DiGiCo

4REA4

Controller Software User Guide

V1.0

ⓘ This Guide refers to 4REA4 Controller software V1.0+

Please read this guide in conjunction with the **4REA4 Getting Started Guide** for details of 4REA4 hardware setup and connections.

Before starting please check www.digico.biz for the latest 4REA4 firmware, software and documentation.

1. IMPORTANT - Read before starting

1.1 System operating firmware

The function of 4REA4 is determined by the operating software that runs it. Software is updated regularly as new features are added and improvements made.

Before attempting to use the APAD App, visit www.digico.biz Support Downloads section to download the latest available version of 4REA4 firmware and Controller software.

4REA4 Firmware is updated using the 4REA4 Controller application.
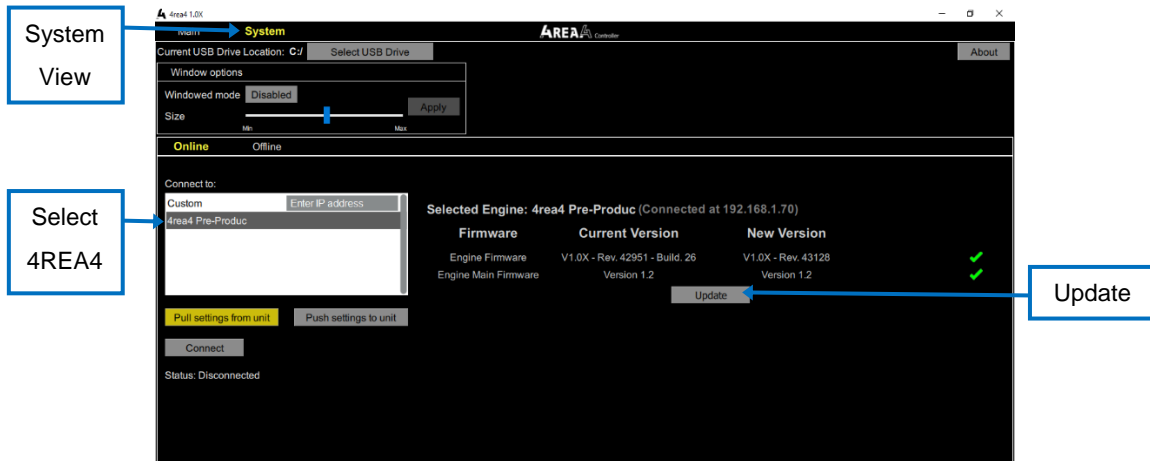
NOTE: Once the 4REA4 is updated and restarted, all connected peripheral devices (A-Control and I/O boxes) will automatically be updated as required.

The procedure is as follows:

1. Connect your controller computer with an ethernet cable to one of the 4REA4 network ports (front or rear or via an ethernet switch)
   Ensure that your controller computer has a compatible IP address to connect to the 4REA4
   The default 4REA4 IP Address is 192.168.1.70 with Subnet Mask 255.255.255.0 and Gateway 192.168.1.254
   Your controller computer could, for example, be set to 192.168.1.200 with Subnet Mask 255.255.255.0

2. Install and run the 4REA4 Controller software
   To Install - Extract the content of the downloaded ZIP file to a folder on your Controller computer
   Close any existing instances of 4REA4 Controller Software
   Run the 4REA4 Controller Installer application and follow the on-screen instructions

3. When the Controller application is installed and running, click on the **System** button in the top left bar and you should see the view in the picture above.

4. Your 4REA4 unit should appear in the **Connect To** box on the left of the screen – click this entry. Details of current and available firmware will be displayed along with a button to start the update.

5. Click the update button, follow any on-screen instructions and wait for the process to complete. The 4REA4 will automatically restart during the upgrade procedure.

1.2 Software licence agreement

By using 4REA4 you agree to be bound by the terms of the relevant End User Licence Agreement (EULA), a copy of which can be found at http://www.digico.biz/docs/about/legal.shtml. You agree to be bound by the terms of the EULA by installing, copying, or using the software.

1.3 Further information

Please refer to the **DiGiCo website** for further information, knowledgebase and technical support. For more information on 4REA4 hardware, system setup and connections please refer to the Getting Started Guides available for download at www.digico.biz.

1.4 Overview

Connecting the Controller Application to you 4REA4

After installing the relevant 4REA4 Controller software from the downloaded upgrade package (see above – 4REA4 VX.X Installer.exe for Windows or 4REA4 VX.X.dmg for Mac) on your computer.

Connect your computer with an ethernet cable to one of the 4REA4 network ports (front or rear or via an ethernet switch)

Ensure that your controller computer has a compatible IP address to connect to the 4REA4

The default 4REA4 IP Address is 192.168.1.70 with Subnet Mask 255.255.255.0 and Gateway 192.168.1.254

Your controller computer could, for example, be set to 192.168.1.200 with Subnet Mask 255.255.255.0

Run the 4REA4 application and click on the **System** button in the top left corner.

The connected 4REA4 should appear on the **Connect To** list - If this entry is not displayed, please check your network settings.

Click the **Connect** button leaving the yellow highlighted button as **Pull settings from unit –** wait until the connection process is complete and you will see confirmation message and a green icon appear next to the System button – now click the Main button in the top left corner to proceed with configuration.
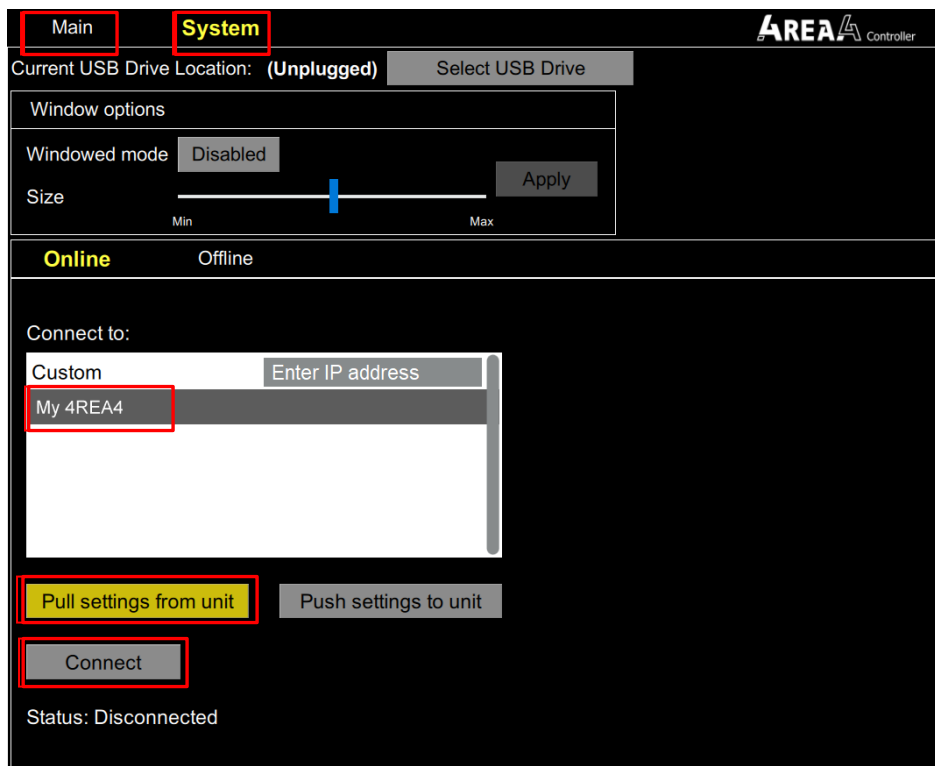
Engine Configuration - Input Channels & Busses

- The 4REA4 A-Core Engine offers 128 Input channels and 48 configurable busses plus 4 Stereo Area Output busses and 4 Stereo Solo busses.
- The configurable busses can be used as Groups, Auxes, FX Sends and Matrices.
- All of these buss types can be Mono or Stereo and a Stereo buss counts as 2 busses from the 48 buss total.
- Mono busses can only be added or removed in pairs
- The audio engine runs at 96KHz and doesn't have an option for any other sample rate.

Control

- The 4REA4 Controller Application which can run under 64 Bit Windows or Mac
- A-Control hardware devices – A-Control 8, A-Control 6 and A-Control 1 – these can control functions such as faders, mutes, solos, aux sends.
- The "APAD" iPad Application – this can control all of the standard channel functions including gain, EQ and Dynamics.
- External GPI triggers from the onboard GPIO ports or the external GPIO unit.

Note: The system is capable of being controlled by up to 40 maximum networked devices with limits on each of the A-Controlller types of 16 ie You could have a maximum of 16 A-Control 1 within the 40 limit.

I/O Devices

NOTE: When using DMI cards and SD Rack (Local) cards in 4REA4, please note that these cards cannot be "hot swapped". Please power down the 4REA4 when inserting or removing these cards

A3232 and AStar

- A168 Stage Box offering 16 Analogue Mic Inputs and 8 Analogue Line outputs
- A164 Wall LCD offering 16 Analogue Mic Inputs and 4 Analogue Line outputs

These are connected via the 4 onboard A3232 ports which can be used singly or as two redundant pairs

Alternatively, they can be connected via the AStar port and AStar unit which provided 4 x A3232 Ports in a remote location.

NOTE: Although the 4REA4 has two AStar ports these can only be used at the same time as a redundant pair connected to two AStar units.

A168 and A164 Wall units can be used in Redundant mode or "Cascaded" in series on a single A3232 port provided that their socket count doesn't exceed 32 Inputs and 32 Outputs

Eg You could connect 2 x 168 devices in cascade mode on a single A3232 port to provide 32 Inputs and 16 Outputs.

Local SD Rack Cards

There are 3 SD Rack card slots on the 4REA4 and these can be populated with Mic Input cards (inc 32 bit version), Analogue Output cards (inc 32 bit version), AES Input cards, AES Output cards and combined AES I/O cards.

NOTE: 32 Bit DAC Cards require card firmware version V16+ to function correctly in 4REA4 – at the time of 4REA4 V1.0 release this version of card firmware is not standard for 32 Bit DAC cards used in SD-Racks.

Please contact support@digiconsoles.com for details of the firmware update procedure

DMI Cards

There are 4 DMI card slots on the 4REA4 and these can be populated with the following DMI card types in Release V1.0

- MADI B or C
- Dante (**Note:** This is a 32/32 I/O device as it is running at 96KHz)
- Aviom
- ADC
- Mic
- DAC
- AES
- Waves (**Note:** There is no control of Waves Multirack from the 4REA4 – this is an I/O only device)

ALSO NOTE: In Release V1.0 the following DMI cards are not supported

- DMI Optocore
- DMI AMM
- DMI ME

1.5 Important Notes for System Administrators

User Logins

When the 4REA4 Controller application is connected to the 4REA4 itself, a user can log into it as an Administrator with a pre-defined password and be allowed to control any/all of its functions.

The person using this Administrator Login will be responsible for setting up other User Logins and giving them permissions to control any/all of the functions.

Logically, at least 4 users will be created to control one of each of the 4 Areas.

The most important thing to note is that the Administrator's method of allocating functionality to different Area users is determined by the channels that are included in each of the Areas.

The buttons at the top of the Controller application labelled Area 1,2,3,4 switch between the views that each Area user will see when they login and these Area users will not be able to select any other Area button than the one that they are permitted to use.

Note: It is critical that, if an Area user is to be prevented from adjusting channels/busses being used in other Areas, that channels and busses are not duplicated in multiple Areas.

If a channel/buss is duplicated in multiple Areas, then one Area user will be able to control that channel/buss even though it is also in use in another Area.

There may be times where having control of a certain channel/buss in multiple Areas is useful but this should be carefully considered.

Controller Channel Assignments

Having established which channel & busses "belong" to a given Area, the Administrator is also responsible for ensuring that the channels/functions assigned to the A-Control units comply with the same rule.

The 4REA4 is not aware of which Area an A-Controller is located in and therefore the A-Controller should only have channel/functions assigned to it that are relevant to its Area location.

This assignment of channels is done via the 4REA4 Controller software and evidently the permission to use that assignment function should only be given to the Administrator and not the Area users themselves.

A similar situation exists with iPad Controllers but the channel assignments for these are setup separately on the iPad itself.

The Administrator will have to login to each iPad individually and ensure that the channel assignment for each Area is appropriate before allowing Area users to login to the iPad.

Once this is done and an Area user logs in, they will be fixed into one Area and be unable to select any other

Note: This Channel assignment cannot be done from the 4REA4 Controller software.

The permissions that have been setup on the 4REA4 Controller for each user will automatically also be applied to the iPad when the user logs in.

Once channel assignments have been established for the 4REA4 Controller application and the A-Control units and the iPad, the rest of the permissions for Area users must be considered.

Permissions

If an Area user has logged in to the 4REA4 Controller software they should, as previously described, only see the channels that are relevant to their Area but they will also see all of the other options and functionality available across the entire engine eg I/O routing, FX parameters, session saving and loading etc.

Using the Permissions system, any user can be prevented from accessing these functions and it will normally be advisable that they should be.

As an example, a standard Area user should be able to control the audio parameters on their own channels and busses and assign any of these channels to their own busses but they should not, for example, be able to assign their channels to another Area's busses.

On the 4REA4 Controller interface, this can be achieved by selecting the Mix function for a buss that is displayed for your Area and then using the channel faders on the channels that have been assigned to you as sends to that buss. If you can't see a buss then you can send anything to it. If you can't see a channel, you can't adjust any of its parameters.

Note: The **Bussing** section of the 4REA4 Controller displays all of the busses and channels and this should be locked out from standard Area users.

Other sections of the 4REA4 Controller software that will probably need to be locked out from a standard Area user because there is a risk that they will interfere with other Areas are:

- General engine configuration such as numbers of busses
- General Buss assignment (as mentioned previously)
- Changes to DMI card global setup parameters
- General network configuration for the controller devices
- Assignment of channels to an Area
- Assignment of channels to an A-Control device
- Switching of input channels from Mono<>Stereo (as this affects the entire engine setup)
- Any I/O routing/patching inc Insert routing
- CG membership and Mute Group changes
- Selection of FX types to be used and the control of any FX parameters (apart from the send return levels to those FX)
- Loading and saving of sessions as this affects the entire engine
- Macro function editing
- Definition of GPIO controls
- Setup of Audio playback from onboard audio files
- Setup of Source Selectors to use with the A-Controllers
- Talkback setup to output busses
- Input Channel and Buss delay settings

Note: This is not a complete list but does contain the most important items.

4REA4 Software Reference Guide

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2. Contents

2.1 User Interface

4REA4 Controller software runs on Windows 64 bit or Mac computers and displays an overview of all channels in the selected Area.

The audio processing and other parameters for these channels can be adjusted by selecting the relevant channel (outlined in yellow) and clicking on the Processing button.

2.2 Processing View
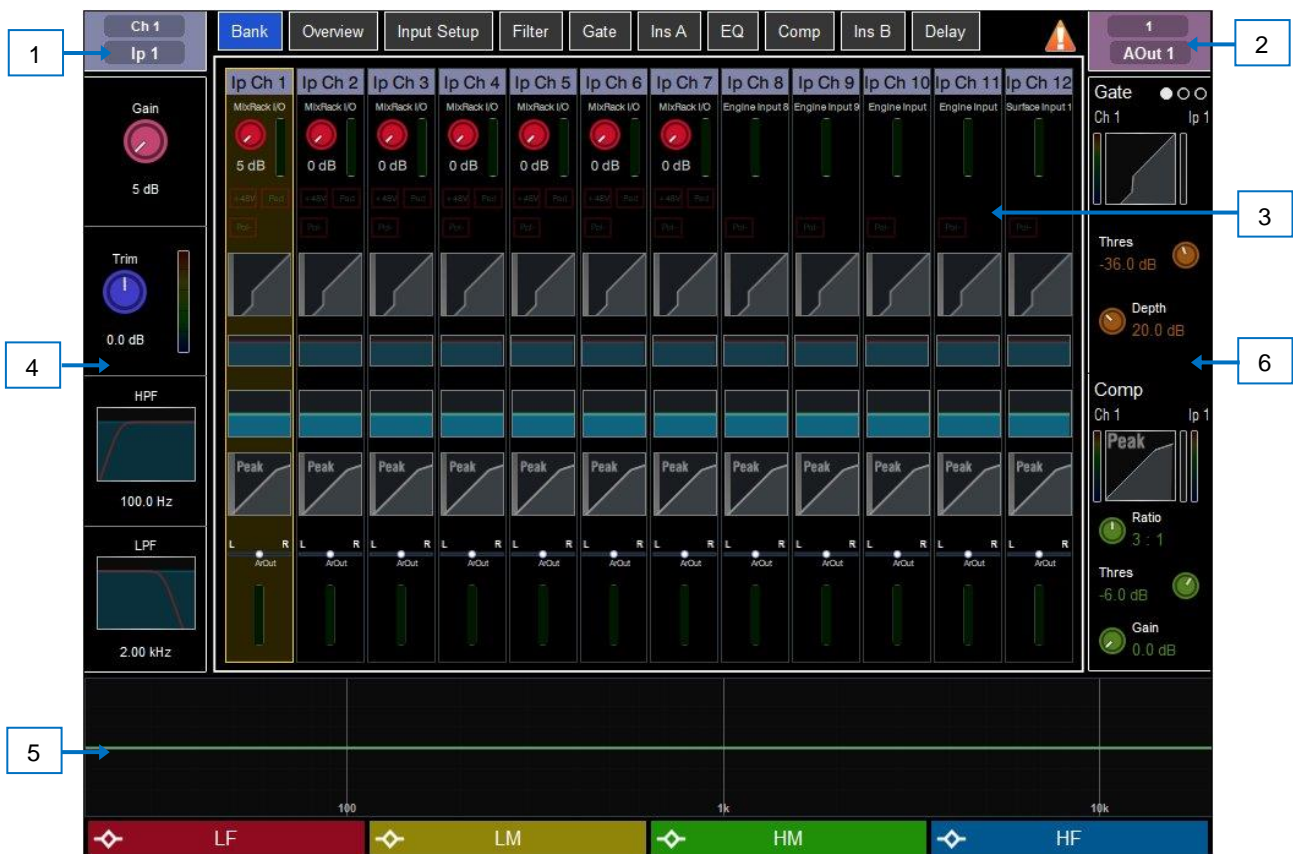
1 **Selected channel** – Displays the name, type and number of the currently selected channel. Click to edit channel name.

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

2 **Active Mix** – Displays the name, colour, type and number of the currently active **Mix**. If a CG Spill is active, 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** button to return to the main mix once you have finished adjusting a mix. Click with the righthand mouse button on a mix buss channel to select/deselect that mix.

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

4 **Input Setup and Filters** – Displays the input 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 CG is selected.

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

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

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

ⓘ The Lower Area configuration is stored in the session, not in snapshot memories.

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

The following views are available in this version of software:

Multiband EQ Graph – Full range EQ 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.

Meters – Scrollable meter-bridge display 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 Input, Mixes and User views.

6 **Soft Rotaries** – Displays the parameters for the assigned controls and meters or thumbnail graphs where applicable. Drag within the display 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 Snapshot memories.

☼ To configure, click the **Setup** button and click this area, drag the required selection from the left to the right of the screen, check for any option or preference, then click Apply to confirm.

The following displays are available in this version of software:

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.
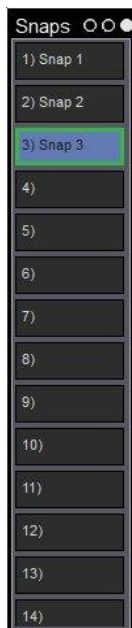
Snapshots

Scrollable snapshot list. Click a snapshot to select.

The selected snapshot is highlighted in blue.

The Next Snapshot is highlighted in green.

2.3 Copy/Paste/Reset, Setup, Solo and Preset buttons

The functionality of these buttons is as follows:

Copy – Click the Copy button and then click 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 - Click the Paste button and then click 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 - Click the Reset button and then click any highlighted area of the screen to reset the associated parameters to factory default. A temporary message will appear at the bottom of the screen to confirm the operation.

☼ **Setup** – Click the Setup button and then click any highlighted area of the screen to configure it. For example, click a display area to set up functions, views or controls. Switching from one display mode to another eg Processing to Bussing will display further setup options.

Solo – Click the Solo button and then click any highlighted area of the screen to solo the selected channel at that point in the signal path. The signal temporarily overwrites the Solo bus and associated meters. Press the Solo Clear button to cancel.

Preset – Click to access the Presets library window for the current page. Presets let you store and recall settings for individual processing blocks such as EQ and Compressor and also for the whole Input or Mix channel. Input and Mix channel processing presets are accessed from their Overview page.

The Presets window shows 3 types of Preset: Factory, User (stored in the 4REA4) and USB (stored in the USB key). Click to select a preset and use the buttons to **Recall**, **Overwrite** or **Delete**. Click **Store New** to store a new preset and use the keypad to type a name. Use the **Utility / Memory / Preset Manager** to organize or transfer your Presets.

2.4 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 Section 3.2 for details on using these keys.

Input channels – Displays name, source type, input meter, gain, +48V and polarity, gate graph, filters, EQ graph, compressor graph, pan and channel meter.

1   Click on a channel to select. The selected channel is highlighted in yellow.

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

3   Pull down the name of a selected Input channel to display details of the sources such as socket numbers. Pull / swipe down again to restore the normal view. Use the **Routing** or **Processing / Input Setup** screen to patch sources.

CGs – Displays name, members (assigned channels) and whether the 'Fader to Zero dB' option is enabled. Use the **Bussing** screen to assign channels.

Mix channels – Displays name, Ext Input, meter (pre-processing), polarity, EQ 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 **Routing** or **Processing / Ext In** screen to patch sources.

2.5 Overview

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

Press the **Preset** button while on the Overview page to access the Channel Presets. Enable the **Recall Input** option to include input socket settings when recalling the Preset. Channel Presets do not store routing, levels or assignments.
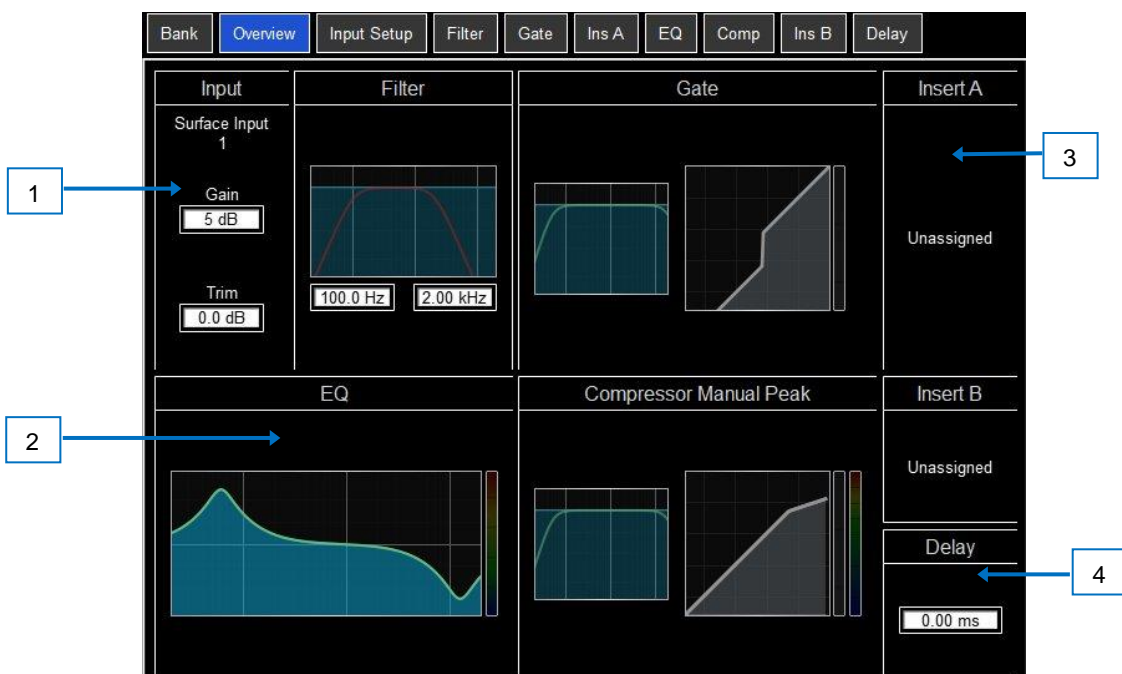
Input channels

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

2 **Processing** – Thumbnail graphs of Filters, EQ, Gate and Compressor complete with sidechain. EQ and filter curves display dim when switched Out. Dynamics display 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 EQ, GEQ and Compressor complete with sidechain. The EQ curve displays grey when switched Out. The compressor graph displays grey when switched Out.

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

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

2.6 Input Setup

The Input Setup 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, click the **Socket** box then drag the mouse over the value to select the required socket or number, then click **Apply**.

Sources that can be patched include Local I/O sockets, DMI card sockets, 3232 device sockets, internal stereo file playback, the output of built-in effects (Rack FX), and the Signal Generator.

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

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

3 **Gain Option** – Lets you choose whether the fader strip rotaries control the Socket Gain or channel Trim when in Gain mode. Turn on **Gain on Channel Strip** for normal operation. Turn it off to prevent accidental Gain changes in situations where the same preamp is shared between different Areas. When off, the dedicated Gain rotary control is disabled and a warning pop-up appears any time the Gain setting is adjusted on screen.

☼ Click **Setup** and click anywhere in the Input Setup screen to access a global setting for disabling Gain on Channel Strip. This affects all channels.

4 **Trim** – Trim provides +/- 24dB control in addition to the Socket Gain or when the source does not have a preamp (for example inputs from a digital source). Trim is part of the channel, not the preamp, and is therefore useful in situations where the preamp is shared between two areas.

When **Gain Tracking** is activated, Trim automatically changes to compensate for gain changes.

☼ Click **Setup** and click anywhere in the Input Setup screen to define a Gain Tracking channel range. This allows the operator to quickly enable or disable Gain Tracking across a range of channels.

A post-Trim signal meter is shown. **Polarity** toggles normal and reverse.

2.7 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, click the **Socket** box then hold and drag the mouse to select the required socket or channel number, then click **Apply**. Socket Gain and Trim controls are shown in this page when an Ext In is assigned.

2.8 Filter

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

1 **Graph** – Click and drag the HPF (orange) or LPF (magenta) 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.

2.9 Gate (Ducker)

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

Press the **Presets** button to access the Gate presets. This includes the option of a channel Ducker to replace the Gate.

1 **Key Input** – Click the **Key Input 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.

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

3 **Gate Settings** – Click and drag in the graph or click and drag on a parameter box to 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.

2.10   Inserts

You can insert external equipment, external plugins, or one of 16 internal Rack FX units into a channel. Input channels provide two Insert points (post Gate and post EQ/Comp).
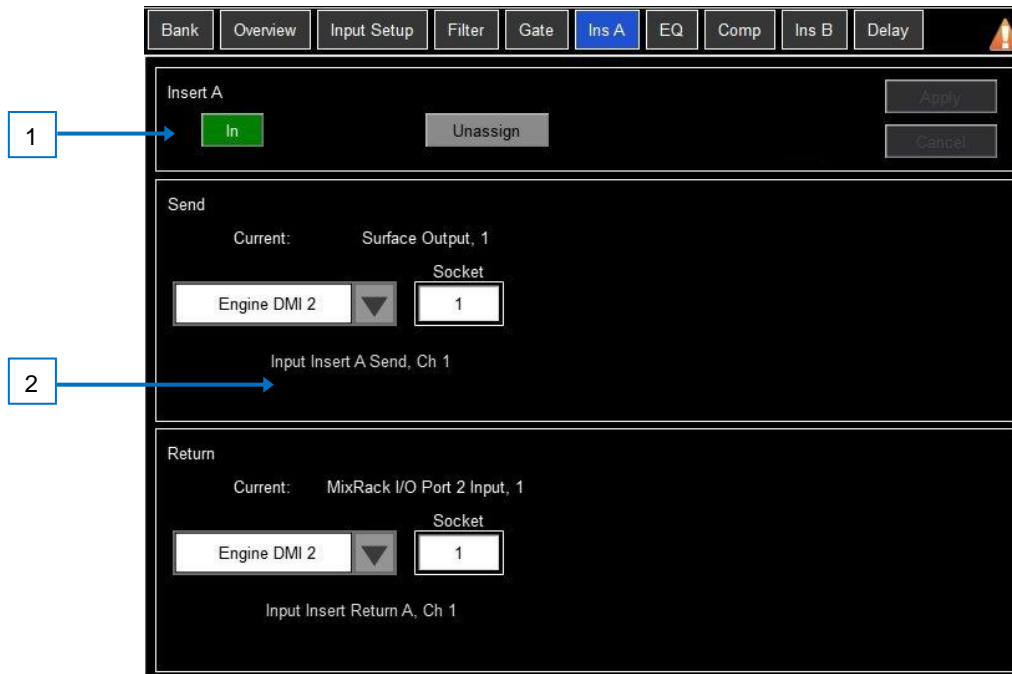
1   **Insert Settings** – Click **In** to switch the inserted device in circuit. Click **Unassign** to clear the current Insert assignment.

1   **Insert Patch** – Use the drop-down menus to assign the **Send** and **Return** to physical sockets, I/O Ports or FX units. Click and drag the boxes to select socket or number. Click **Apply** to confirm.

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

2.11   EQ

The Parametric Equaliser provides 4 fully adjustable bands of equalisation. It can be adjusted using the mouse on the graph by clicking and dragging the parameter values.

☼ Click **Setup** and then click the navigation tabs area to access channel options including the processing order of EQ and Compressor. The default order is EQ first, Compressor next. You can invert the order on a per channel basis or globally.

ⓘ The EQ/Comp order for each channel is stored in Session files. It is not stored in snapshots.

☼ Click **Setup** and then click anywhere in the EQ screen to access the Global channel EQ options the frequency range for the 4 bands may be set globally for all Input or Mixes to be limited or **Full Range**.

1   **Graph** – Click and drag the 4 band dots to adjust their centre frequencies. Click and drag the HPF / LPF dots to adjust their cut-off frequencies. The overall frequency response curve is highlighted when the EQ is switched in and dim when switched out.

2   **EQ 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.

2.12 GEQ

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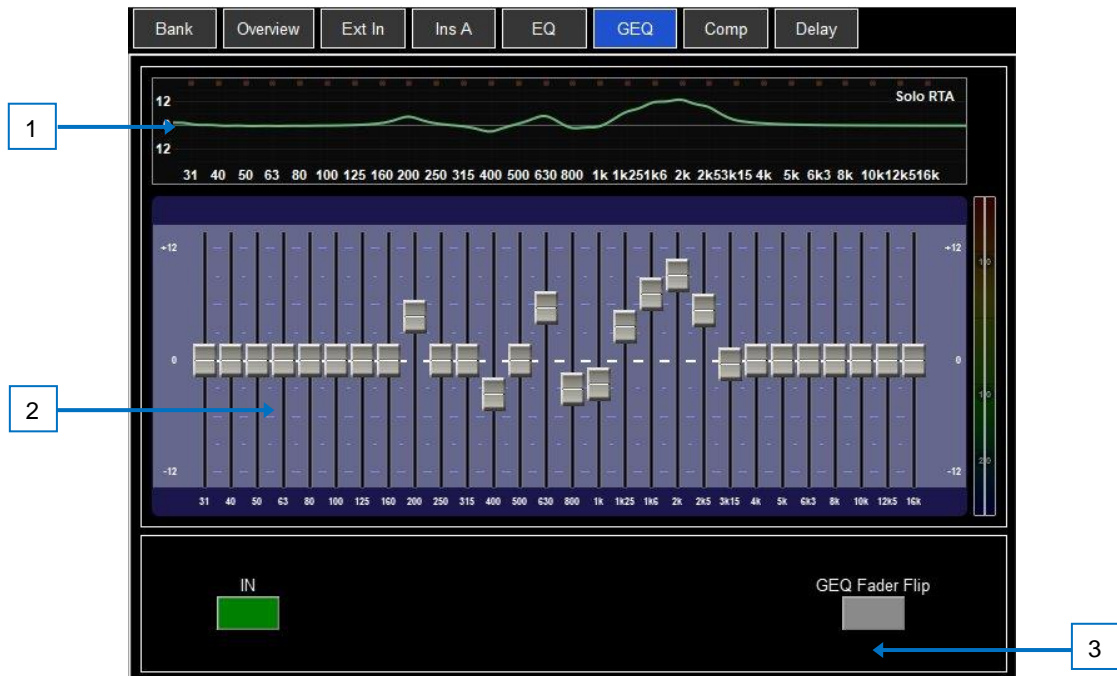
1 **Graph** – The top part of the screen shows the combined frequency response curve of the GEQ. The curve turns green when the GEQ is switched in and grey when switched out. An RTA of the SOLO signal with optional peak band indication is also superimposed on the graph.

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

2 **GEQ Sliders** – Click and hold a frequency slider to select and drag it up / down

3 **GEQ Settings** – Click **GEQ Fader Flip** to control the GEQ with the faders in the main and upper overview displays. 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 SOLO. Press **GEQ Fader Flip** again to toggle between frequency ranges and back to normal mixing.

2.13   Compressor

This page provides access to the channel Compressor settings and sidechain filter.
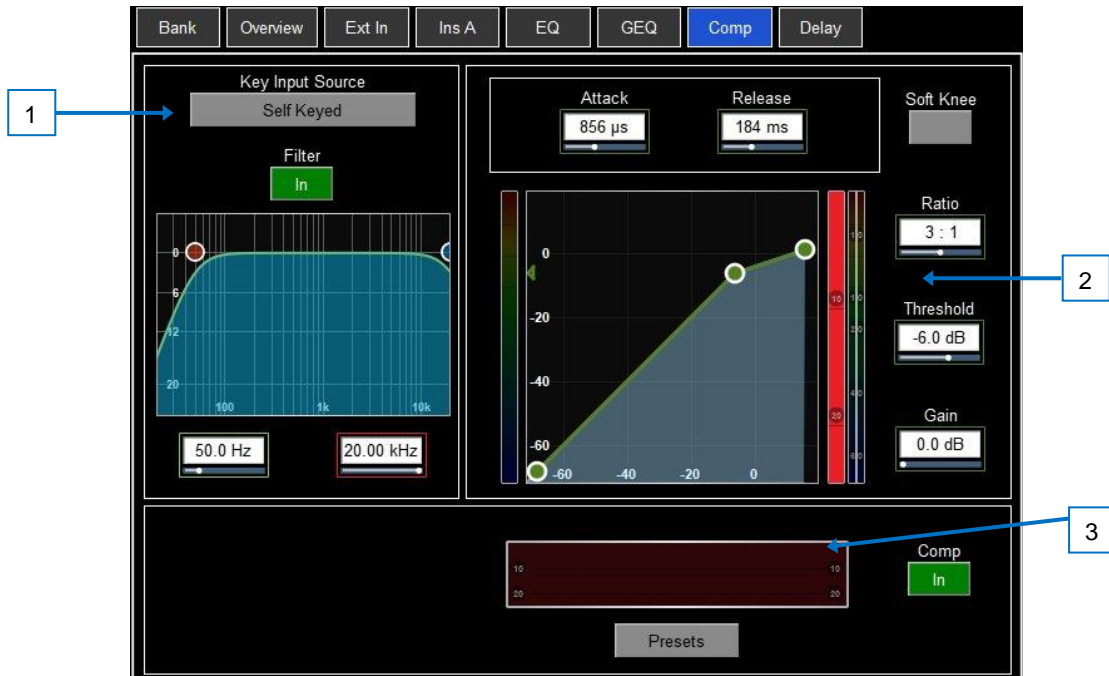
☼ Click **Setup** and then click the navigation tabs area to access channel options including the processing order of EQ and Compressor. The default order is EQ first, Compressor next. You can invert the order on a per channel basis or globally.

ⓘ The EQ/Comp order for each channel is stored in Session files. It is not stored in Snapshots.

1   **Side Chain** – Click the **Key Input Source** box to open a window for selecting the Key (trigger) input to the Compressor. An adjustable HPF and LPF filter can be switched in to limit the frequency range of the Key signal.

2   **Compressor Settings** – Click and drag in the graph or click a parameter box and use the screen rotary to 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.

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

2.14   Delay

The delay settings for all the channels or mixes are shown on this page, with the currently selected channel highlighted. Use the mouse to change its value or click and drag on another parameter box to adjust the delay for a different channel. Click the **In** buttons to toggle the delay in or out. Input delays can be adjusted up to 340ms, Mix delays up to 680ms.

☼ Click **Setup** and then click 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 4REA4 can compensate for the effect on delay.

3. Main screen

3.1 Main User Interface

Note that the **Mix** selection buttons on each channel determine the functionality of the channel faders and the channel strip On/Off buttons.

By default, the Mix button is selected for the current Area's Area Out Buss and this means that all other relevant channels types' fader and on/off buttons will be assigned to mix to that Area Out.

For example, to send an input channel to the Area Out, ensure that the Mix button is pressed (red highlight) for the Area Out channel. Either left click the Mix button in the channel on the lower expanded view or right click the Mix button in the upper section overview.

Now press the On button on the relevant input channel and move the fader up.

Pressing the Mix button on other output channel types eg Group or Aux will assign the faders and on/off switches to that mix so, for example, if an Aux Mix was selected as the Mix target, the channel faders would be assigned as Aux Sends and the channel on/off buttons would be Aux Send on/off.

If a Mix button is selected on an input channel, the faders on the relevant output channels (eg Aux busses) will display and control the level of that input channel being sent to each of those busses.

See the table below for details of possible mix selections and signal paths.

Channel Type	Can be sent to….	Can receive from….
Input	Group/Aux/FX/Area Out	N/A
Group	Aux/FX/Area Out/Matrix	Input/FX Return
Aux	Matrix	Input/FX Return/Group
FX	N/A	Input/FX Return/Group
Area Out	Matrix	Input/FX Return/Group
Matrix	N/A	Group/Aux/Area Out
FX Return	Group/Aux/Area Out	N/A
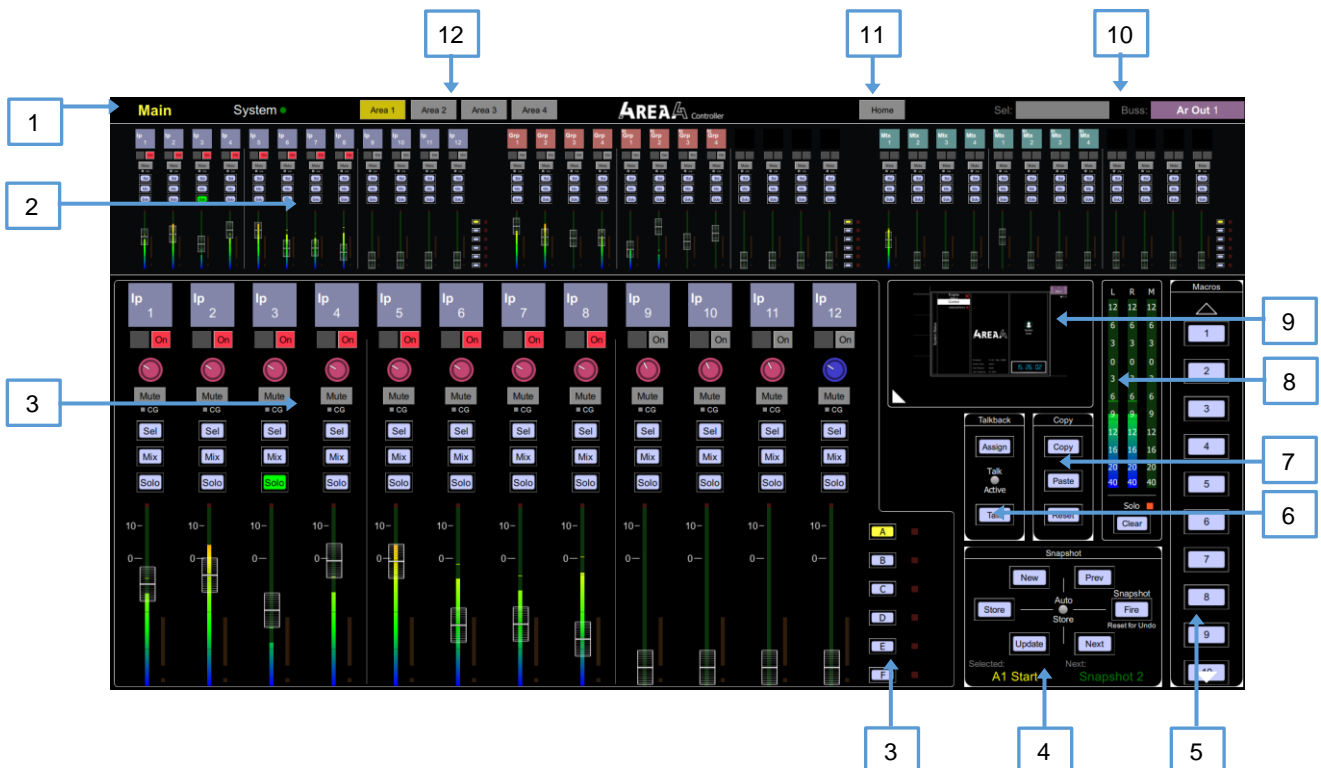
1   **Main & System Buttons** – Toggles UI view between the main view shown above and the system view which provides settings related to the system, such a USB drive location and 4REA4 connections

2   **Bank Navigation** – Displays banks 1, 2 and 3, each bank can be selected to bring it to the main bank view.

3   **Main Bank View** – Displays a single enlarged bank for easy access to faders and various functions, layer selection buttons can be found in the bottom right.

4   **Snapshots Panel** – Displays the selected snapshot in the bottom left and the next snapshot in the bottom right. Also contains various snapshot related controls such as Fire and Store.

5   **Macros Panel** – Displays a list of assignable macro buttons capable of a variety of user functions.

6   **Talkback Panel** – Contains controls related to the talkback such as Assign and Talk.

7   **Copy Panel –** Contains controls which are used to copy, paste or reset various parameters throughout the application.

8   **Solo Meter –** Large meter used to display the current solo level.

9   **Minimised View –** Toggles between an expanded settings view used to display the majority of settings and controls within the 4REA4.

10   **Channel Indicators –** Used to display the currently selected channel (left) and the buss which is currently being mixed to (right).

11   **Home Button –** Displays the home menu.

12   **Area Selection –** Used to select which area the controller screen displays.

3.2 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 **Home** key to come back to this page and present a familiar state of the display controls. Pressing this key will exit from any screen mode or menu, unselect the currently selected channel, make the current area 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. Click the component to display further information.

2   **System Info** – Displays firmware version, current User, and the last snapshot and session 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, and Audio Sync Lock.

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

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

ⓘ If a password is set for the current User, then this must be entered when the User logs in.

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

3.3 User login

The system Administrator can set up to 9 User Profiles to protect settings and restrict access to certain functions. Click **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 **Engine / Config / User Profiles** screen. The Admin User is always displayed. Icons indicate if the User has a password or User Snapshot set. Click a User to select then click **Login** to change User.

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

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

4. 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 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 or any other screen metering.

☼ Click **Setup** and click anywhere in the Inputs or Mix meter tab to set the associated source point. This will affect the main display meters too. Options available for Inputs are Post Gain, Post Gate/EQ, Post Compressor, Post Delay. Options available for Mixes are Post Gain, Post Insert Return, Post EQ, Post GEQ, Post Compressor and Post Fader.

☼ Click **Setup** and click anywhere in a User tab to configure the User view. Click 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.
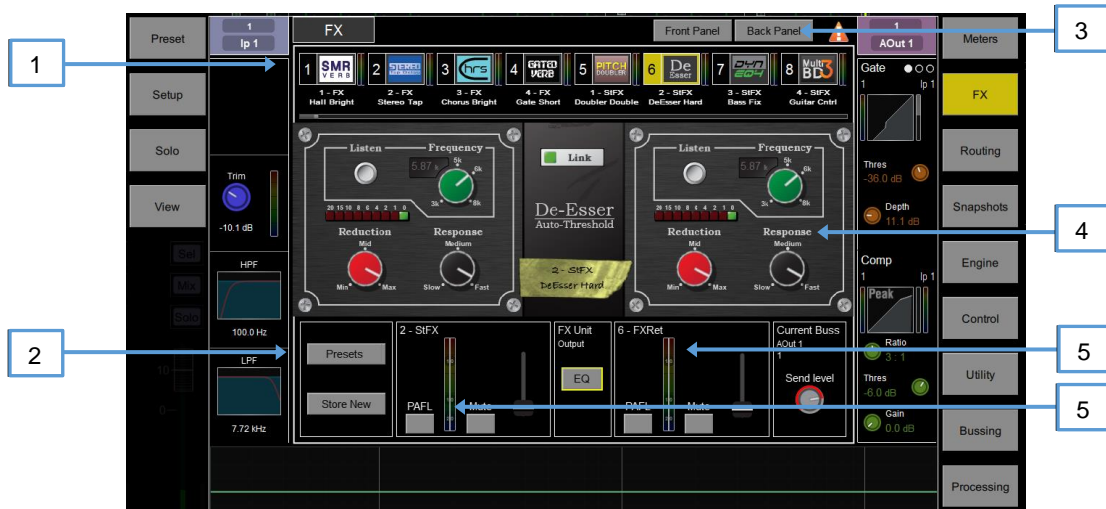

RTA – A 1/3 octave Real Time Analyser for the active solo signal.

☼ Click **Setup** and click 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.

5. FX

The FX screen gives access to the 16 virtual FX slots.

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. Click and drag left to right to view all the FX slots. Click a device or empty slot to select.

2   **Presets** – Click the **Presets** button to access the FX Presets. The Presets 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. Click to select a preset and click **Recall** to load. Click **Store New** to store the current FX settings as a User preset. Click **Overwrite** to update an existing preset with current settings.

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

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

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 Buss->Return, then Solo, Mute, and fader level are displayed for both the send and return. Each FX Return has a 4-band EQ.

Click the **EQ** switch to open the EQ window.

ⓘ The FX Front Panel, presets button and EQ 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.
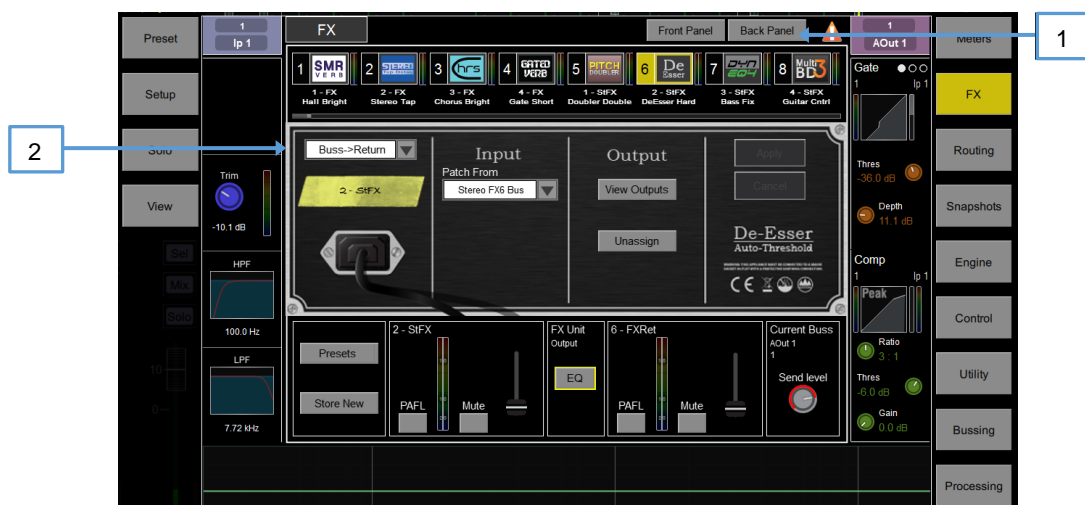
1 **Back Panel** – Use this view to edit the routing for the selected FX. Use the drop-down box to choose between Unassigned, Insert or Buss->Return.

2 **Buss->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 click **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 / Input Setup screen of such channel.

6. Routing

Use this screen to patch inputs and outputs from / to analogue sockets, I/O Ports, A3232 ports, DMI Cards. The patch is presented as a matrix view with red boxes indicating an active connection. Crossed out red boxes indicate an invalid connection, for example when the output is not available in the current system configuration.

⚙ Click **Setup** and click anywhere in the Routing 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) and click 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 screen size when operating the Routing screen.

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

6.1 Inputs

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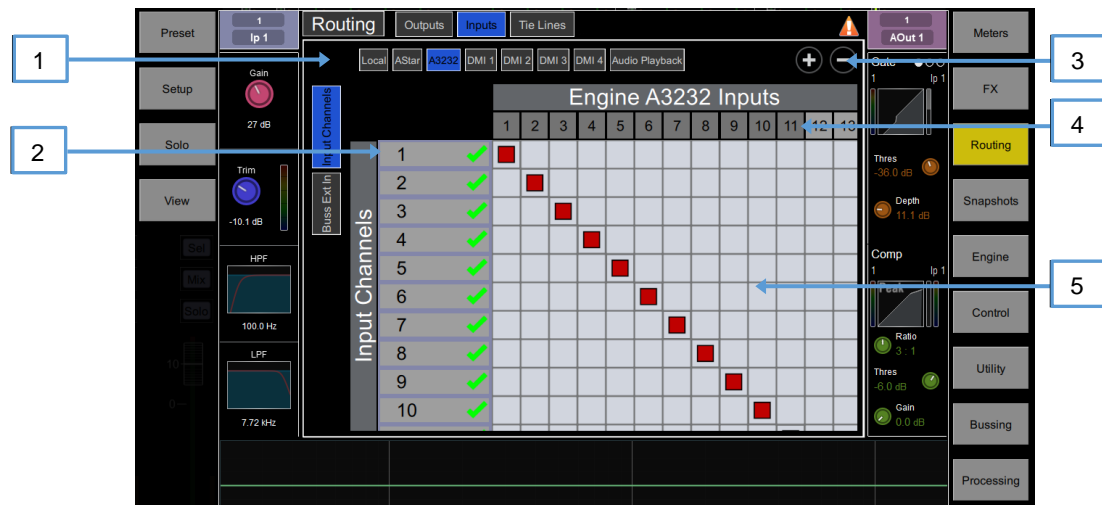
1   **Navigation tabs** – Click an item to present its associated sources or channels to the matrix view.

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

3   **Zoom** – Use the two buttons provided or scroll 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.

Click 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.

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

6.2 Outputs

Patch Mixes, Direct Outs, FX or Solo (displayed on the left) to outputs (displayed on top).
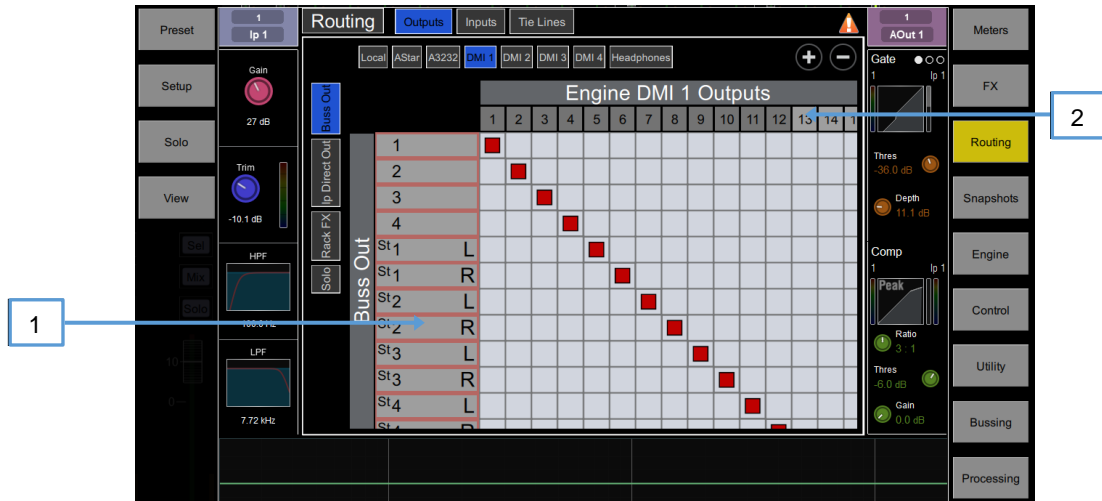
1 **Sources** – Channel names are displayed. Click a channel name or number to edit its name.

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.

Click a socket number to open a window with a list of current assignments and available controls for the socket.

For example, click on a Local AES output to access its Polarity and Sample Rate settings.

6.3 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.
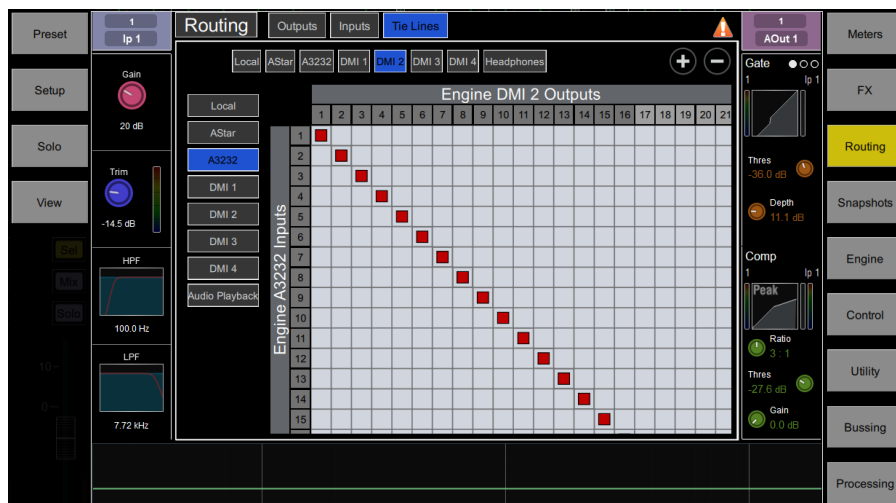
7. Bussing

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

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

1   Aux sends are shown as a purple bar if post-fade, or as a red 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   Click the drop-down menu to select the **Global Direct Output Source.** This setting affects all channel Direct Outputs and can be set to Post Gain, Post LPF, Post Gate, Post Insert A Return, Post EQ, Post Compressor, Post Insert B Return, Post Delay.
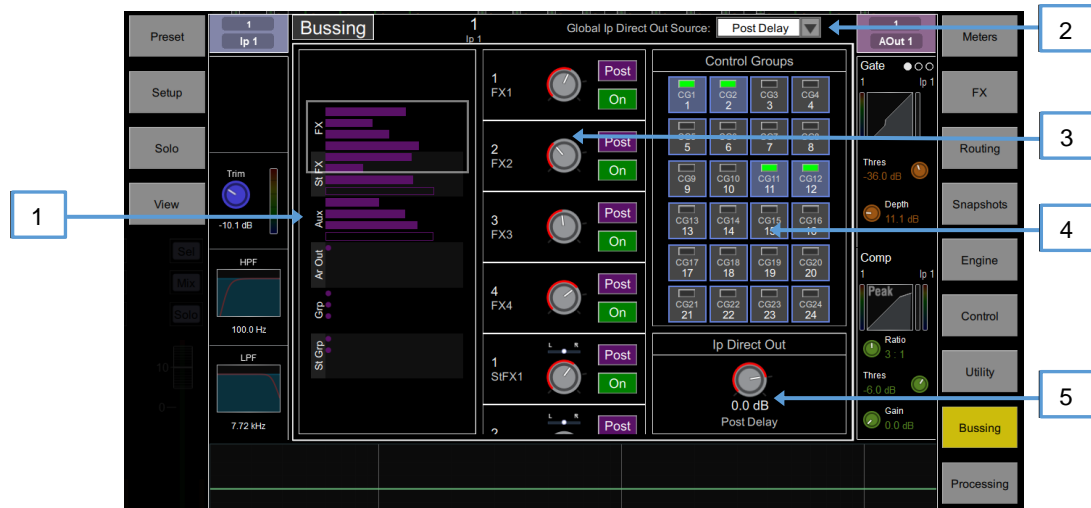
☼ Click **Setup** and click anywhere in the Routing screen to access further options for the Direct Out including **Follow Fader** and **Follow Mute**.

3   Scroll in this area or scroll / click anywhere in the overview area to navigate the controls. Click **On/Off** to toggle the channel assignment to the Area Out, FX send, Aux, or Group. Click **Pre/Post** to switch the FX or Aux send pre-fade or post-fade. Click and drag the rotary control to adjust the send level or channel level to the Area Out. Click and drag a Pan control to adjust the send Pan (stereo sends and Area Out only).

4   **CG assignments** – Click the **On/Off** buttons to toggle the channel assignment to the associated CG.

5   **Direct Out** – Click and drag the control to adjust the Direct Out level. The current source point for the Direct Out is displayed.
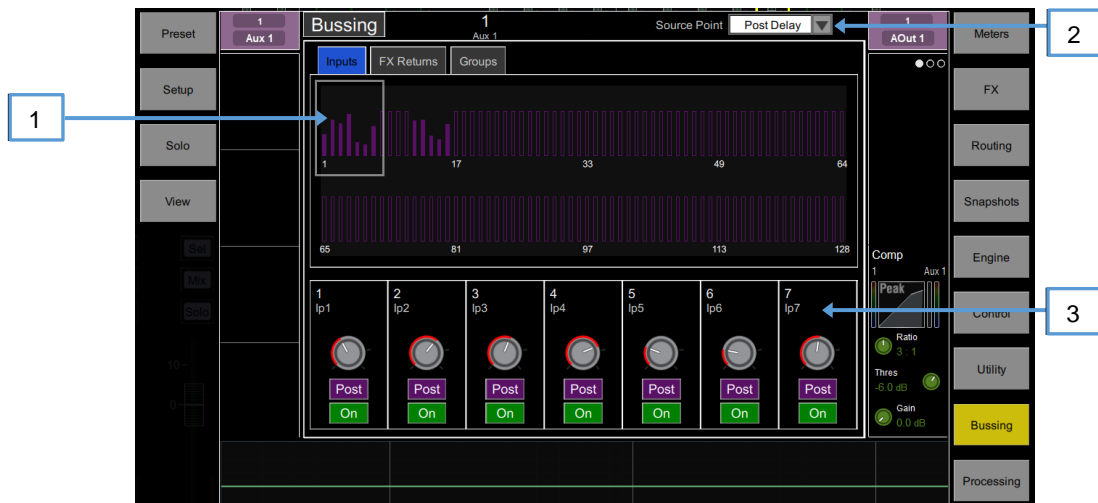
Aux and FX sends – Displays routing and assignments of Input channels, FX Returns and Groups to the selected Mix.

1   **Sends overview** – Sends from Inputs, FX Returns and Groups are shown as a purple bar if post-fade, as a red 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 Gain, Post Insert A Return, Post EQ, or Post Delay.

3   **Routing controls** – Scroll in this area or click in the overview area to navigate the controls. Click **On**/**Off** to toggle the channel assignment to the Mix. Click **Pre**/**Post** to switch the channel send pre-fade or post-fade. Click and drag a rotary control to adjust the channel send level. Click and drag on a Pan control to adjust the channel send Pan (stereo sends only).
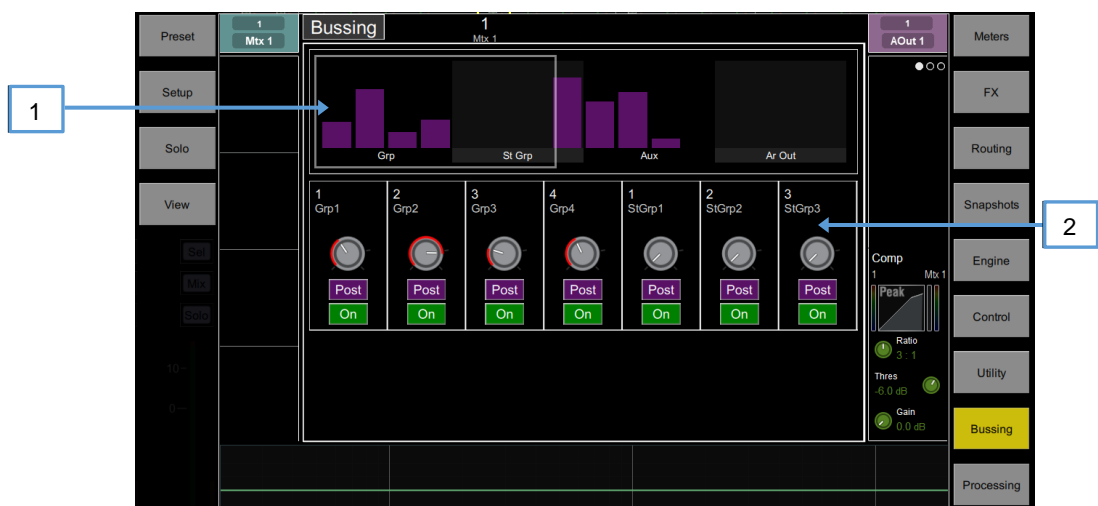
Matrix sends – Displays routing and assignments of Groups, Aux and Area Out mixes to the selected Matrix.

1   **Sends overview** – Sends from Groups, Aux and Area Outs are shown as a purple bar if post-fade, as a red 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 click in the overview area to navigate the controls. Click **On**/**Off** to toggle the Mix assignment to the Matrix. Click **Pre**/**Post** to switch the send pre-fade or post-fade. Click and drag a rotary control to adjust the send level. Click and drag a Pan control to adjust the send Pan (stereo Matrix only).

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

☼ Click **Setup** and click anywhere in the Routing screen to access the **CG fader to 0dB** option. This forces the CG level at 0dB.

8. Snapshots

Use this screen to manage snapshots. Up to 800 snapshots may be stored, and one or more Cue Lists can be created from the snapshots. Global Safes and per snapshot Recall Scopes can be set to block certain parameters from recall.

8.1 Snapshot Manager

Gives access to the snapshot list for editing or recalling.
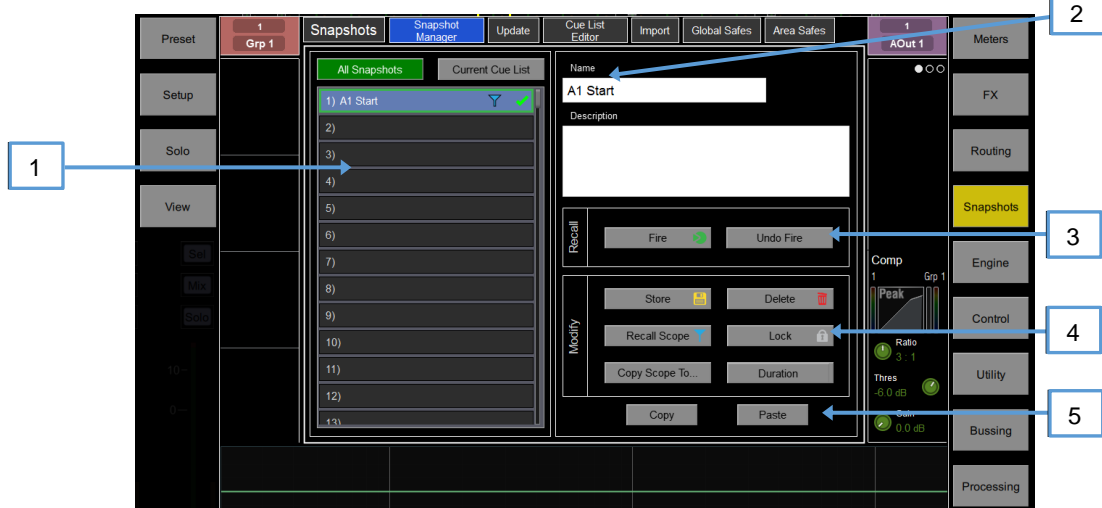
1 **Snapshot list** – Choose to display the list of all 800 snapshots or the **Current Cue List**. The snapshot highlighted in blue is the currently selected snapshot and is displayed in the bottom left corner of the snapshot panel. The snapshot highlighted in green is the next snapshot and is displayed in bottom right corner of the snapshot panel.

Scroll or click and drag up/down and click in the list to select a snapshot. Both the blue and green indicators will move to confirm the selection. Note that the Next (green) snapshot can be selected independently from the current snapshot using the **Prev** and **Next** buttons found in the snapshot panel.

Icons in the snapshot list indicate the following:

✔ A snapshot is stored in this memory location.

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

⟐ Duration is set for this snapshot.

▼ Recall Scopes are set for this snapshot.

🔒 The snapshot is locked.

2 **Name** Click the **Name** box to type in a name up to 20 characters long for the currently selected snapshot. Click the **Description** box to enter a note about the snapshot.

3 **Recall** – Click **Fire** in either the snapshot manager window or the snapshots panel to recall the Next (green) snapshot. This overwrites current settings with those stored in the snapshot being recalled. Click **Undo Fire** to restore the settings prior to a snapshot recall.

4 **Modify** – All these functions affect the currently selected (blue) snapshot.

Click **Store** in either the snapshot manager or the snapshot panel to store current parameters to the snapshot. Press the **New** button in the snapshot panel to store current parameters to the next available (empty) memory location.

You can update only a selection of parameters to the current snapshot or a range of snapshots. Click **Update** to open the Update Snapshot Range window (see below).

Click **Delete** to clear the name, content and Recall Scope of the snapshot.

Click **Recall Scope** to view and edit the Recall Scope settings for the snapshot (see below).

Click the **Lock** button to lock the snapshot from any edit thus preventing accidental changes.

Click **Copy Scope To…** to copy the current recall scope settings to either a single snapshot, a range of snapshots or all snapshots.

You can automate the recall of one or more other snapshots when you recall a snapshot. Touch **Duration** to open the Duration settings for the snapshot (see below).

6   Click **Copy** to copy the content and Recall Scope of the currently selected (blue) snapshot. Click the snapshot you wish to copy to and click the **Paste** button to paste. snapshot names and descriptions are not copied.

✿ Click **Setup** and click anywhere in the Snapshot Manager to access several snapshot management preferences:

Snapshot Overwrite Confirmation displays a confirmation pop-up on snapshot store and when using the Snapshot Manager page. A confirmation pop-up is always displayed on snapshot delete.

Snapshot Recall Confirmation displays a confirmation pop-up on Snapshot Recall when using the Snapshot Manager page. A confirmation pop-up is always displayed on snapshot delete.

Disable Snapshot Buttons Disables all buttons in the snapshot panel to prevent accidental operation.

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

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

Track Embedded moves the Current (blue) highlight to the last recalled snapshot when Durations are set.

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

Select To Fire lets you recall a snapshot simply by selecting its location in the snapshot list. The currently selected snapshot is highlighted in orange in this mode.

ⓘ No confirmation pop-up is displayed when Select To Fire is active. Only use this option if really required.

8.2 Recall Scope

A Recall Scope prevents certain channels or parameters being overwritten by the snapshot recall. It only affects the snapshot it is associated with.

Use the tabs on the left to view the different parameter groups. scroll to zoom in and out of the matrix view. Drag up/down or left/right to navigate through the matrix. Click an item to toggle. Allowed items will be recalled, Blocked items will not.

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

ⓘ Snapshot recall scope can be copied and pasted from the Snapshot Manager window – see for details

8.3 Duration Recall

You can automate the recall of one or more other snapshots when you recall a snapshot. A delay time can be set for each automatically recalled snapshot within the host snapshot.
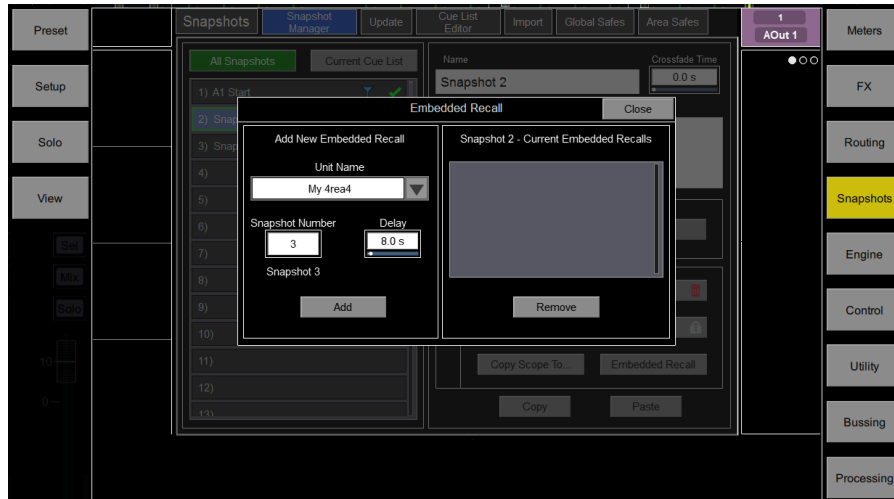
Set the **Snapshot Number** to select the Snapshot you wish to recall. Its name is displayed below the box. Set the **Delay** time for the snapshot recall. This is the time the system waits before recalling the Snapshot after you have recalled the host Snapshot. Time can be set from 0 sec (instant) to 4 minutes. Click **Add** to add the Snapshot to the list on the right.

The list shows the recalled Snapshots together with delay times. Select one and click **Remove** to remove from the list.

8.4 Update

Update parameters in one or multiple snapshots.

1   **Snapshot List** – Click to select the snapshot(s) to be included in the update. Any number and combination of snapshots can be selected from this list.

    A snapshot is stored in this memory location.

    This snapshot will be included in the update – click to toggle.

2   **Select Snapshots** – Quick options to select **All**, **None** or a **Range** of snapshots.

3   **Scope** – Select one of the following options:

Manual – Click to open the **Update Scope** matrix and manually select which parameters to include in the update.

Use the tabs on the left to view the different parameter groups. Scroll to zoom in and out of the matrix view. Click and drag to navigate through the matrix. Click an item to toggle. Items highlighted in green will be updated, all other items will be ignored. Click the **+** and **–** symbols to show and hide nested parameters.

Click a parameter label on top of the table to toggle one parameter for all channels. Click a channel label on the left to toggle all parameters for one channel. Click **Update All** to select all items, or **Update None** to deselect all items.

Auto Tracking – This option tracks all parameter changes made by the user. After making the desired changes to parameters you can Apply these changes to the selected snapshot(s).
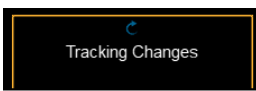
This pop-up indicates the system is in Auto Tracking mode and parameter changes are being recorded. Click the pop-up at any time to return to the Update page and **Apply** or **Cancel** the changes

4   **Mode** – Select the update mode:

Absolute - Overwrites the target parameters in the selected snapshot(s) with the current values.

Use Absolute mode to change a parameter in multiple snapshots *to* a fixed value
Example: Change CH1 fader level to 0dB in all snapshots.

Relative - Changes to level parameters (Gain/Fader/Send/Master) are applied relatively to the selected parameters in the target snapshot(s).

Use Relative mode to change a parameter in multiple snapshots *by* a fixed value
Example: Increase CH1 fader level by +3dB in all snapshots.

ⓘ Non-level parameter changes in Relative mode will be applied Absolutely to the target snapshot(s).

ⓘ When performing a Manual-Relative update, only parameters that have changed since the last snapshot recall will be applied to the target snapshot(s).

5   **Update** – Select **Apply** to update the selected parameter(s) in the target snapshot(s). Press **Cancel** to discard the update.

8.5 Cue List Editor

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

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

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

Click **Move Up** or **Move Down** to move the selected snapshot in the current Cue List.

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

8.6 Import

Import allows the user to import one or more snapshots from an existing session into the current session. This might be useful for example in festival situations where snapshots from a guest engineer's session are imported into the current session - without any audio interruption - and then filtered as required.

1 **Local Snapshots** – A list of snapshots in the currently loaded session.

2 **Select Session** – Click to select the Session that contains the snapshot(s) you wish to import.
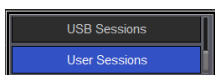
Click on the dropdown menu to toggle between session locations – USB or User.

3 **Selected Session** – A list of snapshots in the session you wish to import from. Drag and drop snapshots from this column into the Local snapshots column to import them into your session.

8.7 Global Snapshot Safes

Snapshot Safes prevent certain channels or parameters being overwritten by a snapshot recall. Contrary to the Recall Scope, this setting is global, affecting ANY snapshot recall. It is typical for certain settings such as macro assignments to be made safe so their settings are global within the session.

Scroll to zoom in and out of the matrix view. Drag up/down or left/right to navigate through the table. Click an item to toggle its state.

Safe items (Indicated by a green tick) will not be recalled.

1 Use the tabs on the left to view the different parameter groups.

2 Click the **+** and **–** symbols to show and hide nested parameters.

3 Click a channel label on left to toggle all parameters for one channel.

4 Click a parameter label on top of the table to toggle one parameter for all channels.

5 Click **All** to toggle all items in the current tab,

6 **Safe All** or **Safe None** to affect all items in all tabs.

A red "**S**" in a screen tab indicates that one or more items have been "**Safed**" in that tab.

A green "**A**" indicates that a parameter is "**Allowed**" to be changed by a Snapshot.

8.8 Area Safes

The snapshot list is divided into four sections, each section is associated with a single area and has a total of 200 snapshots. Snapshots 1 – 200 are associated with Area 1, snapshots 201 – 400 with Area 2, snapshots 401 – 600 with Area 3 and snapshots 601 – 800 with Area 4.

An Area Safe prevents certain channels or parameters being overwritten by any snapshot recall which is not associated with the selected area. This allows an engineer to quickly safe parameters for all snapshots in the current areas section.

Use the tabs on the left to view the different parameter groups. Scroll to zoom in and out of the matrix view. Drag up/down or left/right to navigate through the matrix. Click an item to toggle. "**A**llowed" items will be recalled, "**S**afed" items will not.

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

ⓘ Note that multiple Controller instances on the same 4REA4 will always share the 4REA4 engine settings, including processing and mixing.

9. Engine Setup

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

9.1 Config / Structure

Use this page to reconfigure the architecture of the 48 Mix busses available.
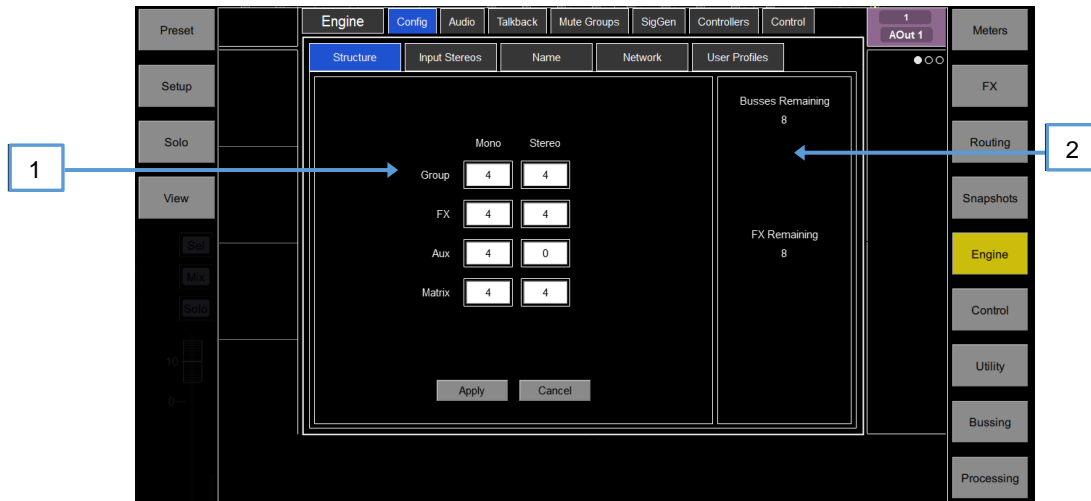
1   **Bus configuration** – Click and drag a box to set the number of mono / stereo Groups, FX sends, Aux sends and Matrix outputs. You can choose any combination but note that mono busses can only be added / removed in pairs.

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

9.2 Config / Input Stereos

Displays the current mono/stereo configuration of the 128 Input channels. Stereo channels are highlighted in green. Click 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.

9.3 Config / Name

Use this page to change the name of a single channel or reset the name of a range of channels. Name of individual channels can be edited from the Processing Screen.

1 **Channel Selection** - Set the channel **Type** from the drop-down menu. Click **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. Click the name box to edit the name when a single channel is selected.

9.4 Config / Network

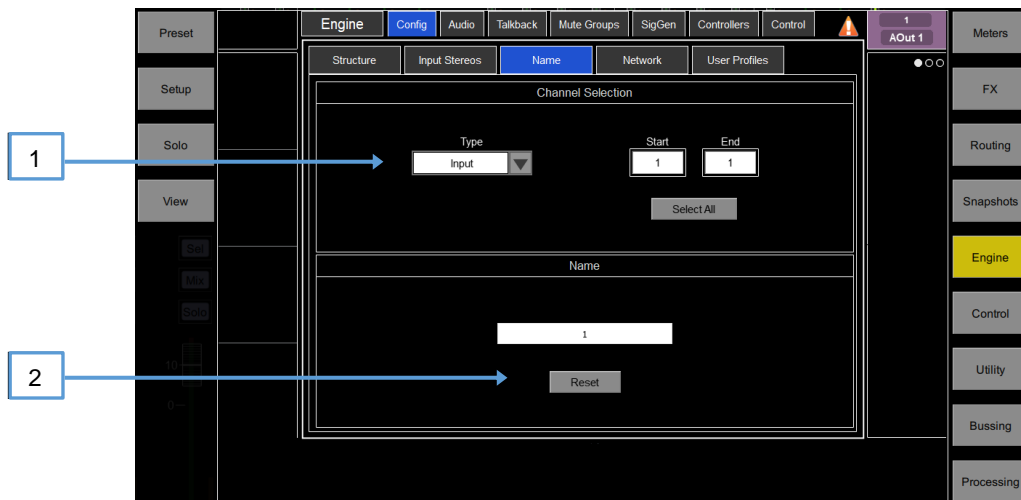Use this page to configure the IP Address and Unit Name to identify the 4REA4 on the network.

1 **IP Settings** – To set a static IP Address, click 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 4REA4 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 clicking the **Reset** button.

Enable **DHCP** to allocate an IP Address to the 4REA4 by a network DHCP server, for example a Wi-Fi router.

ⓘ Only use DHCP when a DHCP server is connected to the 4REA4. If DHCP is enabled and the 4REA4 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 4REA4 on the network. The default is '4REA4'.

3 **Connections** – Displays the number of active network connections to the 4REA4.

9.5 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 or changes User. Icons in the list indicate if a password is set and if the User is active.

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

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

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

ⓘ The User snapshot 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 4REA4 engine. They are not stored in sessions.
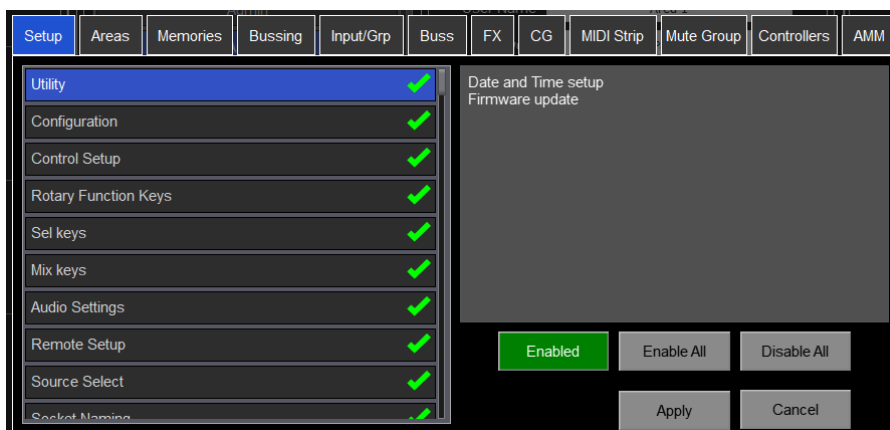
User permissions – Each User can have their own set of Permissions applied. Use the tabs across the top of the window to view and set different groups of permissions. Select an item in the list and toggle the **Enabled/Disabled** button as required. The window on the right provides a description of the functions included in the currently selected item. Use the **Enable All / Disable All** buttons to quickly toggle all items in the currently open tab. Click **Apply** to accept the changes.

ⓘ **NOTE**: These User Profiles and Permissions also apply to the A-PAD 4REA4 iPad App.

9.6 Audio / I/O Settings

These tabs display information on the fitted card in the DMI and A3232 Ports and gives access to any relevant options.
See Appendix D for module specific information.

ⓘ Note that DMI Cards and SD Rack (Local) cards must not be "hot swapped" – to insert or remove cards, please power down the 4REA4 Unit first

ⓘ Note that clock, redundancy and other options for the Dante and Waves DMI cards are accessed by the Audinate and Waves software respectively. Access to these settings is not provided by the 4REA4 interface.

9.7 Audio / Audio Sync

Use the Audio Sync page to set the audio clock options for the system.
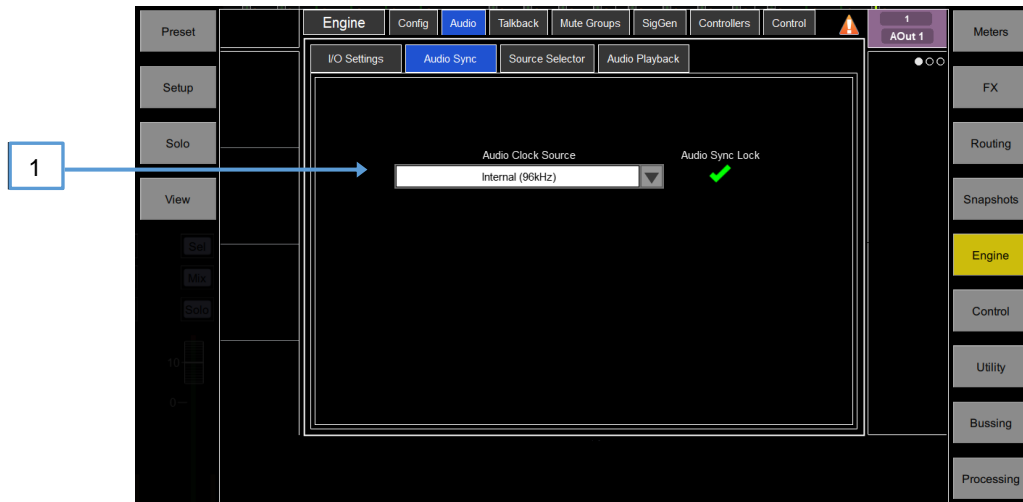
1   **Audio Clock Source** – Select the clock source for the 4REA4 system. Set to **Internal (96kHz)** to use the internal audio clock, this is the default setting. Set to a **DMI Port** to sync from an audio networking card, or **Engine Ext BNC** to sync from a 96kHz Wordclock provided at the BNC input of the 4REA4.

ⓘ 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.

9.8 Audio / Source Selector

The Source Select page allows the configuration of up to 20 Source Selectors, each with up to 20 sources, that can be controlled via GPIO or AC Remote Controllers.

Sources configured in a Source Selector are mutually exclusive on the output Mix. This can be used for example for selection of background music in a room, with automatic crossfades when switching sources.

ⓘ Note that any Input or Group routed to the selected output Mix but not selected as a member will not be affected by the Source Selector. This allows for a priority mic, paging, announcement or alarm system to be always routed to the output Mix regardless of the active source in the Source Selector.
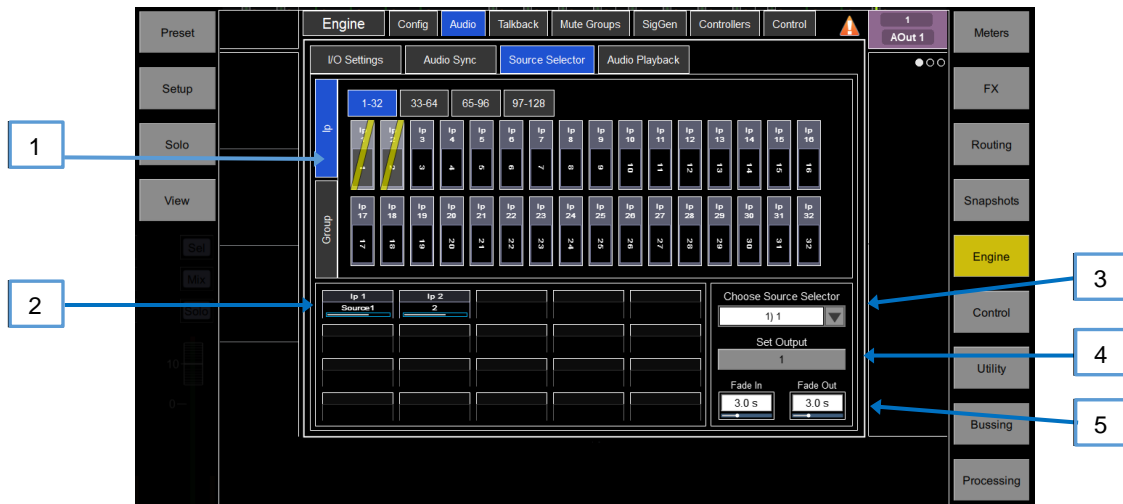
1   **Sources: Inputs / Groups** – Use the vertical tabs to switch between inputs and groups. Drag and drop inputs and/or groups into the lower pane to add them to a Source Select group.

2   **Source selector members** – This area shows the members of the currently selected Source Select group along with the current level. Each group can contain up to 20 sources which can be any combination of inputs and groups.

Once a source has been added to the group, touch the source to specify the name and on-level for the source. The name specified for a source here is independent from the name used for the source elsewhere in the system so you can give "friendly" labels to the sources for the operators.

3   **Source Selector** – Touch to select a Source Select group. Up to 20 Source Select groups can configured.

4   **Output** – Touch to select a stereo or mono AUX or Area Out that is used as the output for the source select group.

5   **Fade In/Out Time** – Set Fade In and Fade Out times between sources of up to 10s.

9.9 Audio / Audio Playback

Audio WAV files can be stored and played by the 4REA4 and used as an input source to any Input channel in mono or stereo.

Files must first be uploaded to the 4REA4 from the computer running the Controller software.
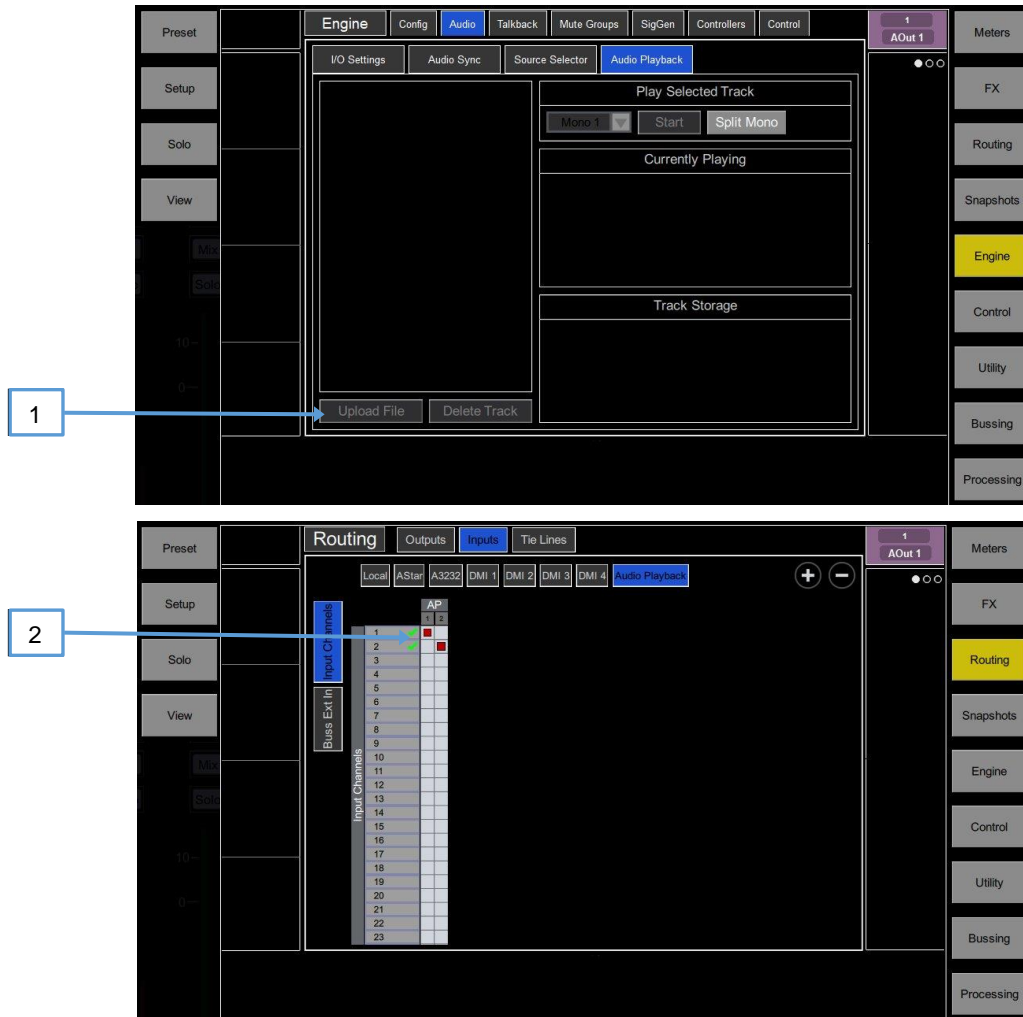
1 With the Controller computer connected to the 4REA4, click on **Upload File** and select the required audio file from the Controller computer's drive – then follow the on-screen instructions to upload the file.

2 When the file has been uploaded it can be routed to an input channel in the **Routing/Inputs** screen and then assigned to an output or buss in the normal way.

Playback can be triggered by the Controller software Macro buttons, the 4REA4 front panel Macro buttons or by a switch on an A Controller device. Assign the **Track Playback** function to the button and select the required track (WAV file) from those available on the 4REA4.

9.10   Talkback

Use this screen to assign and configure Talkback.

Assign – Click 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 Solo on Talkback attenuates the soloed signal while talking to prevent feedback from the engineer's monitor into the Talkback microphone.

2   **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 Input Setup** – Set the source Gain, Trim, Pad and phantom power. You can also make the source **Safe** from snapshot recall.

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

9.11 Mute Groups

4REA4 provides 8 Mute Groups in addition to the 24 CGs. This page lets you assign channels and mixes to Mute Groups and control Mute masters. You can assign one or more macros to control the Mute Groups using the **Engine / Control / Macros** menu.
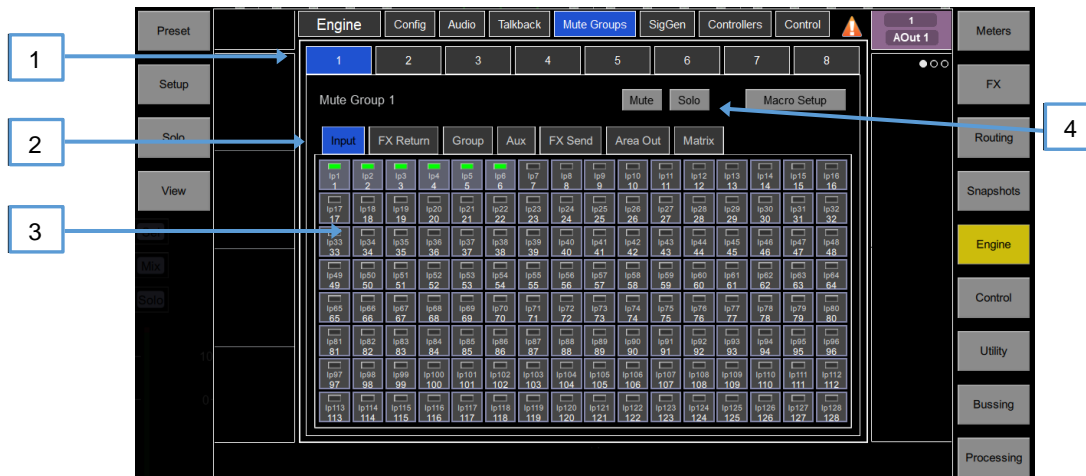
1 Select the Mute Group using the tabs at the top of the page.

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

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

4 Click **Mute** to mute the Mute Group. Click **Solo** to listen to the contribution of the channels assigned to the Mute Group in the Monitor system. Click **Macro Setup** to open the **Engine / Control / Macros** menu should you wish to assign the Mute Group to a Macro.

9.12   SigGen

The Signal Generator provides a test signal to help you align and test components of a sound system.

Assign – Click 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. Click 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.

9.13 Controllers

Up to 8 GPIO modules and 16 A-Control remote controllers per device type are configurable, each with its own assignments and functions.

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

Adding Remote Controllers to the **Engine / Controllers / Device Manager** configures an independent set of controls that can be used with or without 4REA4 Controller Software connection, for applications such as personal monitoring, room control etc.

Add a device to the **Control / Controllers / Device Manager** instead to assign **Sel** and **Mix** keys to the A-Control device and use the remote controller as an extension of the 4REA4 Controller software
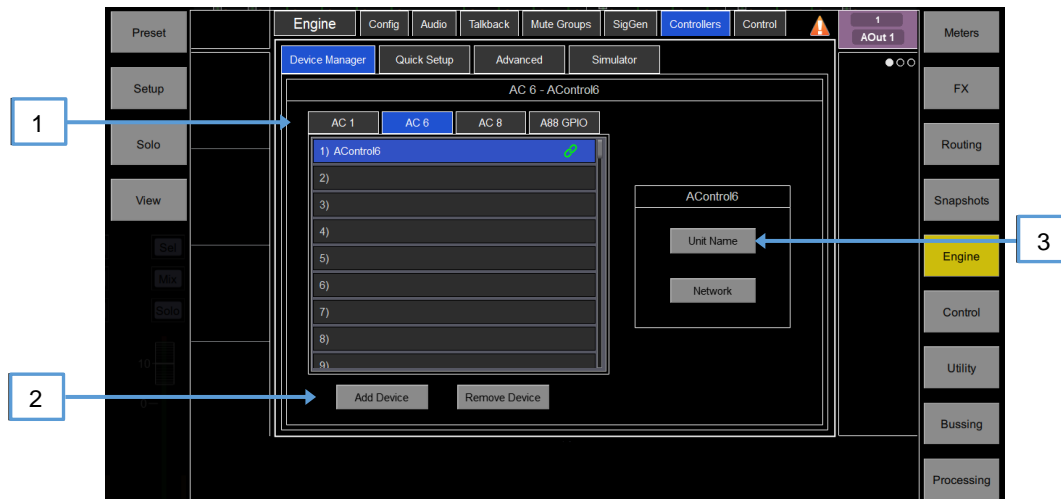
1   Select the device tab using the tabs on top and select one of the 16 locations in the list. The list shows the unit name of assigned devices.

🔗 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 snapshots. 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** – Click to assign a physical AC controller to the selected location in the list.

Remove Device – Click to unassign an AC controller from the selected location.

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

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

AC6 - IP 192.168.1.72 Subnet Mask 255.255.255.0 Gateway 192.168.1.254 DHCP off
AC8 - 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.

9.14   Remote Control / Quick Setup

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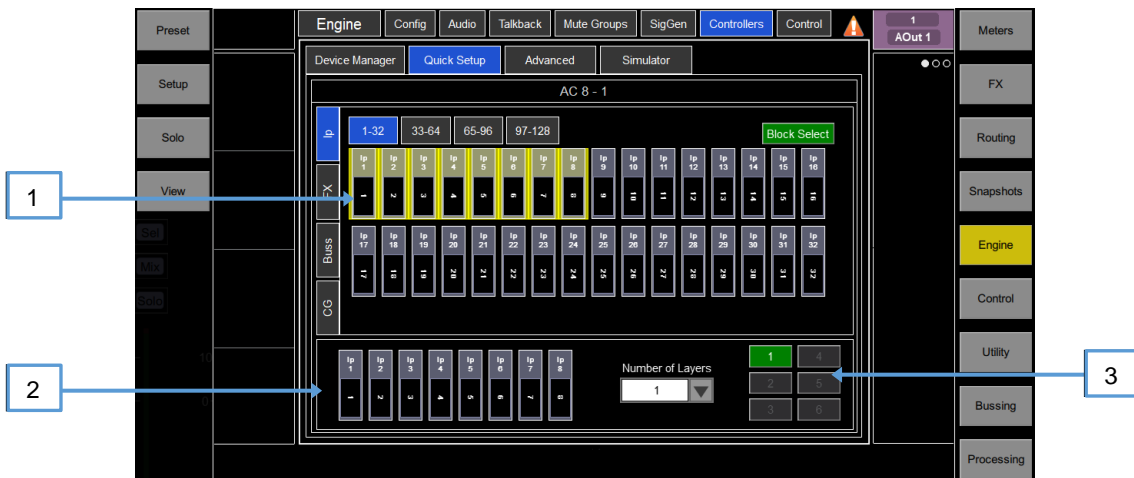
☼ Before you start, click **Setup** and click anywhere in this screen to edit the default settings for Quick Setup. These settings determine the function of the strips at the moment of assigning to the AC device. They don't affect strips which are already assigned.

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 click 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 buttons on the AC Controller will be automatically assigned to the Layer selection.

9.15 Remote Control / Advanced

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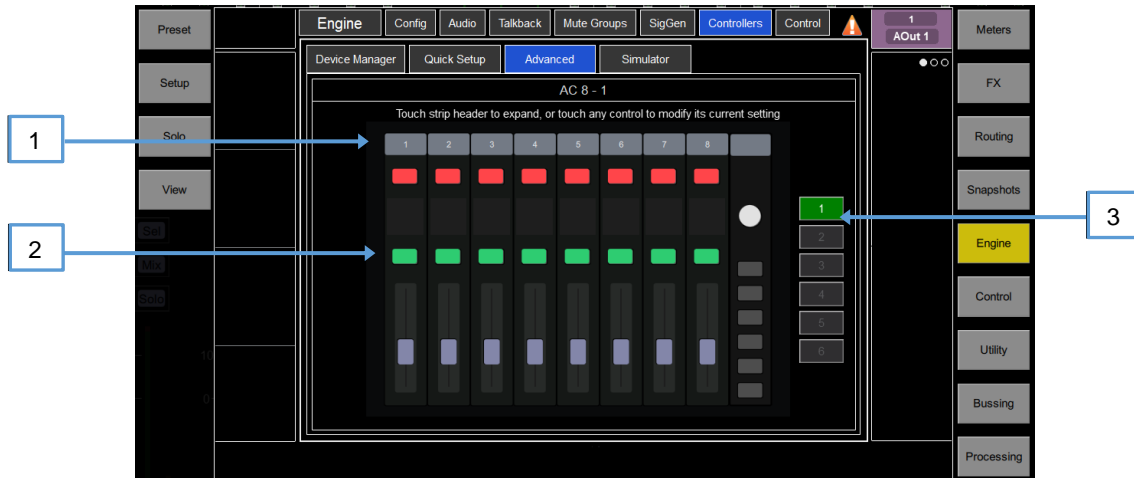
1 Click a strip header to expand the view and display the assigned functions or parameters for the strip.

2 Click a control to assign a function or parameter. Note that the screen will display two rows of rotary controls for the AC6. The lower row is the main function, the upper row is the secondary (push 'n turn) function.

3 Select the Layer you want to edit.

9.16 Remote Control / Simulator

Use this screen to simulate the operation of the selected device.
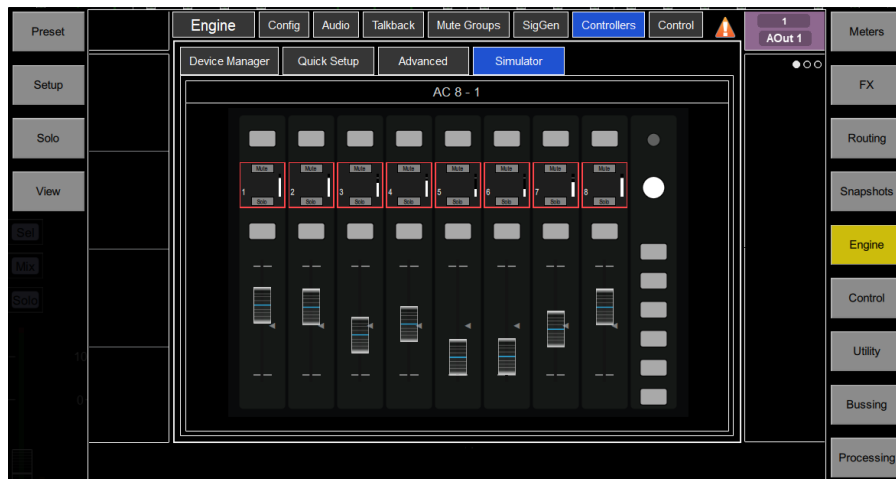
Click a button on the screen to control the assigned function. Click and drag a fader / rotary control to control the assigned parameter.

9.17   Engine / Control

The Engine/Control tab allows access to the setup of the 8 x 4REA4 front panel Macro keys and the onboard Engine GPIO ports.

Setup of the front panel Macros is done in **Engine/Control/Macros/Advanced** and the procedure is the same as the Controller application Macros detailed in <u>Control / Macros</u> in Section 10 of this manual.
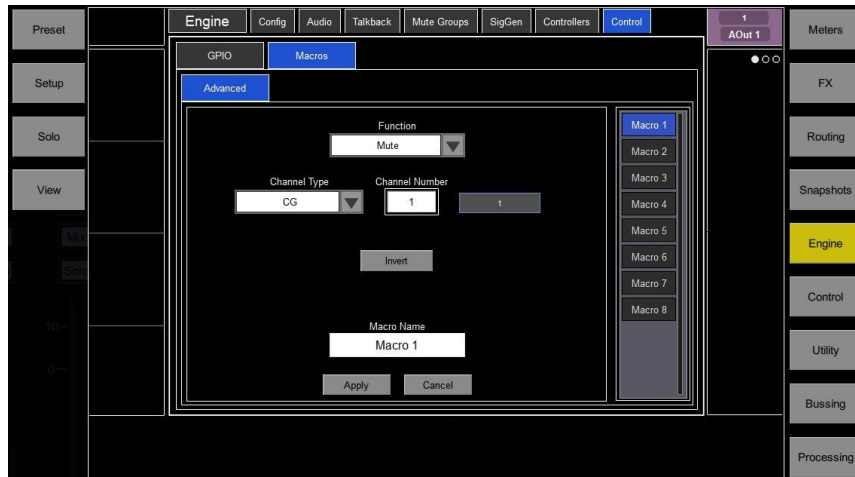
The onboard Engine GPIO ports are configured in **Engine/Control/GPIO/Advanced.**

Click on one of the 8 x on-screen GPIO IN or OUT buttons to open a display where a function can be selected from a drop-down list.

Use the Simulator screen to simulate the operation of the device.
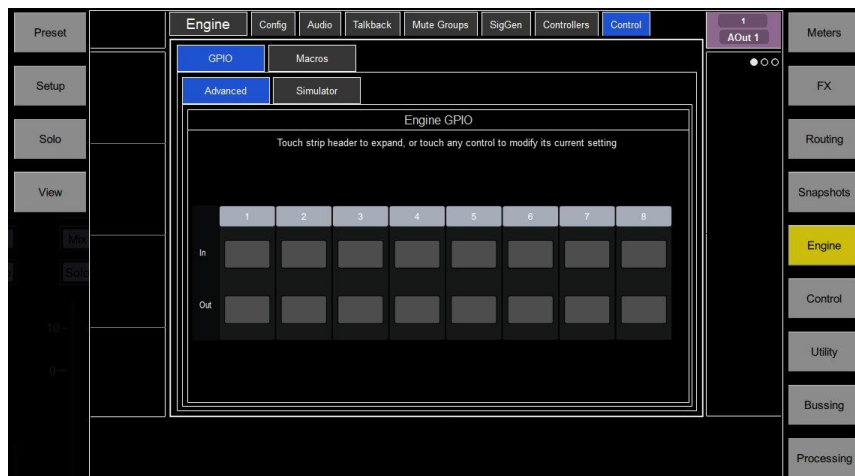
10. Control Setup

These pages let you configure the strip layout, macros, control preferences, CG Spills, audio settings and Controllers' Settings.

10.1   Control / Strip Assign

Any combination of Input channels, FX, Group, Aux, Area Outs and CG strips can be assigned to the 6 layers of faders. This lets you customise the controller layout to suit the application. The layout is stored within snapshots and can be made Safe from snapshot recall.

The factory Template Sessions (see Appendix C) provide an empty layout and 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.
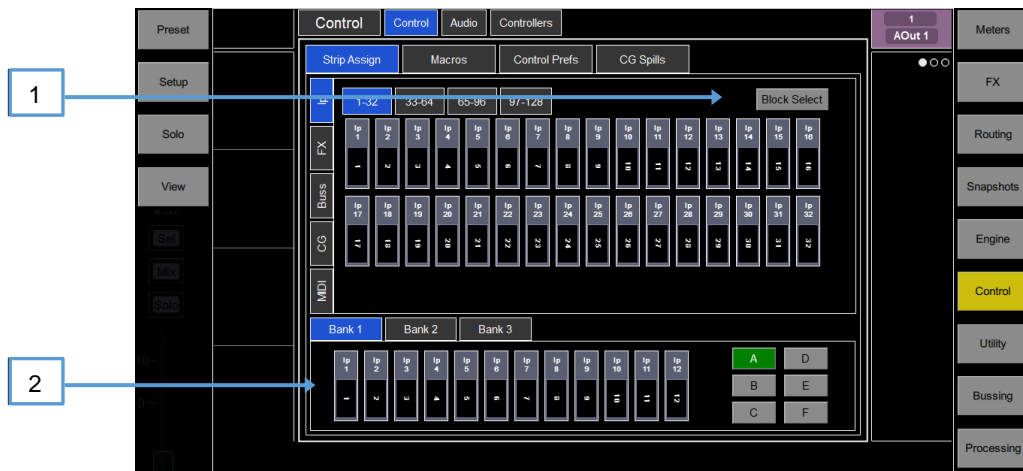
1   Drag and drop channels into the desired position in the lower window. Use the tabs on the left to view different types of channels available, and the tabs on top to navigate to higher / lower number channels.

Turn on **Block Select** and click 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.

☼ Click **Setup** and click anywhere in the Strip Assign page to access the assign preferences. Turn on **Sync Selected Layer with Control** to make the screen follow the active Layer on the Controller software for the selected Bank.

10.2   MIDI Strips (Not yet implemented in V1.0)

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 renamed. They are stored within snapshots and can be made Safe from snapshot recall.

Custom MIDI messages can be assigned to faders, all six rotary functions (Gain, Pan and Custom 1-4), Mute, Mix and Solo keys. To configure the messages click the midi channel and navigate to the Midi Strip menu found in the processing window.

MIDI Strip – Click the top left box to set name and colour for the MIDI Strip. Click 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 Sessions 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>

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

10.3   Control / Macros

4REA4 Controller provides up to 26 assignable keys on the right of the application.
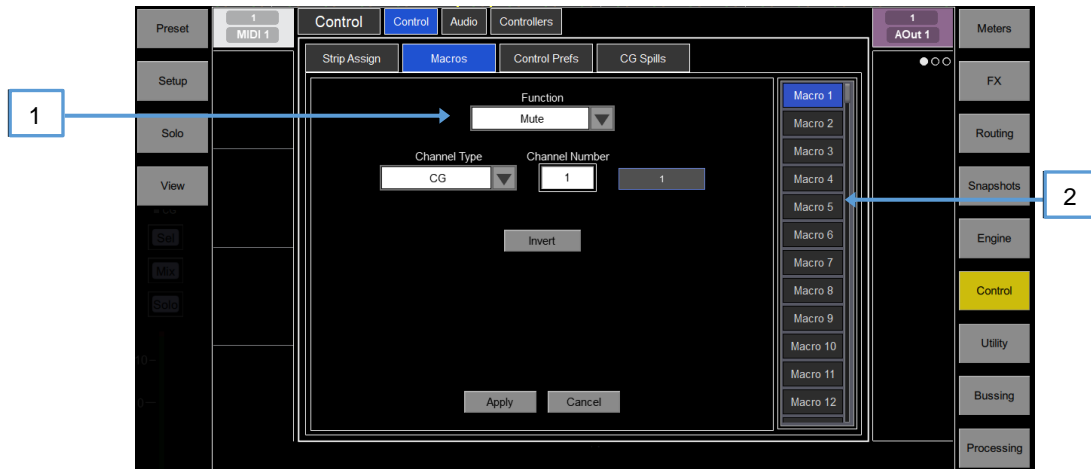
1   Open the **Function** drop-down menu and select the function to assign. Set the **Channel Type** and **Channel Number** to select the required channel (only applies to certain functions). Turn on **Invert LED** if you want the macro LED to be lit when the function is off. Press **Apply** to confirm the changes.

ⓘ Macro assignments are stored within snapshots. To prevent macro assignments to be overwritten on snapshot recall, you can make one, a selection or all Safe using the **Snapshots / Global Safes** screen.

Available Macro functions are as follows:

- Unused
- **Mute** – Mute control for any input channel, bus or CG
- **Sel** – Quick access to processing for a channel
- **Mix** – Quick access to a specific Mix
- **Solo** – Quick access to a selected Solo
- **Solo Clear** – Turns off all currently active Solo keys
- **Sel Mix Solo Snapshot** – Combination on single key, for example to recall a specific per-Mix strip layout when mixing monitors
- **CG Spill Active** – Turns CG Spill mode on/off
- **Snapshot Controls** – Quick access to snapshot controls (Fire, Store etc.)
- **Tap Tempo** - Assign to any of the 16 FX L or R tap
- **Custom MIDI** - Transmit a custom MIDI message string
- **Talkback Assign** - Talkback to different outputs
- **Mute Group** – Mutes/unmutes the specified Mute Group
- **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
- **Fader On/Off** – Intended for triggering GPO messages
- **Fader Start** - Intended for triggering GPO messages
- **Track Playback –** Press to start/pause hold to stop ready to start from the beginning.

2   Click one of the Macro buttons on the right of the screen to select it. Drag up / down to scroll.

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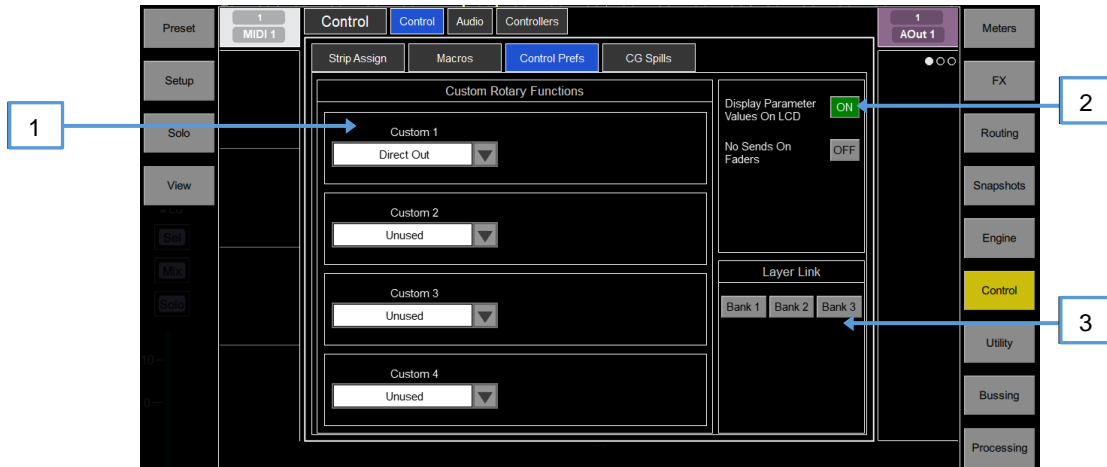
1   **Custom Rotary Functions** – Use the drop-down menus to select the required **Function** for each Custom strip rotary control. Available functions are Unused, Direct Out, Send Level (Aux or FX sends), HPF Frequency, Compressor Threshold, and Channel Level. Click **Apply** to confirm the change.

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, or the **Bussing** screen.

3   **Layer Link** – Click 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 Group (CG) Spills

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

The CG Mix function can be assigned to Macros, which allows spills to be used when CG strips are not in the active Layer.
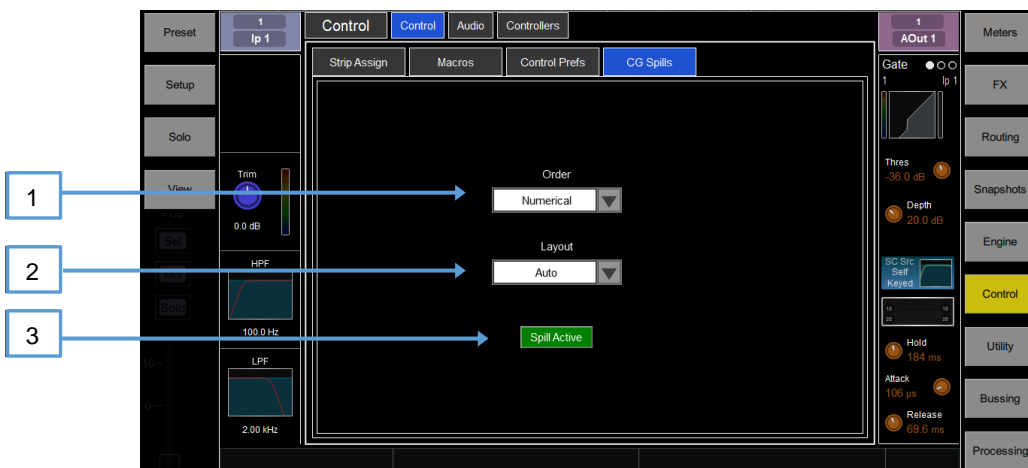
1   **Order** – The order in which the channels are displayed on the Surface. Set to **Numerical** to follow the channel number, or **Strip** to follow the order of the strip layout at the moment of the spill.

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

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

10.6   Audio / Solo

Set your preferences for the solo monitoring system.

The strip solo key operates in the following way:

- Input solo overrides mix solo
- Releasing input solo restores previous mix solo
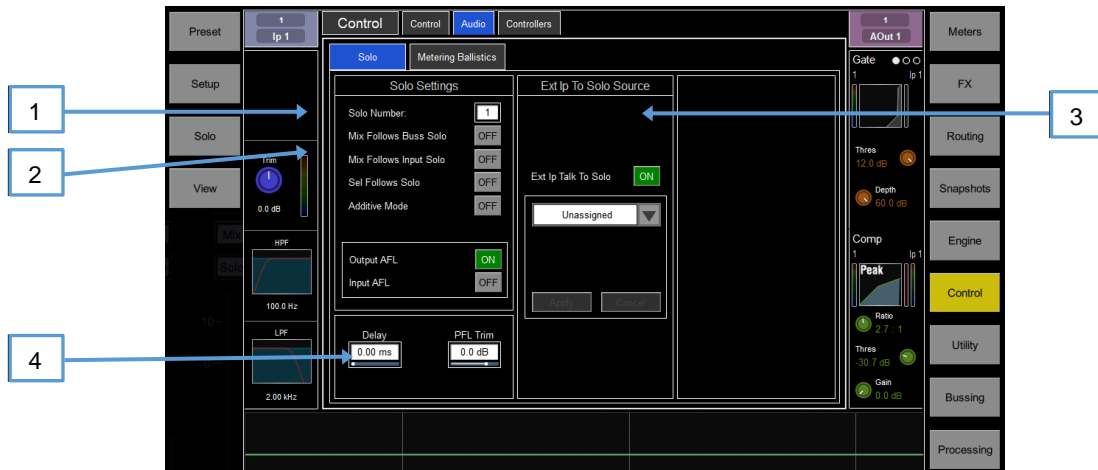
1   **Solo Number** – Set the solo bus that the 4REA4 will use for the monitoring system. This affects the function of the solo keys, Listen key, and audio to the 4REA4 headphones.

When more than 1 solo bus is configured in the **Engine / Config / Structure** screen, multiple operators can share the same 4REA4 system whilst using different solo busses.

ⓘ The 4REA4 headphones output is defaulted to solo bus 1.

ⓘ The **RTA** function is fixed to solo bus 1

ⓘ **Delay**, **PFL Trim** and **Ext Input to Solo Source** are available for solo busses 1 and 2 only.

2   **Mix Follows Bus Solo** automatically makes a **Mix** key active when a Mix solo key is pressed.

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

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

Additive Mode sums solo 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 solo keys are pressed.

3   **Ext Ip to Solo Source** – Use the drop-down menu to select and assign an external signal to the solo monitor, for example an I/O Port input for 'shout' communication

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 682ms can be set to align the solo signal with the acoustic sound from the stage.

PFL Trim adjusts the PFL signal from -inf to 10dB. This avoids loud PFL levels in situations where the Mix output levels are low.

10.7   Audio / Audio Playback

Set up and manage stereo playback to a USB key. 4REA4 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.
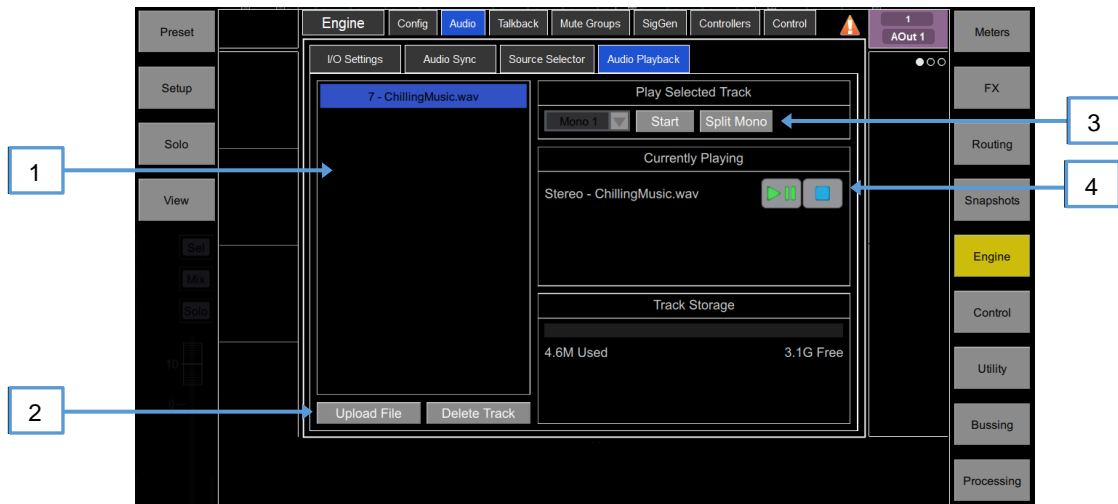
1   Lists the uploaded and available audio files ready for playback.

2   **Upload File** – Use this to search for and upload an audio file for playback

    Delete Track – Removes the selected track from the list.

3   **Split Mono** works in conjunction with the drop down menu allowing selection of Mono 1 or Mono 2 instead of Mono to both outputs.

4   Play /Pause/Stop buttons and displays currently playing file.

10.8   Audio / Audio Sync

1   **Audio Clock Source** – Select the device which should provide audio sync – internal, word clock input or relevant DMI cards.

10.9   Audio / Metering Ballistics

The response of 4REA4 meters on screen can be adjusted to suit the engineer's preference.

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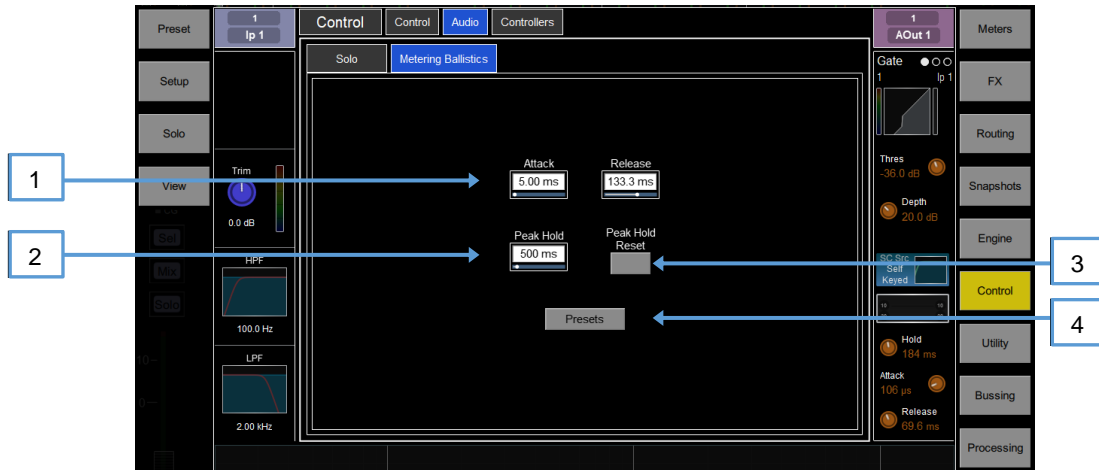
1   Use fast **Attack** and **Release** for fast response, digital absolute peak meters. This ensures you keep control and avoid digital clipping of signals including those with very fast dynamics but note that the meters may read hotter than those on other consoles you are used to.

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

2   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.

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

10.10 Config / Network

Use this page to configure the IP Address and Unit Name to identify the 4REA4 on the network.

1   **IP Settings** – To set a static IP Address, click 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 4REA4 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 clicking the **Reset** button.

Enable **DHCP** to allocate an IP Address to the 4REA4 by a network DHCP server, for example a Wi-Fi router.

ⓘ Only use DHCP when a DHCP server is connected to the 4REA4. If DHCP is enabled and the 4REA4 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 4REA4 on the network. The default is '4REA4'.

3   **Connections** – Displays the number of active network connections to the 4REA4.

10.11 Remote Control

Up to 8 GPIO modules and 16 A-Control 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 sections 10.12 to 10.15 in this Guide for instructions on setting up and assigning IP remote controllers.

Adding Remote Controllers to the **Engine / Controllers / Device Manager** configures an independent set of controls that can be used with or without Director connection, for applications such as personal monitoring, room control etc.

Add a device to the **Control / Controllers / Device Manager** instead to assign **Sel** and **Mix** keys to the A-Control device and use the remote controller as an extension of the 4REA4 Controller software.

11. Utility

11.1   Memory / Session Manager

A session file stores the complete 4REA4 setup. This includes the session structure, system preferences, all snapshots and all presets. User Profiles are not stored in session files. Sessions are stored in the 4REA4 and can be transferred between 4REA4 systems or archived via USB key.

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

Sessions can be overwritten, renamed or deleted. **Template Sessions** provide a quick starting point by giving you a familiar layout to start from. Template Sessions cannot be edited or deleted. They contain a number of default snapshots to reset the Surface layout to the starting point.

ⓘ See Appendix C in this guide for an overview of available Template Sessions.
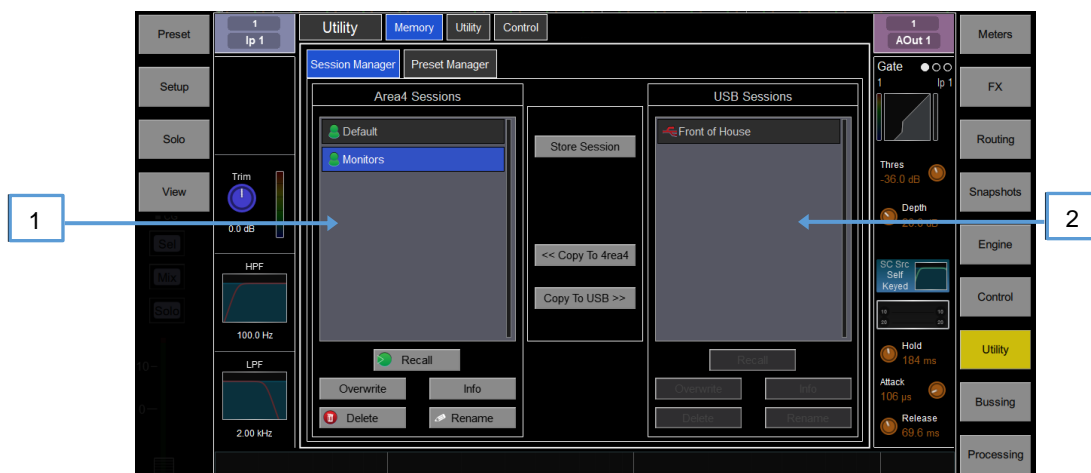
1   **Area4 Sessions** – Lists Template and User Sessions stored in the 4REA4. Click **Store Session** and type in a name to store a new User Session.

Click a session to select it and click **Overwrite** to update it with current settings. You can **Rename** and **Delete** existing Sessions. Click **Info** to display the file size of the Session and the date it was last modified. Click **Recall** and confirm to recall a Session.

When loading a session created in earlier firmware, a message will appear warning you that new features will not be reset. If you select **Yes** to load the session you should then check the parameters of any new features before proceeding to ensure they are set appropriately.

ⓘ Recalling a session overwrites all system settings, bus configuration, snapshots and presets. If you want to keep your current settings for later use, save them first as a User Session.

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

ⓘ 4REA4 sessions stored on systems running more recent firmware will not load on systems running earlier versions. However, earlier versions of Sessions are compatible with 4REA4 systems running later firmware.

2   **USB Sessions** – Lists User Sessions stored in the USB drive. The files are stored in the USB DiGiCo-4REA4/Sessions folder. Click a Session to select it and press **Overwrite** to update it with current settings. You can **Rename** and **Delete** existing sessions. Click **Info** to display the file size of the Session and the date it was last modified. Click **Recall** and confirm to recall a Session.

Select a USB Session and click **Copy to 4REA4** to copy the file to the 4REA4 memory. Select a 4REA4 Session and click **Copy to USB** to copy the file to the USB drive.

☼ Click **Setup** and click anywhere in this screen to access **Session Manager Options**. Enable **Allow Control Only Recall** to only recall the non-engine data from a session. Engine data will not be affected by a session recall when this option is enabled. This option would typically be used when in Multi-Controller mode so that current settings and audio on the 4REA4 and Controller software wouldn't be disrupted when a Session is recalled on the second instance of Controller software. See Appendix E for more information.

11.2 Memory / Preset Manager

Use this page to edit and transfer presets. Presets include Channel Processing, Mix Processing, EQ, GEQ, Gate, Compressor, FX parameters.
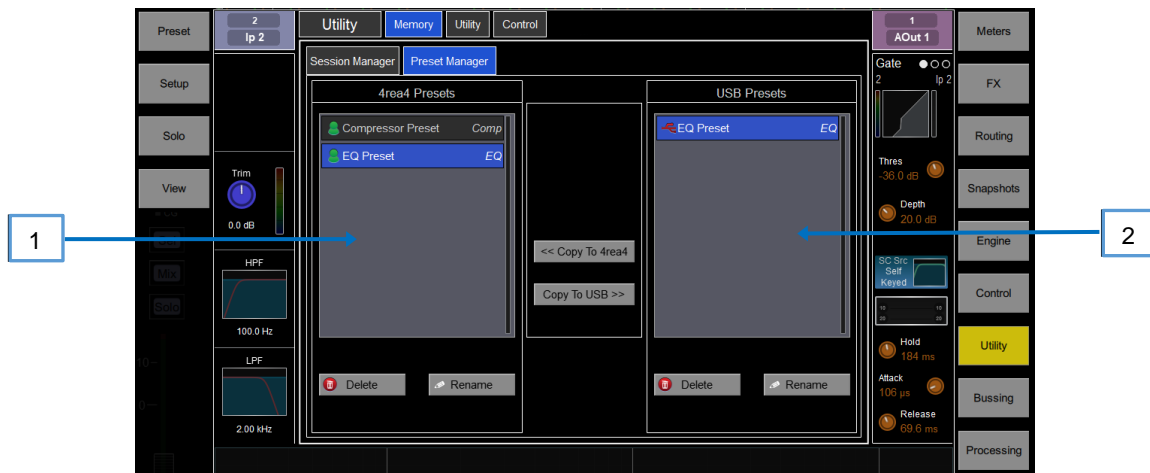
1 **4REA4 Presets** – Lists presets stored in the current session. click a preset to select it. You can **Rename** and **Delete** existing presets. click **Copy to USB** to copy the preset to the USB drive.

2 **USB Libraries** – Lists presets stored in the USB drive. The files are stored in the USB DiGiCo-4REA4/Presets folder. Click a preset to select it. Click **Copy to 4REA4** to copy the preset to the 4REA4 memory.

ⓘ 4REA4 presets are stored within a session file. If you want to use one or more presets in a different session, save them first to USB, recall the session, and transfer the presets back to the 4REA4.

11.3 Utility / History

This page keeps a timed register of events such as system boot up or shut down, when snapshots are recalled, and any error recognised by the system.
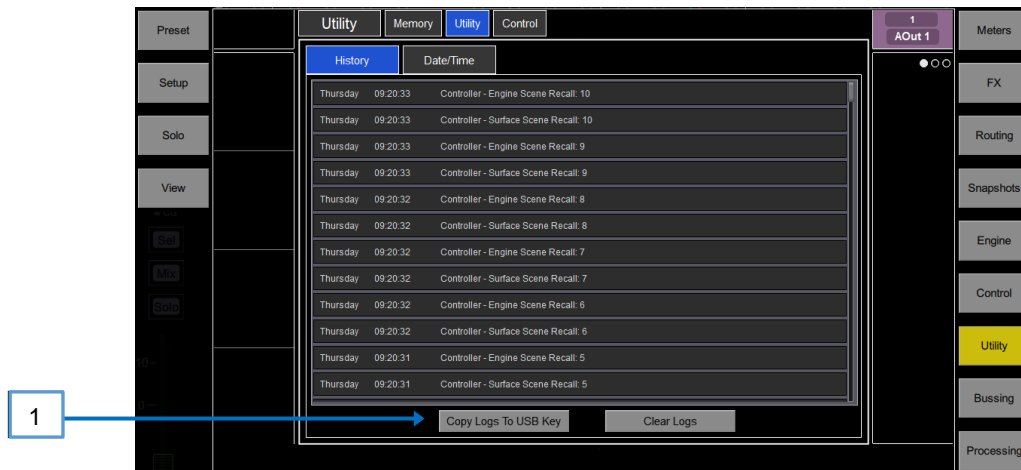
1 If you suspect a problem with the 4REA4 system you can **Copy the logs to USB Key** and send them to support@digiconsoles.com for diagnostic purposes.

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

☼ Click **Setup** and click 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.
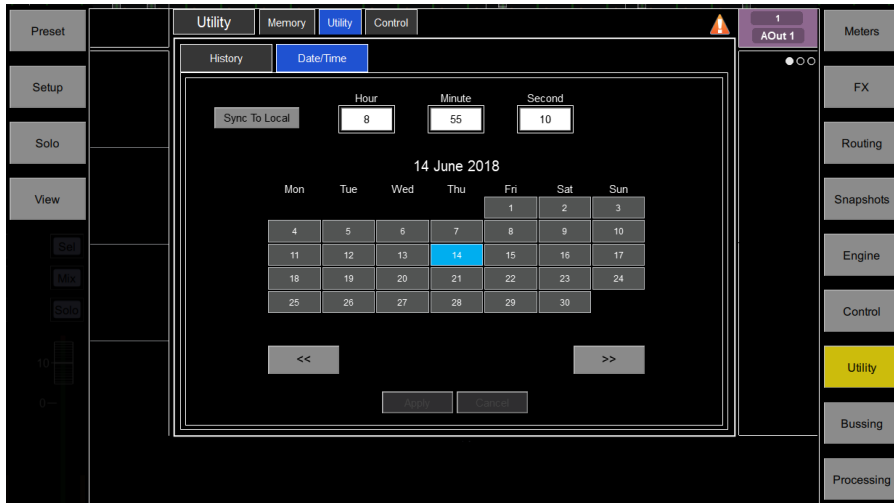
11.5　Control / MIDI (not yet implemented in V1.0)

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 – Rack FX

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

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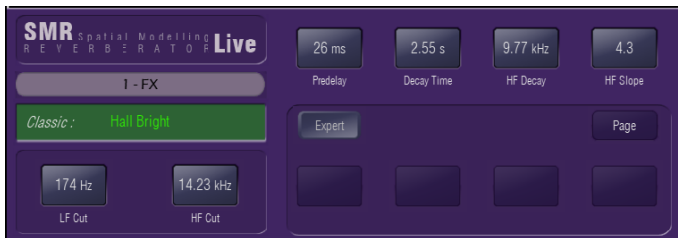
SMR Reverb - SMR Live is a Spatial Modelling Reverberator featuring 4 fully configurable complex spatial models Classic, Hall, Room and EMT. Each of these models use different reflection and decay algorithms to provide natural sound spaces ideal for Live sound.

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.

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.

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.

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.
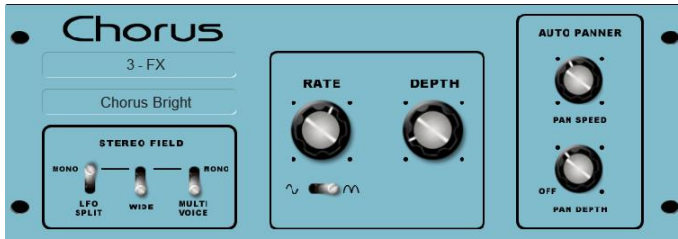
Chorus - Chorus derives from the late 80's where different stereo field creation techniques influenced the sound of each chorusing unit.

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.

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.

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.

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.

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.
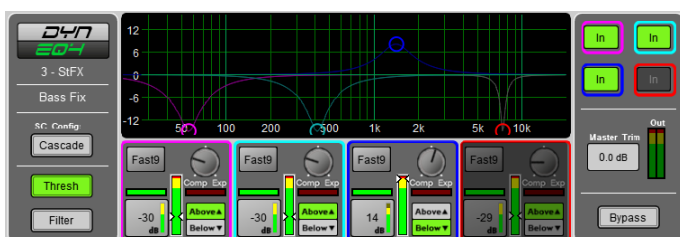

Dynamic EQ - DynEQ4 is a model of the industry standard stereo 4-band Dynamic Equaliser. It is an advanced processing tool providing four bands of equalisation that respond to the dynamics of the signal.

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.
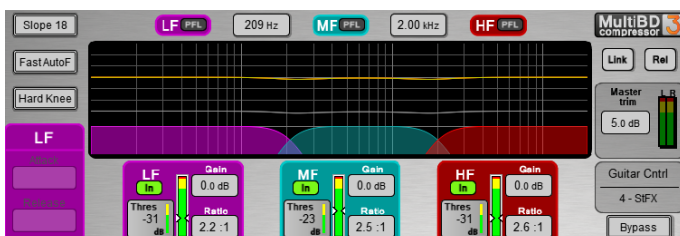
Multiband Compressor - Two multiband compressor types provide independent compression control over different frequency bands. This is an advanced mixing tool for mastering and live sound control. It gives more precise control over the dynamics and less pumping effect than the more common single band 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.

13. Appendix B – Snapshot & Session content

13.1 Snapshots store the following parameters and settings:

Input channels

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

FX Sends, FX Returns

- Level
- Mute
- Routing assignments, sends and Pan
- CG / Mute Group assignments
- Name

Control Group

- Assignments
- Level
- Mute
- Name

Mute Groups

- Assignments
- Mute

MIDI Strips

- MIDI messages
- Name

Mix channels

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

FX

- FX parameters for each unit
- EQ

Others

- AC Controllers settings
- Source Select settings
- Macro settings
- GPIO settings
- Patchbay – Input source, Inserts, Outputs
- I/O Port – Option card settings
- Output Polarity
- Talkback HPF
- Global Direct Out source
- Strip Assigns for each bank
- Soft Rotary controls

13.2   Sessions

Sessions store the following settings:

Current settings

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

Snaphots

- All Snapshots (1-800) including names and descriptions
- Snapshot Recall Scopes
- Global Snapshot Safes
- Area Safes
- Cue lists
- Current cue list
- Snapshot options (Editing Confirmation, Auto Store, Auto Increment, Track Embedded, Fire on Select)

Presets

- All User Presets

Engine Setup

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

Solo

- Solo preferences (Additive mode, Mix Follows Solo, Sel Follows Solo, AFL option)
- Solo Delay and Trim
- External Input Talk to Solo switch and Trim

Others

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

13.3   Settings not stored in Sessions

The following settings are not stored in Session memories. These settings are local to the 4REA4.

- Network settings
- Event logs
- User Profiles

14. Appendix C – Template Sessions

Template Sessions provide a quick starting point by giving you a simple and familiar layout.

They may contain default Snapshots to reset some of the 4REA4 settings such as strip assign layout to a known starting point.

They also have default Snapshot Global and Area Safe settings that will serve as a logical starting point for configurations – these settings can be changed and the sessions resaved as User sessions.

The **"Template Blank"** session has:

- A single Area out assigned to Bank 3 in each of the 4 Areas
- A "Layout" Snapshot in each of the 4 Areas that only affects the Strip Assign in each of those Areas
- **NOTE:** If you use this template session and subsequently change the strip assign layout it is advisable to update the "Layout" Snapshots accordingly.

The **"Template Full"** session has:

- A single Area out assigned to Bank 3 in each of the 4 Areas
- Input Channels 1-128 assigned to Area 1 Bank 1
- A "Layout" Snapshot in each of the 4 Areas that only affects the Strip Assign in each of those Areas
- **NOTE:** If you use this template session and subsequently change the strip assign layout it is advisable to update the "Layout" Snapshots accordingly.

Bus architecture:

- 8 Groups (4 Mono, 4 Stereo) – assigned to Bank 3, Layer 2
- 4 FX Sends (2 Mono, 2 Stereo) – assigned to Bank 3, Layer 4
- 4 Stereo FX Returns – assigned to Bank 3, Layer 4
- 8 Aux (4 Mono, 4 Stereo) – assigned to Bank 3, Layer 1
- 8 Matrix (4 Mono, 4 Stereo) – assigned to Bank 3, Layer 3
- 12 Control Groups – assigned to Bank 3, Layer 5

15.Appendix D – I/O Module Options

ⓘ Note that DMI Cards and SD Rack (Local) cards must not be "hot swapped" – to insert or remove cards, please power down the 4REA4 Unit first.
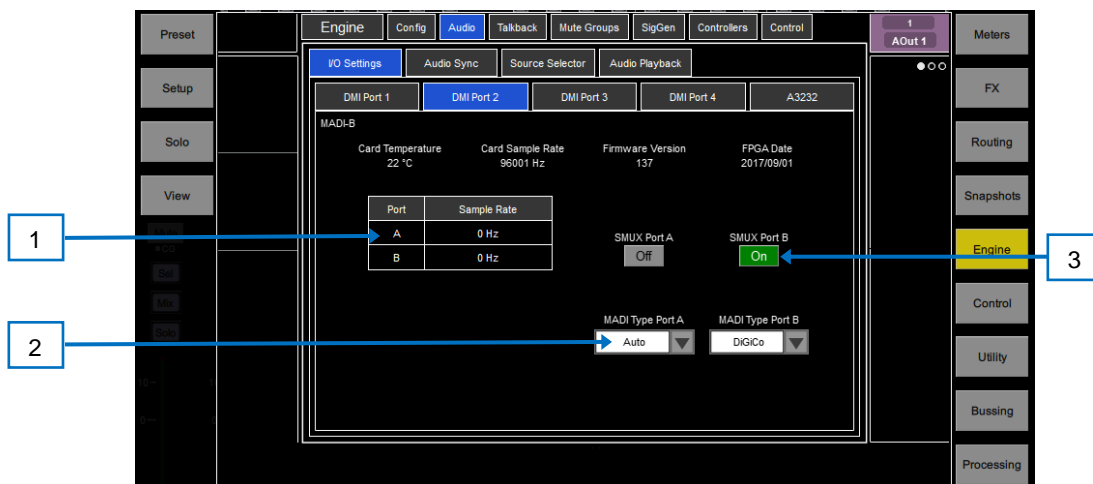
15.1   DMI AES

1 **Input SRC Display** – Enable the **SRC Bypass** option in **Routing** view by clicking on the relevant socket to disable input sample rate conversion on a socket pair basis.

Note that DMI AES Outputs do not have AES Converters and are synced to the system clock

15.2   DMI MADI (B or C)

1   **MADI Sample Rate Display** – Shows the sample rate on each of the two MADI ports

2   **MADI Type** – **Auto (Recommended setting)** – When **Auto** is selected, the DMI card will set its transmit channel count and sample rate to match that of the received MADI stream.

DiGiCo – When **DiGiCo** is selected, the DMI MADI card no longer responds to DiGiCo Ch57 control Data being received from an SD series console but acts as a pass-through device.

Fixed – When **Fixed** is selected, the MADI channel RX/TX count is fixed to 64 Channels and the DMI card will not respond to DiGiCo Ch57 Control Data.

3   **MADI Mode** – There are 2 MADI standards when running at 96 kHz, SMUX (48k frame) and High Speed (true or 96k frame).

96Khz SMUX MADI uses a native 48 kHz clock which the DMI can detects and report. This 48kHz SMUX clock cannot be differentiated from a standard 48 kHz without intervention.

If SMUX Mode is required, the SMUX mode needs to be manually set. This is done by clicking the SMUX box located above each MADI type drop down.

15.3   DMI Dante

DMI Dante card will need Dante Network configuration in addition to its **Sync Source** settings.
All DANTE devices should be configured using Dante Controller which is available from:
https://www.audinate.com/products/software/dante-controller

15.4   DMI Waves

DMI Waves Card will need Soundgrid Network configuration in addition to its **Sync Source** settings.
This is done using either Waves MultiRack or SoundGrid Studio, both of which are available from:
http://www.waves.com/downloads

15.5   DMI Mic

8 analogue Mic Pre-Amps with gain and +48V control

15.6   DMI ADC

16 Line level only analogue inputs on 2 x 25 way D-Sub connectors – there is no gain or +48V control on these cards.

15.7   DMI DAC

16 Line level only analogue outputs on 2 x 25 way D-Sub connectors

15.8   DMI Aviom

16 Output channels at 48KHz (with SRC) supporting the Aviom A-Net Pro16 protocol

15.9   SD-Rack Cards

There are 3 SD Rack card slots on the 4REA4 and these can be populated with Mic Input cards (inc 32 bit version), Analogue Output cards (inc 32 bit version), AES Input cards, AES Output cards and combined AES I/O cards.

NOTE: 32 Bit DAC Cards require card firmware version V16+ to function correctly in 4REA4 – at the time of 4REA4 V1.0 release this version of card firmware is not standard for 32 Bit DAC cards used in SD-Racks.

Please contact support@digiconsoles.com for details of the firmware update

16. Appendix E – Multiple Software Controllers

16.1   Sessions

In a typical Multi-Controller system, each Controller computer would store and recall its own Session independently of other Computers running Controller software. Although the 4REA4 Engine data would be the same in each Controller's Session file, the Controller data would be unique to the Controller that stored the Session.

When loading Multi-Software Controller sessions, the last user to store the Session would recall the Session as normal. Additional users would recall their Sessions in **Control Only Recall** mode to prevent making any changes to the 4REA4 Engine configuration.

ⓘ Enable **Allow Control Only Recall** by pressing **Setup** when on the **Utility / Memory / Session Manager** page – see for more information on Session Manager.

16.2   Snapshots

In a typical Multi-Controller system, each Controller would store and recall its own Snapshots(s) independently of other Controllers.

Each Area is allocated its own set of 200 Snapshots

For example, in a 2 Area Multi-Controller configuration, the Area 1 would have Snapshots 1-200 and Area 2 Snapshots 201-400

As a Snapshot also contains Engine settings, it would be typical to configure scopes to block unwanted Controller and Engine parameter changes when recalling a Snapshot.

16.3   Areas

Up to 4 Areas can be configured, and each Area contains a snapshot range and Area Safe settings.

In a typical Multi-Controller configuration, the Area Safes would be configured on each Controller to allow relevant changes when a Snapshot recall is performed.

ⓘ Changes made to the Mixer Config – for instance adding or removing an AUX, GRP or MTX – would need to be reflected in the Filters for each Area.

17.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
	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

EQ

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

Compressor

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	Thresh, Ratio, Attack, Release, Knee
Type	Manual Peak
Channel Direct Out	Individual Trim (per channel)
Options	Source, follow Fader, follow Mute (global for all)
	Source points globally selectable

Mix Processing

48 Mix Processing Channels + 4 x Stereo Area Outs	Configure as mono/stereo Groups, Aux, Matrix
Mix mode	LR
External Input to Mix	Assignable source
Trim	+/-24dB digital trim
Polarity	Normal/Reverse
Insert	Assign to any sockets, In/Out
	1 insert point per channel: Pre-EQ
GEQ	28 bands 31Hz -16kHz, +/-12dB
Type	Constant-Q
Gain	Frequencies displayed on LCD strip
EQ	as input channel
Compressor	as input channel
Delay	Up to 680ms, in/out

Band 4	Selectable HF Shelving, Bell, Lo-Pass	**FX**	
Bell Width	Non-constant Q, variable, 1.5 to 1/9th octave	FX Processing	16 x Rack FX engine, internal module
Shelving Type	Classic Baxandall	Mode	Send>Return, Inserted, Daisy Chain FX, direct to output
Hi-Pass, Lo-Pass Filter selectable	12dB/octave	**FX Returns**	
Band in/out	per channel	16 Stereo dedicated returns	Fader, Pan, Mute, Routing to Grp, Aux, FX, Area Out
			4-band EQ on each return
Talkback	Assignable source	**RTA**	31-Band 1/3 octave 20-20kHz
High Pass Filter	12dB/octave, 20Hz-400Hz	Source	Follows selected Solo source
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, Area Out, Matrix		