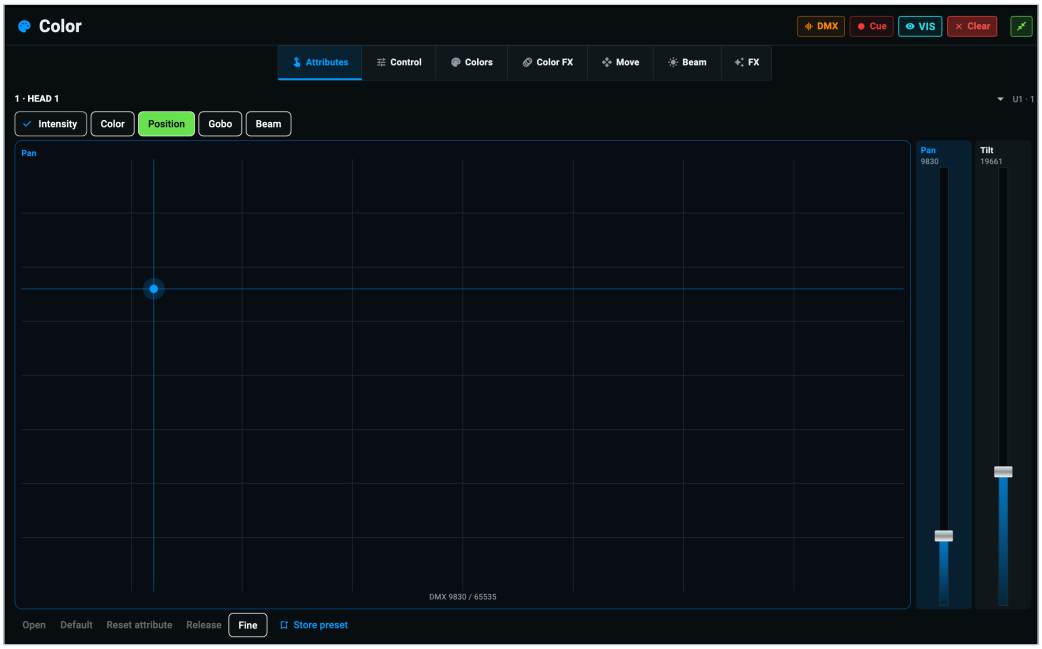
Note
Enabling VIS/LIVE does not force full brightness. Set Dimmer deliberately if a fixture is dark. Arm output for the intended selection, not for an earlier panel you remember seeing.

C · Programmer

21 Attributes: profile-aware controls

PGM > Attributes

Attributes builds controls from the fixture profile and DMX mode and shows only supported attribute families. In a multi-fixture selection, choose the individual fixture to edit here; raw channel offsets are not blindly copied between different modes.



PGM > Attributes - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Intensity / Color / Position	Dimmer, color and pan/tilt. A coarse/fine pair may appear as one 16-bit control.
Gobo / Beam	Profile-defined gobos, rotation and optical attributes. Gobo 1 and 2 have separate channels.
Control	Fixture commands. Enable control channels before editing utility, macro, lamp or reset channels.
Open / Default	Recall the profile-defined open slot or family defaults.
Reset attribute / Release	Restore a declared default or release a raw override. Both bytes of a fine pair are released together.
Store preset	Save the family for a matching profile, mode and channel layout. Control commands are excluded.

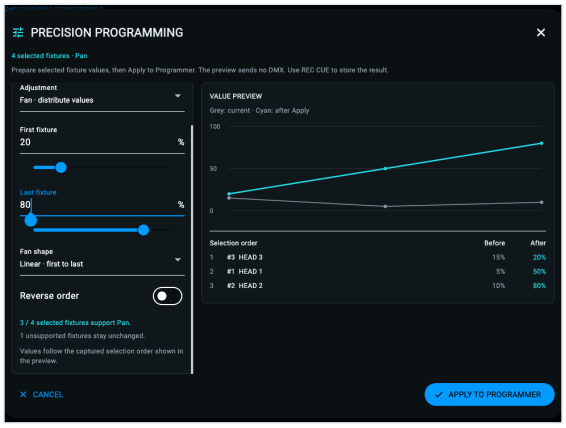
Note
KAJO cannot invent missing gobo images, slot ranges or defaults. An unavailable Default/Open button can simply mean that the profile has not defined the required information.

C · Programmer

22 Precision: absolute, relative and Fan edits

PGM > Programmer toolbar > Precision

Precision prepares a numerical multi-fixture edit before applying it to Programmer. The graph and table show supported targets and their before/after values; the draft sends no lighting output.



Precision: Fan distributes supported pan values in selection order. The preview sends no DMX. Captured from version 2.4.

STEP BY STEP

1. Select fixtures in the order you want to use. Open Precision and choose the intended attribute.
2. Use Absolute for a common value, Relative for a shared change, or Fan for a Start-to-End spread through the selection.
3. For Fan, use Reverse to flip order or Mirror for a symmetric spread with at least three supported fixtures. Inspect the graph and table.
4. Choose Apply. Only the chosen attribute is written into Programmer under the current Blind, LIVE/VIS and recording rules.
5. Record or Update the intended cue, then Clear Programmer before testing stored Playback or Execute output.

CONTROLS AND MEANINGS

Attributes	Profile-dependent intensity, white, red, green, blue, pan, tilt, focus, zoom and iris.
Relative	A common clamped change preserves spacing between current values. The group stops together at the supported endpoints.
Unsupported fixtures	Shown as skipped rather than assigned a guessed channel.
Changed context	If selection, show, patch or programming has changed, reopen/review the draft before applying it.

> **Note**
> Apply does not save a cue and does not enable LIVE. First taking over one attribute retains the other current attributes; a zero-change edit does not take over output.

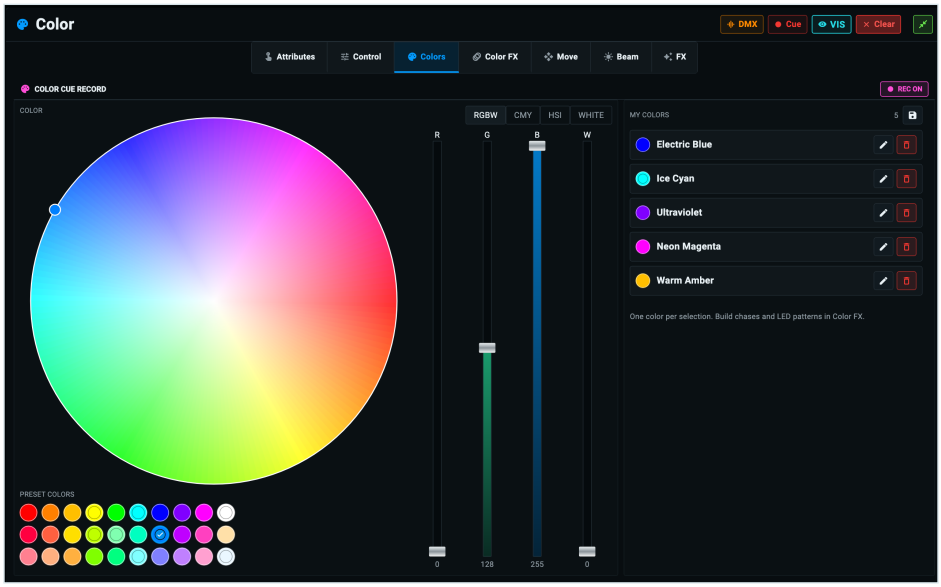
See also: 20 Programmer, VIS and LIVE / 15 Selection, Grid, List and Plot / 34 Cue Attribute Timing

C · Programmer

23 Colors, primary colors and My Colors

PGM > Colors

Colors selects a static color. Choose a primary preset, use the wheel or enter supported emitter values. Selecting a color pill does not start an animation; build animations on Color FX.



PGM > Colors - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select fixtures and check which color channels their modes provide.
2. Choose RGBW, CMY, HSI or WHITE as appropriate. Edit only the intended values.
3. Choose a pure preset or mix your own color. Check White when you want a saturated RGB result.
4. Use Save current color to add a named color to My Colors.

CONTROLS AND MEANINGS

RGB / White	R, G and B mix color. W adds white only on fixtures that support it.
Amber / UV	Dedicated faders appear for supported selected profiles. In a mixed selection, each value reaches only fixtures with the corresponding emitter channel.
My Colors	Saved RGB/White choices. Use their edit/delete controls to manage them.
Color wheel	A mechanical wheel differs from LED color mixing. Use profile slot data rather than treating an RGB value as a wheel DMX value.

> **Note**
> Amber and UV are recorded as separate channel data, including zero. In this version My Colors does not store complete extended-emitter multichannel mixes; use a cue for those.

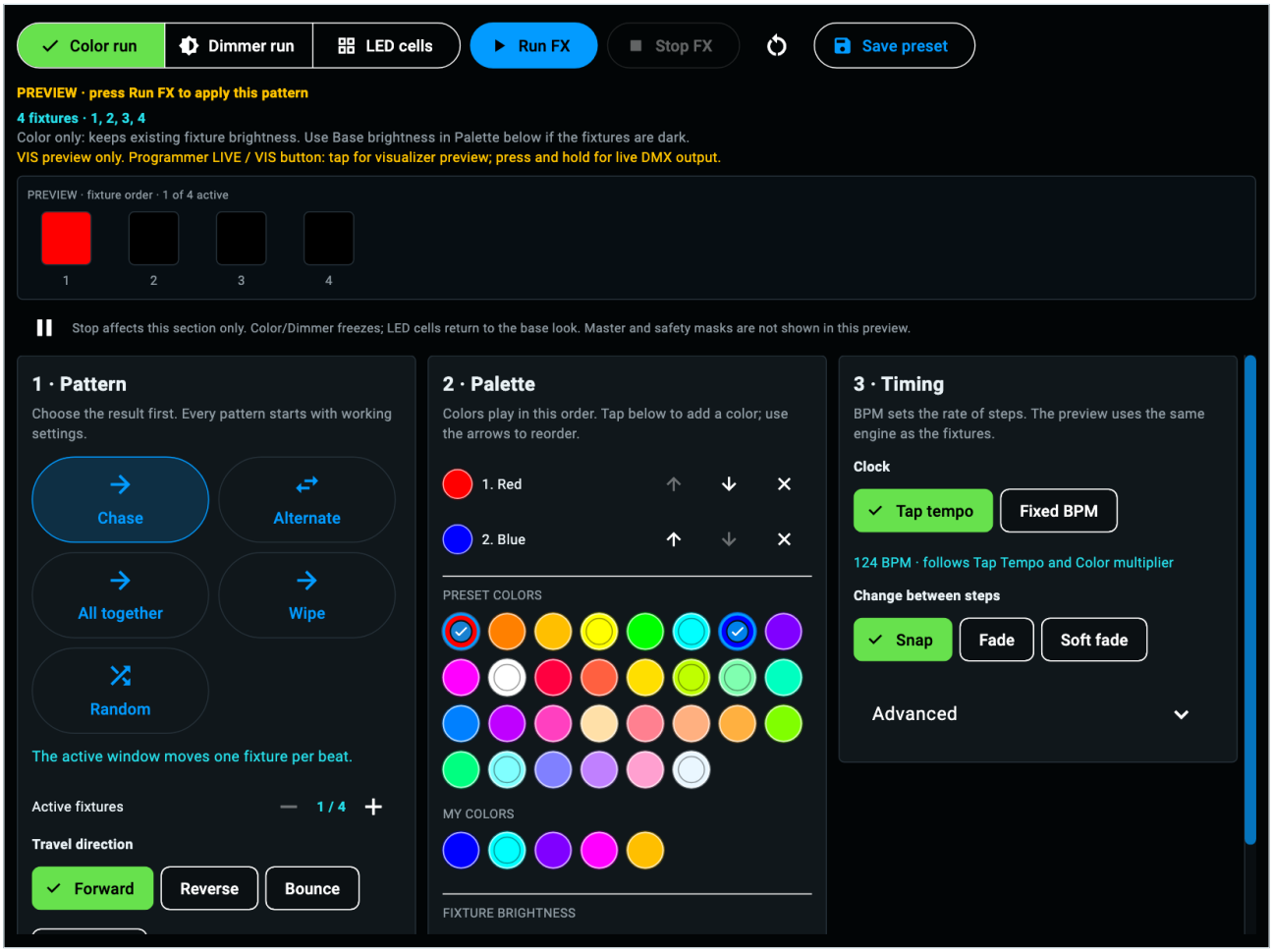
See also: 24 Color FX: choose the pattern first / 31 Record only the intended cue content

C · Programmer

24 Color FX: choose the pattern first

PGM > Color FX > Color run

Color FX separates pattern design from static color selection. Start with the result you want. Each numbered preview cell represents a target fixture, showing which lights are active and their colors.



PGM > Color FX > Color run - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Top controls	Choose Color run. Run FX applies the recipe; Stop FX stops the open section only.
Three stages	Pattern selects the arrangement, Palette supplies colors and Timing defines the clock and transitions.
Fixture preview	Shows target order and progression. Change one setting at a time and inspect the row.

C · Programmer

24 Color FX: choose the pattern first: workflow

STEP BY STEP

1. Select fixtures and open Color run.
2. Choose Chase, Alternate, All together, Wipe or Random. Each pattern starts with working defaults.
3. Build a palette from preset colors and My Colors. Move entries with the up/down arrows and remove unwanted entries.
4. For Chase or Random, set Active fixtures. Choose a travel direction for Chase if required.
5. Choose timing and inspect the preview. Press Run FX to apply the recipe.

CONTROLS AND MEANINGS

Chase	An active window travels from fixture to fixture. If all fixtures are active there is no moving dark gap.
Alternate / All together	Neighbors take turns / all fixtures change together.
Wipe / Random	The next color fills the row / a repeatable random arrangement changes each step.
Live edits	Edits to the matching running effect apply without restarting its clock. With this off, edits remain in preview until Run FX.

> **Note**
> Color run retains existing fixture brightness. Use Base brightness if fixtures are dark. The pattern preview excludes Master and safety masks. Run FX arms missing targets in VIS only; press and hold Programmer LIVE / VIS to send to real fixtures.

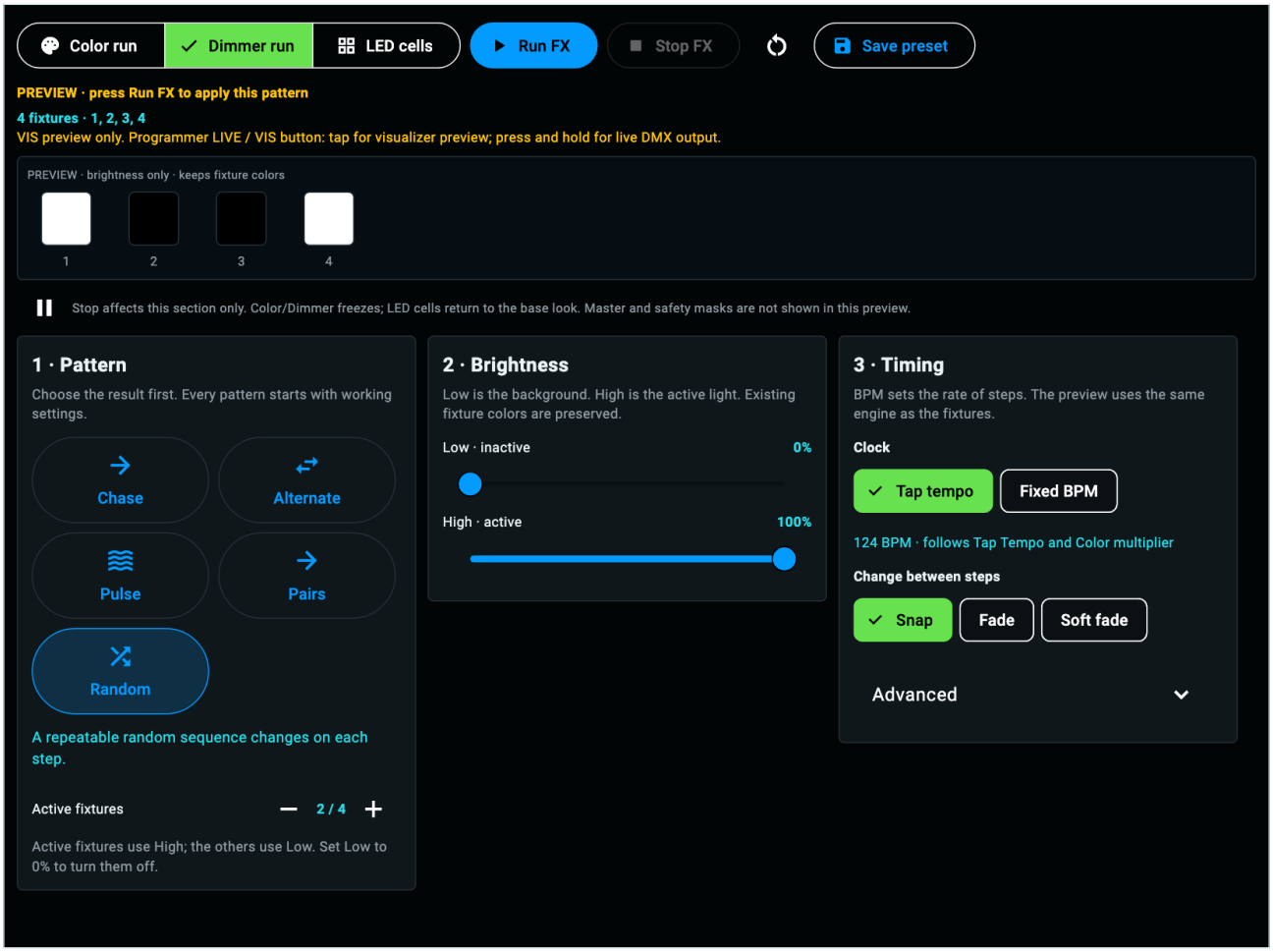
See also: 25 Dimmer run and stopping FX / 26 LED cells: all cells or animation / 31 Record only the intended cue content

C · Programmer

25 Dimmer run and stopping FX

PGM > Color FX > Dimmer run

Dimmer run creates rhythm with brightness while preserving fixture colors. Low is the background level; High is the active level. Equal levels produce no brightness variation.



PGM > Color FX > Dimmer run - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Pattern	How brightness moves among fixtures. Random now includes Active fixtures.
Brightness range	Low and High define inactive and active levels; fixture colors remain unchanged.
Rhythm	Timing defines the clock. Snap changes in steps; Fade produces a softer transition.

C · Programmer

25 Dimmer run and stopping FX: workflow

STEP BY STEP

1. Select the targets and open Dimmer run.
2. Choose Chase, Alternate, Pulse, Pairs or Random. Chase and Random offer Active fixtures to set the simultaneous active count.
3. Set Low and High. For example, 10% / 80% gives variation without complete blackouts. Set Low to 0% if inactive fixtures should be off.
4. Choose Tap tempo or Fixed BPM and Snap, Fade or Soft fade.
5. Press Run FX. Stop FX freezes the current Color/Dimmer value rather than deleting unrelated sources.

CONTROLS AND MEANINGS

Pulse	All targeted fixtures rise and fall together.
Pairs	Adjacent fixtures act as pairs.
Save preset	Store the recipe in the show without fixed fixture membership; reuse it on another selection.
Load a saved preset	Stage it in preview. Run FX is required before it replaces a running effect.
Switch sections	Each section keeps its edits. Opening another section alone does not stop output.

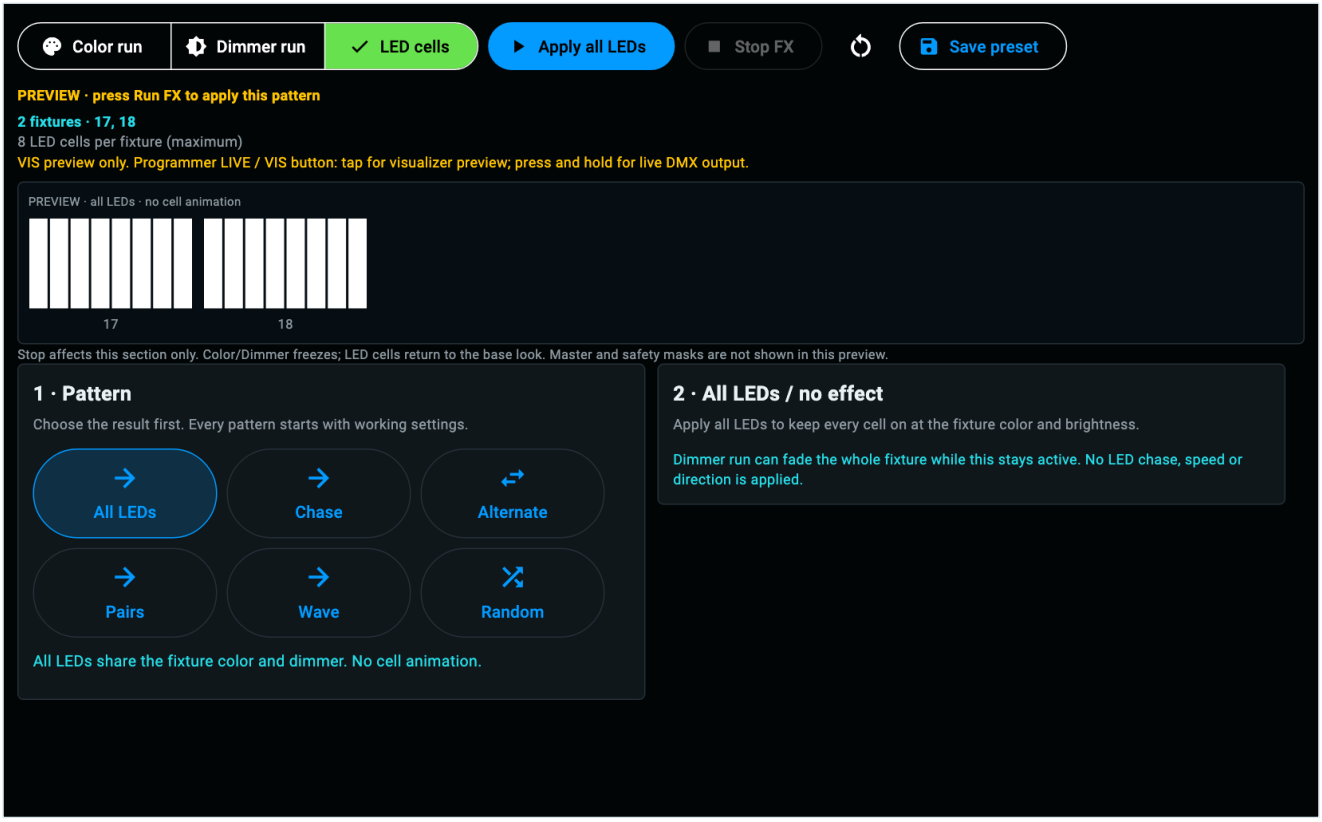
> **Note**
> Color run and Dimmer run share one fixture layer: Run FX replaces that layer only. LED cells is an independent layer and can run alongside either. Stop FX affects only the open section; hidden runs, Execute and Playback continue.

C · Programmer

26 LED cells: all cells or animation

PGM > Color FX > LED cells

All LEDs keeps every cell at the fixture color and dimmer without cell animation. Dimmer run can control the whole fixture while LED cells animates inside it. Individual cells are available only when the selected DMX profile defines them.



PGM > Color FX > LED cells - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Targets	Only a cell-capable profile can expose multiple LED parts inside a fixture.
All LEDs or animation	All LEDs activates every cell without animation. Choose Chase or another pattern for a cell effect.
Independent layers	Dimmer run can control the whole fixture while LED cells selects its cells. Stop FX affects only the open section.

C · Programmer

26 LED cells: all cells or animation: workflow

STEP BY STEP

1. Select fixtures with separately controlled cell channels. Ordinary single-color-point fixtures are excluded.
2. For no cell effect, choose All LEDs and Apply all LEDs. This is the default when first opening LED cells.
3. For animation, choose Chase, Alternate, Pairs, Wave or Random and set Low/High. Existing fixture colors are retained.
4. Choose direction and timing. Together aligns fixtures; Stagger offsets their phases.
5. Use Advanced only when needed: Start position, Fixture offset and LED order alter the progression.
6. Press Run FX. Stop FX releases this LED mask to the underlying look and leaves a running Dimmer/Color layer intact.

CONTROLS AND MEANINGS

All LEDs	A static full-cell mask, not full brightness. Every cell follows the fixture color and dimmer.
BPM	For LEDs, the speed of a complete LED cycle, not necessarily one individual cell step.
Wave / Band width	The width of the traveling band; shown only for patterns that use it.
Start position / Fixture offset	Initial cycle phase / phase difference between fixtures.
Saved LED shapes	Use an older mask as a pattern starting point, then set timing with the current controls.
Apply all LEDs	Choose All LEDs and press Apply all LEDs. This removes the cell animation mask; Dimmer run can still control the whole fixture.

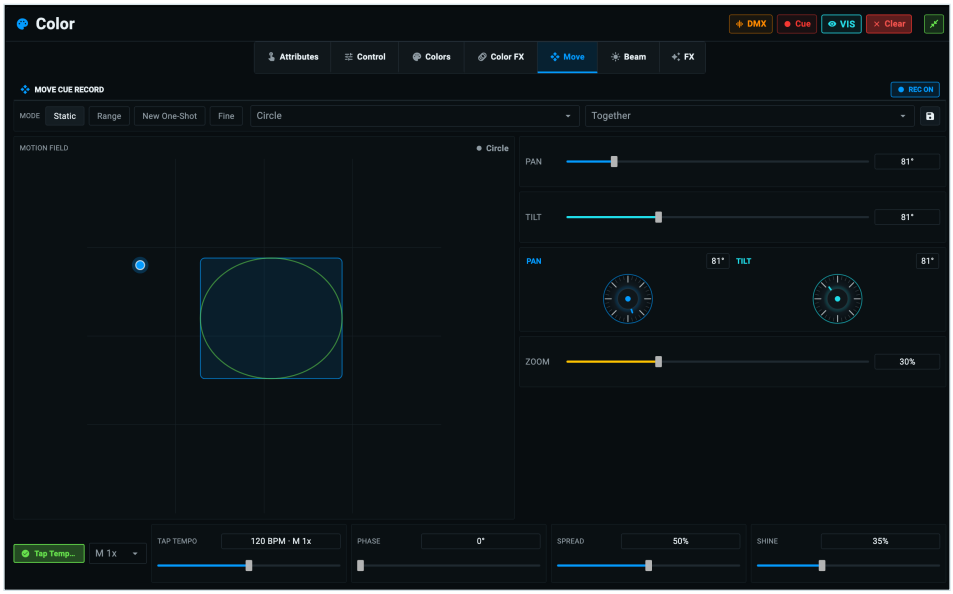
> **Note**
> A fixture is the whole light; a cell is one individually controlled LED part. Verify physical cell order on the actual fixture. Record the dimmer and cell combination together to replay both layers from a cue.

C · Programmer

27 Move and movement design

PGM > Move

Move controls pan, tilt and supported movement attributes, including fixed aiming and movement patterns. Begin with a small range and slow speed so both axes are easy to understand.



PGM > Move - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select moving fixtures and open Move.
2. Try the XY pad or pan/tilt values in the VIS sandbox.
3. Choose a movement program and set its ranges. Check pan and tilt separately.
4. Set speed, phase and fixture spread; use Tap Tempo when needed.
5. Check zoom and Home as well. Record only Move scope if the cue should contain movement alone.

CONTROLS AND MEANINGS

Pan / Tilt	Horizontal and vertical axes. Real angles depend on the fixture travel.
Range	Limit motion to the intended area.
Speed / BPM	Cycle speed; higher settings require faster mechanical movement.
Phase / Spread	Initial pattern position and phase differences between fixtures.
Home / Invert	Center position and direction reversal; verify them in the actual installation.

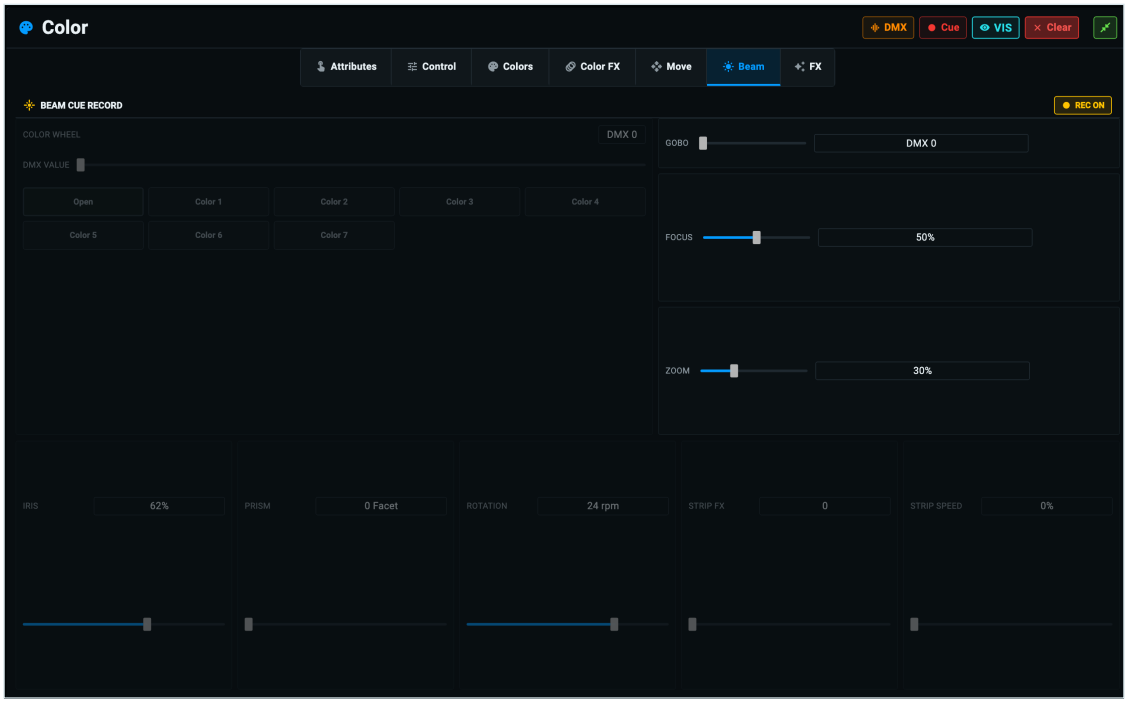
> **Note**
> For a movement-only cue, restrict record scope. Earlier Programmer brightness or color edits may otherwise be recorded too.

C · Programmer

28 Beam, gobo, prism and color wheels

PGM > Beam / Attributes

Beam groups optics and fixture-specific features. Controls depend on the profile. A disabled Zoom on a fixture without zoom does not transmit an imaginary channel.



PGM > Beam / Attributes - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Zoom / Focus	Beam size and focus. Their physical behavior depends on the optics.
Iris / Prism	Aperture size and prism functions, where defined.
Gobo / rotation	Pattern selection and indexing/rotation. Prefer named ranges supplied by the profile.
Strobe	The fixture shutter/strobe channel, distinct from software dimmer animation.
Strip effect / speed	Built-in LED/strip programs on fixtures that support them.
Control channels	Reset, auto and sound commands are device controls; avoid recording them in an ordinary look.

> **Note**
> A mechanical wheel is not RGB mixing. Color FX uses mapped static slots; an unmapped wheel remains Open. In raw DMX, verify the fixture chart before selecting a wheel range.

C · Programmer

29 DMX channel editor and Release

PGM > DMX

The channel editor shows raw channels from the fixture profile. Use it for special functions and chart verification. It bypasses some abstractions used by general color and movement controls.



PGM > DMX - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select the intended fixtures and open DMX.
2. Check fixture ID, universe and channel name before changing a value.
3. Change one known channel at a time. Preview first and use a low-level hardware test when appropriate.
4. Release an unwanted override with Release/Clear. Treat both bytes of a coarse/fine pair as one attribute.
5. If recording to a cue, check fixture selection and the relevant record scope.

CONTROLS AND MEANINGS

0-255	One 8-bit channel value. Zero has different meanings on different channels.
Coarse / Fine	Two channels form a more precise value. An unexpected fine value can change position.
Raw override	May hold a channel even when another panel shows a different setting. Release it when no longer needed.

> **Note**
> Avoid unknown reset, lamp, auto and sound ranges. The editor cannot infer command ranges absent from a fixture manual; a channel label is not complete profile metadata.

C · Programmer

30 Inspect what is controlling a fixture

Top bar > tree icon > Output sources

Use Output sources when an unexpected value remains, a cue appears ineffective or different runs overlap. This inspector reads the current sources without changing fixture selection or starting a run.

STEP BY STEP

1. Open the tree icon and choose the fixture to inspect.
2. Read Intensity, Color, Position and Beam separately: different sources may control different attributes.
3. Check the cue/Execute name and bank/slot where shown, then inspect overlays and blocking reasons.
4. Use Refresh for a new snapshot and compare it with LAST COMMITTED DMX.

CONTROLS AND MEANINGS

Controls	The saved base value or explicit raw-channel source before final overlays.
Contributes	A layer can affect this attribute; this does not imply exclusive final ownership.
Retained source	A retained macro recall whose present contribution cannot be assigned with certainty.
Blocked / Preview only	The source is not currently controlling that attribute; read the explanation.
Overlay	For example Master scaling, BLACK/PANIC or fixture safety behavior.

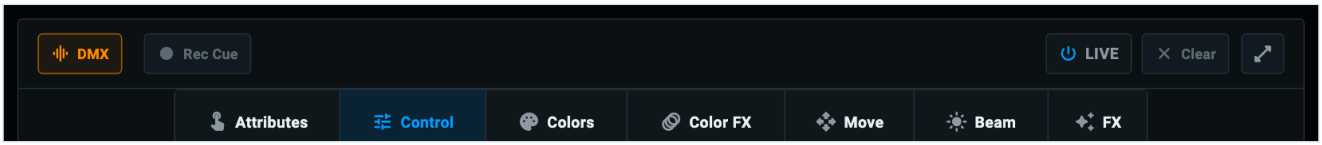
Note
LAST COMMITTED DMX is the last frame produced by the software, not feedback from a physical fixture. It can be older than the source snapshot, especially when transmission is off. Refresh does not itself send DMX.

D · Cues and playback

31 Record only the intended cue content

PGM > Rec Cue / Programmer record settings

Recording has two scopes: which fixtures and which attributes. Set both before Rec Cue. Seeing the right fixture list does not remove old Programmer edits.



Programmer toolbar. Rec Cue opens recording, DMX opens channels and LIVE controls Programmer output. Earlier version 2.3.5 screenshot; appearance may differ in 2.4.

STEP BY STEP

1. Use Programmer Clear first if earlier edits should not be included.
2. Select the intended fixtures and edit only the required values.
3. Choose Selected for the current selection. All can include active Programmer content more broadly.
4. Check Color, Move and Beam record switches and the intended brightness values.
5. Press Rec Cue and give it a useful label. Open Edit Contents to verify fixture membership and values.
6. Clear Programmer and test the cue from Playback or Execute, so you are checking recorded content rather than an overlaid edit.

CONTROLS AND MEANINGS

Selected	Restrict recording to selected targets and their recordable content.
All	Does not automatically mean a complete snapshot of the whole patch; active Programmer content determines the result.
Replace / Merge	Replacement changes existing content; merge adds or updates the recorded attributes.
Color / Move / Beam	Attribute-family scope. A displayed value is not necessarily included in the cue.

Note
To record a Pixel Map together with ordinary lights, save the map, run it from the Pixel Map library, then program the other fixtures. Include both the map targets and the ordinary lights in the recording scope and press Rec Cue. The cue stores the map animation, not just its current colors. Stop the independent map run and Clear Programmer before testing the recorded cue.

Practical example
For a movement-only cue: Clear Programmer, select the heads, create movement and include Move only. Verify that brightness/color ownership was not added. Selecting fixtures alone does not add unrelated lights.

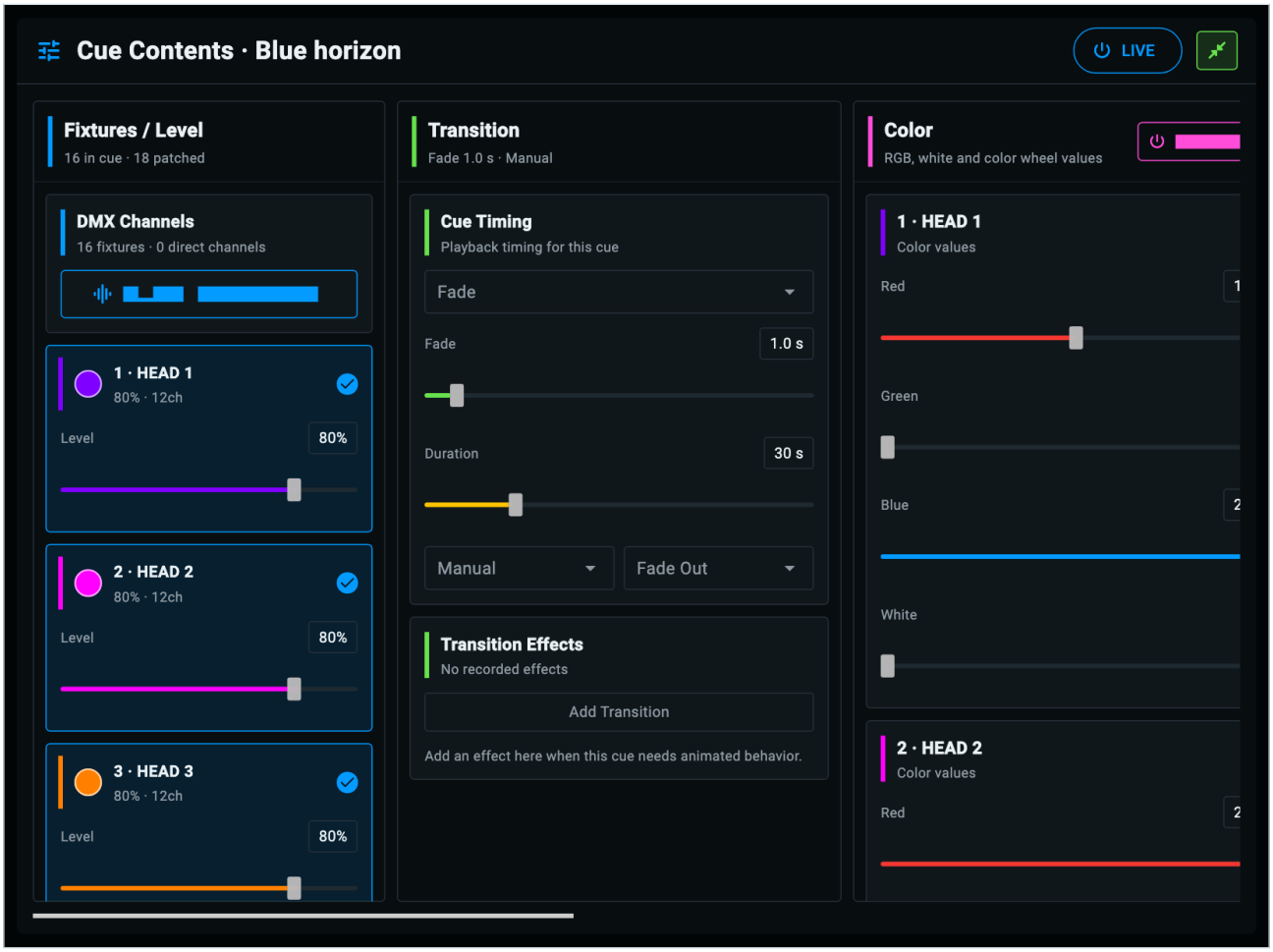
See also: 32 Cue Contents and live editing / 39 Execute: live operation / 84 Troubleshooting: dark or stuck lights

D · Cues and playback

32 Cue Contents and live editing

Cues > select cue > Edit Contents

Cue Contents shows recorded values by fixture and attribute. Remove incorrect targets or unnecessary families and adjust values here. The editor LIVE switch is its own preview source.



Cues > select cue > Edit Contents - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Left column	Fixtures / Level identifies cue members. Every included fixture should be there deliberately.
Attribute columns	Color, Move and Beam show recorded families. Not every fixture needs all families.
LIVE	The editor preview displays changes on its targets. Check the state before editing.

D · Cues and playback

32 Cue Contents and live editing: workflow

STEP BY STEP

1. Select a cue and open Edit Contents.
2. Verify included fixtures in the left column; remove incorrect members first.
3. Enable the editor LIVE switch to see edits in Visualizer and DMX output.
4. Adjust recorded color, level, position or other supported values. LIVE follows the changes.
5. Also test with editor LIVE off and the cue running normally. Closing the editor releases its preview source.

CONTROLS AND MEANINGS

Editor LIVE	Different from Programmer VIS/LIVE. It brings the edited cue into output as a preview source.
Fixture membership	Determines which lights the cue can control.
Attribute families	A disabled family should not send that family's values to unrelated fixtures.
DMX Channels	Check recorded direct channel values too if semantic controls do not explain the result.
UPDATE from Programmer	Select the intended cue, prepare the wanted Programmer values and recording scope, then use UPDATE. Check the target name and verify the saved contents afterward.

Note
Edits follow the editor's normal save behavior. LIVE controls preview, not a separate save/discard choice. Master, BLACK and other output limits still apply. Update/Delete confirmations retain the cue they were opened for even if the list selection changes; always read its name before confirming. Deleting a linked cue leaves a Missing Cue indication in Execute, which must be relinked or cleared.

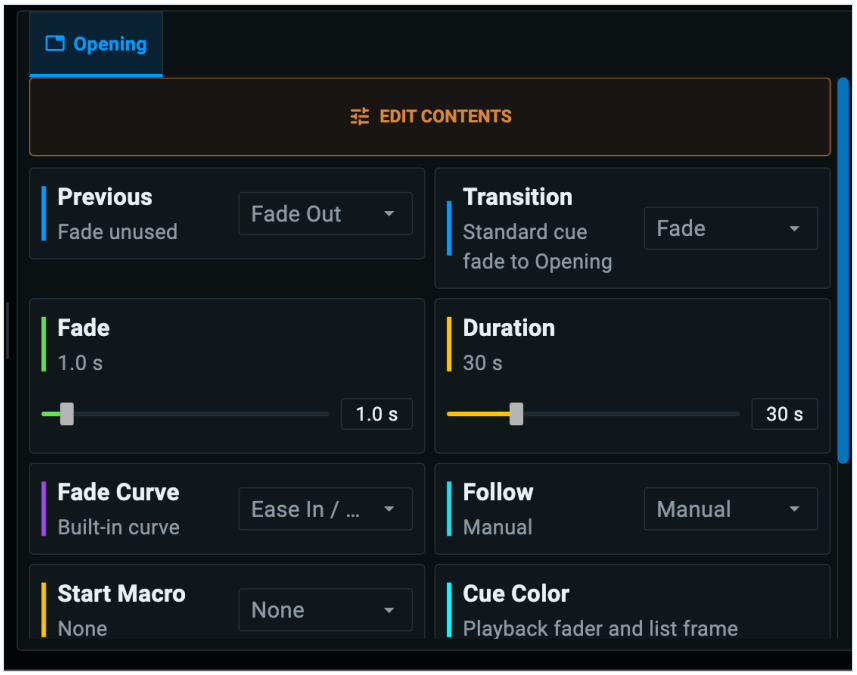
See also: 31 Record only the intended cue content / 33 Cue transition, duration and follow

D · Cues and playback

33 Cue transition, duration and follow

Cues > right-hand cue settings

Cue settings determine entry transitions and how the list advances. Fade is transition time; Duration is the cue hold/follow timing. Confusing them is a common cause of unexpected playback.



Cues > right-hand cue settings - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Previous	Release previous content no longer needed using Fade Out or Cut.
Transition	Fade, Morph or Position Only. Position Only changes recorded positions while retaining the underlying look.
Fade / Position Time	The transition length, not automatically the whole cue duration.
Duration	Cue duration used for automatic advancement.
Fade Curve	Transition shape. Linear and Ease In / Out behave differently even at the same duration.
Follow	Manual waits for operation; Auto advances by time; Beat uses beat timing; Timecode uses the configured timecode.
Start Macro / Cue Color	A macro at cue start / the UI identification color. Cue Color does not recolor physical fixtures.

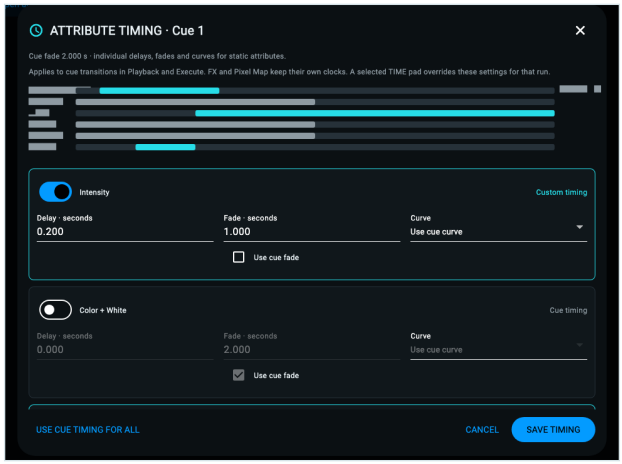
Note
The right pane ends with New, Delete, Rename and Duplicate. Common management actions also appear beside items in the left list. Cue Color is a UI marker, not a lighting look.

D · Cues and playback

34 Cue Attribute Timing

Cue details > Attribute Timing; Edit Contents > Transition

Give different attribute families their own delay, fade and curve. This lets color settle first while pan and tilt travel more slowly, without splitting one look into several cues.



Attribute Timing: attribute delays and fades shown as a timeline and editable list. Captured from version 2.4.

STEP BY STEP

1. Open Attribute Timing for the intended cue.
2. Enable a custom timing for Intensity, Color/White, Pan, Tilt, Focus or Zoom.
3. Set Delay before that family starts and Fade for its transition. Use cue fade or Use cue curve inherits the cue's defaults.
4. Compare the timing windows in the diagram. Choose Save Timing and test the cue from Playback and Execute.
5. Use cue timing for all removes the overrides and returns the families to the ordinary cue timing.

CONTROLS AND MEANINGS

Default behavior	An empty family override preserves the cue's existing fade and curve.
TIME override	A chosen TIME overrides family delays and fades for that run, including TIME 0 for immediate output.
Position Only	Shows Pan and Tilt settings while retaining other saved family timings for a later full transition.
Playback / Execute	Use the same timed transition rules. Pause, Blind and Stop keep their normal transport and ownership behavior.

Note
Saving timing is one undoable cue edit and is retained in the show file. Timeline Preview seeking displays the state at the requested position immediately; it is not a rehearsal of each normal cue-start fade.

See also: 33 Cue transition, duration and follow / 37 TIME: override transition duration / 39 Execute: live operation

D · Cues and playback

35 Playback and GO

Bottom Playbacks / Cue Stack

Playback is the show running list. The library may hold many more cues than are loaded below. A fader changes playback control rather than re-recording cue content. Optional GO quantization schedules a manual trigger against the shared musical clock.



Long-press the bottom BPM display to open GO quantization. Captured during feature development; 2.4 also offers a bar interval. Captured from version 2.3.5.

STEP BY STEP

1. Load cues or songs into Playback and check their order and selection.
2. Set Master and per-cue playback levels deliberately.
3. Long-press the blue BPM button in the bottom transport to choose GO Off, GO 1/4, GO 1/8, GO 1/16, GO 1/32 or GO 1 bar.
4. Press GO and follow Current, Next and time indicators.
5. Use PAUSE/STOP as needed and check what other concurrent sources are doing.
6. Use Settings > Shows & backups > Clear Playbacks to empty the running list and build it again.

D · Cues and playback

35 Playback and GO: controls and storage

CONTROLS AND MEANINGS

GO / NEXT / BACK	GO resumes the same paused cue; an explicit command for a different cue starts that chosen cue. Check Current and Next after a jump.
PAUSE / STOP	Pause freezes the run; STOP ends it without firing Cue ends macros or starting the next song. Neither deletes the library cue.
GO quantization	GO waits for the next selected musical division; GO Off starts immediately. The setting defaults to Off and is saved with the show. Queued identifies a cue waiting to start.
Pending GO	STOP, PAUSE, backgrounding or changing/reloading the Playback list cancels the wait. A tempo change retimes it. Scheduled Timeline events and automatic Follow keep their programmed times; they are not delayed again.
FLASH	Momentarily raises the associated fader/cue according to its configuration.
Fader Role	May be Intensity or another role. Do not assume every fader is a dimmer.
Fader Curve / Move Dark	Control response / dark movement preparation where supported.
Blind	A fade already committed to stage continues while you prepare edits in Blind. Staged changes become live only when you release Blind.
GO status pulse	While Playback is running and unpaused, green GO has a subtle once-per-second pulse, about 60 BPM. It indicates running state, not the song beat or a tempo lock. Pause, Stop, waiting Queued state and reduced-motion settings remove the pulse.

Note
If one run stops and a fixture remains on, check other Execute buttons, Playback, Programmer, Pixel Map, macros and Autopilot. An empty Programmer is not an empty output. Timeline Beat Snap and Pixel Map BPM SYNC are separate settings.

Practical example
At 120 BPM, 1/4 is one beat (500 ms), 1/8 half a beat (250 ms), 1/16 a quarter beat (125 ms) and 1/32 an eighth of a beat (62.5 ms). GO waits for the next boundary; the wait depends on when you press it. Set beats per bar in External sync when using the bar boundary.

D · Cues and playback

36 Playback fader roles

Playback > Fader Role

A visible fader can control different parameters. Fader Role identifies its purpose. Changing its role is not a permanent rewrite of every cue value.



Playback > Fader Role - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Intensity / INT	Scale cue playback brightness.
Manual Morph / MORPH	Manually control progress through a transition.
Effect Speed / SPD	Change cue effect speed.
Effect Mix / MIX	Adjust effect blending.
Movement Speed / MOVE	Adjust movement speed where supported.
Disabled / OFF	The fader does not control content.
Fader Curve	Shape response; the physical midpoint need not equal a 50% effect value.

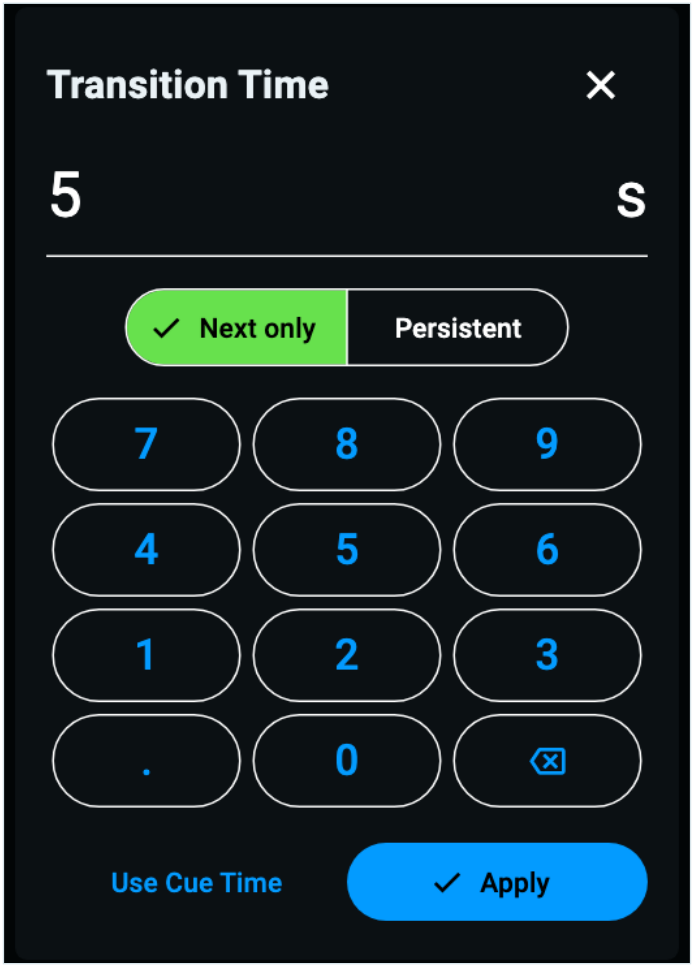
> **Note**
> If a fader does not change brightness, check its role before editing the cue. Effect Speed cannot open a dark fixture's dimmer.

D · Cues and playback

37 TIME: override transition duration

TIME / Execute / Autopilot

TIME changes transition duration without changing stored brightness, colors or the cue fade settings. Normal Execute targeting and Latch rules still determine which runs change. The same TIME setting applies to manual Autopilot mood changes while running and return to AUTO mood.



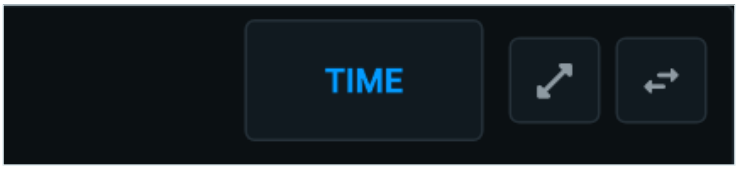
The TIME keypad: a five-second override, applied to the next transition by default. Earlier version 2.3.4 screenshot; appearance may differ in 2.4.

READING THIS VIEW

Seconds	Enter a transition duration; zero means an immediate change.
Next only / Persistent	Use the value once by default, or keep it for subsequent transitions.
Apply / Use Cue Time	Arm the override, or clear it and return to cue times.

D · Cues and playback

37 TIME: override transition duration: workflow



The rectangular TIME button in version 2.4. Tap it to open the transition override.

STEP BY STEP

1. Open the Transition Time keypad.
2. Enter seconds; decimals are allowed and zero makes an immediate transition.
3. Keep the default Next only for one transition. Choose Persistent only when the override should remain active.
4. Press Apply and fire the cue or Execute block.
5. Use Cue Time clears the override and restores cue timings.

CONTROLS AND MEANINGS

TIME	The rectangular button in the Execute header. Its active border and seconds show the time override; 1× means Next only and ∞ means Persistent.
Next only	The default. Consumed by the next visible transition that uses it.
Persistent	Applies to later transitions until cleared.
Panic / Black return	Returning to underlying playback uses the pending override. Selecting a cue under a mask does not consume a one-shot time before the visible return.
Transition already running	A new override does not alter the duration already captured by that transition.
Autopilot mood	Next only is consumed by a live change to a different mood. It stays pending while stopped, in Base Look, on a repeated identical selection or during music-driven selections.

Note
Autopilot displays the target mood and remaining transition time. Mechanical wheels use static color slots; changing TIME does not start continuous wheel rotation.

Practical example
Enter 5 s with Next only, then fire another cue in the same Latch group. The targets that normally change now transition in five seconds; the following change returns to cue timing.

See also: 39 Execute: live operation / 64 Master, BLACK and PANIC

D · Cues and playback

38 Move Dark: prepare positions in darkness

Playback / Cue Stack > Move Dark

Move Dark helps preposition upcoming movement and optics when this can be done while dark, avoiding a visible beam search before the fixture lights.



Playback / Cue Stack > Move Dark - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Build two cues with verified targets, brightness and positions.
2. Enable the intended playback Move Dark behavior.
3. Check next-cue preview and preparation on dark fixtures.
4. Test a slow transition, then performance speed. Check that lit unrelated fixtures do not move.

CONTROLS AND MEANINGS

Prepositioning	Prepare values in darkness without lighting a fixture solely to change position.
Threshold / active sources	Another source can keep a fixture lit; this cue's low level alone does not prove dark output.
Position Only	A separate transition type that does not use Move When Dark preparation.

> **Note**
> Move Dark is not a mechanical limit or a guarantee that motors reach any position at any speed. Test real fixtures with actual fade timings.

D · Cues and playback

39 Execute: live operation

Execute > banks A-D

Execute provides performance buttons linked to content with a chosen fire/release behavior. Buttons can share fixtures or control different attributes; the active marker reports each button's running state.



Execute with example cues: EXECUTE / LAYOUT, banks and the rectangular TIME control are in the header. Captured from version 2.4.

D · Cues and playback

39 Execute: live operation: workflow

CONTROLS AND MEANINGS

Toggle	Press to start and press again to stop.
Latch	A new run replaces matching runs in its Latch group according to the configured rules.
Flash	The run is active while held; release removes this momentary source.
Bump	Momentary/pulsed activation according to the button configuration. Test its content and duration before live use.
Banks A-D	Separate button surfaces. Changing banks does not stop every run from the previous bank.
Missing Cue	Shown when the linked cue was deleted. Relink or clear that button.
Playback and other buttons	Each run retains its own fixtures and attributes. Releasing one run does not stop another owner that still controls the same fixture.

Note
Stopping a button releases its own source. Another active source may still light the same fixture. BLACK is the separate global lighting blackout control. Local and remote Flash holds are separate. A lost remote hold is released automatically; persistent Toggle/Latch runs on the controller are not a held button.

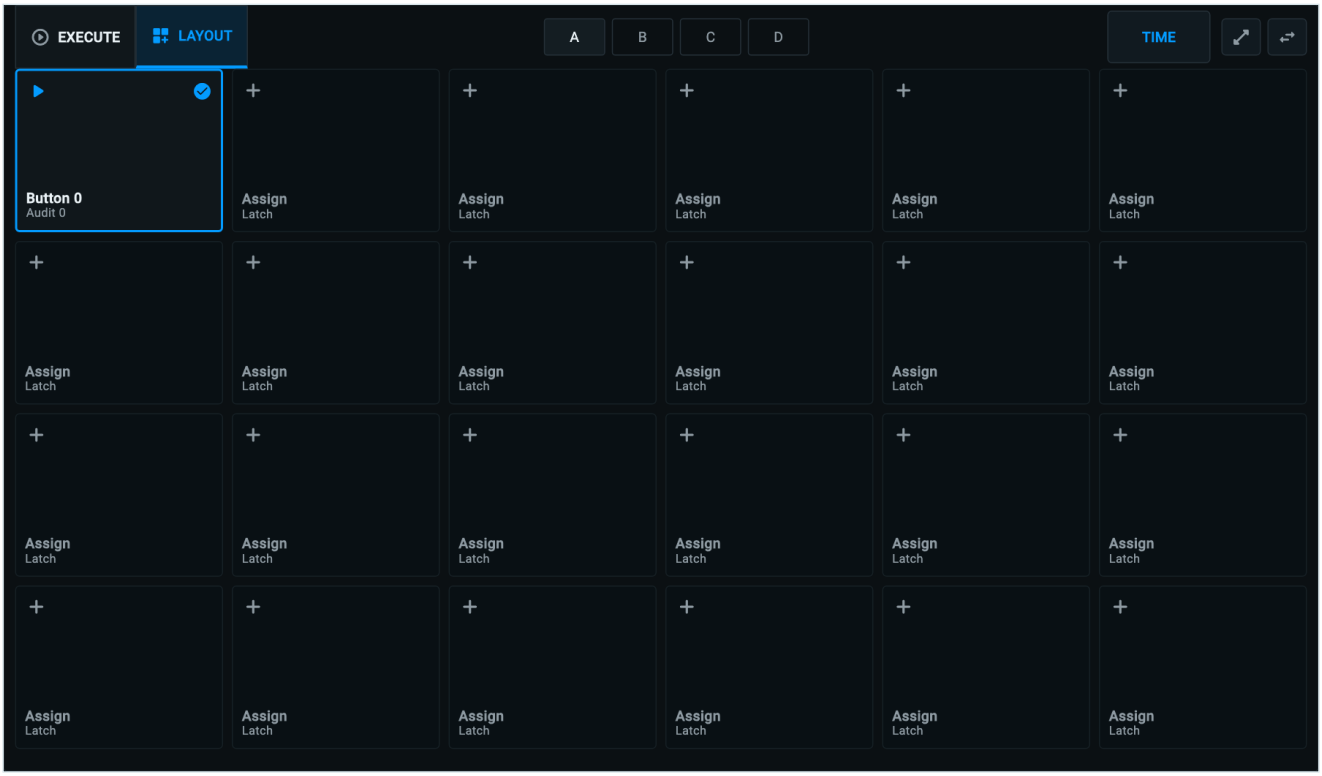
See also: 40 Execute Layout, links and groups / 37 TIME: override transition duration / 64 Master, BLACK and PANIC

D · Cues and playback

40 Execute Layout, links and groups

Execute > Layout / selected block settings

Use Layout to build the performance surface. Label and color buttons by purpose. Put alternative looks in a common Latch group and separate independent effects appropriately.



Execute with example cues: EXECUTE / LAYOUT, banks and the rectangular TIME control are in the header. Captured from version 2.4.

STEP BY STEP

1. Choose the bank and block to edit.
2. Choose its content type and cue, effect, Pixel Map or macro.
3. Set Fire Mode and, where needed, Latch group.
4. Verify target fixtures, levels and effect settings.
5. Choose its Playback relationship: Independent, Pause cue stack or Stop cue stack.
6. Return to Execute mode and test switching, overlapping and stopping buttons.

CONTROLS AND MEANINGS

Type	Cue, Effect, Pixel Map, Macro or Intent. Start a Song through a Start Song macro.
Independent	Does not intentionally pause or stop the cue stack.
Pause / Stop cue stack	The button can change Playback state; check this if GO playback appears to stop.
Button label and color	Operator identifiers; they do not change the cue's physical colors.
Active sources	Several banks and buttons can run together. Check all sources when resolving a conflict.

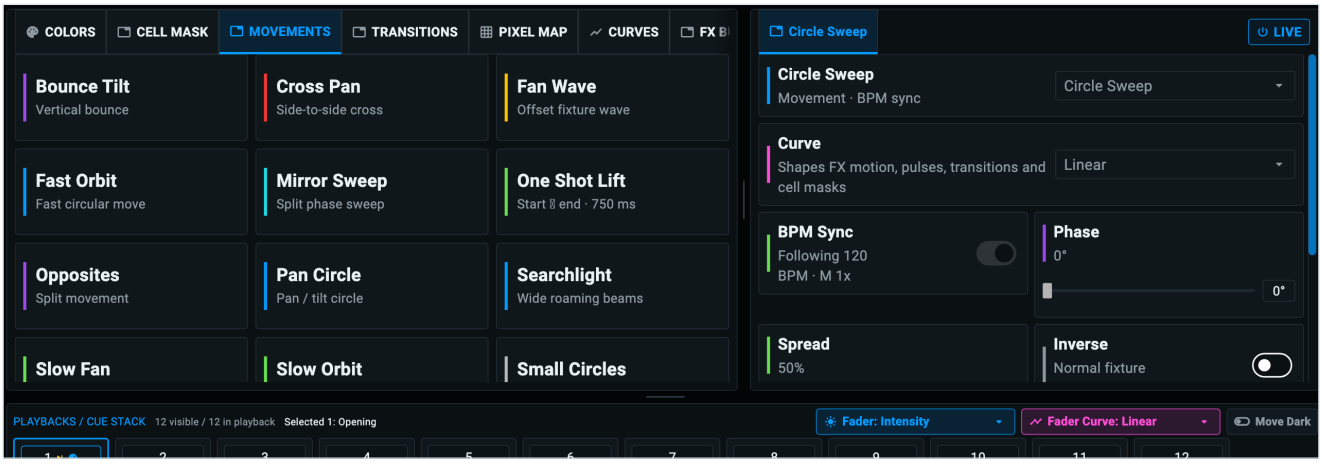
Practical example
One Latch group can contain alternative head colors and another can control LED towers. Use a separate Toggle for a Random Dips overlay so it does not replace the base color.

D · Cues and playback

41 Random Dips and Position Only

Effects > Random Dips; Cues > Transition > Position Only

These controls change one dimension while retaining the rest of a look. Random Dips attenuates existing light. Position Only moves to recorded positions without changing underlying color or brightness.



Effects > Random Dips; Cues > Transition > Position Only - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Random Dips / Dark Fixtures	The fraction of target fixtures dimmed on each step.
Depth / Dark Duration	Attenuation depth and dark interval.
Softness / Beats per Step	Edge softness and step timing.
Dips Execute fader	Scales dimming depth; it is not a new base-light brightness.
Position Only	Record the intended fixtures' positions and select Position Only transition.
Position Time	Movement transition time, starting from current output.

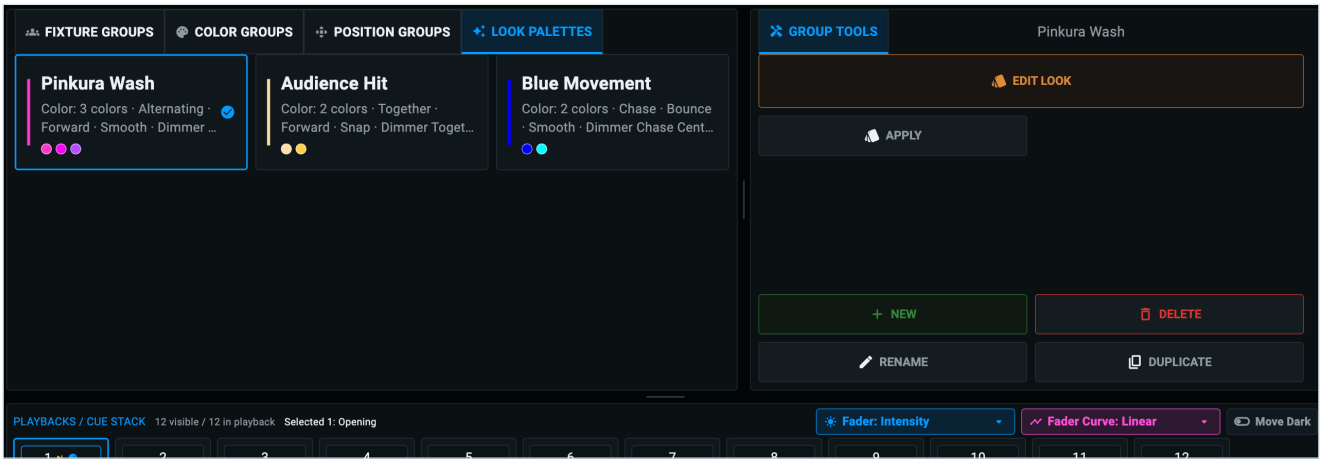
Note
Random Dips cannot light an already dark fixture or change its color. Releasing Position Only restores underlying position. Move When Dark does not preposition a Position Only cue.

E · Groups and effects

42 Fixture Groups and palettes

Groups > Fixture / Color / Position / Look Palettes

Groups and palettes reduce repeated work. A Fixture Group selects lights. Color, Position and Look palettes contain values or programs to apply. Keep selection groups distinct from output-producing content.



Groups > Fixture / Color / Position / Look Palettes - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select the intended fixtures and group type.
2. Create a new group or edit an existing one.
3. Check members and included attributes, then save.
4. Try Apply in sandbox before hardware output.

CONTROLS AND MEANINGS

Fixture Groups	A saved selection, for example all heads.
Color Groups	A palette and optional color program. Check colors, order and timing.
Position Groups	Saved target positions.
Look Palettes	May combine color, brightness and position; the UI identifies included families.
Edit Look / Color / Position	The primary editing action is at the top of the right pane.
Apply	Apply according to normal Programmer targeting. Check selection and output mode.

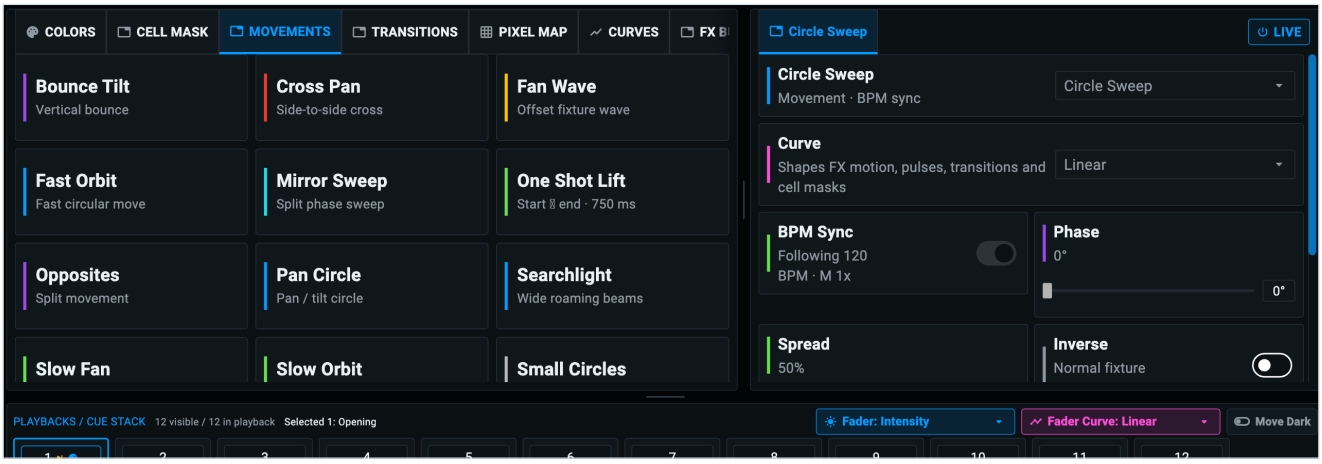
> **Note**
> Shared palette references and a cue's own recorded color-program snapshot are different mechanisms. Inspect saved cue content when editing a shared palette later.

E · Groups and effects

43 The Effects library

Effects

Effects contains ready-made programs and tools for custom effects. Targets and controlled attributes depend on effect type. A movement effect is not a color look, and a dimmer overlay is not a complete cue.



Effects - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select targets before starting an effect.
2. Choose an effect and identify the attribute it controls.
3. Adjust speed, phase, spread, intensity and mix according to that effect's meaning.
4. Start/stop and inspect the underlying look. Record to a cue or link to Execute as required.

CONTROLS AND MEANINGS

Colors / Cell Mask	Color programs and internal fixture LED patterns.
Movements	Moving-light patterns.
Transitions	Transition effects, separate from cue timing.
Pixel Map	Map or matrix patterns.
Curves	Fade and FX response curves.
FX Builder / custom effects	Build programs for color, dimmer, movement or optics.

> **Note**
> A parameter can mean different things in different effects. Random Dips Depth is attenuation; another effect's Intensity may mean active brightness. Follow the selected effect's labels.

E · Groups and effects

44 FX Builder

Effects > FX Builder / Create FX

FX Builder creates a named effect for selected fixtures. Choose a type those fixtures actually support, then activate the draft preview explicitly. Opening the builder or saving an effect does not start its output.



FX Builder: choose supported targets and explicitly activate VIS or LIVE. Earlier 2.3.4 screenshot.

STEP BY STEP

1. Select the intended fixtures before opening FX Builder or Create FX.
2. Create an effect or select an existing preset. Use Colors for color mixing, Move for moving fixtures, or LED Cells for individually addressable fixture LEDs.
3. Set a recognizable range or palette, then speed, phase and spread.
4. Tap the output control for VIS preview. Press and hold it to enable LIVE output on the selected targets. New drafts start OFF.
5. Check base brightness and Master if no light is visible. A Color effect does not open a closed dimmer.
6. Save the effect. Record it into a cue or link it to Execute when you want a reusable performance control; test stopping as well.

E · Groups and effects

44 FX Builder: controls and storage

CONTROLS AND MEANINGS

OFF / VIS / LIVE	OFF sends no draft output. VIS is local preview. LIVE requires the deliberate hold gesture and sends DMX.
Type and targets	Move needs pan/tilt; LED Cells needs a cell-capable profile. Unsupported targets and empty selections are explained in the workspace.
Range / Phase / Spread	Range defines the allowed values; Phase sets the cycle start; Spread offsets fixtures within the cycle.
Mix / Intensity	Check the amount of effect applied. LED Cells Dim = 0 is a valid lower brightness, not the same as an effect Mix of zero.
Existing preset	Editing retains its effect type. A new draft may choose Colors or LED Cells to suit the selected fixtures.

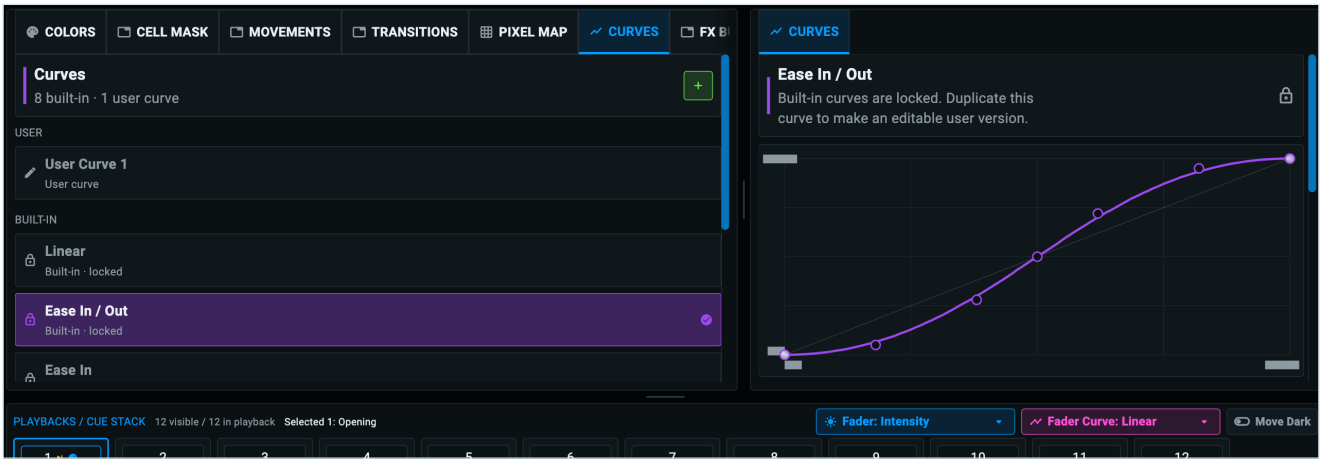
Note
Confirm the draft output state even when the same fixtures already have Programmer LIVE values. Another active cue or effect may also own the attribute. Use Output sources to inspect overlapping control.

E · Groups and effects

45 Curves: Fade and FX

Effects > Curves

A curve maps elapsed time or fader travel to an output value. The same two-second transition can feel linear, slow at the start or fast at the end depending on its curve.



Effects > Curves - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Select a built-in curve or create your own.
2. Edit points and choose sharp or rounded points as needed.
3. Name and save the curve.
4. Select it as a cue Fade Curve, Playback Fader Curve or a compatible FX curve.
5. Test across the intended range and verify both endpoints.

CONTROLS AND MEANINGS

Linear	Uniform change relative to time or fader travel.
Ease In / Out	A gentle start and end.
Custom curve	Allows nonuniform response; edited points do not necessarily produce a steadily increasing value.
Fade / Fader / FX	The same curve idea appears in different places, but each use has its own selection.

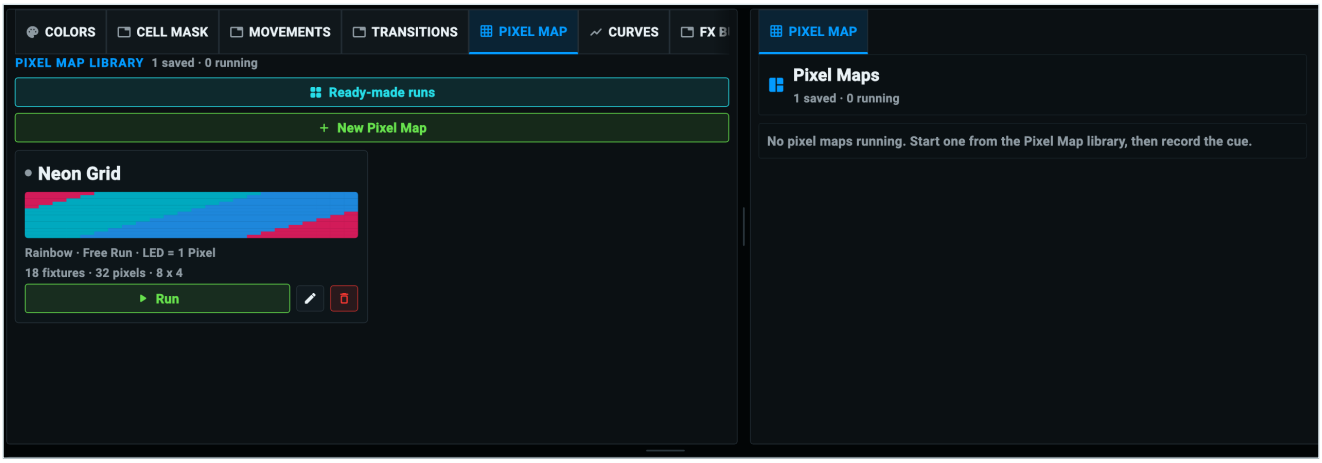
> **Note**
> A sharp or complex curve does not replace movement limits. Define allowed positions and physical travel separately.

F · Pixel Map

46 Pixel Map: turn the rig into a matrix

Effects > Pixel Map

Pixel Map treats fixtures or their individual LED cells as pixels. Define the map before selecting a pattern. Incorrect cell order can look like a pattern bug even when the mapping is the cause.



The Pixel Map library in 2.3.5. Neon Grid is a map created for this guide.

STEP BY STEP

1. Open the Pixel Map library and create or edit a map.
2. Include only the intended fixtures. Choose Fixture = 1 Pixel or LED = 1 Pixel.
3. Set grid size and place targets using Fixture Rows, Fixture Columns, Pack Rows or Snake.
4. Check the direction and grid position of each fixture/cell row.
5. Choose pattern, timing and brightness. Use the editor LIVE control to test the draft, then Save. Saving or leaving the editor ends its temporary LIVE output. Start the saved map with Run in the library when you want it to keep running while you work elsewhere.

F · Pixel Map

46 Pixel Map: turn the rig into a matrix: controls and storage

CONTROLS AND MEANINGS

Fixture = 1 Pixel	Each whole fixture receives one map color.
LED = 1 Pixel	Individually addressed cells receive separate pixel colors according to the profile.
Columns / Rows	The map coordinate system, independent of node ports or fixture ID order.
Layout / Shape	Target arrangement and the preview pixel shape.
Editor LIVE versus library Run	Editor LIVE is temporary and ends on Save or exit. A library Run or a recorded cue is a separate output source and keeps its normal start/stop behavior.

Note
LED mode requires a DMX mode with individual cell channels. A built-in auto/strip macro is not the same as separately addressed RGB cells.

Practical example
One cue can combine an animated tube map and static front lights: save the map, Run it from the library, set the front lights in Programmer, select the intended map and front-light targets, then Rec Cue. Stop the separate library Run and Clear Programmer before testing that cue from GO or Execute.

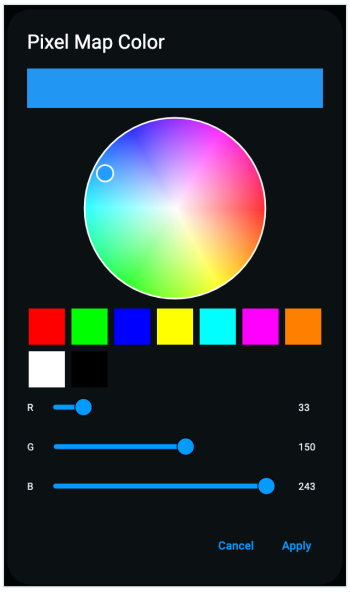
See also: 47 Custom Pixel Map colors / 48 Pixel patterns, timing and media

F · Pixel Map

47 Custom Pixel Map colors

Pixel Map editor > PATTERN > COLORS > Custom

Each map has its own palette, separate from Programmer My Colors. Choose up to eight colors with a color wheel, RGB faders or preset buttons. Preview, saved maps and recorded cues use that palette in order.



Pixel Map Color: choose a color on the wheel, from basic swatches or with the RGB faders. Apply confirms the change. Version 2.3.4.

STEP BY STEP

1. Choose PATTERN > COLORS > Custom in the map editor.
2. Tap a numbered color. Drag the color wheel to choose hue and saturation, or adjust the RGB values and preset buttons.
3. Choose Apply to accept the color draft. Cancel leaves that palette slot unchanged.
4. Add up to eight colors with the plus button. Press and hold a color to remove it; at least one remains.
5. Check the preview, save the map, and update or re-record an existing cue only if it should use the edited palette.

CONTROLS AND MEANINGS

Automatic	Use the pattern's built-in color behavior.
One Custom color	A single-color pattern; movement and brightness animation can continue.
Several Custom colors	The ordered palette supplies the pattern colors. Changing the pattern retains your Custom palette.
Recorded cues	A cue retains its own palette snapshot. Editing the library map does not rewrite existing cues.

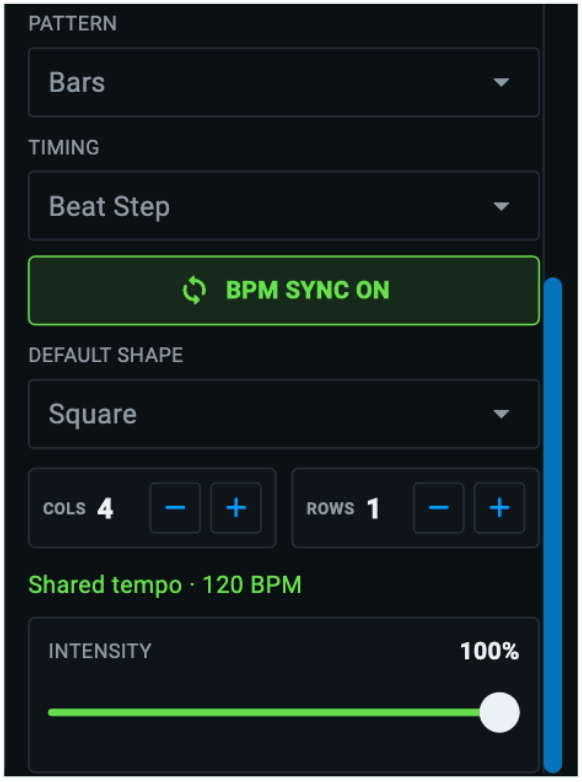
Note
Image, GIF and Video-style sources use their source-color logic and do not offer the same Custom palette controls.

F · Pixel Map

48 Pixel patterns, timing and media

Pixel Map editor > PATTERN / TIMING

Choose a pattern after checking the fixture and LED mapping. Ready-made runs includes Tube / Strip patterns. BPM SYNC optionally makes pattern timing follow the shared musical clock; Image, GIF and sampled Video retain their own source-color behavior.



Pixel Map BPM SYNC and TIMING: actual components captured during feature development with a demonstration map. Captured from version 2.3.5.

STEP BY STEP

1. Choose a pattern or Ready-made run and inspect its preview.
2. Open TIMING and turn BPM SYNC On to follow the shared tempo and beat phase. With it Off, use the map's own SPEED.
3. Choose Static, Free Run, Beat Step or 4 Beats and set intensity. Save the map and test its Run, cue or Execute owner.
4. For Video, choose MEDIA SOURCE > Import and select a local file. Up to 12 frames are sampled onto the grid and advanced by TIMING.

F · Pixel Map

48 Pixel patterns, timing and media: controls and storage

CONTROLS AND MEANINGS

BPM SYNC clock	A selected external sync clock has priority for shared tempo and phase, even during Song or Preview. On clock loss, the last tempo continues. With External sync set to Internal, a running Song or Timeline Preview uses its beat grid/BPM; otherwise reliable Beat Detect from a listening Autopilot is used, then shared TAP/BPM.
BPM SYNC Off	Manual SPEED remains active. Old maps keep this behavior until you enable sync.
Synced TIMING	Static holds a phase; Free Run progresses continuously in musical time; Beat Step advances per beat and 4 Beats every four beats.
Saved and paused maps	The setting is retained in the map and recorded cue. A paused synced cue holds its look and rejoins the shared phase on resume.
Custom colors	Use the map’s ordered Custom palette; imported media uses source colors.
Text / Image / GIF / Video	Map text or sampled image frames onto the grid. Tiny grids cannot make long text readable. Video and GIF are sampled content, not a full-frame-rate media-server pipeline.

Note
BPM SYNC does not start the microphone. For live music, confirm Autopilot Beat Detect is listening; otherwise set the Song BPM, TAP/BPM or external clock. Timeline Beat Snap only positions markers. Leaving the editor ends temporary LIVE; saved Run, cue and Execute sources keep their own stop controls.

F · Pixel Map

49 Ready-made runs and Tube / Strip patterns

Effects > Pixel Map > Ready-made runs; map editor > Ready-made runs / Browse patterns

Choose a moving thumbnail instead of building every pattern from scratch. Gallery thumbnails illustrate an example grid; your actual result depends on how fixtures and LEDs are mapped.

STEP BY STEP

1. Open Ready-made runs and choose a category and thumbnail.
2. From the library, a choice creates an editable map. Check included fixtures and their placement. In an existing editor, changing the pattern retains mapping, palette, intensity and timing.
3. For a pixel tube or neon strip, try the Tube / Strip category and check the mapped LED order and direction.
4. Choose Automatic or up to eight Custom colors. Adjust Timing, Speed, Intensity and Curve.
5. Save the map. Save Only does not start it; Run/Stop controls output. Record a running map to a cue or assign the saved map to Execute.

CONTROLS AND MEANINGS

Flow / Geometry / Rhythm	Patterns include Tunnel, Rings, Spiral, Plasma, Waves, Diagonal Sweep, Mirror, Chevron, Radial Rays, Matrix Rain, Orbit and Scanner, plus the earlier patterns.
Tube / Strip	Comet, Dual Comet, Color Wipe, Theater Chase, Fire and Glitter run along the mapped LED sequence.
Across fixtures	The sequence can continue from one tube into the next. Flipping a tube in the mapping changes its LED direction.
Timing	Static holds a phase; Free Run moves continuously; Beat Step and 4 Beats advance according to tempo.

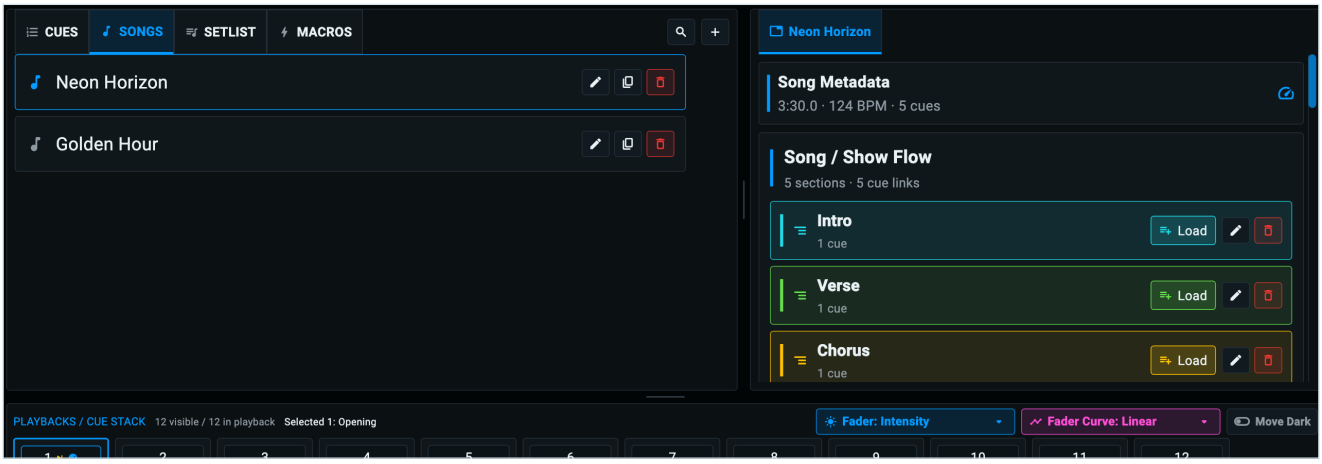
Note
Opening the gallery does not enable DMX. If editor output is already on, choosing another pattern updates that existing run. A whole-fixture profile cannot show individually addressable LED detail.

G · Songs and timing

50 Songs and Show Flow

Cues > Songs

A Song groups cue links for a piece of music. Show Flow divides them into sections such as Intro, Verse, Chorus, Drop and Outro. The cue library remains shared, and one cue may be linked to several songs.



Cues > Songs - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Create a Song and label it for the music.
2. Link the correct cues and check order.
3. Arrange links into Show Flow sections and rename sections if needed.
4. Set duration, tempo, timecode information and optional audio.
5. Load the intended content into Playback before running the song or using MIDI Start Song.

CONTROLS AND MEANINGS

Cue link	A reference to a cue. Editing that cue affects its links; Duplicate creates a separate copy.
Show Flow / Load	Load a section or song's cue set according to the UI action.
Duplicate	The copy icon on the left duplicates that Song. Management buttons on the right are at the bottom.
Duration / BPM	Metadata and timing aids, not automatic synchronization with another audio player.

Note
A Song is not another show file. MIDI Start Song targets the stored song ID, not merely a list row number.

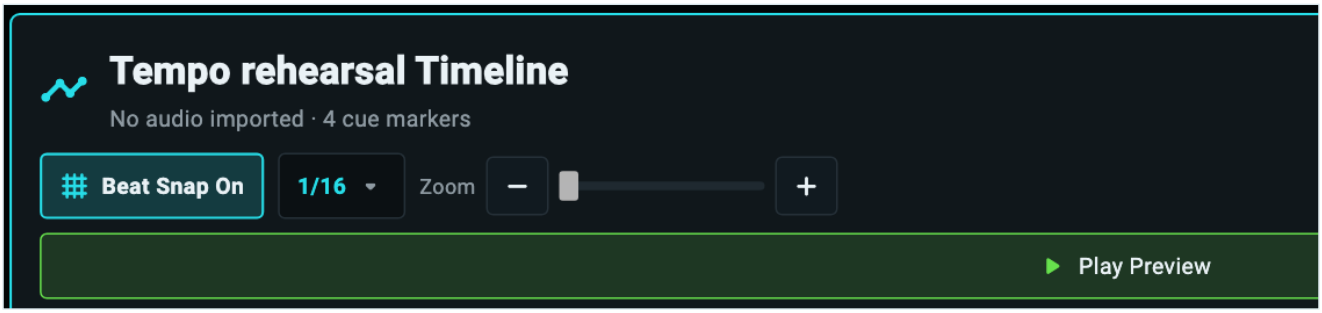
See also: 54 MIDI Learn: Notes, CC and Program Change / 51 Audio, Song Timeline and Beat Snap

G · Songs and timing

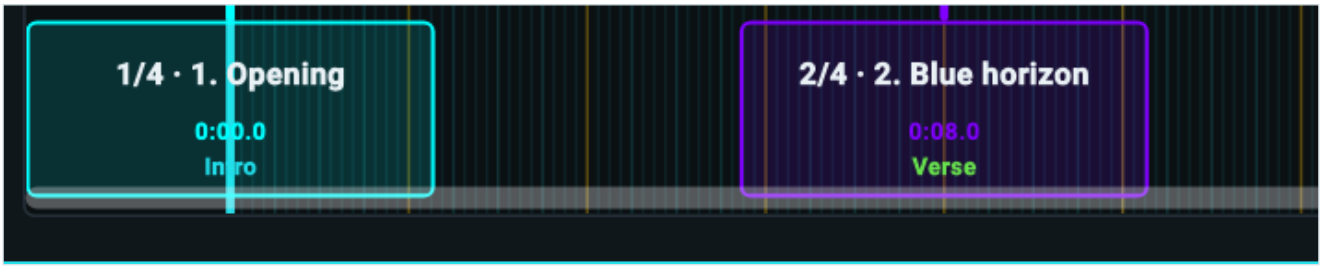
51 Audio, Song Timeline and Beat Snap

Cues > Songs > selected Song > Timeline

Place Song Cue events against a waveform, detected beats or Song BPM. Play Preview runs the timeline and all recorded cue sources so that lighting and audio can be prepared together.



Song Timeline Beat Snap On, the 1/16 selector and Play Preview, captured during feature development. Captured from version 2.3.5.



Two rehearsal cue markers from the same development view. The time is the trigger position; the grid snaps a marker when you move it.

STEP BY STEP

1. Open the intended Song Timeline. Import audio if needed and check duration, BPM and detected beat positions.
2. Turn Beat Snap On and choose 1/4, 1/8, 1/16, 1/32 or 1 bar. Add or drag a cue marker to its nearest selected division; Off allows free placement.
3. Check cue identity, song membership and event order. Enabling Beat Snap does not move markers already stored.
4. Press Play Preview to run Song Cues with or without audio. It plays recorded FX, movement, palettes and Pixel Maps as well as static values.
5. Seek to inspect another position, then Stop Preview before the performance. Closing the editor also releases preview and restores its previous Playback source.
6. Load the Song into Playback and test its normal GO, pause, stop and transitions separately.

G · Songs and timing

51 Audio, Song Timeline and Beat Snap: controls and storage

CONTROLS AND MEANINGS

Beat Snap	Edits the placement of markers. It does not change BPM, synchronize an effect or delay a manually pressed GO.
Grid divisions	1/4 is one beat, 1/8 half a beat, 1/16 a quarter beat and 1/32 an eighth beat. The nearest division follows detected beat times; without them it uses Song BPM. Timeline 1 bar means four beats. Live GO 1 bar instead uses the beats-per-bar setting in External sync.
No Beat Grid	Set Song BPM or import audio with detectable beats before using musical snapping. The snap division is saved per Song; events play at their saved times.
Live GO quantization	Long-press the bottom blue BPM button and choose GO Off, 1/4, 1/8, 1/16, 1/32 or 1 bar. Off runs immediately; quantized GO waits for the next selected boundary.
Preview	Has its own lifetime. Seeking applies the correct cue state immediately, rather than replaying every normal cue-start fade. Stop/close restores prior Playback state; tempo edits you make during preview are retained.
SONG AUDIO	The shared volume and separate Mute control affect song audio, not lighting Master. They are retained during this app session, not as per-song startup settings.
Audio ownership	An editor does not take over another live song’s audio. If a newer live song starts, an old preview or seek cannot reclaim it.
Output information	Displays audio route and system-reported volume when available. Some external routes have their own volume control.

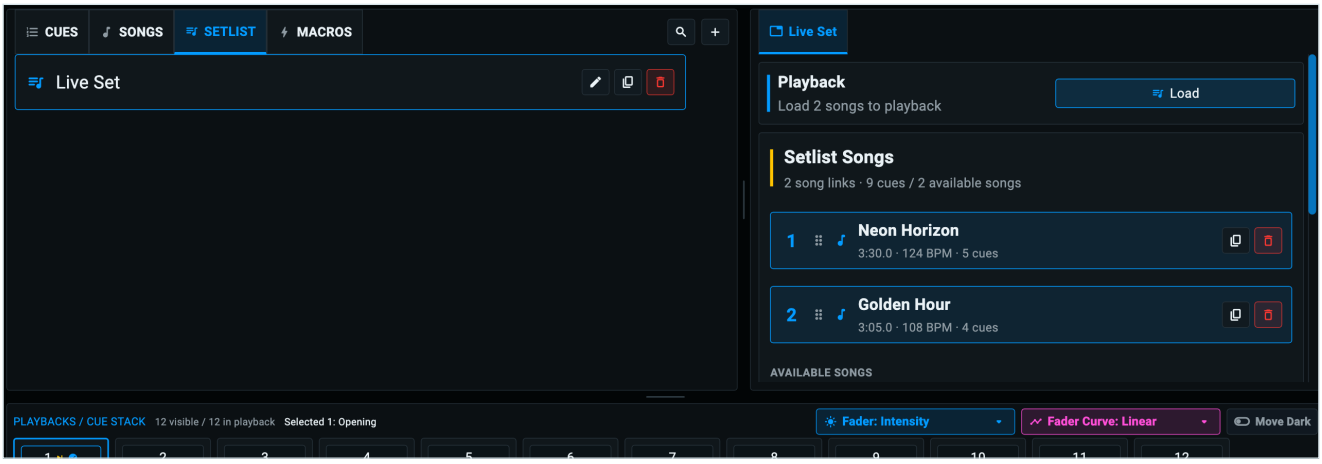
Note
Preview may send real DMX. Verify the output state before Play Preview. Start Song begins at zero; an external Start alone does not follow another app’s audio seeks. Test the actual audio route and hardware volume controls. For pattern tempo use Pixel Map BPM SYNC; for live GO timing use the separate BPM > GO setting.

G · Songs and timing

52 Setlist and loading Playback

Cues > Setlist

Setlist arranges songs and, where needed, direct cue links for a performance. Loading it creates the Playback list. Check setlist edits separately from the state of an already loaded running list.



Cues > Setlist - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Create a named Setlist.
2. Add songs in order and check any direct cue links.
3. Set advancement and delay if you need automatic behavior.
4. Load the setlist into Playback and verify song and cue order.
5. Test a song change, the final cue and a break before the show.

CONTROLS AND MEANINGS

Song order	The performance structure; also verify each Song's internal cue order.
Advance / Delay	How the list advances and any delay. Manual is a clear starting point.
Duplicate / Rename / Delete	The copy icon is beside the left-list item; right-pane management buttons are at the bottom.
Clear Playbacks	Empty the loaded running list without deleting the Setlist itself.

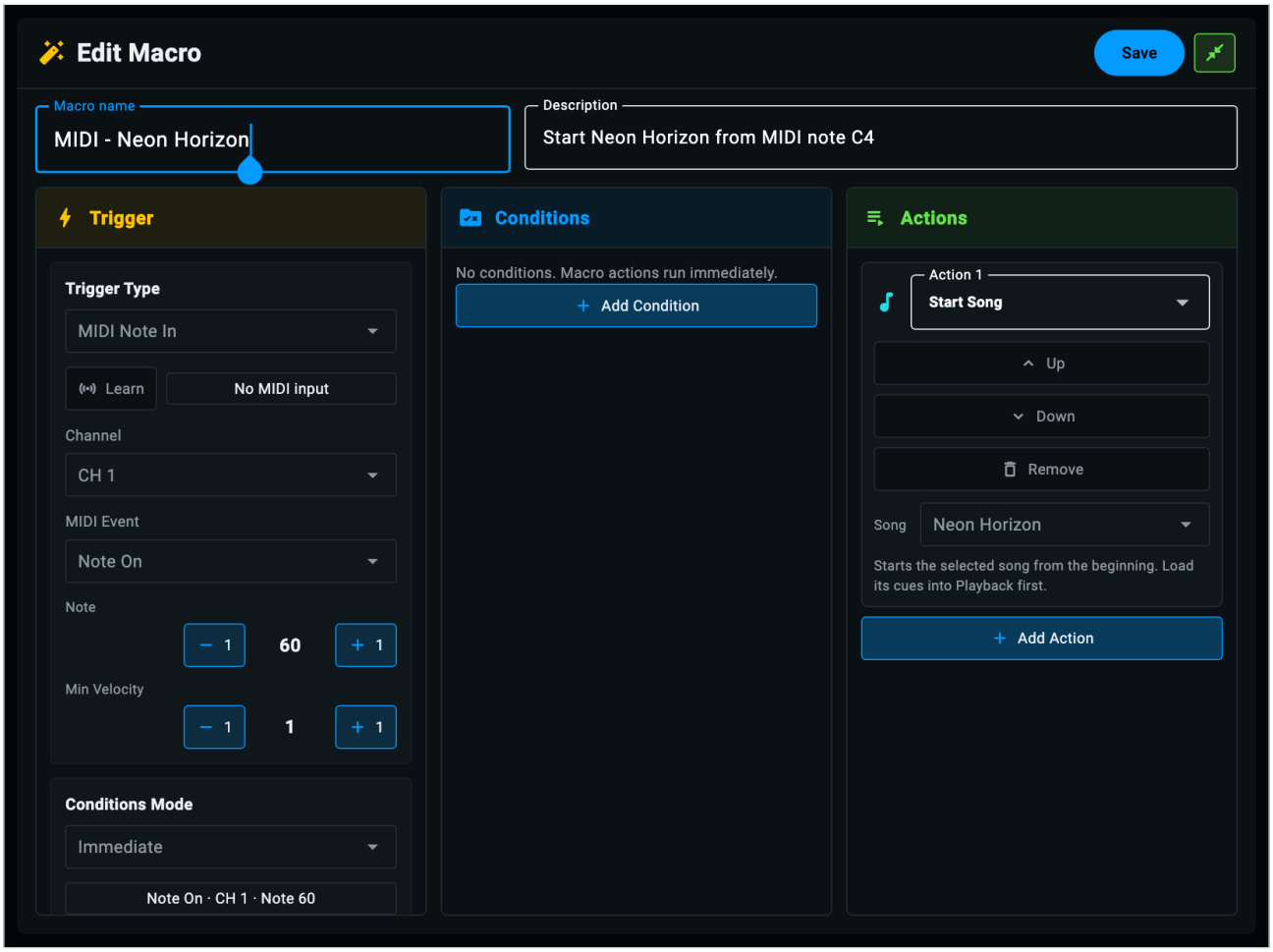
> **Note**
> For MIDI song control, the cue library, Song links and loaded Playback list must all contain the intended target.

H · Macros, MIDI and external control

53 Macros: triggers, conditions and actions

Cues > Macros / Execute macro editor

A macro automates one or more actions. Its trigger starts it, conditions determine whether it may run, and the action list defines what happens and in what order.



Cues > Macros / Execute macro editor - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Trigger	The event that starts the macro. This example uses a MIDI note.
Conditions	Optional rules determine whether an action is allowed now.
Actions	The operations to execute. Start Song points to a particular Song identity.

H · Macros, MIDI and external control

53 Macros: triggers, conditions and actions: workflow

STEP BY STEP

1. Create a named macro and choose a trigger.
2. Choose an action and target, such as Start Cue or Start Song.
3. Add further actions in order; use Wait only for an intentional delay.
4. Add conditions and an Immediate, Wait or Wait with Timeout policy where required.
5. Save and test unsuccessful conditions and cancellation as well as normal operation.

CONTROLS AND MEANINGS

Trigger	Manual Execute, MIDI Note In, timecode, cue start/end or another offered state event.
Conditions	For example a running cue/effect, Master/fader threshold or Black/Panic state.
Actions	Start/stop cues, songs, effects or Pixel Maps; GO, Master, bank changes and safety actions.
Wait with Timeout	Wait for a condition for a bounded time; not an endless wait or a plain action delay.

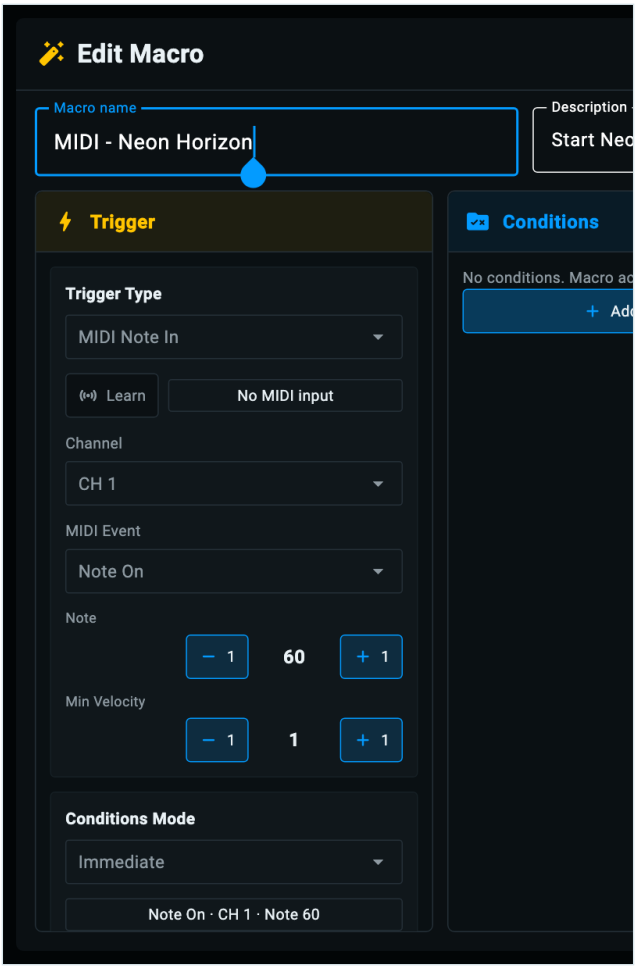
> **Note**
> Operator Black/Panic cancels pending macro chains so an old delayed Restore or GO does not fire unexpectedly. Test macros in their actual performance context.

H · Macros, MIDI and external control

54 MIDI Learn: Notes, CC and Program Change

Cues > MACROS > Trigger > MIDI Note In / MIDI Control Change In / MIDI Program Change In

MIDI macros turn incoming Notes, Control Change (CC) and Program Change messages into cue, Song and other actions. iOS/iPadOS and macOS provide native MIDI input. Native Android MIDI input is disabled in this version.



The macro MIDI trigger in 2.3.4. Choose the corresponding event type for Note, CC or Program Change messages.

READING THIS VIEW

MIDI Learn	Choose Notes, Control Change or Program Change, receive that message type and check the learned channel and number.
Event type	For Notes choose On/Off. CC uses Enter range or Value changes; Program Change uses raw numbers 0-127.
Range / threshold	Minimum velocity filters notes; a CC value range filters controller input. Neither changes stored cue brightness.

H · Macros, MIDI and external control

54 MIDI Learn: Notes, CC and Program Change: workflow

STEP BY STEP

1. Connect the MIDI source and choose the desired trigger type in the macro.
2. Use Learn and send a message of that type, or enter its channel and number manually. Choose CH 1-16 or Any.
3. For Notes, choose Note On, Note Off or both and set minimum velocity. For CC, choose its value range and triggering mode.
4. Add Start Cue, Stop Cue, Toggle Cue or Start Song and select the intended saved target.
5. Save, leave Learn, and send the message again. Test release, repeated messages and song changes.

CONTROLS AND MEANINGS

MIDI Note In	Note number 0-127. Note On and Note Off are distinct events; avoid an unintended second trigger on release.
MIDI Control Change In	CC number and value range 0-127. Enter range fires once on entering the range; leave it before triggering again. Value changes fires on distinct values within the range.
MIDI Program Change In	Uses raw program 0-127. The editor also shows the corresponding 1-128 label used by some senders; check the numbering convention.
Continuous Master CC	Use CC, Value changes, range 0-127 and Set Master > Use incoming MIDI CC value. Use immediate execution and only Set Master actions in that macro.
Learn	Learns the selected message type, channel and number. Check CC thresholds separately; Learn does not choose a new range for you.

Note
Successful Learn confirms reception, not the action target. A running/waiting CC or Program Change macro completes before its next instance starts. Show-file loading is not a MIDI action. Use a Song target inside the loaded show.

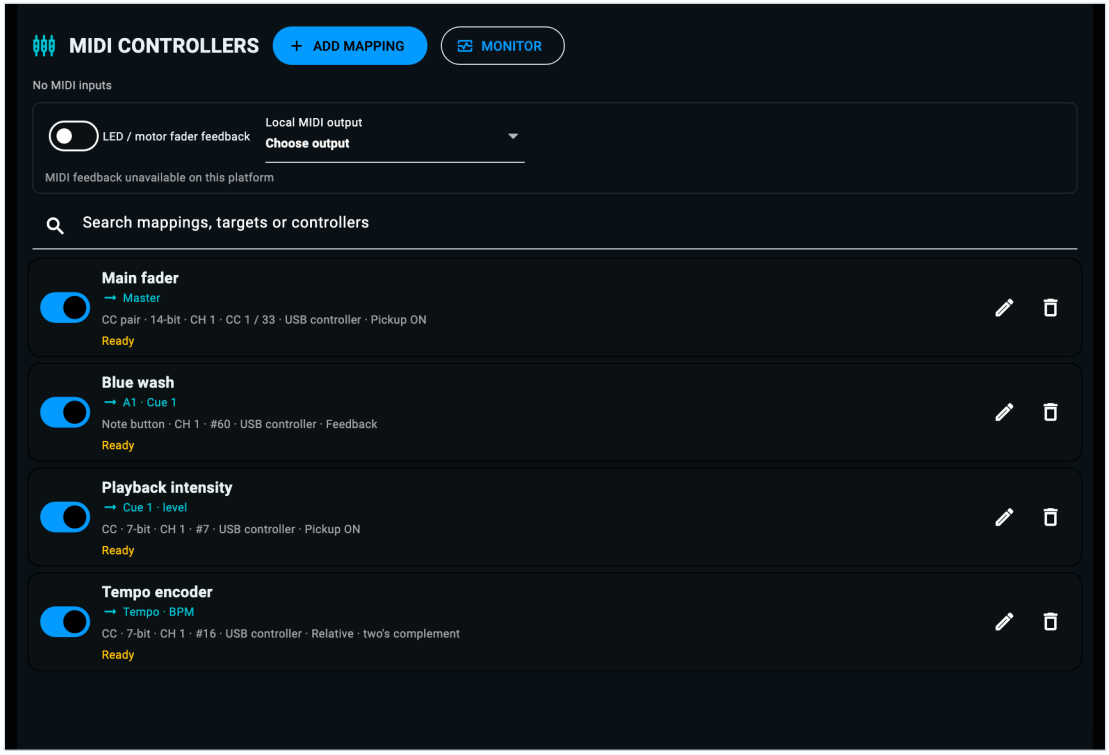
See also: 57 StageTraxx: select and start a Song by MIDI / 78 Performance Session and background operation

H · Macros, MIDI and external control

55 Direct MIDI controllers and feedback

Settings > Live control > MIDI controllers

Map a hardware control directly to a verified live target, separate from MIDI-triggered macros. Up to 256 mappings are stored with the show. Native MIDI is available on iOS/iPadOS and macOS; Android MIDI input is disabled in this build.



MIDI controllers: direct mappings, pickup and optional device feedback. Captured from version 2.4.

H · Macros, MIDI and external control

55 Direct MIDI controllers and feedback: workflow

STEP BY STEP

1. Add a mapping and select its live target. Press Learn, move the controller, then check the input, channel and message number.
2. For a fader choose CC 7-bit, a CC 14-bit MSB/LSB pair or 14-bit Pitch Bend. Set Pickup when the hardware should catch the console value before taking over.
3. For a relative encoder choose the exact two's-complement, sign/magnitude or offset-64 format and its step size.
4. Save and test movement in both directions. Monitor shows recent messages and pickup state; another live edit re-arms pickup.
5. For supported LED or motor-fader feedback, select one named MIDI output on this device and explicitly enable feedback. Use a fixed input and channel for each feedback mapping.

CONTROLS AND MEANINGS

Targets	Supported Master/tempo, Playback, Execute, fixture and transport controls. Direct MIDI Autopilot toggles its run state.
Held Execute Flash	Use Note or CC press/release. Program Change is a pulse and cannot hold Flash.
Learn	Captured input does not run a target and remains muted until the binding editor closes.
Feedback	Off by default and device-local. Conflicting addresses are suppressed; feedback should return through the intended separate input/channel, not an uncontrolled MIDI loop.
Existing macros	Note, CC and Program Change macro workflows remain available for sequences of actions.

> **Note**
> This is generic MIDI mapping, not automatic Mackie/HUI, NRPN/RPN or proprietary SysEx support. Match the hardware's actual message format. A deleted or rebound target is disabled rather than silently redirected.

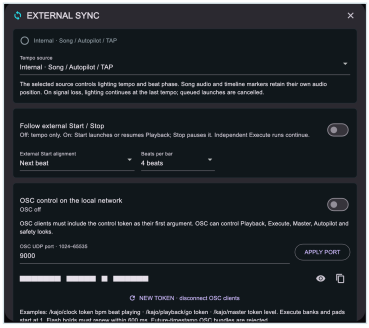
See also: 54 MIDI Learn: Notes, CC and Program Change / 05 Your own live surface / 56 External tempo: MIDI Clock, Link and OSC

H · Macros, MIDI and external control

56 External tempo: MIDI Clock, Link and OSC

Settings > Live control > External sync; bottom BPM menu

Internal timing is the default. Select an external tempo and phase source when a music app or controller should lead KAJO. The shared musical clock drives Autopilot rhythm and Pixel Map BPM SYNC; transport following is a separate choice.



External sync: tempo source and separate Follow Start/Stop. OSC has its own enable switch. Captured from version 2.4.

STEP BY STEP

1. Choose MIDI Clock and its native MIDI input, Ableton Link on iOS/iPadOS, or OSC clock.
2. For Link, enable Link yourself in Link settings and connect peers on the same network. For OSC, enable the listener only when needed, choose its UDP port (default 9000) and give the controller its token.
3. Check the clock status and BPM. Set beats per bar from 1-16 when using bar-based starts or quantization.
4. Optionally enable Follow Start / Stop, Off by default. Choose Immediate, next beat or next bar; Link also needs Start/Stop Sync enabled in its own pane.
5. Test clock loss, transport Stop and manual takeover before performance. Set live GO quantization separately in the BPM menu.

CONTROLS AND MEANINGS

MIDI Clock	24 pulses per quarter note with Start, Continue, Stop and Song Position Pointer on iOS/iPadOS/macOS. Clock pulses alone cannot identify the original bar if joining mid-song.
Ableton Link	Available on iOS/iPadOS in this build. macOS and Android Link are not enabled.
OSC	Authenticated LAN commands across supported platforms. Every command needs the token; settings and token stay on this device.
External Stop	Pauses Playback; independent Execute runs continue. Tempo sync does not seek the song audio or replay skipped timeline cues.
Lost clock	Lighting continues at the last tempo. Queued GO is cancelled, and reconnection does not automatically start a cue.
OSC clock	Send /kajo/clock with token (string), BPM (number), continuous quarter-note beat count (number), playing (0/1). Example: 120 BPM, beat 32.5, playing 1. Select OSC clock as the source; a clock packet alone does not start Playback.
OSC GO / Master	/kajo/playback/go takes only the token; /kajo/master takes token and level 0-1. The token is always the first OSC string argument. Send to the device's LAN address and configured UDP port.
OSC Execute Hold	/kajo/execute/hold takes token, bank, pad, pressed (0/1). Bank and pad are one-based. Renew a held press at least every 250 ms and send 0 on release. An unrenewed hold expires after 600 ms.

Note
For OSC Execute Flash, renew held messages at least every 250 ms. A 600 ms lease releases that source if messages stop. Keep the controller and KAJO on a trusted LAN and use the configured token.

Practical example
For a beat-matched comet: enable Pixel Map BPM SYNC, select the external clock, verify its beat phase, then start the saved map or its cue. Beat Snap in Timeline is unrelated to this live clock selection.

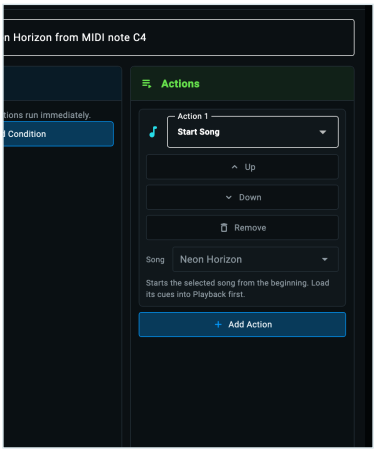
See also: 55 Direct MIDI controllers and feedback / 35 Playback and GO / 48 Pixel patterns, timing and media / 51 Audio, Song Timeline and Beat Snap

H · Macros, MIDI and external control

57 StageTraxx: select and start a Song by MIDI

Cues > MACROS > MIDI trigger > Start Song

Select music in another app and start the matching KAJO song using a MIDI macro. The Song target is stored by identity, so renaming or reordering it does not silently retarget the macro.



Start Song targets a song in the macro editor. Version 2.3.4.

STEP BY STEP

1. Create the KAJO Song and cues. Load them into Playback, for example through the active Setlist.
2. Create a MIDI Note In, Control Change or Program Change macro with Start Song and select the correct Song.
3. In the external app, choose KAJO Lights as offered by iOS or the intended MIDI route.
4. Send the agreed message and channel at the start of the music.
5. If the other app will stay in front, start KAJO Performance Session first and wait for Background ready.

CONTROLS AND MEANINGS

Start Song	Stop previous song cue playback, select the target's first playable cue and start its timeline at zero.
Start the same Song again	Restart it from the beginning.
Missing or unloaded target	KAJO reports the problem rather than deliberately choosing an unrelated song.
Show File	Opening another show file is not a MIDI action. Start Song operates within the currently loaded show.

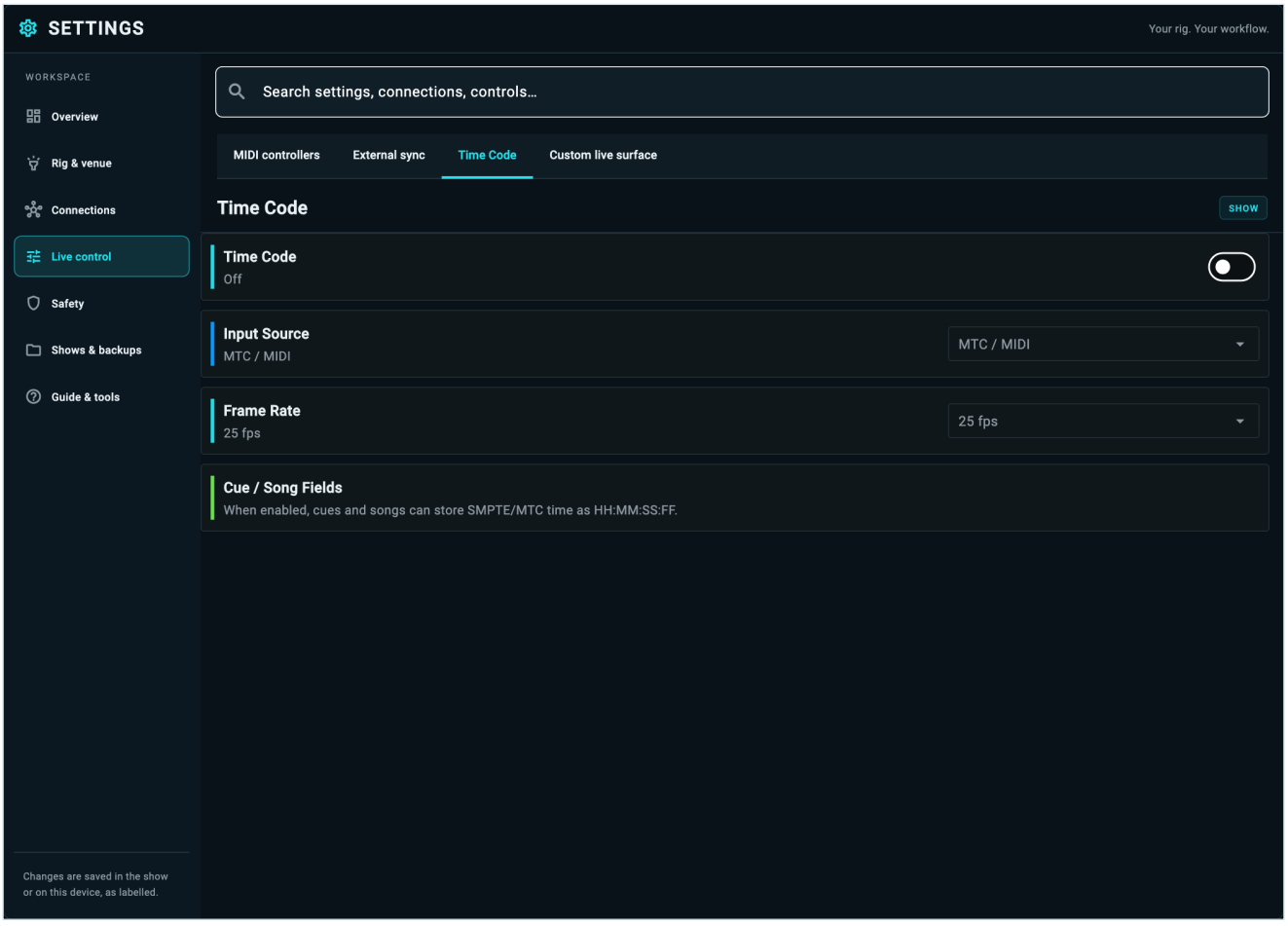
> **Note**
> MIDI start alone does not make both apps' playheads share one clock. Plan and test external seek, pause and restart behavior separately.

H · Macros, MIDI and external control

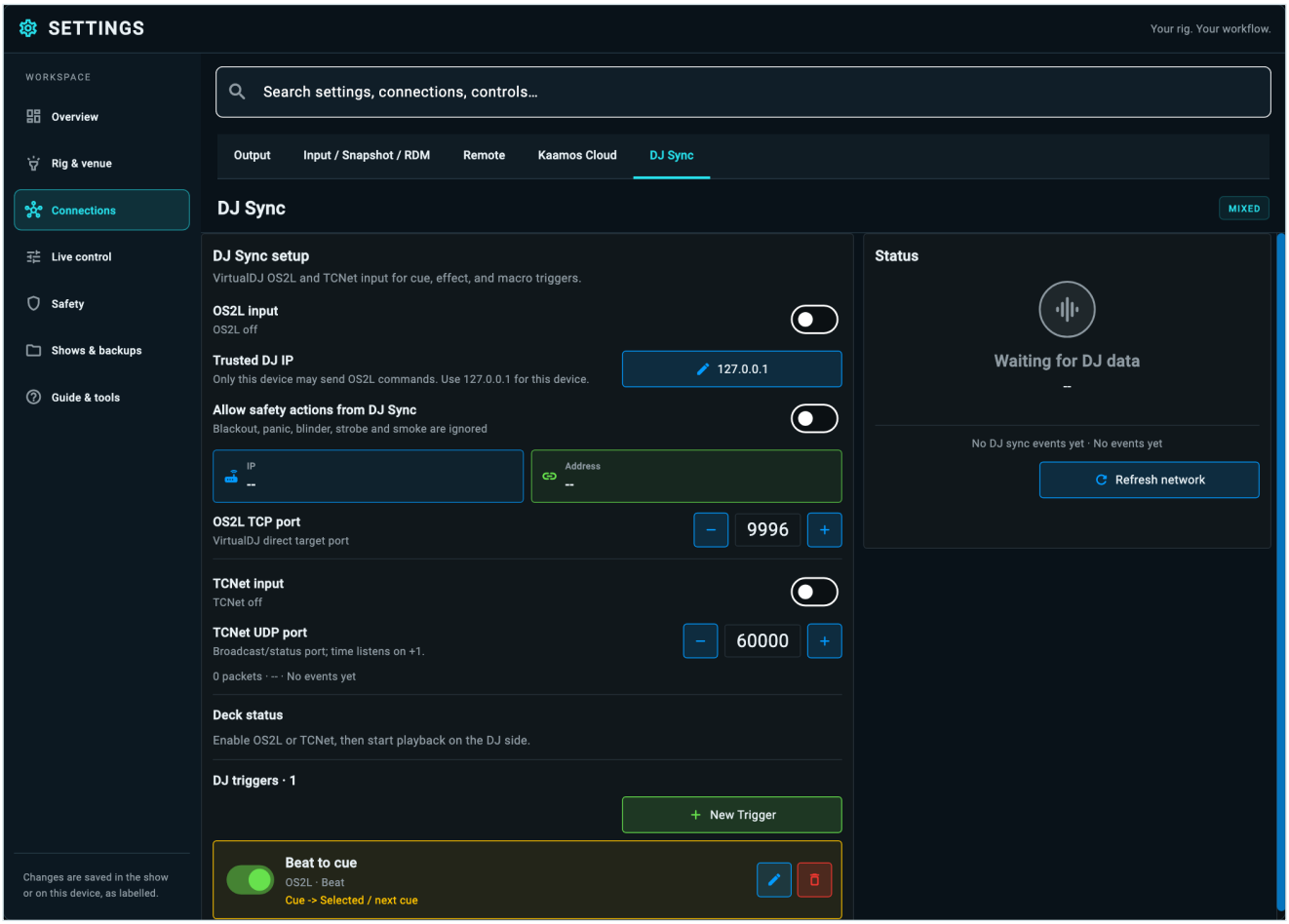
58 Time Code and DJ Sync

Settings > Live control > Time Code; Settings > Connections > DJ Sync

Timecode expresses absolute time as HH:MM:SS:FF. BPM/beat expresses musical progression. Use timecode for precise trigger points and beat/speed for pattern rhythm.



Live control > Time Code: an upper tab alongside MIDI and synchronization controls. Captured from version 2.4.



DJ Sync has its own upper tab in Connections.

CONTROLS AND MEANINGS

MTC / MIDI	External MIDI Time Code input. Match the sender frame rate.
Internal	KAJO's internal time base for timecode operations.
LTC / Audio	The option is visible, but a separate LTC audio input is not available in this version. Use MTC or internal time.
Frame Rate	Timecode frame numbering. Changing FPS requires checking trigger times.
OS2L / TCNet	DJ Sync connections. Inspect received state, tempo/events and trigger rules.
DJ trigger rule	Map a received event to the intended cue, effect or macro. Connecting alone does not create that mapping.

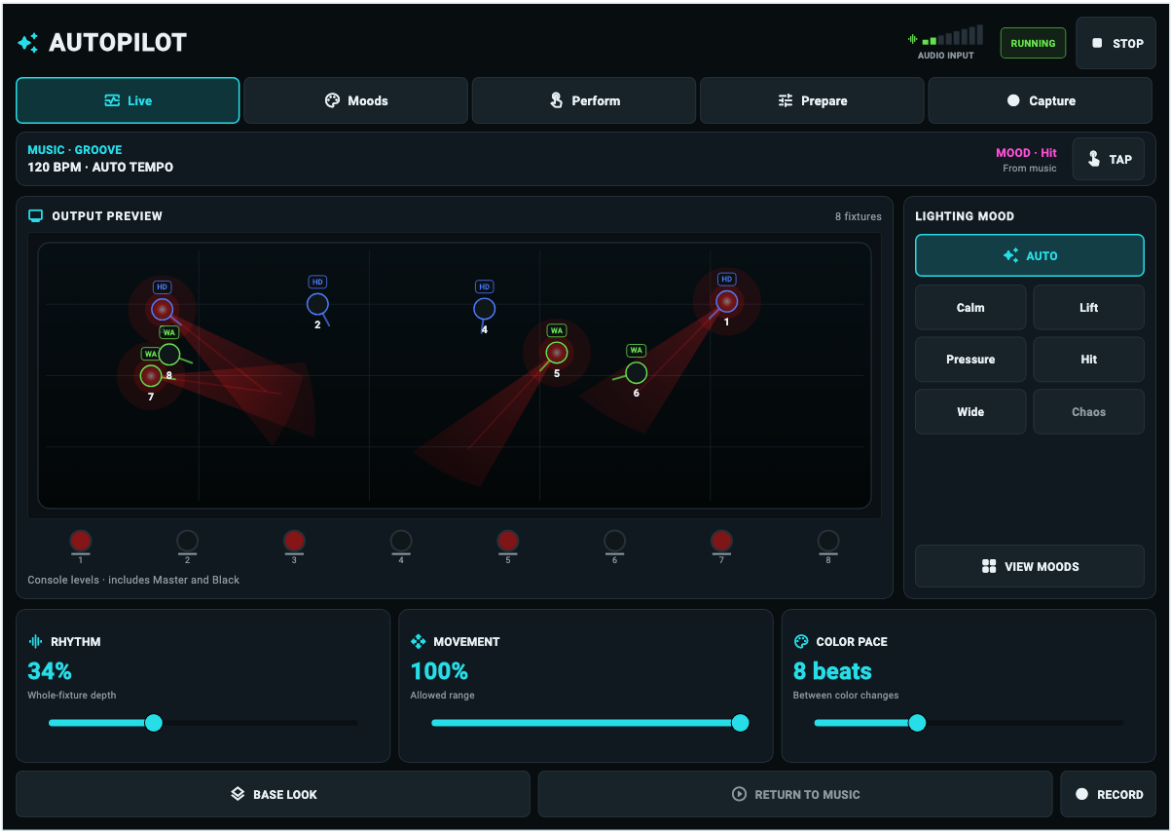
Note
Song BPM is not timecode frame rate. If timecode does not advance, check its source and input before altering cue Fade or Duration. A DJ trigger edit or deletion applies only to the show and rule that opened the dialog. Reopen the action after changing shows or losing permission. The rule firing with the music alone does not cancel configuration editing.

I · Autopilot

59 Autopilot: Live and explicit start

PILOT > Live

PILOT opens and closes the Autopilot workspace. Closing it or changing pages leaves a running show running; only Start and Stop change Autopilot's run state. Its five pages are Live, Moods, Perform, Prepare and Capture. Detected music section, chosen mood and tempo are separate information.



Live: actual console output, explicit Start/Stop, whole-fixture rhythm and Base Look. Captured from version 2.3.5.

READING THIS VIEW

Start / Stop	Start/Stop controls the run. PILOT opens or closes the page; closing it leaves the run active.
Actual output	The fixture view includes the composed output and ownership messages.
Base Look / Music	Choose break lighting or release manual Base Look and wait for music.

I · Autopilot

59 Autopilot: Live and explicit start: workflow

STEP BY STEP

1. Choose fixtures, brightness caps and movement limits under Prepare > Rig. Check microphone permission and music detection under Prepare > Audio.
2. On Live, choose AUTO or prepare a mood, then press Start. Choosing a mood while stopped does not start the microphone or lighting output.
3. Adjust Rhythm, Movement and Color Pace. Watch OUTPUT PREVIEW and listen to a complete musical phrase before another change.
4. Base Look selects the manual break look. Return to Music releases it and waits for real music; it does not start stopped Autopilot.
5. Stop ends Autopilot's own run. PILOT only closes the workspace, so you can return to Execute while Autopilot continues.

CONTROLS AND MEANINGS

RHYTHM	Depth of whole-fixture and fixture-group brightness changes. Normal group changes follow quarter-note beats or slower timing, rather than individual pixels.
MOVEMENT	Amount of the permitted range in use. Zero holds the current position; raising it resumes movement smoothly.
COLOR PACE	Color duration in beats. A larger beat value changes colors more slowly.
AUTO MOOD / tempo AUTO	The first returns mood selection to music. Tempo AUTO returns to beat detection; TAP sets the shared tempo manually.
OUTPUT PREVIEW	Combined console preview includes Master, BLACK and any Programmer VIS preview. It is not feedback confirming that a fixture received DMX.

Note
Base Look is not BLACK. Stop and Base Look do not turn off fixtures owned by other sources. On iOS/iPadOS, microphone Autopilot pauses in the background even during a Performance Session; see the background-operation chapter for its conditions.

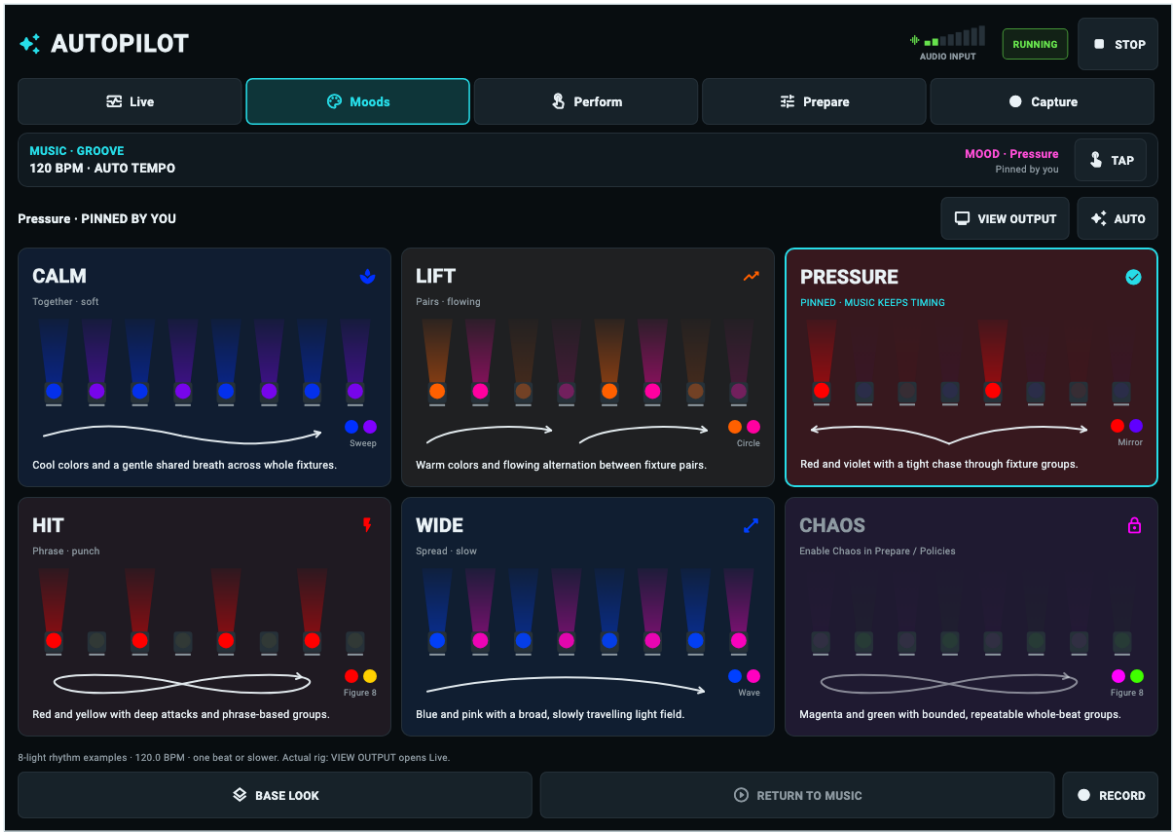
Practical example
Press Start, choose Lift and set a suitable Rhythm depth. Close PILOT and use Execute while Autopilot continues. Open PILOT again and press Stop to end its run.

I · Autopilot

60 Moods: choose the lighting character

PILOT > Moods

Moods selects the lighting character. Each card’s eight-light rhythm example follows the running BPM and uses the same rhythm function as output. Examples pause when the run or music pauses. The movement curve illustrates a family, not an exact pan/tilt path. Use VIEW OUTPUT to see the actual rig on the larger Live page; VIEW MOODS returns here.



Moods: beat-timed rhythm examples and white movement diagrams. VIEW OUTPUT opens the full-width rig on Live; VIEW MOODS returns. Captured from version 2.3.5.

READING THIS VIEW

Mood cards	Choose the lighting character. White curves illustrate movement; eight-light examples follow the current BPM.
AUTO	Release your pinned mood while preserving direct controls and Base Look.
TIME	Use the console TIME setting for a manual live mood transition.

I · Autopilot

60 Moods: choose the lighting character: workflow

STEP BY STEP

1. Choose Calm, Lift, Pressure, Hit, Wide or permitted Chaos. While stopped, the choice is prepared for Start. Choosing during Base Look does not release the break.
2. In normal mode, Lift, Pressure, Hit and Chaos hold the active fixture group for a full beat: at 120 BPM, at least 0.5 seconds. Extra onset detections do not insert another flash within that beat.
3. For a five-second change, enter TIME > 5 > Apply, then select a different mood while running. Next only applies once; Persistent keeps the time for later changes that use it.
4. AUTO releases your pinned mood while preserving controls, limits and Base Look. The same choice, staging during a break and automatic music analysis do not consume pending TIME.

CONTROLS AND MEANINGS

Calm	Cool color pair and a gentle shared breath across whole fixtures; Sweep movement family.
Lift	Warm color pair and alternating fixture pairs; Circle movement family.
Pressure	Red/violet and a tight chase through whole-fixture groups; Mirror movement family.
Hit	Red/yellow and deep group rhythms that change across phrases; Figure 8 movement family.
Wide	Blue/pink and a broad, slowly travelling light field; Wave movement family.
Chaos	When permitted, magenta/green and bounded, repeatable whole-beat groups; not unrestricted random flashing.

Note
PINNED BY YOU identifies your choice. Execute owns mood means an Execute Intent has priority and your choice waits underneath it. Movement locked preserves a manually selected movement family. Card animations and movement curves do not send DMX.

Practical example
Lift > TIME 5 s > Pressure fades Autopilot-owned continuous values to the new run over five seconds. The music clock continues; mechanical wheels use static color slots.

I · Autopilot

61 Perform: control movement and rhythm

PILOT > Perform

Perform combines two live controls in a touch pad: horizontal position sets movement range and vertical position sets whole-fixture rhythm depth. It does not change BPM, choose a pixel pattern or bypass fixture limits. Values remain after you lift your finger.



Perform: horizontal movement range and vertical whole-fixture rhythm depth. Captured from version 2.3.5.

READING THIS VIEW

Performance pad	Move horizontally for movement range and vertically for rhythm depth.
Readouts	Movement and Rhythm percentages show the two separate values.
Fine controls	Movement Speed, Color Strength, Saturation and Color Pace are separate from BPM.

I · Autopilot

61 Perform: control movement and rhythm: workflow

STEP BY STEP

1. Press Start to run Autopilot. While stopped, edits prepare settings without starting output.
2. Drag right for more Movement or left for less. The bottom gives softer rhythm; the top gives deeper rhythm.
3. Read the Movement and Rhythm percentages. Check OUTPUT PREVIEW; on smaller screens, return to Live to see it.
4. Choose Color Pace: 2, 4, 8 or 16 beats. Fine-tune Movement Speed, Color Strength and Saturation; on short displays these are under Prepare > Response.
5. If an adjustment has no visible effect, read ownership messages before changing more settings.

CONTROLS AND MEANINGS

STILL - WIDE	Use 0-100% of the permitted range. Zero holds position; higher values use more of each fixture's allowed area.
SOFT - DEEP	Whole-fixture rhythm response from 0-100%. Zero removes this rhythm depth; it does not black out the whole show.
Movement Speed	Movement-cycle speed. More beats/cycle means slower movement; normal mode also limits speed at shorter settings.
Color Strength / Saturation	Amount of color control / color saturation. Color strength is 0% explains why Autopilot is not changing color.
Ownership	Cue/Execute may own color/rhythm or beam values. Movement locked identifies a manual movement family; Programmer VIS can appear in the preview.

Note
Autopilot drives included moving fixtures even over legacy cue position data. Safety controls and separate attribute owners retain their priority. Movement stays continuous through tempo and mood changes; AUTO does not reset Perform values.

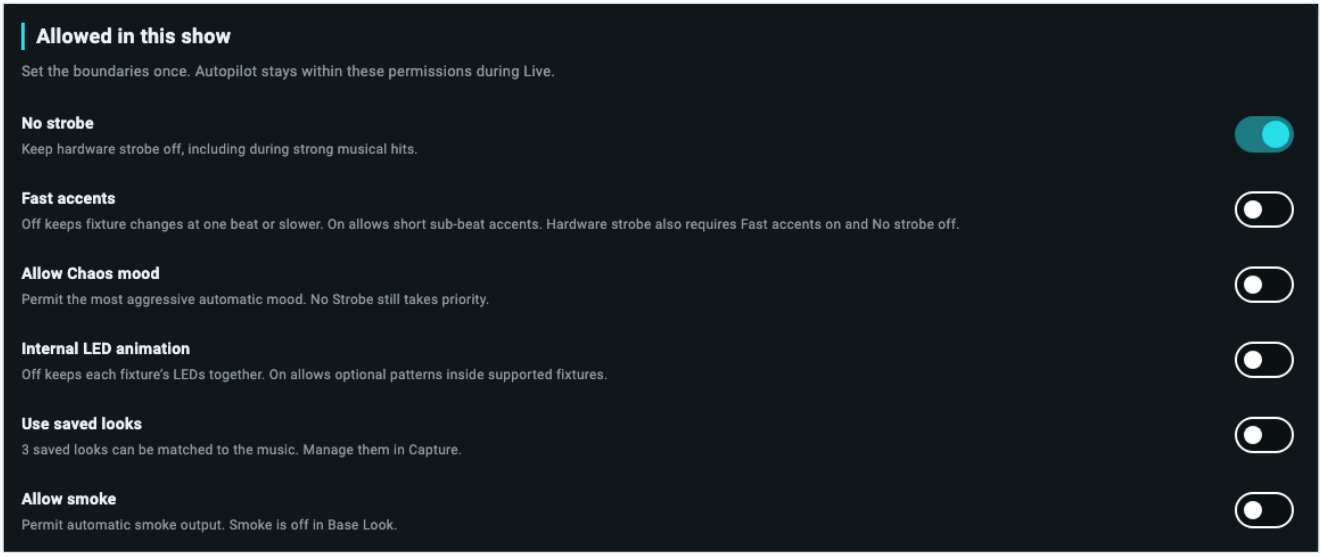
Practical example
Start with moderate Rhythm. Move up for deeper rhythm and right for broader movement as the song grows. Fast accents is a separate permission, not an action of the touch pad.

I · Autopilot

62 Prepare: rig, limits and policies

PILOT > Prepare > Rig / Response / Policies / Audio

Prepare separates rig setup and permissions from live operation. Its four sections are Rig, Response, Policies and Audio. Opening it does not enable Autopilot. Ordinary music-driven output works with whole fixtures, rather than individual internal LED cells.



Prepare > Policies: separate permissions for fast accents, strobe, Chaos and internal LED animation.

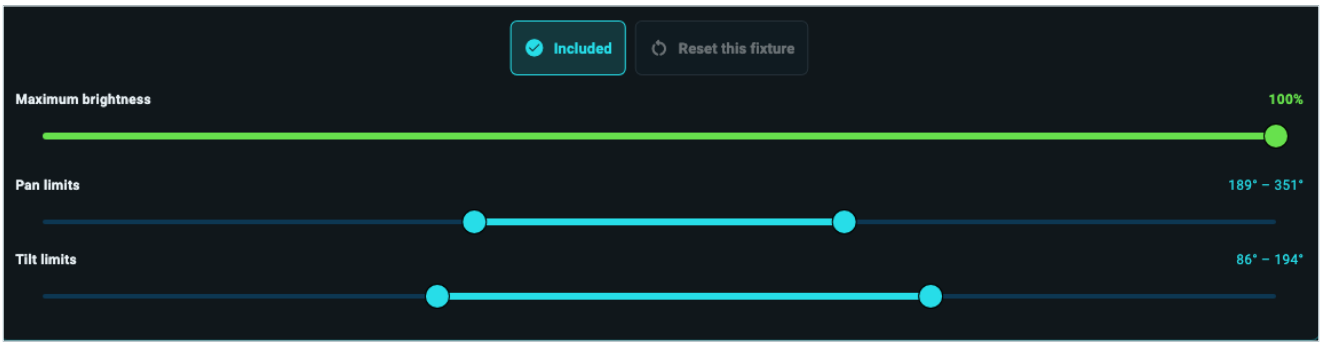
READING THIS VIEW

Rig	Choose participating fixtures and their physical limits.
Response / Policies	Response sets behavior and break lighting. Policies > Fast accents is off by default; hardware strobe needs a separate permission.
Audio	Choose the tempo source and inspect detection evidence.

Note
LED color mixing and mechanical wheels use different control. An unmapped wheel stays Open; mapped wheels use static slots instead of arbitrary rotation. Allow smoke is separate and smoke stays off in Base Look. Check limits on the physical rig before performance.

I · Autopilot

62 Prepare: rig, limits and policies: workflow



Prepare > Rig: expand a fixture to set Included, Maximum brightness and its own Pan/Tilt limits.

STEP BY STEP

1. Rig: include fixtures, set Maximum brightness and use Pan limits and Tilt limits for movers. Smoke and laser devices do not join ordinary fixture output.
2. Check Map static wheel colors against the fixture's DMX chart. The map is shared by that profile; verify static slots on the physical fixture.
3. Response: adjust Mood variation, Energy bias, Base Look level and Movement shape. Freeze look between songs holds movement and colors during breaks; VIS retains its last displayed position.
4. Policies: leave Fast accents and Internal LED animation off for ordinary whole-fixture rhythm. Permit Chaos, saved looks or smoke intentionally.
5. Audio: check microphone permission, Song sensitivity, Beat Detect or Tap Tempo, and detection meters. Quiet music can continue without drum hits; real silence returns to Base Look.

CONTROLS AND MEANINGS

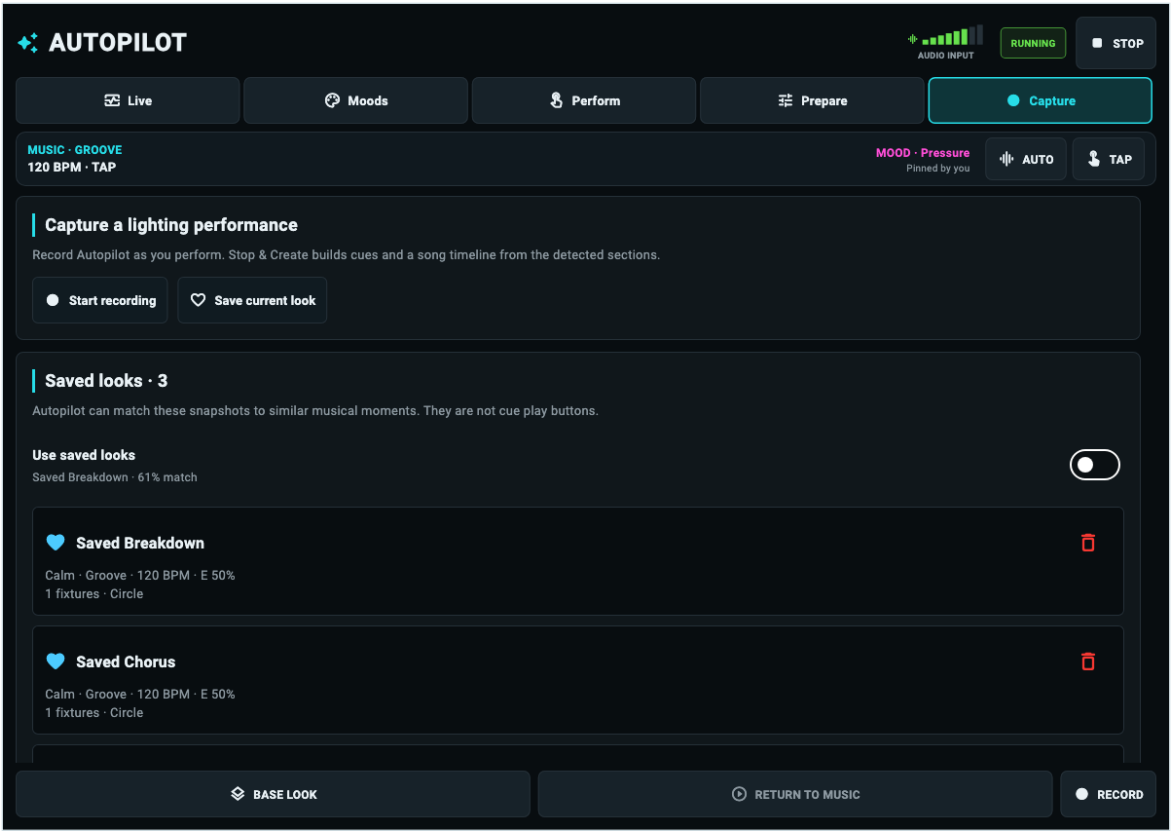
Fast accents	Off by default. Off keeps normal group changes on full beats or slower; on permits short accents within a beat.
No strobe	Independent hardware-strobe block. Autopilot strobe needs both Fast accents on and No strobe off. Whole-fixture dimmer rhythm does not require strobe.
Internal LED animation	Off by default, keeping each fixture's LEDs together. On permits internal patterns on supported fixtures.
Rig / Reset this fixture	Restores only that fixture's movement limits and brightness cap. This is not a hardware DMX reset command.
Reset global controls	Restores global controls and policies. Fixture inclusion, custom movement/brightness limits and wheel maps remain.
Audio	Input level, music presence and beat confidence are different. Steady noise or one loud sound alone does not establish reliable musical timing.

I · Autopilot

63 Capture: record a run or save a look

PILOT > Capture

Capture turns a performance into programming material, or saves one current look for later matching. It is Autopilot's fifth page. Saved looks is not a cue launch bank: Autopilot chooses suitable snapshots to match the music.



Capture: Start recording, Stop & Create, Save current look and the saved-look library.

READING THIS VIEW

Record	Record a performance after starting Autopilot; finish with Stop & Create.
Save current look	Save one snapshot for automatic music matching.
Saved looks	Manage snapshots here; they are not cue play buttons.

I · Autopilot

63 Capture: record a run or save a look: workflow

STEP BY STEP

1. Enable Autopilot with Start. Start recording does not enable a stopped run.
2. Press Start recording and perform through the musical sections. Recording status and elapsed time are shown. Stop & Create builds cues and a Song timeline from those sections.
3. Save current look captures one current situation. Enable Use saved looks only when Autopilot may match library looks to the music.
4. Check generated cues, target fixtures, values and timing before performance. Attach any local backing audio separately to the Song.
5. Delete unwanted saved looks individually or with Delete all saved looks. Confirmed deletion keeps existing cues and Songs.

CONTROLS AND MEANINGS

Start recording	Begins gathering material only while Autopilot is running.
Stop & Create	Ends recording and creates editable cue and timeline material.
Save current look	Stores one snapshot in the Saved looks library.
Use saved looks	Allows automatic matching to musical situations; it does not launch a saved look as a cue.
Effect permissions	Saved looks follows run permissions; Capture applies Fast accents and No strobe when creating cues. Existing cues run independently. Unknown internal LED hardware macros are not written.

Note
Capture stores detected musical sections, timing and the lighting programming generated from them. It does not record microphone audio or every DMX frame. Clearing the library and resetting global controls are separate actions.

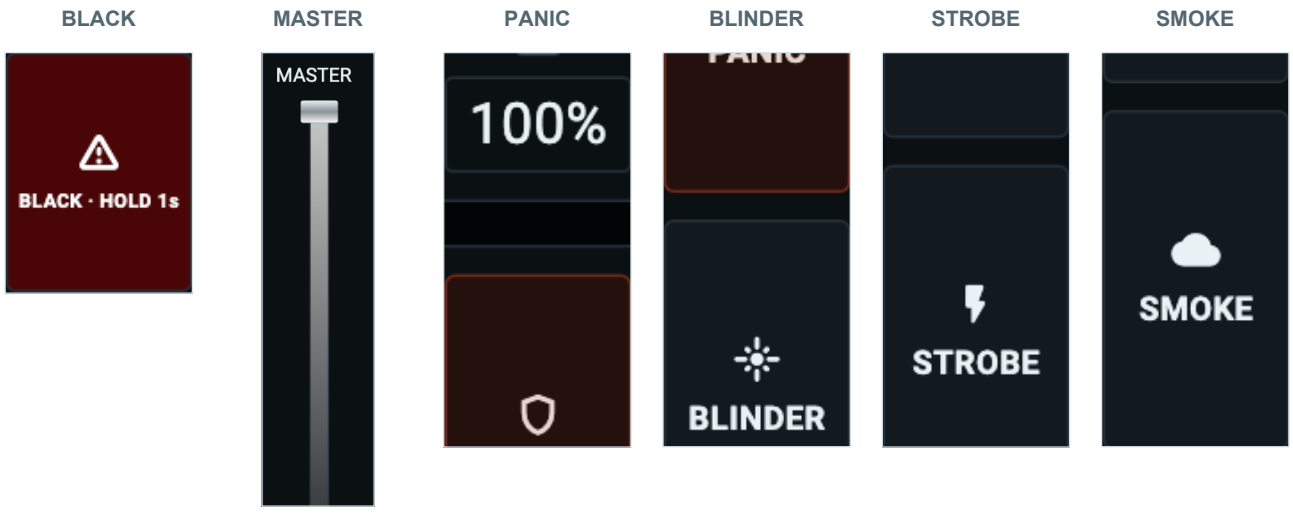
Practical example
Record a rehearsal of one song, choose Stop & Create, then inspect the generated Song and cues. Continue editing from that material; Capture does not replace checking your own rig.

J · Live controls and output

64 Master, BLACK and PANIC

Right rail; Settings > Safety > Panic Look

Master changes output brightness. BLACK darkens the lighting output; PANIC applies your configured safety look. These are different commands and neither deletes saved cues. BLACK is at the top right, above the shorter master; Panic and the other controls are below.



Enlarged details of the actual right-rail controls. On the desk, BLACK is above Master; the other controls are below. Earlier version 2.3.5 screenshot; appearance may differ in 2.4.

CONTROLS AND MEANINGS

Master	Overall brightness. Zero does not remove fixture power or necessarily stop motors.
Enable BLACK	Hold continuously for one second. A short tap does not enable blackout.
Release BLACK	When active, tap once to release.
PANIC	Recall the configured Panic Look; define a useful look for your rig.
Return	Release restores the underlying current output. A pending TIME override can set the visible return duration.
Continuing sources	Independent or recorded sources do not disappear just because a safety look temporarily covers them.

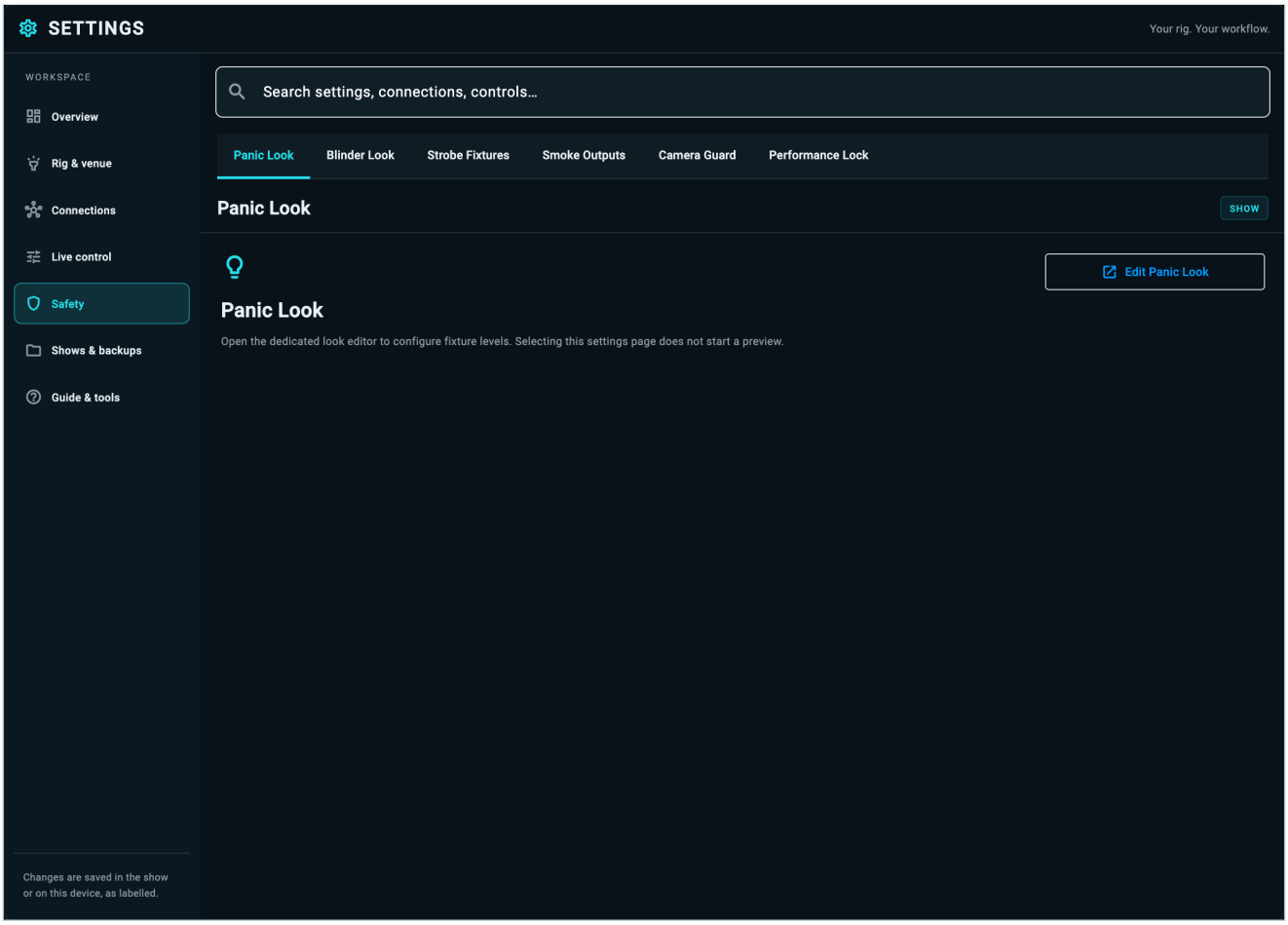
Note
Activating BLACK clears other momentary lighting safety overrides and cancels pending operator macro chains. BLACK is not a physical emergency stop for smoke equipment; Smoke is a separate output.

J · Live controls and output

65 BLINDER, STROBE and SMOKE

Settings > Safety > Blinder Look / Strobe Fixtures / Smoke Outputs

These are quick performance controls. Configure their targets and values in Settings so they do not act on whichever fixtures happened to be selected last.



Safety groups looks and performance-button targets. Opening a page alone does not start a look preview. Captured from version 2.4.

STEP BY STEP

1. Define Blinder Look fixtures and channel values.
2. Choose the intended group in Strobe Fixtures.
3. Configure Smoke Outputs: universe/address, level and Flash or Toggle behavior.
4. Test press/release and interactions with Black, Panic and Master.

CONTROLS AND MEANINGS

BLINDER	A held bright override; release exposes continuing underlying sources.
STROBE	Momentary strobe on selected strobe fixtures. Other channels follow the remaining output and safety rules.
SMOKE / Flash	Output is active while held.
SMOKE / Toggle	Press to change state; press again to stop.
Address / channel	The smoke control channel may not be channel 1. Follow the device chart.

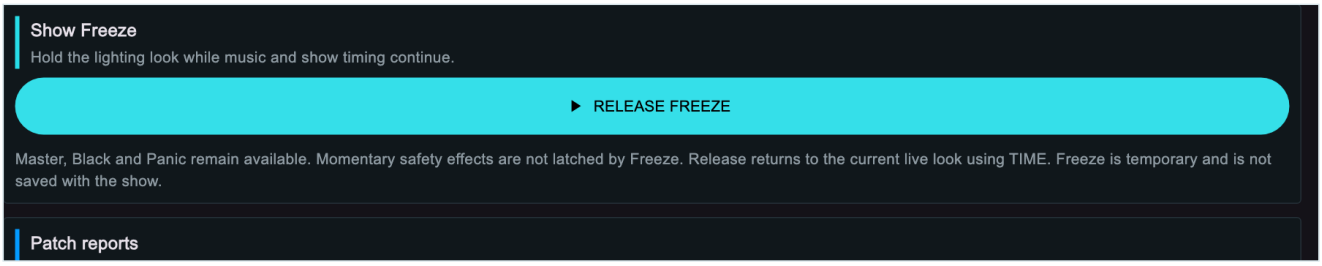
Note
Observe the equipment's operating limits. DMX zero does not disconnect mains power, and a software button does not replace a device emergency stop.

J · Live controls and output

66 Show Freeze: hold the lighting look

Top bar > snowflake; Settings > Guide & tools > Additional tools > FREEZE LOOK

Show Freeze holds the current lighting appearance while music, Timeline and cue clocks continue. Use it for a temporary visual hold; use PAUSE when the Playback clock itself should stop.



Show Freeze holds the lighting look. RELEASE FREEZE releases it with the TIME transition. Captured from version 2.4.

STEP BY STEP

1. Press the snowflake or FREEZE LOOK.
2. Read the persistent FREEZE notice. You can still change the underlying run with GO, faders or Stop.
3. Use RELEASE in the notice to return to the current live state. The transition uses TIME, including 0 for immediate release; without an override it is one second.
4. Release before a Backup handover or after the intended hold is finished.

CONTROLS AND MEANINGS

Master / BLACK / PANIC	Remain available immediately while the look is held.
Held momentary controls	Freeze does not keep smoke or momentary strobe active after its source is released.
Stop during Freeze	Stops the underlying transport but leaves the held look visible until RELEASE.
Temporary state	Not stored with the show. A changed show/patch or a true background suspension clears the old hold.
Browsing settings	Switching Settings pages, universe filters or fixture selection, searching profiles and refreshing library status preserve the held look. Accepting an unchanged address or rejecting an occupied address is not a patch edit.

> **Note**
> Freeze holds DMX values. It cannot pause an animation generated inside a physical fixture by its own built-in program. Re-freezing during a release fade captures the currently blended look.

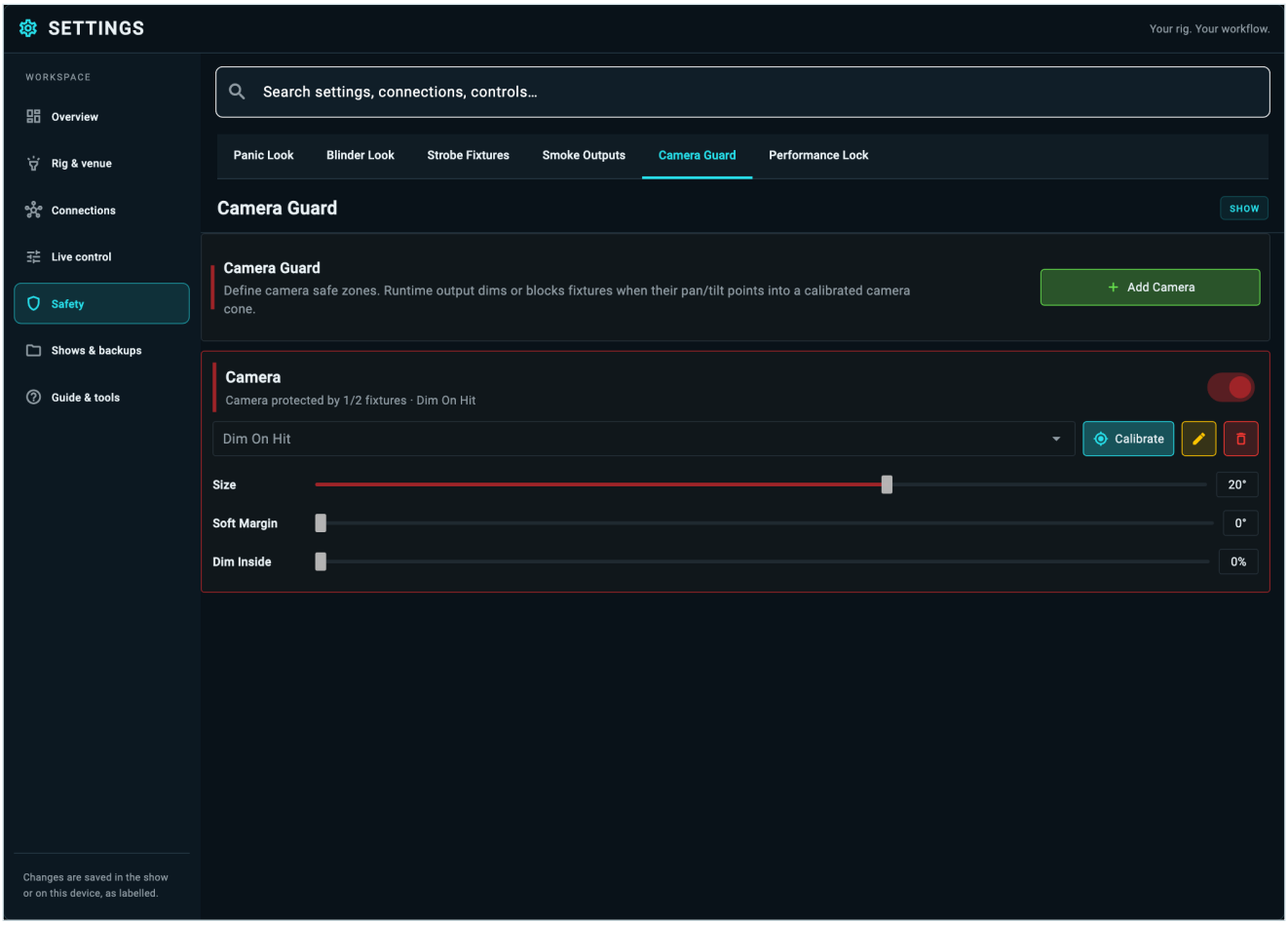
See also: 37 TIME: override transition duration / 64 Master, BLACK and PANIC / 35 Playback and GO

J · Live controls and output

67 Camera Guard and AR Focus

Settings > Safety > Camera Guard; AR Focus

Camera Guard limits beam hits on a configured camera using calibrated directions and protection areas. It is not automatic performer tracking or continuous physical-camera detection.



Safety > Camera Guard: add a camera, configure protection and explicitly open calibration. Captured from version 2.4.

STEP BY STEP

1. Add a named camera area and enable it.
2. Select protected moving fixtures and calibrate their pan/tilt direction toward the camera.
3. Set protection radius, soft margin and dimming level.
4. Choose Avoid + Dim, Dim On Hit or Hard Block.
5. Test all intended movement paths and recheck whenever fixtures or the camera move.

CONTROLS AND MEANINGS

Avoid + Dim	Attempt avoidance and dimming in the hit area.
Dim On Hit	Keep movement direction but attenuate when pointing toward the camera.
Hard Block	A stricter block of configured hits.
AR Focus Auto Hunt	Camera-assisted aiming, separate from a continuous tracking engine.

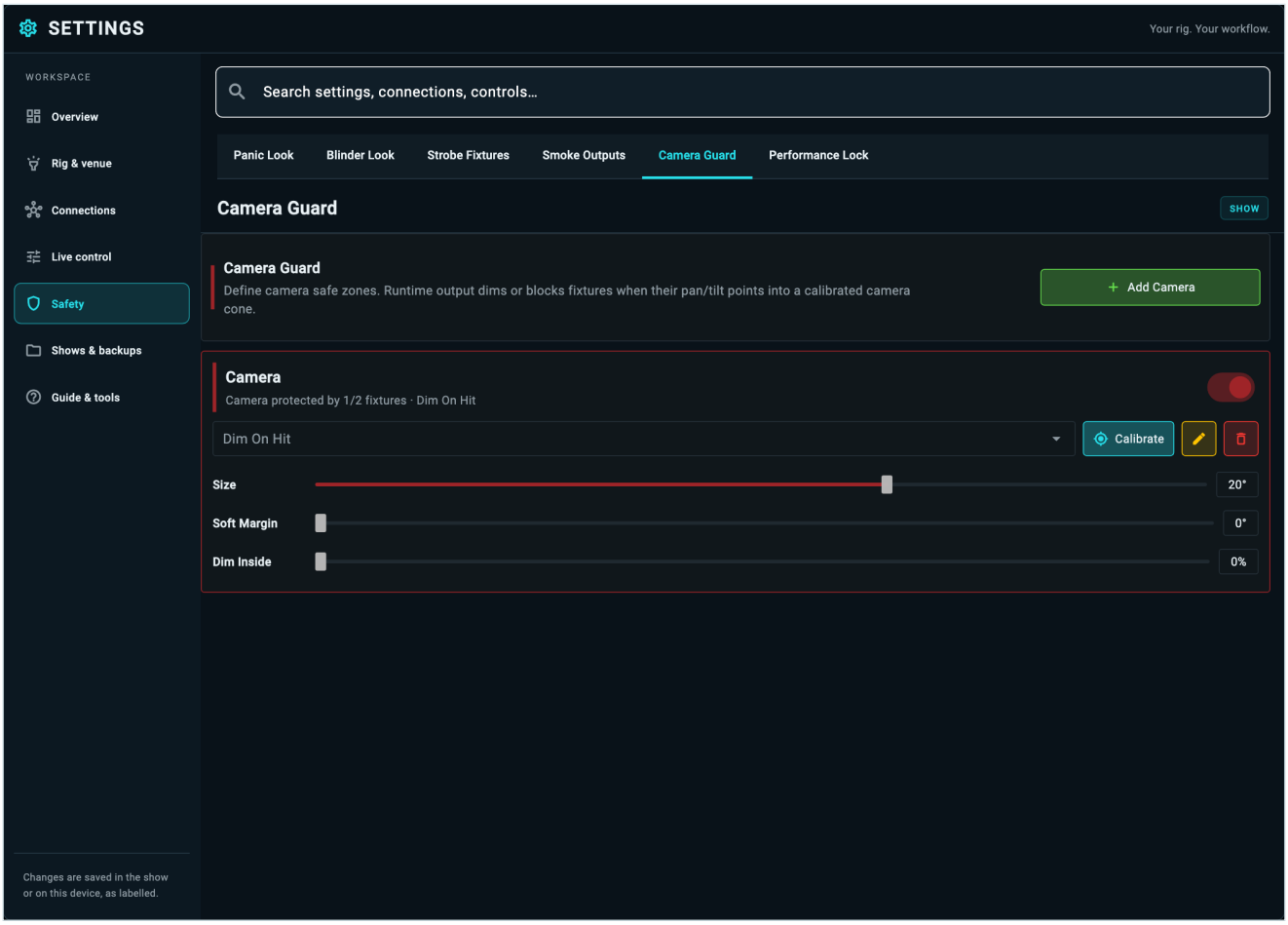
Note
The switch alone does not protect a camera without correct per-fixture directions. Verify protection again after installation or calibration changes. Add Camera, Calibrate and edits require editing permission. Reopen the action if calibration, show or permission changes during the dialog; an old rename or deletion does not replace the current protection.

J · Live controls and output

68 AR Focus / Auto Hunt in practice

Fixture calibration > AR Focus / Auto Hunt

Auto Hunt helps locate an aiming point using a camera, either a supported local camera mode or paired remote phone. It is a calibration tool, not continuous performer tracking.



Camera Guard Calibrate opens a separate aiming workflow; opening this settings page does not calibrate. Captured from version 2.4.

STEP BY STEP

1. Select the intended moving fixture and camera device.
2. Set the target in the camera view and ensure the light spot is distinguishable.
3. Start Hunt; the search progresses from coarse to fine.
4. Use Stop Hunt if needed and make small pan/tilt corrections.
5. Save the successful aim, calibration or related Camera Guard result using the offered save action.

CONTROLS AND MEANINGS

Remote phone	Pair Phone Remote first; use Auto Hunt in the phone camera view when selected.
Fine step	Reduce the size of manual fine adjustments.
Saving	Check whether the saved result is a target position, calibration or camera protection data.

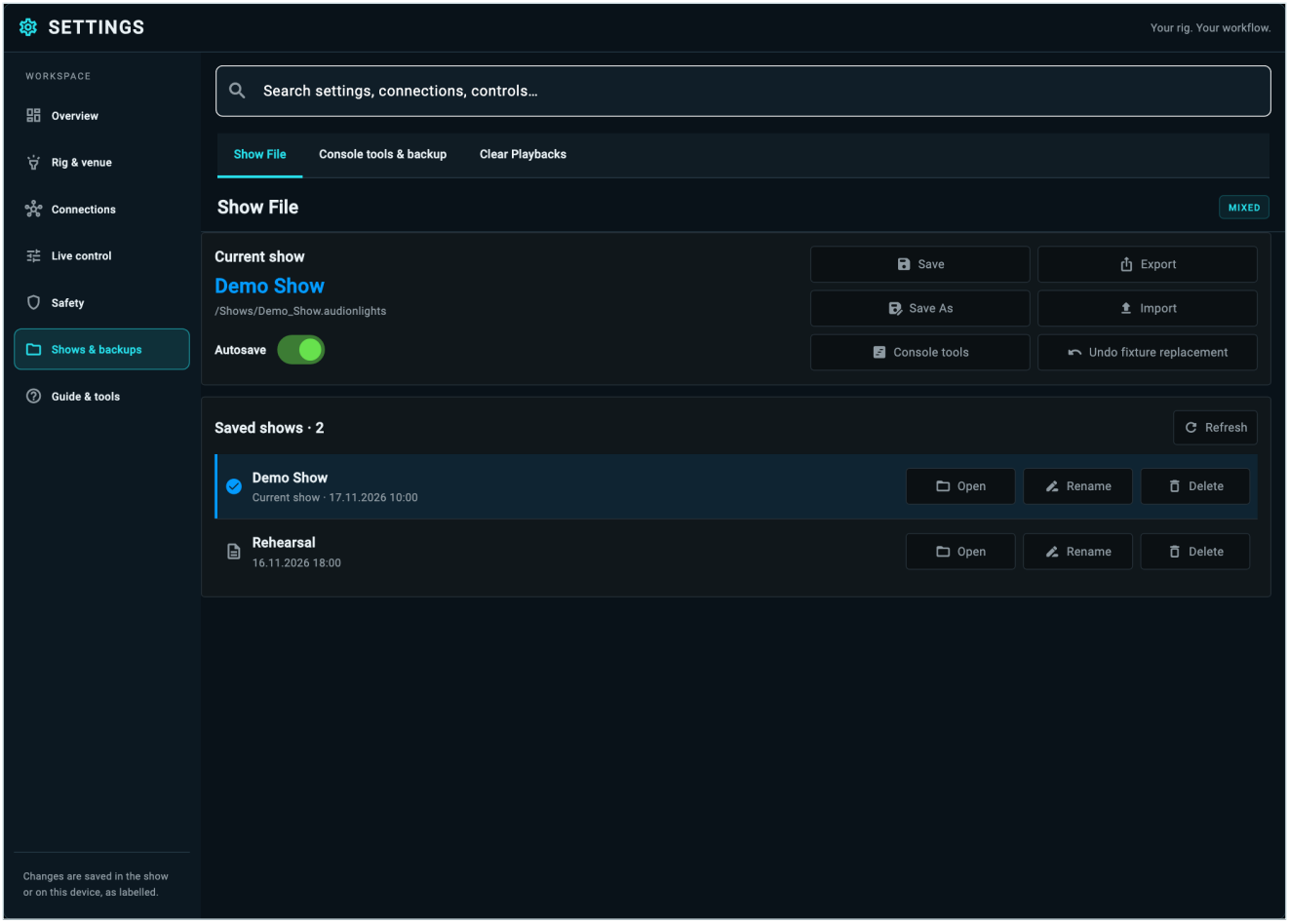
Note
Camera permission and a visible light spot are required. Do not accept a failed search as calibration. Save a working show before extensive recalibration.

K · Show files

69 Save, Save As and Rename

Settings > Shows & backups > Show File

Show File combines current-show saving and saved files on one page. The top Current show card contains its name, location, Autosave, save actions and import/export actions. The Saved shows list is directly below. There are no lower Current, Saved shows or Transfer tabs.



Show File: Current show, Autosave and save/transfer actions together, with Saved shows below. Captured from version 2.4.

READING THIS VIEW

Current show	The name, location and Autosave share a card with its action buttons.
Save / Save As	Save As is directly below Save. Export/Import share the compact action area.
Saved shows	The list below provides Open, Rename and Delete for each saved file.

K · Show files

69 Save, Save As and Rename: workflow

STEP BY STEP

1. Open Settings > Shows & backups > Show File and check Current show.
2. Use Save to update the current show. Save As is immediately below it and creates a separate named copy.
3. Check Autosave in the same card. Import and Export share its action area; wide layouts use two button columns.
4. Use Open, Rename or Delete for the intended file in the Saved shows list below. Refresh reloads the list.
5. After changing shows, check the desk name. Save a named copy before major rig changes.

CONTROLS AND MEANINGS

Save	Update the current save using normal file behavior.
Save As	Create a separate named copy, useful before venue-specific changes.
Rename	Renames the selected file in Saved shows; Save As creates a new copy.
Autosave	An automatic working copy; recognize its label to avoid opening the wrong version.
Open / Delete	Open the chosen save / delete the selected saved item after confirmation.
Show could not be opened	Saving and DMX output pause if no working copy can be recovered. Retry opening show, or explicitly preserve the existing files before starting a new show. An unreadable copy is not silently overwritten by an empty show.
Unfinished dialogs	If the show, selected file, settings page or editing permission changes during a name dialog or delete confirmation, the old action is not committed. Reopen the action for the intended target.

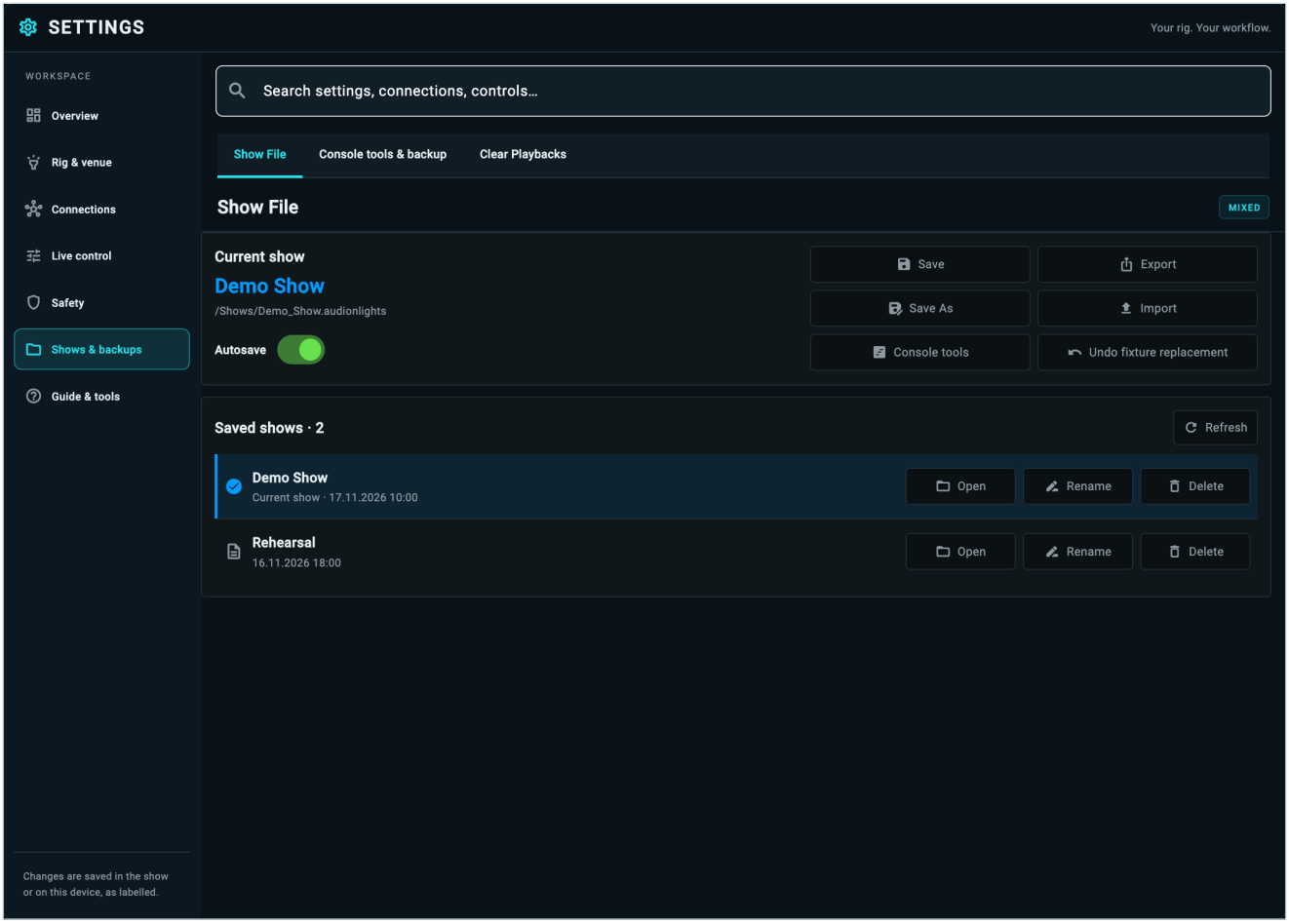
Note
Save As and Rename do not export to another device. Use Export in the same Current show card for a portable copy. Console tools opens the additional workflows; Undo fixture replacement restores the state before the last fixture replacement. Keep a known working copy until the new one is verified.

K · Show files

70 Export, Import and setlist import

Settings > Shows & backups > Show File > Export / Import

Export and Import are in the top Current show card beside the save controls. There is no separate Transfer page or transfer card. Native file pickers differ between platforms; file types and the need to inspect the import remain the same.



Export and Import are in Current show. There is no separate Transfer tab. Captured from version 2.4.

STEP BY STEP

1. Open Show File on the source device and press Export in Current show. Save or share the resulting file to the intended location.
2. On the destination, choose Import and select a KAJO show or supported Audion Live setlist JSON.
3. Check patch, fixture identities, universes, cues, songs and setlist.
4. Save a named copy on the destination and test output before performance.

CONTROLS AND MEANINGS

KAJO show	The lighting-show structure including patch.
Setlist JSON	Song/show structure does not automatically supply unknown fixture profiles or complete lighting cues.
Media / audio	Check that source files exist on the destination. A path from the old device does not prove that media transferred.
macOS Import	Opens the system file picker. Check folder and file type if a file is not visible.

> **Note**
> Verify target IP addresses after import. The new device can have different network conditions or permissions even if the show opens correctly.

K · Show files

71 Undo and Redo programming edits

Top bar > Undo / Redo; Ctrl/Cmd+Z / Ctrl/Cmd+Shift+Z

The shared history covers supported cue, library, Song/Setlist, patch and Execute-layout edits in chronological order. It restores programming rather than replaying a previous live performance.

STEP BY STEP

1. Use Undo to reverse the most recent supported edit; read its description.
2. Use Redo to reapply it. Making a new edit after Undo discards the Redo branch.
3. After a patch change, verify fixture identity, profile, universe/address and affected saved cue channels.
4. After an Execute binding or layout change, check the pad and explicitly restart it if needed.

CONTROLS AND MEANINGS

Patch	Includes add/import/duplicate/delete, rename, active status, role, addressing/Auto Address and profile replacement; affected stored channel data is restored together.
Execute	Includes A-D bindings, names/colors, sizes/moves, grid size and saved fire/latch settings.
Live operation	Bank selection, running faders and live button presses are not history steps. Restoring a removed/rebound pad does not restart its old run.
Limits	History is bounded to 80 steps / 8 MiB and clears when changing shows. Not every effect editor or setting is covered; macro-library deletion is not restored.
Text fields / locks	A text field retains its own Undo. Performance Lock and Guide Mode block programming-history actions.

> **Note**
> Undo is not a saved-file backup and is not a way to recreate a past live output state. Save a named working show before major rig changes.

K · Show files

72 Lock the desk for performance

Top bar > lock icon; Settings > Safety > Performance Lock

Performance Lock protects programming while keeping prepared live controls available. Set it before handing the device to a performer or another operator.

STEP BY STEP

1. Press the top-bar lock. On first use, enter and confirm a 4-8 digit PIN.
2. Operate prepared Execute banks/pads, Playback transport/faders, Master and the right-rail live controls.
3. Use Live controls for TIME, Autopilot Start/Stop and moods, Start Song or Load Setlist.
4. Choose UNLOCK and enter the PIN to resume programming.

CONTROLS AND MEANINGS

Protected	Patch, library edits/deletes, show changes/import/Save As and Undo/Redo are unavailable. Macros cannot bypass this protection with Record/Update actions.
Still live	Existing runs, clocks, fader levels and safety states continue. BLACK retains its one-second hold; release is a tap.
Favorites / sources	Saved Master/Tempo/Execute/Playback controls and the source inspector remain useful; fixture programming and editing favorites are blocked.
PIN storage	Stored on this device, separate from show files. A configured PIN makes later launches start locked.

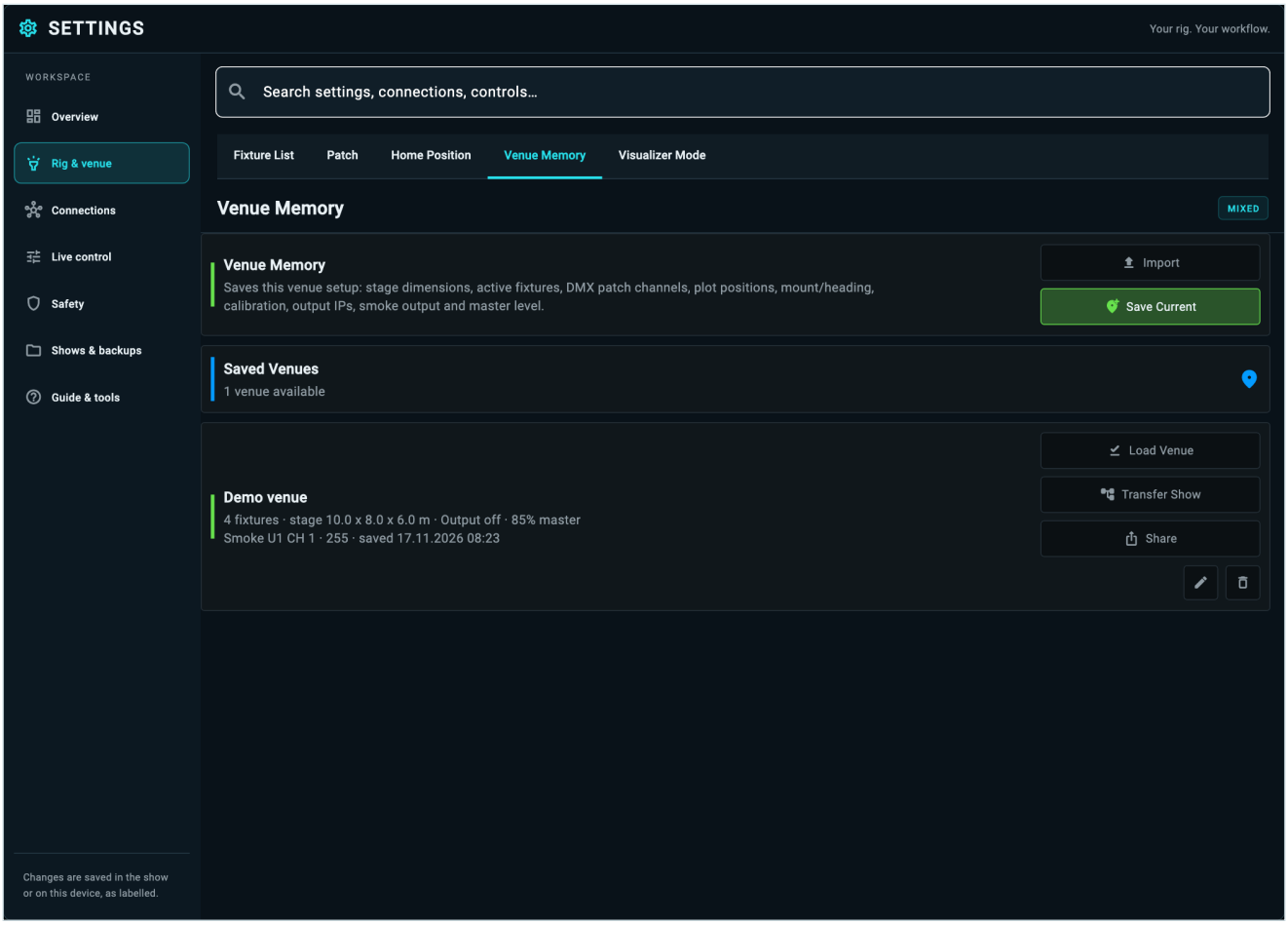
Note
This is an operator lock inside KAJO, not an operating-system kiosk. Check the PIN before the show; moving a show file to another device does not transfer its PIN.

K · Show files

73 Venue Memory and adapting the rig

Settings > Rig & venue > Venue Memory

Venue Memory stores venue-related patch, network targets, plot, homes, calibration and related settings. It helps reuse programming at another location.



Rig & venue > Venue Memory: saved venues and rig-transfer workflows. Captured from version 2.4.

STEP BY STEP

1. Build and test the venue patch and calibration.
2. Save a named Venue Memory.
3. At another setup, select the appropriate memory and review loading/adaptation.
4. Check roles and fixture correspondences; still validate physical aiming and wheel slots.
5. Save under a new show label to retain the previous venue version.

CONTROLS AND MEANINGS

Patch / IPs	Fixtures, addresses and network destinations.
Plot / Home / Calibration	Stage-map and physical control settings.
Adapt show	Adapt show roles/targets to the venue rig using the offered controls.
Share / Rename / Delete	Manage venue memories separately from the cue library.

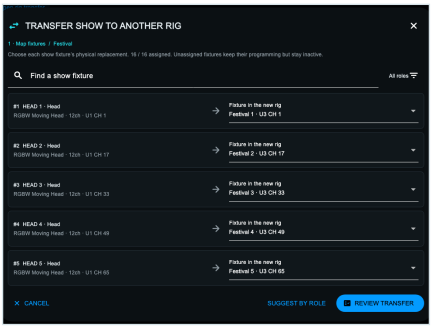
> **Note**
> Venue Memory cannot make different fixture models optically identical. Verify movement, dimmer response, gobos and wheel colors before live use. To adapt programming to different fixtures, use the reviewed Transfer Show workflow; a simple venue load is not a programming transfer.

K · Show files

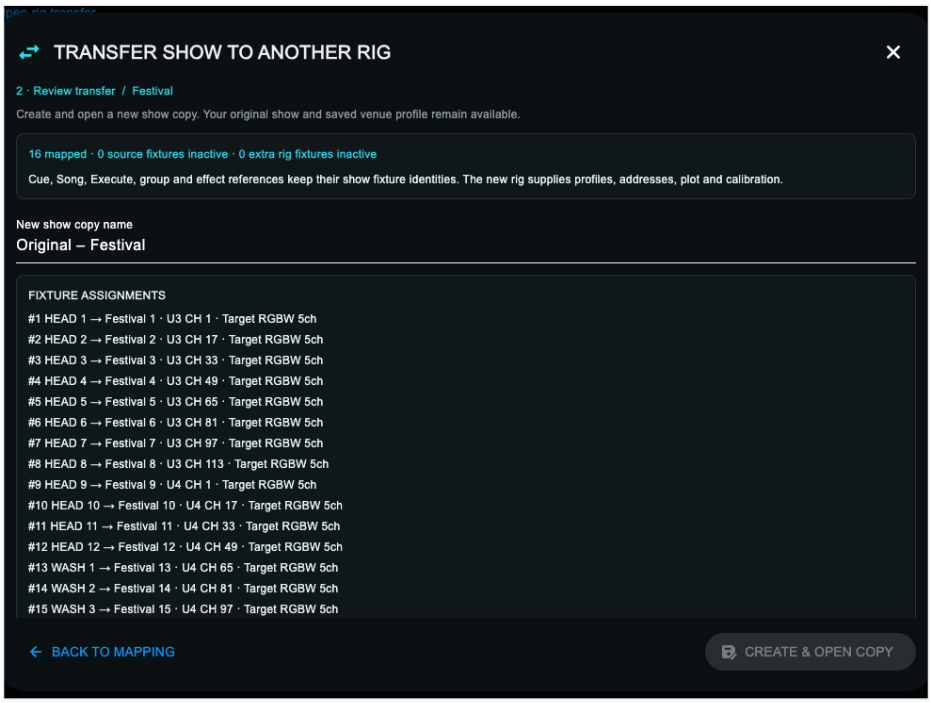
74 Transfer a show to a different rig

Settings > Rig & venue > Venue Memory > destination venue > Transfer Show

Transfer Show adapts existing programming to another set of fixtures and saves a separate named copy. Loading a venue alone changes setup; it does not perform this reviewed transfer.



Transfer Show: map show fixtures to the destination rig before review. Captured from version 2.4.



Review transfer: check compatibility and the new show name. Create & Open Copy creates a separate copy.

STEP BY STEP

1. Prepare the destination rig as a Venue Profile, including profiles, addresses, geometry, mounts and calibration.
2. Open the original show, import the destination Venue Profile into Venue Memory and choose Transfer Show on its card.
3. Match each source fixture to one destination fixture. Review the role/profile suggestions; a destination can be assigned only once.
4. Leave unmatched source fixtures inactive. Review unsupported attributes and raw-DMX warnings, then enter a different show name.
5. Create the copy. The original is backed up before switching. The old rig is released dark; the new copy opens stopped and dark, with network/USB outputs Off by default.

6. Check patch, visualizer geometry, limits and representative Playback/Execute cues before deliberately enabling output.

CONTROLS AND MEANINGS

Logical identity	Cue IDs, song links, timing, palettes, FX and Execute references retain their identities.
Physical setup	Destination profiles, DMX addresses, positions, mounting and calibration replace their source equivalents.
Unmatched fixtures	Original programming is retained but inactive. Extra destination fixtures get fresh IDs and stay inactive.
Profile differences	Unsupported raw channels and mechanical wheel/program slots are dropped or reported, not guessed. Reprogram those looks for the destination.
Output settings	Use venue output settings is optional and never starts a cue by itself.

> **Note**
> Transfer is one-to-one fixture matching. It does not duplicate one source across many destinations or merge only part of another show. Keep the original and inspect the adapted copy with the real rig.

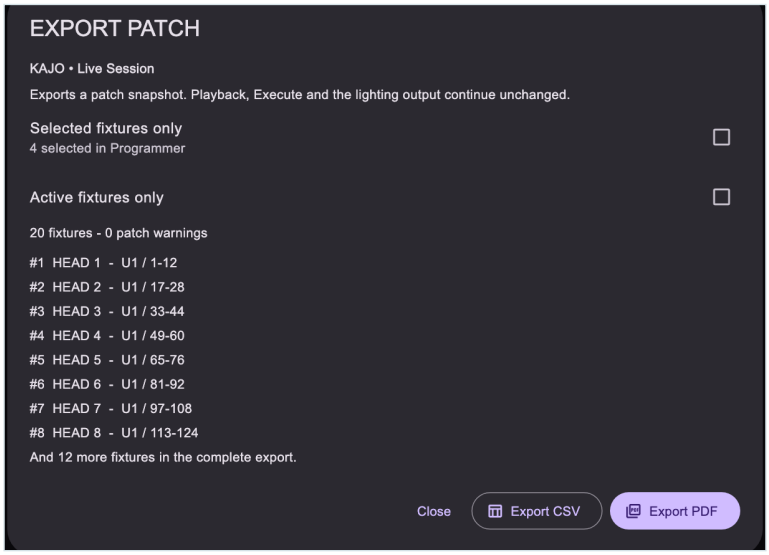
See also: 73 Venue Memory and adapting the rig / 69 Save, Save As and Rename / 12 Adding fixtures and assigning patch addresses

K · Show files

75 Export the patch as PDF or CSV

Settings > Guide & tools > Additional tools > EXPORT PATCH

Create a separate printable or spreadsheet-friendly patch report without changing fixtures, cues or running output.



Export Patch: choose PDF or CSV and check which fixtures will be included. Captured from version 2.4.

STEP BY STEP

1. Choose EXPORT PATCH and review all patched fixtures or Selected fixtures only.
2. By default inactive fixtures are included. Choose Active fixtures only if the recipient needs only the current active rig.
3. Check addresses, footprints and overlap warnings, then choose PDF or CSV.
4. Save with the macOS file dialog or use the mobile share sheet to send/store the report.

CONTROLS AND MEANINGS

Columns	Fixture ID, label, profile/mode, universe, start/end channel, footprint, role, mount and active state.
PDF	Paginated searchable report with bundled fonts. A character missing from those fonts is represented by its U+ code.
CSV	Original Unicode text in UTF-8 with a BOM. Formula-like text is protected for spreadsheet opening.
Warnings	Help review patch conflicts; exporting does not repair or apply any patch changes.

> **Note**
> This is a report, not a replacement for Export Show or a Venue Profile. Export the show as well when another KAJO installation needs the programming.

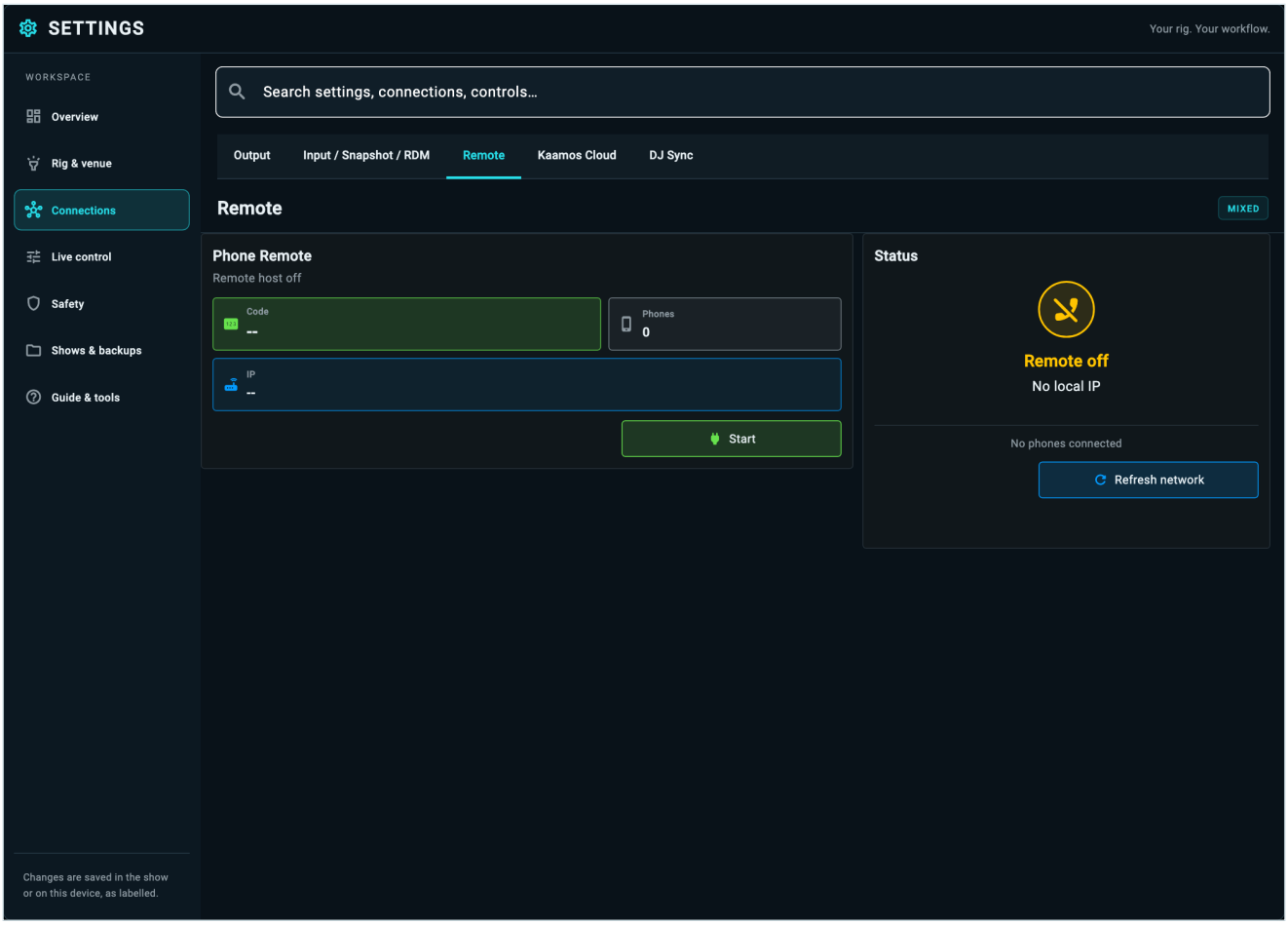
See also: 12 Adding fixtures and assigning patch addresses / 74 Transfer a show to a different rig

L · Remote connections

76 Phone Remote on the local network

Settings > Connections > Remote

A remote phone is a KAJO control surface. The main controller retains the show and DMX output. Connecting a phone does not transfer ownership or create a standalone backup controller.



Connections > Remote: local Phone Remote pairing code, address and connection status. Captured from version 2.4.

STEP BY STEP

1. Connect the phone and main controller to the same suitable LAN.
2. Open Remote and start/refresh connection details if needed.
3. Use the displayed address and pairing code.
4. Check the connected-phone count on the main controller.
5. Try Execute and Playback, then open PILOT at the bottom left for the existing Autopilot controls, including Start/Stop. Test the intended controls before the show.

CONTROLS AND MEANINGS

Code	The pairing code. Use your actual app code rather than a screenshot example.
IP / URL	The local main-controller address; changing Wi-Fi may change it.
Phones	The number of connected remote devices.
Disconnection	A lost momentary Flash, Blinder, Strobe or held Smoke command is released by the controller. Existing persistent runs may continue; check controller output and reconnect before sending more commands.
Autopilot	With a compatible connected Remote, start/stop, choose mood, adjust rhythm, movement and color pace, recall Base Look and tap tempo. Prepare/Capture programming stays on the main controller.
PILOT navigation	The bottom-left PILOT button opens Autopilot control. Execute and Playback are above it; changing the remote page does not itself start or stop Autopilot.

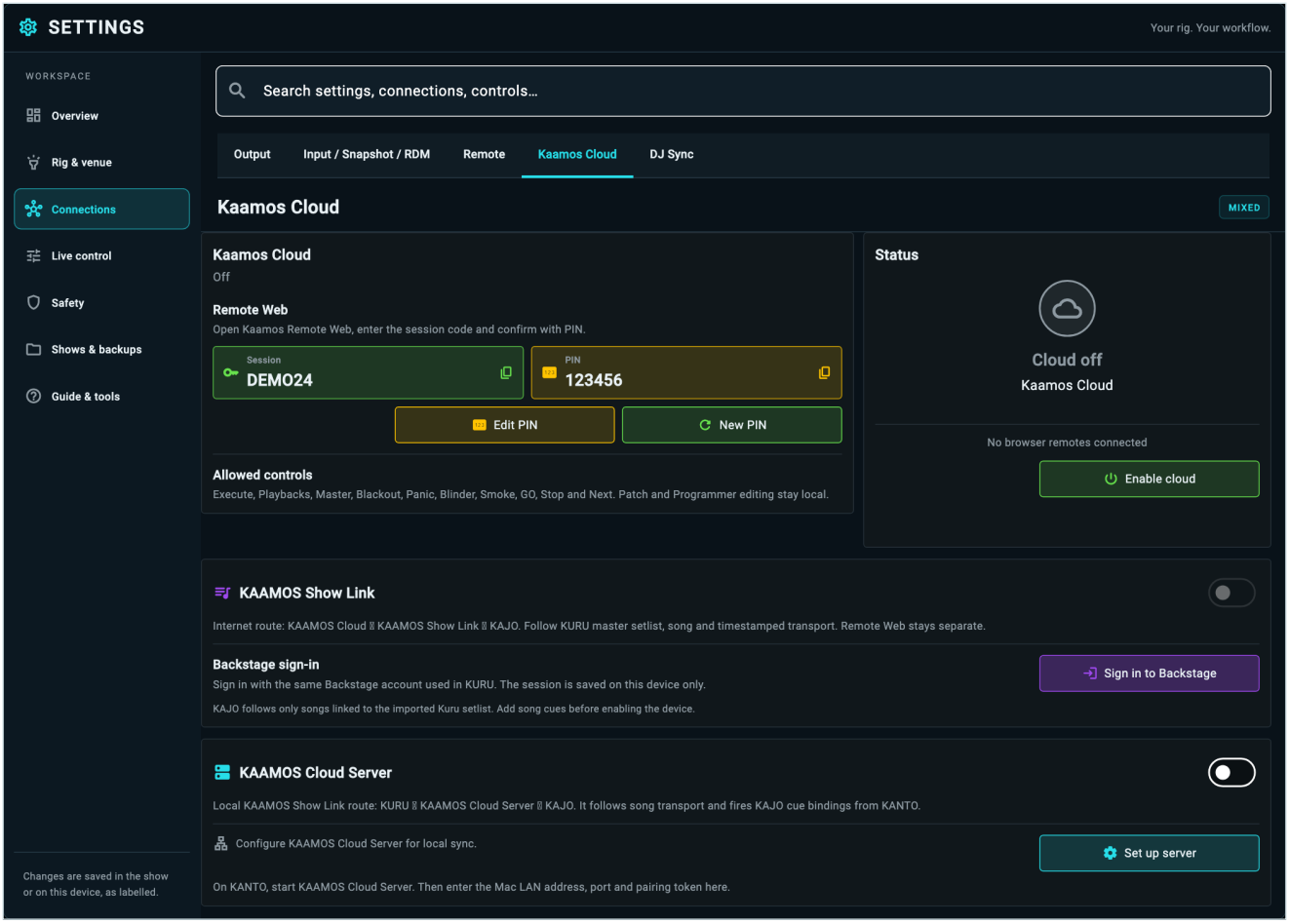
Note
The browser Remote uses the separately deployed Remote page. A main-app update alone does not update a separately hosted browser page; check its version/capabilities. Avoid guest-network client isolation and share pairing details only with authorized operators.

L · Remote connections

77 Cloud and KAAMOS connections

Settings > Connections > Kaamos Cloud

Kaamos Cloud is an upper tab in Connections. It groups internet remote control, KAAMOS Show Link and the local KAAMOS Cloud Server connection. They are separate from local Art-Net/sACN output. The service must be available and have the required permission and sign-in.



Connections > Kaamos Cloud: internet remote control, KAAMOS Show Link and Cloud Server. Captured from version 2.4.

L · Remote connections

77 Cloud and KAAMOS connections: workflow

CONTROLS AND MEANINGS

Cloud remote	Internet control through a session and its access details. Check the active session.
Session code / PIN	Share only with the operator. Never publish a real show code in a manual or screenshot.
KAAMOS Show Link	Follows the KURU Tracks master setlist, song and timestamped transport. Sign in to the same Backstage account and check song bindings.
KAAMOS Cloud Server	Local host, port and pairing details; wait for the indicated ready state.
Local light output	Remains the main controller's job. Cloud does not fix node addressing or fixture modes.

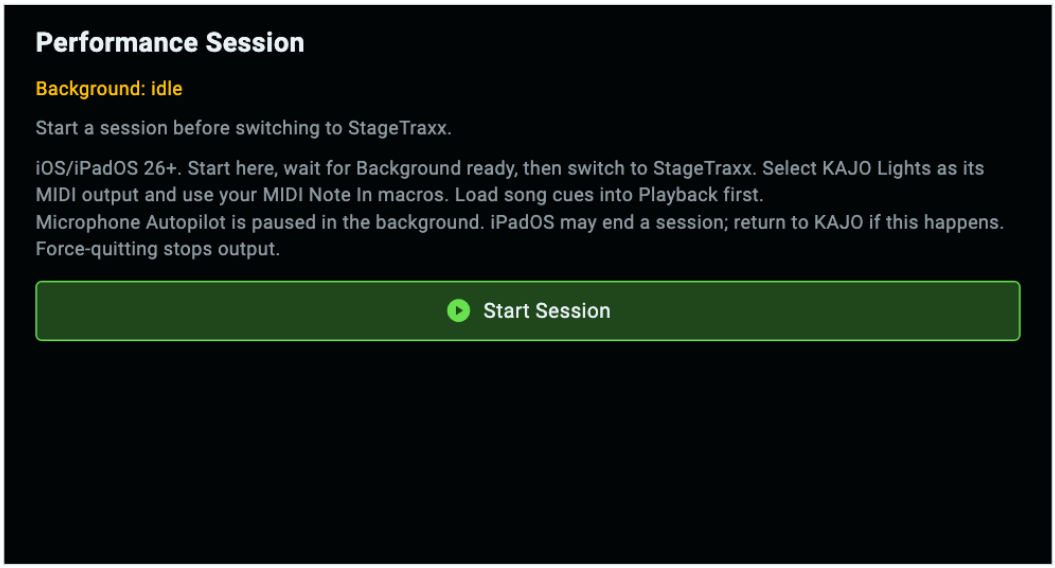
Note
Plan local operation during an internet-service outage. Cloud remote, local Phone Remote and synchronized Backup serve different purposes. If the show, page or editing permission changes during a PIN or server dialog, reopen the setting before saving.

L · Remote connections

78 Performance Session and background operation

iOS/iPadOS: Settings > Shows & backups > Show File > Performance Session

Performance Session is available on iOS/iPadOS 26 or later when granted by the system. Background ready allows supported lighting and song operation while another app is in front. Android build 80 and later do not include this background connection service: keep KAJO in the foreground during a show.



The iOS/iPadOS Performance Session panel: Start Session and the system-granted background permission status. Captured from version 2.3.5.

L · Remote connections

78 Performance Session and background operation: workflow

STEP BY STEP

1. On iOS/iPadOS, keep KAJO in the foreground and choose Start Session.
2. Wait for Background ready. Starting or requested is not yet an active session.
3. Switch to StageTraxx or the controlling app and test your MIDI Note, CC or Program Change macros. This Performance Session workflow is for iOS/iPadOS.
4. Verify the actual audio route, cue timing and Art-Net receiver before the show.
5. Use End Session when finished. If the session is denied or ends, return to KAJO and review the reported reason.

L · Remote connections

78 Performance Session and background operation: controls and storage

CONTROLS AND MEANINGS

Background ready	The native session is active. Supported lighting and timeline work can continue; this does not enable features unavailable on the current platform.
iOS / iPadOS 26+	Obtain the system grant with KAJO in front. Supported MIDI macros can control KAJO while StageTraxx is in front.
Android	No Performance Session background service from build 80 onwards. Keep KAJO in front. When backgrounded, output and show clocks pause in a controlled way; returning resumes from the frozen show time.
Denied / unavailable	Read the reason and keep KAJO in front. Repeatedly pressing Start is not proof of background permission.
Without an active session	Mobile output suspends in a controlled way. Returning resumes from frozen show time instead of skipping the time spent suspended.
Microphone Autopilot	Microphone listening pauses in the background on mobile devices; the session is not a background microphone mode.
macOS	Changing window focus does not invoke mobile background suspension.
Force quit / system expiry	Force quit ends execution. The OS can deny or end a session; return to KAJO when it ends.

Note
Start and check the session for each performance; it is not a promise of unlimited unattended background operation. While KAJO is in front, it keeps the screen awake during supported show operation. Test the actual device, audio app and node before a live performance. The Performance Session card appears on Show File only on supported iOS/iPadOS devices; it is not a general start button for every platform.

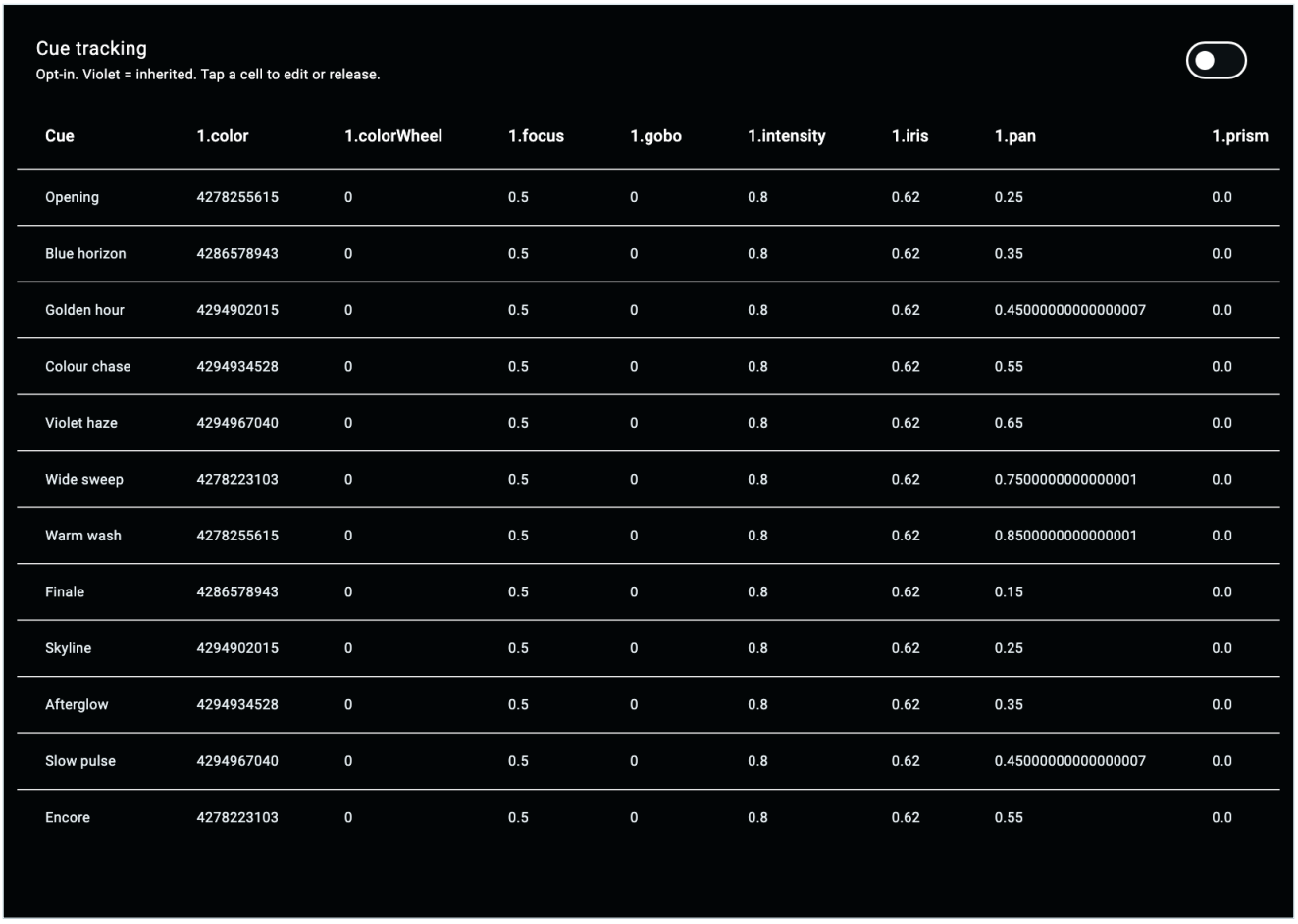
See also: 54 MIDI Learn: Notes, CC and Program Change / 76 Phone Remote on the local network

M · Advanced tools

79 Tracksheet and tracking

Settings > Shows & backups > Console tools & backup > Tracksheet

Tracksheet shows cue attributes as a table. Tracking is off by default so existing snapshot shows retain their behavior. With tracking enabled, values can be inherited from earlier cues in list order.



Cue	1.color	1.colorWheel	1.focus	1.gobo	1.intensity	1.iris	1.pan	1.prism
Opening	4278255615	0	0.5	0	0.8	0.62	0.25	0.0
Blue horizon	4286578943	0	0.5	0	0.8	0.62	0.35	0.0
Golden hour	4294902015	0	0.5	0	0.8	0.62	0.45000000000000007	0.0
Colour chase	4294934528	0	0.5	0	0.8	0.62	0.55	0.0
Violet haze	4294967040	0	0.5	0	0.8	0.62	0.65	0.0
Wide sweep	4278223103	0	0.5	0	0.8	0.62	0.7500000000000001	0.0
Warm wash	4278255615	0	0.5	0	0.8	0.62	0.8500000000000001	0.0
Finale	4286578943	0	0.5	0	0.8	0.62	0.15	0.0
Skyline	4294902015	0	0.5	0	0.8	0.62	0.25	0.0
Afterglow	4294934528	0	0.5	0	0.8	0.62	0.35	0.0
Slow pulse	4294967040	0	0.5	0	0.8	0.62	0.45000000000000007	0.0
Encore	4278223103	0	0.5	0	0.8	0.62	0.55	0.0

Settings > Shows & backups > Console tools & backup > Tracksheet - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Rows and columns	One row is a cue; one column is an attribute on a particular fixture.
Value or inheritance	Explicit data belongs to the cue. Inherited data comes from earlier rows; violet identifies inheritance.
Cells	Tap to edit or release. Zero differs from a missing value.

M · Advanced tools

79 Tracksheet and tracking: workflow

STEP BY STEP

1. Save a separate show before enabling tracking.
2. Enable it and edit one well-understood cell.
3. Check downstream cues in list order.
4. Test zero, inheritance and release before larger table changes.

CONTROLS AND MEANINGS

Track	Create an origin that carries forward until another explicit value interrupts it.
Cue Only	Change this cue while retaining its original influence on following cues.
Skip	Change this cue while allowing the preceding origin to continue afterward.
Inherit	Explicitly inherit a value; violet cells distinguish inheritance instructions.
Release / Release group	Release a raw channel or an intensity, color, position or beam family.
Numbers	Normalized values and recorded integers. A color may appear as an ARGB integer rather than a visual picker.

Note
Zero is a real value. Inheritance follows cue-list order, not the order in which the operator happened to press cues. A later cue's explicit color or other attribute replaces the inherited value for that attribute, including earlier direct DMX data. Inspect raw-channel entries as well as the visible attribute when checking an unexpected result.

M · Advanced tools

80 Multitrack FX

Settings > Shows & backups > Console tools & backup > Multitrack FX

Multitrack FX edits several event tracks on a shared timeline, combining attributes such as dimmer rise, color change and movement.



Console Tools > Multitrack FX - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

READING THIS VIEW

Attribute track	Each track targets one fixture and one attribute.
Event	The curve shows range and shape. Plus adds an event; the cross deletes it.
Shared transport	Run, BPM sync and Loop control the combined tracks. They do not automatically attach them to a cue.

M · Advanced tools

80 Multitrack FX: workflow

STEP BY STEP

1. Add a track and select fixture/attribute, for example intensity, RGB, pan, tilt, zoom or focus.
2. Add an event and set start, duration and range.
3. Choose waveform, cycles and phase.
4. Enable BPM sync for beat-based timing; otherwise times are seconds.
5. Use Run/Stop and optionally Loop. Inspect the underlying output after stopping.

CONTROLS AND MEANINGS

Start / Duration	Event position and length in the selected time unit.
Range / Waveform	Value bounds and shape.
Cycles / Phase	Repeats within the event and initial phase.
Loop	Repeat the whole timeline.
Overlapping events	A later overlapping event/track wins for the same attribute.
Saving	Track structure is saved with the show. This version has no direct cue attachment or separate Pause transport for this editor.

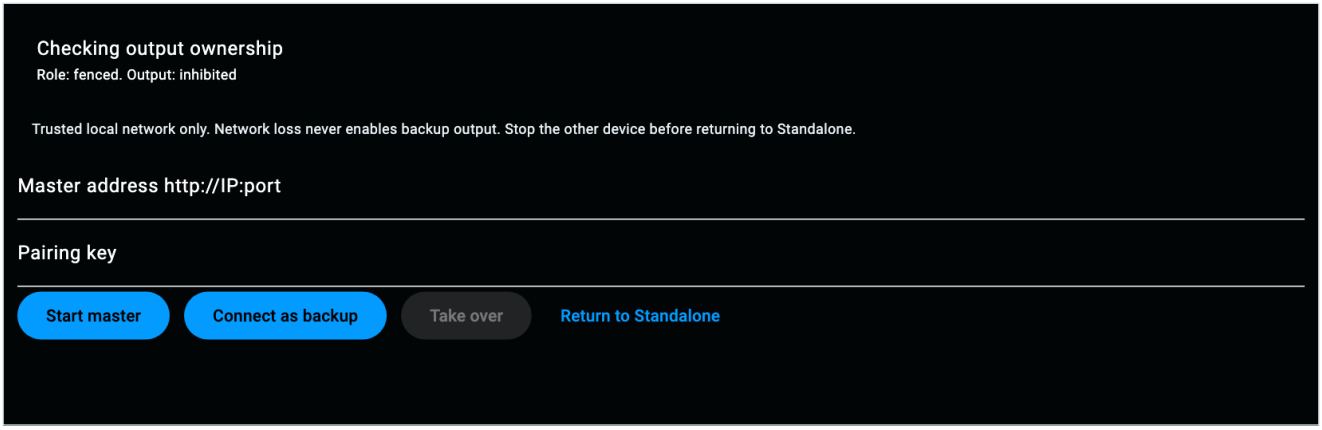
Note
Multitrack and Song Timeline differ: Song Timeline triggers cues during a song; Multitrack changes fixture parameters on its own tracks.

M · Advanced tools

81 A synchronized backup device

Settings > Shows & backups > Console tools & backup > Backup

Backup synchronizes the show and supported running state with another device. Take over is an acknowledged handoff, not automatic failover when a network connection disappears. Read the handoff check before stopping the main controller.



Console Tools > Backup - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

STEP BY STEP

1. Start Master on the main controller.
2. Enter its private LAN address, port and pairing key on the backup.
3. Connect as backup and verify that it has the intended show and a working path to the DMX rig.
4. Use Take over and read any blocked-source message. The master must acknowledge that its output has stopped before the backup may transmit.
5. If the main controller has failed completely, physically isolate or stop its output first. Only then confirm standalone operation on the backup.
6. After a restart, OUTPUT PAUSED · previous backup session keeps output fenced. Open Backup settings to reconnect, or choose Resume on this device after stopping the other console.

M · Advanced tools

81 A synchronized backup device: controls and storage

CONTROLS AND MEANINGS

Supported running state	Playback cue fades and supported persistent Execute Cue/FX/Pixel runs can transfer their running state, fader levels and timing. Both devices must support the current handoff protocol.
Blocked handoff	Active macros, Flash/Bump holds, Autopilot, Programmer LIVE, standalone Pixel Map, Multitrack FX, a Song Timeline or editor preview can block transfer. An unfinished movement/TIME transition can also block it. Resolve the reason before retrying.
Output fence	Losing a connection or restarting does not automatically allow a second device to transmit.
OUTPUT PAUSED	Resume on this device requires explicit confirmation that the other console has stopped. A recovery error leaves output protected; resolve the error before retrying.
Take over	A manually requested, acknowledged handoff. Unsupported sources are rejected before the master output is stopped.
Network	The pairing key restricts access but this LAN transport is not encrypted; use a trusted network.

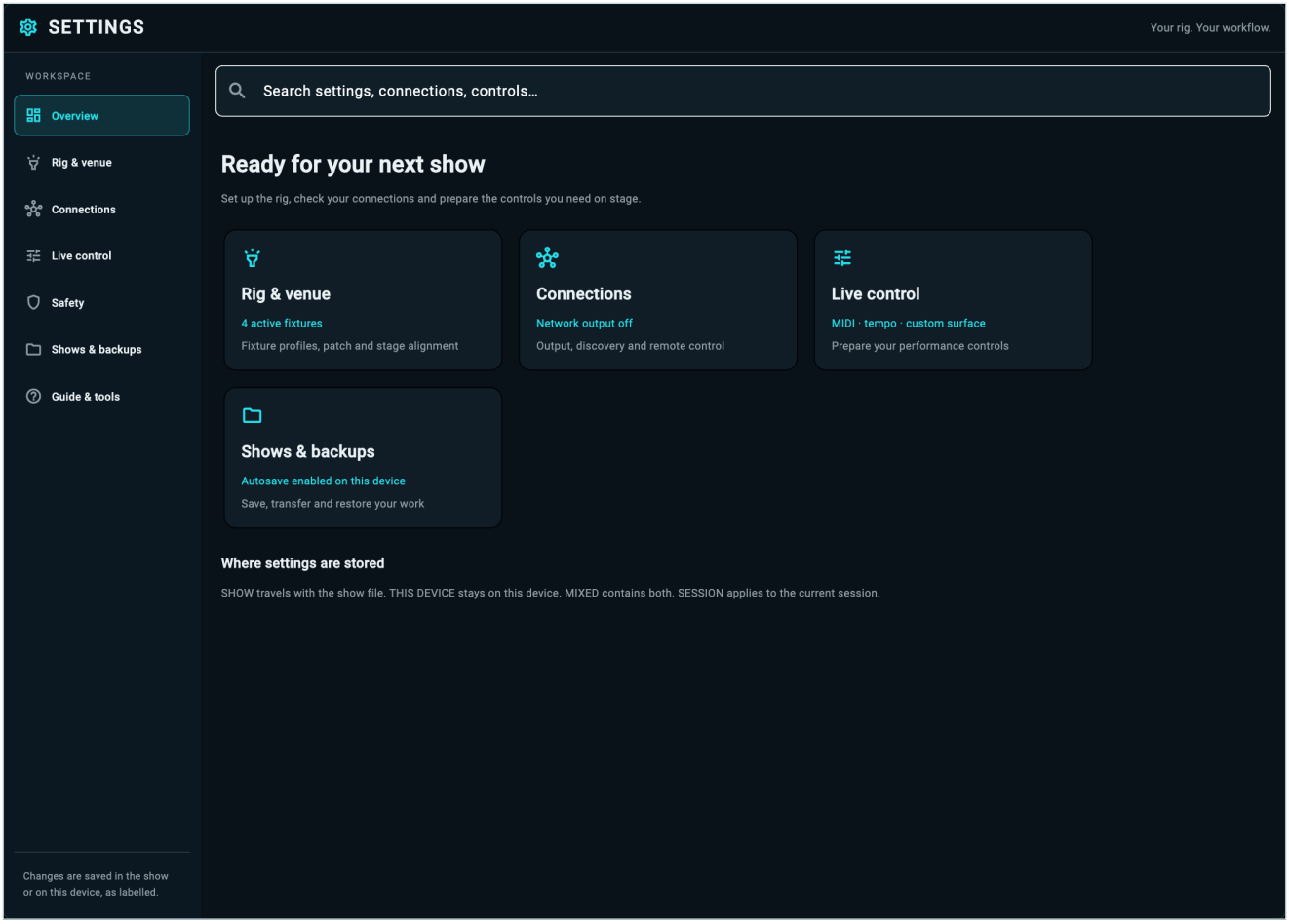
Note
Rehearse handoff with the actual equipment. Having a backup file does not establish correct universe routing to the node.

N · Settings and troubleshooting

82 Settings, Output Rate and Guide Mode

Settings > Overview; Connections > Output; Guide & tools > Guide Mode

Settings is a task-based workspace. Choose a task from its inner left menu and a page from the single upper tab bar. Search finds settings by name or function. Opening a page, tab or search result does not start a preview, change lighting output or request an autosave.



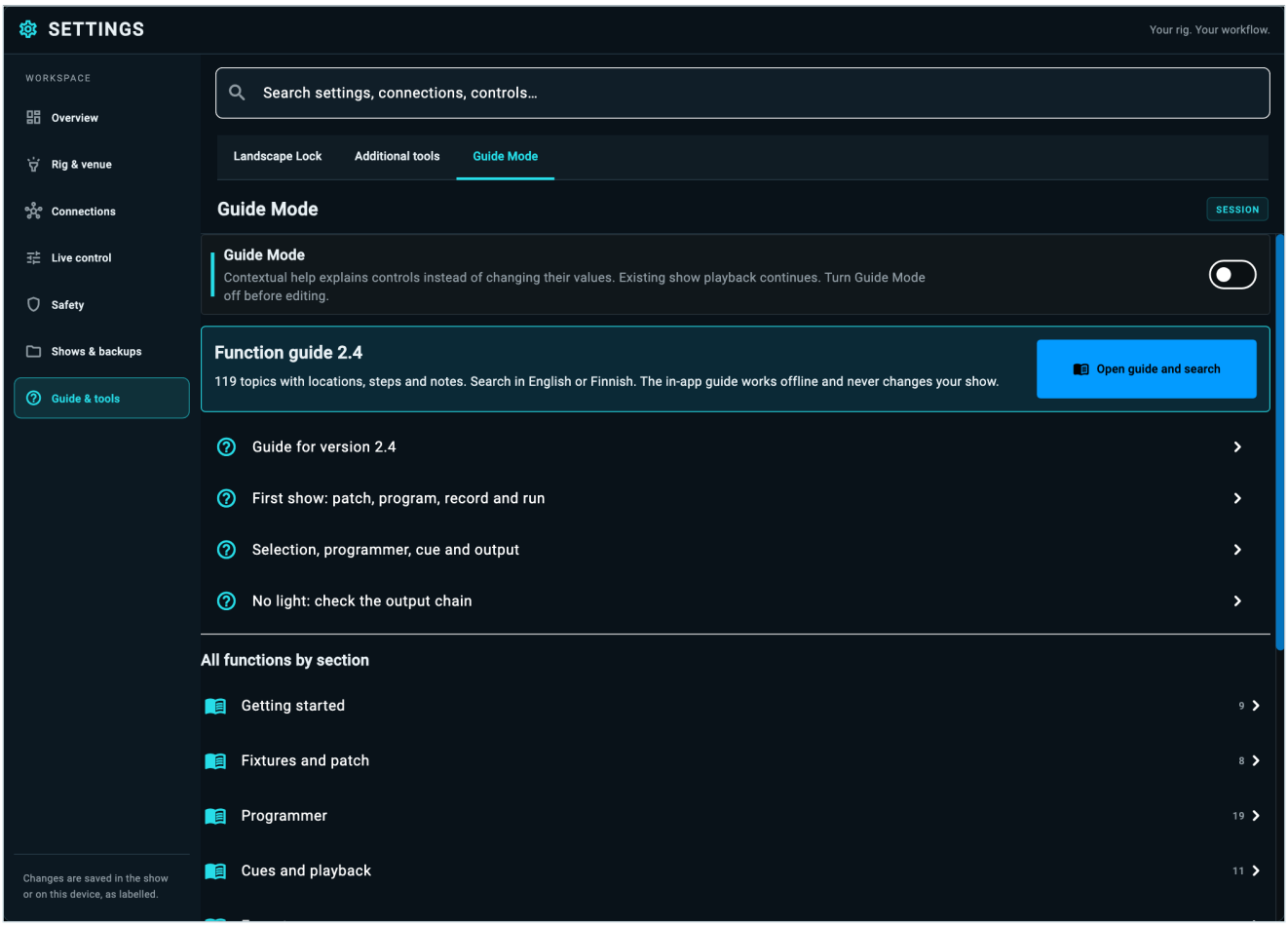
Settings Overview, task navigation and search. Upper page tabs follow the selected task group. Captured from version 2.4.

READING THIS VIEW

Inner task menu	Choose a task; the outer main menu leaves Settings.
Search and tabs	Find a feature or choose one upper page tab. Browsing does not change output.
Storage scope	SHOW, THIS DEVICE, MIXED and SESSION identify the setting storage scope.

N · Settings and troubleshooting

82 Settings, Output Rate and Guide Mode: workflow



Guide & tools > Guide Mode is the last tab. Open guide and search opens the in-app handbook.

STEP BY STEP

1. Open Settings from the outer main menu. Overview provides shortcuts and search stays above the pages.
2. Choose Rig & venue, Connections, Live control, Safety, Shows & backups or Guide & tools, then choose an upper page tab.
3. Read the storage scope badge: SHOW, THIS DEVICE, MIXED or SESSION. Use the actual control or action button to make a change.
4. Leave Settings by choosing another outer main-menu section. Running Playback and Execute sources continue while browsing.

CONTROLS AND MEANINGS

Rig & venue	Fixture List, Patch, Home Position, Venue Memory and Visualizer Mode. Profile tools are in the ADD FIXTURE editor beside Fixture List.
Connections	Output, Input / Snapshot / RDM, Remote, Kaamos Cloud and DJ Sync share the upper tab bar. Output selects Art-Net, sACN or USB-DMX.
Live control / Safety	MIDI controllers, External sync, Time Code and Custom live surface / Panic Look, Blinder Look, Strobe Fixtures, Smoke Outputs, Camera Guard and Performance Lock.
Shows & backups	Show File, Console tools & backup and Clear Playbacks. Show File combines saving, Autosave, Import/Export and the saved-file list.
Guide & tools	On mobile the order is Landscape Lock, Additional tools, Guide Mode. macOS hides Landscape Lock; Guide Mode stays last.
Output Rate	A dropdown on Connections > Output. Smooth: 25 ms / 40 fps; Fast: 20 ms / 50 fps; Eco: 33 ms / about 30 fps. Smooth is the default.
Guide Mode	Open Guide & tools > Guide Mode. Open guide and search opens the in-app FI/EN handbook. Guide Mode explains controls without changing them while the show continues. Turn it off before programming.
PDF and Landscape Lock	EN/FI PDF downloads require internet. Landscape Lock is device-local: ON locks landscape, OFF permits rotation within the device rotation-lock limits.

Note
Rectangular action buttons sit to the right of their text and can wrap or grow to fit labels. Narrow workspaces may need horizontal panning. A higher rate does not guarantee better physical DMX behavior: check the receiver, network, effect load and 2D/3D choice with the actual rig.

N · Settings and troubleshooting

83 Additional macOS windows

Settings > Guide & tools > Additional tools > OUTPUT / PLAYBACK / EXECUTE

Open independent resizable windows on macOS, including on a second monitor. All windows control the same show and main engine; opening one does not create another DMX output or a Backup console.



Mac OUTPUT window: levels and relative pan/tilt. Actual AppKit view with demonstration test data. Captured from version 2.4.

STEP BY STEP

1. Choose OUTPUT, PLAYBACK or EXECUTE in Additional tools.
2. Move and resize the window for the monitor. Browse its pages or Execute banks without assuming the main workspace changed.
3. Verify cue or pad identity before running it. Test held Flash and its release.
4. Close extra windows when no longer needed. Closing or losing focus releases that window's held controls.

CONTROLS AND MEANINGS

OUTPUT	A bounded overview of levels and relative pan/tilt, refreshed up to four times per second. It is not a second full 2D/3D visualizer.
PLAYBACK	Paged controls for the current Playback content, up to 64 cues per page.
EXECUTE	Bank browsing and verified controls for the current assignments. Each window owns only its own held presses.
Changed show or target	Old window commands are rejected if their original target has changed. Held presses have a short renewable safety lease.

Note
These native windows are macOS-only. The output overview pages up to 192 fixtures at a time; the main console remains the full editing workspace.

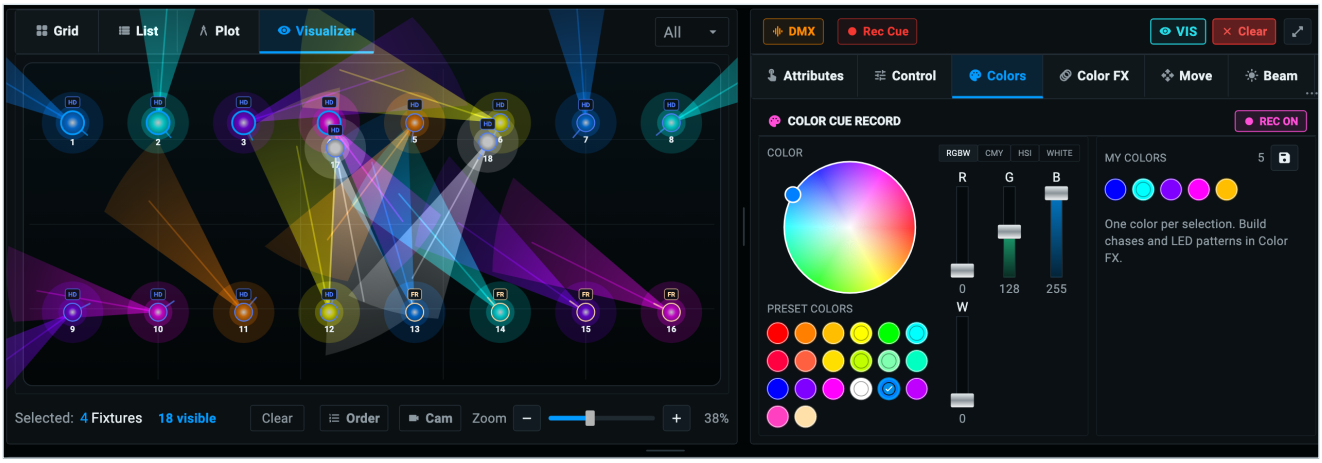
See also: 35 Playback and GO / 39 Execute: live operation / 16 Visualizer: 2D and 3D

N · Settings and troubleshooting

84 Troubleshooting: dark or stuck lights

Check output sources in this order

Separate transmission failures, incorrect channel charts and concurrent source ownership. This helps avoid trying to solve the wrong problem by moving every control.



Check output sources in this order - version 2.3.5. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

Preview works, no real light	Check VIS versus red LIVE, Connections output, IP, universe, address, DMX mode, node port and cabling.
Wrong color	Check White, Amber/UV, raw overrides and RGB mixing versus a mechanical wheel.
Execute stops but a light remains on	Check other banks, Playback, Programmer, macros, Pixel Map and Autopilot. Releasing one source can reveal another.
A cue moves unrelated fixtures	Inspect Cue Contents members, scopes and raw channels, plus patch-address overlaps.
Everything must go dark	Hold BLACK for one second. Stopping one Execute is not global blackout.
Control is lost on app switch	Check Performance Session, Background ready and platform support.

> **Note**
> For a repeatable fault, record version/build, device, protocol/node, fixture model/mode and active sources. Save a separate reproducible show.

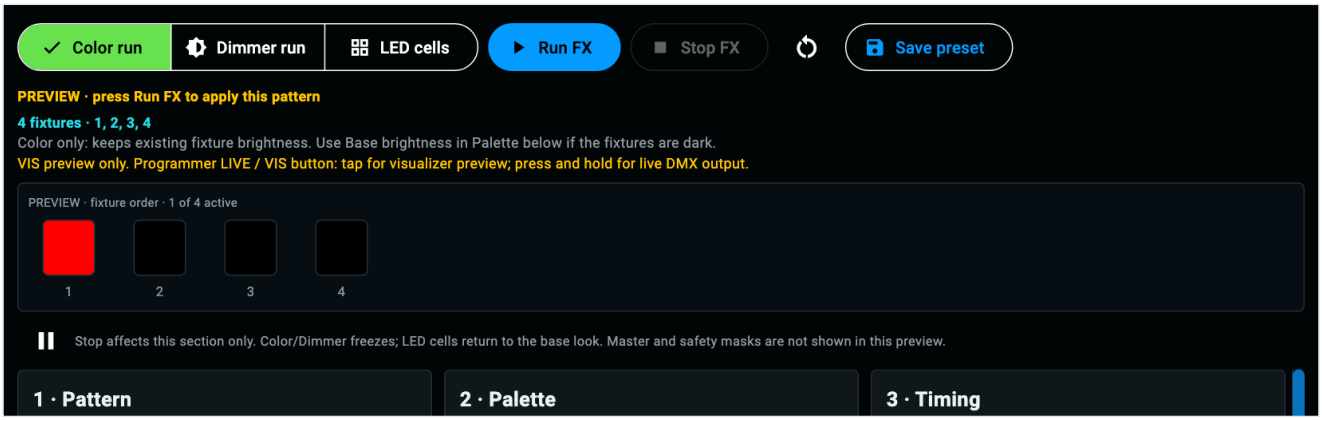
See also: 06 What is stored where? / 31 Record only the intended cue content / 64 Master, BLACK and PANIC

N · Settings and troubleshooting

85 Troubleshooting: no effect or music response

Color FX / Effects / PILOT

Missing animation can be the expected result of a setting. Check the pattern's basic requirements before changing speed or sensitivity.



Color FX / Effects / PILOT - version 2.3.4. Actual application view with demonstration fixtures; cropped for readability.

CONTROLS AND MEANINGS

No color variation	The palette has one color, all fixtures share a color or another source owns color.
Chase does not travel	Active fixtures equals the entire target count, only one fixture is selected or the cycle is very slow.
Dimmer run is static	Low equals High, Master is zero or another source affects brightness.
LED cells unavailable	The selected profile mode has no separate cell channels.
Preview moves but hardware does not	Run FX has not been applied or Programmer is VIS only. Check base brightness too.
Autopilot has too little/much response	Check audio/microphone permission, input level, music-presence state and sensitivity.
Movement stutters	Check the physical speed channel/mode, movement limits, load, Output Rate and 2D/3D rendering.

> **Note**
> Change one explanatory setting at a time. Timing, brightness and color are separate: an animated Color FX preview does not mean the fixture dimmer is open.

O · Practical workflows

86 Three practical show structures

Choose a starting workflow

These examples combine the manual's features into complete workflows. They are starting points rather than ready-made shows for every rig.

CONTROLS AND MEANINGS

1. A manually operated band show	Patch and test. Build base-look cues for fixture groups. Put head alternatives in one Latch group and towers in another. Add a separate Random Dips Toggle, define Panic/Blinder, and test TIME changes and stopping.
2. A song-based show	Build a cue library, Songs and Show Flow. Place cue events on Song Timeline. Arrange a Setlist and load Playback. Test GO/Follow, the final cue, breaks and the next Song.
3. StageTraxx + MIDI	Choose one app for audio playback. Create a MIDI Note In > Start Song macro per song and load cues into Playback. Start Performance Session, wait for readiness and test changes with the external app in front.

Note
Save a named working show after each significant stage. Keep a known base look that is easy to recall during performance.

P · Reference

87 Platform feature map

Version 2.4 / build 81

This table describes the 2.4 development implementation. OS permissions, connected equipment and the network can limit operation. A visible option alone does not prove a working connection.

CONTROLS AND MEANINGS

iOS / iPadOS	Art-Net/sACN, native MIDI mappings/macros and MIDI Clock. Ableton Link is available here. Performance Session requires iOS/iPadOS 26+ and a granted session.
Android	Foreground Art-Net/sACN, authenticated OSC, supported USB-host DMX and microphone analysis. Background Performance Session and native MIDI are unavailable; Link is not enabled.
macOS	Network output, supported serial USB-DMX, MIDI mappings/macros/Clock, authenticated OSC and additional native windows. Link is not enabled in this build.
iPadOS USB-DMX	No USB serial DMX output; use a network node.
DMX input / RDM	ArtDMX snapshot input and compatible Art-Net RDM gateways. No live input merge, USB-RDM, RDMnet or subdevice support.
Camera alignment	Requires camera access, an observable target and verified physical mounting/travel. It does not infer unknown rig geometry or audience boundaries.
LTC / NDI	No separate working LTC audio input, live NDI input or video performer tracking.
Pixel Map Video	Local video is sampled into up to 12 grid frames. It is not a full-frame-rate media server.

Note
This manual describes the 2.4 development version (81), not a confirmed store release. Screenshots show actual application components with demonstration data; older captures retain their source version in captions. Check new workflows with the actual rig, gateway, MIDI controller and audio route before performance.

P · Reference

88 Glossary

Key interface terms

Use these terms to distinguish a device, an attribute, stored content and a currently running output source.

CONTROLS AND MEANINGS

Fixture / profile / mode	A light / its channel description / the selected DMX channel mode.
Universe / address	A group of 512 DMX channels / the fixture start channel.
Attribute / scope	A property / the attribute families included in control or recording.
Cue / look / palette	Stored timed content / a lighting appearance / a reusable value group.
Programmer / Blind	Working programming values / editing without changing visible output.
Sandbox / VIS / LIVE	Local visualizer preview / its status label / Programmer output sent to real DMX.
Fade / Duration / Follow	Transition time / cue duration / how playback advances.
Cell / pixel / mask	One internal LED part / one map point / a pattern that activates parts.
Release / Clear / Stop	Release ownership / clear edits / stop a particular run. They need not produce the same output.
HTP / LTP / ownership	Merging based on intensity or latest control / which source controls an attribute. Check the rules of the sources in use.
Beat Snap / GO quantization / BPM SYNC	Timeline marker placement / waiting for a live trigger boundary / pattern progression against the shared musical clock.
Show Freeze / Pause	Holding the composed lighting look while clocks run / pausing the Playback clock.
Transfer Show	Creating a reviewed adapted copy for a different physical rig while retaining logical programming references.