ALLEN&HEATH

dLive

Firmware Reference Guide

V1.4

ⓘ This Guide refers to dLive firmware V1.4. Before starting please check www.allen-heath.com for the latest dLive firmware and documentation.

IMPORTANT - Read before starting

System operating firmware

The function of dLive is determined by the firmware (operating software) that runs it. Firmware is updated regularly as new features are added and improvements made.

ⓘ Check www.allen-heath.com for the latest version of dLive firmware.

Software licence agreement

By using dLive you agree to be bound by the terms of the relevant **End User Licence Agreement** (EULA), a copy of which can be found at www.allen-heath.com/legal. You agree to be bound by the terms of the EULA by installing, copying, or using the software.

Further information

Please refer to the **Allen & Heath website** for further information, knowledgebase and technical support. For more information on dLive hardware, system setup and connections please refer to the MixRack and Surface Getting Started Guides available for download at www.allen-heath.com.

You can also join our Allen & Heath Digital Community to share knowledge and information with other dLive users.

dLive Firmware Reference Guide

ALLEN&HEATH

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Contents

1. Processing screen

The left screen on the S5000, S7000 and C3500 is dedicated to channel processing. The S3000, C1500 and C2500 incorporate processing into the System screen.

1.1 Harmony UI

dLive integrates the touchscreen with a set of 'wrap-around' controls colour-coded for intuitive and quick operation. Dedicated areas of the screen display values and status of the corresponding controls; some are configurable or user assignable (widget areas).
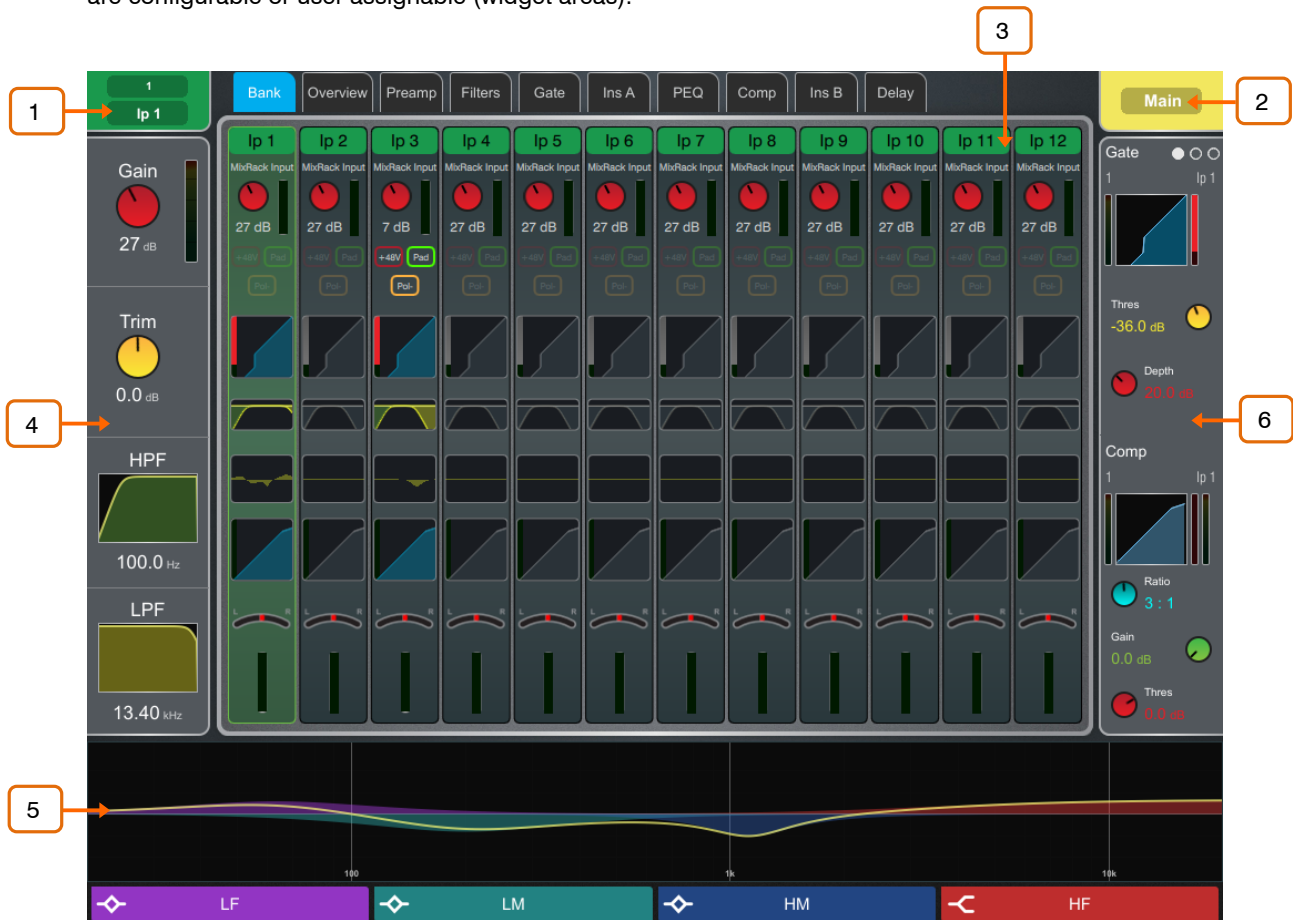
1 **Selected channel** – Displays the name, colour, type and number of the currently selected channel. Tap to edit channel name and colour. 7 colours and off are available.

A name can have up to 8 characters, however only the first 6 characters will be displayed in the fader strip LCD. To store a name for instant access later on, touch a 'quick name' box and touch Store.

2 **Active Mix** – Displays the name, colour, type and number of the currently active Mix. If a DCA Spill is active on the Surface, the Mix name is surrounded by a red square.

ⓘ Be aware of which mix is currently active. It is good practice to turn off the Mix key to return to the main mix once you have finished adjusting a mix.

3 **Main screen area** – Touch any of the tabs at the top of the screen to open a specific processing block or page. Alternatively, tap on any of the widget areas described below to open any associated processing page in the main screen area.

4 **Preamp and Filters** – Displays the preamp meter and values for the Input Channel Gain, Trim, HPF and LPF controls. The HPF and LPF graphs are greyed out

when the associated filter is off. The controls are hidden where not available, for example when a Mix channel or DCA is selected.

You can tap on this area to select the preamp or filters when using the **Copy**/**Paste**/**Reset** or **Listen** keys.

⑤ **South Area** – User assignable area, typically used for displaying the PEQ parameters and/or response curve. Press the **View** key to toggle between the configured views.

✲ To configure, hold down the **Setup** key and touch this area, drag the required views from the left to the right of the screen, touch these to set any option or preference, then touch Apply to confirm.

ⓘ The South Area configuration is stored in Shows, not in Scene memories.

You can tap on this area to select the PEQ when using the **Copy**/**Paste**/**Reset** or **Listen** keys.

The following views are available in this version of firmware:

Individual PEQ Bands – Displays the response of each PEQ band. Frequency and gain values are temporarily shown when a setting is adjusted.
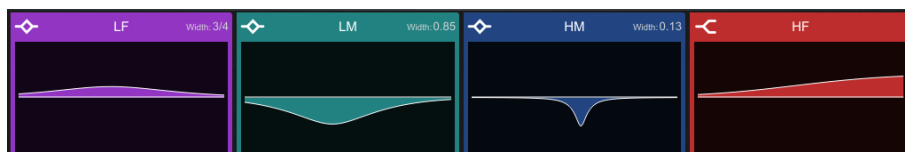
Multiband PEQ Graph – Full range PEQ view. The individual effect of each band is shown as fill colours, while the overall response curve is shown as a yellow line. Frequency and gain values are temporarily shown when a setting is adjusted.
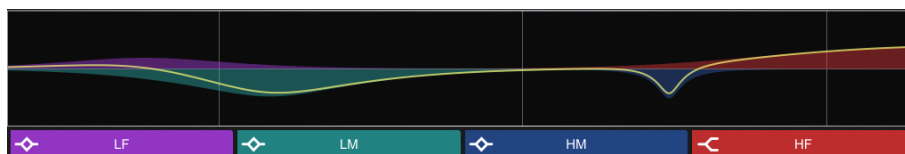
PEQ Values Only – Displays value bars for Gain, Width and Frequency.

Meters – Scrollable meter-bridge widget showing signal level, gain reduction, gate activity, channel names and colours. Can be set to display Inputs, FX Returns, Mixes, or any of the 4 User Meter views. The tap-off point for the meters can be chosen for each view.

⑥ **Soft Rotaries** – Displays the parameters for the assigned controls and meters or thumbnail graphs where applicable. Press the keys on top of the rotaries, or swipe within the widget area to toggle between the 3 available layers.

Soft Rotaries can be set to follow channel selection, active Mix or to be locked to a specific channel. Their assignments and settings are stored in Scene memories.

✲ To configure, hold down the **Setup** key and touch this area, drag the required widgets from the left to the right of the screen, check for any option or preference, then touch Apply to confirm.

The following widgets are available in this version of firmware:
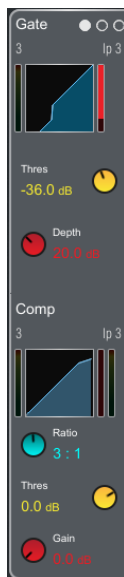
Gate and Comp

Gate with signal meter, graph, gain reduction meter, Threshold and Depth control;

Compressor with signal meter (pre and post), graph, gain reduction meter, Ratio, Threshold and Gain control.
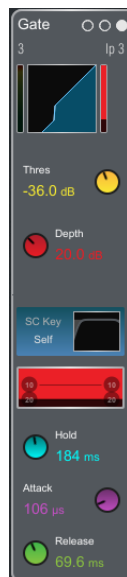
Gate

Signal meter, graph, gain reduction meter, sidechain graph, histogram, Threshold, Depth, Hold, Attack and Release control.
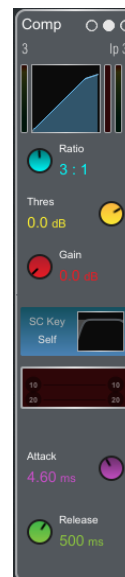
Comp

Signal meter, (pre and post), graph, gain reduction meter, sidechain graph, histogram, Ratio, Threshold, Gain, Attack and Release control.
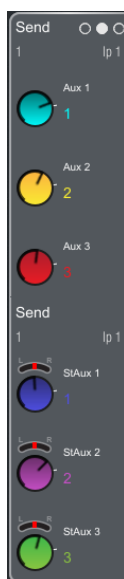
Send levels

Configurable widget with up to 6 sends, typically for monitor use or FX sends.

FX

Controls of 6 key parameters for a chosen FX unit.

Scenes

Scrollable scene list. Touch a Scene to select.

The selected Scene is highlighted in yellow.

The Next or 'Go' Scene is highlighted in green.

1.2 Copy/Paste/Reset, Setup, Listen and Lib keys

The following keys can be used in conjunction with the touchscreen:

Copy – Hold down and touch any highlighted area of the screen to copy the settings of a specific processing block. A temporary message will appear at the bottom of the screen to confirm the operation.

Paste - Hold down and touch any highlighted area of the screen to paste copied settings. A temporary message will appear at the bottom of the screen to confirm the operation.

Reset - Hold down and touch any highlighted area of the touchscreen to reset the associated parameters to factory default. A temporary message will appear at the bottom of the screen to confirm the operation.

⚙ **Setup** – Hold down and touch any highlighted area of the screen to configure it. For example, touch a widget area to set up functions, views or controls. Touch on the main screen area to access options further to those displayed.

Listen – Hold down and touch any highlighted area of the screen to listen to the selected channel at that point in the signal path. The signal temporarily overwrites the PAFL bus and associated meters. Press the PAFL Clear key or touch the screen popup to cancel.

Lib – Press to access the Library window for the current page. Libraries let you store and recall presets for individual processing blocks such as EQ and Compressor, and also for the whole Input or Mix channel. Input and Mix channel processing Libraries are accessed from their Overview page.

The Library window shows 3 types of Library: Factory, User (stored in the mixer) and USB (stored in the USB key). Touch to select a Library item and use the buttons to **Recall**, **Overwrite** or **Delete**. Touch **Store**

New to store a new item and use the keypad to apply a name. Use the **Shows**/**Util / Memory / Library Manager** to organize or transfer your Libraries.

Help – Press to display a contextual help for the current screen.

1.3 Bank view

The Bank view provides an at-a-glance overview of all channels assigned to the active fader Bank and Layer. It follows both channel selection and Layer selection, so that it always displays the channels you are working on.

The Bank view can be used with the **Copy**/**Paste**/**Reset** and **Listen** keys, for example for copying a single processing block to one or multiple channels. See paragraph 1.2 for details on using these keys.

Input channels – Displays name and colour, source type, preamp meter, gain, +48V and polarity, gate graph, filters, PEQ graph, compressor graph, Pan and channel meter. The channel name is framed in orange when Virtual Soundcheck is active.

1 Tap on a channel to select. The selected channel is highlighted in green.

2 Tap on a processing block within a selected channel to open the associated page.

3 Pull down the name of a selected Input channel, or swipe down with two fingers anywhere in the Bank view to display details of the sources such as socket numbers. Pull / swipe down again to restore the normal view. Use the **I/O** or **Processing / Preamp** screen to patch sources.

DCAs – Displays name, colour, members (assigned channels) and whether the 'Fader to Zero dB' option is enabled. Use the **Routing** screen or the Surface **Assign** keys to assign channels.

Mix channels – Displays name and colour, Ext Input, meter (pre-processing), polarity, PEQ graph, compressor graph, and channel meter (post-processing).

1 Scroll the list up or down if the members are too many to fit in the strip.

2 Pull down the name of a selected Mix channel to display details of the Ext Input source such as socket number. Pull down the name again to restore the normal view. Use the **I/O** or **Processing / Ext In** screen to patch sources.

1.4 Overview

The Overview page provides an at-a-glance view of all processing for the selected Input or Mix channel. Touch a section to open the related page.

Press the **Lib** key while on the Overview page to access the channel Library. Enable the **Recall Preamp** option to include Preamp settings when recalling the Library. Channel Libraries do not store routing, levels or assignments.

Input channels

1 **Preamp** – Displays the Preamp source, Gain and Digital Trim. Icons show 48V phantom power and polarity setting.

2 **Processing** – Thumbnail graphs of Filters, PEQ, Gate and Compressor complete with sidechain. EQ and filter curves display yellow when switched In and grey when switched Out. Dynamics display blue when switched In and grey when switched Out.

3 **Insert** – Assignment and bypass status are shown for the two Insert points.

4 **Delay** – Shows the setting for the selected channel.

Mix channels

1 **Ext In** – Displays the External Input source, Gain and Digital Trim. Icons show 48V phantom power and polarity setting.

2 **Processing** – Thumbnail graphs of PEQ, GEQ and Compressor complete with sidechain. The PEQ curve and GEQ sliders display yellow when switched In and grey when switched Out. The compressor graph displays blue when switched In and grey when switched Out.

3 **Insert** – Assignment and bypass status are shown.

4 **Delay** – Shows the setting for the selected channel.

1.5 Preamp

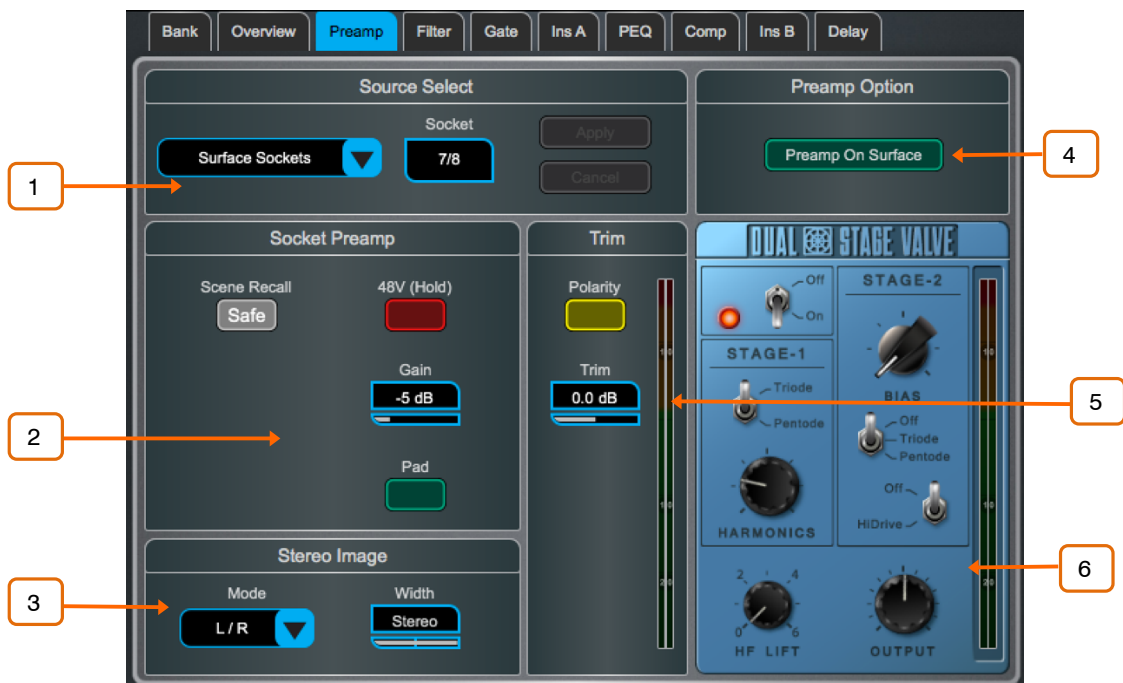The Preamp page provides access to the Input Channel source patching and other Input settings.

1 **Source Select** – Open the drop-down menu to choose which source to patch to the channel, touch the **Socket** box then turn the screen Rotary to select the required socket or number, then touch **Apply**.

Sources that can be patched include MixRack sockets, Surface sockets, DX Expander inputs, USB stereo playback, I/O Port inputs, the output of built-in effects (Rack FX), and the Signal Generator.

To provide a simple starting point, the Template Show default is one-to-one mapping of sockets to channels.

2 **Socket Preamp** – If the patched source is a Mic/Line XLR input then its Preamp controls are shown. These provide remote control of the input preamp circuit located at the socket. **Pad** switches in a 20dB input attenuator, and the combined Gain + Pad value is shown in the Gain box. Touch and hold the **48V** button for 1 second to enable or disable phantom power.

Enable the Scene Recall **Safe** option to make the Preamp Gain, Pad and 48V settings safe from Scene Recall. This can be useful when splitting the same mic preamp to two or more channels.

ⓘ Making a channel Safe using the Surface **Safe** key automatically makes the associated Preamp safe. Turning off Safe using the surface key unsafes the Preamp.

3 **Stereo Image** – If the channel is configured as stereo then the Stereo Image settings are shown. **Mode** selects normal stereo input (L/R), reversed stereo input (R/L), stereo with inverted Left polarity (L −Pol/R), reversed stereo with inverted Right polarity (R −Pol/L), mono sum (Mono), Left as mono source to both sides (L/L), Right as mono source to both sides (R/R), Middle/Side decode to stereo (M/S). **Width** adjusts the Stereo Image from 0% (mono) to 100% (stereo).

4 **Preamp Option** – Lets you choose whether the fader strip rotaries control the Preamp Gain or channel Trim when in Gain mode. Turn on **Enable Preamp on Surface** for normal, single console operation. Turn it off to prevent accidental Gain changes in situations where the same preamp is shared between FoH and Monitor consoles. When off, the dedicated Preamp rotary control is disabled and a warning pop-up appears any time the Gain setting is adjusted on screen.

✸ Hold down **Setup** and touch anywhere in the Preamp screen to access a global setting for disabling Preamp on Surface. This affects all channels.

5 **Trim** – Trim provides +/- 24dB control in addition to the Preamp Gain or when the source does not have a preamp (for example inputs from an I/O Port). Trim is part of the channel, not the preamp, and is therefore useful in situations where the preamp is shared between FoH and Monitor consoles. A post-Trim signal meter is shown. **Polarity** toggles normal and reverse.

6 **Preamp Model** – Displays the DEEP Processing model and controls, if one is loaded. Press the **Lib** key to access the preamp Library and load a preamp model such as a Dual Stage Valve.

1.6 Ext In

You can assign an external input to any Mix channel, for example for bus summing, combining console outputs, or external communications. The Ext Input sums with the Mix channel pre-insert and is affected by the Mix processing and fader.

Open the **Source Select** drop-down menu to choose which source to patch, touch the **Socket** box then turn the screen Rotary to select the required socket or channel number, then touch **Apply**. Socket Preamp and Trim controls are shown in this page when an Ext In is assigned.

1.7 Filter

The Filter page provides access to the HPF and LPF filters.

1   **Graph** – Touch and drag the HPF (green) or LPF (yellow) dots to adjust the filter cut-off frequency.

2   **HPF** – The frequency for the High Pass Filter is adjustable from 20Hz to 2kHz, and the **Slope** can be selected from 12dB/octave to 24dB/octave. Two filter types are available: Butterworth (optimized frequency response) and Bessel (optimized phase response).

3   **LPF** – The frequency for the Low Pass Filter is adjustable from 20Hz to 20kHz. The slope is fixed 12dB/octave.

1.8 Gate (Ducker)

This page provides access to the Input channel Gate settings and sidechain filter.

Press the **Lib** key to access the Gate Library. This includes the option of a channel Ducker to replace the Gate.

1. **Side Chain** – Touch the **Side Chain Source** box to open a window for selecting the Key (trigger) input to the Gate. An adjustable HPF and LPF filter can be switched in to limit the frequency range of the Key signal. The curve turns yellow when the filter is switched in.

2. **Histogram** – Shows Gate activity over time.

3. **Gate Settings** – Touch and drag in the graph or touch a parameter box and use the screen rotary do adjust.

Threshold sets the level at which the gate opens to let the signal through. The meter on the left lines up with the graph and shows the signal at the input to the gate. The gain reduction meter on the right shows when the gate is closed. **Depth** sets how much the signal is attenuated when the gate closes. **Attack, Hold, Release** set how fast the gate opens when the signal rises above the threshold, how long it is held open after the signal falls below the threshold, and how long it takes to attenuate after it closes.

1.9 Inserts and Dyn8

You can insert external equipment, external plugins, one of 64 internal Dyn8 engines, or one of 16 internal RackExtra FX units into a channel. Input channels provide two Insert points (post Gate and post PEQ/Comp).
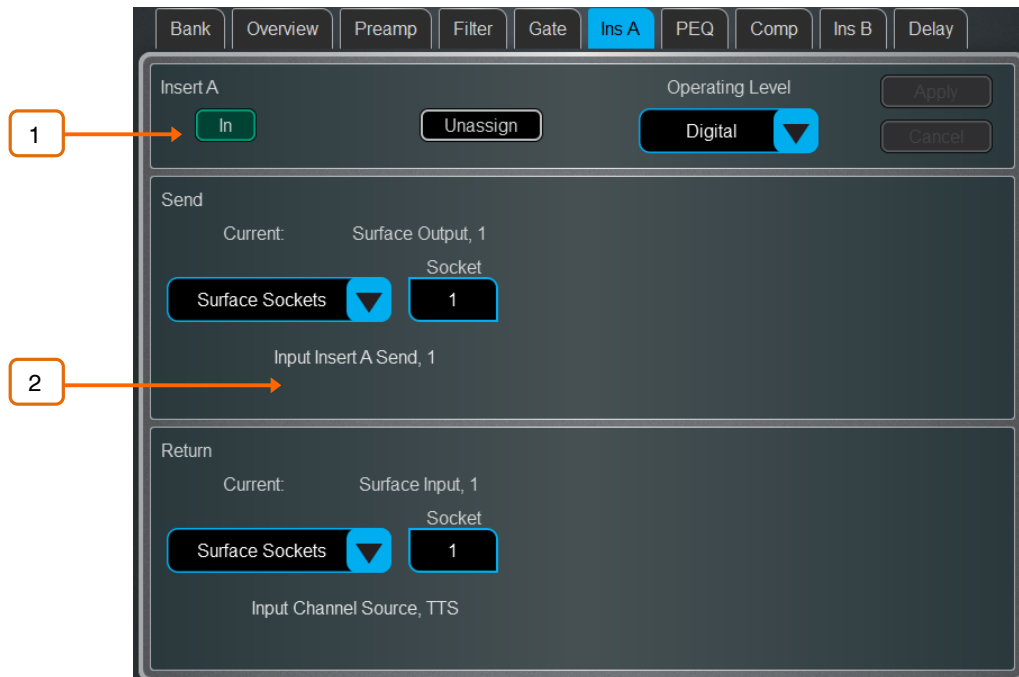
1   **Insert Settings** – Press **In** to switch the inserted device in circuit. Choose the **Operating Level** of the insert point: Digital sends the signal at 0dB for use with external digital equipment via AES3 or I/O Ports; Analogue compensates for the +4dBu nominal level on the XLR outputs, so that the overall gain of the insert circuit is 0dB; -10dBV is a standard for consumer equipment. Press **Unassign** to clear the current Insert assignment.

2   **Insert Patch** – Use the drop-down menus to assign the **Send** and **Return** to physical sockets, I/O Ports, Dyn8 engines or FX units. Touch the boxes and use the screen rotary to select socket or number. When assigning Dyn8 engines, the system automatically selects the next available (unassigned) engine. Touch **Apply** to confirm.

If an internal RackExtra FX is assigned, the controls for the device are displayed in the Insert screen for convenience, together with a button to access the FX Library and a Dry/Wet control to adjust the balance of direct and effect signal.
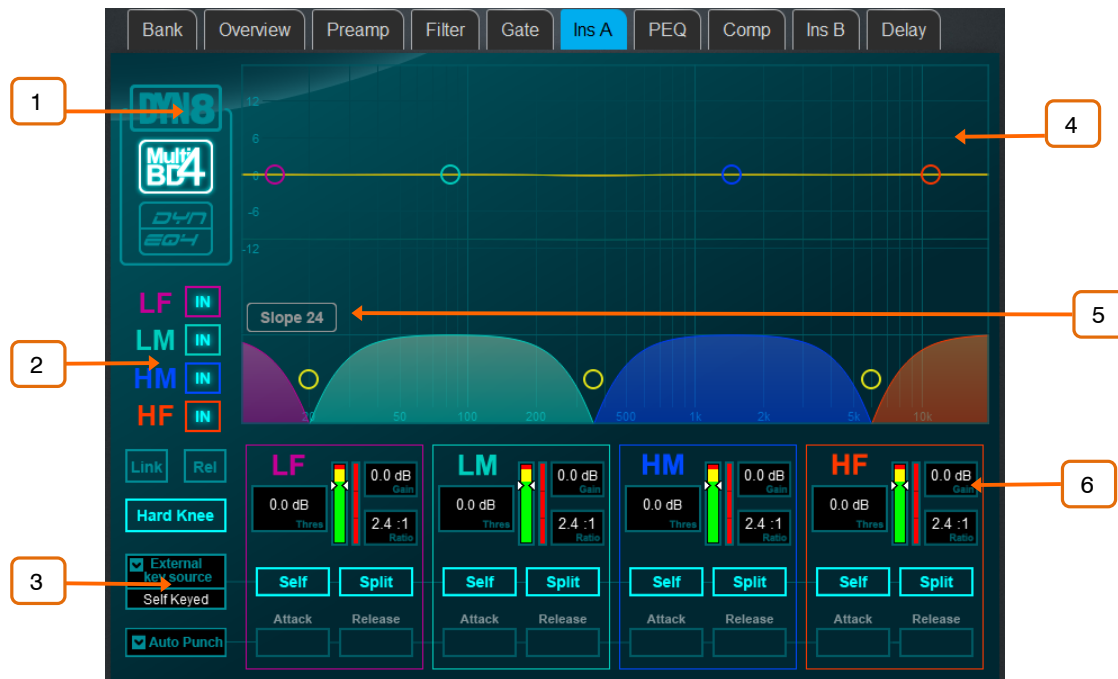
Dyn8

Each engine offers 4 bands of multiband compression and 4 bands of dynamic EQ.

1 Select view mode: multiband controls, dynamic EQ controls, or a graphic overview of both.

2 Per-band bypass controls.

The multiband view has also controls of compression **Knee** (Hard or Soft), an option to **Link** all parameters across bands for quick setup, and a **Rel** option to link all parameters whilst keeping the relative offset.

The dynamic EQ view has an option to select the function of the screen rotary (**Freq** or **Gain**) when a band is selected in the graph.

3 Select the **External Key Source**. Each band can be set to operate with the selected key source or **Self** keyed. The key can be set to **Split** (same key signal feeds both side of a stereo pair) or **Wide** (true stereo key).

Set the desired ballistics mode. There are two manual (Peak, RMS) and four automatic modes (Punch, Opto, Slow, Fast) for the multiband compressor, with the manual modes providing per-band **Attack** and **Release** time. The dynamic EQ offers two per-band ballistic modes: **Std 9** (standard, smooth frequency conscious release) or **Fast 9** (fast release).

4 The multiband graph displays the resulting crossover frequency response. Shaded fills show dynamic gain reduction. The yellow curve shows makeup gain for each band, and the blue curve shows maximum potential gain reduction.

The dynamic EQ graph displays the 4-band frequency response, with the shaded fills showing dynamic activity and the solid outline showing maximum cut/boost for each band.

Touch and drag the points to adjust frequency values. To avoid accidental changes, the Gain can only be controlled in Director or by using the screen rotary.

5 Choose the crossover **Slope**: - 6, 18, or 24 dB/oct. Slope 6 has minimal phase summing distortion and is typically used for programme mastering. Slope 18 and 24 provide more band isolation and work well for vocal and instrument control.

6 Per-band controls of threshold, gain (multiband), ratio (multiband), width (dynamic EQ).

The dynamic EQ Gain set in the graph is the maximum amount of compression (cut) or expansion (boost) for the band when the sidechain signal level is **Above** or **Below** the threshold setting, depending on settings.

1.10   PEQ

The Parametric Equaliser provides 4 fully adjustable bands of equalisation. It can be adjusted using dedicated rotary controls on the surface or using the touchscreen.

⚙ Hold down **Setup** and touch the navigation tabs area to access channel options including the processing order of PEQ and Compressor. The default order is PEQ first, Compressor next. You can invert the order on a per channel basis or globally.

ⓘ The PEQ/Comp order for each channel is stored in Show files. It is not stored in Scene memories.

⚙ Hold down **Setup** and touch anywhere in the PEQ screen to access the Fill Curves and 20Hz-20kHz options. **Fill Curves** displays the individual response of the 4 PEQ bands and HPF / LFP filters with shaded colours. The frequency range for the 4 bands may be set globally for all Input or Mixes to be limited or **Full Range**.

[1]   **Graph** – Touch and drag the 4 band dots to adjust their centre frequencies. Touch and drag the HPF / LPF dots to adjust their cut-off frequencies. The overall frequency response curve turns yellow when the PEQ is switched in and grey when switched out.

[2]   **PEQ Settings** – **Frequency** sweeps the shelving, centre or cut-off frequency for each band. **Width** adjusts the width in octaves of the bell shaped EQ band. **Gain** allows up to +/-15dB boost or cut for each band. The LF and HF EQ bands can be set as shelving, bell shaped or low/high cut 12dB/octave filters.

1.11   GEQ

A 28-band 1/3 octave Graphic Equaliser is provided on each of the Mix outputs. It can be adjusted using the touchscreen or the Surface faders.
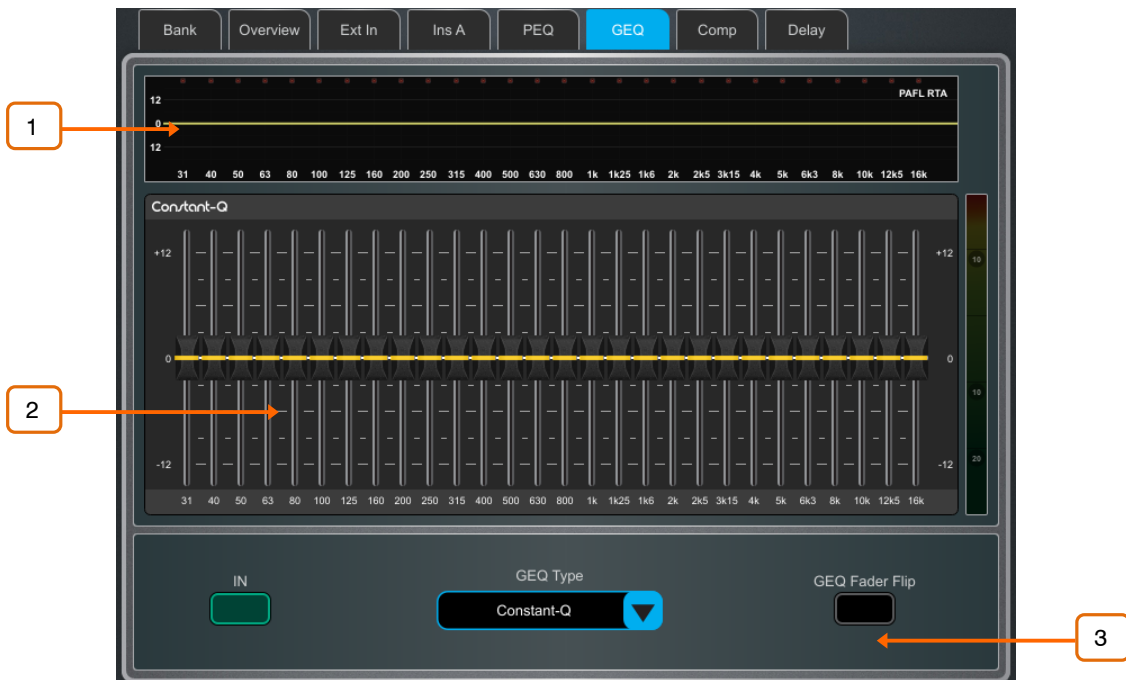
1   **Graph** – The top part of the screen shows the combined frequency response curve of the GEQ. The curve turns yellow when the GEQ is switched in and grey when switched out. An RTA of the PAFL signal with optional peak band indication is also superimposed on the graph.

ⓘ Make sure the PAFL source is related to the selected channel (typically the very same channel or a separate measurement microphone).

2   **GEQ Sliders** – Touch a frequency slider to select and drag it up / down or use the screen rotary to adjust the gain.

3   **GEQ Settings** – Press **GEQ Fader Flip** to control the GEQ with the Surface faders. The fader strips and their displays show the settings of the GEQ frequency bands, while the right hand fader becomes the master for the selected Mix and the fader strip meters display the RTA for the currently selected PAFL. Press **GEQ Fader Flip** again to toggle between frequency ranges and back to normal mixing.

Use the **GEQ Type** drop-down menu to select one of four DEEP Processing GEQ models available. These offer different types of cut/boost response.

ⓘ See Appendix A in this guide for more details on GEQ models.

1.12   Compressor

This page provides access to the channel Compressor settings and sidechain filter.

⚙ Hold down **Setup** and touch the navigation tabs area to access channel options including the processing order of PEQ and Compressor. The default order is PEQ first, Compressor next. You can invert the order on a per channel basis or globally.

ⓘ The PEQ/Comp order for each channel is stored in Show files. It is not stored in Scene memories.

Several compressor types are available including emulations of classic industry standards. These can be recalled via Library presets and include the option of a channel Ducker to replace the Compressor. Press the Surface **Lib** key to access the available Libraries.

ⓘ See Appendix A in this guide for more details on Compressor models.
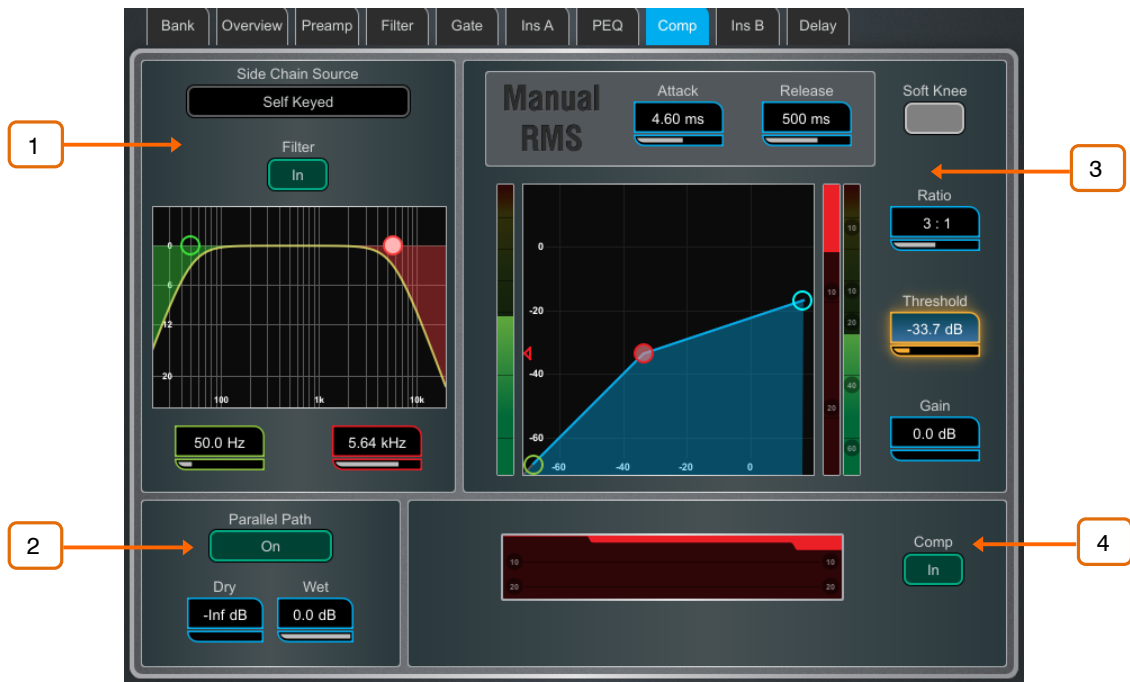
1   **Side Chain** – Touch the **Side Chain Source** box to open a window for selecting the Key (trigger) input to the Gate. An adjustable HPF and LPF filter can be switched in to limit the frequency range of the Key signal. The curve turns yellow when the filter is switched in.

2   **Parallel Path** – Lets you balance the dry 'uncompressed' signal with the compressed output. When turned off, only the compressed signal is routed to the output.

3   **Compressor Settings** – Touch and drag in the graph or touch a parameter box and use the screen rotary do adjust.

Threshold sets the level at which the compression starts. The meter on the left lines up with the graph and shows the signal at the input to the compressor. The gain reduction meter on the right shows how much the signal is being compressed. **Ratio** sets the amount of compression when the signal exceeds the threshold. A ratio of 1:1 means no compression. Set Ratio to 'Infinity' to use the compressor as a limiter. **Gain** is the make-up gain to compensate for the drop in overall volume after compression. **Soft Knee** adds compression gradually with gentler ratio as it approaches the threshold. **Attack** and **Release** control how fast the compressor pulls back the signal when it exceeds the threshold and how long it takes to let go when the signal drops below the threshold.

4   **Compressor Histogram** – Shows Compressor activity over time.

1.13   Delay

The delay settings for all the channels or mixes are shown on this page, with the currently selected channel highlighted. Use the screen rotary to change its value, or touch another parameter box to adjust the delay for a different channel. Touch the **In** buttons to toggle the delay in or out. Input delays can be adjusted up to 340ms, Mix delays up to 680ms.
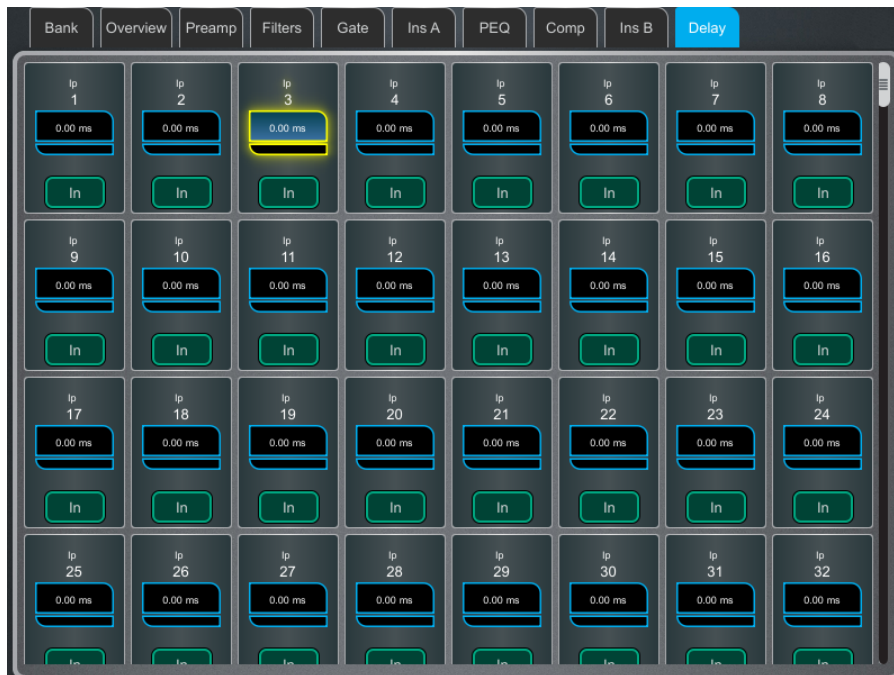
☼ Hold down **Setup** and touch anywhere in the Delay page to access the unit and temperature preferences for the Delay. The default unit is ms but can be changed to metres, feet, or samples. This can be changed globally for the Input channels and for the Mix channels. Enter the ambient temperature if using distances so that dLive can compensate for the effect on delay.

2. System screen

The right screen on the S5000, S7000 and C3500 gives access to system settings, FX, meters, routing and I/O. The S3000, C1500 and C2500 incorporate the Processing screen into this screen.

2.1 Harmony UI

1   **Selected** / **Last Recalled Scene** – Displays the currently Selected Scene in yellow, or Last Recalled Scene in blue (see chapter 7.1 for details). The Selected Scene is highlighted in yellow in the Scene list.

2   **Next Scene** – Displays the Scene next to be recalled when pressing **Go**.

3   **Main screen area** – Press the Screen mode keys to select pages and menus displayed in this area.

4   **Scenes widget** – Scrollable scene list. Touch a Scene to select. The selected Scene is highlighted in yellow. The Next or 'Go' Scene is highlighted in green.

5   **South Area** – User assignable area, typically used for displaying meters. Press the **View** key to toggle between the configured views.

❖ To configure, hold down the **Setup** key and touch this area, drag the required views from the left to the right of the screen, touch these to check for any option or preference, then touch Apply to confirm.

Available views are detailed in paragraph 1.1.

6 **Soft Rotaries** – Displays the parameters for the assigned controls and meters or thumbnail graphs where applicable. Press the keys on top of the rotaries, or swipe within the widget area to toggle between the 3 available layers.

Soft Rotaries can be set to follow channel selection, active Mix or to be locked to a specific channel.

⚙ To configure, hold down the **Setup** key and touch this area, drag the required widgets from the left to the right of the screen, check for any option or preference, then touch Apply to confirm.

Available widgets are detailed in paragraph 1.1.

2.2 Home

When no screen mode is selected, the System screen displays a Home page with a System Status dashboard, real time clock and access to User login.

ⓘ Press the Surface **Home** key to come back to this page and present a familiar state of the Surface controls. Pressing this key will exit from any screen mode or menu, unselect the currently selected channel, make the Main LR the active **Mix**, and Layer A active across all fader banks.

1 **System Status** – Displays a list of system components. A green tick indicates the component is running correctly. A red cross indicates that an error is detected. A blue icon appears when a non-critical event is logged. Touch the component to display further information.

2 **System Info** – Displays firmware version, current User, and the last Scene and Show recalled.

When a system component is selected in the left column, information on that component is displayed here, for example status of PSU, cable redundancy, Audio Sync Lock and the type of I/O modules fitted in a DX32 Expander.

If an error is detected, touch on the 'An Error Occurred' message to open the **Utility / History** page and display the logs. Contact Support for assistance.

3 Press **Switch User** to access the User login page.

Press **Lock Surface** and confirm to lock all Surface controls and touchscreen. Parameters will not be changed if the Surface controls are moved while locked, for example when left unattended. Touch the screen again to unlock the Surface.

ⓘ If a password is set for the current User, then this must be entered when the User locks or unlocks the Surface.

Press **Power Down** and confirm to safely power down the system before you switch power off. Failures to power down correctly may result in recent parameter changes being lost or under rare circumstances, possible data corruption.

4 **Clock** – Shows the time in hours, minutes, seconds. Set using the **Utility** / **Utility** / **Date/Time** screen.

2.3 User login

The system Administrator can set up to 9 User Profiles to protect settings and restrict access to certain functions. Touch **Switch User** on the Home page to log in as a different User.
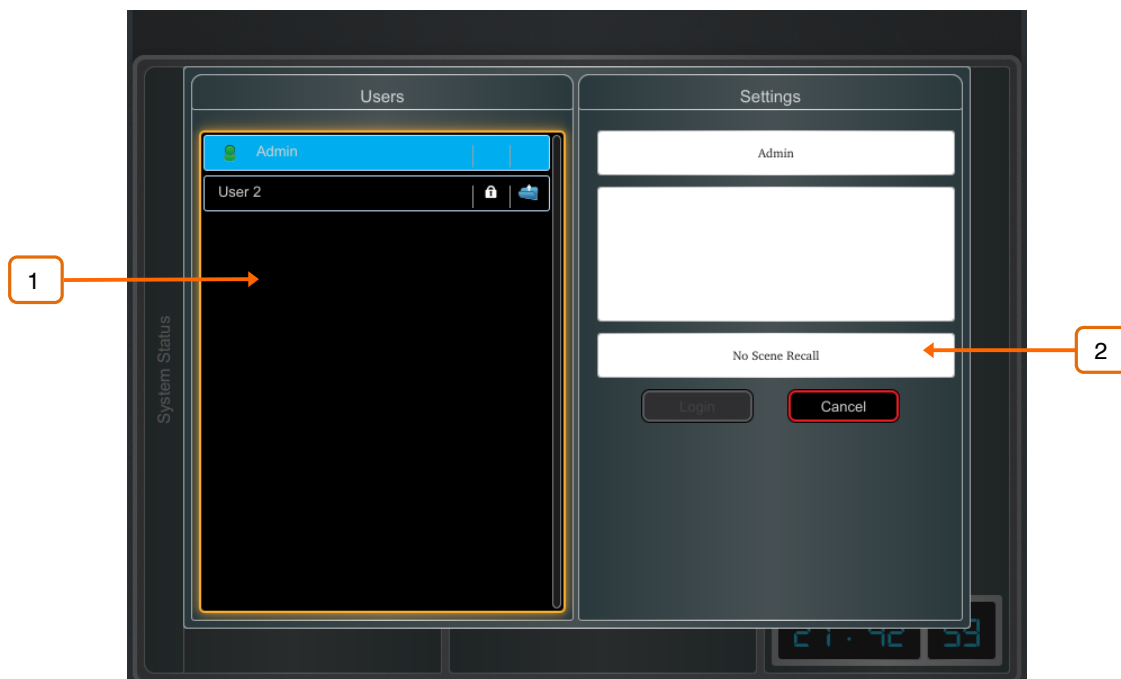
1 **Users list** - Shows available Users. These can be configured and enabled in the **MixRack** / **Config** / **User Profiles** screen. The Admin User is always displayed. Icons indicate if the User has a password or User Scene set. Touch a User to select then touch **Login** to change User.

If a password is set, it needs to be entered using the screen keypad when the User logs in using this screen, when the system is powered up, or when the User locks or unlocks the Surface.

2 **User Scene** – If one is set, it is recalled automatically on login when the User is changed. It is not recalled when the Surface is unlocked, or when the system is powered down and up again while the same User is current.

3. Meters

Different tabs give access to meters for all Input channels, all FX Sends and Returns, all Mixes, and up to 4 configurable User views, as well as a Real Time Analyser.
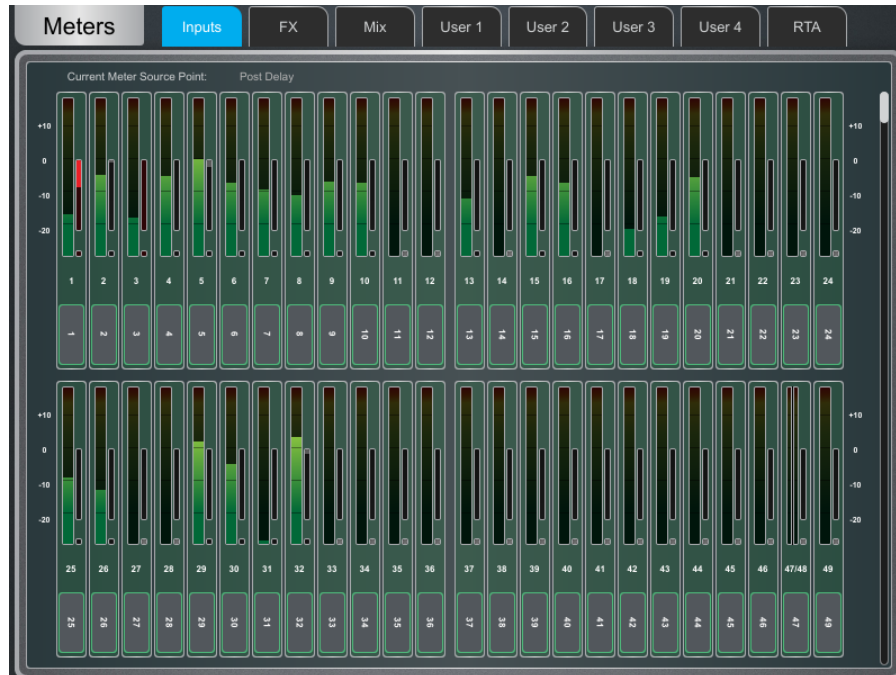
Meters tabs – Channel name and colour is shown below each meter. A gain reduction meter and gate active indicator are also displayed, these show activity in red when switched In, and in grey when switched out.

The meter source point can be globally set for all Inputs and all Mixes independently. This does not affect the fader strip meter on the Surface or any other screen metering.

☀ Hold down **Setup** and touch anywhere in the Inputs or Mix meter tab to set the associated source point. This will affect the Surface LED meters too. Options available for Inputs are Post Trim, Post Gate/PEQ, Post Compressor, Post Delay. Options available for Mixes are Post Trim, Post Insert Return, Post PEQ, Post GEQ, Post Compressor, Post Fader.

☀ Hold down **Setup** and touch anywhere in a User tab to configure the User view. Touch a channel and drag it to the lower part of the screen to configure, add spacers or rows as required, and press Apply to confirm.
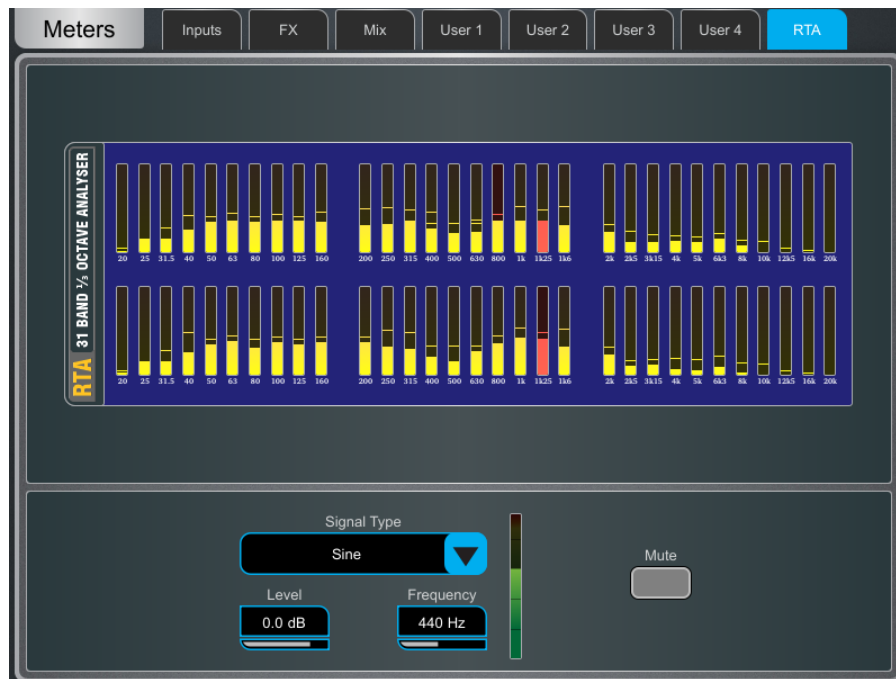
RTA – A 1/3 octave Real Time Analyser for the active PAFL signal.

☀ Hold down **Setup** and touch anywhere in the RTA page to enable or disable the **Show Peak Band** option. When enabled, the RTA displays the dominant frequency as a red bar or by lighting the red Pk indicator on the related strip meter while in GEQ Fader Flip mode.

4. FX

The FX screen gives access to the 16 virtual RackExtra FX engines.

1   **FX bar** – The 16 slots are shown across the top of the screen either empty or with FX devices loaded. The FX name, current Library preset and metering is shown next to each icon. Scroll left to right to view all the FX slots. Touch a device or empty slot to select.

2   **Library** – Press the **Library** button or **Lib** key on the Surface to access the FX Library. The Libraries are grouped by FX type. You can choose to load one of many Factory presets, or to recall a previously stored User preset from the Show or directly from your USB key. Touch to select a preset and touch **Recall** to load. Touch **Store New** to store the current FX settings as a User preset. Touch **Overwrite** to update an existing preset with current settings.

ⓘ See Appendix A in this guide for more details on FX models.

3   Switch between the **Front Panel** and **Back Panel** view.

Tap on the **Global Tap Tempo** box or touch and use the screen rotary to set the global rate for any delay FX locked to Global Tap Tempo. The current rate is shown. The Tap Tempo can be assigned to a SoftKey using the **Surface / Control / SoftKeys** screen.

4   **Front Panel** – All key FX controls are presented here. Switch to the **Back Panel** to access routing settings.

5   Meters at the input and output of the currently selected FX are shown. If the FX is inserted on a channel, the **In** switch and **Dry**/**Wet** level controls are shown. If the FX is configured as a Mix->Return, then PAFL, Mute, and fader level are displayed for both the send and return. Each FX Return has a 4-band parametric equaliser.

Touch the **PEQ** switch to open the PEQ window.

ⓘ The FX Front Panel, Library button and PEQ can also be accessed by the Processing Screen when an FX Send or Return is selected, or by the Processing Insert page when a channel with inserted FX is selected.

Back Panel – Use this view to edit the routing for the selected FX. Use the drop-down box to choose between Unassigned, Insert or Mix->Return.

Insert breaks a channel signal path at its Insert point to route it to the FX and back into the channel. Select the channel and press **Apply** to confirm. Some FX devices allow a **Dual Mono** mode to insert the FX into two separate mono channels.

Mix->Return patches the FX device as a system effect with a Send bus and a dedicated stereo FX Return channel. Select the bus you want the FX to use and press **Apply** to confirm. The source patch defaults to the corresponding FX Send bus if available in the current bus configuration. The output patch defaults to the dedicated stereo FX Return channel. You can reassign an FX output to a different Input channel using the Processing / Preamp screen of such channel.

5. I/O

Use this screen to patch inputs and outputs from / to analogue sockets, I/O Ports, DX Expanders, USB, or to the ME monitor port. The patch is presented as a matrix view with solid cross-points indicating an active connection. Striped cross-points indicate an invalid connection, for example when the output is not available in the current system configuration.

⚙ Hold down **Setup** and touch anywhere in the I/O screen to access the following preferences:

Confirm when reassigning opens a confirmation pop-up whenever a patch is being changed.

Only patch when the Patch button is pressed requires a two fingers operation to prevent accidental changes to the patch. Hold down the screen **Patch** button (Shift key in Director) and touch a cross-point to patch when this option is enabled. Hold down and draw a line on the matrix to quickly patch sources to destinations 1:1.

Use full screen takes advantage of the full touchscreen size when operating the I/O screen.

Allow multiple tabs displays multiple items at the same time in the matrix view.

5.1 Inputs

Patch sources (displayed on top) to Input channels or to the Ext In of Mix channels (displayed on the left).
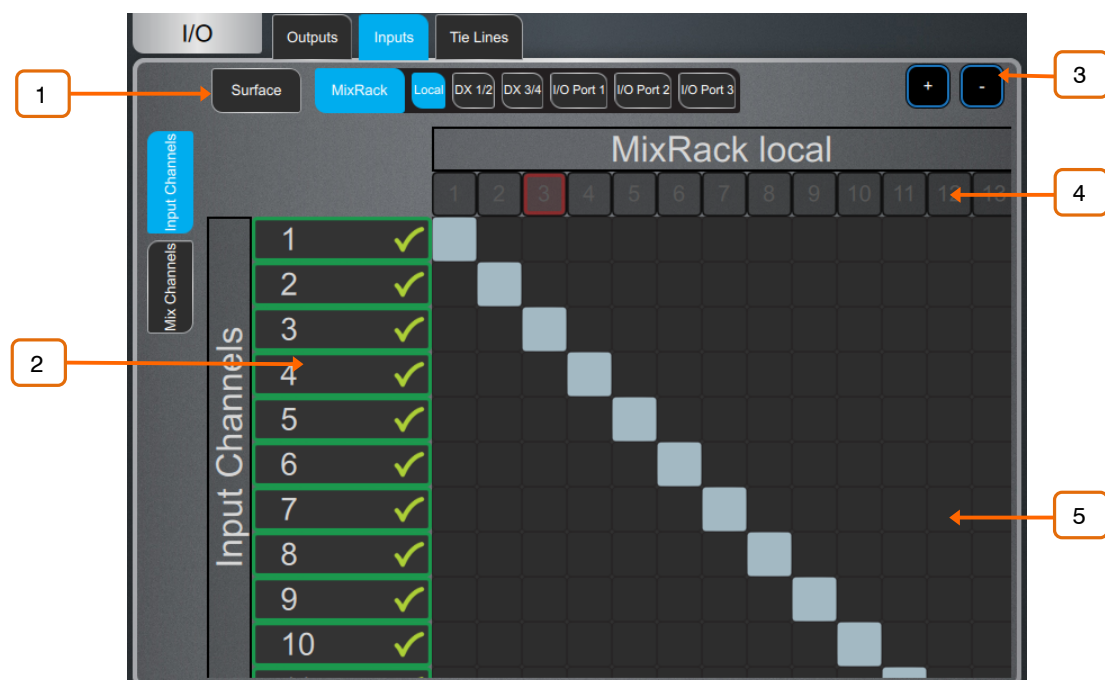
[1] **Navigation tabs** – Touch on an item to present its associated sources or channels to the matrix view.

[2] **Destinations** – Input and Mix channel names and colours are displayed. A green tick appears when any source is assigned to the channel. Touch a channel name or number to edit its name and colour.

[3] **Zoom** – Use the two buttons provided or a two-fingers pinch in the screen area to zoom in and out. Low levels of zoom provide a good overview of the I/O patch but disable cross-point operation to prevent accidental changes.

[4] **Sources** – The source number is greyed out if already patched, highlighted in red if +48V is detected at the socket, or striped when the input is not available in the current system configuration.

Touch on a socket number to open a window with a list of current assignments and available controls for the socket, for example gain, +48V and Pad for a preamp, or SRC options for a digital input.

ⓘ Sample Rate Conversion can be bypassed for any stereo digital Input on a dLive Surface or DX32.

⑤   **Matrix view** – With low levels of zoom, touch on an area of the matrix to zoom in. With higher levels of zoom, touch on a cross-point to patch a source (**Patch button** disabled). A confirmation popup will appear if the **Confirm when reassigning** option is enabled. Touch on an active cross-point to unassign.

5.2 Outputs

Patch Mixes, Direct Outs, RackExtra FX or PAFL (displayed on the left) to outputs (displayed on top).
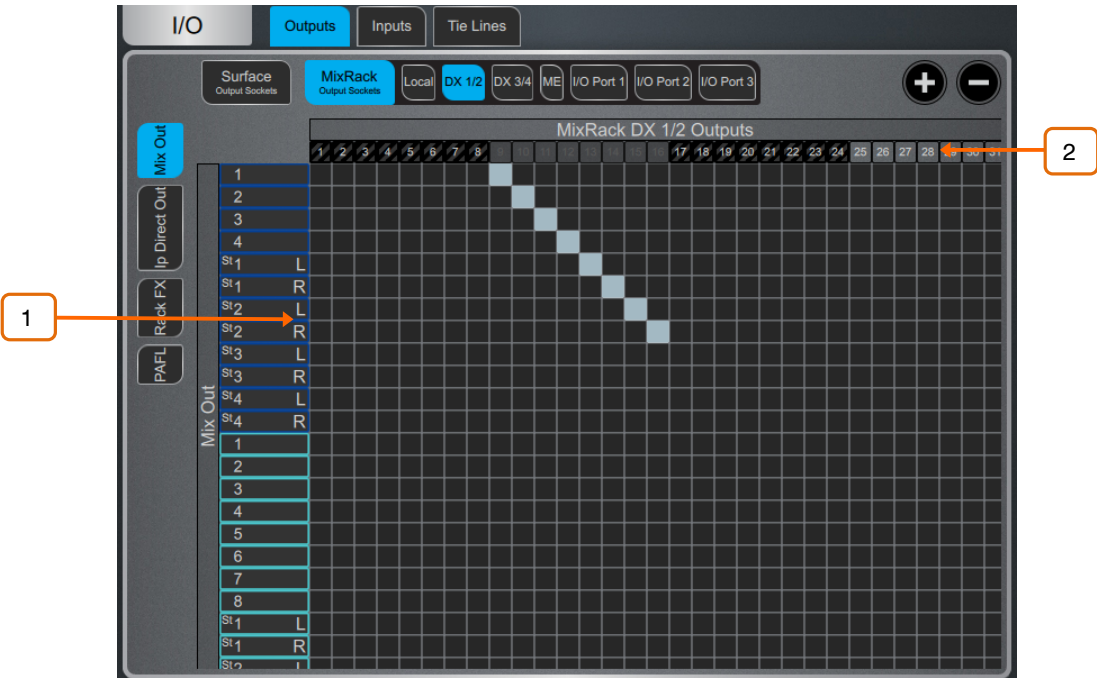
① **Sources** – Channel names and colours are displayed. Touch a channel name or number to edit its name and colour.

② **Destinations** – The output number is greyed out if already in use, or striped when the output is not available in the current system configuration.

Touch on a socket number to open a window with a list of current assignments and available controls for the socket.
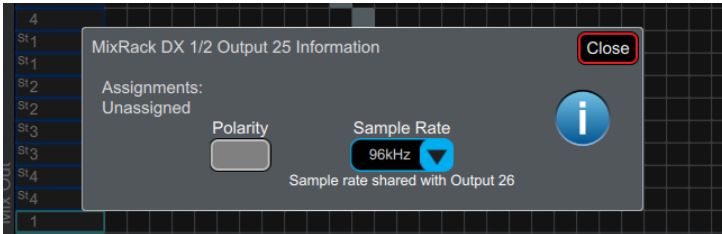
For example, touch on a DX32 digital output to access its Polarity and Sample Rate settings.
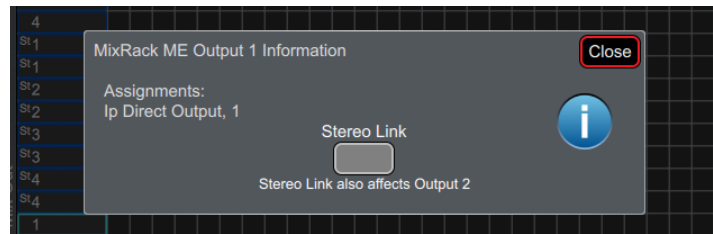
Touch on a ME output to access the Stereo Link option. When Stereo Linked, outputs to the Allen & Heath Personal Monitoring System will be recognised as a stereo pair and assigned to a single key on the ME-1 mixer.

5.3 Tie Lines

Use this page to patch any source (displayed on the left) directly to one or multiple destinations (displayed on top), without impacting on mix resources or bus configuration.
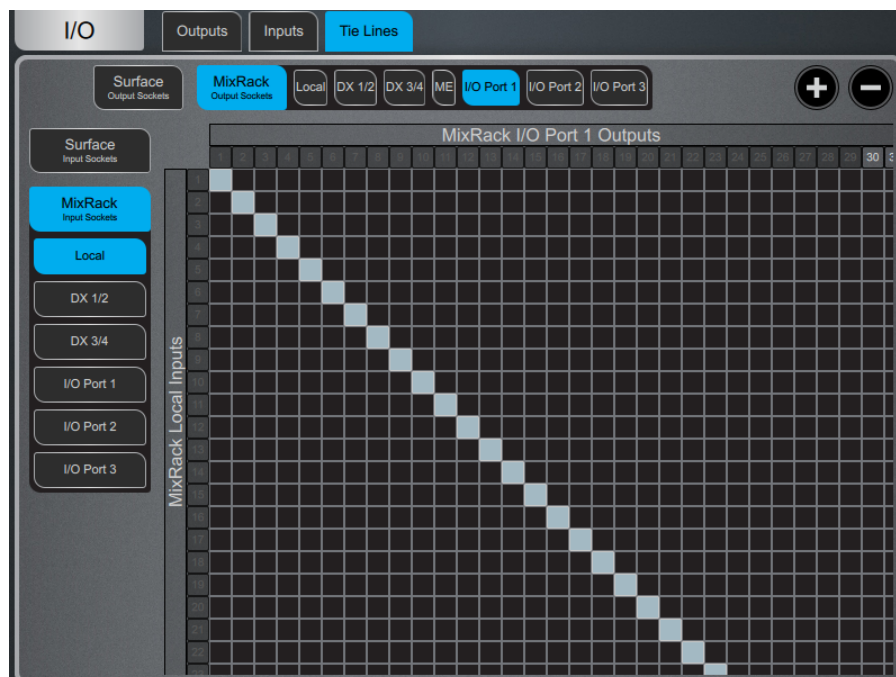
Digital Split using Tie Lines – In a digital split system (for example FoH and Monitors), it is typical to use the Tie Lines to send the Local inputs from the Master MixRack to an I/O Port and over to the Slave system, as pictured above. This method (as opposed to using channel Direct Outs) splits the signals straight after the preamp so they are unaffected by Digital Trim or Direct Out Source on the Master system.

5.4 Virtual SoundCheck

Use this page to configure and enable Virtual SoundCheck. The Record Send and Virtual SoundCheck modes are independent of Scene memories. This means you can patch analogue I/O, inserts and FX whilst in Virtual SoundCheck, with the peace of mind that these changes will stay in place when you exit Virtual SoundCheck. It also means that you can recall and store Scenes whilst in Virtual SoundCheck without the need to use Safes or Recall Filters.
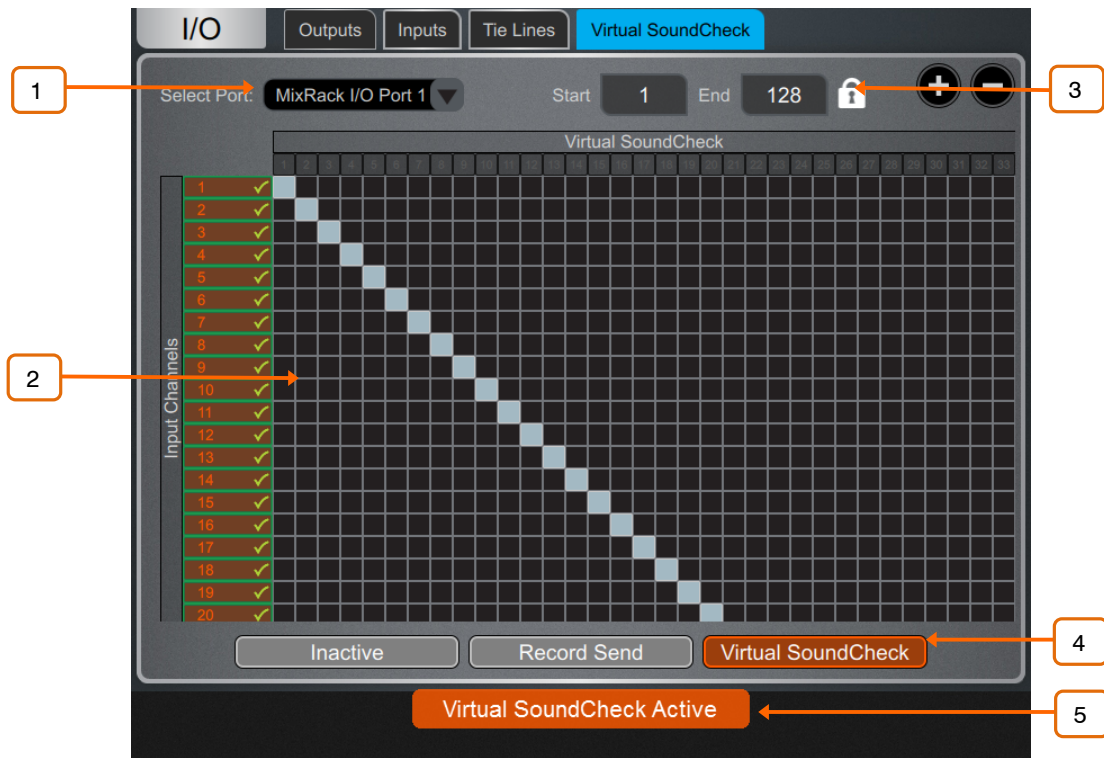
1 **I/O Port** – Select the I/O Port to use with Virtual SoundCheck.

2 **Matrix View** – Patch the channels to the I/O Port. It is typical to leave this patch to 1:1 so that Inputs are straight from/to the same numbered I/O Port channel.

3 **Range** – You can limit the range of I/O Port channels dedicated to Virtual SoundCheck. This can be useful if the same I/O Port is used for other applications at the same time, for example for plugin processing or audio distribution. The range selection is locked when in Record Send or Virtual SoundCheck mode.

4 **Inactive** disables Virtual SoundCheck. The normal I/O patch is in use.

Record Send sends the pre-trim audio from the Input Channels to the I/O Port for multitrack recording purposes. This will temporarily override the normal output patch to the selected I/O Port, if different.

ⓘ The source point is always pre-trim (it doesn't follow the Input Direct Out source setting). For multitrack recording applications other than Virtual SoundCheck, where the recording of the processed channel is required, go to **I/O / Outputs** and patch Input Direct Outs instead.

Virtual SoundCheck sends audio from the I/O Port to the Input Channels in place of the live inputs, temporarily overriding the normal input patch.

5 **Virtual SoundCheck Active** – A message is displayed on screen to remind the user that Virtual SoundCheck is active. Touch the orange box in any other screen to go back to this screen.

A **Virtual SoundCheck** button will also appear in the **Processing / Preamp** screen. This allows you to disable Virtual SoundCheck on individual channels, for example to run a live mic alongside the recorded tracks.
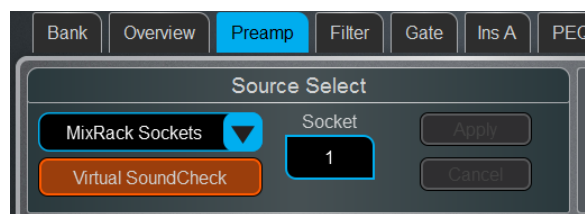
6. Routing

The Routing screen lets you view and adjust sends, routing and assignments for the currently selected channel. It offers an alternative to using the dLive fader strips, **Mix** keys and **Assign** / **Pre** keys.

ⓘ For more information on using the fader strips on the Surface please refer to the dLive Surface Getting Started Guide available for download at www.allen-heath.com.

Input channels – Displays routing, assignments and Direct Out controls.

1   Aux sends are shown as a purple bar if post-fade, as a green bar if pre-fade. The bar is filled in if the channel is assigned to the Mix, the outline only is shown otherwise. **Group** assignments are shown as a purple dot.

2   Touch the drop-down menu to select the **Global Direct Output Source.** This setting affects all channel Direct Outputs and can be set to Post Preamp, Post LPF, Post Gate, Post Insert A Return, Post PEQ, Post Compressor, Post Insert B Return, Post Delay.

✲ Hold down **Setup** and touch anywhere in the Routing screen to access further options for the Direct Out including **Follow Fader** and **Follow Mute**.

3   Scroll in this area or scroll / touch anywhere in the overview area to navigate the controls. Touch **On**/**Off** to toggle the channel assignment to the Main Mix, FX send, Aux, or Group. Touch **Pre**/**Post** to switch the FX or Aux send pre-fade or post-fade. Touch on a rotary control and use the screen rotary to adjust the send level or channel level to the Main mix. Touch on a Pan control and use the screen rotary to adjust the send Pan (stereo sends and Main mix only).

When in 5.1 Main mode, a surround panning icon is displayed instead of the Main assignment. Touch the widget to access surround panning and LFE level (see below).

4   **DCA assignments** – Touch the **On**/**Off** buttons to toggle the channel assignment to the associated DCA group.

5   **Direct Out** – Touch the control and use the screen rotary to adjust the Direct Out level. The current source point for the Direct Out is displayed.
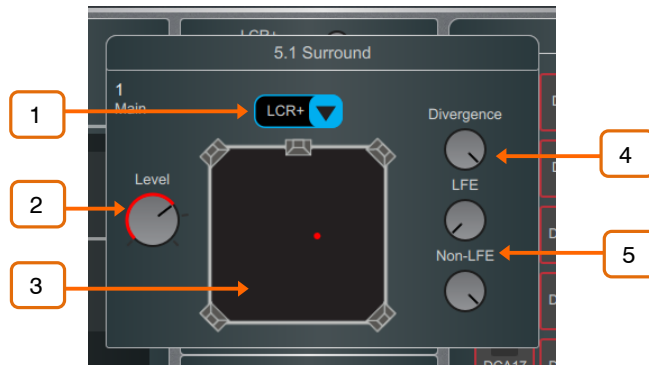
Surround panning – Access to 5.1 image, options and LFE level.

1 **Panning mode** – Touch the drop-down menu to select the panning mode for the selected channel with regards to the front triplet.

LR – The Pan control will affect the stereo image to L and R. No signal will be sent to C.

LCR – Each channel can be panned from left, through centre to right. At mid pan, full signal is fed to C and none to L and R. Stereo Inputs and FX Returns will be hard panned to LR.

LCR+ – The Pan control will affect the stereo image while the **Divergence** control will determine the amount of signal to C vs LR.

2 **Level** – This is the Main channel level.

3 **5.0 Panning** – Drag the red pointer to position the channel at any point in the 5.0 image.

4 **Divergence** – When the **Panning Mode** is set to LCR+, this control determines the amount of signal to C vs LR, given a fixed stereo image. For example, at mid pan and with the control fully clockwise (full Divergence), no signal is fed to C and the stereo image relies on LR only (the so called 'phantom centre'). At mid pan and with the control fully anti-clockwise (no Divergence), the signal is sent to C only.

5 **LFE** and **Non-LFE levels** – Use the **LFE** level to control the amount of signal sent to the Main LFE channel. Use the **Non-LFE** level to control the amount of signal sent to the Main 5.0 mix. This is always open by default but can be attenuated up to –inf for example for use with special LFE-only effects.
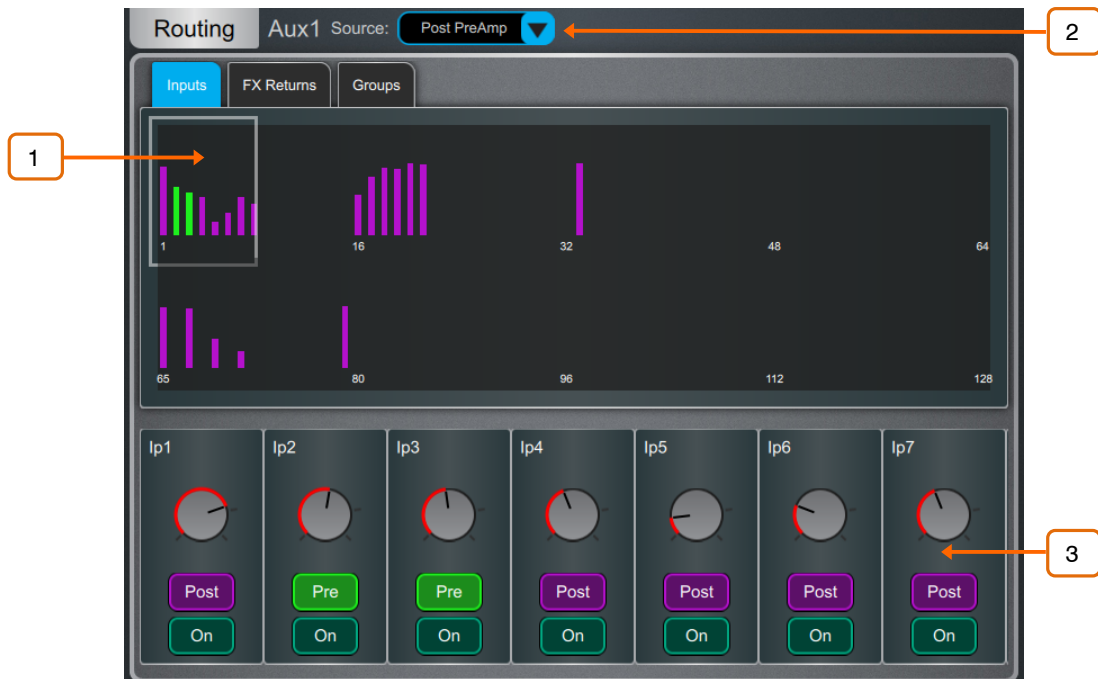
Aux and FX sends – Displays routing and assignments of Input channels, FX Returns and Groups to the selected Mix.

1   **Sends overview** – Sends from Inputs, FX Returns and Groups are shown as a purple bar if post-fade, as a green bar if pre-fade. The bar is filled in if the channel is assigned to the Mix, the outline only is shown otherwise. Use the tabs on top to display **Inputs**, **FX Returns** or **Groups**.

2   **Mix Source** – The point within the channel signal path that feeds the selected Mix is set globally for each Mix using this drop-down menu. It can be set to Post Preamp, Post Insert A Return, Post PEQ, or Post Delay.

3   **Routing controls** – Scroll in this area or touch in the overview area to navigate the controls. Touch **On**/**Off** to toggle the channel assignment to the Mix. Touch **Pre**/**Post** to switch the channel send pre-fade or post-fade. Touch on a rotary control and use the screen rotary to adjust the channel send level. Touch on a Pan control and use the screen rotary to adjust the channel send Pan (stereo sends only).

Matrix sends – Displays routing and assignments of Groups, Aux and Main mixes to the selected Matrix.

1 **Sends overview** – Sends from Groups, Aux and Main mixes are shown as a purple bar if post-fade, as a green bar if pre-fade. The bar is filled in if the Mix is assigned to the Matrix, the outline only is shown otherwise.

2 **Routing controls** – Scroll in this area or touch in the overview area to navigate the controls. Touch **On**/**Off** to toggle the Mix assignment to the Matrix. Touch **Pre**/**Post** to switch the send pre-fade or post-fade. Touch on a rotary control and use the screen rotary to adjust the send level. Touch on a Pan control and use the screen rotary to adjust the send Pan (stereo Matrix only).

DCA and Groups – Displays channel assignments to the DCA or Group. Touch **On**/**Off** to toggle the channel assignment to the DCA or Group. For DCAs, use the tabs on top to display different channel types.

☼ Hold down **Setup** and touch anywhere in the Routing screen to access the **DCA fader to 0dB** option. This forces the DCA level at 0dB.

7. Scenes

Use this screen to work with the dLive Scene memories. Up to 500 Scenes may be stored, and one or more Cue Lists can be created from the Scenes. Global Scene Safes and per Scene Recall Filters can be set to block certain parameters from recall.

7.1 Scene Manager

Gives access to the Scene list for editing or recalling.
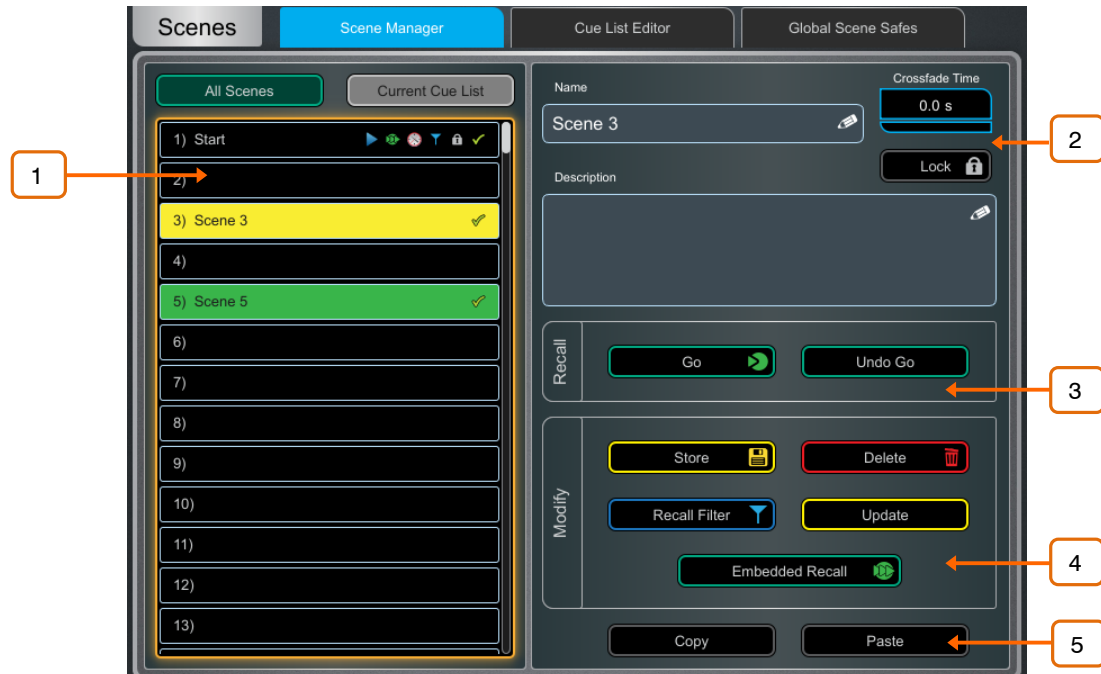
1 **Scene list** – Choose to display the list of all 500 Scenes or the **Current Cue List**. The Scene highlighted in yellow is the currently selected Scene, and is displayed in the top left corner of the System screen. The Scene highlighted in green is the Next or 'Go' Scene, and is displayed in the top right corner of the System screen.

Swipe up/down or use the screen rotary to scroll, and touch in the list to select a Scene. Both the yellow and green indicators will move to confirm the selection. Note that the Next (green) Scene can be selected independently from the Current Scene using the Surface **Prev** and **Next** keys.

Icons in the Scene list indicate the following:

A Scene is stored in this memory location.

This is the last recalled Scene, and is also displayed in the Home screen.

Embedded Recall is set for this Scene.

A Crossfade Time is set for this Scene.

Recall Filters are set for this Scene.

The Scene is locked.

2 Touch the **Name** box to open the keypad and type in a name up to 14 characters long for the currently selected Scene. Touch the **Description** box to enter a note about the Scene. Touch the **Lock** button to lock the Scene from any edit thus preventing accidental changes.

Touch the **Crossfade Time** and use the screen rotary to set a crossfade time up to 20 seconds for the currently selected Scene. This time sets how long it takes for levels and pan to change from their current settings to the settings of the Scene being recalled. Crossfades affect Input faders and Pan, Mix faders, DCA faders, send levels and Pan.

ⓘ Crossfades affect the audio levels, however the faders on the Surface will move instantly to their new position. Manually moving a fader during a crossfade will overwrite the crossfade for the associated channel.

3 **Recall** – Touch **Go** or press the Surface **Go** key to recall the Next (green) Scene. This overwrites current settings with those stored in the Scene being recalled. Touch **Undo Go** or hold down the **Reset** key and press the **Go** key on the Surface to restore the settings prior to a Scene recall.

4 **Modify** – All these functions affect the currently selected (yellow) Scene.

Touch **Store** or press the Surface **Store** key to store current parameters to the Scene. Press the Surface **New** key to store current parameters to the next available (empty) memory location.

You can update only a selection of parameters to the current Scene or a range of Scenes. Touch **Update** to open the Update Scene Range window (see below).

Touch **Delete** to clear the name, content and Recall Filter of the Scene.

Touch **Recall Filter** to view and edit the Recall Filter settings for the Scene (see below).

You can automate the recall of one or more other Scenes from the same or a different unit when you recall a Scene. Touch **Embedded Recall** to open the Embedded Recall settings for the Scene (see below).

5 Touch **Copy** to copy the content and Recall Filter of the currently selected (yellow) Scene. Touch the Scene you wish to copy to and touch the **Paste** button to paste. Scene names and descriptions are not copied.

❄ Hold down **Setup** and touch anywhere in the Scene Manager screen to access several Scene management preferences:

Scene Editing Confirmation displays a confirmation pop-up on Scene Store and Recall when using the Scene Manager page. A confirmation pop-up is always displayed on Scene Delete.

Display Last Recalled displays the Last Recalled Scene in blue in the top left corner of the screen, instead of the currently Selected Scene.

Auto Store automatically stores current settings to the last recalled Scene whenever a Scene is recalled. It is typically used during soundcheck to save all changes to a Scene before recalling a different one.

ⓘ Auto Store affects the last recalled Scene as displayed in the Home screen, this is not necessarily the currently selected (yellow) Scene.

Auto Increment moves the Next (green) pointer to the next available Scene in the list whenever a Scene is recalled, so that the Next Scene is always the Current Scene + 1. It allows recalling multiple sequential Scenes quickly with a single button press.

Track Embedded moves the Current (yellow) pointer to the last recalled Scene when Embedded Recalls are set.

Go on Touch lets you recall a Scene simply by touching its location in the Scene list and Scene widget. The currently selected Scene is highlighted in orange in this mode.

ⓘ No confirmation pop-up is displayed when Go on Touch is active. Only use this option if really required.

Disable Surface Controls locks the Scene area of controls on the dLive Surface, to prevent accidental operation.
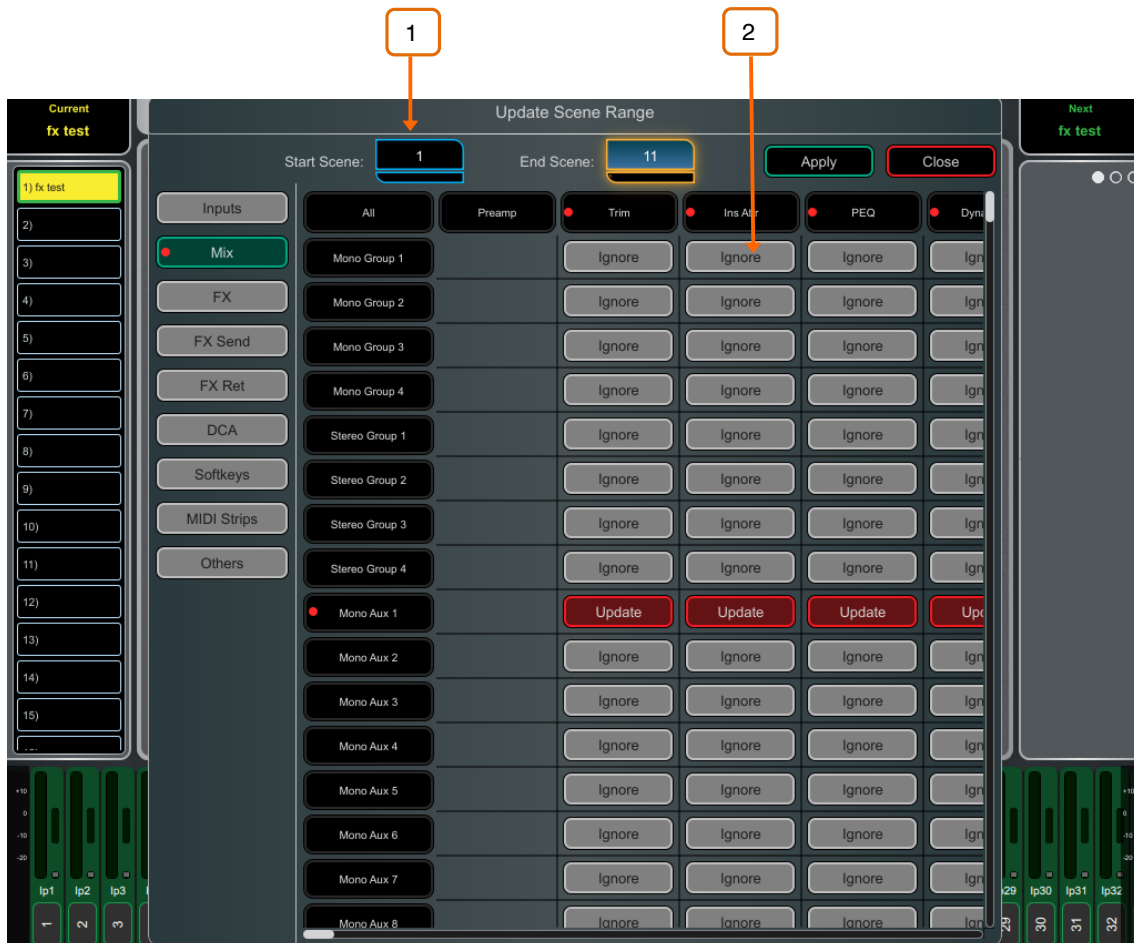
Update Scene Range – You can update a selection of current parameters to the current Scene, a specific Scene or a range of Scenes.

1   Touch the boxes and use the screen rotary to select the range of Scenes to update. This defaults to the currently selected (yellow) Scene.

2   Use the tabs on the left to view the different parameter groups. Swipe up/down or left/right to navigate through the table. Touch an item to toggle. Items highlighted in red will be updated, all other items will be ignored.

Touch a parameter label on top of the table to toggle one parameter for all channels. Touch a channel label on left to toggle all parameters for one channel. Touch **All** to toggle all items in the current tab.

A red dot lights in a tab when one or more items have been selected for the update in that tab.

ⓘ **Routing** (sends and assignments) will only update when both the Input Routing and Mix Routing items are set to Update. This allows selection of single or multiple cross-points, for example Input 1 to Mono Aux 3 and 4. To update all sends for an Input, select Routing on the Input and Routing on all Mixes. To update all sends to a Mix, select Routing on the Mix and Routing on all Inputs.
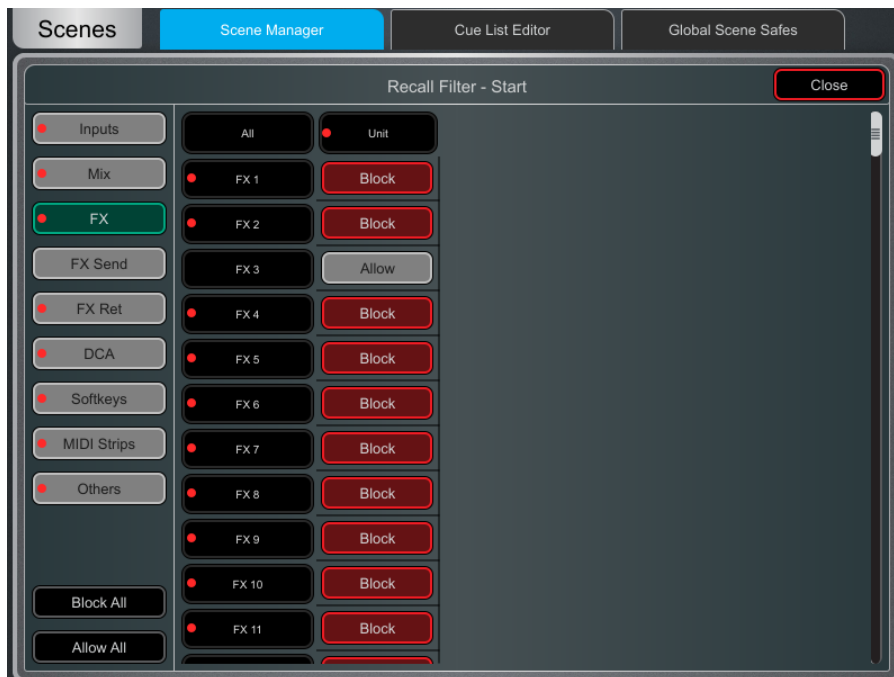
Recall Filters – A Recall Filter prevents certain channels or parameters being overwritten by the Scene recall. It only affects the Scene it is associated with.

Use the tabs on the left to view the different parameter groups. Swipe up/down or left/right to navigate through the table. Touch an item to toggle. Allowed items will be recalled, Blocked items will not.

Touch a parameter label on top of the table to toggle one parameter for all channels. Touch a channel label on left to toggle all parameters for one channel. Touch **All** to toggle all items in the current tab, or touch **Block All** or **Allow All** to affect all items in all tabs.

A red dot lights in a screen tab when one or more items have been blocked in that tab.
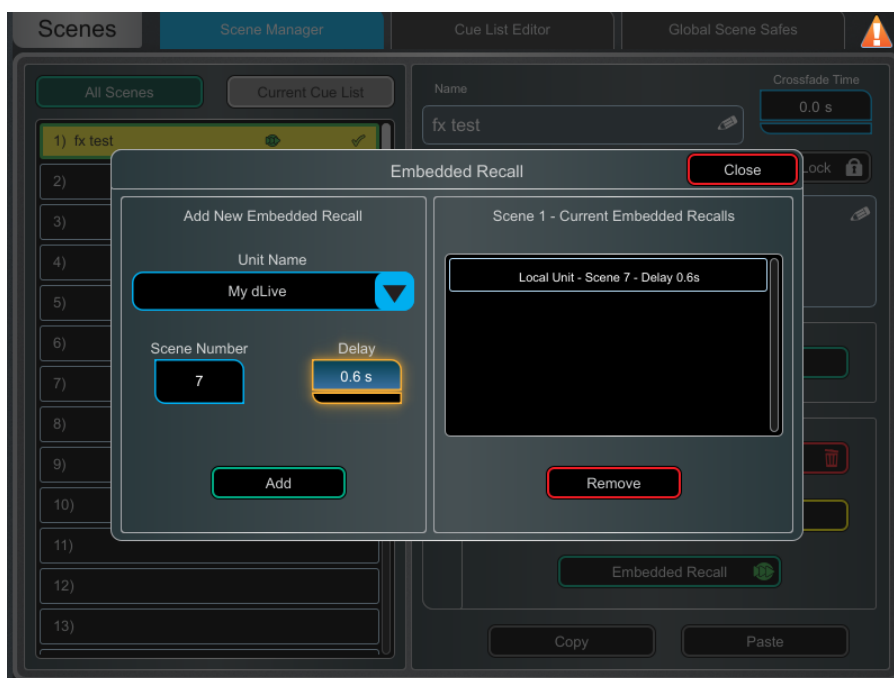
Embedded Recall – You can automate the recall of one or more other Scenes from the same or a different unit when you recall a Scene. A delay time can be set for each embedded Scene within the host Scene.

Select the target unit or system from the **Unit Name** drop-down. All compatible Allen & Heath units found on the dLive network are listed here. Select 'My dLive' to automate Scenes on the local system.

Set the **Scene Number** to select the Scene you wish to embed. Its name is displayed below the box. Set the **Delay** time for the embedded Scene recall. This is the time the system waits before recalling the Scene after you have recalled the host Scene. Time can be set from 0 sec (instant) to 4 minutes. Touch **Add** to add the Scene to the list on the right.

The list shows the embedded Scenes together with associated units and delay times. Select one and touch **Remove** to remove from the list.

7.2 Cue List Editor

A Cue List is a custom list of Scenes selected from the list of available Scenes. Cue Lists can be named, saved, recalled and deleted.

1   **Current Cue List** – Drag and drop Scenes here to create a Cue List. Scenes can be placed in any order and repeated any number of times in the list. To remove a Scene from the Cue List, touch the trash can icon to the right of the Scene name.

2   Touch **Save** to name and store the current Cue List. Touch **Load** to select and open a previously saved Cue List. Touch **Clear Current** and confirm to remove all Scenes from the current Cue List.

Touch **Move Up** or **Move Down** to move the selected Scene in the current Cue List.

Touch **Overwrite** and confirm to update a saved list with the current Cue List. Touch **Manage** to open a list of saved Cue Lists and delete one or more.

7.3 Global Scene Safes

Scene Safes prevent certain channels or parameters being overwritten by a Scene recall. Contrary to the Recall Filters, this setting is global, affecting ANY Scene recall. It is typical for certain settings such as SoftKeys assignments to be made Safe so their settings are global within the Show.
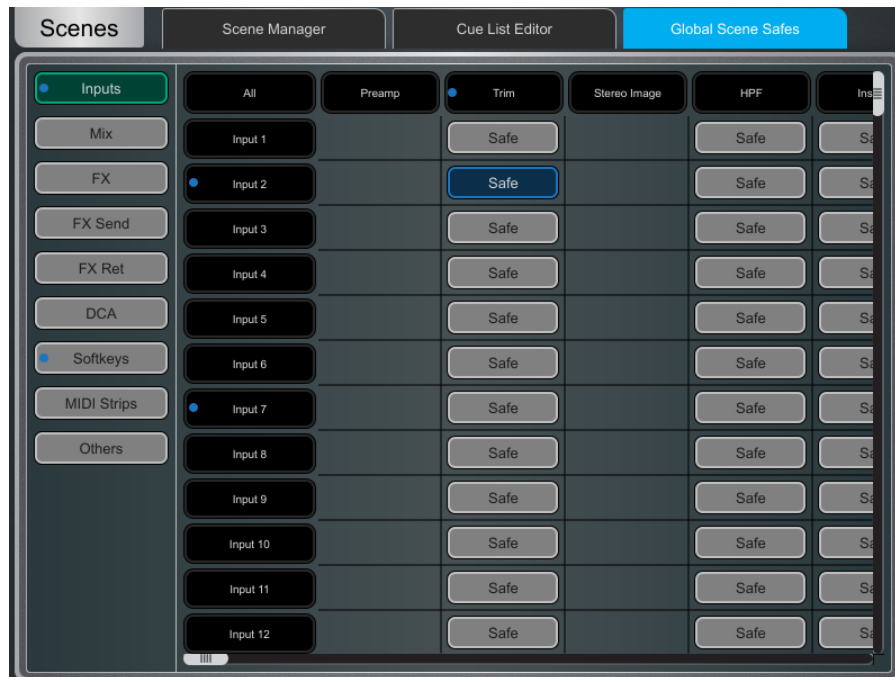
Use the tabs on the left to view the different parameter groups. Swipe up/down or left/right to navigate through the table. Touch an item to toggle its state. Safe items (highlighted in blue) will not be recalled.

Touch a parameter label on top of the table to toggle one parameter for all channels. Touch a channel label on left to toggle all parameters for one channel. Touch **All** to toggle all items in the current tab, or touch **Block All** or **Allow All** to affect all items in all tabs.

A blue dot lights in a screen tab when one or more items have been safed in that tab.

8. Ganging

Use this screen to create and edit up to 16 Gang groups. A Gang links all or a selection of processing and routing parameters for two or more channels or mixes of the same type. The channels or mixes in a Gang are known as 'Members'. The parameters are known as 'Attributes'.

Ganging provides absolute, not relative control.

ⓘ Gang settings follow Scene automation. You can 'safe' Gang settings from being overwritten using the **Scenes / Global Scene Safes** page.
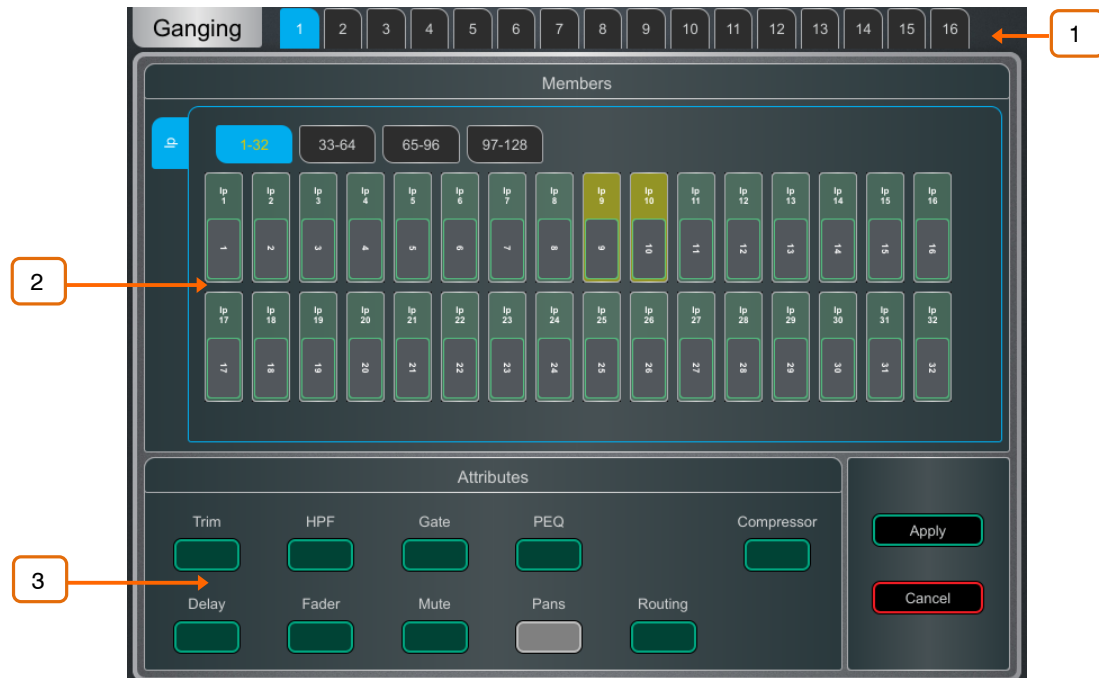
1 ⎯ Touch one of the 16 Gang tabs at the top of the screen to create or edit a Gang group. A Gang with channels already assigned highlights yellow.

2 ⎯ **Members** – Select either the Input (Ip) or Mix tab. Touch the channels you wish to gang or ungang. A channel or Mix can only belong to one Gang.

3 ⎯ **Attributes** – Touch the parameters you wish to link. Adding the Routing attribute links the sends and assignments from the ganged channels. Touch **Apply** to confirm the changes.

ⓘ Preamp Gain cannot be ganged. You can set Gain controls to a nominal level, then gang the Trim controls and use to make input level adjustments while mixing. Alternatively, configure a Stereo Input in **MixRack / Config / IP Stereo Config** to permanently link two Input channels and their preamps within the current Show.

9. MixRack Setup

These pages give access to the mixer bus configuration, Input stereo configuration, network settings, audio settings and User Profiles.

9.1 Config / Mixer Config

Use this page to reconfigure the architecture of the 64 Mix busses available.
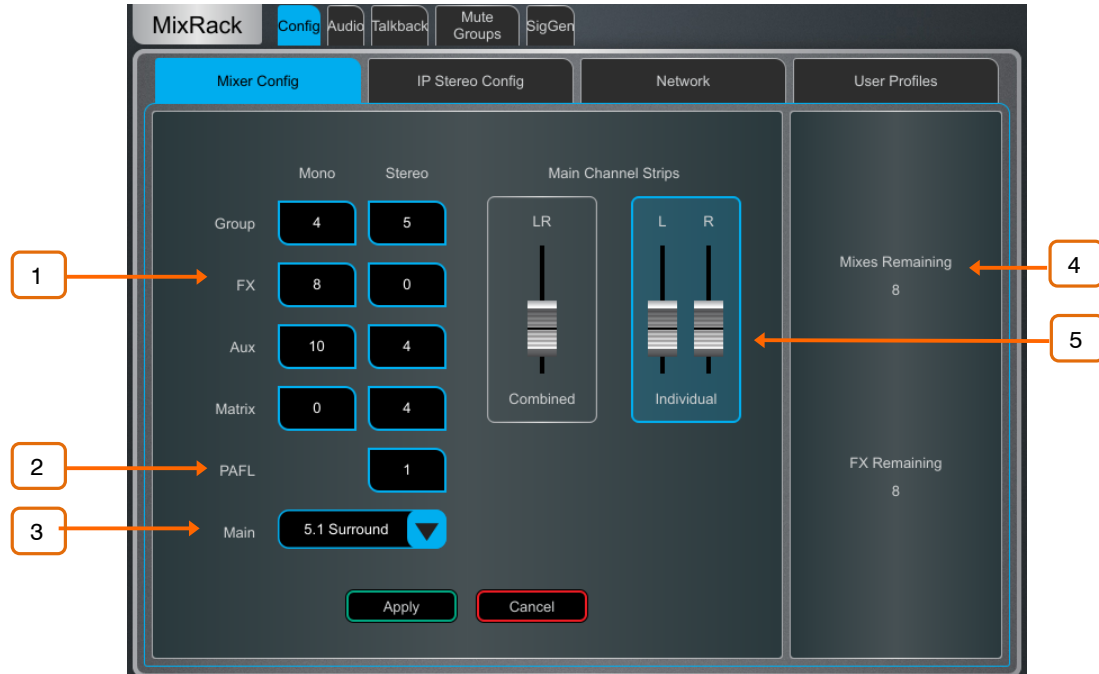
1   **Bus configuration** – Touch a box and use the screen rotary to set the number of mono / stereo Groups, FX sends, Aux sends and Matrix outputs. You can choose any combination, but note that mono busses can only be added / removed in pairs.

2   **PAFL** – Touch and use the screen rotary to set the number of stereo PAFL busses. Set to 1 for a typical standalone system. Extra PAFL busses can be useful when multiple operators are sharing the same dLive system. For example, an engineer mixing FoH on the Surface, and a second engineer mixing Monitors on a laptop.

3   **Main** – Select one of 5 modes of Main mix:

None - No Main mix, for example dedicated monitor mixing with a large number of Aux mixes.

LR - Standard stereo Main mix.

LR+Msum - A stereo Main mix with additional output which is the mono sum of the pre-fade, pre-processed LR mix. For example to feed a mono delay speaker or zone.

LR+M - A 3-way main mix with independent stereo LR and mono M busses. Channels can be separately assigned to any combination of LR and M. Typical application for M is main centre speaker, mono PA or bus-fed sub bass.

LCR – A 3-way main mix with LCR panning. Each channel can be panned from left, through centre to right. At mid pan, full signal is fed to M and none to L and R. Stereo channels feed the LR mix only.

5.1 Surround – Multichannel 5.1 output. Each channel can be set to LR, LCR or LCR+ panning with regards to the front triplet. When in this mode, an on-screen surround panning widget is displayed in the **Routing** screen.

4   Displays the number of busses and FX sends remaining and warns if you exceed the maximum.

5 **Main Fader Strips** – The Main LR mix can be presented on the Surface as a single, **Combined** fader strip or as two **Individual** fader strips. When ganged, all processing for LR including delays is linked. A Balance control is provided to adjust the relative Left and Right level. The option will also affect the Main surround channels sL and sR.

Press **Apply** to confirm the changes. All current settings other than the bus configuration will stay in place.

ⓘ Mix Config reassigns the bus architecture and resets mix parameters. These changes if needed should be done before, not during a show.

9.2 Config / IP Stereo Config

Displays the current mono/stereo configuration of the 128 Input channels. Stereo channels are highlighted in green. Touch the buttons to change the configuration and press **Apply** to confirm. Stereo channels use a single fader strip and all their processing controls are linked.
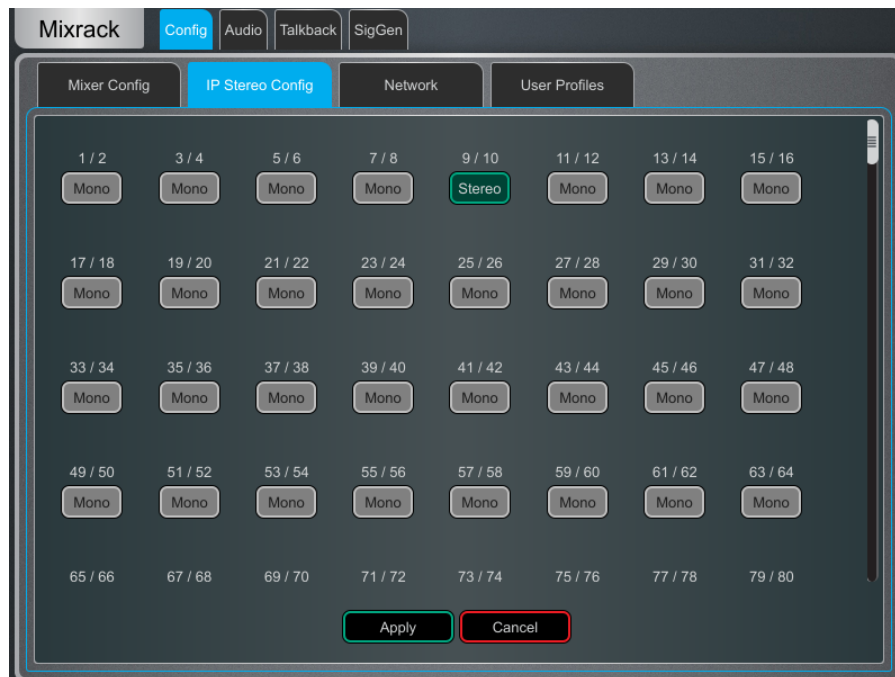
ⓘ This is intended for permanently configuring channels as stereo inputs, for example music players. Use the **Ganging** screen for on-the-fly linking of stereo sources while mixing live.

Config / Name & Colour

Use this page to change or reset the name and colour of a range of channels. Name and colour for individual channels can be edited from the Processing Screen.
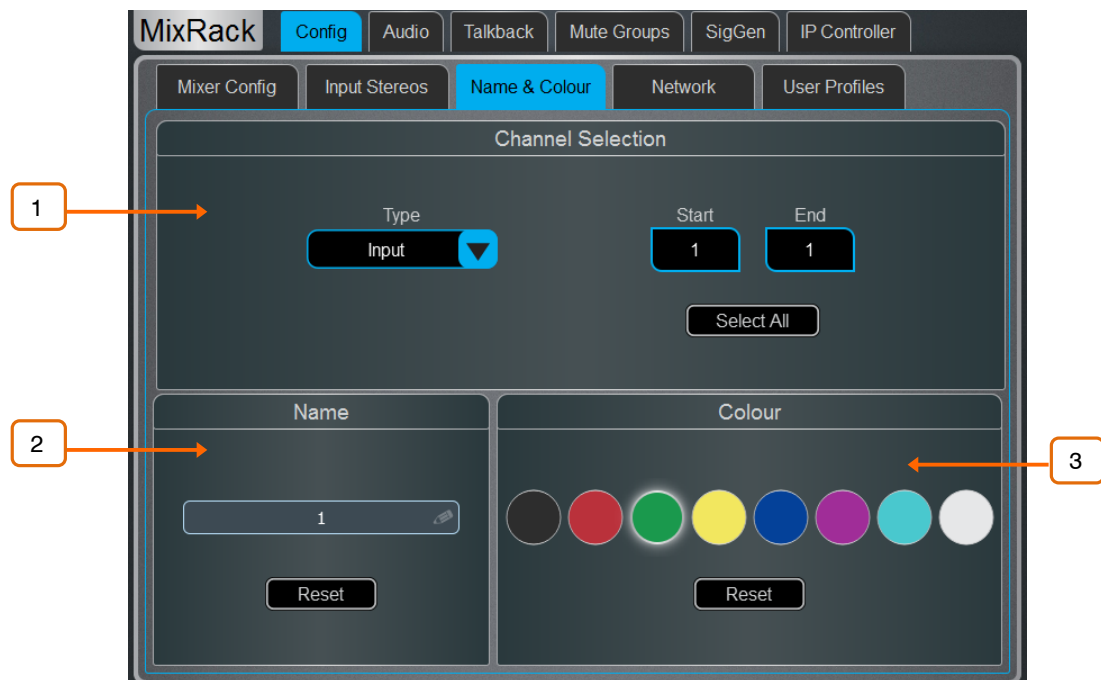
1   **Channel Selection** - Set the channel **Type** from the drop-down menu. Touch **Select All** or set the **Start** and **End** to select a range of channels.

2   **Name** – Press **Reset** to restore the default channel names to the selected range. Touch the name box to edit the name when a single channel is selected.

3   **Colour** – Touch a colour to change or press **Reset** to restore the default channel colours to the selected range.

9.3 Config / Network

Use this page to configure the IP Address and Unit Name to identify the MixRack on the network.

1   **IP Settings** – To set a static IP Address, touch the **IP Address** box and type in the address. Make sure the Subnet Mask and Gateway are valid, and all devices on the network including Wi-Fi routers, access points or laptops have unique but compatible addresses.

The default MixRack IP Address is 192.168.1.70 with Subnet Mask 255.255.255.0 and Gateway 192.168.1.254. You can restore these defaults by touching the **Reset** button.

Enable **DHCP** to allocate an IP Address to the MixRack by a network DHCP server, for example a Wi-Fi router.

ⓘ Only use DHCP when a DHCP server is connected to the MixRack. If DHCP is enabled and the MixRack is powered up while no server is present, it can take longer than usual for the system to boot.

2   **Unit Name** – A name with up to 16 characters can be set to identify the MixRack on the network. The default is 'dLive Mix Rack'.

3   **Connections** – Displays the number of active network connections to the MixRack. The Surface and touchscreens count as one connection each.

9.4 Config / User Profiles

Up to 10 User Profiles including an Administrator can be set to restrict operator access and protect selected functions.
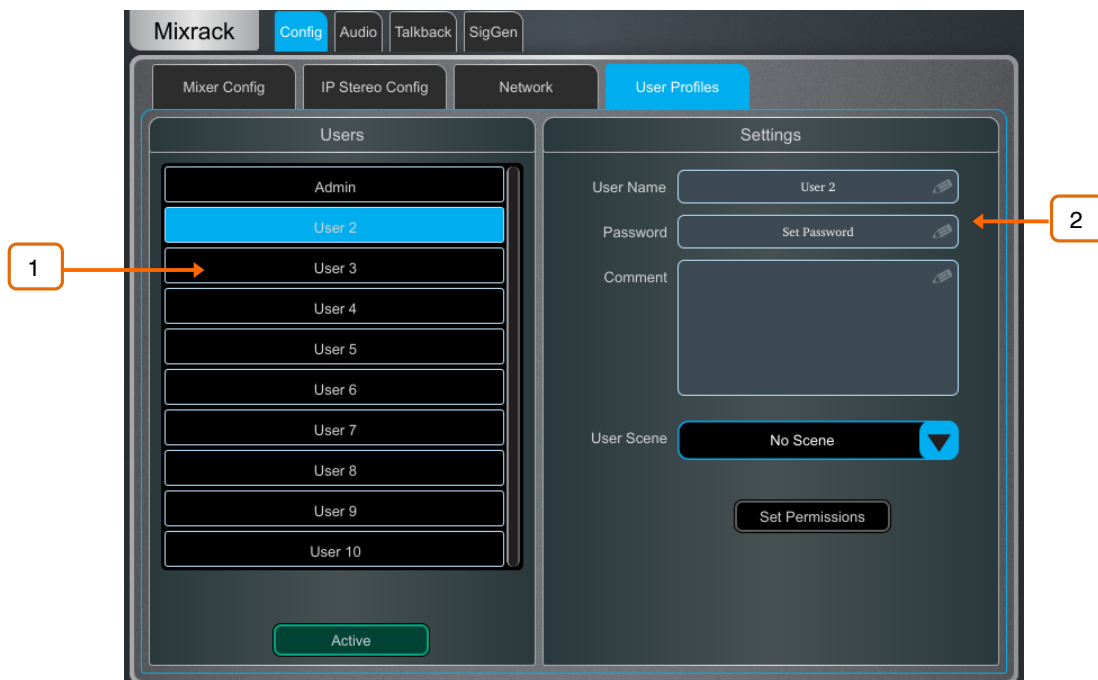
1 **Users** – The Admin user has access to all functions and can set permissions and allocate passwords if required for the other users. The password, if one is set, is required when the User logs in, changes User or locks / unlocks the dLive Surface. Icons in the list indicate if a password is set and if the User is active.

Touch a User to edit its profile. Touch **Active** to enable this User in the **Home** / **User Login** screen.

2 **Settings** – Touch the **User Name** box to enter a name up to 16 characters. Touch the **Password** box to set or change a password up to 16 characters. Touch the **Comment** box to enter an additional note.

Touch the **User Scene** drop-down to select a Scene to recall automatically when the User logs in. This will overwrite current settings. A User Scene can ensure that the mixer is restored to a known starting point for the User.

ⓘ The User Scene only recalls when the User is changed. It does not recall when the same User logs in or the system is powered up without changing User.

Press **Set Permissions** to open the Permissions window (see below).

ⓘ User Profiles are stored in the dLive MixRack. They are not stored in Show memories.
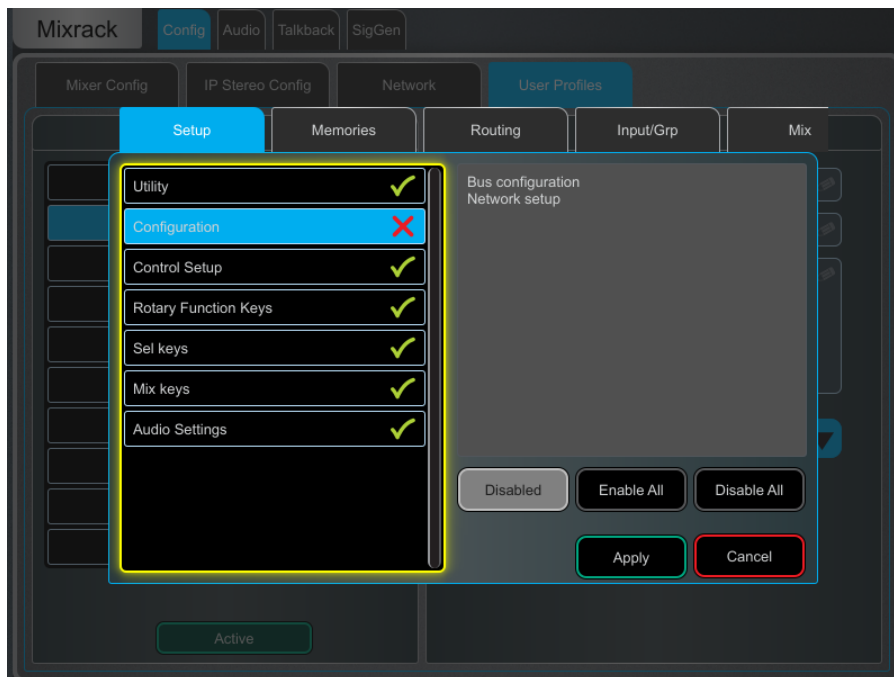
User permissions – Each User can have their own set of Permissions applied. Use the tabs across the top of the window to view and set different groups of permissions. Select an item in the list and toggle the **Enabled**/**Disabled** button as required. The window on the right provides a description of the functions included in the currently selected item. Use the **Enable All** / **Disable All** buttons to quickly toggle all items in the currently open tab. Touch **Apply** to accept the changes.

9.5 Audio / I/O Port

These tabs display information on the fitted card in I/O Port 1, 2 and 3, and give access to any relevant option.
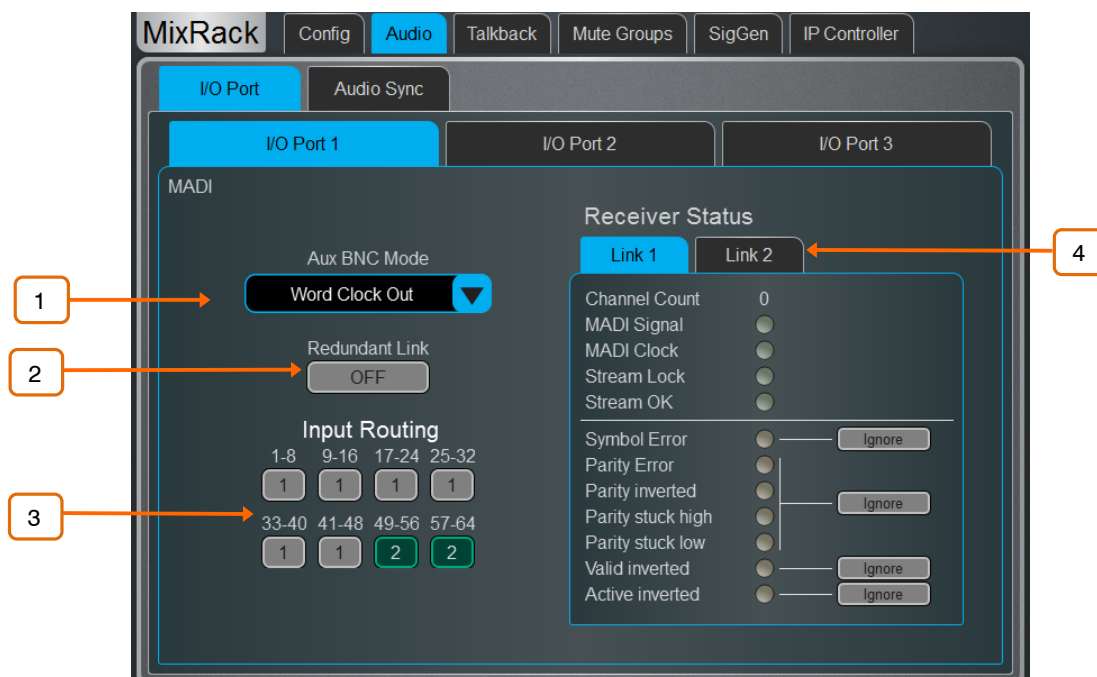
1   **MADI Aux BNC Mode** – Set to **In 1 Thru** to replicate the incoming Link 1 stream to the Aux BNC. Set to **Out 1 Mirror** to split MADI outputs to the Aux BNC. Set to **Wordclock Out** to provide a Wordclock signal on the Aux BNC.

2   **MADI Redundant Link** – Enable this option to use Link 2 on the MADI card as a dual redundant connection.

3 **MADI Input Routing** – With Redundant Link disabled, you can choose if incoming MADI channels are sourced from Link 1 or Link 2, in blocks of 8 channels.

4 **Receiver Status** – Displays the status of the two Links. If any error is detected on the stream i.e. the stream is not fully compliant to the MADI standard, dLive will mute the incoming audio. However, an option to ignore these errors is given to allow wider compatibility with third party equipment.

ⓘ Only ignore stream errors when strictly required and check for integrity of the audio at low level. An error in the stream might cause full scale digital noise on the outputs!

ⓘ Note that clock, redundancy and other options for the M-Dante, M-Waves and M-ES-V2 cards are accessed by the Audinate, Waves Audio or Auvitran software respectively. Access to these settings is not provided by the dLive interface.

9.6 Audio / Audio Sync

Use the Audio Sync page to set the audio clock options for the system.
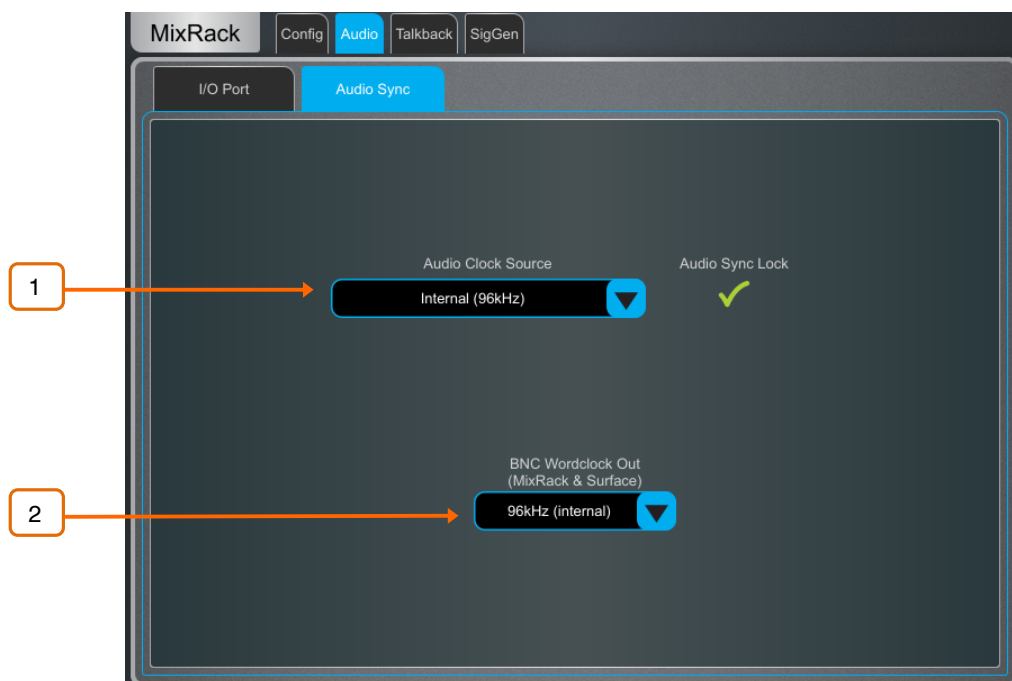
1 **Audio Clock Source** – Select the clock source for the dLive system. Set to **Internal (96kHz)** to use the internal audio clock, this is the default setting. Set to an **I/O Port** to sync from an audio networking card, or **MixRack / Surface BNC Wordclock In** to sync from a 96kHz Wordclock provided at the BNC input of the MixRack or Surface.

ⓘ When linking two or multiple systems together using audio networking cards, the 'Master' system (typically the one that has control over the preamps) is set to Internal and all other systems are set to sync from the relevant I/O Port.

ⓘ Only sync from 96kHz sources or, if an M-DL-ADAPT 'letter-box' adapter is fitted, from a 48kHz audio networking card fitted in the adapter.

ⓘ When using a dLive C Class MixRack, an option is displayed in this page to set the BNC connector as either a Wordclock input or output.

2 **BNC Wordclock Out** – Select the sample rate for the Wordclock output provided at the Surface and MixRack. This can be set to **Off**, **44.1kHz**, **48kHz** or **96kHz (internal)**.

9.7 Talkback

Use this screen to assign and configure Talkback.
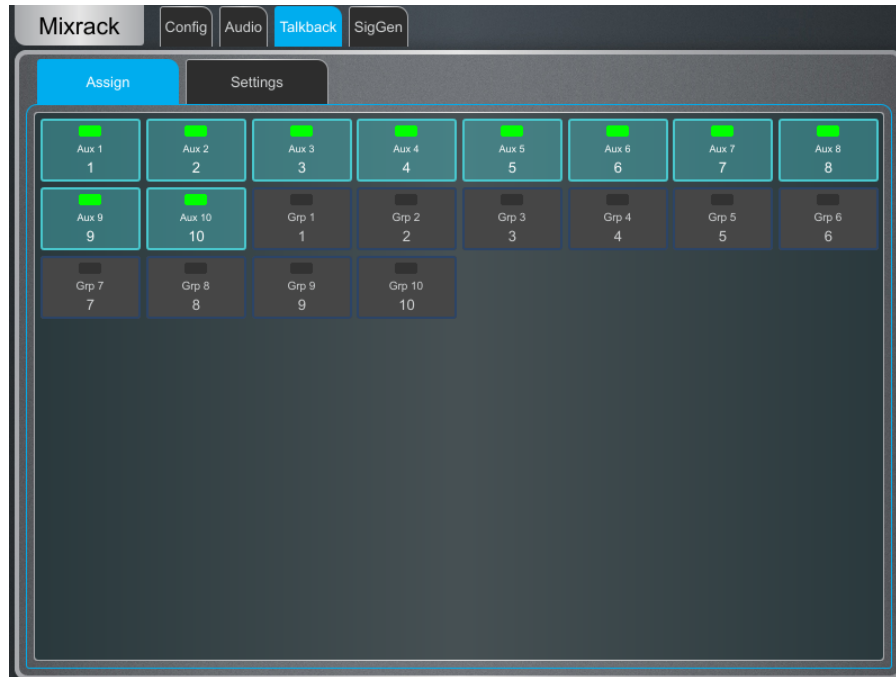
Assign – Touch a Mix button to assign Talkback.

Settings – Use this page to choose the Talkback source and set its options.

☐ 1   **General** – The default Talk switch operation is momentary (press and hold while talking). Turn on **Enable Latching** for latching operation (press to turn on, press again to turn off).

Enable Dim PAFL on Talkback attenuates the PAFL signal while talking to prevent feedback from the engineer's monitor into the Talkback microphone.

Enable Mains Assignment presents the Main mix as a valid destination for Talkback in the Assign tab.

2 **Talkback Source Select** – Use the drop-down menu and **Socket** box to select the Talkback source from any system input. Press **Apply** to confirm.

3 **Talkback Source Preamp** – Set the source Gain, Trim, Pad and phantom power. You can also make the source **Safe** from Scene recall.

4 **HPF** – High Pass Filter frequency and In/Out switch.

9.8 Mute Groups

dLive provides 8 Mute Groups in addition to the 24 DCA Groups. This page lets you assign channels and mixes to Mute Groups and control Mute masters. You can assign one or more SoftKeys to control the Mute Groups using the **Surface** / **Control** / **SoftKeys** menu.
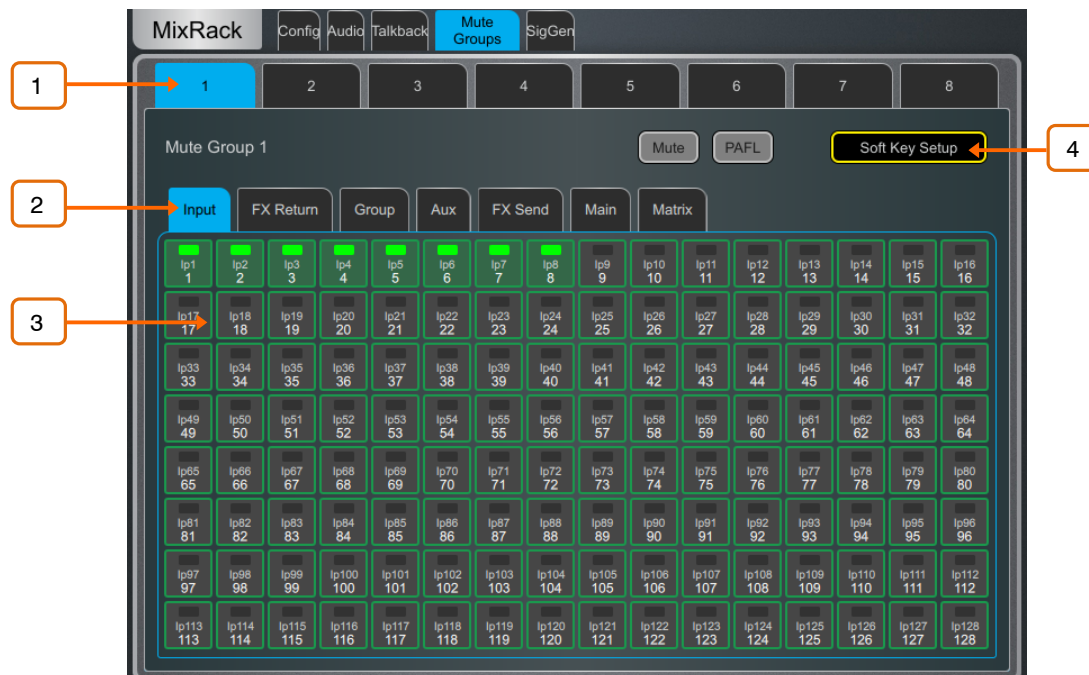
1 Select the Mute Group using the tabs at the top of the page.

2 These tabs let you navigate all available Input channels, FX Returns and Mixes.

3 Touch the on/off buttons to toggle the channel assignments to the Mute Group.

4 Touch **Mute** to mute the Mute Group. Touch **PAFL** to listen to the contribution of the channels assigned to the Mute Group in the Monitor system. Touch **SoftKey Setup** to open the **Surface** / **Control** / **SoftKeys** menu should you wish to assign the Mute Group to a SoftKey.

9.9 SigGen

The Signal Generator provides a test signal to help you align and test components of a sound system.
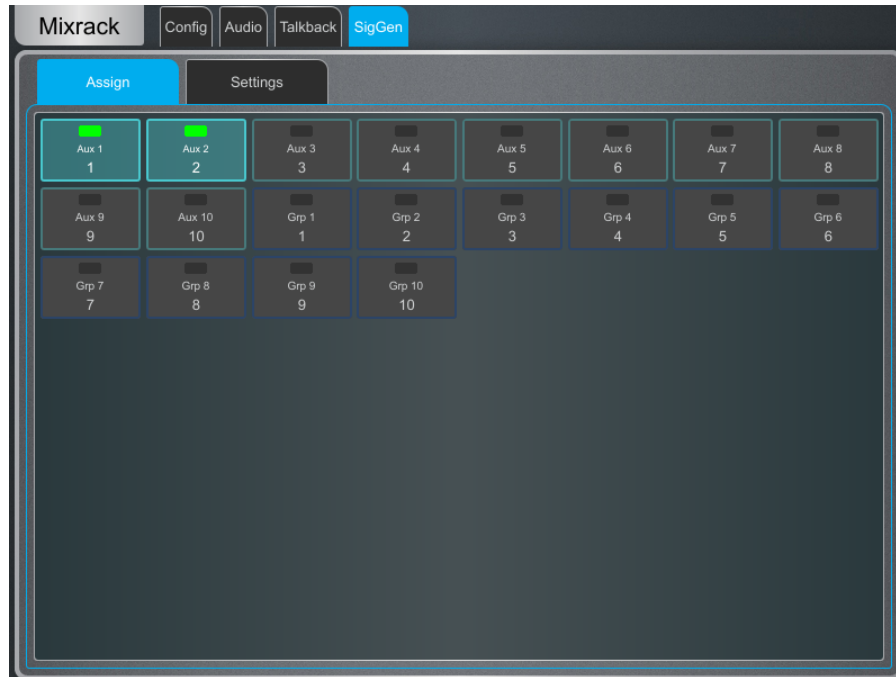
Assign – Touch a Mix button to assign the SigGen. The signal routes through the Mix processing, therefore will be affected by the Mix EQ and compressor.

ⓘ The SigGen is disabled while Talkback is active.
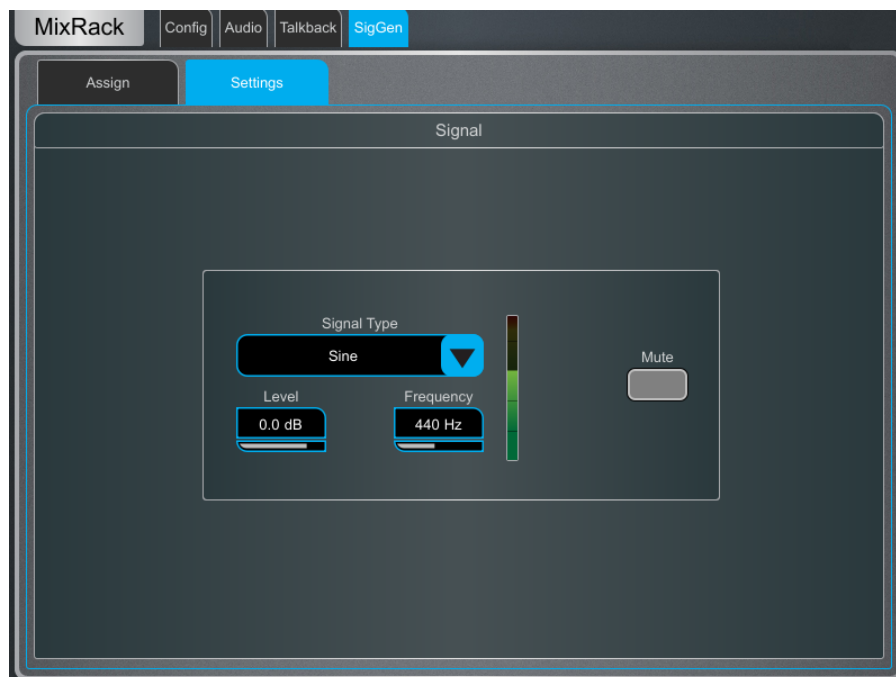
Settings – The SigGen **Level** can be set from fully off to full scale +18dB. Touch the **Mute** button to turn off.

There are 4 types of signal available:

Sine - A pure tone. Set the frequency using the **Frequency** box. This can be swept across the full audio spectrum from 20Hz to 20kHz.

White Noise - A signal containing all audio frequencies with equal energy per Hz.

Pink Noise - A signal containing all audio frequencies with equal energy per octave, a logarithmic curve and typically used for testing speakers and room response.

Band Pass Noise - Band filtered pink noise centred around the frequency set using the **Frequency** control.

9.10   IP Controller / Device Manager

Up to 16 IP remote controllers per device type are configurable, each with its own assignments and functions.

ⓘ Refer to the Remote Controller Getting Started Guide for information on the device hardware and connection.

Adding IP controllers to the **MixRack / IP Controller / Device Manager** configures an independent set of controls that can be used with or without Surface connection, for applications such as personal monitoring, room control etc.

Add a device to the **Surface / IP Controller / Device Manager** instead to assign **Sel** and **Mix** keys to the IP device and use the remote controller as an extension of the dLive Surface i.e. the channel and Mix selection is shared across the Surface and IP device.

1   Select the device tab using the tabs on top, and select one of the 16 locations in the list. The list shows the unit name of assigned devices.

🔗   The link icon will display green when the physical device is connected to the network and synchronised. It will display red when the device is not present or synchronising after being added.

ⓘ The key and fader / rotary assignments for each device are stored in the dLive Scenes. They are not stored on the physical device. These settings belong to the device location in the list, for example you can assign functions and parameters to a location prior to adding a device, or you can remove a device without affecting the functions and parameters of its location.

2   **Add Device** – touch to assign a physical IP controller to the selected location in the list.

Remove Device – touch to unassign an IP controller from the selected location.

3   **Unit Name** – touch to edit the name of the selected device.

Network – touch to edit the IP address, subnet, and DHCP setting for the selected device. The default settings are:

IP6   IP 192.168.1.72 Subnet Mask 255.255.255.0 Gateway 192.168.1.254 DHCP off

IP8   IP 192.168.1.73 Subnet Mask 255.255.255.0 Gateway 192.168.1.254 DHCP off

ⓘ To avoid network conflicts, make sure all connected IP controllers are assigned a unique name and IP address.

9.11   IP Controller / Quick Setup

Quick Setup lets you quickly assign one or multiple channels to the IP controller strips, automatically mapping the keys and faders / rotaries to a set of default functions and parameters.
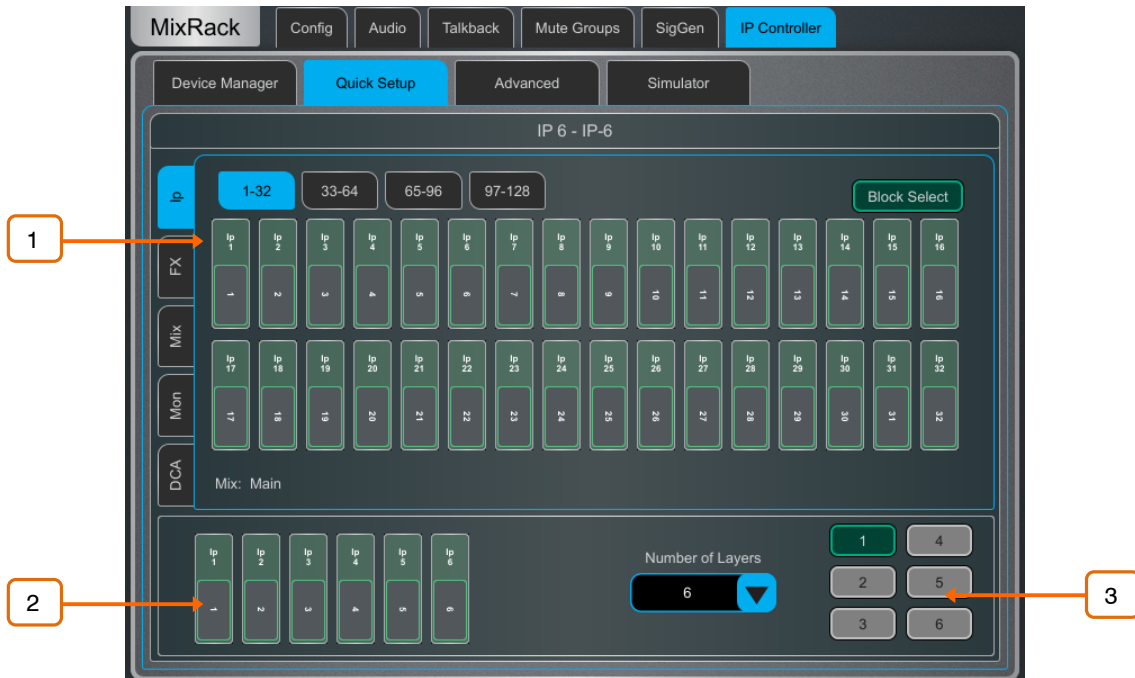
☀ Before you start, hold down **Setup** and touch anywhere in this screen to edit the default settings for Quick Setup. These settings determine the function of the strips at the moment of assigning to the IP device. They don't affect strips which are already assigned.

①   Drag and drop channels into the desired position in the lower window. Use the tabs on the left to view different types of channels available, and the tabs on top to navigate to higher / lower number channels.

Turn on **Block Select** and touch the first and last item you wish to assign to drag a range of channels.

②   Drag channels out of the box to unassign.

③   Set the active **Number of Layers** from the dropdown menu and select the Layer you want to assign channels to. Up to 6 SoftKeys on the IP Controller will be automatically assigned to the Layer selection.

9.12   IP Controller / Advanced

Advanced allows one-by-one assignment of keys and faders / rotaries.
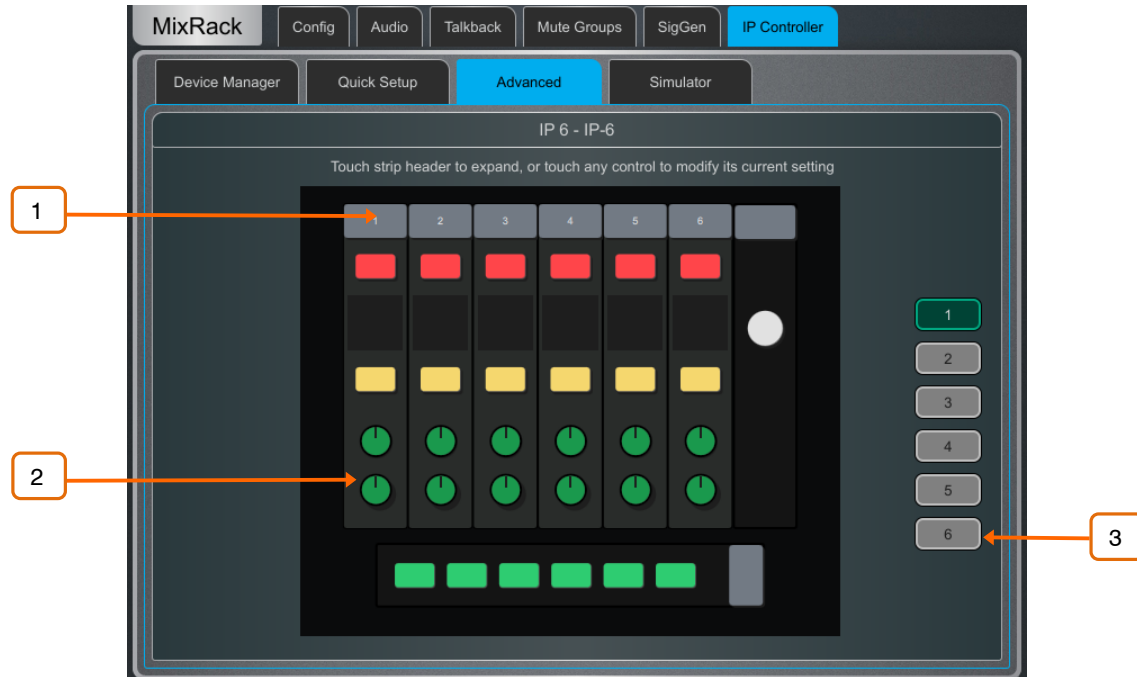
1️⃣   Touch a strip header to expand the view and display the assigned functions or parameters for the strip.

2️⃣   Touch a control to assign a function or parameter. Note that the screen will display two rows of rotary controls for the IP6. The lower row is the main function, the upper row is the secondary ('n turn) function.

3️⃣   Select the Layer you want to edit.

9.13   IP Controller / Simulator

Use this screen to simulate the operation of the selected device.

Touch a key on the screen to control the assigned function. Touch a fader / rotary control and use the Surface screen rotary encoder to control the assigned parameter.

10. Surface Setup

These pages let you configure the Surface preferences, illumination, strip layout, audio and network settings.

10.1   Control / Strip Assign

Any combination of Input channels, FX, Mix masters, DCAs and MIDI strips can be assigned to the 6 layers of faders. This lets you customize the mixer layout to suit the application. The layout is stored within Scenes and can be made Safe from Scene recall.

The factory Template Shows provide a classic layout with Input channels on the left and Mix masters on the right to give you a starting point.

Current assignments are shown in the lower window arranged in Banks and Layers.

1   Drag and drop channels into the desired position in the lower window. Use the tabs on the left to view different types of channels available, and the tabs on top to navigate to higher / lower number channels.

Turn on **Block Select** and touch the first and last item you wish to assign to drag a range of channels into the lower window. If you drop more channels than there are strips available then they will wrap into the next Layer overwriting channels currently assigned there.

2   Drag channels out of the window to unassign.

⚙ Hold down **Setup** and touch anywhere in the Strip Assign page to access the assign preferences. Turn on **Sync Selected Layer with Surface** to make the screen follow the active Layer on the Surface for the selected Bank.

10.2   MIDI Strips

Fader strips can be assigned as MIDI Strips. There are 32 MIDI Strips available. Each can be assigned to transmit a custom MIDI message. This is ideal for controlling audio within a Digital Audio Workstation (DAW), a slave mixer, or parameters on external equipment such as effects devices. MIDI Strips can be named and coloured. They are stored within Scenes and can be made Safe from Scene recall.

Custom MIDI messages can be assigned to faders, all six rotary functions (Gain, Pan and Custom 1-4), Mute, Mix and PAFL keys. To configure the messages press the MIDI Strip **Sel** key.

Bank	MIDI Strip

Fader	B1,00,<VAR>
Gain Rotary	B2,00,<VAR>
Pan Rotary	B2,20,<VAR>
Custom 1 Rotary	B2,40,<VAR>
Custom 2 Rotary	B2,60,<VAR>
Custom 3 Rotary	B2,40,<VAR>
Custom 4 Rotary	B2,60,<VAR>
Mute Switch	91,00,<VAR>	Local OFF
Mix Switch	91,20,<VAR>	Local OFF
PAFL Switch	91,40,<VAR>	Local OFF
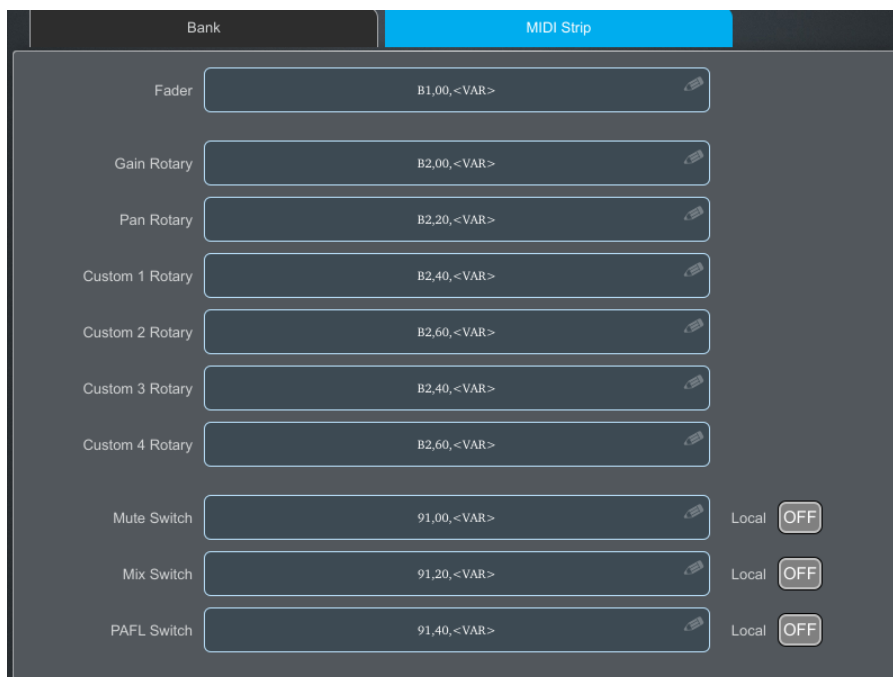
MIDI Strip – Touch the top left box to set name and colour for the MIDI Strip. Touch a control box to type in a custom MIDI message where <VAR> represents a variable value.

Turn **Local** on if you want the key LED indicator to follow local presses. Turn this off if you want the indicator to follow remote messages (MIDI tally).

The following default CC and Note on/off messages are assigned within the factory Template Shows for MIDI Strips 1-32 (hex values shown):

• Fader = B1, 00, <VAR> to B1, 1F, <VAR>

• Rotary Gain = B2, 00, <VAR> to B2, 1F, <VAR>

• Rotary Pan = B2, 20, <VAR> to B2, 3F, <VAR>

• Rotary Custom 1 = B2, 40, <VAR> to B2, 5F, <VAR>

• Rotary Custom 2 = B2, 60, <VAR> to B2, 7F, <VAR>

• Mute key = 91, 00, <VAR> to 91, 1F, <VAR>

• Mix key = 91, 20, <VAR> to 91, 3F, <VAR>

• PAFL key = 91, 40, <VAR> to 91, 5F, <VAR>

ⓘ You can restore the factory default MIDI messages by recalling the 'Reset MIDI' Scene in the Template Shows. This resets the messages for all 32 MIDI strips.

ⓘ Download the DAW Control driver from www.allen-heath.com to convert the default MIDI messages to popular HUI or Mackie Control protocols for DAW use. The DAW Control driver is not available for Windows PC computers.

10.3 Control / SoftKeys

dLive Surfaces provide up to 26 assignable keys on the right of the Surface, depending on model.

1 ☐ Touch one of the SoftKeys buttons on the right of the screen to select it. Swipe up / down to scroll.

2 ☐ Open the **Function** drop-down menu and select the function to assign. Set the **Channel Type** and **Channel Number** to select the required channel (only applies to certain functions). Turn on **Invert LED** if you want the SoftKey LED to be lit when the function is off. Press **Apply** to confirm the changes.

ⓘ SoftKey assignments are store within Scenes. To prevent SoftKey assignments to be overwritten on Scene recall, you can make one, a selection or all Safe using the **Scenes / Global Scene** Safes screen.

Available SoftKey functions are as follows:

- Unused
- Mute - For example, using DCAs as Mute Groups
- Sel – Quick access to processing for a channel
- Mix – Quick access to a specific Mix
- PAFL – Quick access to a selected PAFL
- PAFL Clear – Turns off all currently active PAFL keys
- Sel, Mix , PAFL Scene – Combination on single key, for example to recall a specific per-Mix strip layout when mixing monitors
- Scene Recall – To instantly recall a selected Scene
- Scene Next/Prev/Go – Scene recall keys
- Tap Tempo - Assign to any of the 16 FX L or R tap or as a Global Tempo
- Custom MIDI - Transmit a custom MIDI message string
- Talkback Assign - Talkback to different outputs
- Level Up – Tap to increase level for faders
- Level Down – Tap to decrease level for faders
- Send Level Up – Tap to increase level for Aux sends
- Send Level Down – Tap to decrease level for Aux sends

10.4 Control / Surface Preferences
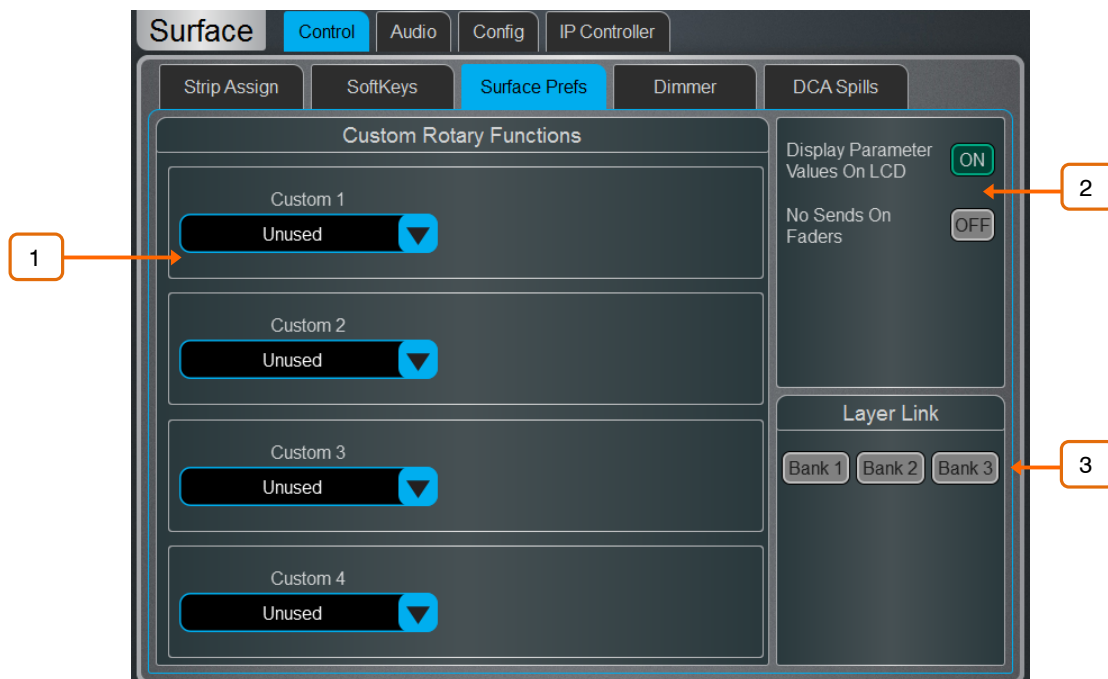
1 **Custom Rotary Functions** – Use the drop-down menus to select the required **Function** for each Custom strip rotary control. Available functions are Unused, Direct Out, Send Level (Aux or FX sends), HPF Frequency, Compressor Threshold, and Channel Level. Touch **Apply** to confirm the change.

2 **Display Parameter Values on LCD** will display the fader position in dB value or value of the rotary function every time the fader or rotary are moved.

No Sends On Faders inhibits sends on faders when pressing any **Mix** key. The channel faders will always control the Input main levels or Mix masters when this option is enabled. You can still control the send levels by using the strip rotary **Sends** function, Soft Rotaries Sends widget, or touchscreen **Routing** screen.

3 **Layer Link** – Touch the buttons to link or unlink the Layers across the fader banks. Selecting a Layer on a linked bank will select the same Layer across all linked banks.

10.5 Control / Dimmer

Use this page to separately adjust the brightness of the touchscreen, LEDs, switch backlights, fader strip LCD displays, and intensity and colour tone of the integrated LED strip illumination. These settings are stored in Scene memories.

10.6   Control / DCA Spills

DCA Spills populate the Surface with only the channels assigned to a DCA, temporarily overriding the current strip layout, whenever a DCA Mix button is pressed.

The DCA Mix function can be assigned to SoftKeys, which allows spills to be used when DCA strips are not in the active Layer, or even dedicate some DCAs as pure 'population groups' without a fader. Go to **Surface** / **Control** / **SoftKeys** to assign.

.
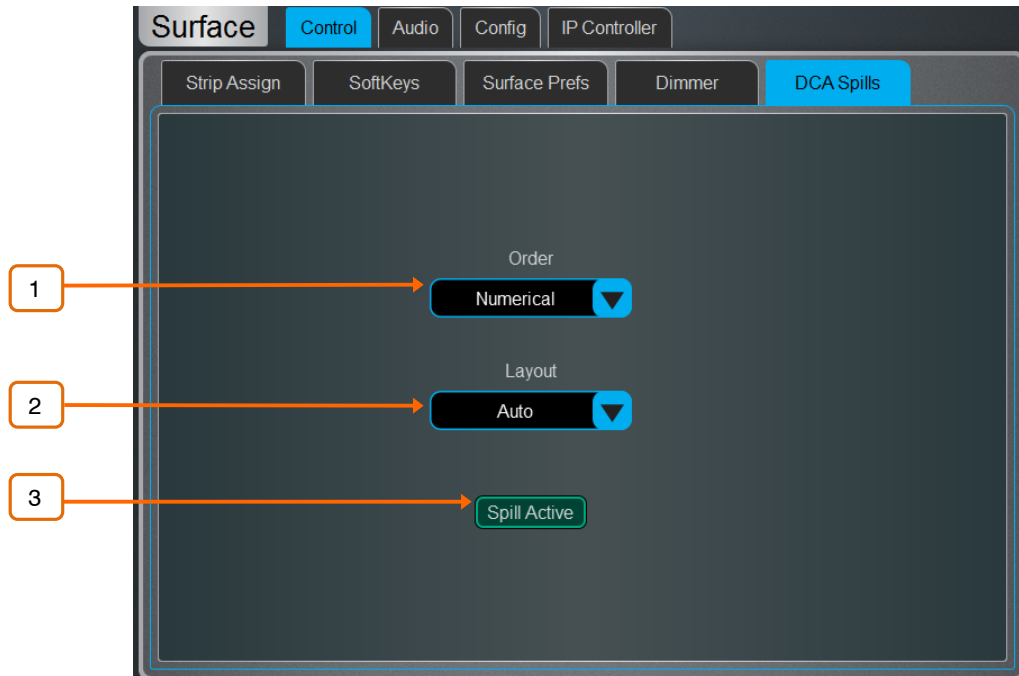
1   **Order** – The order in which the channels are displayed on the Surface. Set to **Numerical** to follow the channel number, or **Strip** to follow the order of the strip layout at the moment of the spill.

2   **Layout** – Set to **Auto** to automatically spill to the fader banks not used by the DCA. Set to **Manual** to manually select the fader banks for the spill.

3   **Spill Active** – Touch to enable or disable the DCA Spills function globally. This switch can be assigned to a SoftKey and used as a quick way to restore the normal strip layout whichever spill might be active.

10.7   Audio / PAFL

Set your preferences for the PAFL monitoring system.

The strip PAFL key operates in the following way:

- Mix PAFL overrides Mains in the monitor
- Input PAFL overrides Mix PAFL
- Releasing Input PAFL restores previous Mix PAFL
- Pressing Mix PAFL clears any Input PAFL
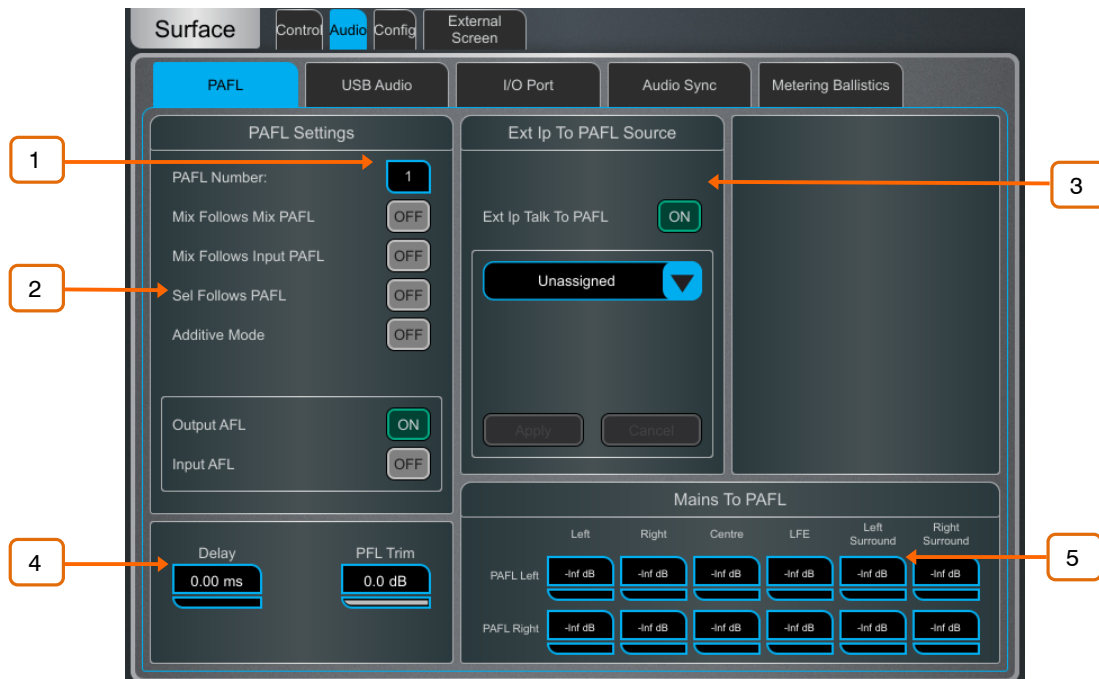
1   **PAFL Number** – Set the PAFL bus that the Surface will use for the monitoring system. This affects the function of the PAFL keys, Listen key, and audio to the Surface headphones.

When more than 1 PAFL bus is configured in the **Mixer / Config / Mixer Config** screen, multiple operators can share the same dLive system whilst using different PAFL busses.

ⓘ The MixRack headphones output is fixed to PAFL bus 1.

2   **Mix Follows Mix PAFL** automatically makes a **Mix** key active when a Mix PAFL key is pressed.

Mix Follows Input PAFL automatically makes a **Mix** key active when an Input PAFL key is pressed.

Sel Follows PAFL automatically selects a channel when its PAFL key is pressed.

Additive Mode sums PAFL selections when turned on. Selections auto-cancel when turned off.

Select either **PFL** (pre-fade listen) or **AFL** (after-fade listen) for Input channels and Mix (Output) masters when the strip PAFL keys are pressed.

3   **Ext Input to PAFL Source** – Use the drop-down menu to select and assign an external signal to the PAFL monitor, for example an I/O Port input for 'shout' communication between FoH and Monitor engineers. The signal will not be affected by the engineer's Wedge or IEM fader strip level.

When assigned, controls for the preamp Gain, Trim, PAD and phantom power will appear in the window to the right.

4   A **Delay** up to 170ms can be set to align the PAFL signal with the acoustic sound from the stage.

PFL Trim attenuates the PFL signal by up to 24dB relative to the AFL signal. This avoids loud PFL levels in situations where the Mix output levels are low.

5   **Mains to PAFL** – Set how much of the Main mix goes to the monitor system when no PAFL is active. It is typical for example to have Main Left and Right feed the PAFL Left and Right busses.

10.8   Audio / USB Audio

Set up and manage stereo recording and playback to a USB key. dLive can play mono or stereo WAV files, 16bit or 24bit, with sample rate of 44.1, 48 or 96kHz. USB recording is fixed stereo WAV 24bit 96kHz (approximately 34MB per minute or 2GB per hour).

> ⓘ The USB key must be formatted FAT32 with 32k cluster size. We recommend you format the key using this page prior to use.

1 Use the transport buttons to Play, Pause, Stop, Record and select previous or next track. To record, press Record to arm the recording, then press Play.

2 **Folder** – Choose to display audio files present in the USB key **Play** or **Record** folder. The two folders are named AHDLIVE/USBPLAY and AHDLIVE/USBREC respectively and are automatically created when a USB key is plugged into the Record/Playback USB port.

Scroll through the list and touch a track to select. The name and length will be displayed in the left window.

3 The current source for USB recording and USB Playback patch is displayed. Touch the **Assign** button to open the **I/O** screen and assign source or destination.

10.9   Audio / Audio Sync
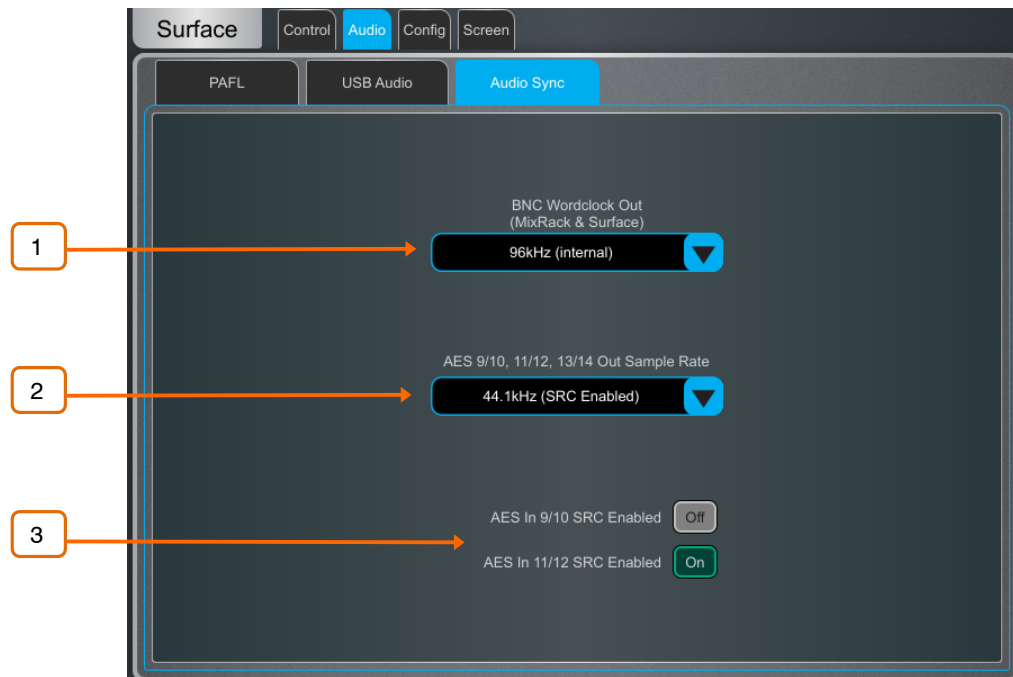
1 **BNC Wordclock Out** – Select the sample rate for the Wordclock output provided at the Surface and MixRack. This can be set to **Off**, **44.1kHz**, **48kHz** or **96kHz (internal)**.

ⓘ When using a dLive C Class Surface, an option is displayed in this page to set the BNC connector as either a Wordclock input or output.

2 **AES Out Sample Rate** – Select the sample rate for the Surface AES3 outputs. This can be set to **44.1kHz**, **48kHz** or **96kHz**. Sample Rate Conversion will be bypassed when set to 96kHz.

3 You can turn the Sample Rate Conversion on or off for each stereo AES3 input as required.

ⓘ Only turn off SRC if the AES sources are syncing from a 96kHz clock provided by the dLive.

10.10   Audio / I/O Port

These tabs display information on the fitted I/O Port card/s, and give access to any relevant option. See paragraph 9.6 in this guide for details.

10.11   Audio / Metering Ballistics

The response of dLive meters on screen and Surface can be tweaked to suit the engineer's preference.

ⓘ To set the global meter source point for Input channels and Mix masters, hold down Setup and touch the main screen area in the **Meters** / **Inputs** or **Meters** / **Mix** screen.
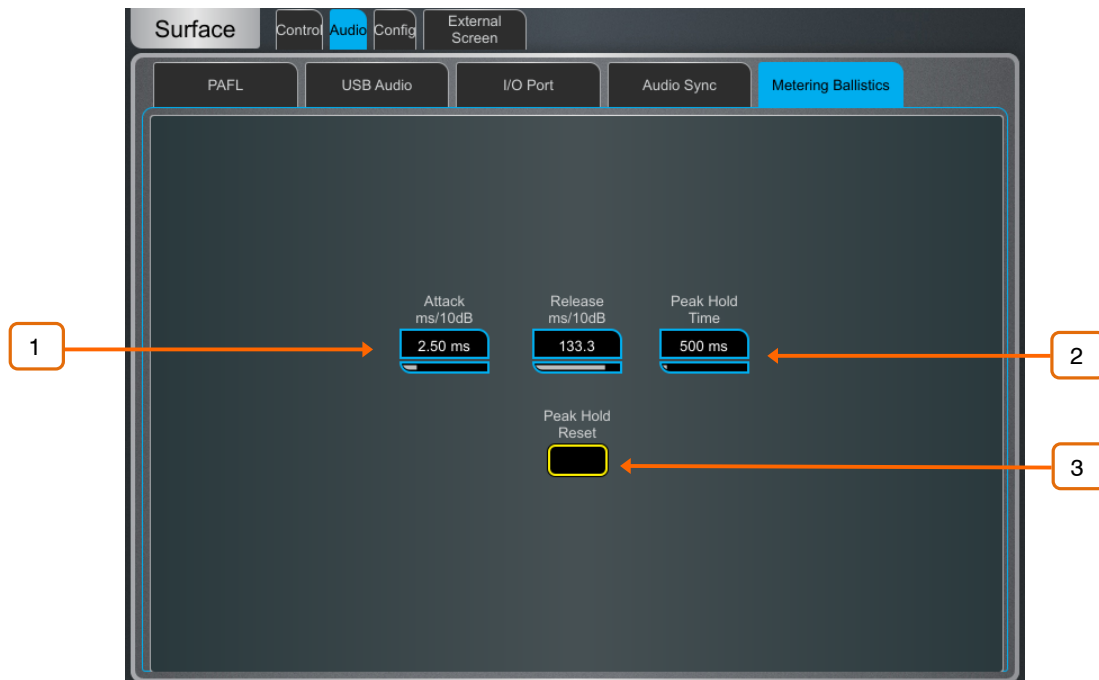
1️⃣   Use fast **Attack** and **Release** for fast response, digital absolute peak meters. This ensures you keep control and avoid digital clipping of signals including those with very fast dynamics, but note that the meters may read hotter than those on other consoles you are used to.

Use slower **Attack** and **Release** to 'dampen' the response if required.

2️⃣   The **Peak Hold Time** can be set from 40ms to 10s or to infinite. This is the amount of time the highest segment of the meter will stay lit and indicates the highest signal level within such time. It also affects the red Peak indicator.

ⓘ The red peak indicator lights to warn that the signal is within 5dB of clipping. It is multi-point sensing which means it detects peak activity at several points in the signal path.

3️⃣   Touch **Peak Hold Reset** to clear all current Peak Hold indicators.

10.12   Config / Network

Use this page to configure the IP Address and Unit Name to identify the Surface on the network.

1   **IP Settings** – To set a static IP Address, touch the **IP Address** box and type in the address. Make sure the Subnet Mask and Gateway are valid, and all devices on the network including Wi-Fi routers, access points or laptops have unique but compatible addresses.

The default Surface IP Address is 192.168.1.71 with Subnet Mask 255.255.255.0 and Gateway 192.168.1.254. You can restore these defaults by touching the **Reset** button.

Enable **DHCP** to allocate an IP Address to the Surface by a network DHCP server, for example a Wi-Fi router.

ⓘ Only use DHCP when a DHCP server is connected to the Surface. If DHCP is enabled and the Surface is powered up while no server is present, it can take longer than usual for the system to boot.

2   **Unit Name** – A name with up to 16 characters can be set to identify the Surface on the network. The default is 'dLive Surface'.

3   **Connections** – Displays the number of active network connections to the MixRack. The Surface and touchscreens count as one connection each.

10.13   Config / Target MixRack
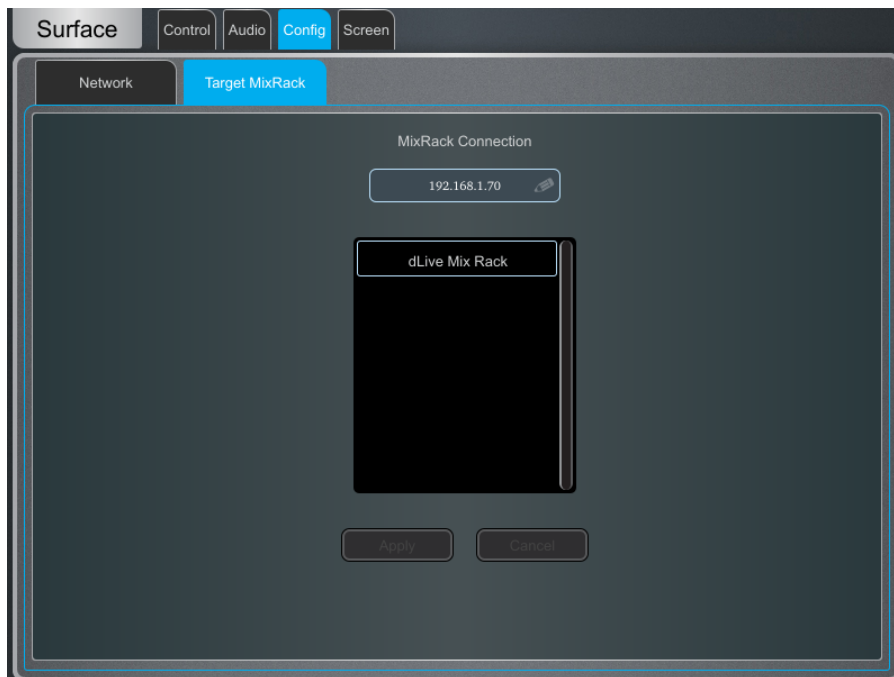
Target MixRack – The Surface remembers the last MixRack it connected to and attempts to connect to it at power up. If you want to connect the Surface to a different MixRack on the network, select the MixRack from the list or type in its IP Address and press **Apply**.

10.14   Screen

Use this page to select the output of the external VGA connector. The VGA output can mirror either screen of the dLive Surface, or set to display a third, independent view.

You can connect a mouse and/or keyboard to the Surface USB port/s for use with the external screen.

ⓘ The external screen must support a resolution of 1024x768.

ⓘ External touchscreen devices can be used if they support a resolution of 1024x768 and are class compliant on Linux. dLive does not support third party driver installation.

10.15   IP Controller

Up to 16 IP remote controllers per device type are configurable, each with its own assignments and functions.

ⓘ Refer to the Remote Controller Getting Started Guide for information on the device hardware and connection.

ⓘ Please refer to section 9.10 to 9.13 in this Guide for instructions on setting up and assigning IP remote controllers.

Adding a device to the **Surface** / **IP Controller** / **Device Manager** adds the option to assign **Sel** and **Mix** keys to the IP device. In this mode the remote controller becomes an extension of the dLive Surface i.e. the channel and Mix selection is shared across the Surface and IP device.

Add IP controllers to the **MixRack** / **IP Controller** / **Device Manager** instead for applications where the Surface is not present or an independent set of controls is required.

11. Shows / Utility

11.1   Memory / Show Manager

A Show file stores the complete dLive setup. This includes the mixer bus configuration, system preferences, all Scene memories and all Libraries. User Profiles are not stored in Show files. Shows are stored in the dLive Surface and can be transferred between dLive systems or archived via USB key.

ⓘ See Appendix B in this guide for details on Scene and Show memory content.

User Shows can be overwritten, renamed or deleted. Factory **Template Shows** provide a quick starting point by giving you a familiar layout and classic mix architecture for typical FoH and Monitor applications. Template Shows cannot be edited or deleted. They contain a number of default Scenes to reset the mixer settings, patch and Surface layout to the starting point.

ⓘ See Appendix C in this guide for an overview of available Template Shows.
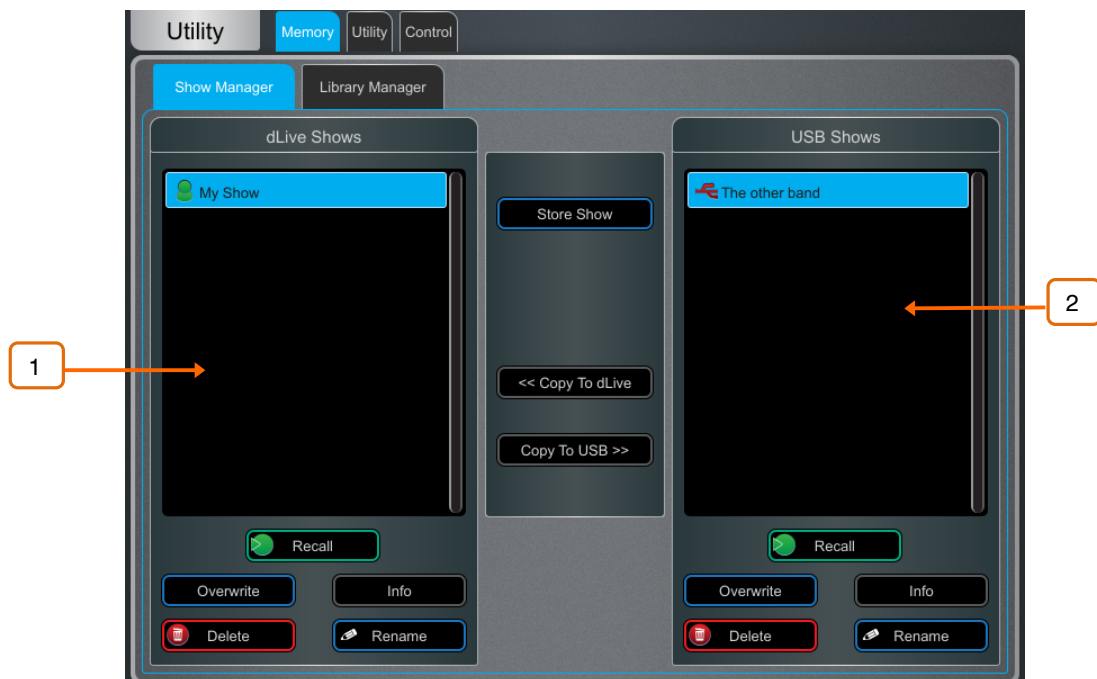
1   **dLive Shows** – Lists Template and User Shows stored in the dLive Surface. Touch **Store Show** and type in a name to store a new User Show.

Touch a Show to select it and press **Overwrite** to update it with current settings. You can **Rename** and **Delete** existing Shows. Touch **Info** to display the file size of the Show and the date it was last modified. Touch **Recall** and confirm to recall a Show.

ⓘ Recalling a Show overwrites all system settings, bus configuration, Scenes and Libraries. If you want to keep your current settings for later use, archive them first as a User Show.

ⓘ Recalling a Show will briefly interrupt the audio. It is not intended for instant recall of band settings or theatre cues. Use Scenes for such applications instead.

ⓘ dLive Shows stored on systems running more recent firmware will not load on systems running earlier versions. However, earlier versions of Shows are compatible with dLive systems running later firmware.

2   **USB Shows** – Lists User Shows stored in the USB drive. The files are stored in the USB AllenHeath-dLive/Shows folder. Touch a Show to select it and press **Overwrite** to update it with current settings. You can **Rename** and **Delete** existing Shows. Touch **Info** to display the file size of the Show and the date it was last modified. Touch **Recall** and confirm to recall a Show.

Select a USB Show and touch **Copy to dLive** to copy the file to the dLive memory. Select a dLive Show and touch **Copy to USB** to copy the file to the USB drive.

11.2   Memory / Library Manager

Use this page to edit and transfer Library presets. Library memories include Channel Processing, Mix Processing, PEQ, GEQ, Gate, Compressor, FX parameters.
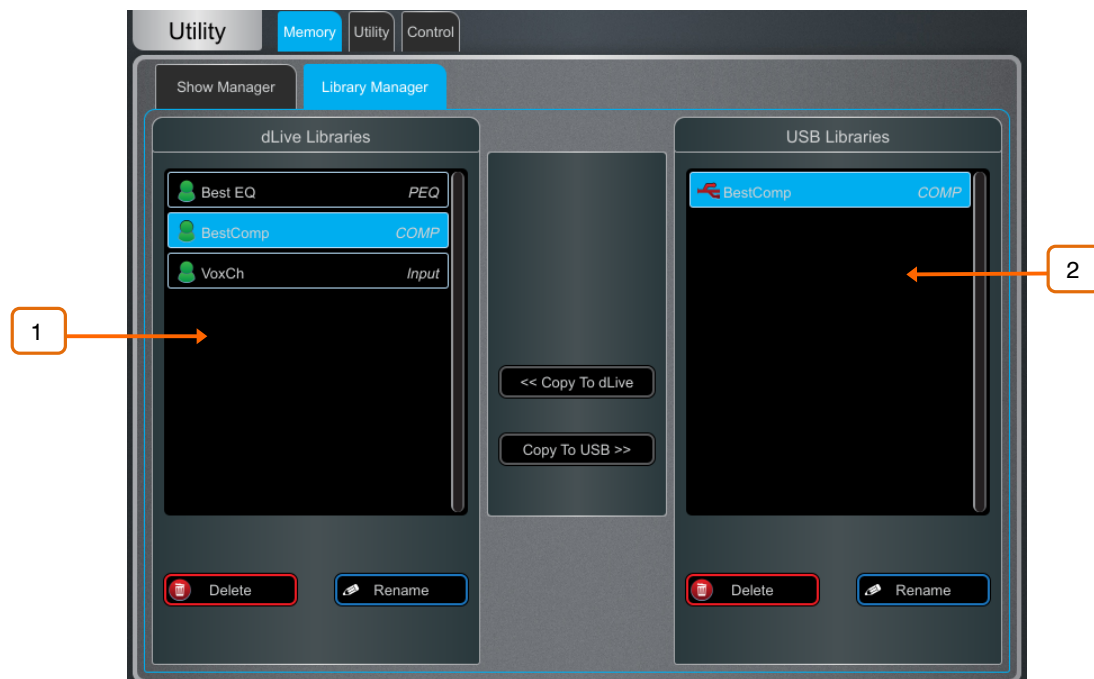
1   **dLive Libraries** – Lists Libraries stored in the current Show. Touch a Library to select it. You can **Rename** and **Delete** existing Libraries. Touch **Copy to USB** to copy the Library to the USB drive.

2   **USB Libraries** – Lists Libraries stored in the USB drive. The files are stored in the USB AllenHeath-dLive/Libraries folder. Touch a Library to select it. Touch **Copy to dLive** to copy the Library to the dLive memory.

ⓘ dLive Libraries are stored within a Show file. If you want to use one or more Library in a different Show, archive them first to USB, recall the Show, and transfer the Libraries back to the dLive.

11.3   Utility / History

This page keeps a timed register of events such as system boot up or shut down, when Scenes are recalled, and any error recognized by the system.
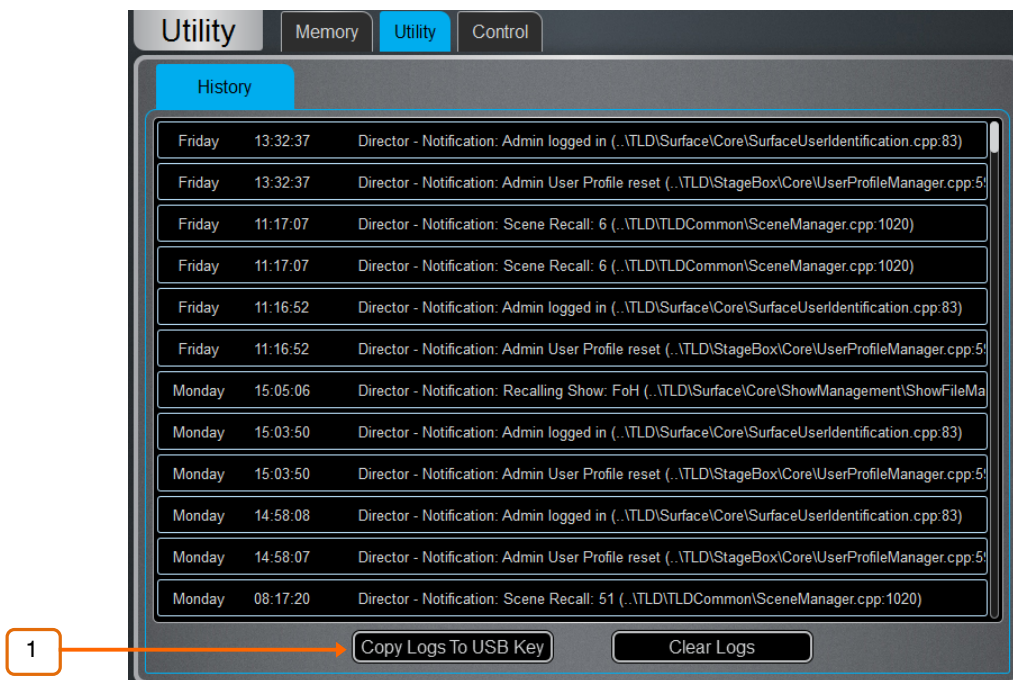
1 If you suspect a problem with the dLive system you can **Copy the logs to USB Key** and send them to Allen & Heath Product Support for diagnostic purposes.

ⓘ Any time an error is logged a warning message will appear in the **Home** screen and a yellow triangle is displayed in the top right corner of the screen. Touch the triangle to navigate to the **Home** screen and investigate the error.

✳ Hold down **Setup** and touch anywhere in this screen to access an option to **Show detailed Event Logs**.

11.4   Utility / Date/Time

Use this page to set the current date and time. The time is displayed in the **Home** screen and used in the History and Event Logs.
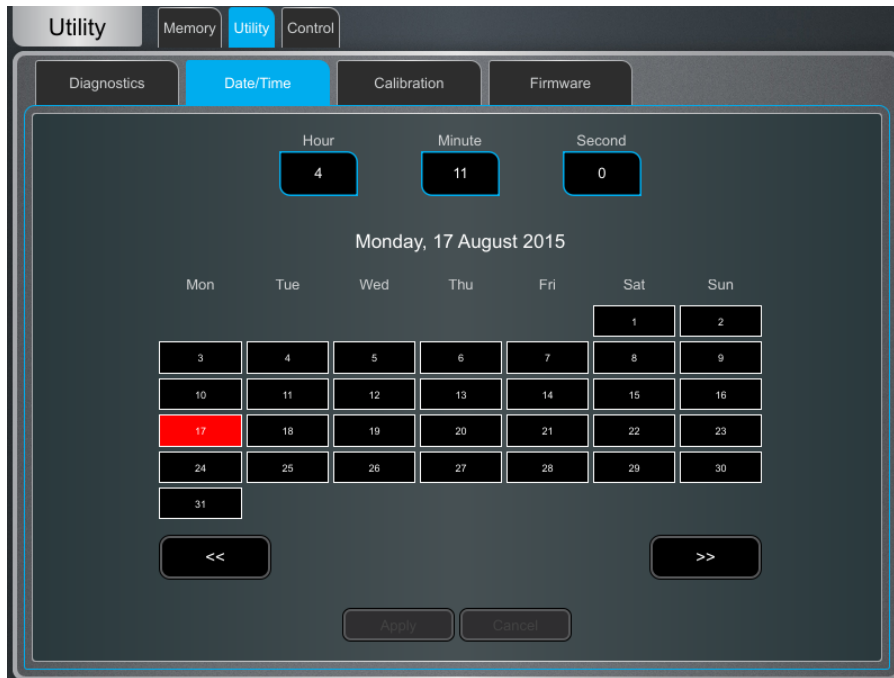
11.5   Utility / Calibration

This page lets you recalibrate the accuracy of the motor faders and touchscreens.

To calibrate the faders, touch the **Calibrate** button and follow the on-screen instructions, moving the faders to the positions instructed at each step.

ⓘ It may be necessary to re-calibrate the motor faders after you update the firmware or perform a full system reset.

To calibrate the touchscreen, touch the **Calibrate** button and wait for the automated procedure to complete.

11.6   Utility / Firmware

Use this page to view or update the current firmware, driver and OS versions. Firmware is updated via a USB drive.

ⓘ Keep your dLive system updated with the latest version of firmware. Check www.allen-heath.com for the latest version and information.

ⓘ Updating dLive firmware resets its parameters and preferences. If you want to keep your current settings save these as a User Show first. Updating firmware does not affect User Shows or User Profiles.

ⓘ dLive Shows stored on systems running more recent firmware will not load on systems running earlier versions. However, earlier versions of Shows are compatible with dLive systems running later firmware.

To update the firmware:

1.   Download the latest firmware from www.allen-heath.com and save the .zip file.

2.   Remove any previous dLive firmware from your USB drive. To do this, look into the USB AllenHeath-dLive folder and delete the existing Firmware folder and also the Firmware.md5 file. Do not delete other files or folders.

3.   Open and extract the .zip file to the root directory of your USB drive.

ⓘ Do not change the folder name or browse inside the Firmware folder as doing this may cause firmware corruption. Attempting to navigate or open files within this directory may cause your Operating System to leave behind small temporary system files which can invalidate your firmware.

4. Safely remove the USB drive from your computer.

5. Plug the USB drive into the dLive USB port, and touch **Update** in the Firmware page. The dLive will reboot to a 'bootloader' screen and if valid firmware is found on the USB drive then details of the current versions and versions found on the drive will be displayed.

6. Touch the **Update** button.

    ⓘ Do not interrupt this process. Failure to complete the transfer may result in firmware corruption. Make sure the mains power and connecting cables are reliable and that the system will not be disturbed or switched off during the update.

7. When the firmware has been successfully installed, the system will automatically reboot.

8. Once the system is fully booted, recall a Template Show or User Show to restore your settings.
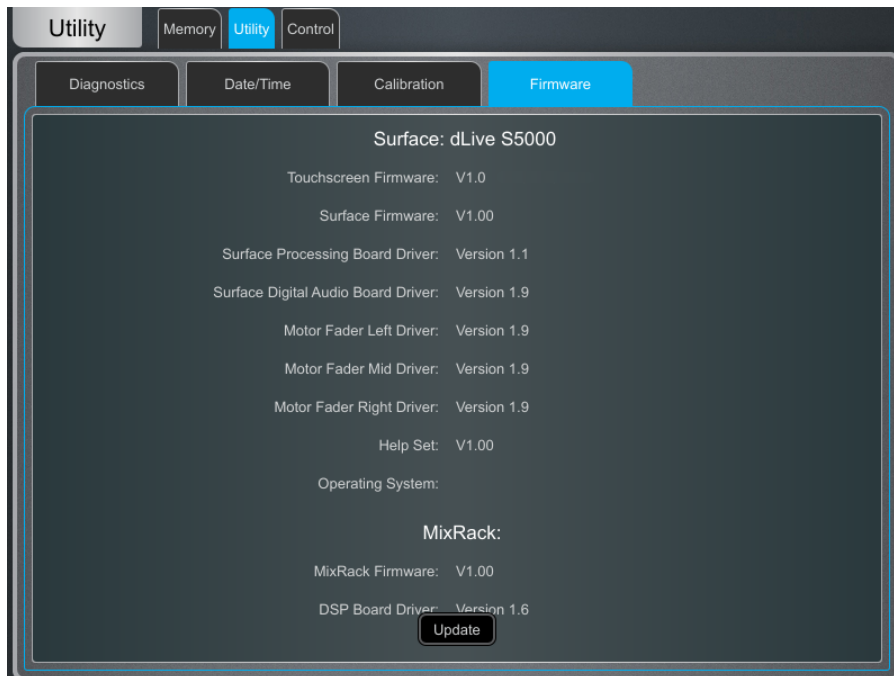
11.7   Control / MIDI

Use this page to assign the MIDI channel number and operate the MIDI Transport controls (MTC). These send out the related MTC messages over TCP/IP.

12. Appendix A – DEEP Processing and RackExtra FX

DEEP processing embeds class-leading compressors and processing emulations directly within the Input and Mix channels. An array of bespoke algorithms can be inserted on the fly without burning FX slots and without the setup, latency and licence hassles associated with external plug-ins.

The RackExtra FX portfolio combines the pristine quality and wide choice offered by boutique plug-ins with the convenience and low latency of onboard processing.

12.1   DEEP Processing GEQ models
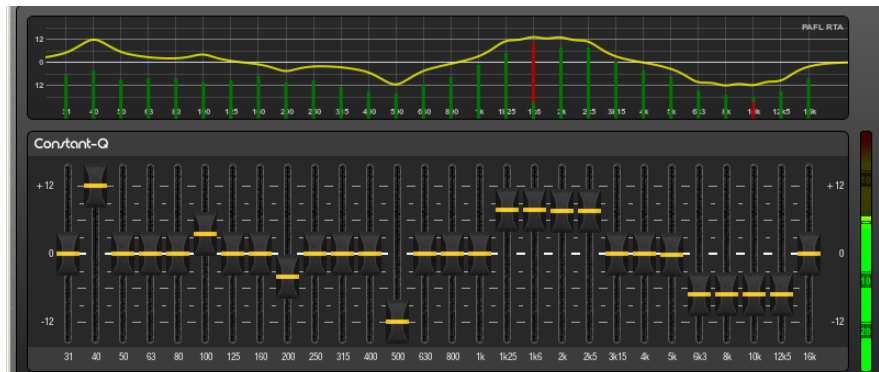
Constant-Q - Symmetrical cut/boost where the width (Q) of the filter is a constant 1/3rd octave for any amount of cut or boost.
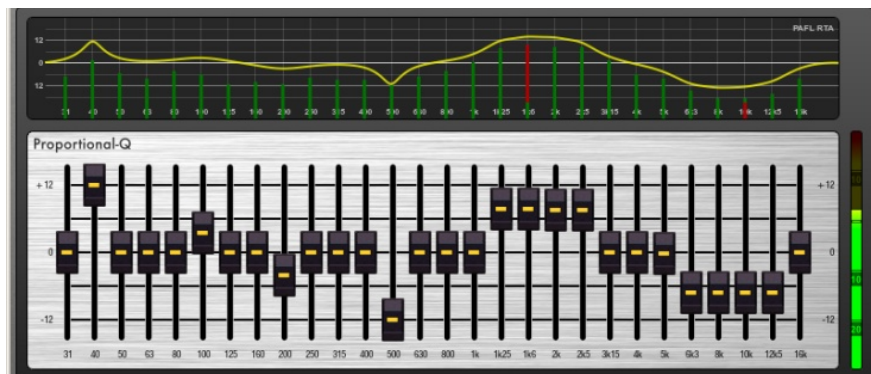
Proportional-Q - Provides smooth wide Q for low cut/boost, which progressively tightens beyond 1/3rd octave for max boost/cut.
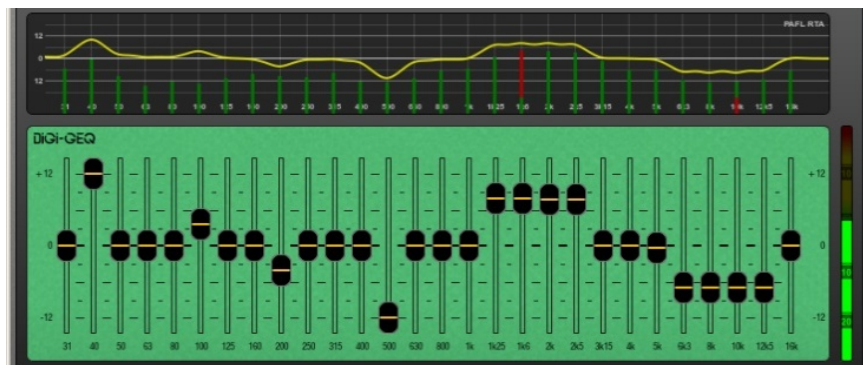
Digi-Q - Gain and width are optimised to minimise band interaction and to provide a frequency response as close to the slider positions as possible.
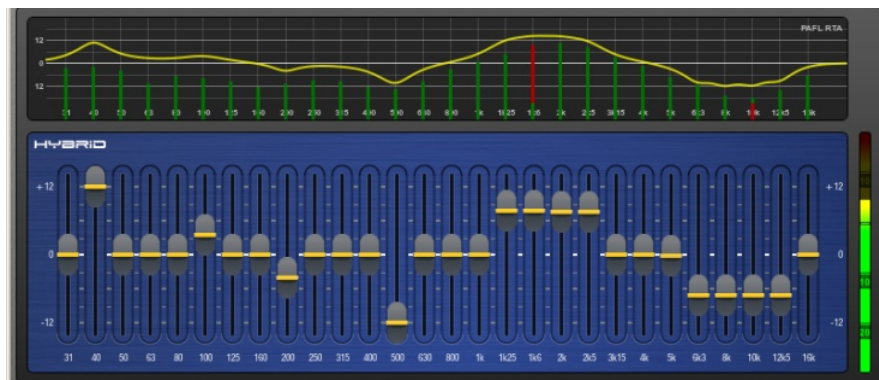
Hybrid - Allen & Heath have developed the best of both worlds. The boost is proportional-Q for smooth and warm small boost settings. The cut is Constant-Q providing clinical 1/3rd Octave attenuation with minimal band interaction.

12.2   DEEP Processing Compressor models
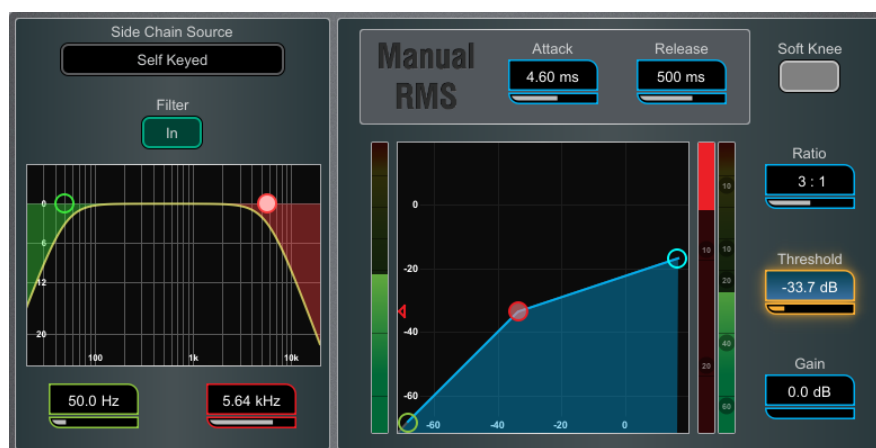
Manual RMS - Offers the response of a fairly fast pre-threshold RMS detector with added ability to manually modify the post threshold ballistics for classic sounding RMS compression with additional attack or release smoothing.
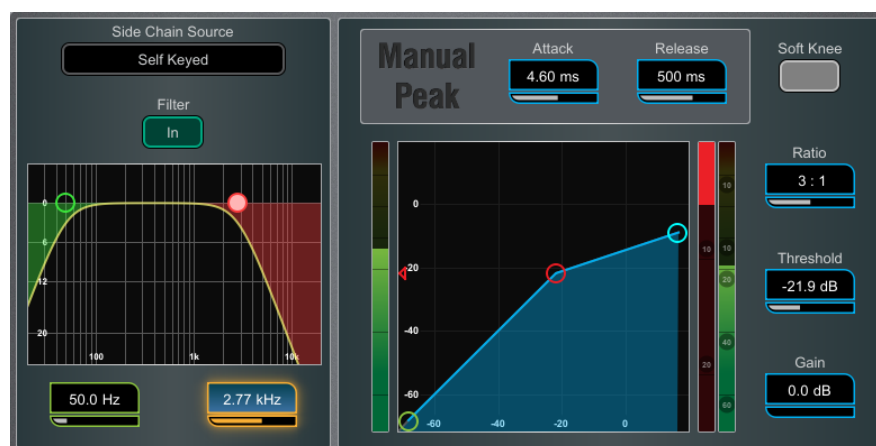
Manual Peak - Offers the response of a peak based threshold detector with various smoothing, auto hold/recovery schemes to minimise distortion. The algorithm is capable of ultra fast attack time with minimal lag before onset.

Opto - Offers the response of a filament optical compressor. The release has non-linear exponential recovery, fast at the start and smooth for final recovery stage. This creates a smooth and musical sounding compressor.

16T - Inspired by an industry classic VCA based RMS compressor this model produces a tight, punchy compression particularly useful with live bass and percussion and also vocals, and with a very easy to use three rotary control interface.

16VU - Based on an original vintage VCA based RMS compressor with VU needle meter, with pleasant characteristic sound due to its non-linearity and distortion artefacts, and also with a simple three rotary control interface.

Peak Limiter 76 - A faithful emulation of the legendary FET limiting amplifier from the late 60s, complete with its nonlinear distortion characteristics, program-dependent Attack, Release and Ratio settings, and trademark 'All buttons' mode.

The **Unit** switch selects one of two units which have been modelled: the modern silver and the black vintage.
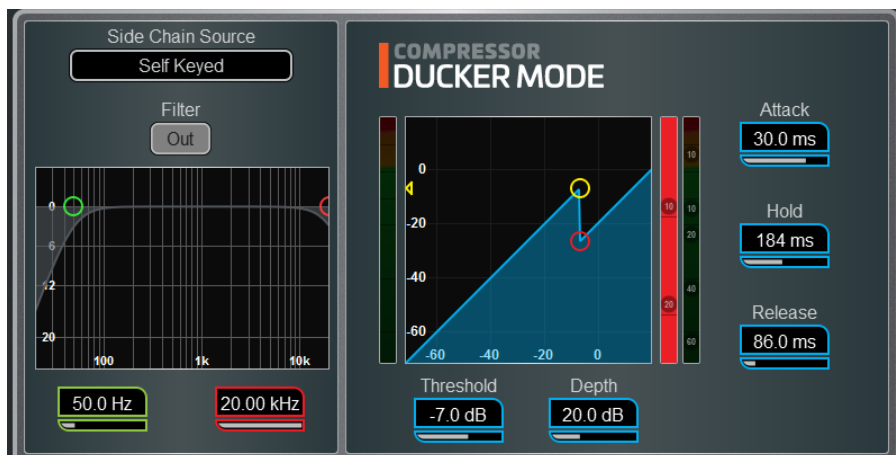
Ducker - The Library for the Gate and Compressor processing blocks includes a channel Ducker with key source selection and LPF/HPF filters, plus controls of Threshold, Depth, Attack, Hold and Release.

12.3   DEEP Processing Preamp models

Dual-Stage Valve – Inspired by a known studio preamplifier, this model recreates the distortion characteristics of valve circuits, from very subtle coloration to full overdrive. It can be fully bypassed with the **On**/**Off** switch.

Stage-1 adds subtle tonal harmonic distortion and offers two modes which mirror the typical valve topologies of analogue preamplifiers: **Triode** is richer in even order distortion resulting in a musical, warm response; **Pentode** is stronger in odd order distortion (predominantly 3rd), resulting in crisper, sharper sound.

Stage-2 provides overdriven valve emulation. It can be switched off circuit or to either **Triode** or **Pentode** mode. **Bias** controls the level of overdrive. With **HiDrive** Off, it produces pronounced 'break up' distortion and compression at high levels. **HiDrive** changes the gain structure to produce a continuous overdrive effect.

The **HF** control adjusts the HF content to compensate for mid range tonal lift and high frequency compression.

The **Output** level is effectively a make-up gain to compensate for the level loss.

12.4   RackExtra FX models

SMR Reverb - SMR Live is a Spatial Modelling Reverberator featuring 4 fully configurable complex spatial models Classic, Hall, Room and EMT. Each of these models use different reflection and decay algorithms to provide natural sound spaces ideal for Live sound.

Classic Emulates high quality plates. Shape tailors the reflection pattern. Min position for fast attack, mid position for rounded early reflections, and max position for separated early and late reflection patterns. Adjusting shape/size/predelay with decay can result in some great Hall reverbs. Small size settings not very useful in live sound applications.

Hall Emulates a real Hall reflection model. No shape control, reflections are controlled with Size, Source diffusion and Ref detail with rich deep decay spectrum.

Room Accurately emulates a characteristic complex room reflection pattern.

EMT Classic plate emulation. A great plate with good tonal balance for live use. Decay setting around 2 seconds is typical.

The SMR primary controls essential for live mixing are always visible:

LF Cut - 0 to 400Hz, 24dB/octave high pass filter to cut low frequencies of the input signal to the reverb.

HF Cut - 2kHz to 20kHz, 24dB/octave low pass filter to cut high frequencies of the input signal to the reverb.

Predelay - The time it takes before the reverb reflections and decay are heard.

Decay Time - Broad spectrum decay control. The time it takes for the reflections to decay to 60dB below the level of the direct sound is known as the RT60, an important measurement of reverb in a room.

HF Decay - Frequency at which the high frequency decay attenuation starts.

HF Slope - The attenuation slope of the high frequency decay. HF Decay and Slope are both essential for high frequency decay spectrum adjustment in a live space. Setting HF Decay and Slope low creates a natural sounding decay. Setting HF Decay and Slope high creates a dramatic decay.

In addition there are 5 pages of scrollable 'Expert' pages for the Reverb which allow precision control:

Page 1 - Reflections - Source Diffusion, Size, Shape, Ref Detail.

Dedicated to reflection control. Keep source diffusion and detail low to help intelligibility. Small sizes are not typical for live applications. 'Shape' is only available in the Plate model.

Page 2 - Echoes - Echo1, Echo1 level, Echo2, Echo2 level.

Dedicated page for user defined echo reflections. You can insert main reflections to create Echo reverb sounds. Echo1 goes to left Echo 2 goes right. Echoes may be layered over the reverb.

Page 3 - Decay Texture - Body Diffusion, Tail diffusion, Mod depth, Mod speed.

Separate body and tail diffusion controls can help prevent metallic decay through too much diffusion. Modulation depth and speed increase reverb density and add chorusing, effective on percussive program but not as useful on piano and vocal.

Page 4 - Decay Spectrum - LF decay, LF XOver, Colour, Colour Freq.

Separate LF decay control with crossover frequency and decay time, useful for live work. Colour is a tuneable element in the decay. High Freq colour settings can enhance ambience, although it can sound metallic with some programme.

Page 5 - Reflection/decay level - Reflection level, decay level.

These controls are dedicated to balancing reflection and decay to improve intelligibility.

Preset Name is displayed in the simulated LCD window. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Stereo Tap Delay - Provides a clean digital delay with a maximum delay time of 2.7 seconds. One of the key features of the stereo tap delay is the ability to

synchronise the delay times to note intervals based on the effects beats per minute value. The delay has two modes of operation:

BPM mode -Delay time is determined by the selected beats per minute and corresponding note value. Standard, dotted and triplet intervals are selectable via the interval selection wheel from whole to 16th intervals.

MS mode - Delay time is set directly in milliseconds. The unit offers control over input and feedback filters, delay width and switchable Scatter/Ping-Pong modes.

Note The Stereo Tap Delay can also be locked to the global tap tempo. Global rate can be manually entered or tapped in using the screen of any delay FX locked to global tap tempo, or by tapping a SoftKey assigned as Global Tap Tempo.

Input filter HP frequency – Sets the frequency of the high pass filter on the input to the delay. This cuts low frequencies.

Input filter LP frequency – Sets the frequency of the low pass filter on the input to the delay. This cuts high frequencies.

BPM / **MS mode** –Switches between Beats Per Minute and Milliseconds mode. In BPM mode the BPM and note selection wheels are displayed allowing delay times to be set as an interval of a selected BPM.

Interval Selection Wheel – Determines the delay time to be set in synchronisation with the chosen BPM. The values range from whole dotted intervals to 16th triplet notes. When an interval is not available due to the BPM being too low, the interval will grey out and not be selectable.

MS time window (in MS mode) – Allows the delay time to be set directly in milliseconds.

Link – Links the left and right delay times.

Local / **Global Tap** – Locks the delay time to the global tap tempo allowing global synchronisation across the console or locally to this effect unit.

Fractional / **Notation display** – Choose to display either fractions or notation representation of the selected interval on the selection wheel.

Feedback filter frequency – Selects the frequency of the filter in the feedback path of the delay unit.

Feedback filter slope – Selects the slope of the feedback filter. A larger slope provides greater feedback attenuation.

Scatter mode – Modifies the delay pattern between Ping-Pong and scattered. Scatter off creates classic Ping-Pong delays. Scatter on reconfigures the regen path giving one delay on the shortest side and regen on the longest side replacing Ping-Pong bounce with some interesting delay patterns. For example, an echo on one side and a regen echo pattern on the other.

Feedback – Controls the amount of the feedback in the delay. A larger amount increases the number of audible repeats.

Width – Controls the stereo imaging of the delay unit, from focussed mono sounding to panned wide stereo delays.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Bucket Brigade Delay - This is an emulation of a vintage analogue delay unit that used a 'bucket brigade device' (BBD) chip for the delay. This was a discrete analogue time delay line where the stored analogue signal was moved along a series

of capacitance sections one step at each clock cycle, similar to a line of people passing buckets of water.

Unlike the analogue equivalent, the GLD Bucket Brigade benefits from long delay lines (up to 2.7 seconds) but maintains the signal degradation expected from such a device. The level of signal degradation is switchable via a 'DIST' (distortion) control which switches between different nonlinearities in the feedback path. Note that even in its cleanest mode the Bucket Brigade delay will degrade and band limit the signal.

The delay has two modes of operation:

BPM mode - The delay interval is determined by the selected beats per minute and corresponding note value. Standard, dotted and triplet intervals are selectable via the interval selection wheel from whole to 16th intervals.

MS mode - The delay interval is set directly in milliseconds. The stereo beat delay can also be locked to the global tap tempo. There are controls for both input and feedback filters, with the latter having individual slope parameters.

Note The Bucket Brigade Delay can also be locked to the global tap tempo. Global rate can be manually entered or tapped in using the screen of any delay FX locked to global tap tempo, or by tapping a SoftKey assigned as Global Tap Tempo.

Input filter HP frequency – Sets the frequency of the high-pass filter on the input to the delay. This cuts low frequencies.

Input filter LP frequency – Sets the frequency of the low pass filter on the input to the delay. This cuts high frequencies.

Width – Controls the stereo imaging of the delay unit, from focussed mono sounding to panned wide stereo delays.

BPM/MS mode – Switches between Beats Per Minute and Milliseconds mode. In BPM mode the BPM and note selection wheels are displayed allowing delay times to be set as an interval of a selected BPM.

BPM window (in BPM mode)– Touch and use the rotary to select the BPM that the note values are synchronised from.

Interval Selection Wheel – Determines the delay time to be set in synchronisation with the chosen BPM. The values range from whole dotted intervals to 16th triplet notes. When an interval is not available due to the BPM being too low, the interval will grey out and not be selectable.

MS time window (in MS mode) – Allows the delay time to be set directly in milliseconds.

Link – Links the left and right delay times.

Local / **Global Tap** – Locks the delay time to the global tap tempo allowing global synchronisation across the console or locally to this effect unit.

Fractional / **Notation display** – Choose to display either fractions or notation representation of the selected interval on the selection wheel.

Low Damp Filter frequency – Selects the frequency of the low damp filter in the feedback path of the delay unit.

High Damp Filter frequency – Selects the frequency of the high damp filter in the feedback path of the delay unit.

Feedback filter slope – Selects the slope of the feedback filter. To filter more or less of the feedback path.

Feedback – Controls the amount of the feedback in the delay. A larger amount increases the number of audible repeats.

Dist – Changes the distortion characteristic of the feedback path allowing for more or less signal degradation.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

2-Tap Delay - Separate left and right tap delay outputs from a mono'd input. Left and right delay can be dialled in using the screen Rotary, tapped on screen or tapped using a SoftKey. Individual tap indicators flash at the tap rate.

Note 2-Tap Delay is no longer available within the factory library from firmware V1.5 onwards as it is replaced by the newer Stereo Tap Delay.

The left and right delay taps can be ganged to mono using the **Link** button. There are adjustment controls below each delay tap for fine tuning the values.

The regen path (feedback) has a low pass damping filter. This filter has a frequency and a slope control for fine adjustment of loop delay HF attenuation. There is also a stereo output width control.

LF Cut - 20Hz to 8kHz HF Cut 400Hz to 20kHz These filters control the input spectrum. The 24dB/octave slope gives brick wall control on what signal spectrum gets delayed.

Delay range - 5ms to 1360ms Delay tap controls Left and Right are tappable, shown with flashing leds.

Fine delay Left and Right adjustment in 1ms steps.

Link sets Left and Right tap delays equal with one control.

Scatter modifies the delay pattern between Ping-Pong and scattered. Scatter off - creates classic Ping-Pong delays. Scatter in - reconfigures the regen path giving one delay on the shortest side and regen on the longest side replacing Ping-Pong bounce with some interesting delay patterns. For example, an echo on one side and a regen echo pattern on the other.

Feedback controls the regeneration of the delay, creating loop delays. Feedback filter controls HF attenuation in the regeneration path/loop delay. The frequency and slope controls give the engineer precise HF attenuation control in the delay loop. Slope set mid for typical settings. Slope minimum is a light HF attenuation setting, maximum position is a large HF attenuation setting.

Width controls the stereo width of the output. Min position = mono, max position = LR.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Echo - This emulates the classic tape echo. It faithfully models the many non-linear attributes of the original hardware. These include frequency warping as the repeat rate is adjusted (essentially changing the tape speed), non-linearity and harmonic content at extreme intensity levels, and various other idiosyncrasies associated with motor speed inaccuracies, tape drift and wow. The Echo also emulates saturation and high frequency characteristics of the record head on tape, found on the original hardware. The Echo allows for 7 different 'modes', each of which activates certain read heads on the tape. There are 3 read heads in total which are a fixed distance apart; by changing the repeat rate it is possible to vary the delay time at each of the heads. The shortest delays can be found with mode 1 and the longest with mode 3. Modes 4-7 are a combination of read heads which can lead to complex repeat patterns and a

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greater risk of instability. The Echo will accept stereo input however it only has a mono output.

Input Gain - Can boost or cut up to 15dB of gain on the echo input.

Mode Selector – Switches between the 'read heads' of the tape machine allowing for different lengths of echo. 1-3 selects a single read head; 4 – 7 selects a combination of multiple heads for a multi layered echo.

Note Be aware that when multiple heads are selected there is a greater chance for instability and self-oscillation which can result in large output levels. For normal use it is advised to use modes 1-3 to prevent excessive feedback.

Bass – Can cut or boost low frequency content in the feedback path of the echo. The centre position provides a bypassed response.

Treble – Can cut or boost high frequency content in the feedback path of the echo. The centre position provides a bypassed response.

Repeat Rate – Controls the echo time by adjusting the artificial motor speed of the tape. A quicker rate means a shorter echo. For the longest echo select mode 3 and set the repeat rate to the far left.

Intensity - Controls the intensity of the feedback path in the echo. More intensity results in more repeats. When intensity is set beyond 75% the unit is capable of self-oscillation and with external input will grow and evolve, however this can result in loud output levels which need to be monitored. When multiple read heads are selected (modes 4-7) added intensity causes even more instability and care should be taken to avoid clipping.

Echo Volume - Allows for a cut or boost of 15dB of gain on the echo output.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Gated Verb - An accurate emulation of the classic 80's Gated Reverb plus two other variants called 'Panned' and 'Powerbox'. The user interface gives instant access to Lo-cut Hi-cut decay spectrum filters and the gate envelope controls - predelay, attack, hold and release.

We depart from the 80's and provide a visual representation of the gate time domain envelope helping the engineer 'see the time envelope of the gate'. Also included are mono, stereo and wide imaging options and decay diffusion control.

Lo cut Decay Filter - 20Hz – 6kHz, 24dB/octave Hi Pass Filter to control the decay spectrum.

Hi cut Decay Filter - 400Hz – 20kHz, 12dB/octave Low Pass Filter to control the decay spectrum.

Time domain Gate envelope controls:

Predelay - 0 - 170ms adjustable pre-delay of gate opening (prior to attack starting).

Attack - Time period for gate to open.

Hold - Time period that the gate remains fully open.

Release - Time period for gate closing.

Maximum gate open time (attack + hold + release) = 500ms.

Models:

Classic nonlinear - Emulates the faithful 80's classic gated reverb.

Panner - Rapid panning between L and R in the reverb. Short time movement FX.

Powerbox - Max power in gated energy. Not as de-correlated as classic non-linear.

Mono/**Stereo**/**Wide** - Option to switch between mono, stereo and wide stereo field output.

Diffusion - Minimum diffusion for 'clear' low diffusion in the reverb decay. Maximum diffusion for 'rich' highly diffused reverb.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.
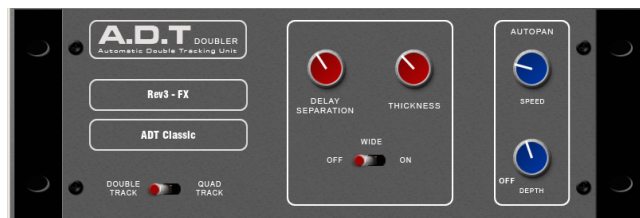
ADT Doubler - An Automatic Double Tracking module capable of creating short echo/chorusing, classic double tracking and 'slapback' tape delay loops.

The ADT is very effective in creating stereo double and quad tracked voices from a mono input. There is also a stereo width enhancer. The tracked voices can be auto panned in the stereo field. The ADT is perfect for creating classic doubling effects, thickening programme on stage or developing a stereo sound field without resorting to chorusing.

The module is stereo in, stereo out (with software normalised mono input if the source is mono). ADT will create a stereo field from a mono source.

Delay Separation - Min position for short delay separation producing Chorusing with Thickness set high. Mid position for classic doubling. ¾ position with thickness high for echo-chorusing. Max position with low thickness for tape loop and slapback Echo.

Thickness - Creates flutter modulation in delay voices. Very high settings can smear detail on some programme.

Double/**Quad Track** - Clear double tracking in the first position. Switch across for thicker quad tracking. With some programme Quad can get too thick and smear detail.

Wide - Extends the delay separation differences between Left and Right enhancing the stereo image.

Autopan - Automatically pans the chorus voices (wet signal only, not the dry signal). This is level modulation of the wet effect (not the dry signal) across the stereo field. It is not complete signal auto panning.

Depth - Determines the amount of movement across the stereo field. Use higher settings for a stronger effect.

Speed - Determines the speed of movement across the stereo field.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.
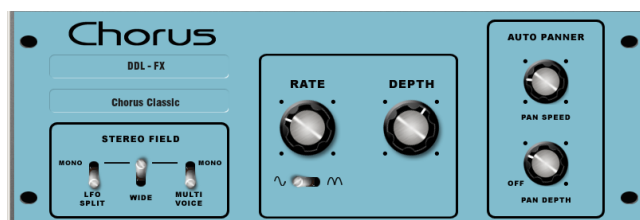
Chorus - Chorus derives from the late 80's where different stereo field creation techniques influenced the sound of each chorusing unit.

Chorus recreates the classics using 3 stereo-field emulations. These emulations can be switched in any combination creating many different stereo fields. All switches up gives no stereo enhancement.

The traditional Rate and Depth controls cover the centre panel. The LFO driving the modulator can be switched to sine or rectified shape. The auto-panning section pans the chorus voices giving stereo level shimmer, another classic modulator effect.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Stereo Field emulations - All switches up turns all stereo enhancement off. There are 3 stereo field emulations each active with switch down. These create stereo fields from a mono input. The 3 emulation switches can be used in conjunction with each other creating many different stereo field sounds, just like a number of classic chorus effects. Be careful as all 3 selected together can sound muffled rather than more 'stereo' with certain programme.

LFO Split uses two separate LFO's for left and right, creating a rich stereo image that varies with rate.

Wide pushes the left and right voices apart producing a very wide stereo image, but can sound phasey on some programme.

MultiVoice stereo field is created through multi-voice splits across left and right. It typically produces a thick stereo sound, but can sound muffled on some programme.

Rate - Min position for slow speed, best used with high depth settings for slow, deep chorus. Mid position for medium speed. Use with mid depth for classic chorus sounds. Max position for fast speed. Use with low depth settings for lively chorus.

Depth - Min position for small voice pitch variation. Useful with fast rates. Max position for large voice pitch variation. Can cause audible pitch change. Best with slow rate.

Sine/Rectified - modulator Switches between sine wave and rectified LFO modulator.

Autopan - Automatically pans the chorus voices (wet signal only, not the dry signal). This is level modulation of the wet effect (not the dry signal) across the stereo field. It is not complete signal auto panning.

Pan Depth - Determines the amount of movement across the stereo field. Use higher settings for a stronger effect.

Speed - Determines the speed of movement across the stereo field.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Symphonic Chorus - A faithful emulation of the 80's classic chorus effect. Simple to use and frequently requested. The unit has just two controls, Frequency and Depth, controlling the rate and delay range of the stereo modulator. The unit produces a rich, lively and wide chorus sound with a suggestion of very mild phasing / flanging.

Live engineers commonly use this unit for thickening vocals and strings and creating a spatial sound from a mono source. This has led to two factory presets 'SymphonicVox' and 'SymphonyStrings'.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Frequency - Adjusts the modulator speed. Minimum setting is a very slow modulation. Maximum is fast modulation. Like the original 80's unit, the maximum frequency

setting is extreme and should be used with shorter depth settings to avoid space ship sound effects. Typical settings are just left of mid position.

Depth - Adjusts the modulator delay depth. Minimum position is short delay depth producing subtle modulation. Some programme may be more prone to phasing/flange type sounds. Mid position is a typical delay depth setting creating tonal depth with rich chorusing. High settings of depth can sound extreme if the frequency is also set too high. Mid position is a typical starting point.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Flanger - Three classic flanger effect emulations – 'Ambient', 'Vintage' and 'Wild'. During research of classic pedal flangers we found numerous LFO modulators and stereo splitting techniques. We implemented them all.

For classic deep flange set Stereo Split and Stereo Spread off, pick triangular modulation, Vintage type and adjust Depth and Regeneration. The Manual switch overrides the LFO, for manual flange sweeps, only found on few historic flangers.

The module is stereo in, stereo out (with software normalised mono input if the source is mono).

Stereo Split Uses two separate LFO's for left and right, creating an enhanced stereo image with left and right flanging in different directions. Can sound very 'psychedelic'. Enhanced Stereo Split can reduce the intensity of the flange zone.

Stereo Spread Creates an enhanced stereo image by offsetting left and right flange voices with dynamic delay. Can sound super wide stereo or phasey depending on programme. Enhanced Stereo Spread can reduce the intensity of the flange zone. With both Stereo Split and Spread off the stereo image is preserved. For classic deep traditional flange effect turn both Stereo Split and Spread off.

LFO Type selector:

Manual Speed control becomes a manual sweep control (LED goes green). Sine, Rectified sine, Inverted rectified sine, Triangular Shape of auto oscillation. Speed Ranges from off to fast modulation. The LED goes red when in auto mode, green when in Manual mode.

Depth - Adjusts the flange zone depth. Min position operates in a tight flange zone. At max position the effect sweeps in and out of the flange zone creating a greater tonal change. High settings of Depth can sound extreme.

Regenerate - Produces feedback into the flanging delay line, making the flange more pronounced. Min position can result in no audible flange. Max position can sound too aggressive.

Emulation Types:

Ambient - HF rich, subtle flange, creating ambience. Great with overhead mics for a spatial sound.

Vintage - Creates a classic silky sound reminiscent of tape machine flanging. Regen control is well balanced LF and HF and the flanging does not get too aggressive.

Wild - An untameable, dramatic effect. The sound turns inside out.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.
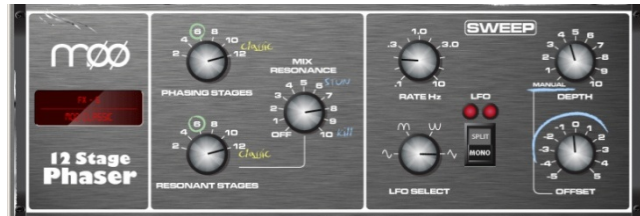
MOO 12 Stage Phaser - A classic 12 stage emulation producing rich textured phasing with plenty of control. The user has control of number of stages, feed forward and feed back, and 'zero' depth manual mode – to manually sweep the Phaser using the offset control.

The classic characteristic sound is produced by careful emulation of the phase chain and operating frequency range around the offset control. Equally important is the emulation of harmonic signatures produced by the companded analogue delay lines producing rich harmonics adding thickness to the sound. The split/mono LFO switch toggles between in-phase intense phasing and split-phase mode - creating spatial rotary effects.

There are many different possibilities through varying the number of stages in the phase chain output or the feedback resonance path. Setup depends on the instrument applied to the unit. Lower numbers produce clean thin sounds. A higher numbers of stages produce a richer phasing sound.

Phasing Stages - Selects which point in the phase chain is taken as output. 6 stages produce a clean phase. However the classic rich sound is 12 stages.

Resonant Stages - Select which point of the phase chain is taken into the feedback 'mix resonance' circuit. 12 Stages is classic.

Mix Resonance - Controls the amount of feedback into the phase chain input. Classic sound around 5 - 8. Full resonance at 10.

LFO Rate - Variable between 0.1 to 10Hz

LFO Select switch - Sine / Rectified / Inverse Rectified / Linear(Triangular) are selectable. Classic unit uses Linear(Triangular). Slow Phasing sounds great with Sine. Rectified variants can create notches or phase spikes which can sound cool. Rectified variants are twice the speed.

LFO split switch 'Mono' setting configures the Left and Right Phase Chains to modulate in phase, the strongest effect. 'Split Phase' runs Left and Right not in Phase, creating a stereo swirl for added spatial rotary effect.

Depth - Controls the amount or depth of LFO modulation in the phase chain. Extreme settings can sound unnatural. Setting this control to minimum turns the LFO modulator off and relies on manual sweeping of the phase chain using the 'offset' control.

Offset - Shifts the operating frequency range of the Phaser. Maximum settings force the Phaser to operate in higher frequencies. Lower Offset settings allow lower frequency phase sweeps (more intense). In manual mode (Depth = 0) the user can adjust the phase sound with this control.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.
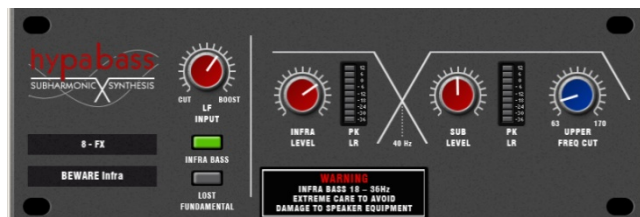
Hypabass - A sub-harmonic synthesis unit used in the live sound environment to generate infra and sub bass spectrum from weaker bass programme. We initially emulated the American analog classic, but implementation in DSP gave us the ability to use more sophisticated techniques in the sub harmonic generator and filtering

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stages. The result is reduced distortion in the infra bass section and much better independent control of the infra and sub bass spectrum, essential for live PA use.

The module is stereo in stereo out (with software normalised mono input if source is mono). The stereo signal remains stereo throughout the signal path. There is no mono'ing to produce either the infra or sub bass path.

• **BEWARE** - Extreme care is needed. Driving high infra bass levels into insufficient speakers may lead to speaker equipment damage.

Operation

'Hypabass' is a sub harmonic synthesis module. An LF input de-emphasis/emphasis trim stage feeds the sub harmonic generator creating low distortion, low frequency spectrum below the source input spectrum. This sub harmonic spectrum is then band-split into Infra Bass (18-36Hz) and Sub Bass (36 Hz upwards). This allows Infra and Sub bass to have separate level controls, essential for controlling 'Infra Bass' and 'Sub Bass' preventing speaker equipment damage, and dealing with resonant acoustics or speaker resonance with exotic LF cabinet porting. Separate Infra Bass and Sub Bass meters are provided. Each are peak detected from both Left and Right signal paths and presented on one meter.

UPPER FREQ CUT - Controls the upper bandwidth of the sub bass harmonic spectrum. This setting depends greatly on the sub bass speaker equipment and the original bass content. Typically a low setting is common to prevent the generated sub bass upper harmonics clashing with the original bass content. Beyond mid position is only useful for Lost Fundamental mode.

LF INPUT BOOST - This filter stage provides emphasis on the input spectrum into the sub harmonic generator and can be used as a global 'more or less' control once everything else is setup.

INFRA BASS Mode - This is the default mode. Energy in the Infra and Sub bass spectral regions is synthesised from the input bass content. Using the independent level controls the engineer can balance Infra and Sub bass.

• Avoid infra bass damaging equipment or sub bass resonating. UPPER FREQ CUT needs to be kept low to prevent the generated sub bass upper harmonics clashing with the original bass content.

LOST FUNDAMENTAL Mode - These harmonics can be output to a mid-range driver to create apparent bass energy since these upper harmonics are musically related to the original bass content. Useful for increasing bass perception in music driving mid-range speaker systems. This turns the Infra bass section off and modifies the output spectrum to operate in the typical upper bass region. Using the Sub level and UPPER FREQ CUT the engineer can manipulate the output to contain harmonics that are above the input bass spectrum.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

De-Esser - Based on the flagship iLive FX engine, the De-Esser emulates the classic Auto-Threshold circuit commonly found on high end hardware units. This produces a constant sibilance reduction regardless of signal level, resulting in a more natural De-Essing process. In comparison, threshold based De-Essing produces inconsistent reduction activity which can result in unnatural vocals.

De-Esser features an adjustable frequency point and a Listen button to allow monitoring of the sibilant region. The response of the De-Esser and the amount of reduction applied are adjustable to suit vocal programme.

The two channels are independent but their controls can be linked thanks to a latch switch.

Listen - A momentary switch used to monitor the left or right channel to listen to the 'ess' band to which the gain reduction will be applied. The Listen button is independent of the "Link" configuration so that even when Link is set, the left Listen monitors the left channel and the right Listen monitors the right channel.

Frequency - Adjusts the lower boundary of the region thought to contain sibilance. This will typically be around the 6kHz range. Adjust the value to capture the "ess" heard on the channel. The frequency is adjustable from 3kHz to 8kHz. Like many advanced De-Essers this is not a simple notch filter. Typically you need to set the frequency slightly lower than the centre frequency of the 'ess'.

Reduction - Provides control over the amount of gain reduction applied to the selected frequency band. At "Min", the De-Esser will not attenuate the band. At "Max" the De-Esser will attenuate the band by up to 24dB.

Response - Adjusts the speed with which the De-esser responds to the presence of ess/sibilance. Medium setting corresponds to the speed found on the iLive platform. Fast setting is much faster, and Slow is roughly half the response time of iLive. To avoid slight artefacts in vocal programme try using the Slow or Medium settings.

Link - Forces the left and right De-esser channels to be matched. If the two channels have different, non-zero settings and the link control is activated, the right channel settings will be set to match those of the left channel. If the link control is then de-activated, the right channel will then reassume the settings it had before the link was initially activated.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Rotator - The Rotator is a model of a traditional rotary speaker cabinet such as those used to create the familiar Leslie organ sound. It simulates the rotating horn (treble) and woofer (bass) along with their crossovers.

Rotors – Turns the treble/woofer motors on/off. When the motors are off, the speakers are both facing the front of the unit. When switched on, the motors will ramp up to the speed indicated by the Speed control. The woofer motor accelerates more slowly than the treble motor. When switched off, the motors will then decelerate to the minimum speed, until stationary and facing the front of the unit. The On/Off switch controls only the rotor speed, not the whole effect.

Speed - Controls the speed of speaker rotation. Its lower setting is 0.1Hz (10 revolutions per second). The other two marked positions emulate those provided on classic rotary speakers: Chorale (indicated as "chor") and Tremolo (indicated as "trem"). The big lamp flashes to show the treble speaker speed.

Width - Adjusts the stereo width of the two microphone outputs, and therefore the spatial "depth" of the effect. At the "Mono" setting both simulated microphone outputs are summed equally to the left and right outputs. At the L/R setting the simulated left/right microphone outputs are sent to the left / right output channels correspondingly.

Balance - Adjusts the relative weighting of the treble/woofer speakers. At the "LF" setting, only the output of the woofer is heard. At the "HF" setting, only the output of the treble horn is heard. You can balance between the two.

Deflectors - Simulates the attachment (On) or removal (Off) of the deflectors on the end of the treble horn.

Back Panel - Simulates the attachment (On) or removal (Off) of the cabinet back panel. This changes the simulated cabinet response as appropriate.

Mic Select - Allow for configuration of the two simulated microphone positions - Side-Side (microphones on opposite sides of the cabinet), Front-Back (mics at front/back

of the cabinet), Front-Front (both microphones at the front of the rotary speaker). In Front-Front mode, the "Separation" rotary becomes available. This allows for the distance between the two front-positioned microphones to be adjusted.

Tube Drive - Controls the tube (valve) drive simulation. With the control at "On" the tube drive is active. With the control at "Off", the tube drive is completely bypassed. The tube drive rotary control adjusts the depth of the distortion (1 = slightly warm, 11 = distorting).

Mains Hum Panel - Adjusts the level of simulated mains hum introduced.

50/60 - Switches between mains frequencies typical to the UK (50Hz) or US (60Hz).

VS1 Vocal Shift - VocalShift VS1 is a stereo vocal pitch shifter squeezing two channels of high quality pitch shifting into a single effect. It has a very low latency (<6ms), covers the whole vocal frequency range, and minimises the phasing and flutter artefacts common with many pitch shifters.

VocalShift allows large shifts of up to +/- 1 octave, with a further switchable octave downshift. The wide range makes it ideal for theatrical or more extreme musical effects. The left and right channels are fully independent, allowing separate, high quality pitch shifting on each.

The two channels can be linked and reset to flat (zero shift) using single button presses.

Semitones - Sets the amount of pitch shift applied to each channel in semitones. The range is -12 (one octave downshift) to +12 (one octave upshift). The current value is displayed in the centre of the rotary. When 'active', the control glows yellow/orange. In Link mode, both corresponding rotaries on the left and right channels will be illuminated. A change to either will then be reflected in both.

Cents - Sets the amount of pitch shift in cents (100 cents = 1 semitone). This is added to the setting of the Semitones (and oct down switch) control to give the overall shift (+1 semitone and +50 cents = +150 cents pitch shift). The cents control is useful for providing very small pitch shifts, for example for phasing and doubling effects.

Oct Down Switch - Provides an additional 1 octave downshift to the current pitch shift settings (i.e. +12 semitones and -1 octave = no overall shift).

Flat - Sets all pitch shift controls to zero (Semitones, Cents and Oct Down are all set to zero).

Width - Controls the stereo width of the two pitch shifted voices, and therefore the weighting of each in the left/right output channels. At the "Mono" position, the left and right channels are mixed equally to both left and right channels resulting in a centre pan, mono effect. At the "L/R" position, the left voice is fed only to the left channel and the right voice to the right channel. Other positions graduate between the two.

Link - Forces the left and right voices to be matched. If the two channels have different, non-zero settings the right channel pitch shift settings will be set to match those of the left channel. If the link control is then turned off, the right channel will restore its settings from before the link was turned on. The Link control links the Semitones, Cents and Oct-Down control. Pressing either "Flat" switch when Linked results in both voices being set to zero.

Preset Name is displayed. Touch and scroll using the screen Rotary for live update. This is a way of live auditioning all library presets for this module (factory, user and USB). You can also select and recall a particular preset using the Library window.

Pitch Doubler - PitchDoubler is a stereo, pitch shifting doubler effect generating the effect of additional voices from its input. It is based on the same pitch shifting technology as VocalShift, with the associated low latency (<6ms), wide frequency range (down to around 80Hz) and minimal phasing / flutter artefacts. The effect squeezes two channels of high quality pitch shifting into a single effect slot, along with further features such as adjustable delay and modulation.

The PitchDoubler has completely independent left and right channels, which can be mixed to the left/right outputs of the effect by means of the stereo width control.

The doubling effect is achieved by provision of time delay, and modulated pitch shift. Sliders are provided on each channel for independent control of the delay (0 – 25ms) and the pitch shift (-100 -> +100). A pitch modulation LFO module, with adjustable rate and depth, provides a natural variation in the pitch shift.

Delay - Sets the amount of delay applied to each voice. It is adjustable from 0 to 25ms. A readout of the delay value is provided below the fader.

Pitch - Sets the amount of pitch shift provided, varying from -100 cents (= 1 semitone) at the lower position to +100 cents at the upper position. The centre position corresponds to zero pitch shift. A readout of the current pitch shift value is provided below the fader.

Width - Controls the stereo width of the two voices. At the "Mono" position, the left and right channels are mixed equally to both left and right channels resulting in a centre pan, mono effect. At the "L/R" position, the left voice is fed only to the left channel and the right voice to the right channel.

Level - Provides attenuation for each voice in the doubler. A level of 0dB will pass the voice without any attenuation. A level of -6dB will pass the voice at half volume, and -Inf will zero the output. A readout of the current gain value is provided to the bottom left of the rotary.

Pitch Mod Panel

Active - This panel presents controls for applying LFO (low frequency) modulation to the pitch shift setting. Make sure the "Active" switch is turned on.

Rate - Controls the rate (frequency) of the LFO applied to the pitch shift. The rate is adjustable from 0.1Hz to 10Hz.

Depth - Controls the depth of modulation applied to the pitch shift. Full depth (100) means that the pitch shift is modulated by the full amount of its current setting. If depth is 0, no pitch modulation is applied.
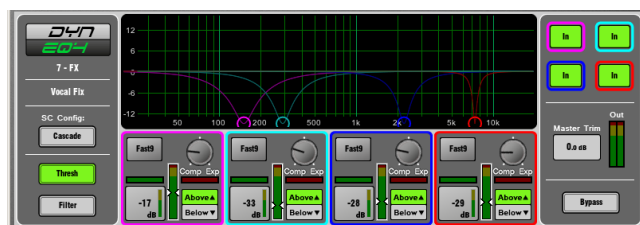
Dynamic EQ - DynEQ4 is a model of the industry standard stereo 4-band Dynamic Equaliser. It is an advanced processing tool providing four bands of equalisation that respond to the dynamics of the signal.

The Dynamic EQ can be loaded into one or more of the FX slots and then inserted into any of the input or mix channels.

Main Graph - Displays the 4 band frequency response, with the shaded fills showing dynamic activity and the solid outline showing maximum cut/boost for each band. Bands grey out if they are bypassed.

Thresh View - Primary control panel with main cut/boost and dynamics controls for each band. You can drag the points in the graph to adjust frequency in this mode.

Comp/Exp - Sets the maximum amount of compression (EQ cut) or expansion (EQ boost) for the band when the sidechain signal level is 'Above' or 'Below' the threshold setting. Centre position is zero dB flat.

Above/Below - Selects whether the EQ operates when the signal is above or below the threshold.

Threshold (-50dBu to 18dBu) - Sets the level at which the sidechain GR cut or boost occurs for that band. A threshold dependent 'zoom' meter is displayed.

Horizontal Gain meter - Shows Dynamic metering of Cut (green) and Boost (red).

Choose one of two **Attack/Release modes**:

• Std9 – standard, smooth frequency conscious release.

• Fast9 – has a fast release.

Filter View - For setting up the frequency response for each band.
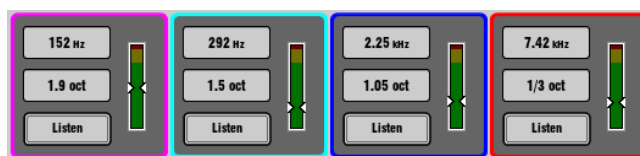
Frequency control - All 4 bands are full range 40Hz - 18kHz.

Width control - LF and HF become shelving at the widest setting.

  • Band1: LF Shelf, Bell 2.1–1/9 octave

  • Band2: Bell 2.25–1/9 octave

  • Band3: Bell 2.25–1/9 octave

  • Band4: HF Shelf, Bell 2.1–1/9 octave

Listen - Touch to momentarily listen to the sidechain filter signal using the PAFL bus.

SC Config - Left and Right signals are summed to produce a mono sidechain for each band. Choose one of two modes:

• Cascade - The sidechain for each band is fed from the previous band. Each band is affected by the previous band activity.

• Parallel - All sidechains are fed from the input to the DynEQ. Avoids band interaction.

Bypass - Individual bands or the whole EQ can be switched in or out. The curve and controls grey out when the band is bypassed.

Master Trim and Meter - Lets you adjust the output +/-12dB to compensate for the effect of the EQ on overall level. The meter displays the stereo output signal.
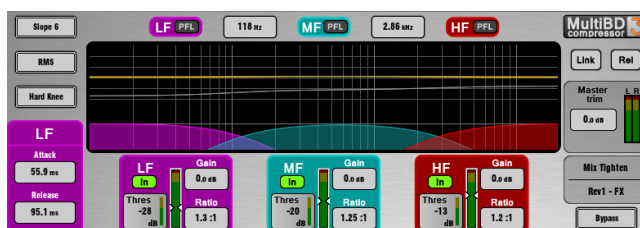
Multiband Compressor - Two multiband compressor types provide independent compression control over different frequency bands. This is an advanced mixing tool for mastering and live sound control. It gives more precise control over the dynamics and less pumping effect than the more common single band compressor.

The Multiband Compressor can be loaded into one or more of the FX slots and then inserted into any of the input or mix channels.

Main Graph - A WYSIWYG graph displays the resulting crossover frequency response. Shaded red fills show dynamic gain reduction. The yellow curve shows makeup gain for each band, and the grey curve shows maximum potential gain reduction. Bands grey out if they are bypassed.

Slope - Choose the crossover slope - 6, 18, or 24 dB/octave. Slope 6 works well with the 3-band compressor. It has minimal phase summing distortion and sounds smooth. It is typically used for programme mastering. Slope 18 and 24 provide more band isolation and work well with the 4-band compressor for vocal and instrument control.

Attack/**Release modes** - There are two manual and 4 automatic dynamics modes:

• Peak Manual

• RMS Manual

• Auto Punch

• Auto Opto

• Slow AutoF

• Fast AutoF

Knee - Hard or Soft (easy knee model).

Link and Relative modes:

There are three operating modes with two buttons at the top right of the screen:

• Normal - Link and Rel buttons turned off. Independent control of each band.
• Link - All band parameters linked for quick setup.
• Relative - All band parameters linked for changes relative to settings made before the Rel button was turned on.

Per band controls:

Ratio - 1:1 (no compression) to 20:1 (maximum compression)

Gain - -6dB to +18dB

Threshold (-50dBu to 18dBu) - Sets the level at which the sidechain gain reduction occurs for that band. A threshold dependent 'zoom' meter is displayed.

In/**Out** - Individual band bypass. The curve and controls grey out for the band.

PFL - Momentary listen to the band solo'd to PAFL. Silences the other bands.

Sidechain Meter - Shows sidechain signal level and threshold point.

Bypass - Switches the whole compressor in or out. The curve and all band controls grey out when the compressor is bypassed.

Master Trim and Meter - Lets you adjust the output +/-12dB to compensate for the effect of the EQ on overall level. The meter displays the stereo output signal.

Transient Controller - This is an accurate model of the industry standard Transient Signal Processor.

Transient Signal Processors provide cut and boost of the attack and sustain envelopes of the input signal. This gives the sound engineer greater control over the transient behaviour of audio programme. The processor is auto-threshold which boosts or cuts specific parts of a signal envelope using auto attack and release times thus making control very simple. The unit has two independent linkable channels of

processing, each with pre-gain and post-gain make-up and two optimised modes of operation.

Controls:

Attack – Sets the amount of gain applied to the attack portion of a transient. Allows up to 15dB boost or cut on the initial onset of a transient signal.

Sustain – Sets the amount of gain applied following a transient, boosting or cutting the sustain envelope of the signal. Allows up to 24dB of cut or boost. Changing the sustain gain on drums can help add or remove reverberation and can transform the tonal quality of the sound.

Pre Gain – Can boost or cut up to 15dB before processing.

Post Gain – Can boost or cut up to 15dB after processing.

In – switches the processor in and out. These are independent controls for each channel. The user interface greys out when the processor channel is out.

Metering – The unit provides signal and peak LED indicators for both input and output. The signal LED has three stages: Green for signal presence, yellow for nominal level above '0' and orange when approaching clipping.

Mode – The mode switch toggles between Transient and Continuous mode. If you hear unwanted artefacts then try changing the mode.

• Transient Mode - The default Transient Mode is designed to be used on percussive, transient material. Its automated attack and release reacts quickly meaning that even the sharpest of transients will be caught and processed with minimal distortion.

• Continuous Mode - Ideally suited for more steady state signals such as a bass or guitar. The unit responds much slower to transients and allows a smoother response.

Link – Links the two processing channels and changes the right channel parameters to match the left. When unlinked the right channel previous parameters are recalled. When linked, a common summed mono side chain is enabled for both channel 1 and 2.

Dimension Chorus – A model of a classic chorus device based on bucket-brigade technology. The 4 modes offer varying degrees of density from subtle spatial chorus to heavy modulation, with mode 'E' extending beyond the capabilities of the original outboard unit.

Controls:

Mode - Mode 1 is the subtlest, producing the most natural of voices and a small stereo spread. Mode 2 increases the width of the voices. Mode 3 increases both the modulation speed and depth of the chorus giving a thicker sound. Mode 4 is the most extreme and it expands the voices to be both louder, faster and wider. Expanding on the original device, we have included mode 'E' which follows the progression of more intense chorusing. This produces quite an aggressive chorusing mode but still utilises the unit's voice architecture.

Output – Set to **Wet Only** when using in a Send/Return configuration, or **Dry+Wet** when inserted on a channel, with the wet/dry control for that channel set to fully wet.

13. Appendix B – Scene and Show memory content

13.1   Scene memories

Scene memories store the following parameters and settings:

Input channels

- Preamp Gain, Pad, +48V
- Digital Trim, Polarity
- Stereo Image
- HPF and LPF Filters
- Insert In/Out and operating level
- PEQ
- Gate and Compressor
- Level (channel fader)
- Mute
- Pan
- Routing assignments, sends and Pan
- Delay
- Direct Out level
- DCA / Mute Group assignments
- Name & Colour

Mix channels

- Ext Input Gain, Pad, +48V
- Digital Trim, Polarity
- Insert In/Out and operating level
- PEQ
- GEQ
- Compressor
- Level (channel fader)
- Mute
- Pan
- Routing assignments, sends and Pan
- Delay
- DCA / Mute Group assignments
- Name & Colour
- Source point

FX Sends, FX Returns

- Level
- Mute
- Routing assignments, sends and Pan
- DCA / Mute Group assignments
- Name & Colour

FX

- FX parameters for each unit
- PEQ

DCA

- Assignments
- Level
- Mute
- Name & Colour

Mute Groups

- Assignments
- Mute

MIDI Strips

- MIDI messages
- Name & Colour

Others

- IP Controllers settings
- Dyn8 routing and parameters
- Softkeys settings
- Patchbay – Input source, Inserts, Outputs
- Virtual SoundCheck settings
- I/O Port – Option card settings
- Output Polarity
- Digital Out Sample Rate
- Talkback HPF
- Ganging
- ME Stereo configuration for Monitor outs
- Global Direct Out source
- Global Tap Tempo
- Strip Assigns for each bank
- Surface illumination
- Soft Rotary controls

13.2   Show memories

Show memories store the following settings:

Current settings

- All settings listed above, stored at the time the Show was last saved

Scenes

- All Scenes (1-500) including names and descriptions
- Scene Recall Filters
- Global Scene Safes
- Cue lists
- Current cue list
- Scene options (Editing Confirmation, Auto Store, Auto Increment, Track Embedded, Go on Touch)

Libraries

- All User Libraries

MixRack Setup

- Mixer Configuration
- Input Stereo Configuration
- Audio Clock source
- BNC Wordclock out option
- Talkback assignments, source assignment, HPF and Dim option
- SigGen assignments and settings

Surface Setup

- AES out sample rate options
- AES input SRC bypass
- Strip Assign 'Sync Selected Layer with Surface' option
- Custom Rotary functions
- Layer Link
- Surface preferences (Display paramenter on LCD, No Sends on Faders)

PAFL

- PAFL preferences (Additive mode, IEM Mix to Headphones, Mix Follows PAFL, Sel Follows PAFL, AFL option)
- PAFL Delay and Trim
- Mains to PAFL levels
- External Input Talk to PAFL switch and Trim

Others

- PEQ / Comp order
- Custom meters
- Quick Names
- MIDI Channel number
- Input PEQ 20-20k option
- Mix PEQ 20-20k option
- Fill PEQ graphs option
- I/O Screen options
- RTA 'Show Peak Band' option
- 'Enable Preamp on Surface' option

13.3   Settings not stored in Shows

The following settings are not stored in Show memories. These settings are local to the MixRack or Surface.

- Network settings
- Event logs
- VGA Screen out mode
- User Profiles

14. Appendix C – Template Shows

Template Shows provide a quick starting point by giving you a familiar layout and classic mix architecture. They contain a number of default Scenes to reset the mixer settings, patch and Surface layout to the starting point.

All Template Shows have:

- Input fader strips on left banks, Mix and DCA masters on right bank.
- Surface Inputs on Layer F of the left bank.
- All channels muted.
- Input channel 1-64 source from MixRack XLR sockets.
- Input channel 65-96 source from DX 1/2.
- Input channel 97-114 source from DX 3/4.
- Input channel 115-126 source from Surface inputs.
- Input channel 121/122 configured as Stereo and sourced from Surface 7/8 (XLR) for music playback.
- Input channel 123/124, 125/126 configured as Stereo and sourced from Surface 9/10 (AES) and 11/12 (AES) respectively.
- Input channel 127/128 configured as Stereo and sourced from the Surface USB stereo playback.
- Soft Rotaries (left screen) assigned to Gate+Comp, Gate, Comp.
- Soft Rotaries (right screen) assigned to Mono Aux Sends, Stereo Aux Sends, FX Sends (follow Sel).
- SoftKeys, IP Controllers, Virtual SoundCheck settings, Talkback HPF, FX Global Tap tempo and Soft Rotary Controls are Safe in the Global Safes.

14.1 FoH

This Template configures a traditional architecture and layout with stereo LR main mix for mixing FoH and monitors from FoH. This is the factory default Show loaded.

Bus architecture:

- 8 Groups (4 Mono, 4 Stereo)
- 8 Mono FX Sends
- 16 Aux (8 Mono, 8 Stereo)
- 8 Matrix (4 Mono, 4 Stereo)
- LR (single fader strip)

14.2 Mon

This Template configures the dLive as a dedicated monitor console with 28 monitor mixes. All Input faders are set to 0dB.

Bus architecture:

- 4 Groups (2 Mono, 2 Stereo)
- 8 Mono FX Sends
- 28 Aux (14 Mono, 14 Stereo)
- 4 Matrix (2 Mono, 2 Stereo)

14.3 Surround

This Template configures the dLive as a surround mixer with 5.1 discrete Main channels.

Bus architecture:

- 8 Groups (4 Mono, 4 Stereo)
- 8 Mono FX Sends
- 16 Aux (8 Mono, 8 Stereo)
- 8 Matrix (4 Mono, 4 Stereo)
- 5.1 Main Surround (individual fader strips)

15. Block diagram

dLive SYSTEM BLOCK DIAGRAM

Firmware V1.4

128 input channels x 64 bus Mix Engine

Assignable buses
GRP AUX FX MAIN MTX PAFL

dLive Surface
MIC/LINE inputs
48V
PP
PAD
-20dB
GAIN
ADC
AES3 inputs
SRC
Bypass
USB
WAV Stereo Playback
Audio interface option card
128 Inputs
I/O Port/s

dLive MixRack
MIC/LINE inputs
48V
PP
PAD
-20dB
GAIN
ADC
Audio interface option card
128 Inputs
I/O Port/s

dLive Expanders
< 32 inputs
MIC/LINE inputs
48V
PP
PAD
-20dB
GAIN
ADC
AES3 inputs
SRC
Bypass

INPUT PATCH
MixRack inputs
Surface inputs
I/O Port inputs
Expander inputs
RackFX outputs
USB Playback
Sig Gen
Mix outputs
PFL

INPUT CHANNEL x 128
Configurable Mono / Stereo
Sidechain
Sidechain
Skt, I/O Port or RackFX INSERT A
Skt, I/O Port or RackFX INSERT B
WIDTH MODE
Stereo ch only
TRIM POL
FILTERS
GATE/Ducker
+4/-10
PEQ
COMP/Ducker
+4/-10
DELAY
MUTE
DCA
FADER
ASSIGN + PAN
PFL AFL
IP to MAIN
IP to GRP
IP to AUX/FX
L R LEV
Post Pre
DIRECT OUT
TRIM
Post-Preamp
Post-Ins A
Post-PEQ
Post-Delay
Source option per AUX mix
Global meter source option
Global source option for DIRECT OUT — Follow MUTE — Follow FADER

FX SEND
Strip METER
MUTE
FADER
PFL AFL
From: FX Send or Any MIX Input DIR OUT

RackFX x16
Send > Return FX
Inserted FX
Patch to: FX Return or Input Channel IP or MIX INSERT Output Patch

FX RETURN x16
METER
PEQ
MUTE
FADER
DCA
ASSIGN + PAN
PFL AFL in-place
Ret to MAIN
Ret to GRP
Ret to AUX/FX
L R LEV
Post Pre

Dyn8 x64
Dynamic EQ Multiband comp
IP or MIX Insert

TALKBACK
HPF
Press to TALK
Assign to: GRP AUX MAIN MATRIX

SIG GEN
Sine (Sweep 20-20kHz)
White Noise
Pink Noise
Bandpass Noise (Sweep)
MUTE
LEV
To: GRP AUX MAIN MATRIX

GRP AUX FX MAIN MTX PAFL

MIX MASTER (GRP, AUX, MAIN)
Post-Trim Post-Insert Post-PEQ
Post-GEQ
Post-Comp
Post-Fader
Global meter source option
INSERT
+4/-10
Skt, I/O Port or RackFX
PEQ
28-band 1/3 octave
GEQ
COMP
Sidechain
DELAY
MUTE
DCA FADER
BAL (Main LR only)
PFL AFL
Mix Output
GRP to MAIN
GRP to AUX/MTX
AUX/MAIN to MTX
Post Pre LEV
EXT IN - Patch from: Skt, I/O Port or RackFX
TRIM POL
Configuration:
64 x Bus = GRP, AUX, FX, MTX, MAIN
Configurable Mono / Stereo

OUTPUT PATCH
Input DIR OUT
GRP/AUX/MAIN
MixRack inputs
Surface inputs
I/O Port inputs
PAFL monitor
Wedge monitor
IEM monitor
RackFX 1-8 out
MATRIX

MATRIX MASTER
Configure as MONO or STEREO
EXT IN - Patch from: Skt, I/O Port or RackFX
TRIM POL
INSERT
Skt, I/O Port or RackFX
Sidechain
PEQ
28-band 1/3 octave
GEQ
COMP
DELAY
MUTE
DCA FADER
PFL AFL
MTX Output
Post-Trim
Post-Insert
Post-PEQ
Post-GEQ
Post-Comp
Post-Fader
Global meter source option

PFL/AFL MONITOR
DELAY
RTA 31-band 1/3 octave
AFL not affected by Trim
-24dB 0dB PFL TRIM
EXT Input to PAFL Skt or I/O Port

PFL active
PAFL
IEM to PHONES
Strip METER
MUTE
FADER
IEM
Strip METER
MUTE
FADER
WEDGE

dLive Surface
DAC
BAL
Ready +4dBu
Line Outputs
SRC
Bypass
44.1/48/96kHz
AES3 Outputs
96kHz WAV Stereo Record
USB
Audio interface option card
128 Outputs
I/O Port/s
DAC
PHONES

dLive MixRack
DAC
BAL
Ready +4dBu
Line Outputs
Monitor 1-40
Audio interface option card
128 Outputs
I/O Port/s
DAC
PHONES

dLive Expanders
< 32 Outputs
DAC
BAL
Ready +4dBu
Line Outputs
SRC
Bypass
44.1/48/96kHz
AES3 Outputs

16. Processing specs

Input Processing

128 Input Processing Channels	Configurable mono or stereo
Trim	+/-24dB digital trim
Polarity	Normal/Reverse
Stereo Width Control	L/R, R/L, L -Pol/R, R -Pol/L, Mono, L/L, R,R, M/S
High Pass Filter	12dB/18/24dB octave 20Hz – 2kHz, switchable in/out
Low Pass Filter	12dB octave 50Hz – 20kHz, switchable in/out
Insert	Assign to any sockets, In/Out, +4dBu/-10dBV level
	2 insert points per channel: Post Gate, Pre-Delay
Delay	Up to 340ms, in/out control

Gate

Sidechain	Self-key + any source selectable, In/Out, Sel 'listen'
Sidechain Lo-Cut Filter	12dB/octave, Freq 20Hz – 5kHz
Sidechain Hi-Cut Filter	12dB/octave, Freq 120Hz – 20kHz
Threshold	-72dBu to +12dBu
Depth	0 to 60 dB
Attack	50us to 300ms
Hold	10ms to 5s
Release	10ms to 1s

PEQ

Type	4-Band fully parametric, +/-15dB
Frequency Range	Global setting for Inputs = 20-20kHz or 'Analogue setup'
Analogue Range setup	20-200Hz, 35-1kHz, 500-15kHz, 2k-20kHz
Band 1	Selectable LF Shelving, Bell, Hi-Pass
Band 2	Bell
Band 3	Bell
Band 4	Selectable HF Shelving, Bell, Lo-Pass
Bell Width	Non-constant Q, variable, 1.5 to 1/9th octave
Shelving Type	Classic Baxandall
Hi-Pass, Lo-Pass Filter selectable	12dB/octave
Band in/out	per channel

Compressor

Compressor	pre/post PEQ, on a per channel basis
Sidechain	Self key + any source selectable, In/Out, Sel 'listen'
Sidechain Lo-Cut Filter	12dB/octave, Freq 20Hz – 5kHz
Sidechain Hi-Cut Filter	12dB/octave, Freq 120Hz – 20kHz
Threshold	-46dBu to 18dBu
Compressor parameters	Thres, Ratio, Attack, Release, Knee - type dependant
Types/Models	Various peak and RMS based Compressor models
Parallel Compression	Wet/Dry control

Channel Direct Out	Individual Trim (per channel)
Options	Source, follow Fader, follow Mute (global for all)
	Source points globally selectable

Mix Processing

64 Mix Processing Channels	Configure as mono/stereo Groups, Aux, Main, Matrix
Main mix modes	None, LR, LCR, LR+MSum, LR+M
External Input to Mix	Assignable source
Trim	+/-24dB digital trim
Polarity	Normal/Reverse
Insert	Assign to any sockets, In/Out, +4dBu/-10dBV level
	1 insert point per channel: Pre-EQ
GEQ	28 bands 31Hz -16kHz, +/-12dB
Type	Constant-Q, Proportional-Q, digiGEQ, hybrid
Gain	Frequencies displayed on LCD strip
PEQ	as input channel
Compressor	as input channel
Delay	Up to 680ms, in/out

FX

FX Processing	16x RackFX engine, internal module
Mode	Send>Return, Inserted, Daisy Chain FX, direct to output

FX Returns

16 Stereo dedicated returns	Fader, Pan, Mute, Routing to Grp, Aux, FX, Main
	4-band PEQ on each return

Talkback   Assignable source

High Pass Filter   12dB/octave, 20Hz-400Hz

Routing   To Groups, Aux, Main, Matrix

Signal Generator   Sine, White Noise, Pink Noise,
                        Bandpass Noise

Sine, Bandpass sweep   20-20kHz

Controls   Level, Mute

Routing   To Groups, Aux, Main, Matrix

RTA   31-Band 1/3 octave 20-20kHz

Source   Follows selected PAFL source

Peak Band Indication   Option to display dominant frequency