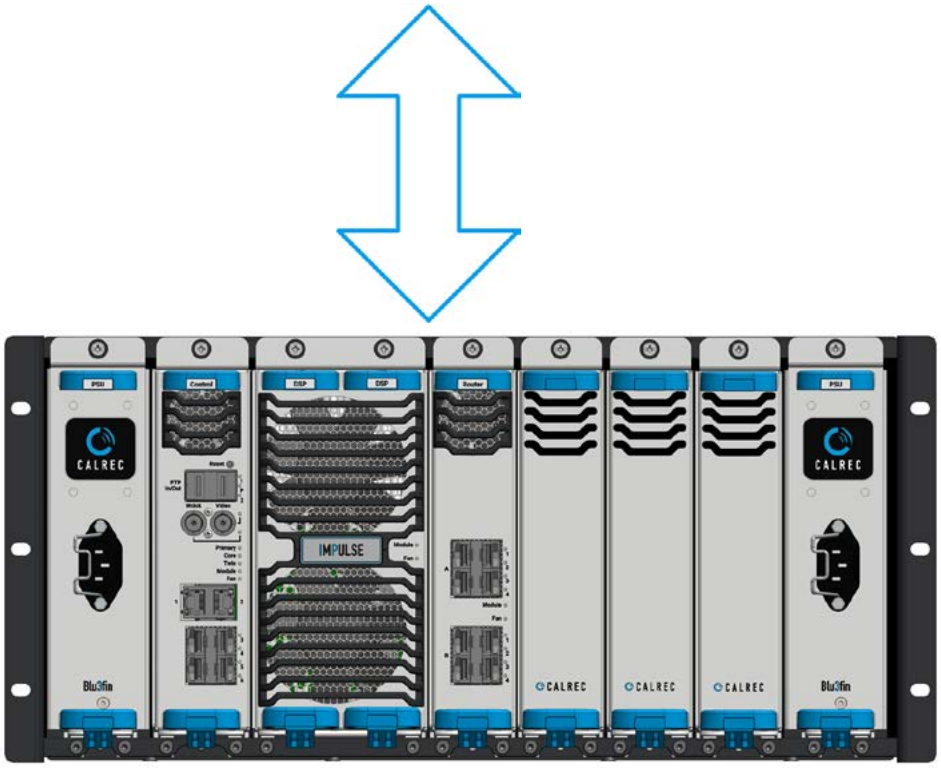
ARGO ASSIST MANUAL V1.0



Digital Broadcast IP Production Interface

CALREC

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Whilst the Company ensures that all details in this document are correct at the time of publication, we reserve the right to alter specifications and equipment without notice. Any changes we make will be reflected in subsequent issues of this document. The latest version will be available upon request. This publication is for International usage.

Calrec Audio Ltd reserve the right to change specifications without notice. E & O.E.

The established policy of Calrec Audio Ltd. is to seek improvements to the design, specifications and manufacture of all products. It is not always possible to provide notice outside the company of the alterations that take place continually.

Despite considerable effort to produce up to date information, no literature published by the company nor any other material that may be provided should be regarded as an infallible guide to the specifications available nor does it constitute an offer for sale of any particular product.

Argo S, Argo Q, Apollo, Apollo+, Artemis, Artemis+, Summa, Brio, RP1, Type R, VP2, Hydra Audio Networking, Bluefin High Density Signal Processing (HDSP) and ImPulse are trade marks of Calrec Audio Ltd.

All other trade marks are acknowledged.

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INFORMATION

CALREC

IMPORTANT INFORMATION

After Sales Modifications
Please be aware that any modifications other than those made or approved by Calrec Audio Limited or their agents, may invalidate the console's warranty. This includes changes to cabling provided by Calrec and variations to the recommended installation as detailed in Calrec documentation.

Modifications to this equipment by any party other than Calrec Audio Limited may invalidate EMC and safety features designed into this equipment. Calrec Audio Limited can not be liable for any legal proceedings or problems that may arise relating to such modifications.

If in doubt, please contact Calrec Audio Limited for guidance prior to commencing any modification work.

Installation
In many installations the AC power connectors will not be readily accessible, effectively making the equipment permanently connected. The installation should be carried out in accordance with all applicable installation rules and regulations.

Service Personnel
The AC power disconnect devices are the 2 x IEC (IEC60320-1 C13/C14) couplers located at the rear of each unit. WARNING: The apparatus has a dual power system. It is essential that BOTH AC power IEC couplers are disconnected to prevent exposure to hazardous voltage within the unit.

Third Party Equipment
Integrating third party equipment into a Calrec system may compromise the product's ability to comply with the radiated emission limits set in the latest EMC (Electro Magnetic Compatibility) standard.

Calrec Audio Limited can not be responsible for any non-conformities due to use of third party equipment. If in doubt, please contact Calrec Audio Limited for guidance prior to integrating any third party equipment.

ESD (Static) Handling Procedures
In its completed form, this equipment has been designed to have a high level of immunity to static discharges. However, when handling individual boards and modules, many highly static sensitive parts are exposed. In order to protect these devices from damage and to protect your warranty, please observe static handling procedures, for example, use an appropriately grounded anti-static wrist band. Calrec will supply an electrostatic cord and wrist strap with all of its digital products.

All modules and cards should be returned to Calrec Audio Limited in anti-static wrapping. Calrec Audio Limited can supply these items upon request, should you require assistance.

This applies particularly to digital products due to the types of devices and very small geometries used in their fabrication, analogue parts can however still be affected.

FIG 1 - LEAD FREE

Pb Pb-Free Lead Free

RoHS Legislation
In order to comply with European RoHS (Reduction of Hazardous Substances) legislation, Calrec PCB and cable assemblies are produced with lead-free (tin/copper/silver) solder instead of tin/lead solder. See Fig 1.

In the unlikely event of a customer having to carry out any re-soldering on any Hardware manufactured by Calrec, it is imperative that lead-free solder is used; contaminating lead-free solder with leaded solder is likely to have an adverse effect on the long-term reliability of the product.

FIG 2 - LEAD FREE STICKER

e1

Circuit boards assembled with lead-free solder can be identified (in accordance with IPC/JEDEC standards) by a small oval logo (see Fig 2) on the top-side of the circuit board near the PCB reference number (8xx-xxx). The same logo is used on the connector hoods of soldered cable assemblies.

If in doubt, please check with a Calrec customer support engineer before carrying out any form of re-soldering.

ISO 9001 and RAB Registered
Calrec Audio Ltd has been issued the ISO9001: 2008 standard by the Governing Board of ISOQAR.

The award, for both UKAS (Fig 3) and RAB (Fig 4) registration, is the most comprehensive of the ISO9000 international standards. Granted in recognition of excellence across design, development, manufacture and after-sales support, the certification follows a rigorous and thorough review of Calrec's internal and external communication and business procedures.

FIG 3 - UKAS REGISTRATION

ISOQAR QUALITY ASSURED ISO 9001
UKAS QUALITY MANAGEMENT 026
Certificate number 3205/02

FIG 4 - RAB REGISTRATION

ISOQAR QUALITY ASSURED ISO 9001
ANAB ACCREDITED
Certificate number 3205/02

HEALTH AND SAFETY

Important Safety Instructions:

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Do not block any ventilation openings.
- Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Warning: to reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- Not intended for outdoor use.
- This equipment must be EARTHED.
- Caution - Shock Hazard
- Disconnect all power sources before starting any servicing operation, equipment must be isolated from the AC power supply. The disconnect devices are the 2 x IEC connectors (IEC 60320-1 C13/C14 couplers).
- Do not leave the equipment powered up with the dust cover fitted.

Cleaning

For cleaning the front panels of the equipment we recommend using a soft anti-static cloth, lightly dampened with water if required.

Explanation of Warning Symbols

Triangular warning symbols contain a black symbol on a yellow background, surrounded by a black border.

The lightning flash with arrow head symbol within an equilateral triangle, as shown on this page, is intended to alert the user to the presence of dangerous voltages and energy levels within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock or injury.

The exclamation mark within an equilateral triangle, as shown on this page, is intended to prompt the user to refer to important operating or maintenance instructions in the documentation supplied with the product.

The altitude warning symbol indicates that the equipment is to be used at an altitude not exceeding 2000m.

The multiple power sources symbol indicates that more than 1 power source is connected and that all power sources should be disconnected before servicing.

Earthing

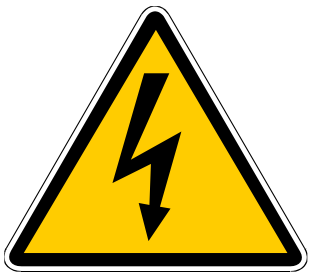
This is a Class I product. An Earth connection MUST be provided in each AC power cord.

The Earth Bolt connection at the rear of the core is provided for those users who wish to have a separate ground/ earth connection using Earth cable at least 6 mm^2 in cross section (10 AWG), this connection is optional and is NOT a requirement to comply with safety standards.

Lithium Battery Replacement

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Batteries must not be exposed to excessive heat such as sunshine, fire or the like.

DANGEROUS VOLTAGES



IMPORTANT INSTRUCTIONS

ALTITUDE WARNING SYMBOL

MULTIPLE POWER SOURCES SYMBOL

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

TECHNICAL SUPPORT

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Email - General:	enquiries@calrec.com
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Fax:	+44 (0) 1422 842159
Website:	www.calrec.com

Should you require any technical assistance with your Calrec product then please contact your regional Calrec distributor. Customers within the UK or Ireland should contact Calrec directly.

For a complete list of worldwide distributors by region, go to www.calrec.com or contact us for more information.

For pre-delivery technical enquiries, UK and Ireland customers should contact the Calrec project manager assigned to their order. Post delivery, the Calrec Customer Support team will take care of your technical enquiries.

Our UK customer support team work closely with our global distributor network to provide the highest level of after sales support. Your distributor should be your first point of contact and will often be able to provide an instant solution, be it technical advice, spares or a site visit by an engineer.

Calrec UK customer support and our global technical team provide free of charge technical support and advice by phone or email to all customers.

Once your console is installed we can provide an engineer on site to carry out system commissioning.

Commissioning ensures the equipment is correctly installed and fully functioning before it goes into use.

During commissioning, our engineers can also help and advise with configuration and setup.

Calrec after sales support includes:

- Free of charge comprehensive technical advice and support by phone and email.
- Software and hardware upgrades.
- Repairs.
- Quick supply of replacement or loan hardware in the event of a failure.
- Providing export documentation for the return of faulty parts.
- On site commissioning visits.
- On site service and health check visits.
- Emergency engineer visits.
- On site on-air support, for complete peace of mind - providing operational guidance, and technical engineering support for new installations or high profile events.
- Operational training.
- Maintenance / technical training.
- Supply of replacement components.
- Supply of documentation.

Service contracts

We offer a range service contracts to our UK and Ireland customers, offering 24/7 telephone support, regular health checks and extended warranty amongst other benefits. Please contact our customer support team for more information on service contracts.

Product Warranty

A full list of our conditions & warranties relating to Goods & Services is contained in the Company's standard Terms and Conditions. A copy of this is available on request.

Repairs

If you need to return goods to Calrec, for whatever reason, please contact your regional distributor or Calrec customer support beforehand for guidance, as well as to log the details of the problem and receive a reference number. For customers outside the UK and Ireland, shipping via the distributor saves customers from dealing with exportation paperwork. If there is a need to send direct to Calrec, contact us beforehand to log the incoming repair and for assistance with exportation documents.

Standard of Service

Ensuring the highest standards is a priority, if you have any comments on the level of service, product quality or documentation offered to you by Calrec, please contact the Calrec Customer Support team in the UK who will endeavour to address the issues. Calrec welcomes all customer feedback.

For feedback specific to this document, please contact enquiries@calrec.com.

ARGO ASSIST
GETTING STARTED

CALREC

ABOUT ARGO ASSIST AND RELATED MANUALS

Argo Assist is an application that provides a control interface equivalent to the facilities found in the Argo consoles, the important difference being that Assist can be used with or without a surface, as the user interface is provided via a web interface application running on a browser platform.

This manual is designed to provide information on how the Assist application is used to control the Argo Digital Broadcast IP Production Systems and is arranged into the same feature areas as a physical console would provide. It should be read alongside the Argo Operator manual to gain a full understanding of the facilities provided.

The Hardware aspects of the various processing cores with their Control Processing, Digital Signal Processing and Routing remains the same as the console versions and the relevant chapters can be found in the following installation manuals:-
Argo Installation Manual (926-312) & Impulse Installation Manual (926-288).

The Operation of the physical console surfaces can be found in the following operator manual:-
Argo Operator Manual (926-313)

Core Connection to PC/Laptop for Argo Applications
Argo Assist is optimised to be accessed using a Google Chrome web browser, on a Windows 10 or higher based computer platform.

Windows PC: Minimum specification

- i5 Intel Processor or AMD equivalent
- 4 Gig RAM memory
- Windows 10 - 64bit
- Google Chrome Browser v75 or higher
- Minimum Display Resolution 1366px X 768px*

Calrec recommends the use of a 1920px X 1080px touch display where possible.

There are a number of ways to interface the Argo Impulse Core to a PC or Laptop, via the Interface '2' port on the front of the Control Processor as shown below right and described here:- see **"Starting Calrec Assist" on page 14** or via the Studio or Management network switches (once setup in the Configure application).
The user can then access a web browser to connect to Calrec Assist's UI via a PC.

For example the IP address of Assist on the Studio A network is set by default to **172.17.1.1** with a Subnet mask of **255.255.255.0**. Setting the NIC (network interface card) in a PC/Laptop to an address in the same network range e.g. **172.17.1.99** with a Subnet mask of **255.255.255.0** will allow a PC/Laptop to communicate with the Argo Assist application by connecting into a switch on that network and simply typing in it's IP address into an internet browser running on the PC/Laptop.

If the user wishes to access the other IP applications used with these systems such as **Configure**, **Connect** or **Software Updater** the user should type in the appropriate IP addresses for each application. See the **Impulse - Argo Start Up Guide (926-321).**

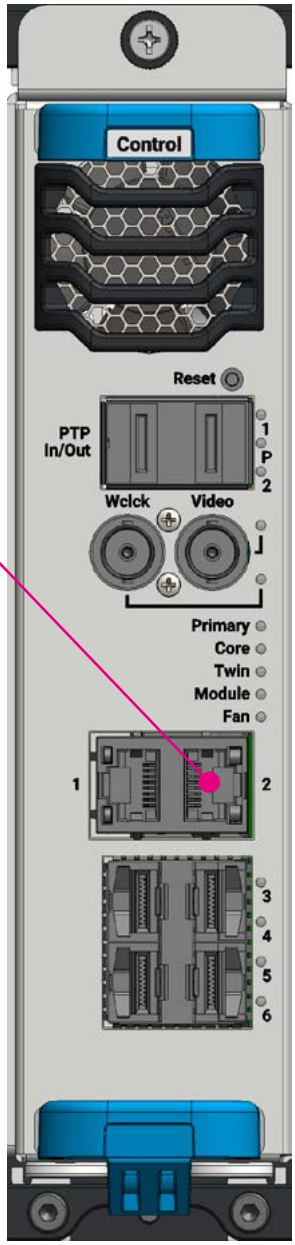
Details of the use of **Configure** & **Connect** for the management of Argo Digital Broadcast IP Production Systems can be found in the following manuals:-
Impulse Configure Application Guide (926-290) & Connect Guide (926-292).

If the user has ordered AoIP Interfaces then the user may also need to refer to the following guide:- **AoIP I/O Manual (926-293).**

Once the user has typed in the IP address for the Assist application, they can proceed to access Assist to control the operation of Argo physical production consoles or alternatively virtual production systems without a physical surface.

The following pages describe the operation of Assist in detail:-

IMPULSE CONTROL PROCESSOR



ARGO ASSIST
OPERATION VIA CALREC ASSIST

CALREC

CALREC ASSIST FOR ARGO

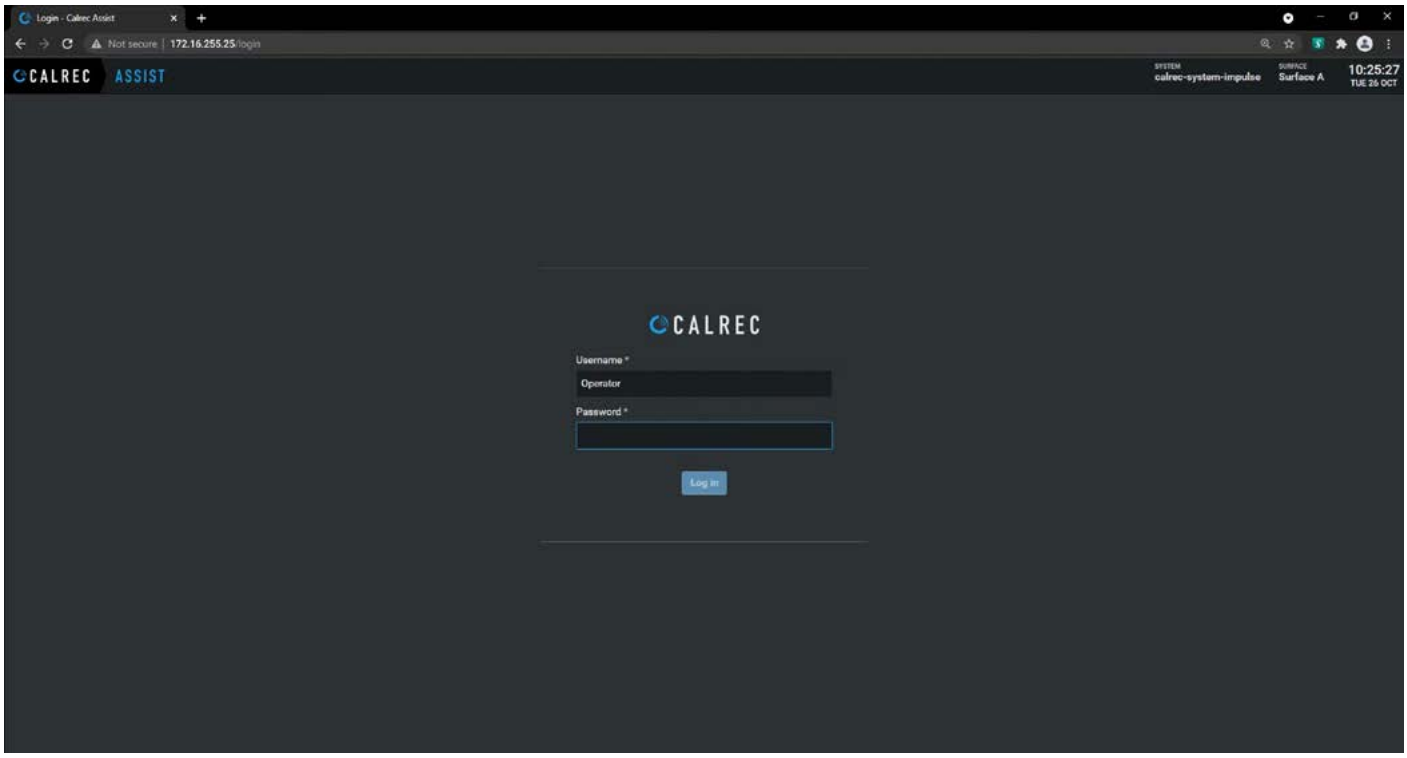
Calrec Assist for Argo is an application which runs in a Web browser on various devices, giving you a virtual online desk running on a laptop.
Once connected to the Impulse Core via an interface port on the front of a Control Processor module, or via other ports such as the Studio network switches (once configured in the Configure application), a web browser can be used to access Calrec Assist's HTML UI. This allows the user to set up shows, memories, fader layout, patching, bus setup, labelling, set input and output levels on a fader bed, control input channel parameters including mic gains, routing to outputs and much more, all on their own device with or without a physical console surface attached. If the user wants to access different pages of the assist application in parallel more pages can be opened by adding further instances of the application arranged in tabs or the user can just drag them out as a new window.

Starting Calrec Assist
The way to connect to Assist is to open a Web browser e.g. Chrome and browse to the address of the Ethernet port connected to. The simplest connection being the interface port labelled '2' on the front of the Impulse Core. By default it's IP address is **172.16.255.25.** This will launch Calrec Assist, which will open on the Log in page as shown below.

Note: Interface 2 is classified as a 'Setup port' and whilst it can be used to access the various applications, it is not intended to be used as part of a network. The Assist and other Calrec applications are typically accessed on the Studio network as described here:- see **"Core Connection to PC/Laptop for Argo Applications" on page 12.**

Calrec Assist Login Instructions
From version 1.4 of the Impulse applications and version 2.0 of the Type R applications, security passwords have been put in place, there are currently two fixed Roles/Accounts available, the normal Operator account and an Engineer account which provides technician access to extra functionality. For the Operator account, the Username should be entered as **'Operator'** with the Password **'calrec'.** Note: both the Username and Password are case sensitive.

ASSIST LOGIN PAGE



In order to access the Assist application, the user will need to enter the Username and Password, the user then taps on the 'Log in' button and the Assist application then accesses the **Home** page as shown at the top of the next page

ARGO HOME PAGE - FADER SURFACE OVERVIEW

The Assist pages are arranged as 4 distinct areas:-

Header Area across the top of the pages the header provides information about the name of the show, sample rate, the memory loaded and a number of various controls such as the Replay, Tone, APFL & Talkback flags which can be cleared by tapping that area of the screen. Further right is shown the On Air status control, current sync status, current system status with dropdowns providing detailed information. Next to these are shown the Current Time and Date and the System Settings access 'gear wheel'.

Note: the relevant facilities in the header area listed above are further detailed in the Header Facilities & Tools Footer section.

Menus & Sub-Menus Area these appear down the left hand side which are used as to navigate around the many functions in Assist. Tapping on any of the menu items opens up a sub-menu, where further selections in that functional area can be made as required.

Contents Area this is the main body of the page where the functions for the selected Menu or Sub-Menu pages appear.

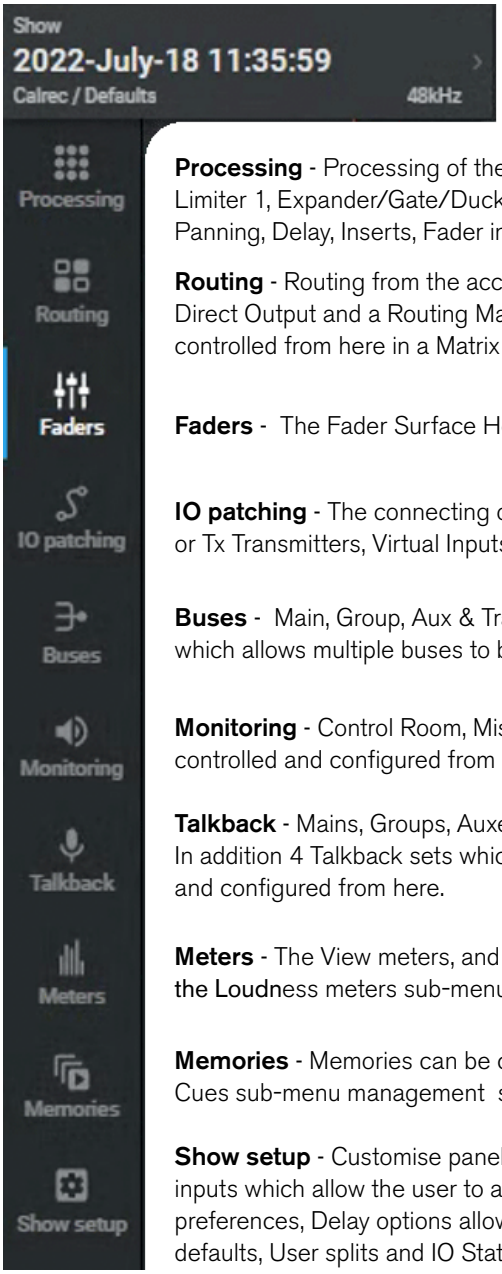
Note: the relevant facilities available in the contents area detailed throughout this manual for each Menu & Sub-menu.

Footer Area this appears across the bottom of the pages and provides information on the currently accessed path which can be changed using the nudge buttons to the left of the Fader Information block. On the right side of the footer are various other functions such as Copy/Paste, Isolate selection, Presets and the Meter & PFL button which allows the user to change the Fader Meter and PFL position along the audio processing paths.

Note: the tools & utilities available in the footer area listed above are further detailed in the Header Facilities & Tools Footer section.

MENUS & SUB-MENUS

Below is shown how the menus & sub-menus are arranged in functional areas:-



Shows - The Show area on the left of the header, as well as displaying the current show information and sample rate also lets the user:- Load, Create, Label Edit, Duplicate, Import, Export and Delete various Shows when the show area is selected.

Processing - Processing of the accessed path's Input, Equaliser, Dynamics 1 Process including (Compressor-Limiter 1, Expander/Gate/Ducker & Sidechain Equaliser), Dynamics 2 Process for Compressor-Limiter 2, AutoMixer, Panning, Delay, Inserts, Fader including Spill faders & Downmix faders and AutoFader all in different sub-menus.

Routing - Routing from the accessed path to Mains, Groups, Mix Minus, Auxes Send & Pan, Tracks Send & Pan, Direct Output and a Routing Matrix providing the routing of Input sources to Output destinations is shown and controlled from here in a Matrix X-Y format making it simpler and quicker to route.

Faders - The Fader Surface Home screen and Fader Layout sub menus are displayed and configured from here.

IO patching - The connecting of Desk Outputs or Rx Receivers, Virtual Outputs and Input Port Lists to Desk Inputs or Tx Transmitters, Virtual Inputs and Output Port Lists are made from here.

Buses - Main, Group, Aux & Track Buses are setup and controlled from here. There is also an Edit buses option which allows multiple buses to be configured and their individual widths locked.

Monitoring - Control Room, Miscellaneous Monitors, User Meters, AFL/PFL and various Talkback levels are controlled and configured from here.

Talkback - Mains, Groups, Auxes, Tracks and the 4 Misc Monitors can be individually have Talkback applied here. In addition 4 Talkback sets which can contain any combination of the individual talkback destinations are controlled and configured from here.

Meters - The View meters, and Edit meters sub-menus can display and configure up to 48 meters on a screen, the Loudness meters sub-menu allows the user to configure and control up to 16 loudness meters.

Memories - Memories can be created/loaded/updated and deleted from here and this Menu item also includes the Cues sub-menu management screen.

Show setup - Customise panels, AutoMixers, Oscillators for Immersive, Surround Stereo and Mono widths, External inputs which allow the user to a large number of External inputs for monitoring and metering purposes, Control preferences, Delay options allow the user to set the Delay Units to be displayed in Time or Frames, Downmix defaults, User splits and IO Status are all configured in their sub-menus.

System settings - This set of sub-menus is accessed from the Gear Wheel on the right side of the header area via a side-drawer and determines system settings that are independent of shows such as:- General Settings, Default controls, GPI and GPO function assignments, On-Air Protection, Display brightness, Control Protocol configuration, Mic Open Systems, Remote Network Access, Port Lists, Monitor widths, Required IO Box resources and System Information which provides system Information about the Core, Software version, No of faders and in later releases DSP Licence details as well as a list of Third party licences used in the creation of Assist. Near the bottom of the Systems settings page is shown the Current User which contains: the "Link the Assist accessed path with a control surface user area", Select which user area that "Assist access/selection operates within", Light/Dark theme mode the Enable on screen keyboard function and the User Log-out at the bottom of the page.

ARGO ASSIST
PROCESSING

CALREC

OVERVIEW

The items in the Assist Menu use the access area in the footer to provide the user with information and control of path selection.

The image above right shows the Input Processing submenu entry in the contents area. The header area shows the name of the show & memory.

At the bottom left of the screen is the access area in the footer, this contains nudge keys which follow the fader surface selection including Sub-layers A or B.

If the user wishes to look at say 1B, rather than 1A they can either change that fader's A or B selection on the Fader surface or click on the Fader Information block to go to the select a fader pop-up and change it there as described at the end of this page*.

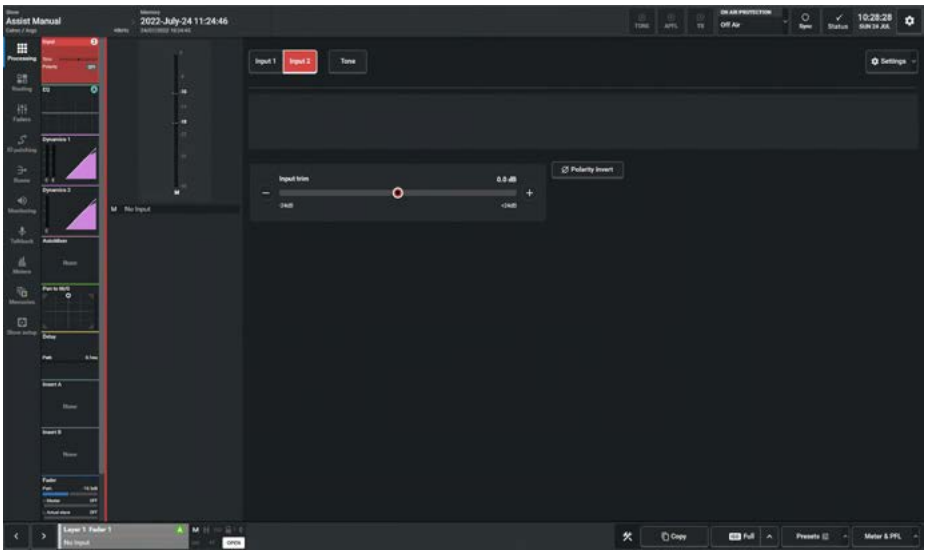
Next to this is the Fader Information block which shows the Layer/Fader Number, User Label & User Port of the currently selected path. Inset in the block is a status window showing various status icons such as path width, clone, isolate, layer lock, VCA status, Autofader active and fader open as indicated.

If the path is wider than mono then a drop down button is shown to the right of this labelled 'Spill Leg Access'. Accessing this allows the user to select the legs that make up a stereo or wider path for independent operation.

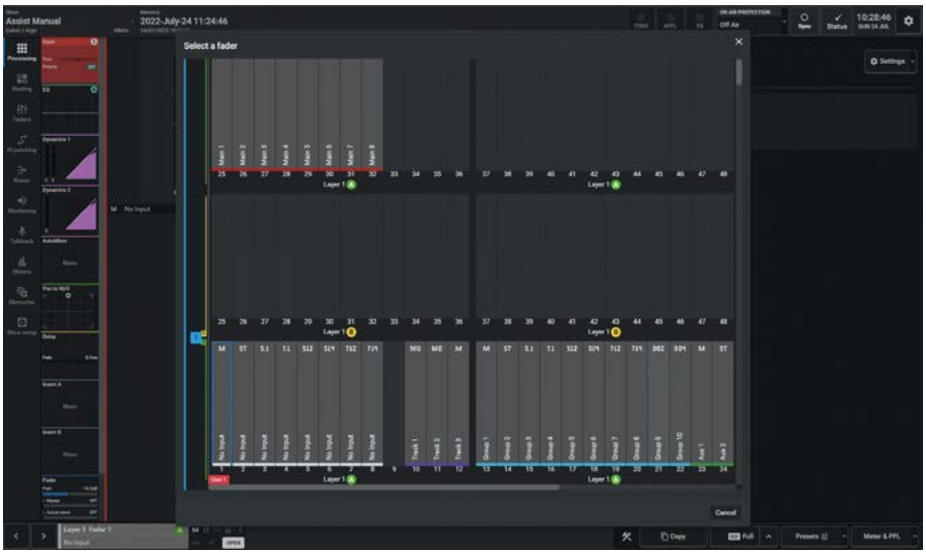
On the right of the header area is shown the various warning flags to inform the user that Tone, APFL (either AFL or PFL) and/or TB (Talkback) is active on the system. Tapping on those icons cancels those functions. Further right is shown the On Air Protection status and control, current Sync status and current System status with dropdowns providing detailed information on the state of the system.

Next to these are shown the Current Time and Date and System Settings access 'gearwheel', which accesses the **System Settings** pages.

PROCESSING PAGE SHOWING INPUT SUB-MENU FUNCTIONS



SELECT PATH TO ACCESS FROM FADER LAYOUT POP-UP



Below the Header area is the contents area as shown on the **Processing>Input** function above right. This central area contains the controls that are specific to the function selected from the sub-menu.

*Tapping on the Fader Information block allows the user to select a different path as shown below right.

After tapping on the fader information block, a copy of the Argo fader layout screen appears as defined in the **'Configure'** application, allowing the user to select any of the existing Layer/ Fader/ A-B paths to become the currently accessed path, or the user can cancel if they decide to return to the existing path access selection.

INPUT

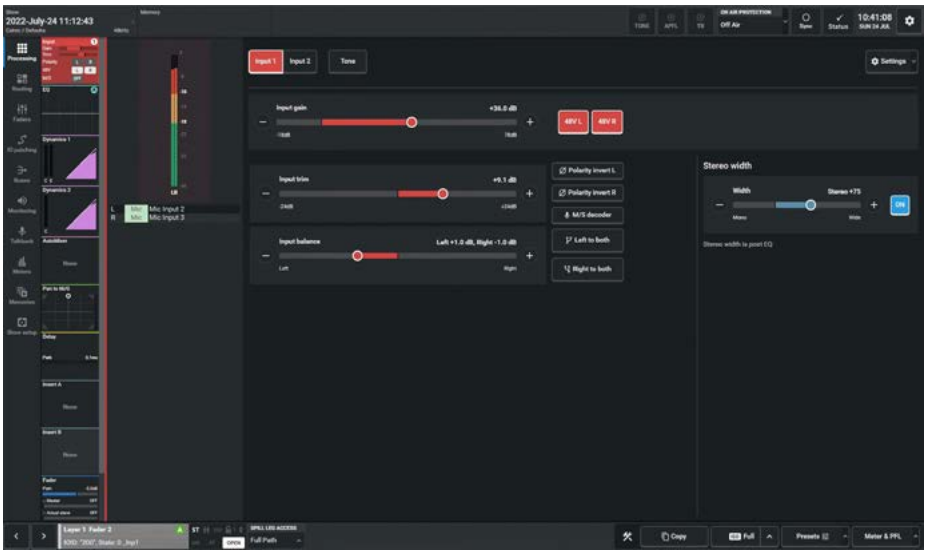
This provides the user with a set of controls related to the currently accessed path on which they can control the input port settings such as mic gain & phantom power and other channel input settings.

Input Controls
After tapping **Processing>Input** from the Menu, the image above right is displayed, which is a stereo input channel that has mic/line ports attached to it on input 1.

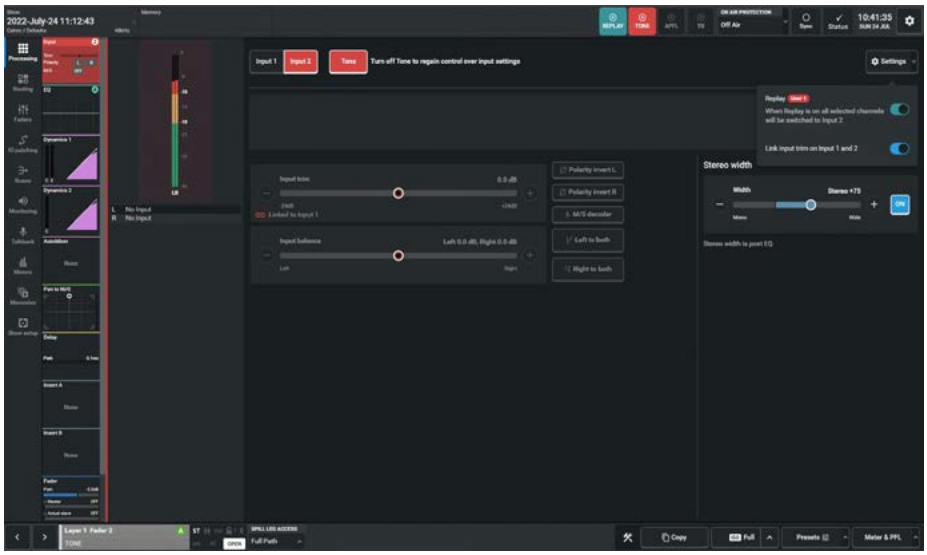
The following controls are available:-
Input 1/Input 2: This selects which of the input sources will be used by this path.
Tone: Select to inject tone into the path, replacing the input sources with the correct tone for the path width.
Input Meter: Shows the Input signals being received by this path.
Input Ports: Shows the ports in use for this path.
Input Gain & 48v: If the source is a Mic input then a gain control with a range of -18dB to +78dB and 48v power control button(s) are made available.
Input Trim: A gain offset of +/- 24dB can be applied to the incoming signal as required and if the link to the other input source is switched on the trim is applied to both sources.
Input Balance & Width: If the source is a stereo signal then additional controls to alter the left-right balance and a Stereo width control to allow the stereo signal to be reduced to a mono source or made wider are provided.
Various Input Switches: To the right of the Trim and Balance controls is a set of channel input switches which include, polarity invert switch(es) and if stereo:- M-S decoder, L to LR & R to LR switches.

The image below right shows the page for Input 2 which is not yet ported. The tone switch has been turned on, which disables the Input controls dimming their displays and a "Turn off Tone to regain control over input settings" message appears. Also shown is the input settings button in the top right of the content area which allows the user to link input 1 & 2 trims. Input 2 is often used for a backup mic to input 1, so that the trims can track each other allowing a changeover at the same signal level in case of a mic failure.

INPUT 1 OF A STEREO PATH



INPUT 2 SHOWING TONE , INPUT TRIMS LINKING & REPLAY OPTIONS



The other setting accessed from the input settings button is the Replay On switch, allowing the user to switch a selected set of paths from Input 1 to Input 2. This is typically used when switching from one source set to another such as a live set to a pre-recorded set of sources.
Spill Leg Access: If the path is wider than Mono, a drop-down box labelled "Spill Leg Access" appears showing 'Full Path' opening this dropdown allows the user to access each spill legs' control parameters. In the case of the input, it allows the user to apply offsets to the various input parameters per leg with the legs arranged as follows:-
For Stereo paths the legs are arranged as:- Left only & Right only.
For 5.1 paths the legs are arranged as:- L/R only, C only, Lfe only & Ls/Rs only.
For 7.1 paths the legs are arranged as:- L/R Only, C Only, Lfe Only, Lss/Rss only & Lrs/Rrs only.
For 5.1.2 paths the legs are arranged as:- L/R only, C only, Lfe only, Ls/Rs only & Ltf/Rtf only.
For 5.1.4 paths the legs are arranged as:- L/R only, C only, Lfe only, Ls/Rs only Ltf/Rtf only & Ltr/Rtr only.
For 7.1.2 paths the legs are arranged as:- L/R Only, C Only, Lfe Only, Lss/Rss only, Lrs/Rrs only & Ltf/Rtf only.
For 7.1.4 paths the legs are arranged as:- L/R Only, C Only, Lfe Only, Lss/Rss only, Lrs/Rrs only, Ltf/Rtf only & Ltb/Rtb only.

EQUALISER

A four band parametric Equaliser + LF & HF filters module is available on every Channel, Group, Main, Aux, and Track signal path.

The frequency range for all bands is 20Hz to 20kHz, the gain range is -18dB to +18dB. The Q control for the bell curve can be set at: 0.3, 0.5, 0.7, 1, 2, 3, 5, 7 or 10, and for all other bands is set at 0.7.

Each band has an On/Off button and the bands 1-6 are switched in and out of circuit together using the buttons on the panel to the right.

When looking at an equaliser module, any control situated within the content area affects the whole module if not independent.

Note: in the case of 5.1 paths and wider the Lfe (e) leg is made independent by default and has its own independent equaliser controls.

Equaliser and Filter Controls
After tapping **Processing>EQ** from the Menu, controls can be adjusted in a number of ways:-

- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.
- Dragging the numbered bands with their control circles on the graph.

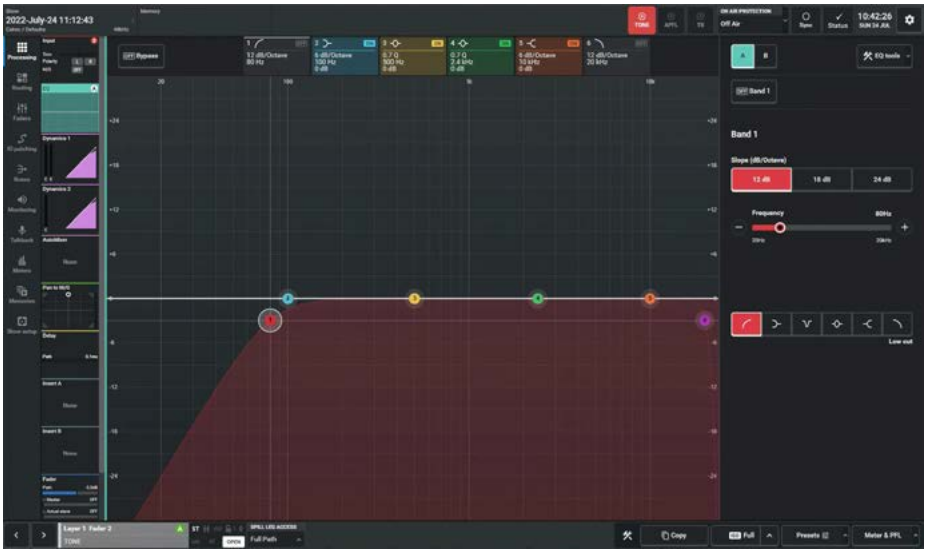
The resultant numerical values are shown in the top right hand corner of each control and also reflected on the graph.

The following controls are available:-
Tapping on any of the 6 band tabs along the top of the EQ control screen highlight that band in the EQ graph display.

The EQ controls to the right of the screen apply to whichever EQ band is currently selected. The graph instantly updates to reflect EQ parameter changes.

Bands 1 & 6 are by default set as Filters but can by changing their response have the same behaviour as EQ bands 1-4.

EQUALISER NOT IN CIRCUIT



EQUALISER IN CIRCUIT

However when set as Filters they can be set to have a slope of 12dB/Oct, 18dB/Oct or 24dB/Oct.

The 6 EQ bands can be set to any response type at any frequency and gain setting, but it is good practice to set them in a logical, frequency-based order.

The image above right shows that all the EQ Band switches are off and as such the EQ processing is not in circuit, the overall EQ curve is flat.

The image below right shows that all the EQ Band switches are on and as such the EQ processing is in circuit, the overall EQ curve follows the resultant shape from the active EQ bands.

Bypass EQ: At the top left of the content area there is a Bypass switch which allows the user to quickly turn off any active EQ processing rather than turn off each active EQ band individually.

The Bypass indication also appears in the Processing Eq icon in the Submenu.

Band: This switches the selected EQ band in/out of circuit.

Slope: For Bands 1 & 6 this offers different slope settings for both Low & High Cut filters and Low & High shelves.

For Bands 2, 3, 4 & 5 this offers different slope settings for Low & High shelves.

Q: Sets the width of the frequency band for the selected response. The higher the Q, the narrower the bandwidth. This is valid for any band with a Bell response.

Frequency: Sets the frequency that the EQ band is operating around.

Gain: Sets the gain increase or gain reduction for the selected band, except for bands set as Notch filters or Low & High Cut filters for Bands 2, 3, 4 & 5.

Response: Select the desired EQ response curve for the selected band, from low cut filter, low shelf, notch, bell, high shelf and high cut filter.

Note: see the Equaliser Response Type highlighted area in image above right.

EQ A/EQ B Comparison: Allows the user to compare two EQ set-ups. To do this tap the EQ Settings **A B** buttons in the side panel to switch between EQ A and EQ B and change the parameters within each setup as required.

The user can switch between the two setups to compare settings.

Note: see the Equaliser A/B Comparison and EQ Tools highlighted areas in the image below right.

EQUALISER RESPONSE TYPE

EQUALISER COPY A TO B OR COPY B TO A

EQ Tools
Tapping this button in the side panel displays the following options:

Copy EQ -Copy A to B & Copy B to A allows the user to duplicate EQ settings which can be useful in auditioning subtle differences in EQ.

Copying the EQ settings to the other EQ setup, modifying either EQ A or EQ B and then using the EQ A/B switching buttons in the side panel, allows the user to quickly switch between the two.

Reset EQ - Reset A & Reset B returns all the EQ A or EQ B settings to their default values respectively.

Equaliser Independence Controls for Stereo, Surround and Immersive Paths

For Multichannel paths such as stereo, surround and immersive paths it is possible to apply equaliser processing independently for:

- each L or R spill leg in a Stereo path
- each LR, C, Lfe, Ls/Rs spill leg in a 5.1 surround path
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, spill leg in a 7.1 surround path.
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf spill leg in a 5.1.2 immersive path.
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf, Ltr/Rtr spill leg in a 5.1.4 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf spill leg in a 7.1.2 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf, Ltb/Rtb spill leg in a 7.1.4 immersive path.

The image above right shows the equaliser page for a 7.1.4 path, in the path footer is shown a drop down box labelled "Spill Leg Access" which normally says 'Full Path'.

Tapping on this opens an independence control table which is used to determine which spill leg controls will be made independent of its multichannel master for any of the 6 equaliser bands shown down the spill leg independence column.

For instance the user may want to make some equaliser bands to act independently and others to track with the master such as the filters.

Sliding any of these switches makes those particular controls for a particular spill leg become independent of the master.

As shown in the image above right, all the controls switches for the Lfe leg are set to independent, this is by default.

In the image below right, the user has just selected the 'Lfe only' leg to be controlled/displayed and this then shows the equaliser control for the Lfe spill leg.

MULTICHANNEL INDEPENDENCE CONTROLS FOR EQUALISER

INDEPENDENT EQUALISER CONTROLS FOR LFE ONLY LEG OF A 7.1.4 PATH

Removing Equaliser Independence from Spill Legs

Tapping on the Spill Legs button to the right of the Access display shown as 'Lfe Only' below right, reopens the independence control switch table as shown in the image above right.

Turning Off the independence switches overwrites the independent control settings that this equaliser process had for this spill leg and replaces it with its master's settings.

DYNAMICS 1

Every Channel input, Group bus, Main bus, Aux bus and Track,bus has 2 Dynamics processors available to it. For Channels, Groups & Mains there is also an associated sidechain equaliser with sidechain listen and a sidechain source selector. This Dynamics 1 processor can be placed Pre EQ/Pre Fader or Post Fader and either run standalone or be linked to any of the eight Gain Reduction buses available.

Compressor/Limiter 1
Compressor/Limiters provide controls for reducing and smoothing the dynamic range of an audio signal.

Compressors proportionally reduce the gain of a signal as it exceeds a definable threshold.

When the compressor is set to be a limiter (by selecting a ratio of 50:1), the input signal must increase by a massive 50dB above the threshold in order for the output to increase by a negligible 1dB.

When looking at a dynamics module, any control situated within the function header affects the whole module if not independent.

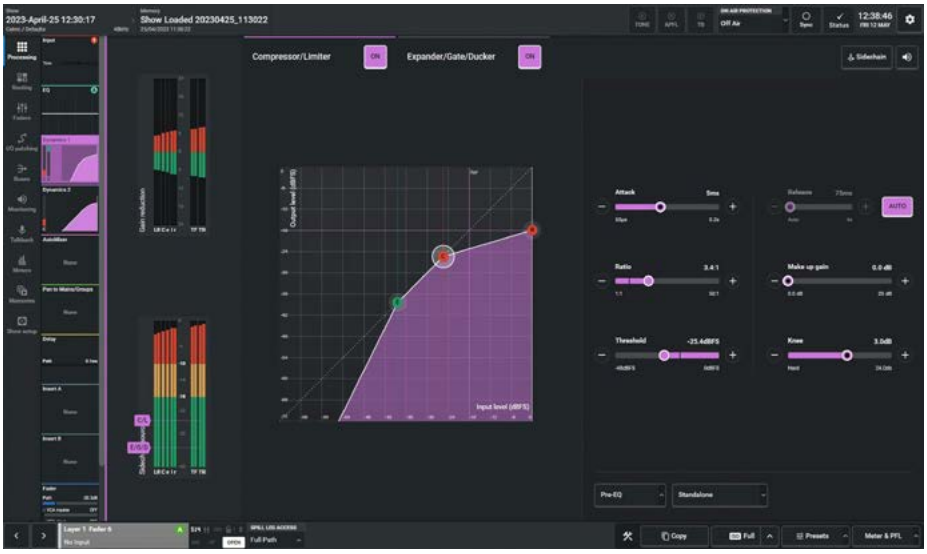
The gain reduction bargraphs are shown in the image above right, on the left of the process window.

This displays the amount of gain reduction being applied to the signal, note that in the case of 5.1.4 paths the Lfe (e) leg is made independent by default, so no reduction is applied as shown above right as Lfe has its own independent dynamics controls.

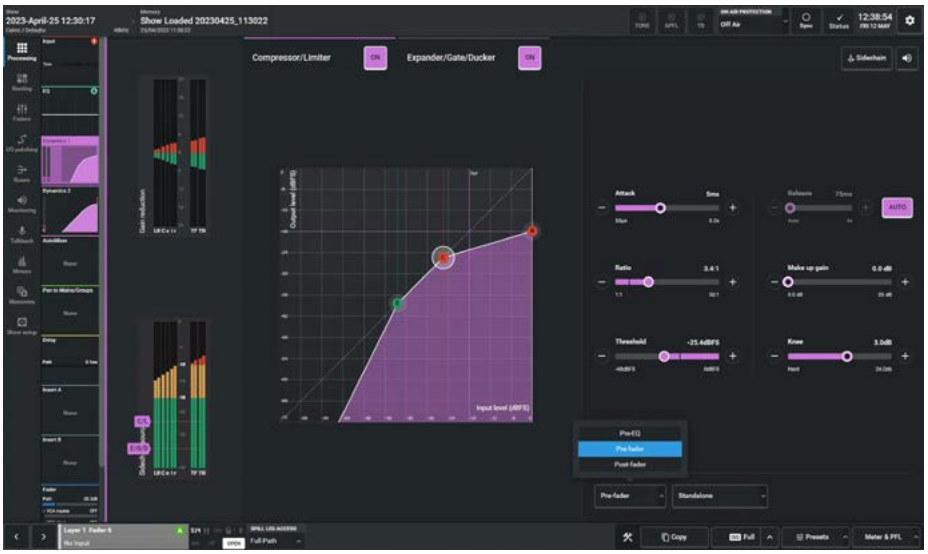
Note: below the Gain reduction bargraphs is shown the Sidechain source audio meter display overlaid with the threshold positions for the Compressor/ Limiter and the Expander/Gate/Ducker.

The audio meter shows the signal level of the sidechain source which can either be from its own path or an external Mono channel, group or aux source.

COMPRESSOR-LIMITER 1



DYNAMICS PATH POSITION



Dynamics Position in Path
Each Compressor/Limiter module can be inserted either Pre EQ, Pre Fader or Post Fader. Tap on the dynamics position button currently showing “Post Fader’ in the side panel and select an option as shown below right.

Note: the Expander/Gate/Ducker processing is tied to the Compressor/ Limiter in Dynamics 1, in that both follow the same Pre EQ, Pre Fader, Post Fader selection.

Compressor/Limiter 1 Controls
After tapping **Processing>Dynamics 1** from the Menu and selecting the Compressor/Limiter from the top of the contents area, the controls can be adjusted in a number of ways:-

- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.
- Dragging the threshold and ratio control circles on the graph.

The resultant numerical values are shown in the top right hand corner of each control.

The following controls are available:-
Compressor/Limiter In/Out switch: This slider switches the Compressor / Limiter in or out of circuit.

Threshold: The level (dBFS) at which the signal will begin to have its gain reduced.

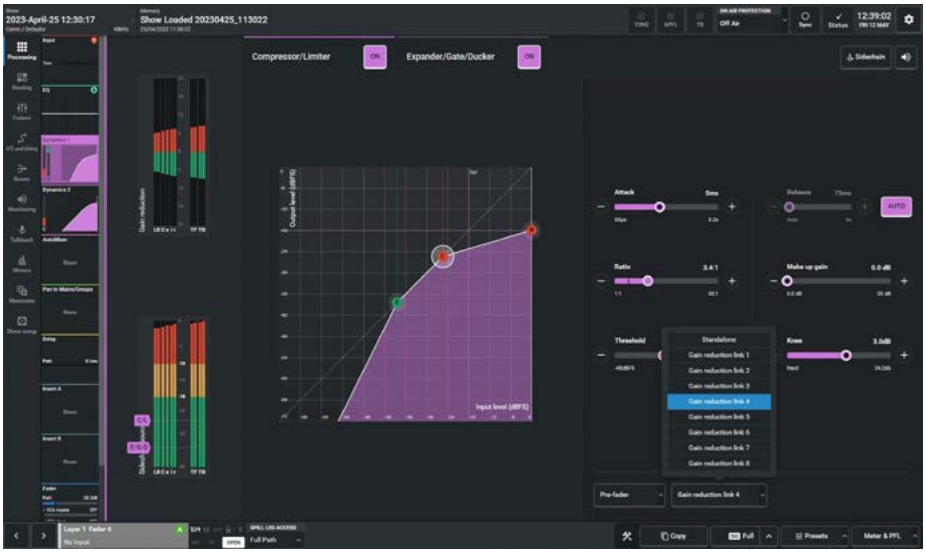
Ratio: Controls gain reduction once a signal has exceeded the threshold, for example, if the ratio is set at 2:1 and the signal exceeds the threshold by 4dBFS, the gain will be reduced so it exceeds the threshold by only 2dBFS. When set to 50:1, the compressor is acting as a limiter.

Attack: Time taken to reduce the gain to reach the new compressed level. Short attack times enable the compressor to catch transients in the audio feed, whereas increasing the attack time will allow initial transients through but catch later transients. Fast attack times are good for catching transients and possibly stopping clipping but, when an attack time is too fast, signals can sound bad, can have artefacts, etc, so it's probably better to start with a fast attack time then slow the attack time down until it sounds right.

Release: Time taken to remove gain reduction once the signal falls back below the threshold. Short release times can lead to a "pulsing" effect, with only audio peaks being compressed. A longer release time will lead to a smoother effect at the expense of some lower level audio components being compressed.

Release Auto: In this mode a filter is applied which determines how quickly the signal comes out of compression by measuring the amount and duration of the compression attack. This is useful in dealing with both sudden noises which recover quickly and sustained noises such as applause which recover slowly. Release Auto is enabled when the slider is dragged all the way to the left, or the **'AUTO'** button is pressed as shown in the image above right.

GAIN REDUCTION LINKS



Make Up Gain: Allows the gain of the whole compressed signal to be increased by up to 20dB.

Knee: Allows the gain of the whole compressed signal to act on signal transients quickly in the case of a Hard knee, whereas a Soft knee applies compression gradually over a range of up to 24dB.

Gain Reduction Links

By default, dynamics modules operate as standalone units. Tap on the dynamics gain reduction link button currently showing 'Standalone' in the side panel and select an option as shown below right, this allows the module to be put into one of eight gain reduction links.

Gain reduction links allow multiple audio feeds to have the same dynamics processing applied.

Note: the compressor-limiter and expander/gate/ducker modules use the same gain reduction links.

When multiple paths' dynamics modules are set to be part of a gain reduction link, the amount of gain reduction applied across the link will always equal that for the signal which is being affected the most.

For example, within a gain reduction link, if one path's signal is causing 5dB of gain reduction and another is causing a reduction of 10dB, all signals within the gain reduction link will have a gain reduction of 10dB applied.
When expander/gate/ducker units are used within a link and one feed within the link reaches the threshold level to open the expander/gate/ducker, all expander/gate/duckers within the link open regardless of the audio levels of their feeds.

Sidechain Listen

Selecting the Sidechain Listen (purple speaker icon shown top right on next page) allows the user to listen to the effect that the sidechain EQ is having on the signal as it is altered.

Note: activating the sidechain listen uses the APFL system and the APFL clear button will be lit in the header area.

Sidechain EQ (SCEQ)
Dynamics units take copies of their input signals, analyse them, and work out how best to process the originals. These copies are called sidechains. SCEQ controls are used to process frequency components of the sidechain signal in order to control which components of the input signal the dynamics will respond to.

With Dynamics 1 processing selected, tap on the Sidechain button in top right corner of the contents screen to see the SCEQ controls as shown above right.

The following controls are available:-
Sidechain EQ Band On/Off Switches: Switching the SCEQ controls in and out for Band 1 or Band 2 of the SCEQ bands, allows the user to hear the difference SCEQ processing makes.

The **'Reset'** button allows the user to reset the parameters of both the SCEQ bands to their default values.

The other SCEQ parameter controls, i.e. **Bypass, Response dropdown, Slope, Band On/Off, Frequency, Gain & Q** are the same as the EQ controls and are explained in more detail in the EQ section.

Note: the SCEQ function is shared between the Compressor/Limiter 1 and the Expander/Gate/Ducker of each Channel, Group and Main Path.

Channels have 2 bands of sidechain equaliser, Groups and Mains have 1 band of sidechain equaliser each.

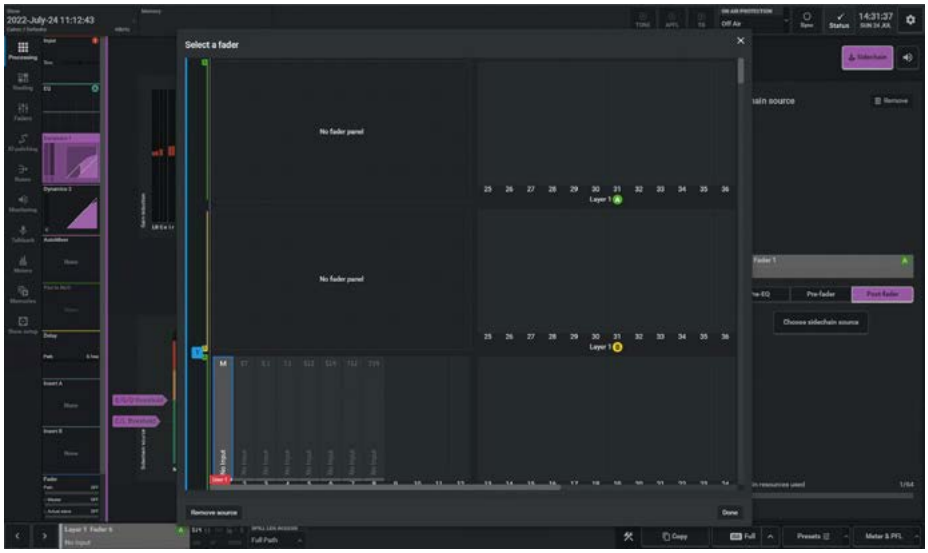
Also note that the Ducker function is not available for Mains.

Sidechain Source Selection
This option is available for Channels and Groups and the control panel appears to the right of the Sidechain EQ panel when valid.

This allows the user to choose a source other than itself to be used to control the amount of compression applied.

SIDECHAIN EQUALISER

SIDECHAIN SOURCE SELECTOR



Only mono channels, groups or auxes can be used as a sidechain source and the Sidechain audio source meter display is shown overlaid with this paths C/ L and E/G/D threshold markers.

When the user taps on the **'Choose sidechain source**' button, this opens the **"Select a fader"** dialogue as shown below right and they can then select the required signal the dynamics needs to respond to.

Details of the selected source are displayed and the user has the option of changing the sources send position between Pre EQ, Pre Fader or Post Fader.

Although it is essential for ducking control, the sidechain source is also available for use with Compressor/Limiter 1, Expander and Gate processing and it is this path's audio that is used as the source for the sidechain equaliser control.

The Sidechain source selection can be removed if not required by clicking on the **'Remove'** button in the top right corner of the Sidechain source panel.

Expander/Gate/Ducker
An expander acts in the opposite way to a compressor: When a signal exceeds the expander threshold it is passed through unchanged, and when it falls below the threshold it is reduced, effectively increasing the dynamic range of the signal and reducing unwanted audio content. The expander page is shown above right.

A gate is effectively an extreme version of an expander, with a very high ratio, resulting in the gain of the input signal being significantly reduced almost immediately as it falls below the threshold. The gate page is shown above right. Gates are often used to minimise unwanted audio content.

A ducker is used to reduce the level of a signal by the presence of another signal or side chain source. A typical use of this effect in a daily radio production routine is for creating a voice-over: A foreign language original sound is dubbed (and ducked) by a professional speaker reading the translation. Ducking becomes active as soon as the translation starts. The ducker page is shown on the next page above right.

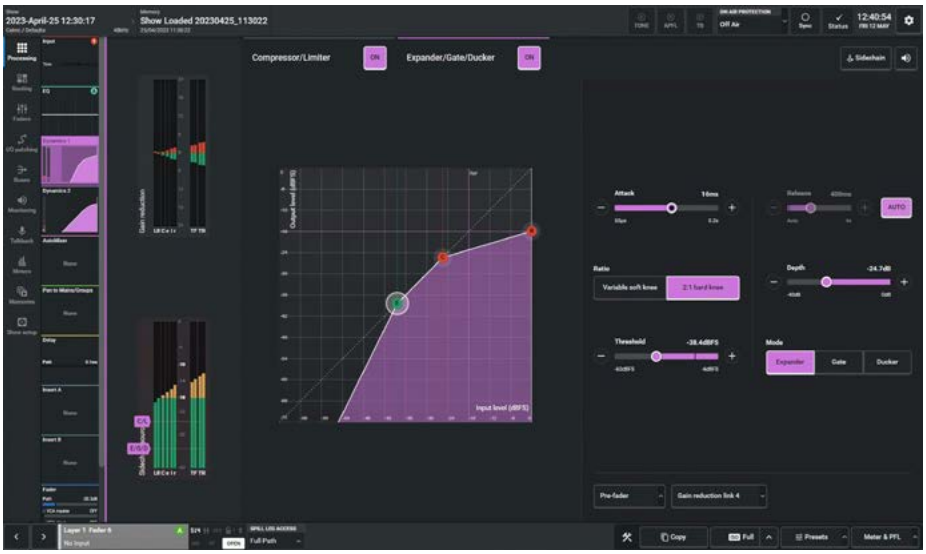
Calrec's expander/gate/ducker processing has 6dB of built-in hysteresis to avoid unwanted "chatter" (constant on/off switching) resulting from an input signal residing on or around the threshold.

The gain reduction bargraphs are again shown in the images on the right, on the left of the process window.

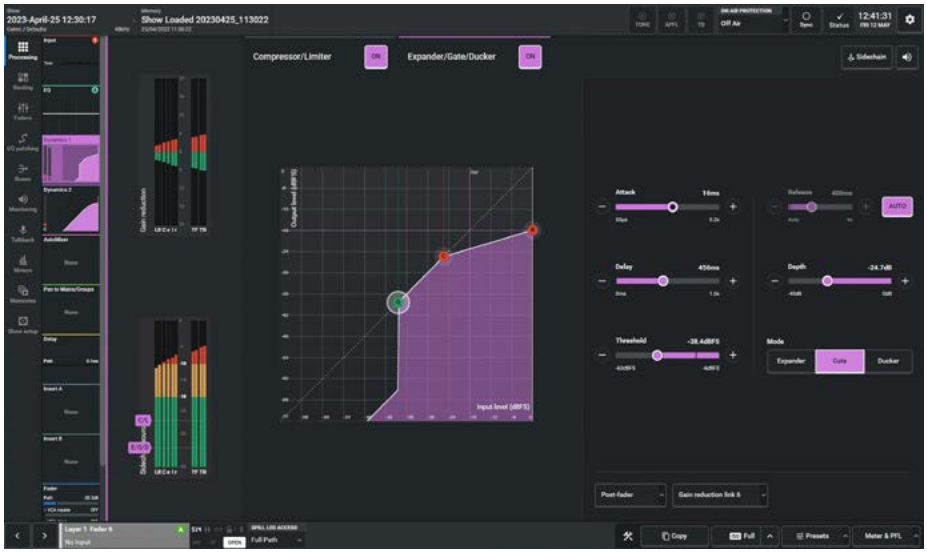
Expander/Gate/Ducker Controls
After tapping **Processing>Dynamics 1** from the Menu and selecting the Expander, Gate or Ducker Mode the controls can be adjusted in a number of ways:-

- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.
- Dragging the threshold control circle on the graph.

EXPANDER



GATE



The resultant numerical values are shown in the top right hand corner of each control and are reflected on the graph.

The following controls are available:-
Expander/Gate/Ducker In/Out switch: This is shown at the top centre of the contents area, it switches the expander/gate/ducker in or out of circuit.

Mode: The expander/gate/ducker module has a triple mode button for switching between expander, gate and ducker functionality.

Threshold: The level (dBFS) at which the signal will begin to have its gain affected.

Depth: Controls the maximum amount of attenuation which can be applied to signals below the threshold.

Delay (Gate & Ducker Only):
The minimum time the gate or ducker will be held open before closing once the threshold is reached.

Ratio (Expander only): Controls the amount of gain reduction applied to the input signal level. A 2:1 Hard knee uses

a fixed ratio of 2:1, meaning 1dB of gain reduction is applied for every 1dB that the signal falls below the threshold.

A Variable Soft knee uses a variable ratio dependent on the input signal level with the final ratio of 3:1 being applied when the signal drops to 20dB below the threshold.

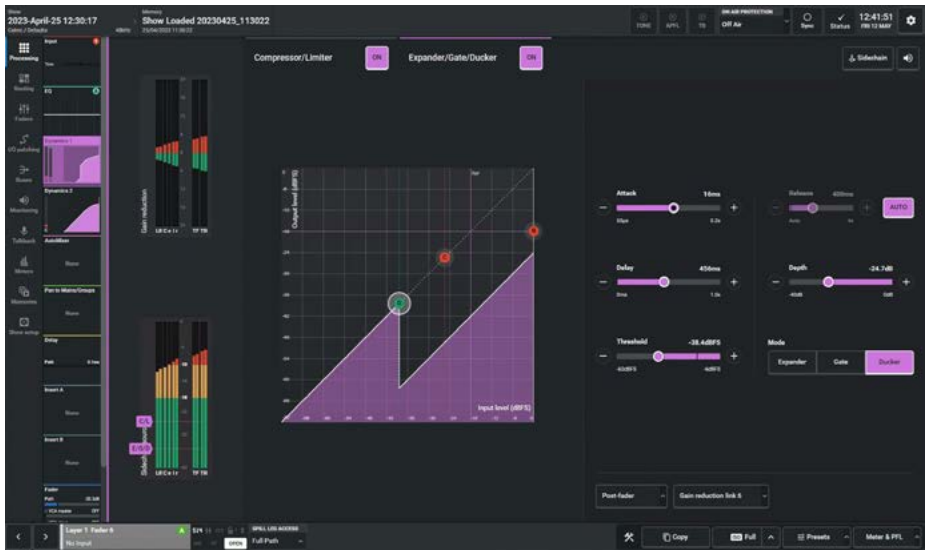
Attack: Time taken for the expander/gate takes to open. Short attack times help to preserve natural transient attack but can result in a "tapping" sound due to the rapid transition. A longer attack time ensures a smoother transition but some of the transient information will be lost.

Release: Time taken for the expander/gate/ducker to close. Longer release times create a smoother more natural transition.

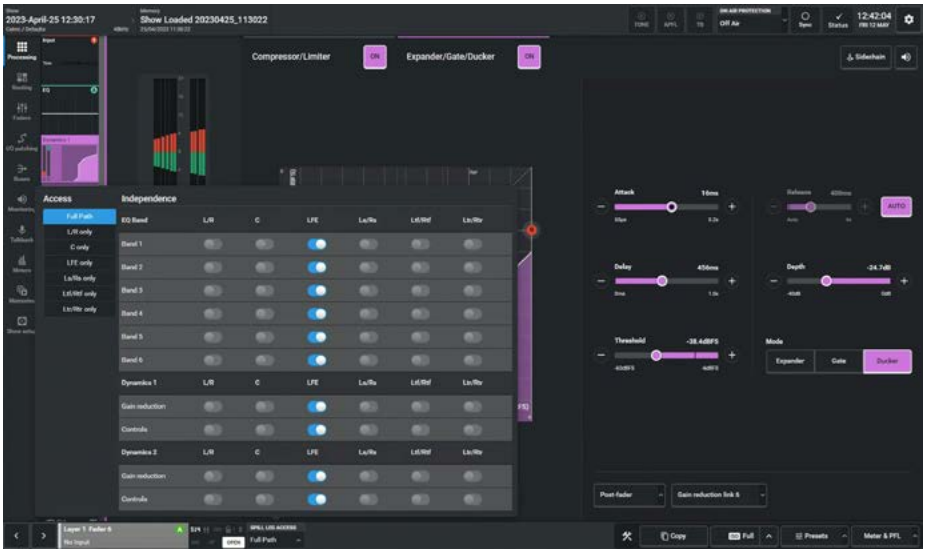
Release Auto: In this mode a filter is applied which determines how quickly the expander/gate/ducker closes by measuring the amount and duration of the attack.

This is useful in dealing with both sudden noises which recover quickly and sustained noises such as applause which recover slowly. Release Auto is enabled when the slider is dragged all the way to the left, or the **'AUTO'** button is pressed as shown in the image above right.

DUCKER



MULTICHANNEL INDEPENDENCE CONTROLS FOR DYNAMICS 1



Dynamics 1 Independence Controls for Stereo, Surround and Immersive Paths

For Multichannel paths such as stereo, surround and immersive paths it is possible to apply Dynamics 1 processing independently for:

- each L or R spill leg in a Stereo path
- each LR, C, Lfe, Ls/Rs spill leg in a 5.1 surround path
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, spill leg in a 7.1 surround path.
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf spill leg in a 5.1.2 immersive path.
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf, Ltr/Rtr spill leg in a 5.1.4 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf spill leg in a 7.1.2 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf, Ltb/Rtb spill leg in a 7.1.4 immersive path.

The image above right shows the expander/gate page for a 5.1.4 path, in the path footer is shown a drop down box labelled "Spill Leg Access" which normally says 'Full Path'.

Tapping on this opens an independence control table, which is used to determine which spill leg controls will be made independent of its multichannel master for any of the dynamics controls or gain reduction elements shown down the spill leg Independence column.

Sliding any of these switches makes those particular Dynamics 1 controls and or gain reduction elements for a particular spill leg to become independent.

The multichannel independence control image below right on the previous page, shows that all the controls for the 'Lfe' leg are independent, this is by default.

In the image above right, the user has just selected the 'Lfe only' leg to be controlled/displayed and this then shows the independent Dynamics 1 controls for the Lfe spill leg.

Removing Dynamics Independence from Spill Legs

Tapping on the Spill Legs Access button to the right of the Fader Display block shown as 'L/R Only' below right, reopens the independence control switch table as shown in the Multichannel Independence Controls for Dynamics 1 figure on the previous page.

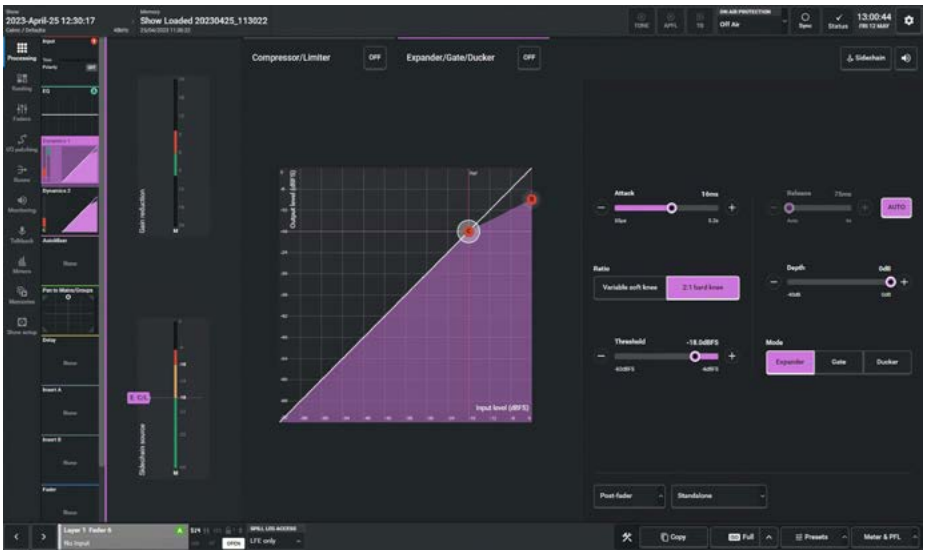
Turning Off the independence switches overwrites the independent control settings that this dynamics process had for this spill leg and replaces it with its master's settings.

If the user selects a spill leg that has not been made independent from its master or selects an expander/gate or compressor-limiter control set that has not been made independent then the display is 'greyed out' and a message saying "Controls linked to path master" appears meaning that no controls are available from this page.

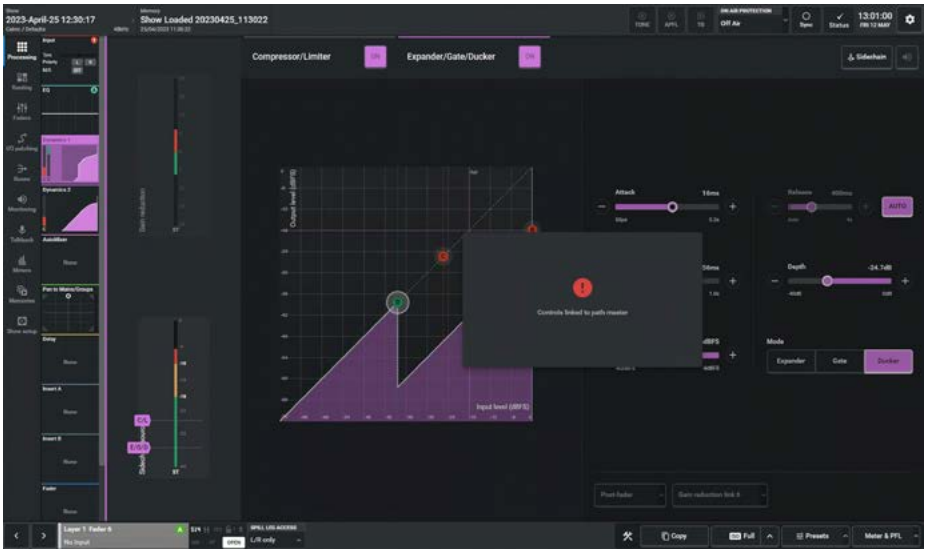
The image below right shows the Expander/Gate/Ducker page for the L/R only spill leg of a 5.1.4 path which has not been made independent.

Note: the Gain Reduction bargraphs on the left side of the contents area will show the meter values for L/R only however no controls are available as they are controlled from its master.

INDEPENDENT EXPANDER CONTROLS FOR LFE ONLY LEG OF A 5.1.4 PATH



NON-INDEPENDENT COMP/LIM 1 CONTROLS FOR L/R ONLY LEG OF A 5.1.4 PATH



DYNAMICS 2

Every Channel input, Group bus, Main bus, Aux bus and Track bus has 2 Dynamics processors available to it. This Dynamics 2 processor can be placed Pre EQ/Pre Fader or Post Fader and either run standalone or be linked to any of the eight Gain Reduction buses available.

Compressor-Limiter 2
Compressor/Limiters provide controls for reducing and smoothing the dynamic range of an audio signal. Compressors proportionally reduce the gain of a signal as it exceeds a definable threshold. When the compressor is set to be a limiter (by selecting a ratio of 50:1), the input signal must increase by a massive 50dB above the threshold in order for the output to increase by a negligible 1dB. When looking at a dynamics module, any control situated within the function header affects the whole module if not independent.

The gain reduction bargraphs are shown in the image above right, on the left side of the contents area and show the amount of gain reduction being applied to the signal, note that in the case of the 5.1.4 path shown, the Lfe (e) leg is made independent by default, so no reduction is applied as shown above right as Lfe has its own independent dynamics controls.

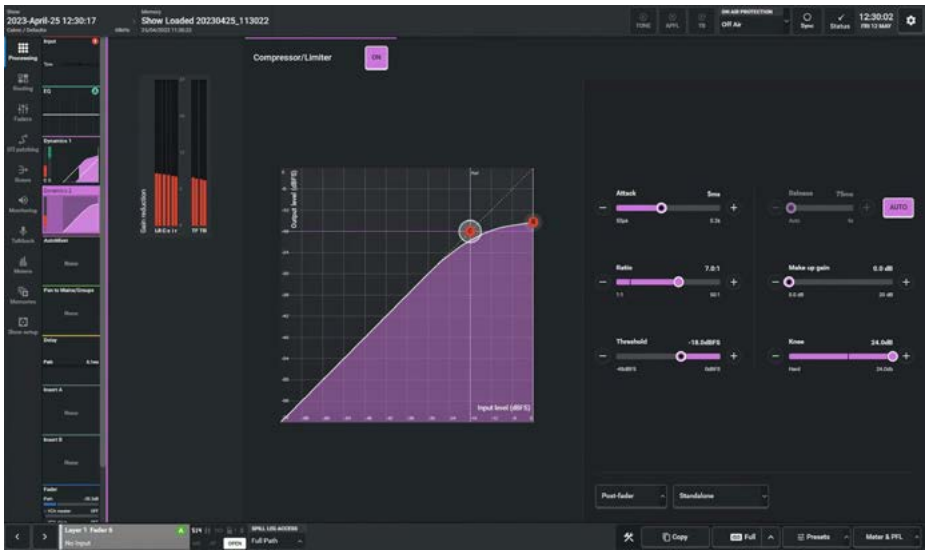
Dynamics Position in Path
Each Compressor/Limiter module can be inserted either Pre EQ, Pre Fader or Post Fader. Tap on the dynamics position button currently showing 'Post Fader' in the side panel and select an option as shown below right.

Note: for Dynamics 1, the Expander/Gate is tied to the Compressor-Limiter and follows the same Pre EQ, Pre Fader Post Fader selection, however the Dynamics 2's Compressor/Limiter can be independently placed in the Pre EQ, Pre Fader or Post Fader position.

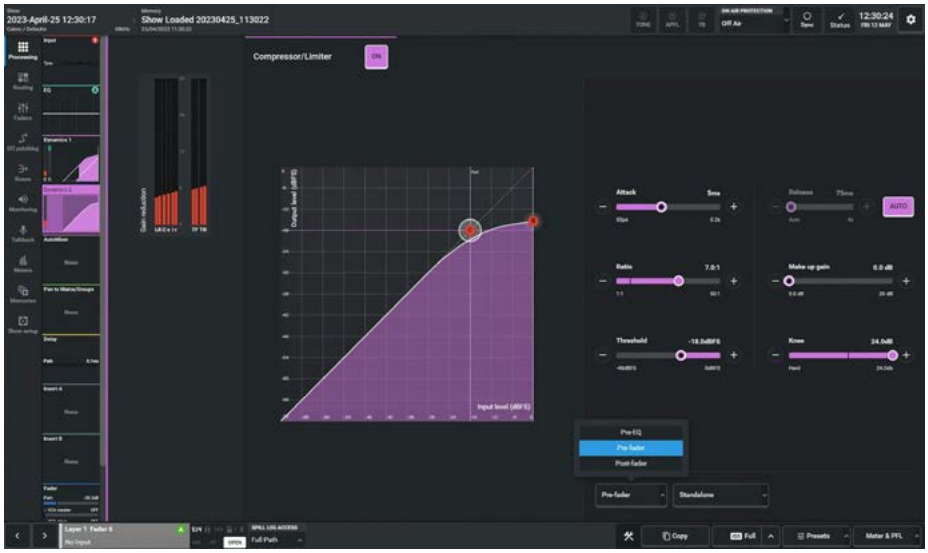
Compressor/Limiter Controls
After tapping **Processing>Dynamics 2** from the Menu, the controls can be adjusted in a number of ways:-

- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.

COMPRESSOR-LIMITER 2



DYNAMICS 2 PATH POSITION



- Dragging the threshold and ratio control circles on the graph.

The resultant numerical values are shown in the top right hand corner of each control and shown on the graph.

The following controls are available:-
Compressor/Limiter In/Out switch: This is shown at the top centre of the contents area it switches the compressor in or out of circuit.

Threshold: The level (dBFS) at which the signal will begin to have its gain reduced.

Ratio: Controls gain reduction once a signal has exceeded the threshold, for example, if the ratio is set at 2:1 and the signal exceeds the threshold by 4dBFS, the gain will be reduced so it exceeds the threshold by only 2dBFS. When set to 50:1, the compressor is acting as a limiter.

Attack: Time taken to reduce the gain to reach the new compressed level. Short attack times enable the compressor to catch transients in the audio feed, whereas increasing the attack time will allow initial transients through but catch later transients.

Fast attack times are good for catching transients and possibly stopping clipping but, when an attack time is too fast, signals can sound bad, can have artefacts, etc, so it's probably better to start with a fast attack time then slow the attack time down until it sounds right.

Release: Time taken to remove gain reduction once the signal falls back below the threshold. Short release times can lead to a "pulsing" effect, with only audio peaks being compressed. A longer release time will lead to a smoother effect at the expense of some lower level audio components being compressed.

Make Up Gain: Allows the gain of the whole compressed signal to be increased by up to 20dB.

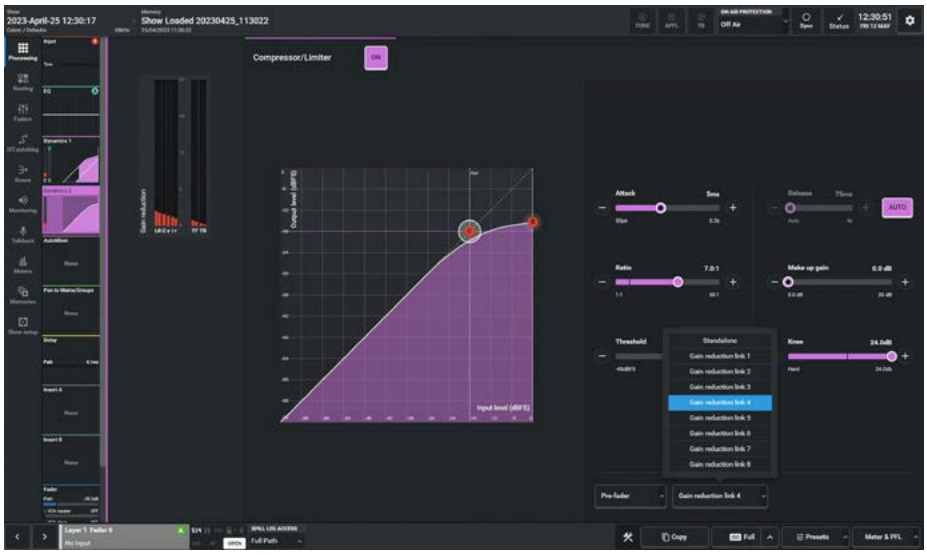
Gain Reduction Links
By default, dynamics modules operate as standalone units. This can be changed by tapping on the dynamics gain reduction link button currently showing "Standalone' in the side panel and selecting an option as shown above right, this allows the module to be put into one of eight gain reduction links. Gain reduction links allow multiple audio feeds to have the same dynamics processing applied.

Note: the Dynamics 2 Comp/Limiter acts independently and can use different gain reduction links than Dynamics 1.

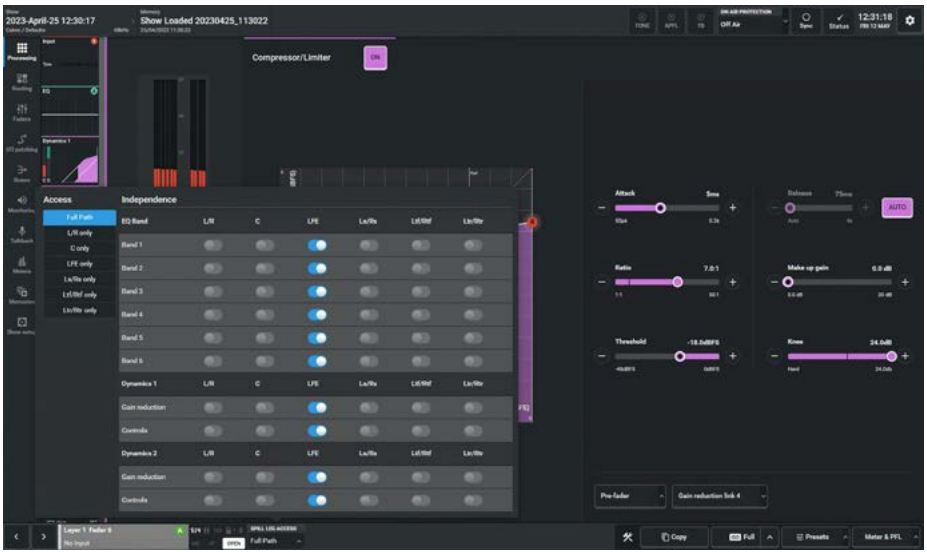
When multiple paths' dynamics modules are set to be part of a gain reduction link, the amount of gain reduction applied across the link will always equal that for the signal being affected the most. For example, within a gain reduction link, if one path's signal is causing 5dB of gain reduction and another is causing a reduction of 10dB, all signals within the gain reduction link will have a gain reduction of 10dB applied.

Dynamics 2 Independence for Stereo, Surround and Immersive Paths
For Multichannel paths such as stereo, surround and immersive paths it is possible to apply Dynamics 2 processing independently for:

GAIN REDUCTION LINKS



MULTICHANNEL INDEPENDENCE CONTROLS FOR DYNAMICS 2



- each L or R spill leg in a Stereo path
- each LR, C, Lfe, LsRs spill leg in a 5.1 surround path
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs spill leg in a 7.1 surround path
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf spill leg in a 5.1.2 immersive path.
- each L/R, C, Lfe, Ls/Rs, Ltf/Rtf, Ltr/Rtr spill leg in a 5.1.4 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf spill leg in a 7.1.2 immersive path.
- each L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf, Ltb/Rtb spill leg in a 7.1.4 immersive path.

The image below right shows the Dynamics 2 Processing Compressor/ Limiter page for a 5.1.4 path, in the path footer is shown a drop down box labelled "Spill Leg Access" which normally says 'Full Path'.

Tapping on this opens an independence control table, which is used to determine which spill leg controls will be made independent of its multichannel master for any of the dynamics controls or gain reduction elements shown down the spill leg Independence column. Sliding any of these switches makes those particular controls and or gain reduction elements for a particular spill leg to become independent.

AUTOMIXER

Argo has eight AutoMixer buses which can be used to automatically mix the levels of a selection of mono and stereo channels and groups, keeping the overall level of the mix constant.

AutoMixers have the effect of boosting paths with higher signal levels relative to other paths in the grouping, whilst lowering those with lower signal levels.

In reality, AutoMixers only ever apply attenuation, signals are never actually boosted.

For example, in a talkshow situation, with one presenter and three guests, if all four microphones are assigned to an AutoMixer and only the presenter is speaking, the three guests' microphones will be attenuated more than the presenter's microphone, giving the effect of a boost to the presenter's voice and keeping the level of the overall program constant.

This method of automixing, i.e. using attenuation adjustment, results in a mix in which the total ambient/background noise level remains fairly constant.

Accessing AutoMixers

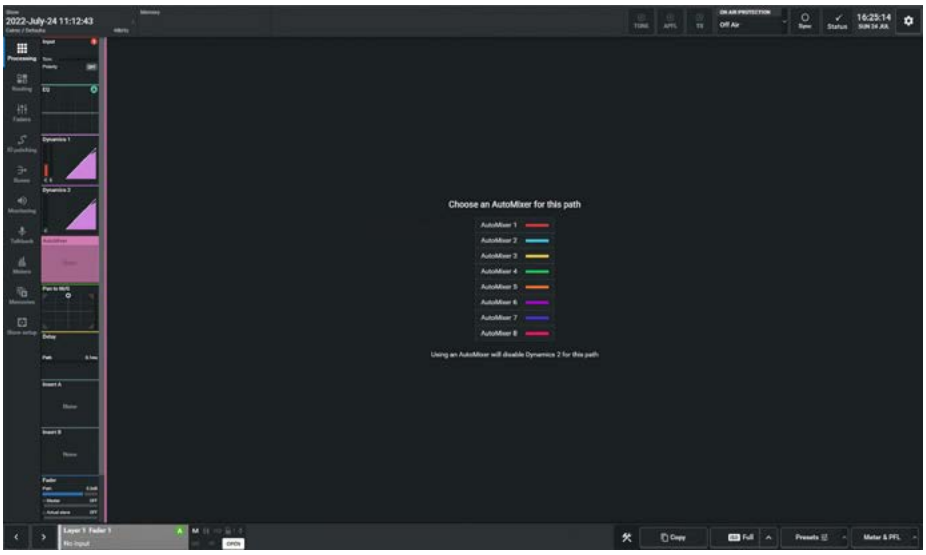
Go to the **Processing>AutoMixer** submenu, if no AutoMixer process is present on the Mono or Stereo path, a selection will appear as shown above right, if an AutoMixer has been allocated the AutoMixer will appear as shown below right.

Applying AutoMixers to Paths

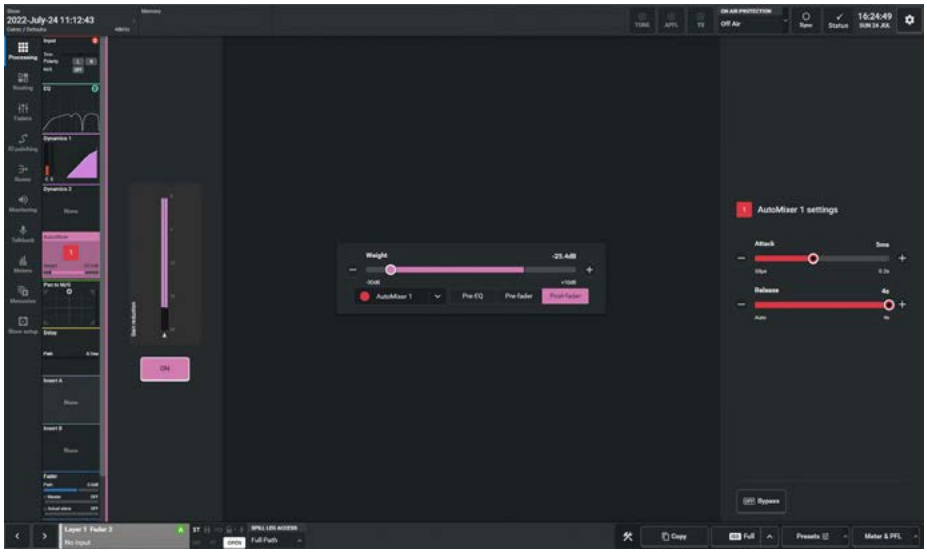
1. Access the mono or stereo channel or group.
2. Tap the **Processing>AutoMixer** tab.
3. Tap to choose an AutoMixer bus for this path: 1 thru 8. (see above right)
4. Check that the AutoMixer Contribution is turned on (it's on by default) see button below gain reduction meter on image below right.

Note: AutoMixers replace Dynamics 2 modules to function, so if an AutoMixer is applied to a path, the Dyn 2 module is disabled and vice versa .

SELECT AUTOMIXER



AUTOMIXER CONTRIBUTION CONTROLS



Setting Individual Path Weighting

AutoMixers calculate the ratios of path audio levels to the sum of all path levels to which the AutoMixer has been applied.

Weighting can be applied individually to each path—the higher the weighting, the more prominence is given to that path in the ratio calculation, giving it more prominence within the mix.

The following controls are available:-

Weight:

This is used to calculate the level of attention applied to the path. The higher the weighting from -30dB to +10dB, the more prominent the path will be in the resulting mix.

AutoMixer On/Off:
This switch underneath the Gain Reduction meter turns the AutoMixer Off or On for this particular path.

Position Buttons:
This sets the position of the Automixer in the audio path processing. The AutoMixer can be applied Pre EQ, Pre fader or Post fader as shown in the image above right just below the Weighting slider.

Gain reduction meter:
This is provided so the user can see how much gain reduction is being applied.

Removing Automixers from Paths
To remove an AutoMixer either select '**No AutoMixer**' from the AutoMixer dropdown as shown above right or tap the '**Remove The AutoMixer**' button on the Dynamics 2 page.

This will allow the user to control the Dynamics 2 processing on that path once more.

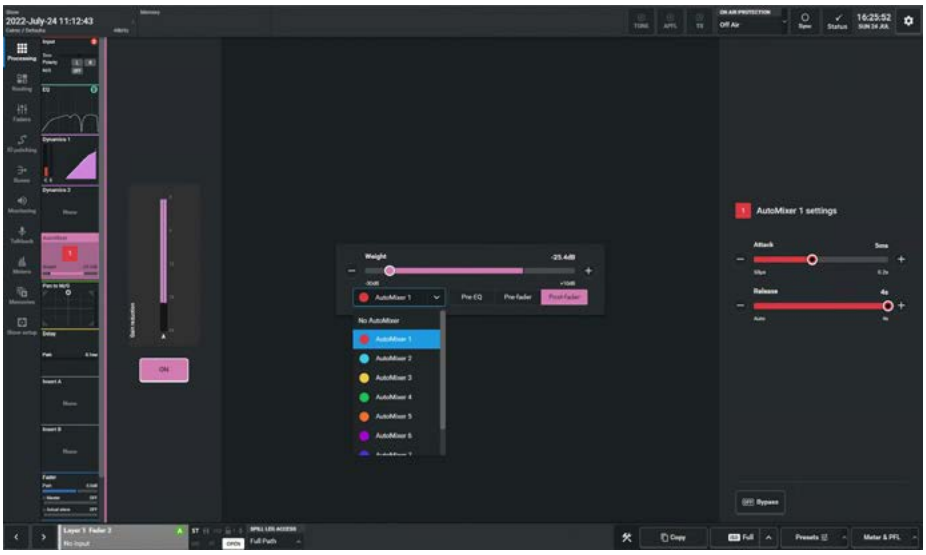
AutoMixer Global Control
Each of the Argo eight AutoMixer buses have their own global attack, release and bypass controls. Attack and release are used to smooth out the signals prior to the level ratio calculation being made.

A compromise must be made between fast attack and release, which leads to a more erratic but fast-acting functioning, and slow attack and release times, which leads to a slower acting but smoother functioning.

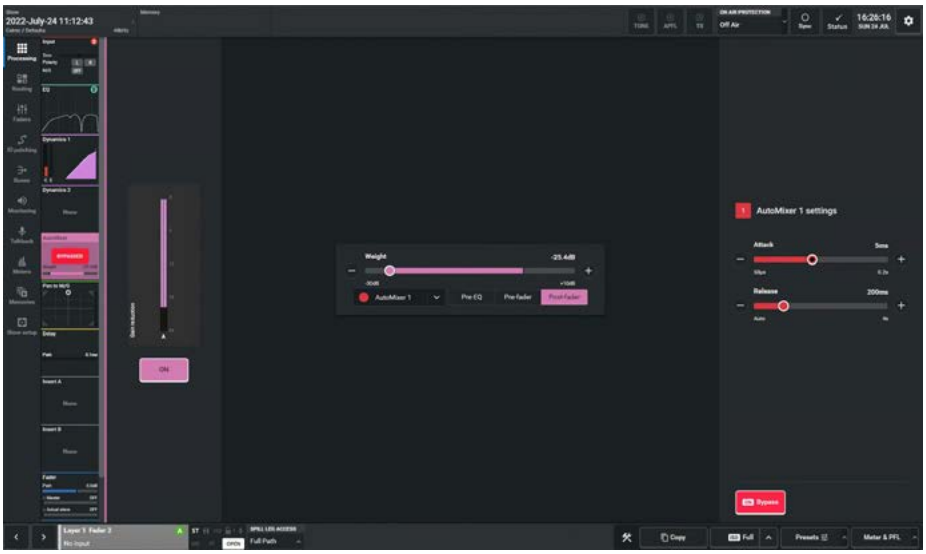
The relevant AutoMixer global controls are shown alongside the AutoMixer path controls in the right hand side panel as shown below right.

The 8 AutoMixer global controls also appear in **Show setup>AutoMixers** this allows the user to adjust all the global controls from the same page.

REMOVE AUTOMIXER



AUTOMIXER GLOBAL CONTROL PER AUTOMIXER



Tapping the **'Bypass'** button at the bottom of the right side panel, disables that AutoMixer bus for all assigned paths and puts a Bypass flag on the menu icon.

The Attack Time for each AutoMixer can be set between 50us (default) and 0.2s

The Release Time for each AutoMixer can be set between 75ms and 4s (default).

If the user wants to momentarily take just a path out of the AutoMixer assignment, the **'AutoMixer Contribution'** On/Off button should be used which can be found underneath the Gain Reduction meter.

PAN

The pan processing tab provides individual pan controls from each channel, group or main. The pan controls in this page are available for panning to mains and groups. Panning to auxes and tracks is handled in the Aux Sends & Pan and the Track Sends & Pan pages.

This page provides flexible and adaptive panning controls which change to reflect the width of both the source and destination paths.

It is important to note that the pan controls for a given path do not actually alter the panning of the path itself.

They do in fact alter the pan position of that path's contribution to its destination bus. There is a shared pan position for the channel when it is routed to main and group buses.

Pan Controls
Depending on the width of the current path, and the width of the destination bus, different pan controls will be made available on the surface. For example when sending a mono path to a mono bus, there will be no controls available. When sending a mono path to a surround or immersive bus, a great deal more controls will be presented that allow control over mono placement in a surround or immersive field.

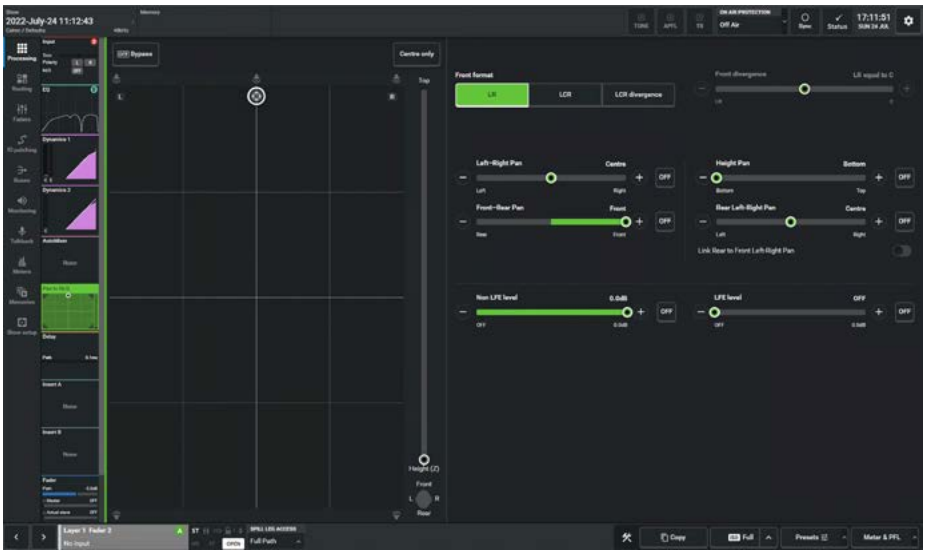
After tapping **Processing>Pan** from the Processing section of the Menu, the controls can be adjusted in a number of ways:-

- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.

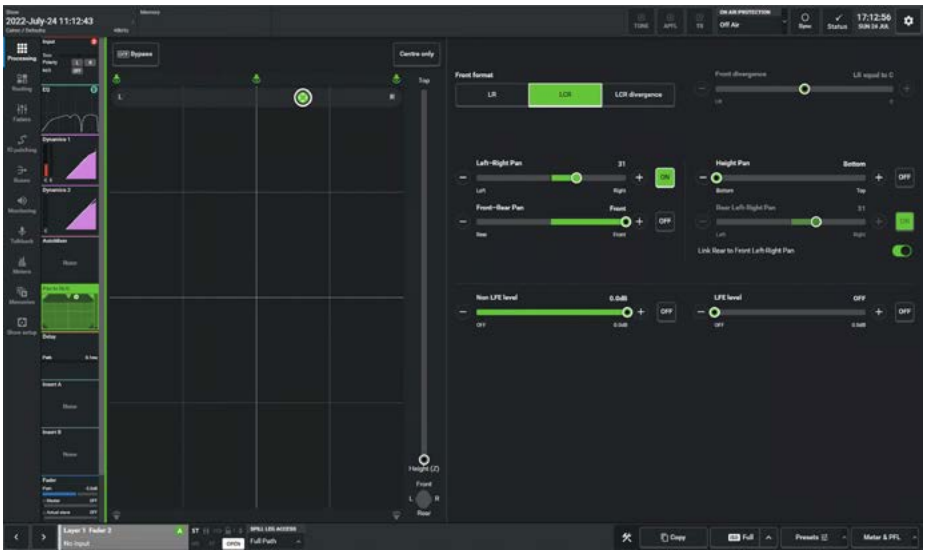
The resultant numerical values are shown in the top right hand corner of each control and shown on the joystick image to the left.

The following controls are available:-
Front Pan:
If the Front Format is set to LR the (Front) Left-Right pan allows positioning of the signal in the L and R speakers.

PAN TO MAINS AND GROUPS



PAN FORMAT OPTIONS



The slider switch just to the right of the Left Right pan control, switches the Left-Right Pan position in or out, as shown above right when out of circuit and below right when in circuit. The speaker symbols also illuminate to show the active panning options. In this case L and R.

Front L-C-R:
The image below right shows a dropdown selector defining the Front Format with 3 options LR, LCR and LCR Divergence.

The Front L-R and L-C-R buttons switches the Front Pan control between L-R panning and L-C-R panning.

Front Divergence:
With Front L-C-R Divergence selected the user can then control the spread of the signal ranging from fully converged in the C speaker, through equal level in L, R & C, to full divergence with no level in the C speaker and full level in the L & R speakers.

Front-Rear pan:
This control varies the position of the signal between the front and rear speakers. The use of this control in combination with the Left-Right Pan control allows the user to steer and place the source audio in the sound field as represented by the panning control/ display to the left of the screen.

The slider just to the right of the Front-Rear pan control switches the Front-Rear Pan position in or out, as shown above right.

Bypass M&G Pan only:
When this switch at the top of the contents area is active all the various pan controls are bypassed as though they had been switched out of circuit as shown above right.

Note: this also displays a Bypass flag on the sub-menu icon.

Centre only:
This sets the signal to appear only in the centre speaker. It effectively overrides all pan positions, see below right.

Lfe Level:
Lfe varies the level sent to the Lfe speaker. When this control is switched out, no signal is sent to the Lfe.

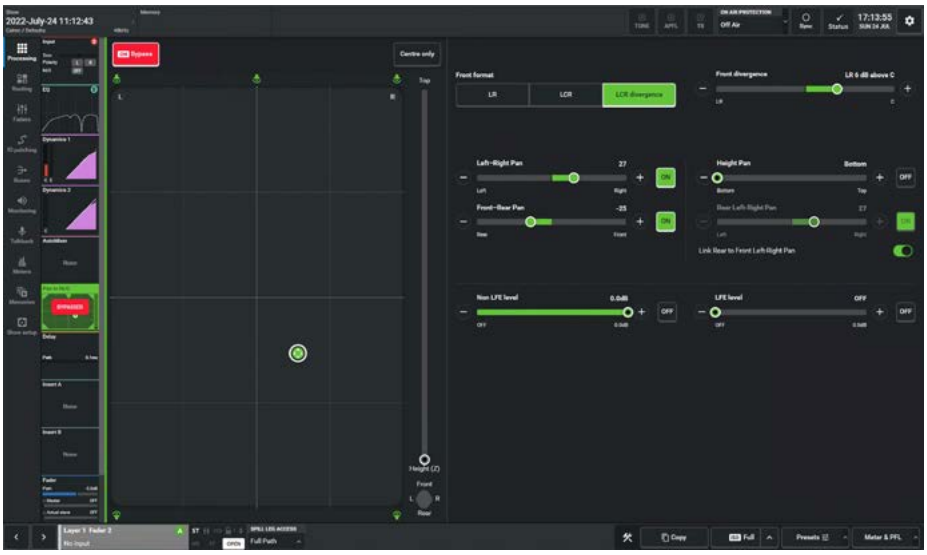
For all legs other than Lfe itself the Lfe level is off by default to prevent them adding audio to the Lfe leg unintentionally, but can be added in as required.

Non-Lfe Level:
The level sent to all channels other than the Lfe channel can be varied with the Non-Lfe control if switched in circuit.

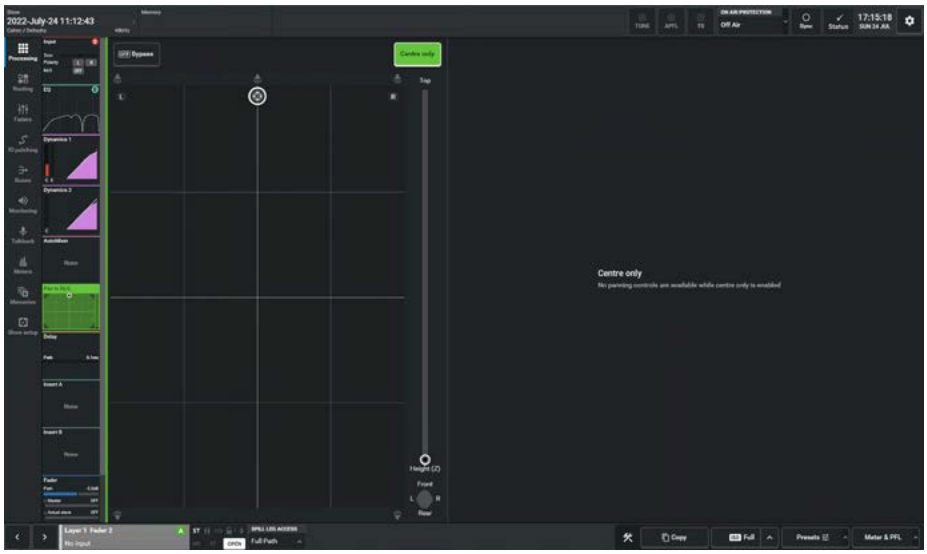
When this control is switched out (and it is by default) and the signal is panned to one or more channels other than the Lfe, the signal is sent at full level.

Note: the Non-Lfe control is turned on but set at the off level (by default) when an Lfe leg is being independently controlled to prevent Lfe audio being added to the other legs unintentionally.

PAN BYPASSED



PAN CENTRE ONLY



Joystick "Puck" Control:
In addition to using the pan controls' sliders and switches, the pan position can be controlled by dragging the puck around the joystick display area.

The area available for panning changes depending on the panning format and the speaker symbols around it, show which speakers are being panned between.

When the 'Link Rear to Front Left-Right Pan' is in circuit, as shown above right, the puck and the green dot are shown in the same position as the joystick is acting in a true X-Y manner.

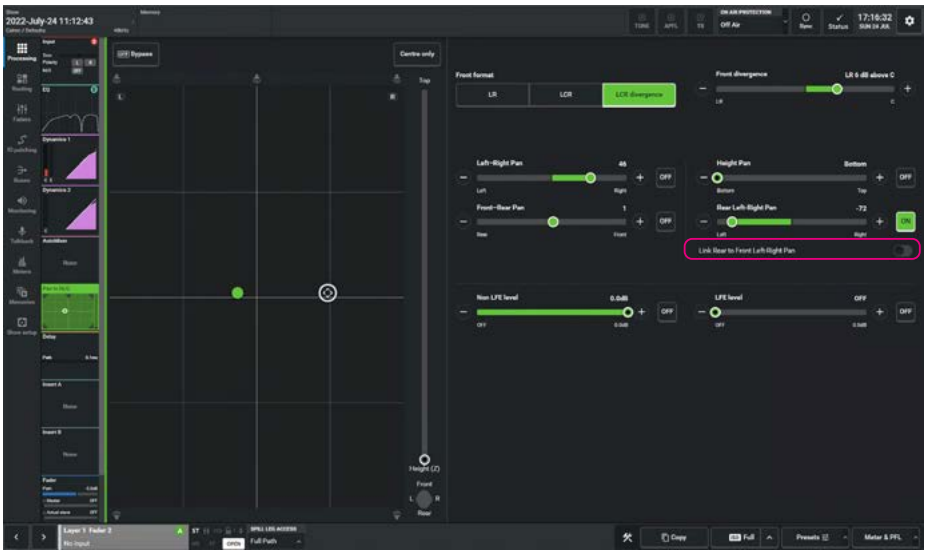
Note: the behaviour changes if the Rear Left-Right pan is NOT linked to the Front Left-Right pan as shown on the next page.

Independent Rear Left-Right Pan:
The Rear Left-Right Pan control, when NOT linked to the Front Left-Right Pan control with the highlighted slider shown above right allows the user to vary the Rear Left-Right position to be set independently from that of the Front Left -Right Position.

The use of this control in combination with the Left-Right Pan and the Front-Rear Pan control allows the user to steer and place the source audio in the sound field as represented by the joystick control/display '**dot**' shown on the left of the screen.

Note: the different positions of the 'puck' and 'dot' although the puck is showing the X-Y position the green dot is showing the actual pan position as shown above right.

INDEPENDENT REAR LEFT-RIGHT PAN



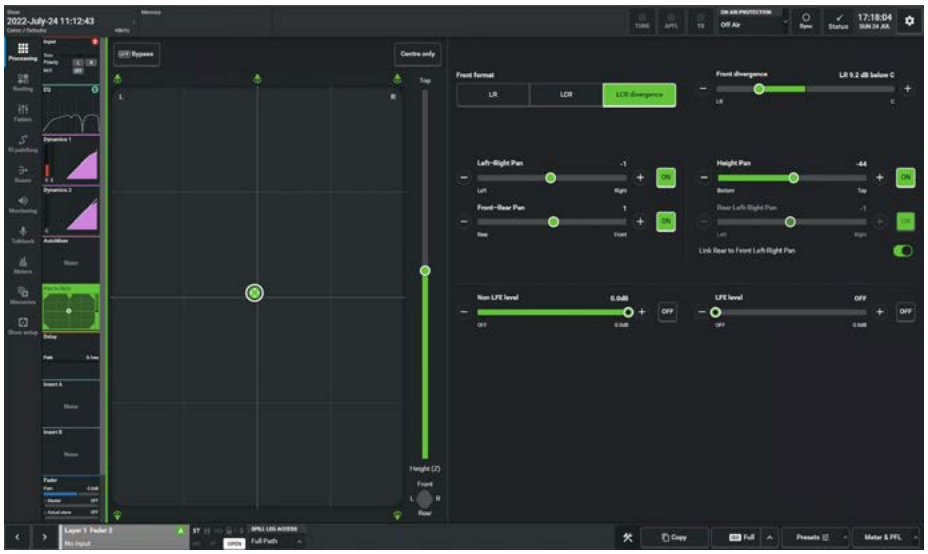
Height Panning
With the introduction of Immersive path formats in Argo, additional position control of the signal's height is also required. The combination of Left-Right (X), Front-Back (Y), and now Bottom-Top (Z) pan position controls allows the user to pan the signal in a 3-dimensional space (X,Y,Z).

The slider switch just to the right of the Height pan control, switches the Height Pan position in or out, as shown below right.

When the Height Pan switch is on, vertical height panning between the surround speakers at head height and the speakers placed typically at ceiling height as top left and right front speakers for 5.1.2, 7.1.2 and 0.0.2 (height only) formats or the speakers placed as top left and right front and top left and right rear speakers for 5.1.4, 7.1.4 and 0.0.4 (height only) formats is enabled.

In addition to using the Height pan controls' sliders and switches, the Joystick area also contains a Height (Z) control which when dragged up & down provides Height pan.

HEIGHT PANNING



Stereo, Surround & Immersive path Spill leg access and independence for Pan settings
Using the independence drop down as shown previously in the EQ and Dynamics sections, it is possible to access each of the spill legs for the stereo paths, 5.1 & 7.1 surround paths and the 5.1.2, 5.1.4, 7.1.2 & 7.1.4 immersive paths, such as the 7.1.4 immersive path shown above right. This allows parameter changes to be made on each spill leg. In the left of the path footer is shown a drop down box labelled "Spill Leg Access" which says 'Full Path'.

When shown as Full Path it is not possible to apply pan to each Mono leg of a Stereo channel and for Surround or Immersive channels, no pan controls are made available, however accessing each of the Spill legs allows the user to pan those legs to the required position in the destination formats.

Accessing Spill Legs for Panning
Tapping on the drop down box labelled "Spill Leg Access" which normally says 'Full Path' opens the independence control table, which is used to determine which spill leg controls will be made independent.

Clicking on a mono spill leg such as 'C' or 'Lfe' or clicking on a stereo spill leg such as 'L/R only' enables the pan controls allowing the user to pan the selected spill legs anywhere in the 3-dimensional space i.e. X, Y & Z panning.

DELAY

Argo has three types of delay available:

- Input delay: up to 5.4s available per path from an input delay pool of up to 256 mono legs, for example, when assigning input delay to a 5.1 path, six of the mono legs are used.
- Path delay: up to 5.4s available per path **always** available.
- Output & Direct Output delay: up to 5.4s available per path from an output delay pool of up to 256 mono legs, used in the same way as the Input delay.

Note: input, path and output delay can be used individually or in combination.

Input & Output Delay Controls
After tapping **Processing>Delay** from the Menu, the image above right is displayed, this shows the Path Delay which is always available and also the Input 1 delay and Input 2 delay unassigned options which can be added by tapping on the Assign buttons.

The image below right shows that a mono input channel has had input 1 & input 2 delays assigned to it and all 3 delays have been switched on using the slider switch to the right of the delay duration controls.

Note: if the input of the channel is selected to Input 1, the Delay value for Input 2 is also shown but is greyed out and cannot be altered until the user changes to Input 2 and vice versa.

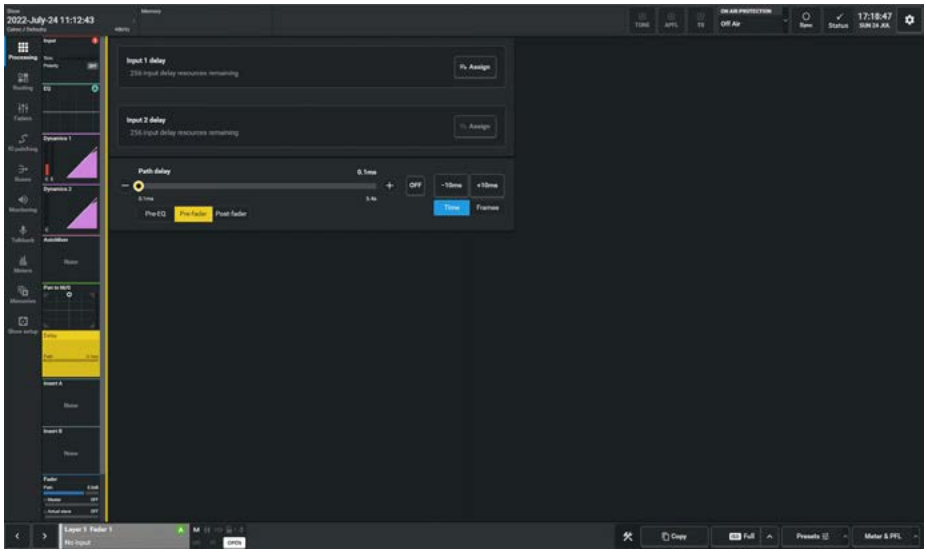
The following controls are available:-
Assign or Remove Delay buttons:
The user can tap on the '**Assign**' button to assign Input and/or Output /Direct Output delay processing from their respective pools. If the delay is no longer required the user can tap on the '**Bin**' icon to put that delay resource back to the pool.

Delay Duration: The user can adjust the controls in a number of ways:-

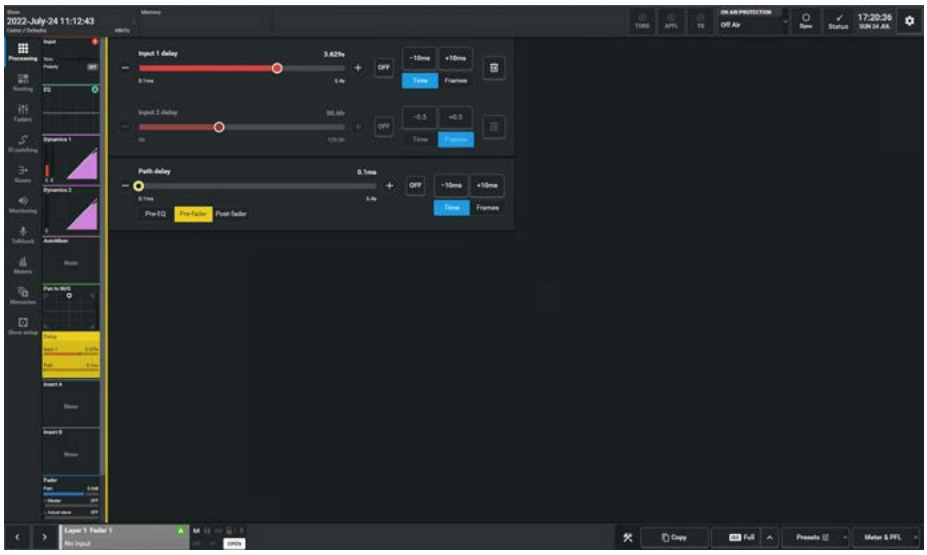
- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.

The resultant numerical values are shown in the top right hand corner above each of the delay controls.

PATH DELAY AND UNASSIGNED DELAY POOLS



PATH DELAY AND INPUT 1 & INPUT 2 DELAYS



Step Buttons: To the right of each control block are +/- Step buttons with the Step size shown e.g. 10ms or 0.5fr.

Note: this can change depending on the delay units used (Time or Frames) as set by the selection switches below the Step buttons.

The frame rate in frames per second (fps) will change the delay amount being applied and there are 5 frame rates available:- 23.98 fps, 24 fps, 25 fps (PAL), 29.97 fps (NTSC) and 30 fps, as set in **Show setup>Delay options**.

Delay On/Off Switch: The user can switch in or out the amount of delay being applied to the path, input and output delays with the slider switches just to the right of each delay duration control.

Path Delay Position: The user can select the position in the audio chain where the Path delay is applied, by tapping on the Pre EQ, Pre Fader or Post Fader buttons under the Path delay duration control as required.

Group and Direct Output Delays
The image above right shows a 7.1.4 group with path delay and 4 direct output delays assigned, note that the direct output delays are only available if the user has created direct outputs for that path.

In this case, four different direct outputs at various widths have been assigned: the original 7.1.4 width, a 5.1 downmix width, a stereo downmix width and a mono downmix width, each of which can have their own delay setting.

The user in this example has decided to work in frames of delay by changing the unit selection from Time to Frames.

Note: Output Delay can be applied to Mains, Auxes & Tracks. Channels and Groups can also have Output delay applied in the form of Direct Outputs.

Main Outputs and Downmix Delays
The image below right shows the delay page for a 5.1.4 Main Output.

Apart from the path delay which is always available, the user has also assigned output delays for the 5.1.4 main output, the 5.1 downmix output, the stereo downmix output and the mono downmix output.

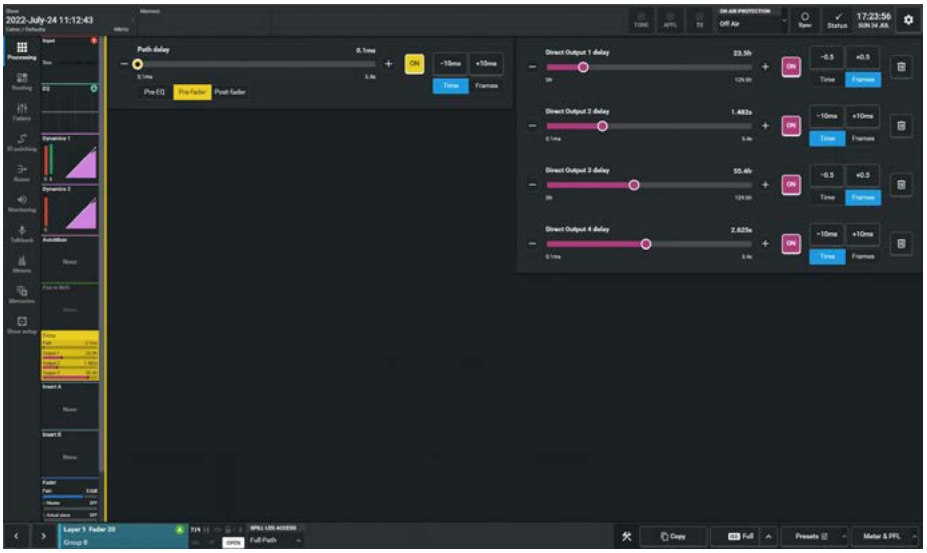
Two delay links are available and selecting two or more delays to the same delay link as shown allows the user to control the delay duration from any of the controls in the link to control all the other delays on the same link.

The linking is done relatively, so that if one link member is set to 1.1s and another is set to 2.1s, then adding 0.1s to either changes both to 1.2s & 2.2s respectively.

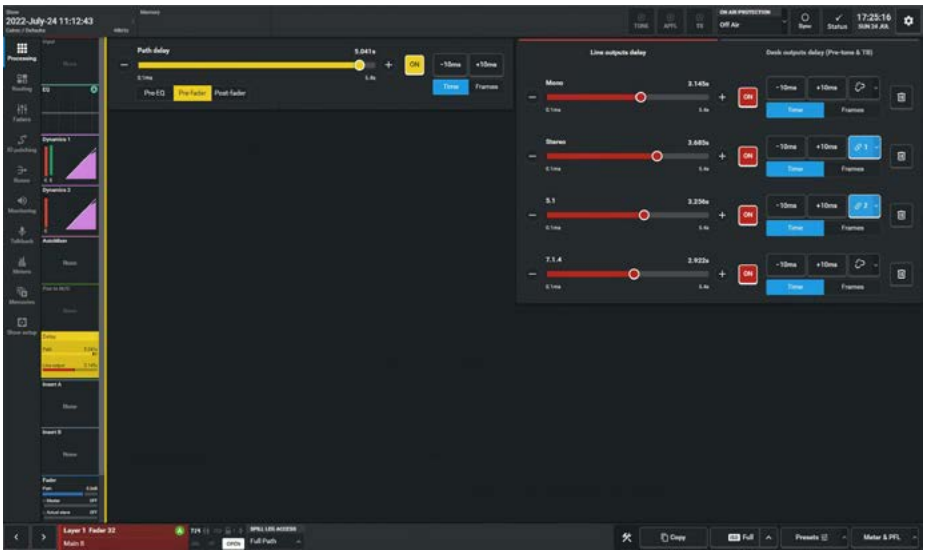
Note: to have the same delay in each link member, set each output to the same value as the others when not in the link and then put them in the link.

Main Line and Main Desk Outputs
On Argo there are two types of outputs from the main buses, Line Outputs & Desk Outputs.

7.1.4 GROUP PATH DELAY AND UP TO 4 DIRECT OUTPUT DELAYS



5.1.4 MAIN PATH DELAY AND OUTPUT DOWNMIX DELAYS WITH DELAY LINKS



The difference being that Desk Outputs are taken pre-tone & talkback and Line Outputs are post-tone & talkback.

The user can access either the Main Line outputs delay set or Main Desk outputs delay set by tapping on the areas above the main output & downmix output delay duration controls.

Note: the Main Line delay outputs and Main Desk delay outputs may be put in the same link if required.

Also note that for all stereo, surround or immersive paths it is not possible to independently alter the delay settings of the spill legs.

Accessing the dropdown box labelled "Spill Leg Access" which normally says 'Full Path' and selecting any of the Independent Spill Legs will show the "No Controls Available" message for the Delay page of a Spill Leg.

INSERTS

Inserts provide a quick way to insert signal processing in the path. Input channels, groups, mains, auxes and tracks can each have two inserts labelled Insert A & Insert B. The configuration is the same for either.

Each insert has a send and a return, with external port connections. Sends and Returns appear in the IO patching screen for patching to/from to external devices. For Argo there is a pool of up to 1024 mono insert legs available which can be used for channels, groups, mains, auxes & tracks. The **Processing>Insert A** and **Processing>Insert B** submenus shown above right allows the user to allocate this pool to the various paths.

Note: the Monitor Sends & Returns are always available and the control for that Insert On/Off is in the monitor section.

Path Inserts

Path inserts are associated with the attached path. If for example, an input channel is attached to a fader and its paths insert is patched to an IO box, then the input channel on that fader is moved to a different fader, the insert patching will move along with it to appear on the faders insert send and return displays.

Add Inserts

The image top right shows the '**Add Insert**' button used to access the insert pool.

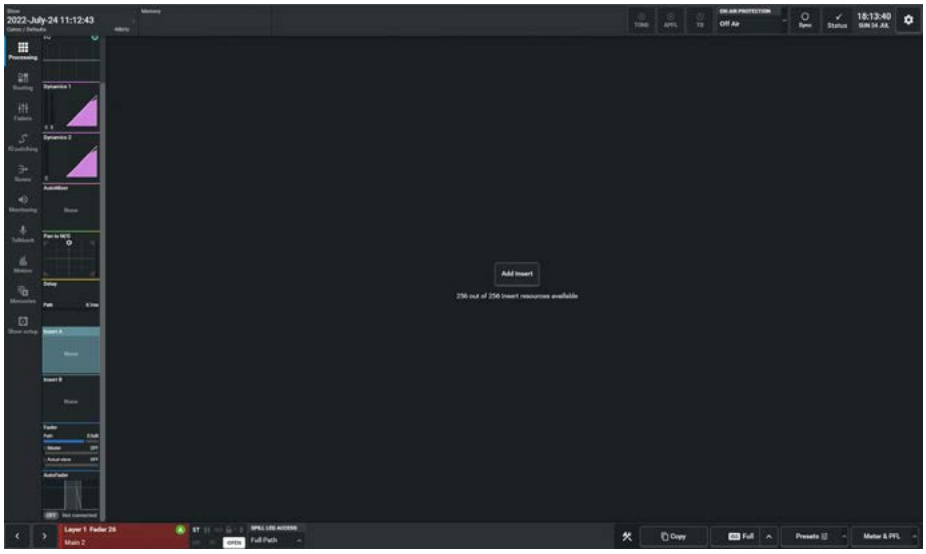
Select Inserts

The image middle right is the dialogue box which appears when the **'Add Insert'** or **'Edit'** button (for paths with inserts present) is tapped. This allows the user to select which Insert(s) are used with this path. The user selects the leg(s) of the path on the left, the inserts to use on the right, then presses the '**Connect**' button below. The '**Remove**' button disconnects the leg(s) from the A or B Insert and the '**Done**' button exits the dialogue box.

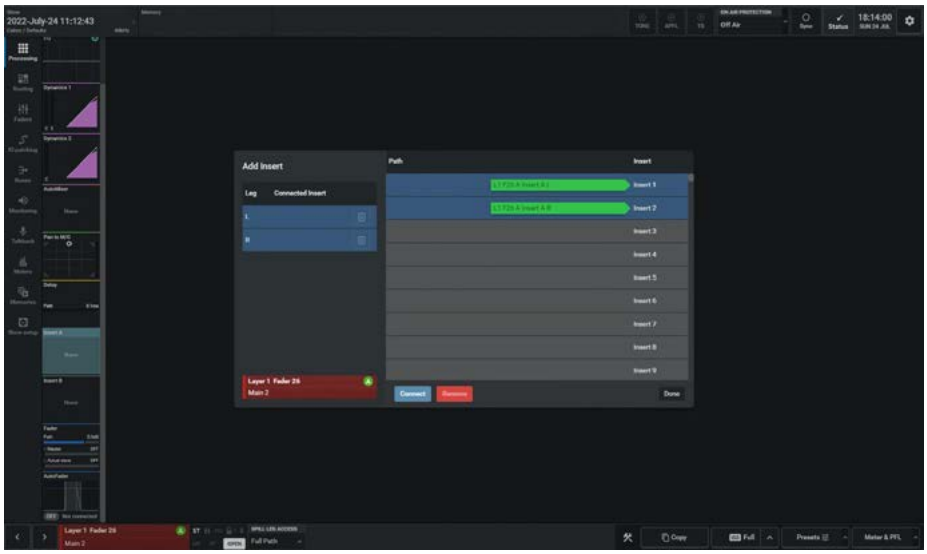
Patching Fader Insert Sends

The image below right shows the Fader Insert sends on the left being connected to the required transmitter stream outputs on the right using the '**Connect**' button in the **IO Patching** page.

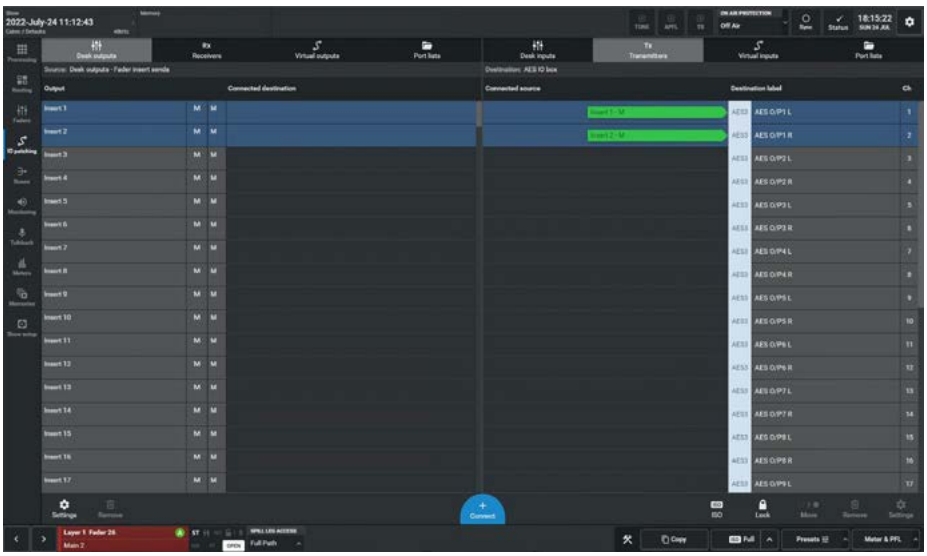
ADD INSERT A



SELECT INSERTS NUMBERS FOR INSERT A



PATCHING FADER INSERT A SENDS



Patching Fader Insert Returns
The image top right shows the Fader Insert returns on the right are connected from the required input receivers stream on the left using the **'Connect'** button on the **IO Patching** page.

Insert Allocation
The image middle right shows the current Insert allocation for each of the legs of the selected path on the left and the patching status of Insert Sends & Returns and the transmitters and receivers on the right that are in use, as well as the various controls used to manage the inserts.

Insert On/Off Button
The button at the top left of the contents area is the Insert On/Off control which switches the Insert in or out of the selected path. This is also shown in the Submenu Icon.

Insert Position
The buttons to the right of the Insert On/Off button at the top of the contents area, show the current position placement for this insert. The user may place the insert Pre EQ, Pre Fader or Post Fader in the Audio chain of that path. Insert A and Insert B can be fed from different positions in the Audio path.

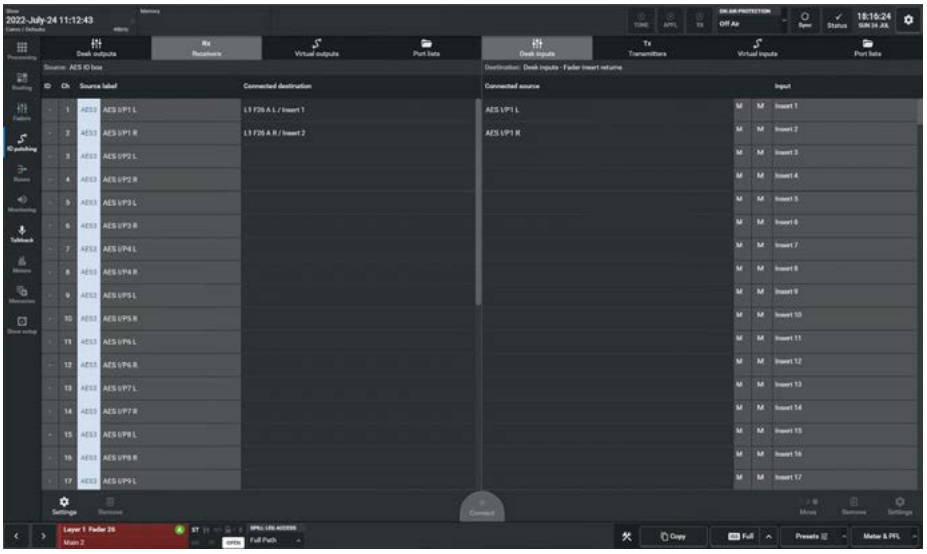
Remove Inserts
The image bottom right shows the "Remove Insert" dialogue box for Insert B which appears when the '**Remove**' button at the top right of the contents area is tapped.

This warns the user that all the Insert parameters associated with this path will be reset, but the IO patches will not be changed. The removed Inserts are returned to the available Insert pool.

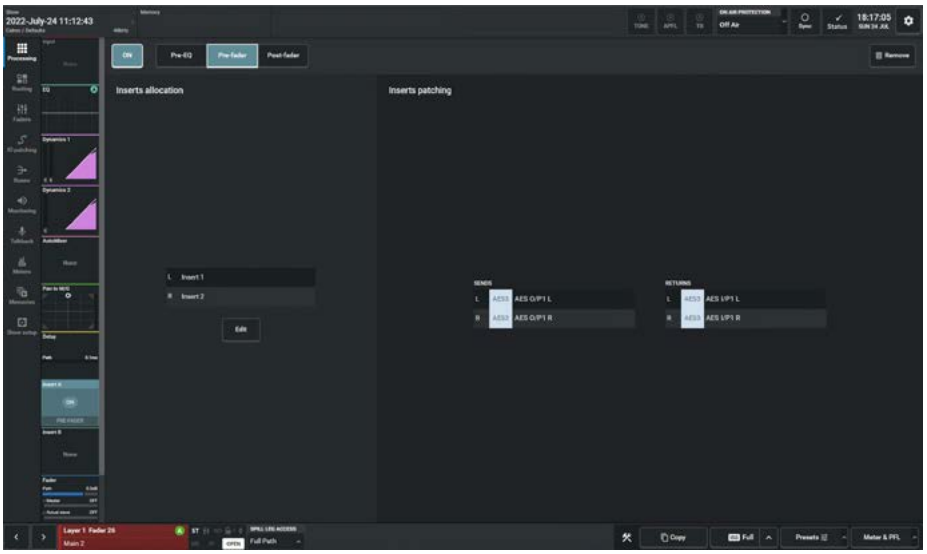
Note: for all stereo, surround or immersive paths it is not possible to independently alter the insert settings of the spill legs.

Accessing the dropdown box labelled "Spill Leg Access" which normally says 'Full Path' and selecting any of the Independent Spill Legs will show the "No Controls Available" message for the Insert page of a Spill Leg.

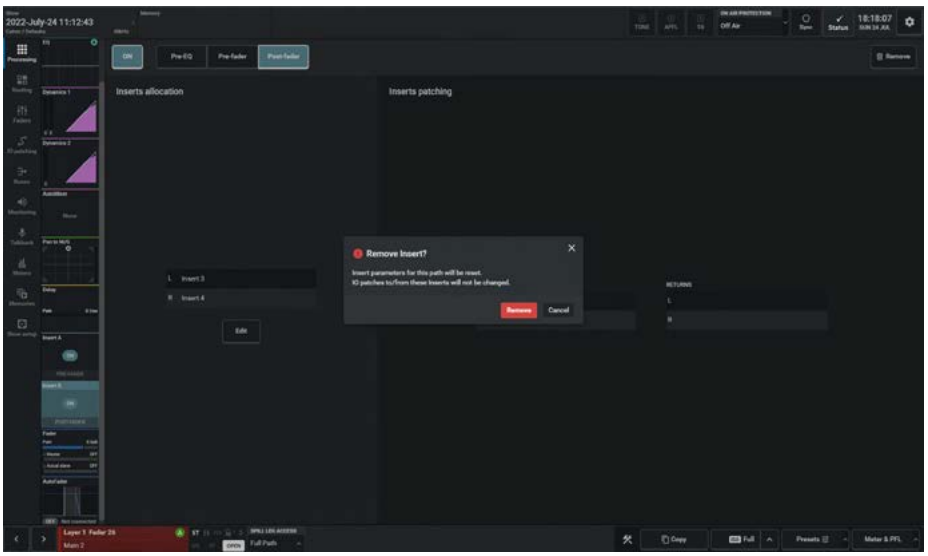
PATCHING FADER INSERT A RETURNS



INSERT A ALLOCATION- ON/OFF- POSITION-PATCHING & REMOVE OPTIONS



REMOVE INSERT B



FADER

This provides the user with a set of faders related to the currently accessed path on which they can control the Fader, Cut, PFL and AFL parameters of all the legs of the accessed path and its downmix levels if Surround or Immersive.

Fader Controls

After tapping on **Processing>Fader** from the Menu, the image above right is displayed showing the master fader and for stereo, surround and immersive paths, a set of spill faders. In this case it shows a 7.1.4 path with all its spill legs.

The following controls are available:-
Fader Levels: The user can tap and drag the fader knobs to modify the levels of each of the faders. The current value of the fader level is shown by the position of the fader knob and numerically in the box just below the PFL & AFL buttons.

PFL & AFL: The user can listen to the individually to the PFL (pre-fader listen) or AFL (after-fader listen) using the PFL or AFL buttons. If the master path is AFL'd or PFL'd on a stereo, surround or immersive path all its legs are also AFL'd or PFL'd.

Cut: The user can cut the output of the path by tapping on this button. If the master path is cut on a stereo, surround or immersive path all its legs are also cut.

The image below right shows the LoRo downmix faders page which for Surround and Immersive paths shows the current downmix levels of its component legs for the same 7.1.4 path from above.

The user can tap and drag the fader knobs to modify the levels of each of those faders including the separate LoRo overall stereo mixdown fader level.

Note: downmix faders do not have AFL, PFL or Cut functions. In the left of the footer, is shown the usual set of nudge buttons which lets the user select a different access path .

FADERS SHOWING SURROUND LEG FADERS

FADERS SHOWING DOWNMIX FADERS

To the right of that is shown the fader information block showing the currently accessed path with its label along with further information..

This includes path width, layer locked and fader open as well as the dropdown box labelled **Spill Leg Access** which normally says 'Full Path'.

This dropdown associated with Stereo, Surround and Immersive paths is not required here as the user has full access to all the legs of the chosen path.

Above the master fader is a CSCP control button which puts the paths under the control of the CSCP system. See **"Control Protocols" on page 176.**

Fader displays in VCA Groups

The fader on the left in the **Processing>Fader** page shows the mono or multichannel master fader which controls the level of all the path 'legs' belonging to it. The level of that fader can be affected when that path is a member of a VCA Group.

Fig 4 shows a fader which is normally shown as part of the **Processing>Fader** page as highlighted in Fig 3 on the last page. It is not part of a VCA Group and the fader level which is shown as 0.0 dB is the actual level for that path '**Fader 1**'.

Fig 5 shows 2 more faders, '**Fader 2**' and '**Fader 3**' which are in a VCA Group, with Fader 2 being the group master and Fader 3 being a slave to that group. Fader 2 is a pathless VCA master as it has no path associated with it and is set to a fader level of +5.0 dB and Fader 3 is a VCA slave to this master and is set to a fader level of -22.0 dB. As Fader 2's level is adjusted this affects all its slave fader levels and the resultant level for Fader 3 is a combination of Fader 2 and Fader 3 levels. Fader 3 shows this combined level of -17.0 dB as both a green meter bar and a numeric value above the fader.

Fig 6 shows 3 more faders, '**Fader 4**', '**Fader 5**' and '**Fader 6**' which are in a VCA Group, Fader 4 is the overall master, Fader 5 is a submaster to the overall master and Fader 6 is a slave to the submaster.

The level of the slave path on Fader 6 is affected by both the master & submaster. In addition to this Fader 4 and Fader 5 have paths attached to them which act as slaves to the master and submaster respectively as shown.

When a Fader is made a master it shows and controls the master fader level by default, however, when the master also has a path on that fader, the path level can be adjusted by holding down its ACCESS button at which point the fader will jump to the position of the slave path. Whilst the ACCESS button is held down moving the fader position changes the level of the slave path instead.

FIG 4 - FADER 1 NOT IN A VCA GROUP

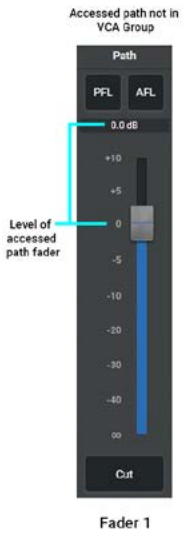


FIG 5 - FADERS 2 & 3 - MASTER AND SLAVE VCA GROUP

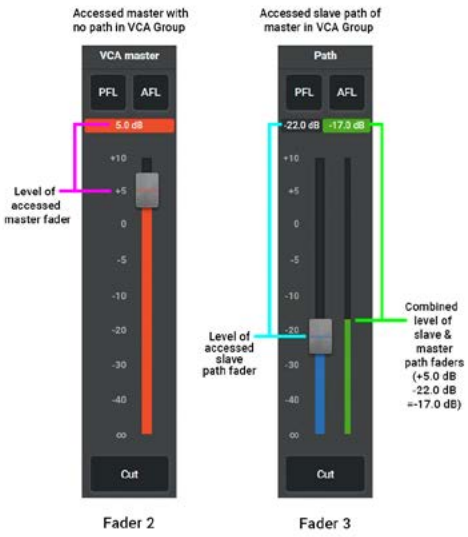
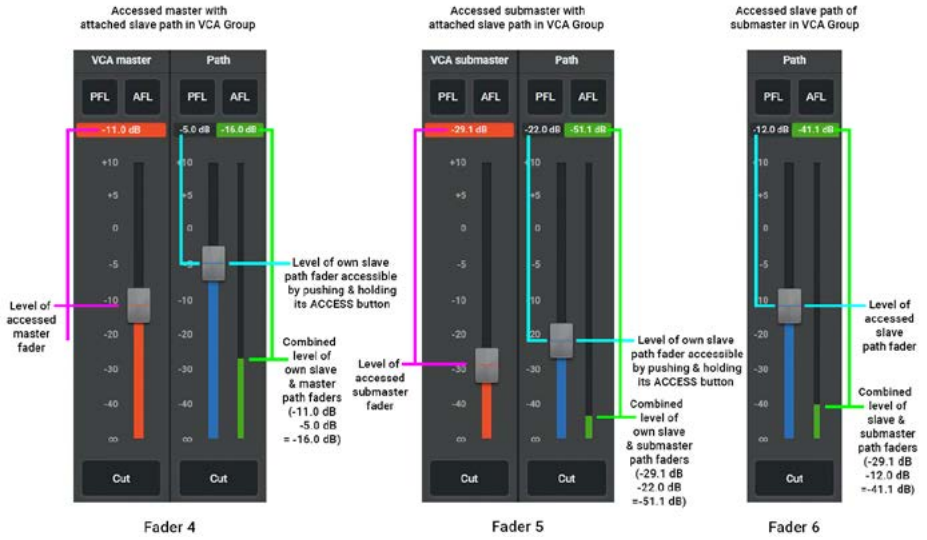


FIG 6 - FADERS 4,5 & 6 - MASTER, SUBMASTER AND SLAVE VCA GROUP



Fader 4 is set to a fader level of -11.0 dB and the slave path on this master is set to a fader level of -5.0 dB. As Fader 4's master level is adjusted this affects the submaster on Fader 5 and all the slave fader levels including the slave path on its own fader. The resultant level for Fader 4 is a combination of Fader 4's master and slave levels. Fader 4 shows this combined level of -16.0 dB as both a green meter bar and a numeric value above the fader.

Fader 5 is set to a fader level of -29.1 dB and the slave path on this submaster is set to a fader level of -5.0 dB. As Fader 5's master level is adjusted this affects all its slave fader levels including the slave path on its own fader. The resultant level for the path on Fader 5 is a combination of Fader 5's master & slave levels. Fader 5 shows this combined level of -51.1 dB as both a green meter bar and a numeric value above the fader.

Fader 6 is set to a fader level of -12.0 dB and is affected by both master and submaster level changes. The level of the submaster on Fader 5 is -29.1 dB and as a consequence, the resultant level for the slave path on Fader 6 is a combination of Fader 5's submaster and Fader 6's slave levels. Fader 6 shows this combined level of -41.1 dB as both a green meter bar and a numeric value above the fader.

AUTOFADER

AutoFaders allow faders to be opened and closed under the control of another system through the use of GPIs.

To control an assignable AutoFader, select the **Processing>Autofader** page as shown above right and press the appropriate access button for the channel whose AutoFader is to be accessed.

The AutoFader screen gives a visual representation of the behaviour of the AutoFaders position over time and provides information about which AutoFader is in use and which GPI the AutoFader is being triggered from on the **System settings>GPI** page.

The image above right shows the inactive AutoFaders page before being attached to an AutoFader and its GPI.

Setting Up AutoFaders for use
There are 256 AutoFaders in the Argo system. GPIs are then assigned to control one or more of these AutoFaders when they receive the required trigger signal.

The AutoFaders can then be assigned to control one or more faders on the surface.

The AutoFader to be used is selected from the '**AutoFader'** dropdown button. Tapping on this button allows the user to select/change the AutoFader trigger.

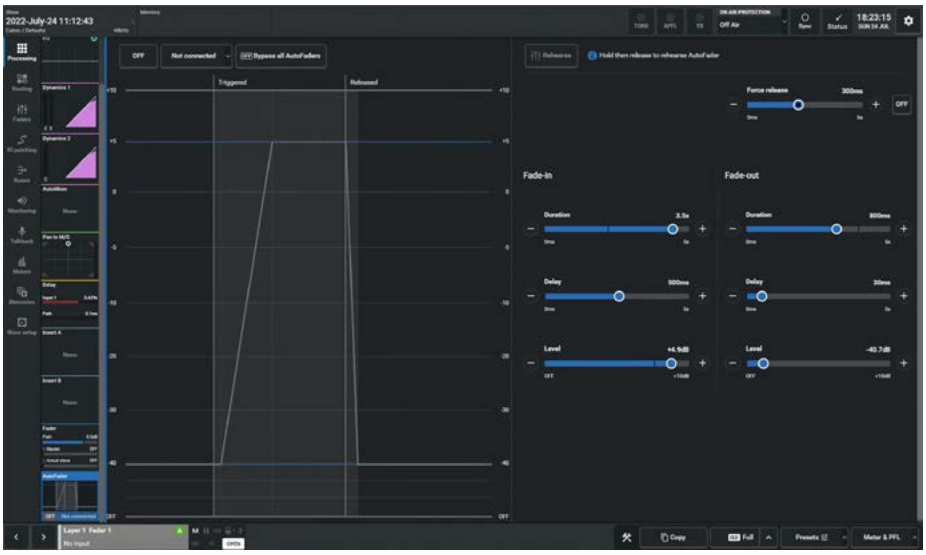
The image below right shows the list of available AutoFaders selection with AutoFader 1 being selected for the fader on this path and the AutoFader has been enabled using the ON button at the top left of the contents area.

The following controls are available:-
AutoFader Controls

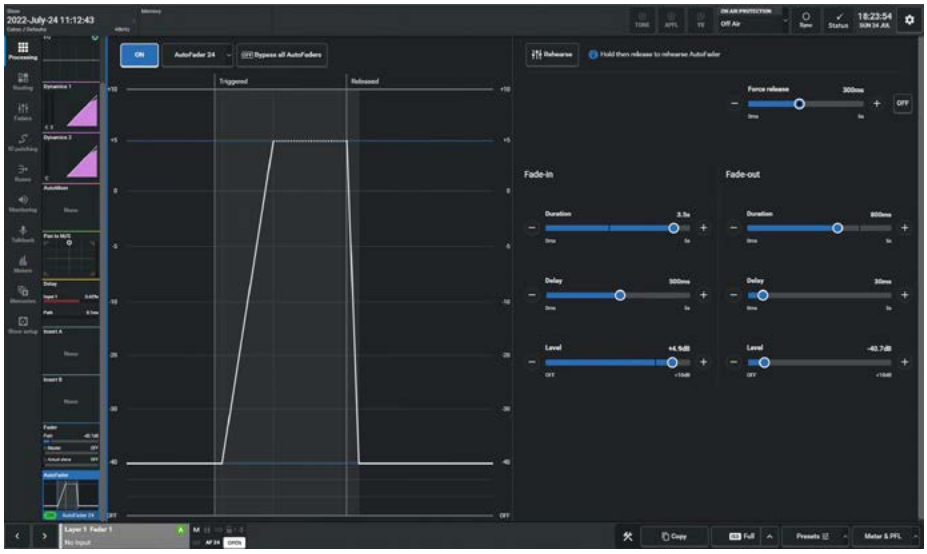
- **AutoFader On:** - This button at the top left of the contents area, enables the AutoFader on this access path.

Note: if the AutoFader is shared across several paths, only this path is affected by this button.

AUTOFADERS



SELECTING AUTOFADER

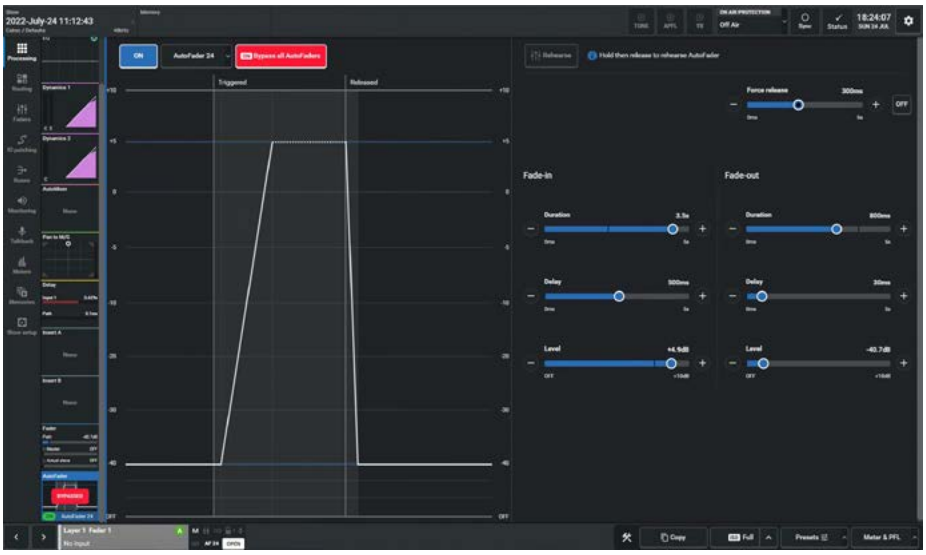


- **Rehearse:** - Tap & Hold the button labelled '**Rehearse**' to trigger the AutoFader and then release the AutoFader to complete the rehearsal. This button allows the user to walk through the action of the AutoFader and adjust parameters if necessary.
- **Fade In Duration:** - This is the fader ramp up period.
- **Fade In Delay:** - This is the delay period before the fader starts to ramp up to the IN LEVEL.
- **Fade In Level:** - This is the level that the fader goes to when the GPI is triggered shown as an 'IN' line.
- **Fade Out Duration:** - This is the fader ramp down period.
- **Fade Out Delay:** - This is the delay period before the fader starts to ramp down to the out level.
- **Fade Out Level**:- This is the level that the fader goes to when the GPI is released shown as an 'OUT' line.

- **Force Release:** - When ON this time period is used to force the AutoFader into the fade out delay phase even if the AutoFader is still triggered via the GPI. If the Force Release control is set to 'OFF' the AutoFader will remain triggered indefinitely whilst the connected GPI is triggered.
- **Bypass AutoFaders:** - When active this switch Bypasses All AutoFaders as shown in the image above right.

Note: the AutoFader thumbnail shows which AutoFader is in use, if it's in Bypass and its On/Off state even when Assist is on a different Processing control page.

BYPASSING AUTOFADERS



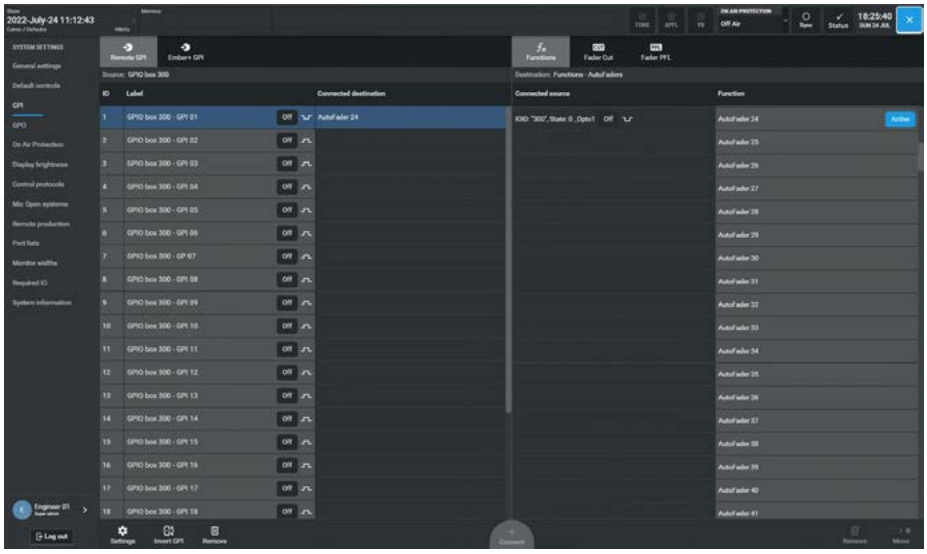
Assigning GPI's to AutoFaders
GPIs are assigned to autofaders in **System Settings>GPI** as shown in the image below right.

There are both physical GPI interfaces connected to Remote GPI over AoIP streams and virtual GPI interfaces provided via the Ember+ protocol.

Here we have selected the Remote GPI button and used GPIO box 300 - GPI 01 which is fed from a physical GPI via the stream connection as the GPI source as shown on the left side of the page.

This is then connected to a GPI function by tapping on the GPI Functions button which brings up a popup with groups of available functions that can be controlled by the GPIs.

ASSIGNING GPI'S TO AUTOFADERS



Selecting the **'AutoFader'** function populates the right hand side of the screen with the available autofaders.

A single GPI may control any number of autofaders, so assignments can be made one to one or one to many.

Select the required GPI from the list on the left, any number of autofaders from the right and touch the '**Connect**' button.

To remove an AutoFader from a GPI, select the connected AutoFader from the right and touch the '**Remove**' button in the left side of the footer.

To free up a GPI port from all connections, select the GPI from the left and touch the '**Remove**' button in the left side of the footer.

This removes all connections made to it, including any AutoFaders.

AutoFader levels
When an AutoFader is attached to a fader and is enabled, providing the trigger signal is not present, the fader will go to the OUT LEVEL complying with the Fade-Out Duration parameter, rather than snapping the audio to the Fade-Out level.

If an AutoFader is enabled, either from path or global enable, for a path whose GPI is currently triggered, the audio should fade (up or down) to the Fade-In Level (if it is not there already), complying with the Fade-In Duration parameter, rather than snapping the audio to the Fade-In level.

When the trigger signal is present, the fader will follow the settings made on the **Processing>AutoFader** screen.

AutoFader parameter settings
The AUTOFADER screen allows the settings of the AutoFaders to be configured. The available settings for all the time based controls are :
0 to 100ms in 10ms steps.
100ms to 1s in 100ms steps.
1s to 5s in 500ms steps.
The IN and OUT gain level settings are OFF to +10dB.

AutoFader indicators
When an AutoFader is assigned to a fader, the Fader display will show the AutoFader Number and the Meter display shows when the AutoFader is active.

Default Fader Interaction Mode
This section describes the operational interaction conditions when settings and fader positions are modified in combination with AutoFaders.

Faders in this default mode allow the user to temporarily override AutoFader control using the path fader to open, close or adjust the path's level.

Faders can be manually adjusted, and their output will reflect the manually set physical position, whether the AutoFader is active or inactive. Adjustments affect current audio, but do not affect subsequent autofades.

AutoFaders do not fight manual control. If a fader is being touched at the time an AutoFader is fired, OR when an AutoFader transitions from its initial 'Fade In Delay' period into its' 'Fade-In' period, then the AutoFader fade-in is cancelled.

This does not cancel the fade-out for this autofade event (which will be triggered as normal if the fader has been manually opened in the interim).

If a fader is touched whilst an AutoFader fade-in is in progress, the auto-fader immediately relinquishes control of the fade-in (but can still perform the subsequent fade out if the fader is no longer touched at that point in time).

Similarly, if a fader is being touched or moved when an AutoFader enters the fade-out stage, or during the fade-out stage, the AutoFader again immediately relinquishes control of the fade out to the operator.

AutoFader fade-in's & fade-out's begin from the current physical position of the fader. If they have been manually adjusted, this becomes the start point, they do not have to go to their specified or expected On or Off level first.

Fade in and fade out values are absolute in that the time taken from the beginning to the end of the fade-in or fade-out period lasts for the duration set by the relevant control, regardless of the actual physical starting level that may have been manually set and differ to that of the AutoFaders set On/Off level.

If a fader is positioned at or below its AutoFaders set Off-Level when a fade-out is instigated, the fade-out will be cancelled.

If a fader is positioned at, or above its AutoFaders set On-Level when a fade-in is instigated, the fade-in will be cancelled.

If the Fade-In Level is being adjusted whilst an AutoFader Fade-In is in progress, or similarly, the Fade-Out Level is being adjusted during a Fade-Out then the Fade-In/Out continues at a constant rate-of-fade until the fader level and In/Out level meet.

At which point the AutoFader stops due to the target level being met. The Fader will then track with the In/Out level control until the next AutoFader fade In/Out by virtue of the fader being fully in/out.

Fade-In Delay, Force Release & Fade-Out Delay can all be adjusted whilst the AutoFader is in their phase of operation, and the adjustments affect the phase they are in (rather than being applied to the next AutoFader trigger cycle).

Each phase can be extended up to its maximum duration whilst that phase is ongoing.

When reducing the duration, the relevant phase will end and the next phase start when the length of time passed since the start of the phase meets that set by the control.

When an AutoFader is fully In or Out, adjusting the relevant In/Out Level control will directly affect the level output by the path - the fader will track the adjustments in real time - it will not apply a fade in/out to track the adjustments.

ARGO ASSIST
ROUTING

CALREC

MAIN AND GROUP ROUTING

The Routing Section deals with the routing of sources to the Argo buses. For each path, there are a number of pages showing its bus routing.

Main and Group Routing
After tapping on the menu selection **Routing>Mains** the image shown above right appears. The user can select other Routing Destinations by tapping on the sub-menu tabs such as **Routing>Groups** as shown below right.

Argo has up to 16 Main Buses displayed in a block, and up to 48 Group Buses arranged in 2 blocks of 24 for display purposes. These can be labelled on the Buses page.

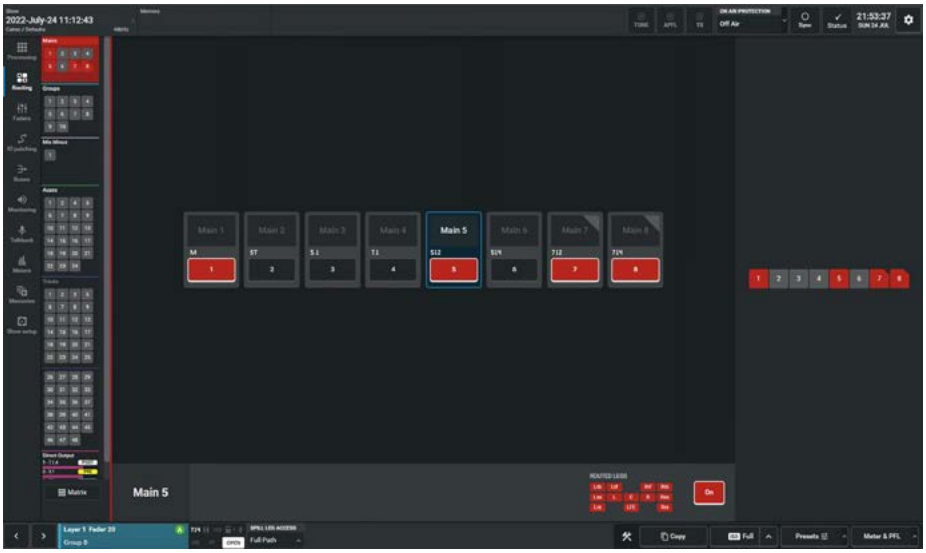
Each main or group bus entry has a numbered button which routes the current access path to it and at the bottom of the page is shown a Route On/Off button for the selected bus and the "Routed Legs" display showing the routed state of each leg of the source to that bus.

Routed Legs display: For mono sources there is no "Routed Legs" display needed, however stereo sources show L & R legs, surround 5.1 & 7.1 sources show L/R, C, Lfe, Ls/Rs legs and L/R, C, Lfe, Lss/Rss, Lrs/Rrs respectively. Immersive sources show each leg depending on the width, such as the 7.1.4 source as shown above right, displaying L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf & Ltb/Rtb legs which are lit in the appropriate colour to show that those legs are routed.

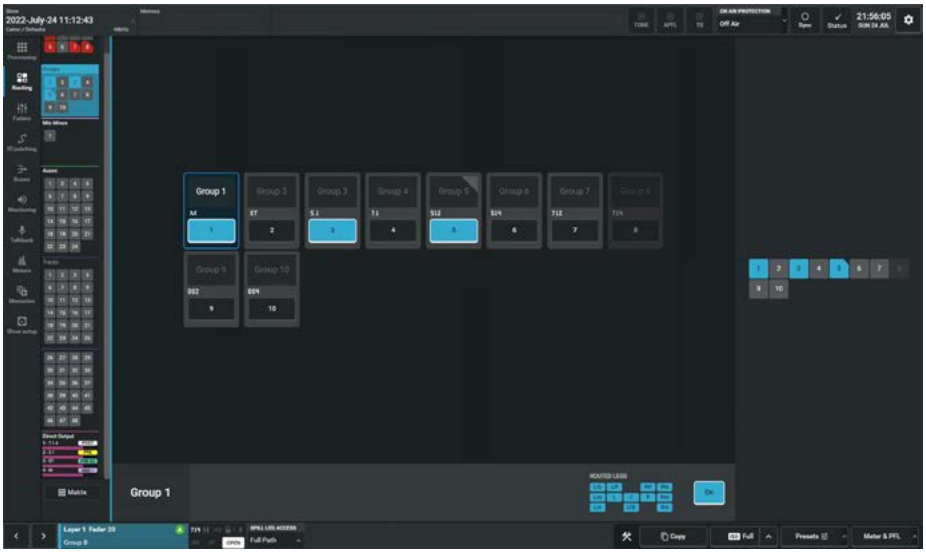
Independent Routing for Stereo, Surround & Immersive spill legs.
Using the independence drop down it is possible to access each spill leg of a stereo, surround or immersive path and allow routing changes to be made on each spill leg.

This is done by accessing the dropdown box labelled "Spill Leg Access" which normally says 'Full Path' in the footer and selecting any of the required Spill Legs from the independence table.

MAIN ROUTING



GROUP ROUTING



- For a stereo source the user can select either the L or R legs to route.
- For a 5.1 source the user can select either the L/R, C, Lfe or LsRs spill leg to route.
- For a 7.1 source the user can select either the L/R, C, Lfe, Lss/Rss or Lrs/Rrs spill leg to route.
- Immersive sources can select each leg to route such as the 7.1.4 immersive source shown below right which the user can select either the L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf or Ltb/Rtb spill leg to route.

Quick Routing: In the panel on the right of the contents area, is a 'clickable' routing display which can be used to quickly switch routes on and off to each bus.

Note: when part of a path is routed e.g. to Main 7 & Main 8 in the image above and Group 5 in the image below, then this partial routing is shown by the corner of the routing block being 'cut off' on the routing display and just the individually routed legs are lit rather than all the legs as shown in the Routed Legs display.

AUX ROUTING SENDS & PAN

Aux buses are generally used to feed external signal processing devices or to create Interruptible foldback feeds (IFB's). For each path, auxes have individual level controls and 2 send positions for each of the possible aux feeds, this allows extensive control of separate mono or stereo mixes.

Auxes also have an additional level of logic control, allowing the user to set conditions under which each pre fader aux send is cut, this is shown in the Aux Buses page.

Aux Routing, Send & Pan Controls
After tapping on the menu selection **Routing>Auxes** the image above right is displayed. Argo has up to 48 Aux Buses, these are arranged in blocks of 24 for display purposes. These can be labelled on the Buses page.

The following controls are available:-
Routing: Each aux bus entry has a numbered button which routes the current access path to it and at the bottom of the page on the right is shown a Route On/Off button for the selected bus and the routed state of each leg of the source.

Send Level: Slide the send level control to alter the level of the aux send between 'off' and +10dB. The send level value is shown in the middle of each send level.

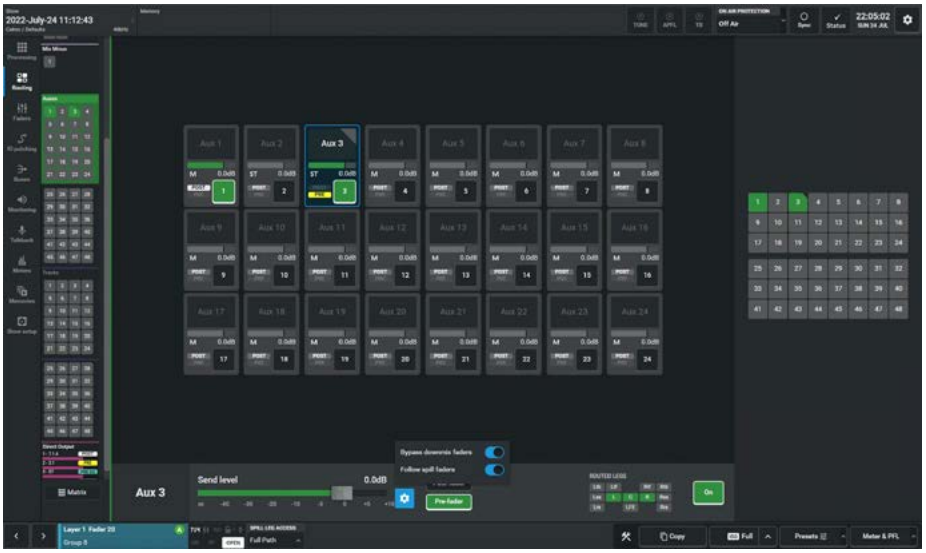
Aux Send Position: Aux sends can be taken at different points in the associated path's signal flow, pre fader or post fader using the selection buttons to the right of the level control.

Options 'Gearwheel': Accesses the Bypass Downmix Faders and Follow Spill Faders options on slider switches.

Bypass Downmix Faders: If the aux output's associated path is surround or immersive and the aux output is stereo or mono the user can choose whether or not to use the downmix fader levels during the downmixing process.

Follow Spill Faders: If the aux output is stereo and the paths send position to it is Pre Fader, (as shown above right) the user can choose whether or not to follow the levels of the spill faders.

AUXILIARIES FOR ROUTING, SENDS AND PANNING



Note: Bypass Downmix Faders and Follow Spill Faders are only selectable when the "Spill Leg Access" displays 'Full Path'.

Pan Position: For stereo aux sends, a pan control is only available in the footer of the contents area to the right of the aux send position when the current access path is either mono, stereo or a mono or stereo leg of a surround or immersive path. This allows the user to adjust the position of the source to the left or right of centre of the Stereo Aux Bus. To the right of the pan position is an On button which switches the pan in or out of circuit. Mono aux sends have no pan controls

Routed Legs display: For mono sources there is no 'Routed Legs' display needed, however stereo sources show L & R legs, surround 5.1 & 7.1 sources show L/R, C, Lfe, Ls/Rs legs and L/R, C, Lfe, Lss/Rss, Lrs/Rrs respectively. Immersive sources show each leg depending on the width, such as the 7.1.4 source as shown above right, displaying L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf & Ltb/Rtb legs which are lit in the appropriate colour to show that those legs are routed.

Independent Routing for Stereo, Surround & Immersive spill legs.
Using the independence drop down it is possible to access each spill leg of a stereo, surround or immersive path and allow routing changes to be made on each spill leg.

This is done by accessing the dropdown box labelled "Spill Leg Access" which normally says 'Full Path' in the footer and selecting any of the required Spill Legs from the independence table.

- For a stereo source the user can select either the L or R legs to route.
- For a 5.1 source the user can select either the L/R, C, Lfe or LsRs spill leg to route.
- For a 7.1 source the user can select either the L/R, C, Lfe, Lss/Rss or Lrs/Rrs spill leg to route.
- Immersive sources can select each leg to route such as the 7.1.4 immersive source shown above right which the user can select either the L/R, C, Lfe, Lss/Rss, Lrs/Rrs, Ltf/Rtf or Ltb/Rtb spill leg to route.

Quick Routing: In the panel on the right of the contents area, is a 'clickable' routing display which can be used to quickly switch routes on and off to each bus.

Note: when part of a path is routed e.g to Aux 3 in the image above, then this partial routing is shown by the corner of the routing block being 'cut off' on the routing display and just the individual routing legs are lit rather than all the legs as shown in the Routed Legs display.

Also because the Source path is wider than Stereo, the Pan display is not shown unless a Spill Leg is accessed.

TRACK ROUTING SENDS & PAN

Tracks are generally used to record copies of channels & groups, feed external signal processing devices or to create Interruptible foldback feeds. Each path can have 4 common track level controls & 3 send positions

The track send level is applied to all tracks from each path and normally paths are only routed to one or two tracks so that individual track send control isn't required. To further extend the flexibility of tracks it is possible to split the track sends which allows each Track to be fed from 1 of 4 track sends, these are labelled A, B, C & D as shown in the image above right. This allows extensive control of up to 96 separate track outputs.

There are 3 types of track:- Mono Odd/Even and Mono which relates to how the odd numbered tracks are panned as a left leg, the even numbered tracks are panned as a right leg or the tracks can be set as Mono.

Track Routing, Send & Pan Controls
After tapping on **Routing>Tracks** the image above right is displayed.

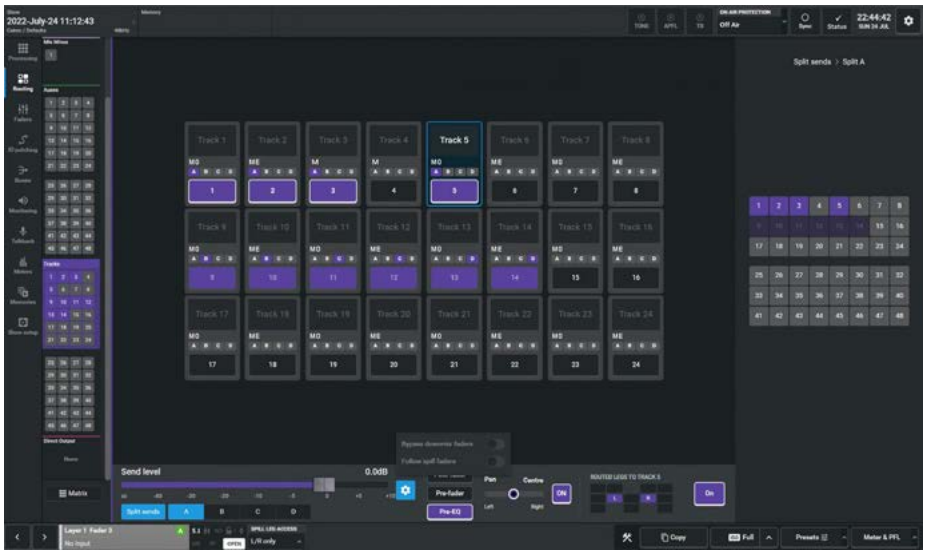
The following controls are available:-
Routing: Each track bus entry has a numbered button which routes the current access path to it and at the bottom of the page is shown a Route On/Off button for the selected bus send (A, B, C or D) and the routed state of each leg of the source to that bus.

Note: the Routing indication for stereo, surround & immersive paths for tracks also show the A,B,C or D send ID if Split sends is enabled.

Track Send Level: Slide the level control to alter the level of the track send between 'OFF' & +10dB. The send level is displayed and controlled at the bottom of the bus display for each of the common send levels for the A, B, C, & D Track sends by selecting the Split Send A,B,C or D buttons and sliding the Send level slider.

Track Send Position: Each of the 4 track sends can be taken at different points in the associated path's signal flow, pre EQ, pre fader or post fader using the selection buttons to the right of the level control.

TRACKS FOR ROUTING, SENDS AND PANNING



Pan Position: For track sends, a pan control is available in the footer of the contents area to the right of the track send position only when the current access path is either mono, stereo or a mono or stereo leg of a surround or immersive path as shown above right. This allows the user to adjust the position of the source to the left or right of centre of the Track bus output. This is applied to tracks defined as odd & even pairs. To the right of the pan position is an On button which switches the pan in or out of circuit.

Options 'Gearwheel': The optional slider switches for **Bypass Downmix Faders** & **Follow Spill Faders** shown above right, are operationally identical to those as described in the Aux Routing section.

More about Track Split Sends.
Each channel has up to four track sends although by default only one is enabled. To enable the four sends, touch the SPLIT SEND button underneath the Send Level control. This will enable the four split send buttons which the user can select from (A, B, C or D) and then create or remove routing to the tracks as required. A letter will highlight below the track number entry when a route is made to indicate which send it is associated with. Each of the four sends has an individual level control and can be placed Pre EQ, Pre Fdr or Post Fdr. This enables access to a wider range of controls for that specific split send.

Removing sends
If a channel is routed to track send C then send C must be selected in order to remove the route. Only routes made with the currently selected send may be removed. In order for the track routing to be collapsed back into just one send (A), all routes from sends B, C and D must be removed. The SPLIT SEND button can now be touched again to disable the three unused B, C, D send controls.

Independent Routing for Stereo, Surround & Immersive spill legs.
This is done by accessing the dropdown box labelled **"Spill Leg Access"** which normally says '**Full Path**' in the footer and selecting any of the required Spill Legs from the independence table. This allows the different Spill legs to be routed to different split sends A, B, C, D if needed as shown in the Routed Legs display.

Quick Routing: In the panel on the right of the contents area, is a 'clickable' routing display which can be used to switch routes on and off to each bus. Grey blocks are unrouted, Purple blocks are routed to the current send and Dark Purple blocks are routed to a different send other than the current one.

Note: when part of a bus is routed, this partial routing is shown by the corner of the routing block being 'cut off' only when looking at the 'Full Path'.

DIRECT OUTPUT & MIX MINUS BUS

Direct outputs are path specific desk outputs, available to Input Channels and Groups. Argo has a pool of up to 1024 mono output resources, shared between Direct Outputs and *Mix Minus Outputs.

Direct Output Controls
After tapping on the menu selection **Routing>Direct Output**, the image above right is displayed, ready for a direct output to be created. The user then taps on one of the unassigned Direct Output placeholders which opens the "Choose a width" dialogue box, as shown middle right, the width of the outputs are dependent on the original width of the path.

In the case of the 7.1.2 path shown the direct outputs can be created at that width or 5.1, Stereo and Mono downmix widths. The number of remaining available outputs is shown on the page, once the pool is empty no further direct outputs can be created. Once the direct output width has been selected it appears as shown below right which in this case shows the 4 possible direct outputs at 7.1.2, 5.1, Stereo and Mono from a 7.1.2 channel attached to Layer 1 Fader 7A.

Note: up to 4 direct outputs are available per path and each can be set to any of the widths shown.

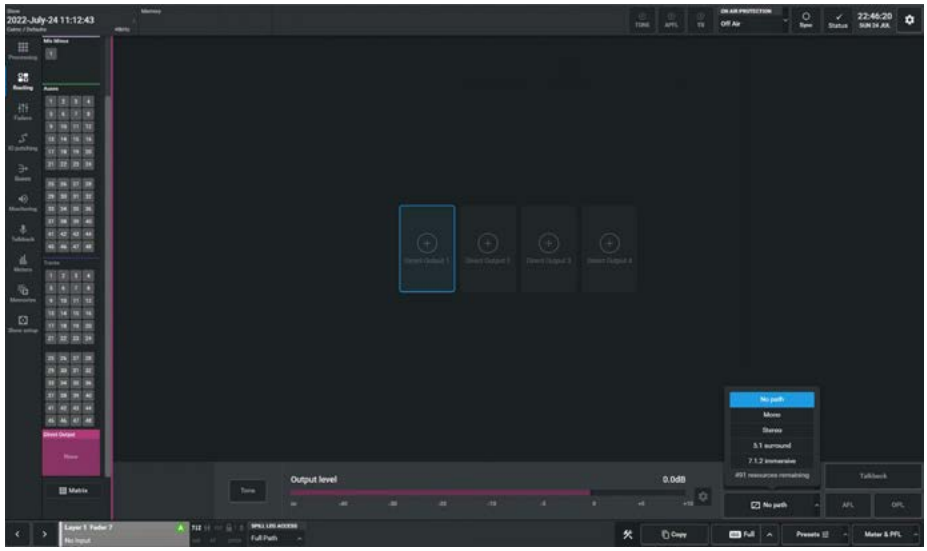
The following controls are available:-
Direct Output Patching: The direct output patch destination ports are shown.

Level: Slide the level control or tap on the + or - icons to alter the level of the direct output between 'off' and +10dB.

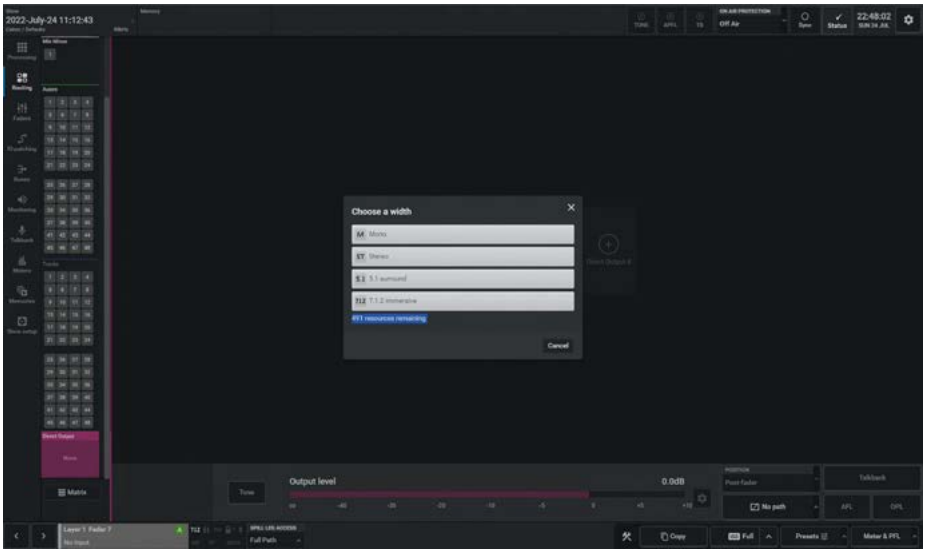
Send Position: Direct outputs can be taken at different points in the path's signal flow, Pre EQ, Pre Fader, Post Fader or Mix Minus as shown in the 'Position' pop-up below right.

Options 'Gearwheel': Accesses the Bypass Downmix Faders and Follow Spill Faders options on slider switches. These settings are shown in the 'Gearwheel' pop-up below right.

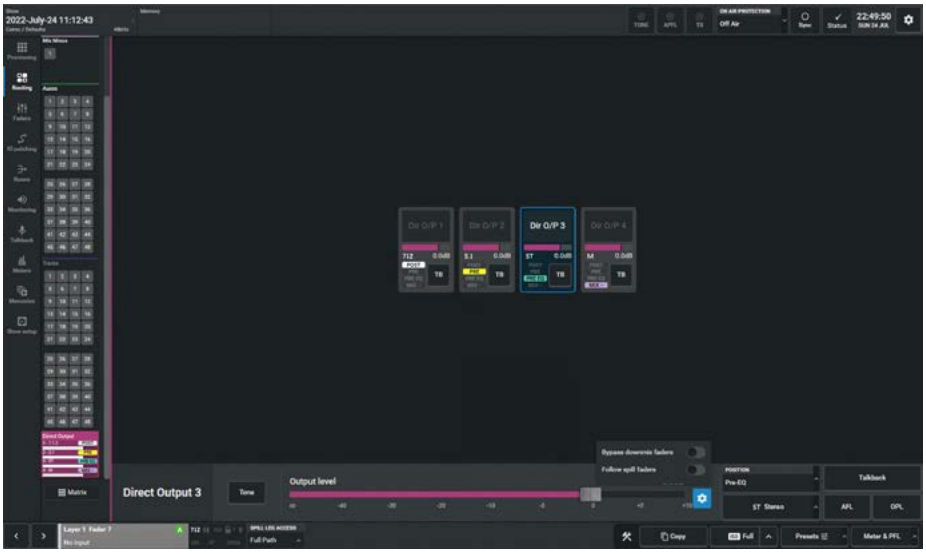
DIRECT OUTPUT EMPTY PAGE SHOWING WIDTH POP-UP



DIRECT OUTPUT CREATE



DIRECT OUTPUT PATH POSITION



Bypass Downmix Faders: If the direct output's associated path is immersive or surround and the direct output is stereo or mono, the user can choose whether or not to use the downmix fader levels during the downmixing process.

Follow Spill Faders: If the direct output is immersive, surround or stereo and its send position is Pre Eq or Pre Fader, the user can choose whether or not to follow the levels of the Spill faders.

AFL: Tapping on AFL replaces the console monitor source with the direct output feed, post level control, providing a non-destructive solo for the direct output.

Output Listen (OPL): Similar to AFL but the feed is taken post output delay.

Talkback: Replaces the direct output feed with the talkback input source.

Tone: Select this to inject tone into the direct output, replacing the direct output feed with the correct tone for the path width, the Tone button turns the tone on or off.

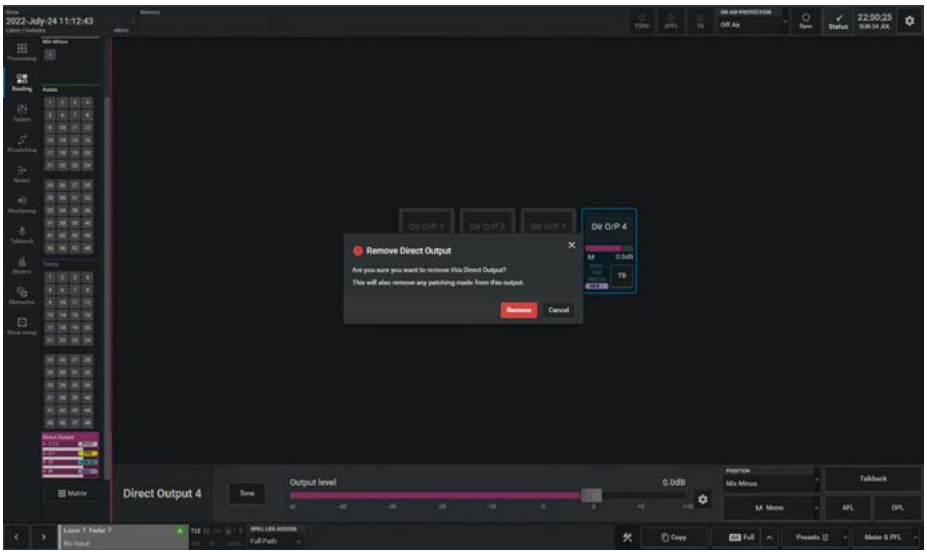
Path Width Box: As shown on the previous page, tapping on the path width pop-up menu allows the user to change the width of the direct output or select 'No path' to remove it.

Mix Minus Routing
After tapping on the menu selection **Routing>Mix Minus** the page shown below right appears.

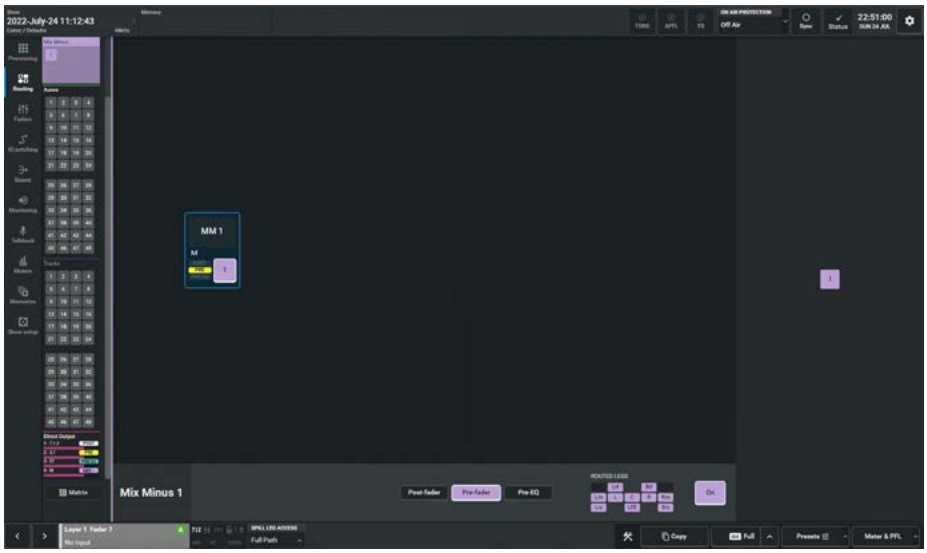
Sending signals to a mix minus bus
There is one mono mix minus bus, which is a global bus that any path can contribute to. To send a signal to this bus, first access the chosen path and tap the numbered button or the Route On/Off button which routes the current access path to it.

At the bottom of the page is shown the routed state of each leg of the source to that bus. Signals can be sent Pre EQ/ Pre Fader/Post fader using the position buttons.

DIRECT OUTPUT WIDTH INCLUDING NO PATH (REMOVE) OPTION



MIX MINUS ROUTING



Using a Direct output as a Mix Minus Output
Each path on the surface has a number of direct outputs associated with it. These direct outputs can be assigned to any output port which then feeds the mix-minus route back to that path's source.

***In Argo there is no dedicated Mix Minus Output, however selecting Mix Minus as the send position allows the mix minus bus to feed the selected Direct Output and provide an output for the Mix Minus bus.**

The user accesses a path on the surface that is being fed by the source they wish to send a mix minus signal to. Select a direct output bus from the Direct Output sub-menu as shown for Direct Output 4 on the previous page, then select the Mix Minus position.

This will route the mix minus signal to that direct output. The mix minus signal sent to the required source will be the contents of the mix minus bus, with the source's contribution (if any) removed by adding an inverted copy of the source to the mix minus signal.

ROUTING MATRIX

The purpose of the Routing Matrix is to simplify and speed up the routing Process. The screen is arranged in a table X-Y format where the Rows as identified on the left represents the sources to be routed and the Matrix to the right represents the crosspoints where the Destination Columns intersect the Source Rows.

Matrix Access

After tapping on the menu selection **Routing>Matrix**, the image above right is displayed. The left side of the routing matrix shows the various source rows that are available in this show. The right side of the routing matrix shows the various destination columns that are available in this show. The crosspoint where source and destination intersect can be selected and then a route established between them. In the image above right, the highlighted blocks indicates that a route has already been made from the mono source channel on Layer 1A Fader 1 to the following bus destinations:- Main 1, Group 1, Aux 1, Mix Minus 1 and Track 1.

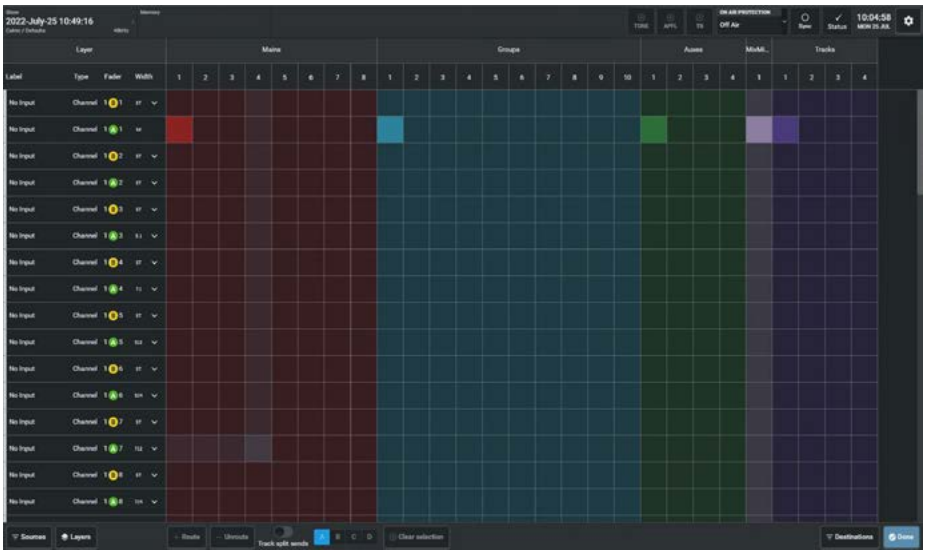
Note: to exit Matrix mode the user taps the 'Done' button on the bottom right of the Matrix page.

Routing Procedure

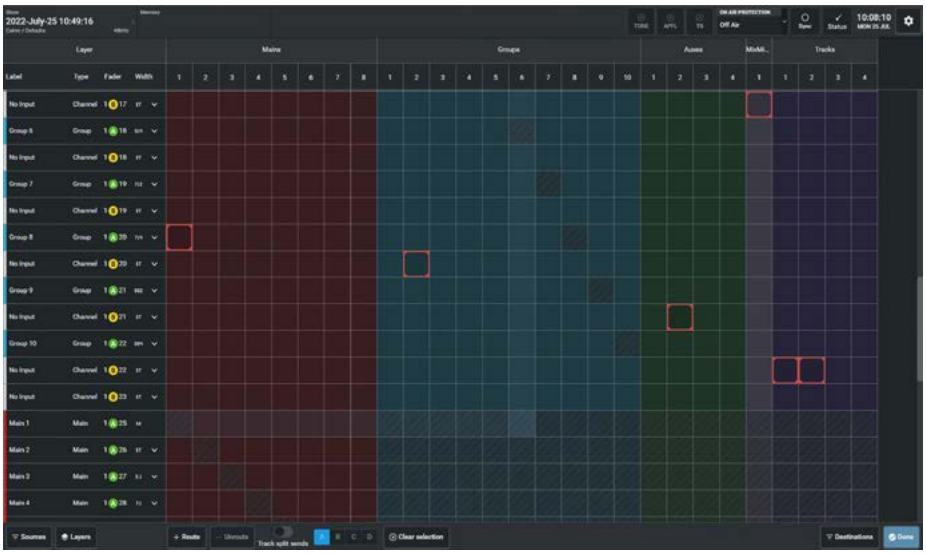
Routing and unrouting is a two stage process the user first selects the crosspoints to be connected and then taps on the now active **'Route'** button in the footer. In order to route a single source to a single destination the user selects the crosspoint by tapping on it, these selections are shown using an outline block, the user can then tap the Route button to action the selection.

If the user wishes to route a number of sources to a destination they can click (or touch) and drag vertically down to make their selection. If the user wishes to route a source to a number of destinations they can click (or touch) and drag horizontally across to make their selection, or drag out a block of selected crosspoints. It is also possible to use control tapping to add crosspoints to the selections, say if a diagonal connection is to be made like routing channels to tracks on a one to one basis. Tapping a single selection again clears that single selection.

ROUTING MATRIX DISPLAY



ROUTING & UNROUTING SELECTION/STEREO & 5.1 SOURCE PATHS EXPANDED



The outline blocks in the image below right show the following crosspoint selections are ready to be routed:-

1. Fader L1F20A to Main 1
2. Fader L1F20B to Group 2
3. Fader L1F21B to Aux 2
4. Fader L1F17B to Mix Minus 1
5. Fader L1F22B to Tracks 1 & 2

The crosshatched squares in the matrix indicate that those crosspoints cannot be routed to, such as routing to itself or other invalid destinations for a particular source, once the selection is made the user clicks on the **'Route'** button in the footer.

Unrouting Procedure

Unrouting crosspoints is a similar method to routing except that the user selects the already highlighted routes and the outline block appears around it, once the required selection is made the user clicks on the now active **'Unroute'** button in the footer.

Clear selection

If the user has made a number of selections as shown in the image below right they can clear all the selections at the same time by tapping on the **'Clear selection'** button in the footer.

Sources Area
The following fields are displayed in the Sources Layer area as highlighted on the left side of the page:-

Label: The source label is shown here which can be a user label, bus label, port label or port number. If the path is a channel that has not yet been ported it appears as 'No Input' as shown above right.

Type: This defines the source path type in Argo the only paths that act as sources are Channels, Groups & Mains.

Fader: This field indicates the layer number that the source is associated with followed by the A or B sub-layer icon and the fader number.

At the bottom of the source list which is scrolled to by either the vertical scrollbar on the right or by dragging the left source area, there are the buses that can be routed from which do not have a fader number but still act as sources, for example Main 1.

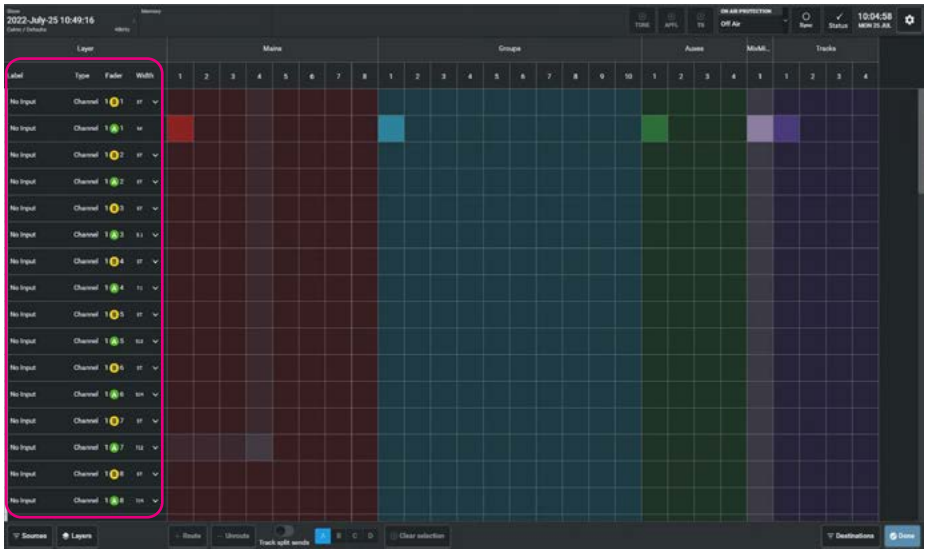
Format: This defines the width of the source which can be mono M, stereo ST, surround 5.1, 7.1 or immersive 5.1.2, 5.1.4, 7.1.2, 7.1.4, 0.0.2 or 0.0.4.

Note: if a source appears in more than one place in the matrix such as the groups as shown in the images to the right then a 'Clone' symbol will appear.

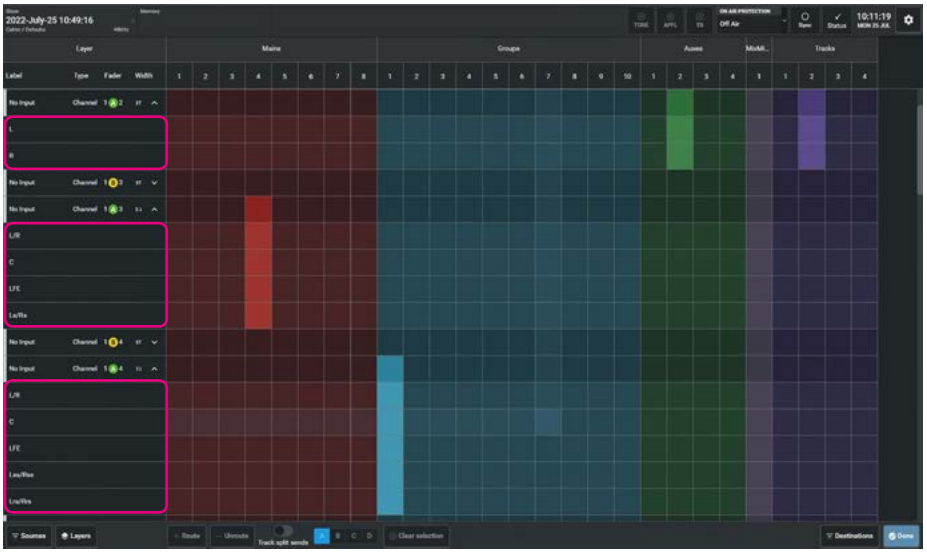
v & ^ expansion arrows: An expansion arrow indicates that this path is either a stereo, surround or immersive source and tapping on the DOWN arrow '**v**' shows the individual legs of the path making them available for routing as shown for:-

Channel L1F2A Stereo
(L & R),
Channel L1F3A 5.1 Surround
L/R, C, LFE & Ls/Rs)
Channel L1F5A 7.1 Surround
L/R, C, LFE, Lss/Rss, Lrs/Rrs
all as shown highlighted below right.

SOURCES



ROUTING INDIVIDUAL SPILL LEGS OF SOURCES



Tapping on the UP arrow '**^**' hides the individual spill legs back underneath the master path row as shown for the same Channels L1F2A, L1F3A & L1F5A immediately above each highlighted block on the page above right.

Generally as all the legs of a source would be routed to the destination, the default view is to show these paths closed up '**v**' as shown for the Channel L1F4A 7.1 Surround path.

Source Filters: In order to simplify the view, various source filters can be applied.

Tapping on the **'Sources'** button on the left side of the footer opens the Source Filter Pop-up. A notification badge appears when a filter or number of filters are active as the filters can be used in combination allowing the user to tailor the sources shown in the routing matrix display.

Source Path filtering: The user can filter the view to only see Channels or Mains or Groups or any source paths in combination as shown above right.

Note: the default selection shows all source paths when the slider switches are all in the OFF position.

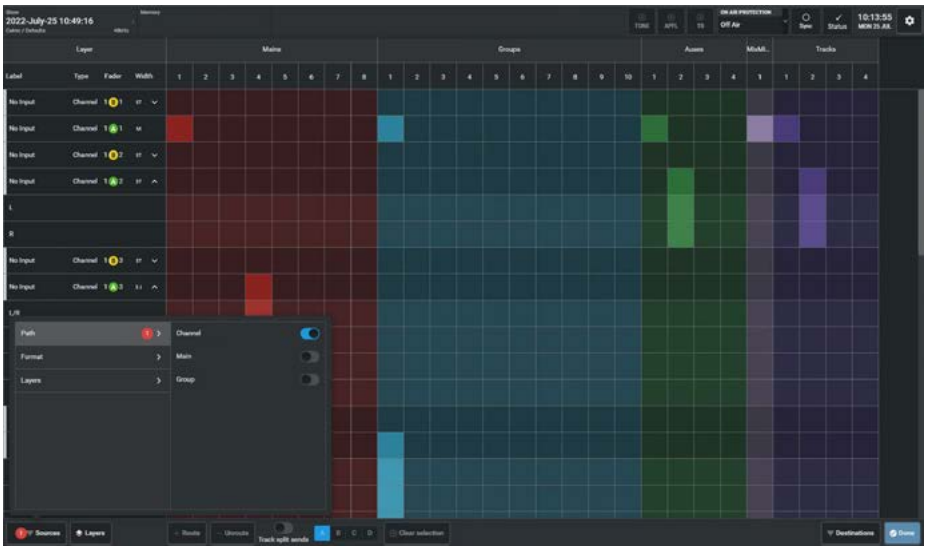
Source Format filtering: The user can filter the view to only see sources of certain width formats these are:- Mono, Stereo, 5.1 & 7.1 Surround and 5.1.2, 5.1.4, 7.1.2, 7.1.4, 0.0.2 & 0.0.4 Immersive formats or any source formats in combination as shown middle right.

Note: the default selection shows all source formats when the slider switches are all in the OFF position.

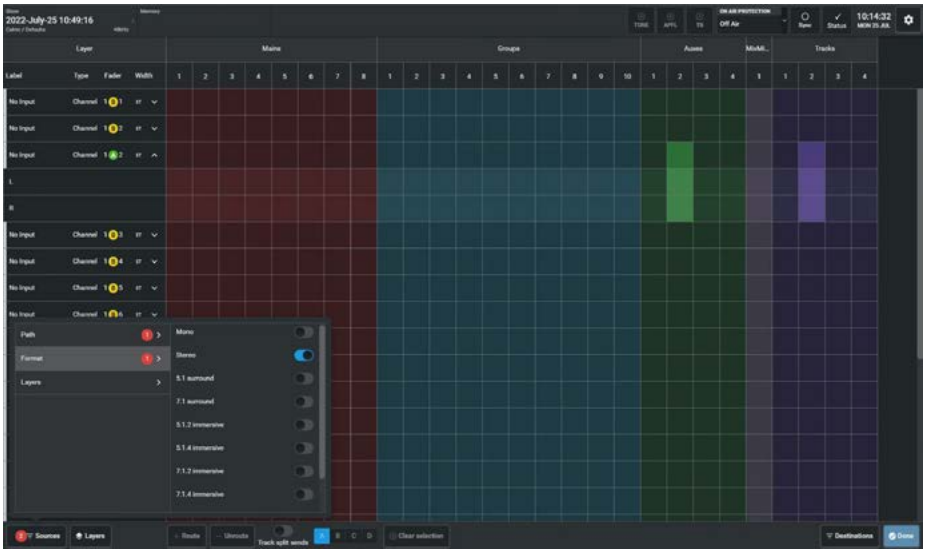
Source Sub-Layers filtering: The user can filter the view to only show sources that have been placed on a Fader on Sub-Layer A or on Sub-Layer B or show all sources when the Sub-Layers A and B option is selected.

Note: the default selection shows all sources when Show A & B is selected including paths not assigned to faders and also that if either Show A or Show B is selected, only sources that have been assigned to faders on Sub-Layer A or Sub-Layer B will be shown and therefore any Main or Group paths not assigned to faders will not be displayed with these filters active.

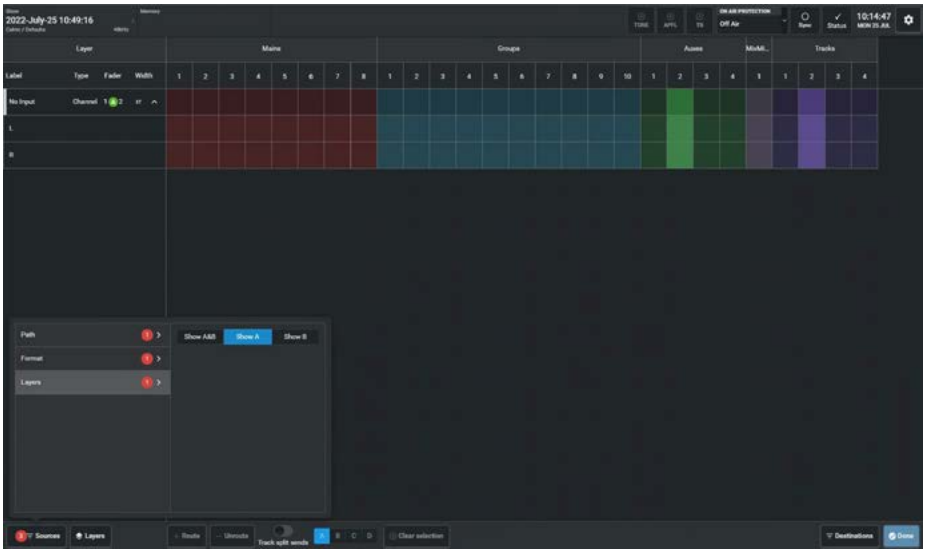
SOURCE PATH FILTERING



SOURCE FORMAT FILTERING



SOURCE SUB-LAYER FILTERING

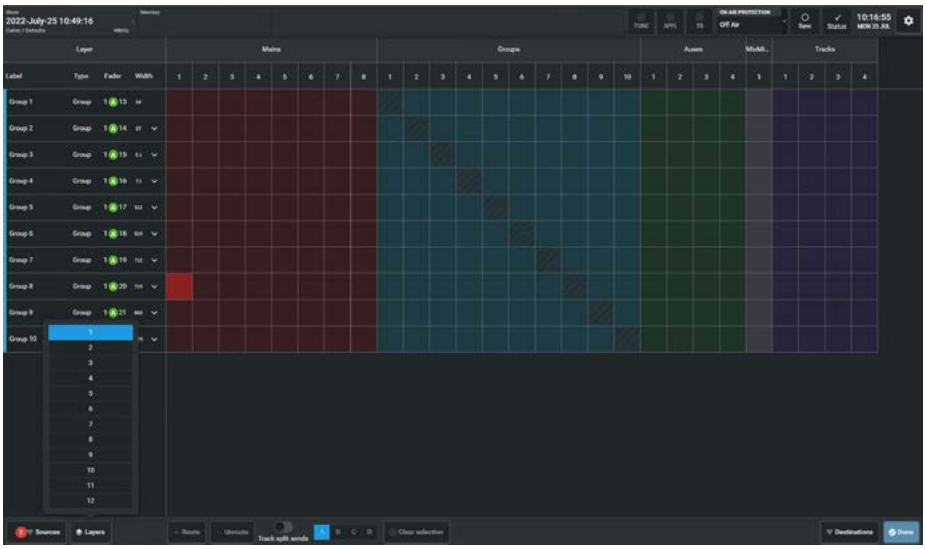


Source Layer Display Control is shown in the image above right. Tapping on the '**Layers'** button on the source side of the footer opens the Layer Control Pop-up.

From here the user can select any of the 12 Layers to display.

Note: this layer selection is independent from the actual current layer that the console is displaying.

SOURCE LAYER DISPLAY CONTROL



Destination Area
The following buses are displayed in the Destination columns:-

Mains: This shows a number of Main columns which vary depending on the available Main buses.

Groups: This shows a number of Group columns which vary depending on the available Group buses.

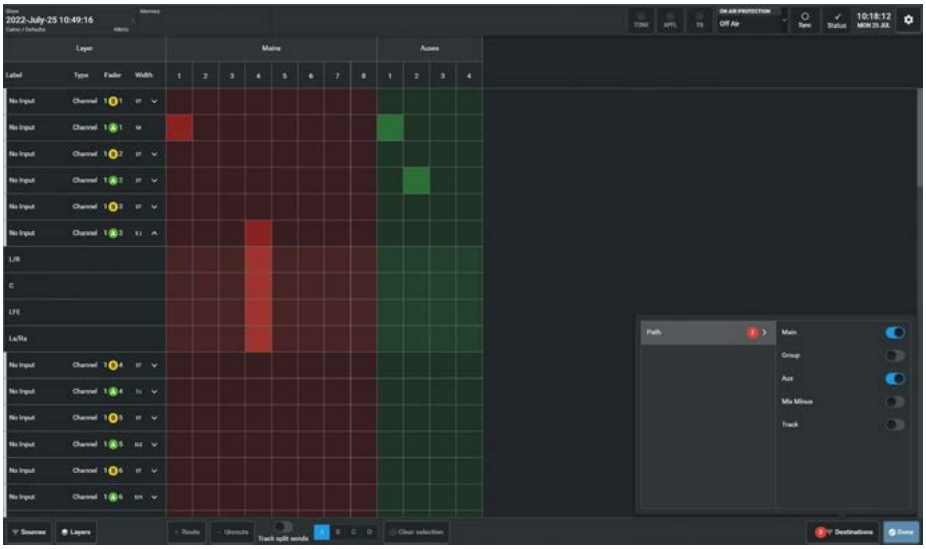
Auxes: This shows a number of Aux columns which vary depending on the available Aux buses.

Mix Minus: This shows the single Mix-Minus Bus column.

Tracks: This shows a number of Track columns which vary depending on the available Track buses.

If there are more buses available than can be displayed on the screen, a horizontal scrollbar will appear at the bottom of the matrix area that can be used to scroll to the required destination or the user can apply the destination filters as required.

DESTINATION FILTERS



Destination Filters
Tapping on the **'Destinations'** button on the right side of the footer opens the Destination Filter pop-up which allows the user to filter the destination view by Main, Group, Aux, Mix Minus and Track bus type.

The image below right shows that the destination filter for Main and Aux buses has been switched on which is why the display is only showing Main and Aux buses as destinations. The Group, Mix Minus and Tracks are hidden.

There is a slider switch provided for each bus type which when on displays that bus type. These can be used individually or in combination. A notification badge appears when a filter or number of filters are active in the footer buttons.

Note: the default selection shows all destination buses when the slider switches are all in the OFF position. Also note that Source & Destination filters can be used in combination to better manage the required routing.

Partial Leg Routing

If a stereo, surround or immersive path only has some of its legs routed the display shows this by displaying its master path with a corner cut off to show it is partially routed when the legs of the master path are not shown.

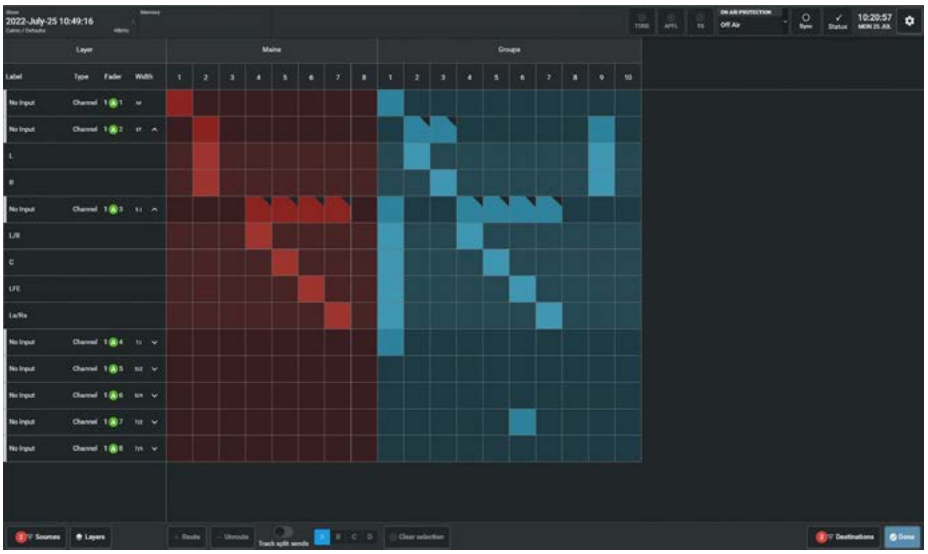
The image above right shows that the Sub-Layer A only and Channel source filters and that the Main and Group destination filters are both on. Both complete and partial routed Stereo and 5.1 paths are being shown.

The stereo channel on Fader L1F2A is fully routed to Main 2, but only partially routed to Group 2 (L) & Group 3 (R).

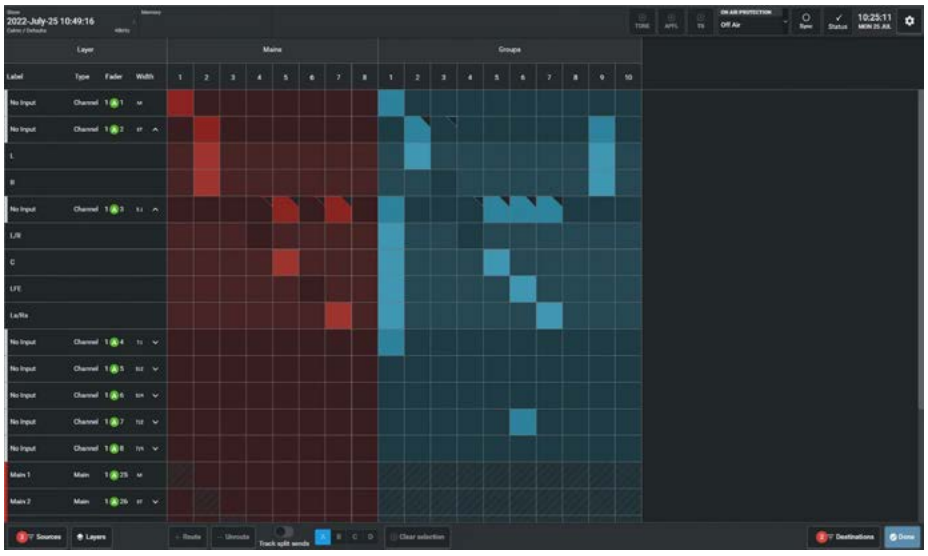
The 5.1 channel on Fader L1F3A is fully routed to Group 1, but only partially routed to Group 4 (L/R), Group 5 (C), Group 6 (LFE) & Group 7 (Ls/Rs) and it is also routed to Main 4 (L/R), Main 5 (C), Main 6 (LFE) & Main 7 (Ls/Rs).

For partial routes the master path shows the corner cut off and when the legs are hidden underneath the master path, the corner cut off becomes an important indication of partial routing.

PARTIAL ROUTED INDICATIONS



PARTIAL UNROUTED INDICATIONS



Partial Leg Unrouting

The image below right shows what happens when all the master paths are unrouted. The complete routes are fully removed but the partial routes appear as unrouted with the corner cut off indication.

The partial routes are unrouted but are remembered allowing the user to easily restore partial routes by re-routing the master paths.

The image below right shows a couple of examples of partial leg unrouting:-

The 5.1 channel's L/R legs on Fader L1F3A has been unrouted from Main 4 & Group 4 and the LFE leg from Main 6, by selecting those crosspoints on the master path and unrouting them.

However the routing matrix still displays the corner cut off as highlighted to remind the user that there are still potential partial routes that would be restored by re-routing the master paths.

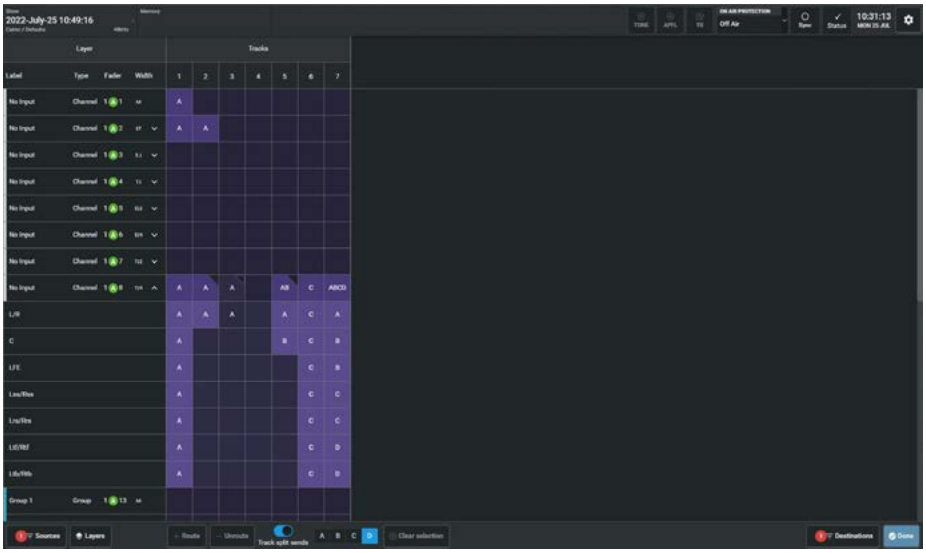
The image also shows that the channel Fader L1F2A which has a (now hidden) partial route from the stereo channel's L leg to Group 2 has been selected.

This is ready to be unrouted with the **Unroute** button.

This will put it into the same state as that stereo channel's R leg on Fader L1F2A to Group 3 which has already been unrouted.

Note: in order to fully remove partial routes the user must first make those partial routes active again and then unroute all the legs directly.

TRACK AND SPLIT SENDS ROUTING



Track and Split Track Sends Routing
In normal operation the Split Sends option accessed from the '**Split Track**' button in the destination side of the footer is turned off. Any track routes made behave just as the groups, mix minus, mains and auxes do including partial route indication.

There are four track sends from each path in Argo and if Split Sends is OFF (by default) then the routes are all made via track send A and as such do not require identification as to which of the four sends are being used.

However when Split Sends is turned on any existing track route will appear with a letter A in it to show which send it is routed from. Looking at just the tracks area of the matrix as shown above right by switching on the Track Destinations filter, it can be seen that a number of routes have been made from a 7.1.4 Immersive Channel on Fader L1F8A to Tracks 1, 2, 3, 5, 6 & 7 respectively the channel to track routing is described below:-

Track 1 shows that complete routes have been made, via track send A, this could either be made by routing the master path or routing all 7 legs to make up the complete route. All the blocks show the track send A letter.

Track 2 is showing a partial route with just the left & right legs being routed via track send A. The master path and the L/R legs show the track letter.

Track 3 is showing an unrouted partial track send A route with the unrouted left & right legs remembered as being from track send A. The master path and the L/R legs show the track letter.

Track 5 was created by first partially routing the left & right legs via track send A with the letter A shown (just as Track 2 was), then the user selected the B button from the Split Send pop-up and routed the centre leg via track send B.

The letter B is then shown in the routing block for the centre leg and that the master path routing indicator which then shows AB with the corner cut off, indicating that it is not only a partial route, but is also routed via two different track sends A & B.

This allows the track send A from the left & right legs and the track send B from the centre leg to be set to different levels by adjusting the track send A and B level controls. For instance a vocal on the centre leg may need to be louder than the audio on the left & right legs so track send B level can be increased in level without affecting the other leg levels.

Track 6 is a complete route from the channel via track send C. The user has selected the C button from the Split Send pop-up and routed the master path via track send C, which means that the output to that track is determined by the track send C level control from the channel. All the blocks show the track send C letter.

Track 7 is an extreme case of controlling all seven of the legs of a 7.1.4 channel from the four different track sends A, B, C & D, this is an unlikely routing arrangement but is shown here for completeness.

The various legs each show the A,B,C or D letters in their routing blocks to show which track send they are controlled from and the master path routing block shows as a complete route (as all legs are routed) with the ABCD letters shown.

It is important to note that routing and unrouting to and from tracks with the split sends option ON is affected by which send A, B , C or D has been selected.

If a channel has been routed to a track using send C then send C must be selected when removing the route. Only routes made with the currently selected send may be removed.

As an example:-
To completely unroute Track 5 then the C leg that has been routed via track send B can only be unrouted by selecting the split sends B button from the pop-up before the centre leg can be selected and then unrouted, otherwise that route would not be altered.

The user would then select the split sends A button from the pop-up before the left & right legs previously routed via track send A can be selected and then unrouted at which point Track 5 would be completely unrouted.

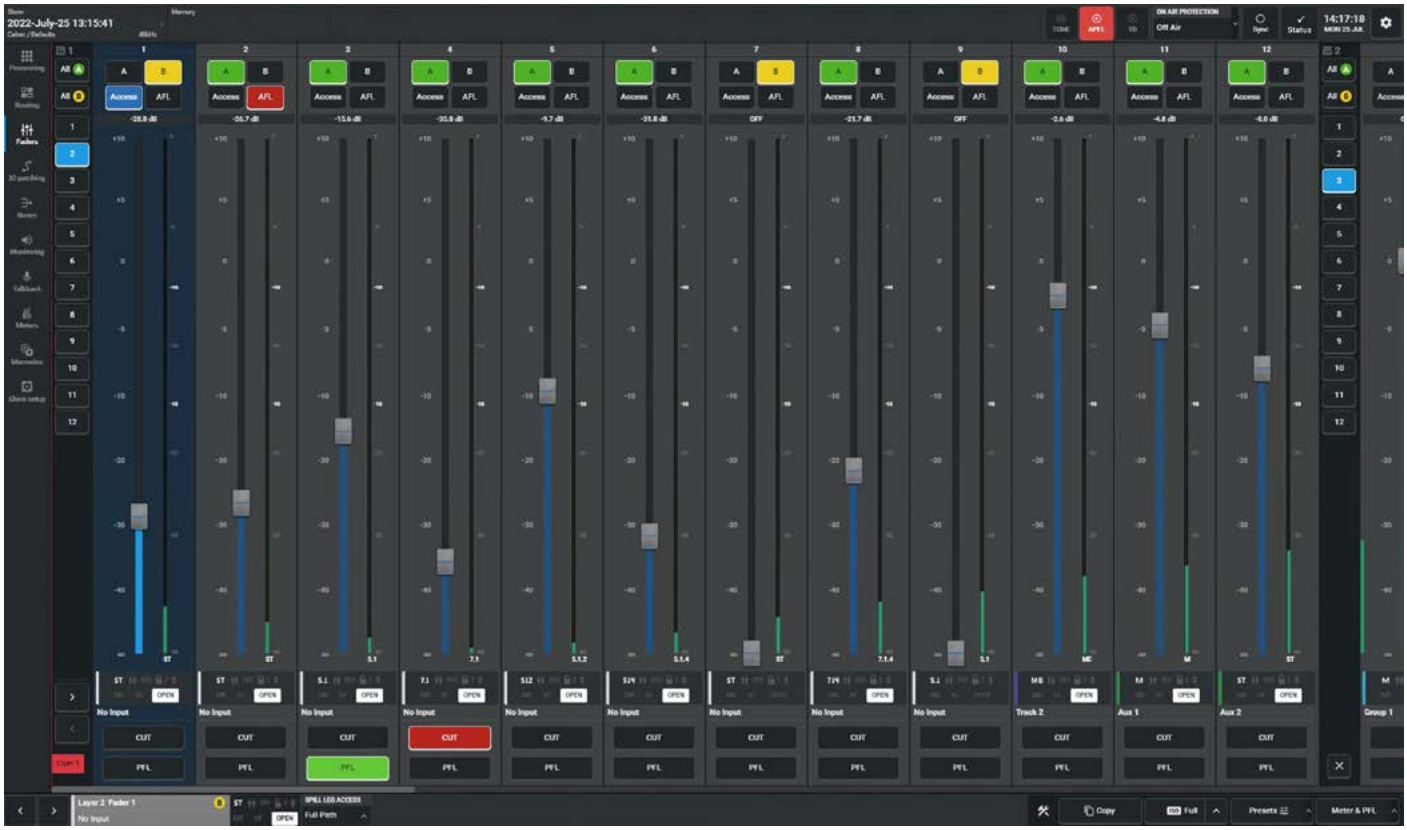
Note: if any route is made to any path via a send other than send A then it is not possible to turn off the split sends option. When all the routes are only via track send A the user can then turn off the split sends slider and the remaining routes will remove their letter A identifiers.

ARGO ASSIST
FADERS

CALREC

FADER SURFACE

FADER SURFACE SHOWING FADERS 1-12 OF 24 IN THE FIRST LAYER SPLIT



The primary purpose of this screen (which is also the home page for Calrec Assist) is to provide the user with a fader bed on which they can mix the shows on by controlling the faders/cuts, listen modes and layer selections of all the paths that are set up on the fader layout screen.

This page is accessed via the menu entry **Faders>Fader Surface** as shown above.

The left side of the content area has a layer control column in it which affects the Fader Surface area, these are described on the next page under the Layer Control column All A & All B and Layer Split headings.

The fader surface area provides a virtual fader bed showing faders in blocks of 12 at a time for Argo emulating the physical fader panels of a console.

The actual number of faders visible is affected by the resolution of the display and the zoom setting of the browser.

In order to see the rest of the faders the user can scroll across them horizontally.

Note: tapping a second time on the same menu item (in this case Faders) folds away the sub-menu to give more space on the content page, as shown above.

Each block of 12 faders has a number shown top left which indicates which panel the user is viewing. The number of panels is determined by the console it is connected to or if no physical console present, it defaults to 48 faders (4 blocks), which are arranged as 12 layers, each with two sub-layers A & B. By tapping on the individual A or B access buttons on the screen, the user can view and control a mixture of paths.

The nudge buttons shown in the Fader access block in the footer follow the A/B selections made here on the fader surface page. The currently accessed path is always shown in a blue background colour.

Each A/B fader path in the Fader Surface is arranged from top to bottom as follows:-

Fader Number:
This displays each fader number in the fader surface arranged in blocks of 8.

Sub-Layer A & Sub-Layer B buttons:
As the A/B buttons are tapped, their paths become the currently accessed selection.

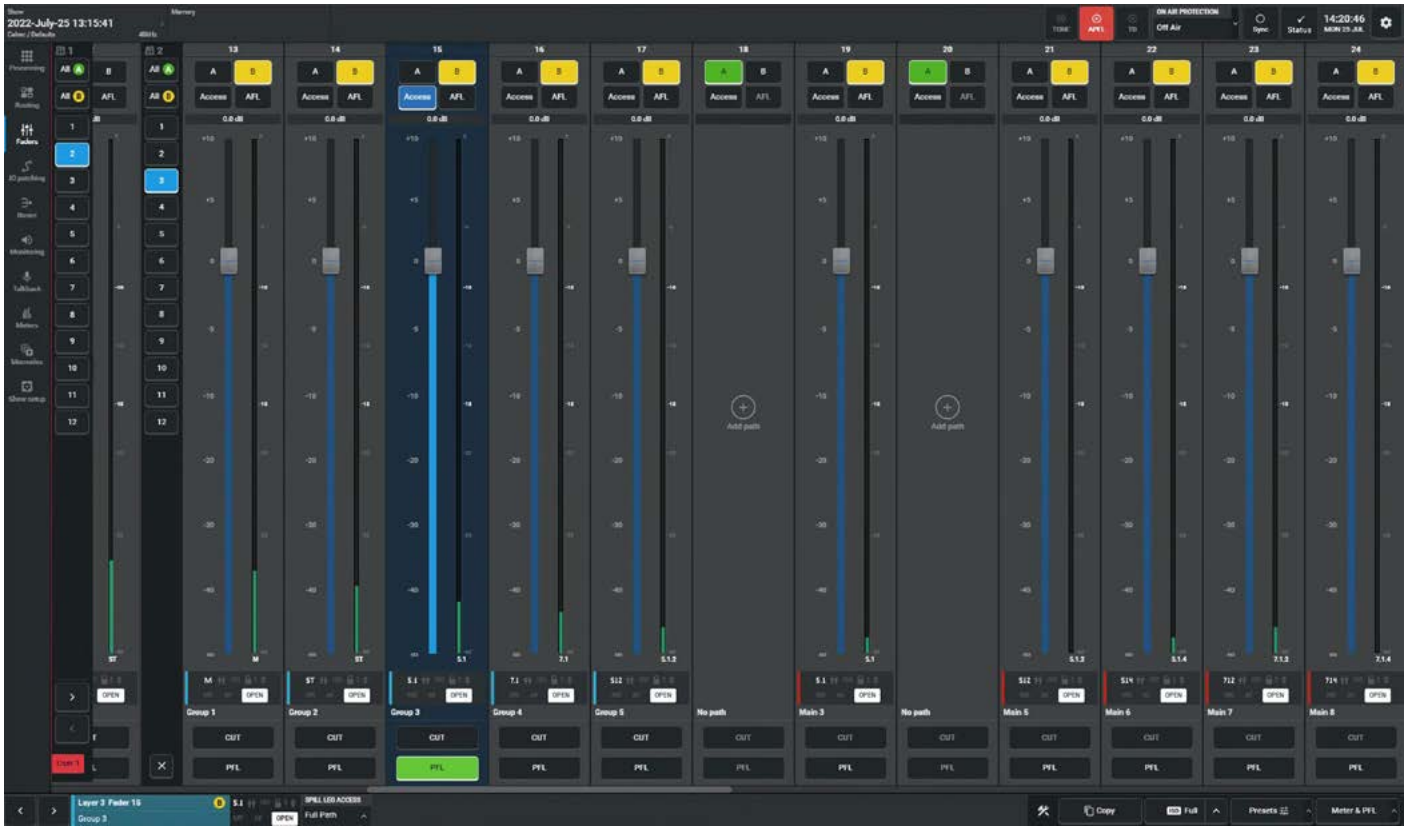
Access button: which can also set the current accessed path lights up Blue. The A sub-layer buttons light up Green, the B sub-layer buttons light up Yellow.

AFL buttons:
These switch the selected path onto the AFL monitor bus.

Fader level indicator:
Displays a numerical fader level value.

Fader Slider:
The fader knob can be clicked (or touched) and dragged up/down to vary the level.

FADER SURFACE SHOWING FADERS 13-24 OF 24 IN THE SECOND LAYER SPLIT



Signal Presence Meter:
The meter to the right of the fader shows the audio level present, if the path is stereo, surround or immersive it shows the highest level.

Fader Status display:
Provides further information about the path being displayed. This is the black inset window below the fader sliders which shows:- path width, clone, isolate, layer 'n' locked, vca status, autofader, fader open, and other icons as required.

At the bottom of this is the Fader Label Area which displays its port or bus name or user label or if it is an unpatched channel it displays 'No input'.

Cut/On buttons:
These buttons at the bottom of each fader can be disabled or enabled in **System settings>General settings** by default this is set to '**Enabled**'.
The user can also decide if these buttons should act as Cut or On buttons.

PFL buttons:
These switch the selected path onto the PFL monitor bus.

Layer Control column:
To the left of each fader block when Layer split is applied to the fader surface is a set of numbered layer buttons, which allows the user to select which of the 12 layers the faders to the right of the layer control column will be displaying and controlling.

All A & All B:
At the top of the layer buttons column are the global ALL A and ALL B buttons which changes the fader surface display to show all the faders on sub-layer A or sub-layer B for the faders to the right of the layer control column.

Layer Splits
Between each Fader block of 12 faders is shown an '**Add layer split**' button, that allows each fader panel to select its own layer and All A/All B selection. The split also applies to all the panels to the right of the panel that are "Split" unless they also have their Layer Split switch selected.

The image above shows the fader surface scrolled across to Faders 13-24 which is controlling paths on Layer 3 as a second Layer Split has been applied to this panel.

This allows independent access to various layers from one or more panels in a layer split area, without affecting any of the other panel layer selections in another layer split area. This allows for a greater flexibility of path selection and the Nudge buttons feature on the Processing and Routing pages track the Current Access selection and vice versa.

To remove a Layer Split the user taps on the 'X' at the bottom of the Layer control column as shown in the image above.

Note: opening more than one window in the session allows the user to have fader control of the mixer in one window and control other functions such as Input or EQ, Dynamics, Routing etc, in another.

FADER LAYOUT

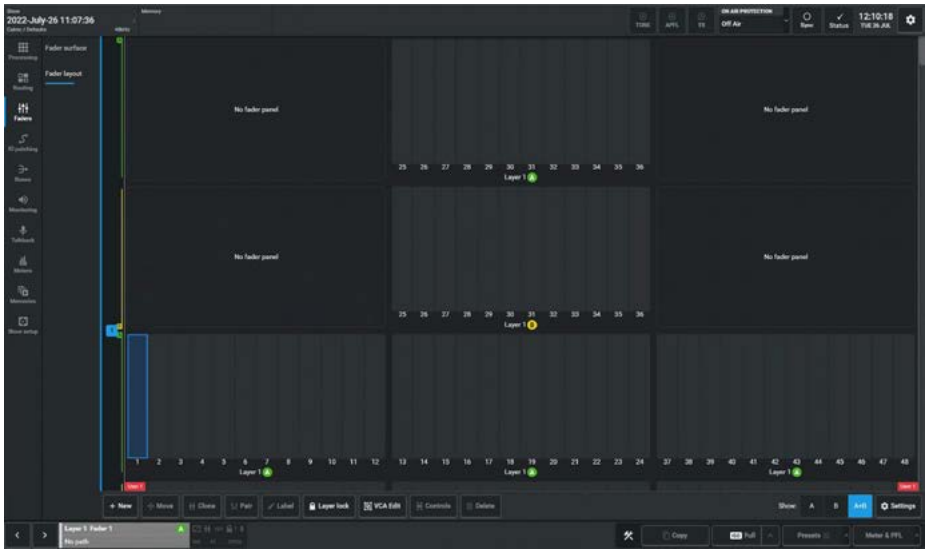
Configuring the Argo Fader Layout
When a show is loaded the fader layout screen is automatically populated as the loaded show becomes the active show. This screen can be accessed from the menu via **Faders>Fader Layout** as shown above right. This is what the user would see when a new show is created. Audio feeds must be attached to channels in order to be processed and routed. Channels must be attached to faders to exist and faders can also be assigned to control bus outputs. The Fader layout screen for Argo shows the number of faders available on the console.
The empty fader layout is configured as shown in the **'Impulse Configuration Guide (926-290)**'.
The example shown is an Argo S and consists of 3, 12 fader sections with section 2 having an additional short 12 fader panel. The 48 faders are arranged as:- Faders 1A-48A and Faders 1B-48B for each of the 12 Layers available. The faders are divided into blocks of 12 to emulate a physical Argo fader panel.
The fader layout displayed above right shows the small faders 25A-36A & faders 25B-36B in the second section above the standard faders 13A-24A.

Attaching a Path to a Fader
To attach a path to a single fader:
1. Tap on an empty fader space to select it, in this case L2F1A.
2. Tap on '**New**' in the control screen footer. A pop-up opens to show the path options, for Channels, Mains, Groups, Auxes, Tracks and Remotes as shown middle right.
3. Tap to select the desired width/type or use '**All sources**' in combination with the Search option if preferred.
4. Tapping on the chosen path(s) places the path on the fader, or tap on '**Cancel**' to return to the fader layout screen without making any changes.

To attach paths to multiple faders:
1. Tap and drag selection to select the desired range of faders.
2. Tap on '**New**' and select your first path the subsequent paths fill the selection.

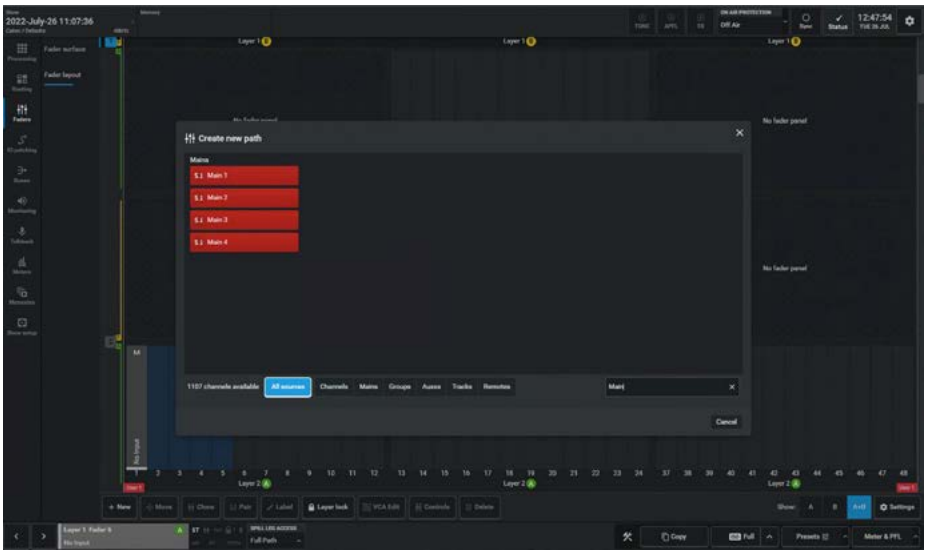
Note: just the Mains paths are shown in the image below right, by typing the word "Main" into the search box.

EMPTY FADER LAYOUT SHOWING STRUCTURE OF SCREEN



CREATE SINGLE NEW PATH

CREATE MULTIPLE NEW PATHS



Populating the Fader Layout

All selected faders can be populated with a chosen path type/width. If an output bus is chosen, the selected faders will be populated with buses in numerical order, e.g. if the user selects 12 faders, then chooses Aux 1 from the pop-up, the faders will be populated consecutively with Aux outputs 1 thru 12. The image above right shows the fader layout screen populated with various channels & buses on Layer 2.

Fader Label Editing

Once a path has been created, the user can edit its fader label and change its background colour see middle right.

To edit a fader label:

1. Select one or more faders and tap on '**Label**' in the screen footer.
2. The footer changes to display a text entry field & six buttons, Copy, Paste, Reset to default, Previous, Next & Done.
3. Enter fader labels using the keyboard.
4. Change the background colour of the label from the dropdown list.
5. Scroll through the fader label fields by tapping on them, or by tapping on '**Previous**' and '**Next**' .
6. Select a path and press '**Copy'** lets the user '**Paste**' labels to other paths.
7. Pressing **'Reset to Default'** clears the selected labels back to default.
8. Once changes complete, tap on '**Done'.**

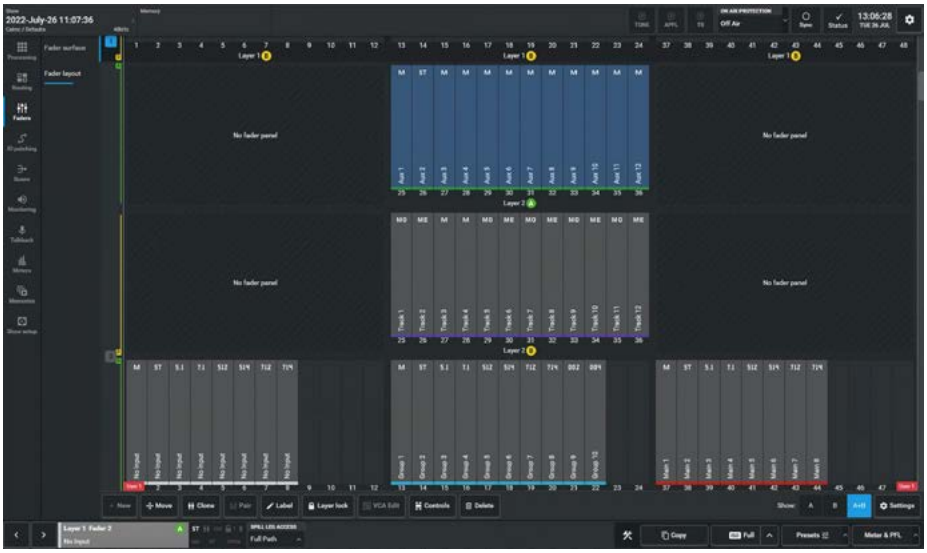
Label Display Options

Accessed from the Settings icon on the right of the footer, the user can change the label displays for the Buses & Outputs between user and system labels, below is shown a hierarchy of Fader labels from:- User Fader labels, Source labels, the Source transmitter channel to the Console receiver channel. By default, the highest level of label is displayed, but the user can choose to force this to show the preferred label. External labels and Patchbay source labels are only shown if the **'Dynamic Channel Labels'** switch is active, else it follows the order shown below right.

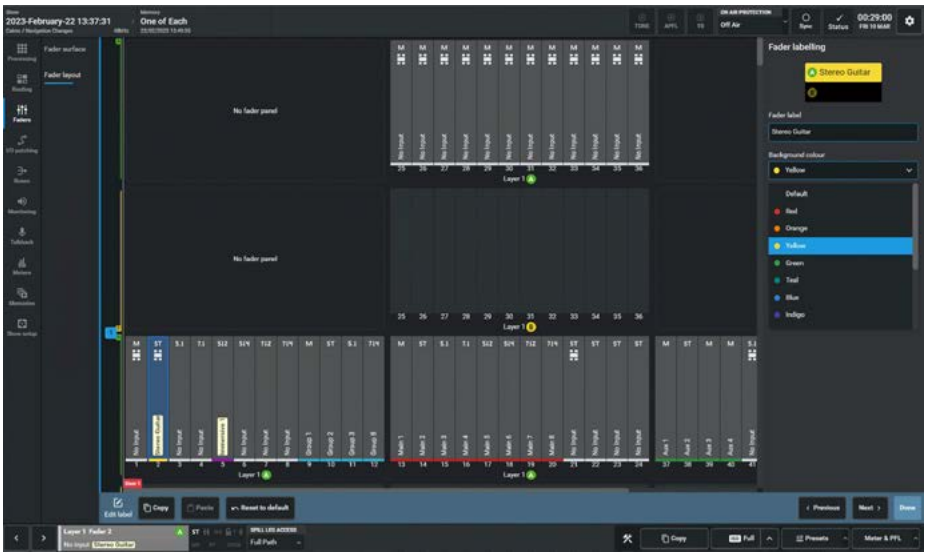
Surface options

With the 'Fader selection follows fader access' switch enabled, the Fader Layout page will jump to the Accessed fader on whichever layer it's on. With the switch disabled it doesn't change its selection. The Fader label display switch can select just the current label selection (A or B) or both A & B labels on a surface fader panel.

POPULATED FADER LAYOUT



FADER LABEL EDITING



LABEL DISPLAY OPTIONS

Moving Paths

To move paths to different faders as shown above right:

1. Select one or more faders, at least one of which must contain a path.
2. Tap on '**Move**' in the screen footer.
3. A pop-up appears in the footer asking the user to select where the first 'Move to' destination should be.
4. Green named pointers then appear under the destinations for empty paths, to show the intended move.
5. Tap on '**Move**' again to confirm. if the user selects a move destination that has existing paths on it the pointers appear red rather than green and they are presented with three options:

Cancel: - cancels the move.

Swap: - swaps the original paths with faders on the chosen destination.

Overwrite: - replaces the destination path with the original selection and removes the destination paths from the surface. As channels don't exist once they are removed from a fader, a pop-up appears if there is an attempt to overwrite a channel, asking for confirmation.

Cloning Paths

To create a clone of a path from a fader:

1. Select the fader to be cloned which must contain a path.
2. Tap on '**Clone**' in the screen footer.
3. A pop-up appears in the footer asking the user to select the destination where the first clone should appear.
4. Green Named pointers then appear under the destinations for empty paths, to show the intended move.
5. Tap on the '**Clone**' button in the pop-up to create the clone path or tap on '**Cancel**' to return to the fader layout screen without change.
6. Once the clone has been created all clones of that path and the original will have the clone icon attached as shown in the image lower right..

If the user selects clone destinations that have existing paths on them, the pointers appear red rather than green and they are presented with a 'Clone & overwrite' option as shown below right which first deletes the paths that are to be overwritten then places the clones on the empty paths.

Note: Pointers appear yellow if the fader path will be overwritten but not destroyed.

MOVE PATHS

CLONING PATHS

CLONE & OVERWRITE

Deleting Paths

To remove paths from the fader layout as shown above right:

1. Select one or more faders, at least one of which must contain a path.
2. Tap on '**Delete**' in the screen footer.
3. A pop-up dialogue appears asking for confirmation that the selected paths are to be deleted and advising **"This operation cannot be undone."**
4. Tap on '**Delete**' in the pop-up to remove the path from the fader layout or tap on '**Cancel**' to return to the fader layout screen without change.

Layer Lock

This allows the user to keep important faders to be always present on the fader surface, regardless of which Layer on sub-layer A or sub-layer B is selected and is locked or unlocked as follows:

1. Select one or more faders (with or without paths attached).
2. Tap on '**Layer lock**' in the screen footer. A padlock symbol appears on the locked paths as shown middle right on Faders L2F1A & L2F2A.
3. To unlock the locked path(s) with the padlock icon(s) select them and tap '**Layer lock**' in the screen footer.

Pair Faders

This allows the user to pair two faders together as shown below right. The pair operate like a Link, where moving either fader moves them both by the same amount, but note it only pairs the faders and cut/on switches. This is primarily designed to pair Argo faders with RP1 Faders.

To pair two faders together:

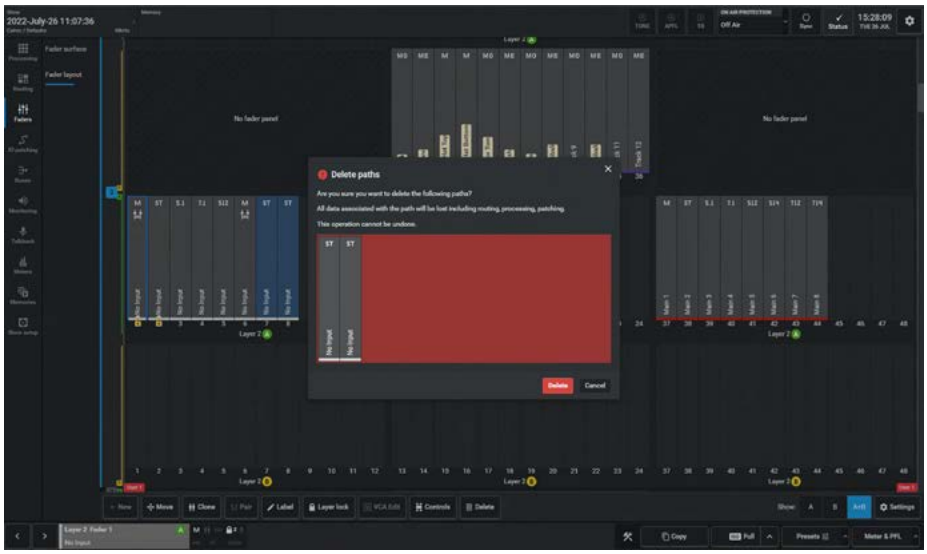
1. Select the first fader to be paired which must have a path attached.
2. Tap on '**Pair**' in the screen footer.
3. Select the second fader to be paired
4. Click 'Pair' in the Pair Footer pop-up.
5. The Pair icon appears on both faders as shown on Faders 1 & 6.

To unpair a fader pair:

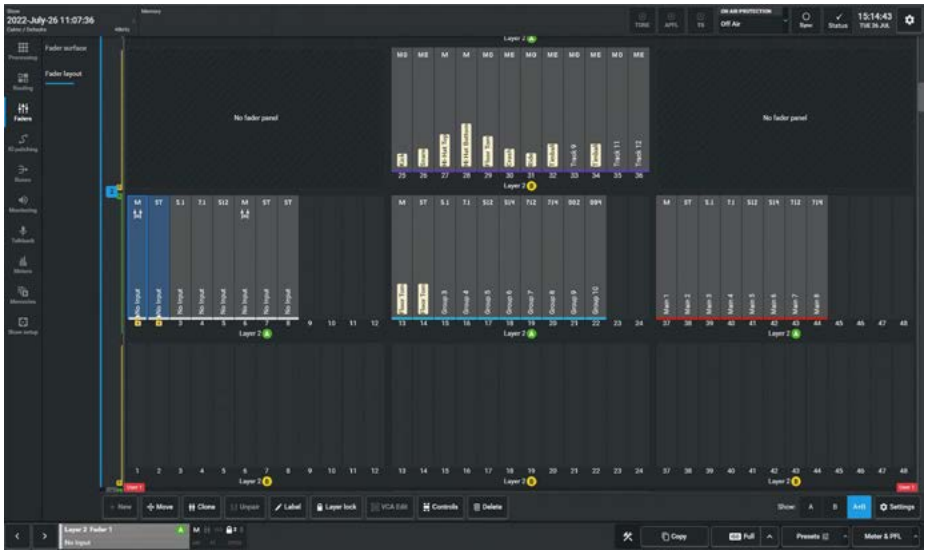
1. Select either of the paired faders.
2. Tap on '**Unpair**' in the screen footer.
3. This will unpair the faders and the pair symbol will be removed.

Note: if one of the pair is deleted from the Fader Layout the Pairing connection is also deleted.

DELETING PATHS



LAYER LOCK



PAIR FADERS

VCA Edit Mode

This allows the user to create, add, edit and remove VCA groups from the **Faders>Fader Layout** page in Assist.

This process is normally carried out on a physical fader surface using access buttons, however the system may be headless with virtual faders so a method of setting up VCA groups is required.

A VCA group consists of a VCA master fader and a number of VCA slave faders.

Adjusting the level of the VCA master fader allows all the VCA slave fader levels to be adjusted maintaining the balance of the sound without having to adjust them all individually.

Entering VCA Edit Mode

The image above right shows a simple example:- fader L1F1A an unassigned path and faders L1F2A & L1F3A assigned as mono Mic channels that the operator wants to control from a VCA group master fader.

The first step is to select the path that will become the VCA Master Fader. Clicking or tapping on the required fader on the fader layout page highlights it and the user then clicks on the VCA Edit button on the right side of the footer.

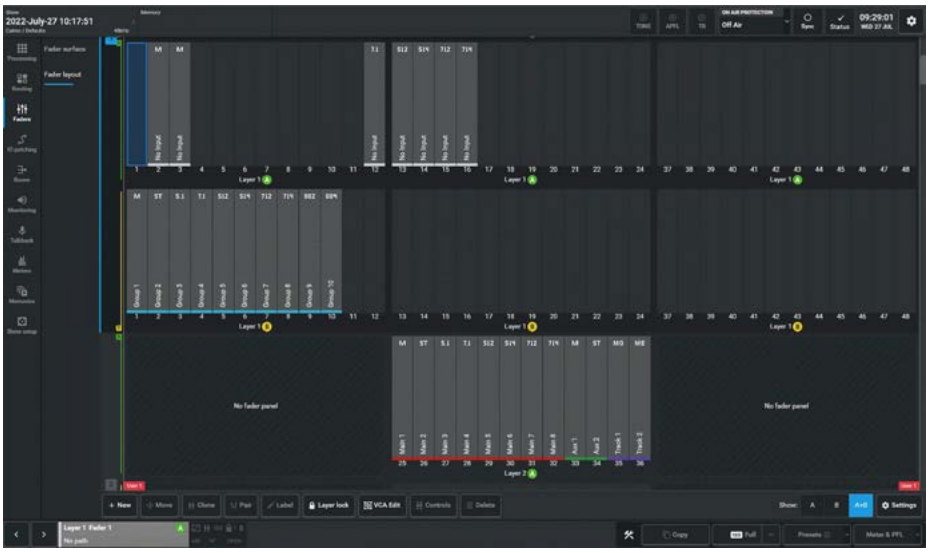
Changing the selected fader

The image middle right shows that fader L1F1A is the selected fader for the VCA Edit page.

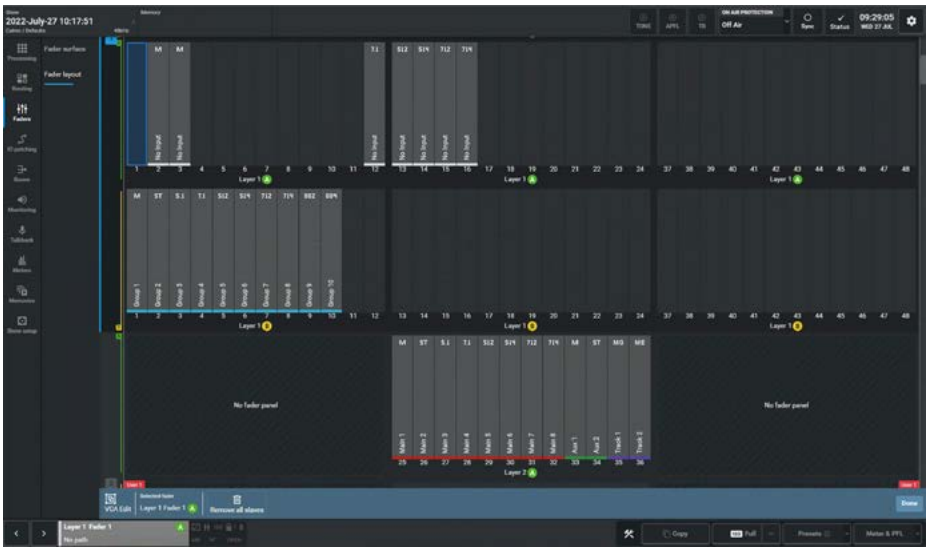
If another fader is to be set as the selected fader the user can tap or click on the currently selected fader again and the highlight will be removed showing that it is deselected with the Footer showing that there is no selected fader, see the VCA edit footer with no selected fader image below right.

The user then chooses the required fader and clicks upon it to change its status to that of selected fader.

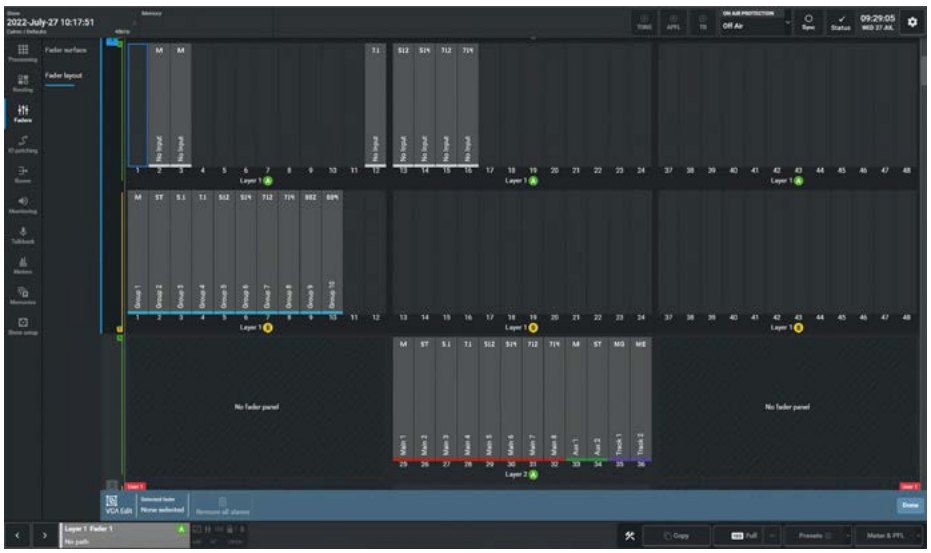
VCA EDIT ENTRY



VCA EDIT FOOTER WITH SELECTED FADER



VCA EDIT FOOTER WITH NO SELECTED FADER



Creating a VCA Group
With fader L1F1A being the selected fader the user selects the faders to be in the VCA group, as shown above right.

In this case just fader L1F2A has been added as a VCA slave and the green '**SL**' Icon has been appended to it along with a green border placed around the path. The selected fader L1F1A now has a label appended as VCA Master of the group and has the red '**MR**' Icon appended to it along with a dashed red border placed around the path. The current path status window in the footer also shows the red '**MR**' icon.

The VCA **MR**, **SL** & **MS** icons appear in the Fader Surface page and on the physical surface fader panels if any.

Also note that fader L1F1A is displaying an empty path icon at the top to show that there isn't a path on the same fader i.e. a VCA master without a path.

A VCA master with a path can be created by choosing a selected fader with a path already assigned to it, in which case the path icon will show the width of the path M, ST, 5.1, 7.1, 5.1.2, 5.1.4, 7.1.2, 7.1.4, 0.0.2 or 0.0.4 as determined by its width.

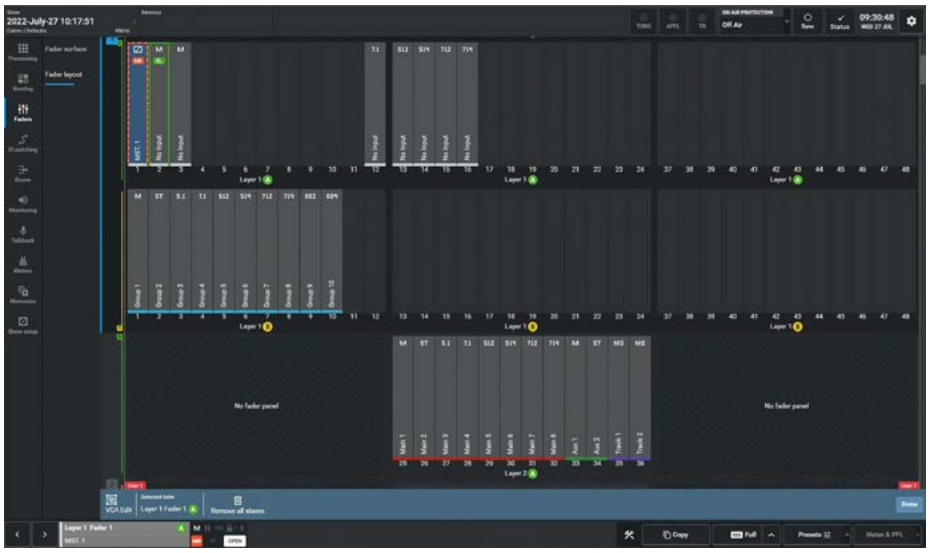
Note: the path underneath will also become a VCA slave of the VCA master on top of it.

Exiting VCA Edit Mode
At this point, if the user has finished creating the VCA group, the user taps on '**Done**' in the footer to return to the normal Fader Layout page function, the VCA group icons remain but the borders which are used to identify the 'selected' VCA group are removed as shown in the image below right.

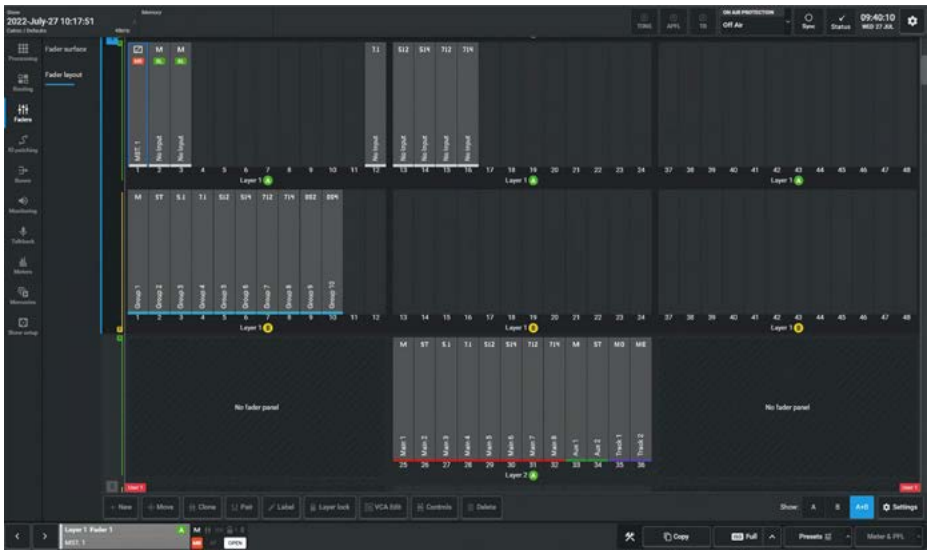
Adding or Removing VCA Slaves
If the user wants to add or remove VCA slaves to/from a VCA group, the user can re enter the VCA Edit mode if they have exited it, choose the selected path and simply click on any available path to add it to the VCA group. The image below right shows that fader L1F3A has now been added to the VCA group.

Note: any fader that is not available for addition to the group is shaded or greyed out.

VCA GROUP CREATED



ADDING VCA SLAVES TO AN EXISTING GROUP



To remove individual VCA slaves from the group the user can click again on the paths with the associated '**SL**' icons and those paths will return to their assigned path only state i.e. '**SL**' icon and border colour removed. If the user removes the last VCA slave from the group then the group is also removed and the VCA master status entry is also removed. If it was a VCA master without a path it becomes unassigned or if it was a VCA master with a path then it will return to their assigned path only state.

Remove all slaves
When VCA Edit mode is active, there is a button labelled **'Remove all slaves'** in the VCA Edit footer, which becomes active when a valid path is selected.

If the user selects a primary, intermediate or simple VCA master and taps on this button all the direct VCA slaves belonging to the selected master will be removed.

For primary VCA masters this also means that all intermediate VCA masters are converted to simple VCA masters.

For intermediate VCA masters this also means that as all their VCA slaves have been removed they become the selected VCA slave of their primary VCA master.

Note: if the primary, intermediate or simple VCA master does not have a path underneath when 'Remove all slaves' is actioned it's entry in fader layout will be removed.

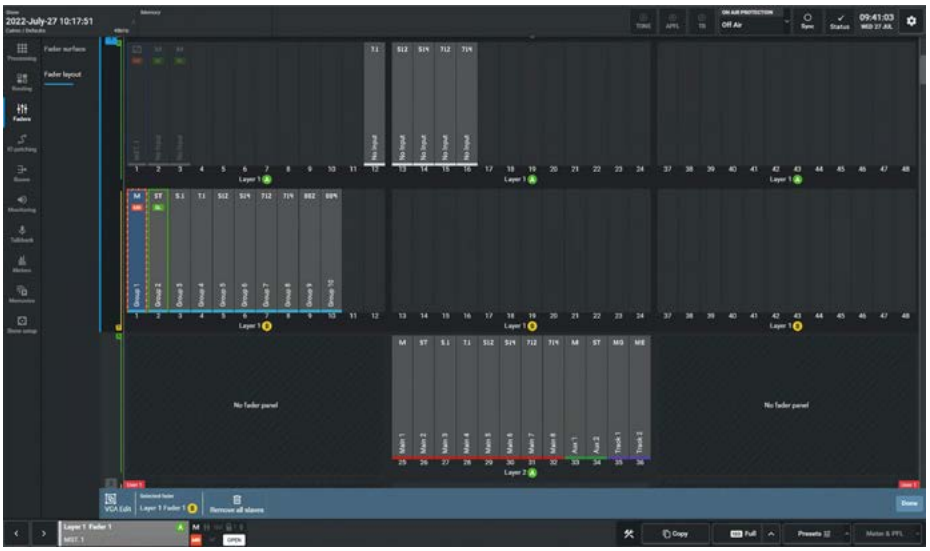
Adding a second VCA group
The image above right shows that a second VCA group has been added. The Selected fader was changed to fader L1F1B which has a path underneath.

This became the second VCA master when fader L1F2B was added to it.

The VCA group here consists of the VCA master and two VCA slaves on faders L1F2B and L1F1B which is the path underneath the VCA master.

Note: the second VCA group members have borders around then to show that they are all members of the same group.

ANOTHER VCA GROUP



Creating a VCA Intermediate Master and VCA Primary Master
Going beyond a simple VCA group structure, it is possible to create intermediate VCA group masters which allow sub groups to be controlled from an overall Primary VCA Master.

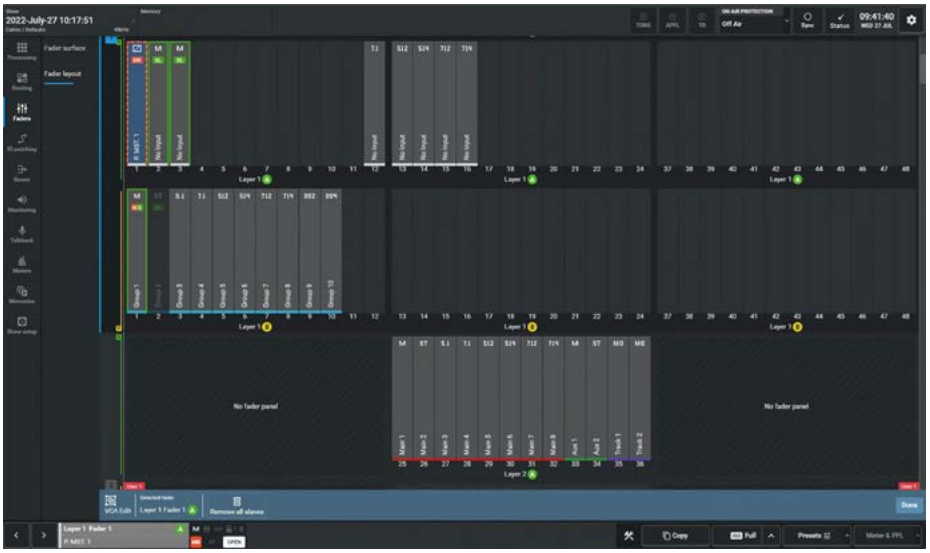
A practical example of this may be in an orchestra setting where a “Strings” VCA group of say 8 different instruments which are already balanced in terms of relative gain and a “Brass” VCA group of another set of different instruments is created but the director want to have overall control of both VCA groups from a single fader so that the balance is retained between the VCA groups.

The image below right shows that the two VCA groups have been combined.

With fader L1F1A as the selected fader, the user clicks/taps on another VCA master fader L1F1B which becomes a VCA intermediate master and its icon changes to ‘**MS**’.

This is to show that it’s still a VCA master to its own VCA slaves but is itself a VCA slave to the Primary VCA master.

VCA INTERMEDIATE MASTER CREATED.



At this point the fader L1F2B is now greyed out because it is a direct VCA slave to fader L1F1B which is now an intermediate VCA master.

A VCA slave cannot have 2 VCA masters, therefore it cannot also be a direct VCA slave to the selected primary master on fader L1F1A.

Note: the green border colours around the paths that are directly controlled from the primary VCA master and the fact that fader L1F2B is both greyed out and does not have a border colour.

Adding or Removing VCA Slaves to/ from a VCA Intermediate Master
If the user wants to add or remove VCA slaves to/from the VCA intermediate master then as shown above right, the user would deselect fader L1F1A and select fader L1F1B, the VCA intermediate master then becomes the selected fader.

Note: the VCA intermediate master shows a red border around it and its directly connected faders are bordered VCA slaves in green, but in this case its VCA primary master is also directly connected, which is why it is bordered in red although greyed out.

The user can then click/tap on any available path to add it to the intermediate VCA master's group or click on any existing VCA slave belonging directly to the VCA intermediate master (as shown by the green border) to remove it.

Removing a VCA Intermediate Master
If the user removes the last VCA slave from the VCA intermediate master then its group is also removed and the VCA intermediate master and simple VCA master statuses are removed.

This can result in two states for the former VCA intermediate master:-
1. If it was a VCA master with a path underneath it becomes a direct VCA slave of the VCA master on Fader L1F1A.

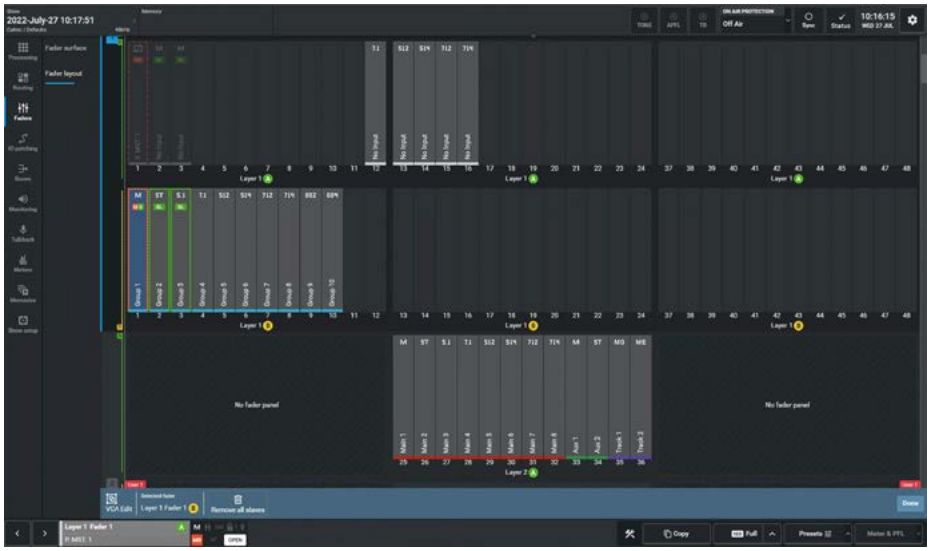
This is what has happened in the image shown middle right. The intermediate VCA master became a selected VCA slave. Clicking or tapping on any of the available paths in this state will turn the selected VCA slave fader back into an intermediate VCA master again.

Deselecting the selected VCA slave will return the VCA layout to normal with the master on L1F1A showing its VCA slaves on faders L1F2A, L1F3A and now L1F1B as shown below right.

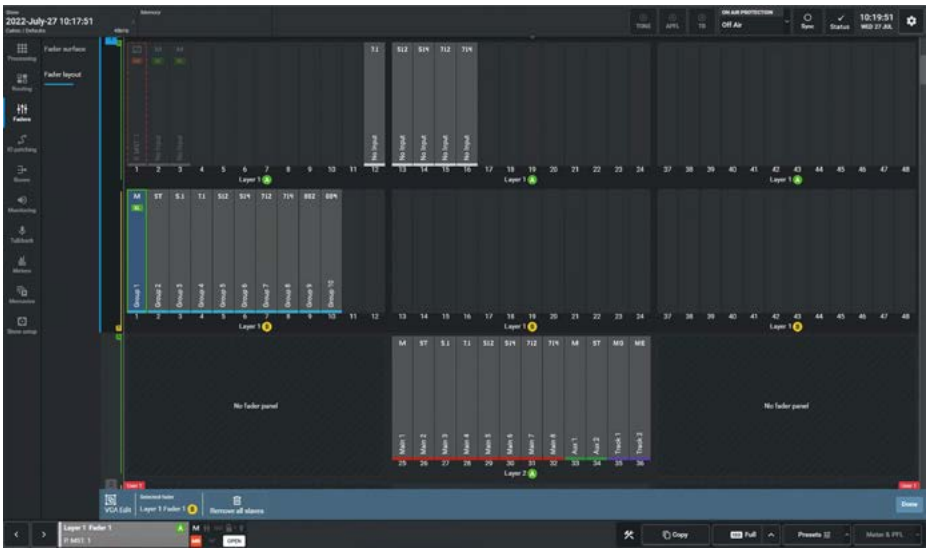
2. If it was a VCA master without a path underneath, its entry in fader layout will be removed.

Note: a VCA intermediate master can return to being a separate VCA master, if the Primary VCA master is set to be the selected fader and then the user clicks on the VCA intermediate master.

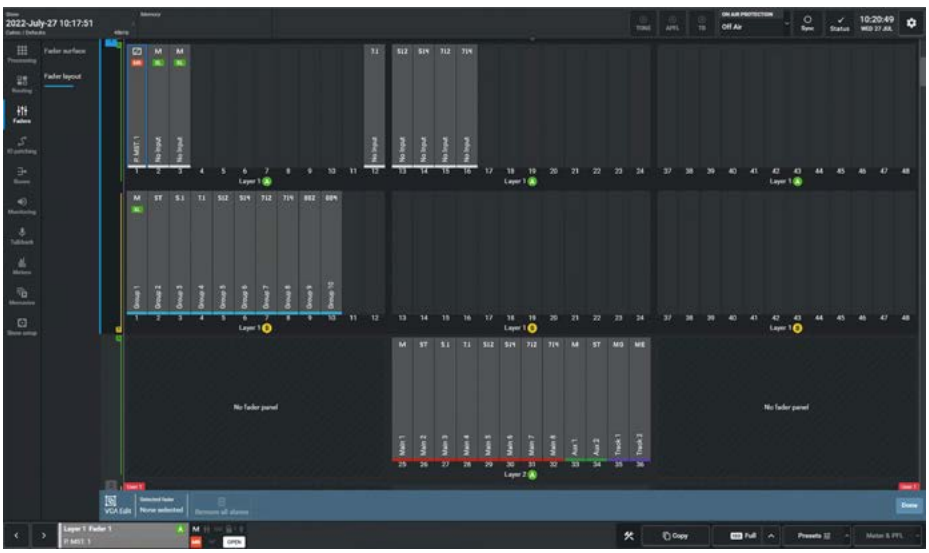
ADD/REMOVE VCA SLAVES FOR VCA INTERMEDIATE MASTER



VCA INTERMEDIATE MASTER REMOVED



VCA SLAVE DESELECTED



VCA Edit display example
The example above right is showing multiple VCA groups with a VCA primary master, four VCA intermediate masters to this primary master and three separate simple VCA masters.

The Primary VCA master shown with a dashed red border, has been selected to show all its intermediate masters shown with a green solid border.

In addition the other VCA masters and paths that are not part of any VCA structure remain available for VCA grouping to the selected path, whilst the paths that are not available to the selected path are greyed out.

The images show the following multiple VCA structures created in VCA Edit:-

Fader L1F1A: Primary VCA master (without path) including own VCA slaves highlighted and they are:-
Fader L1F3A: Intermediate VCA master (without path) of a VCA slave fader L1F4A, which is a mono channel.
Fader L1F5A: Intermediate VCA master (without path) of a VCA slave Fader L1F6A, which is a mono channel.
Fader L1F1B: Intermediate VCA master (with mono group path) of VCA slave faders L1F1B, L1F2B & L1F3B, which are Group buses 1, 2 & 3.
Fader L1F4B: Intermediate VCA master (with 7.1 group path) of VCA slave faders L1F4B, L1F5B & L1F6B, which are Group buses 4, 5 & 6.

Fader L1F8A: VCA master (without path) of VCA slave faders L2F25A, L2F26A & L2F27A, which are Main outputs 1, 2 & 3.

Fader L1F10A: VCA master (without path) of VCA slave faders L1F12A, through to L1F16A, which are 5 immersive channels.

Fader L1F11A: VCA Master (without path) of VCA slave Faders L2F33A & L2F34A, which are Aux Outputs 1 & 2.

VCA GROUPS DISPLAY EXAMPLE IN VCA EDIT

VCA GROUPS DISPLAY EXAMPLE AFTER EXITING VCA EDIT

VCA display example in Fader Layout when not in Edit mode
The image below right shows the same VCA display example when not in VCA Edit mode. The outline coloured border displays have been removed after exiting.

The VCA **MR** master icons, **SL** slave icons and **MS** intermediate master icons remain for each fader entry in the Fader Layout and are also shown in the Fader Surface.

Filtering the Fader Layout View
The fader layout view can be altered to show just the A layer paths, just the B layer paths or both A+B layer paths by changing the Show: selection option in the bottom right of the fader layout page as highlighted in the image below right.

User Controls Editor

The standard Argo fader panel has 2 x 4 button control button cell rows placed just above the faders Cut/On button. The lower row of these cells as highlighted in the image above right can be configured to display a user defined set of controls.

This is carried out by first selecting the path to have its 4 button user control cell configured from the Assist Fader layout. This then makes the Controls option available in the footer of the fader layout page.

Selecting this option opens the user controls editor as shown below right. On the right side of the editor is shown the 4 button layout with the currently undefined user controls shown in the display in the centre. Tapping on any of the 4 buttons in the display or any of the 4 Add buttons under button functions, opens the Customise button menu with the Input Control page shown.

The following pages detail the extensive set of control options that each of the 4 buttons for the selected path can be customised to perform.

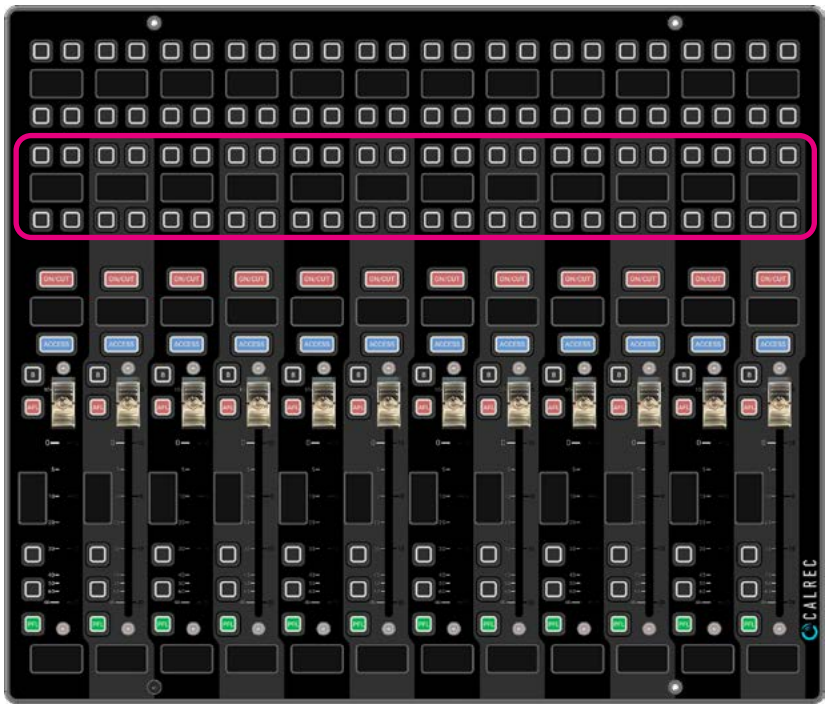
In order to simplify some of these selections, 3 filter sets are provided:-

- Global Functions: these controls are console wide.
- Path Functions: these controls apply to the selected path.
- Bus Functions: these controls apply to buses only.

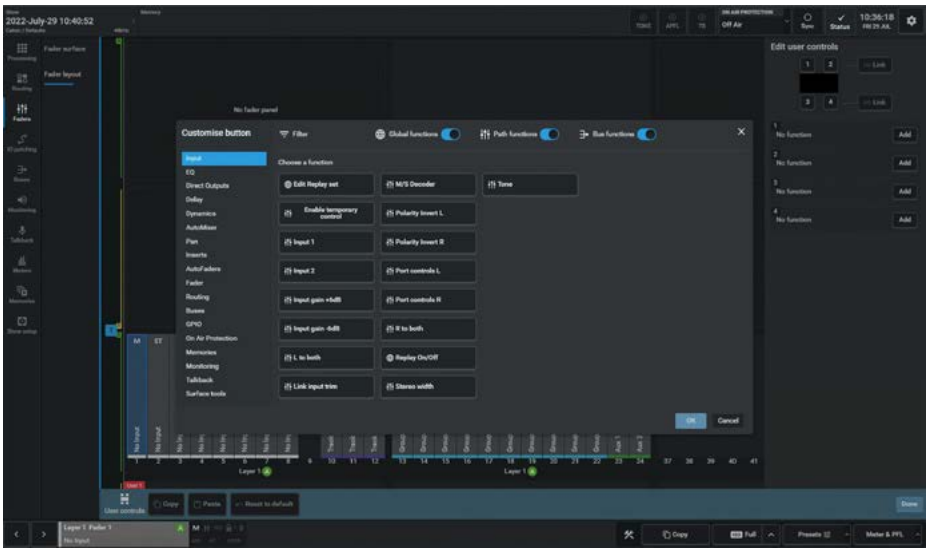
The sliders Include/Exclude that type of function in the control option lists.

The user taps on '**OK'** once the selection is made or **'Cancel'** to exit unchanged.

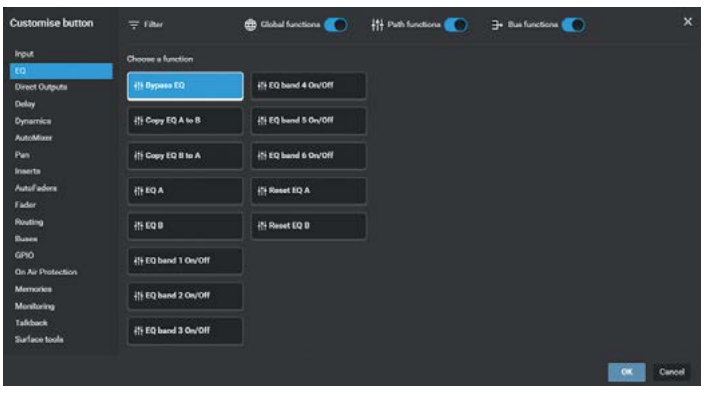
IU6576 - ARGO STANDARD 12 FADER PANEL



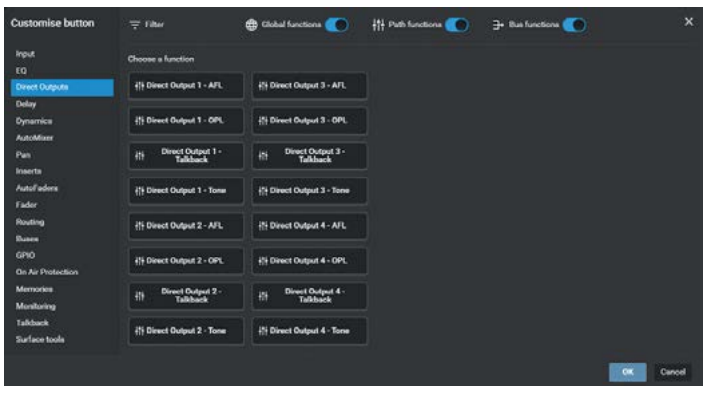
FADER LAYOUT - USER CONTROLS EDITOR FOR PATHS - UNDEFINED



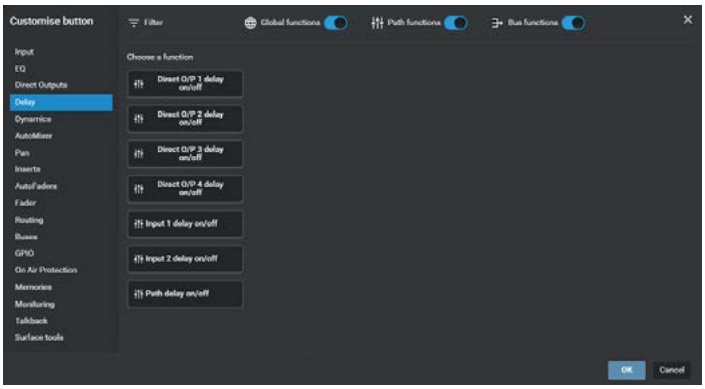
FADER LAYOUT CONTROLS - EQ



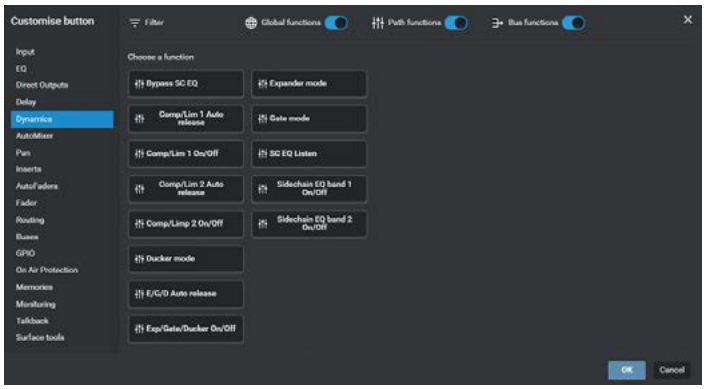
FADER LAYOUT CONTROLS - DIRECT OUTPUTS



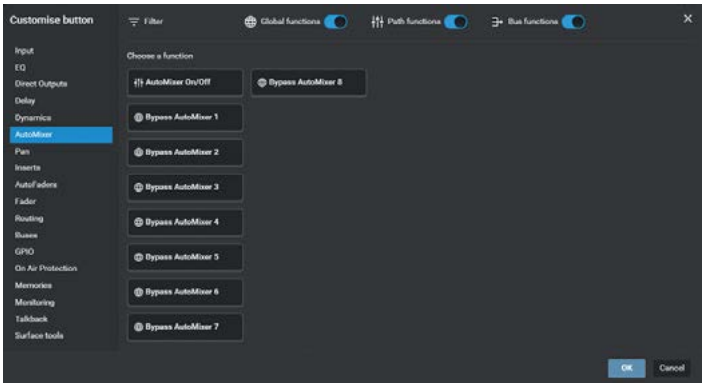
FADER LAYOUT CONTROLS - DELAY



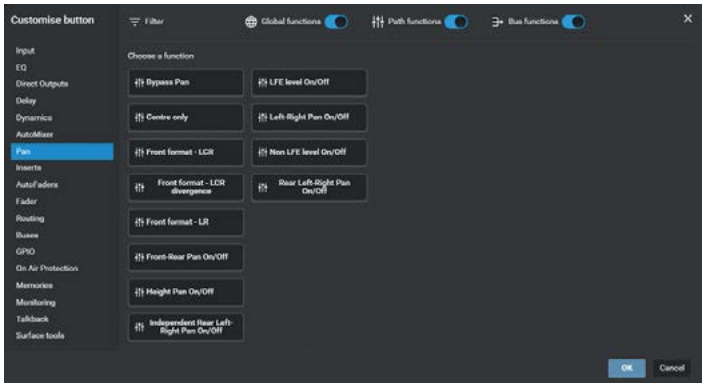
FADER LAYOUT CONTROLS - DYNAMICS



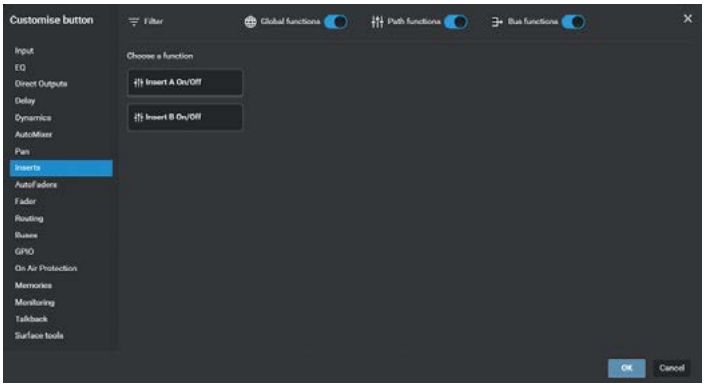
FADER LAYOUT CONTROLS - AUTOMIXER



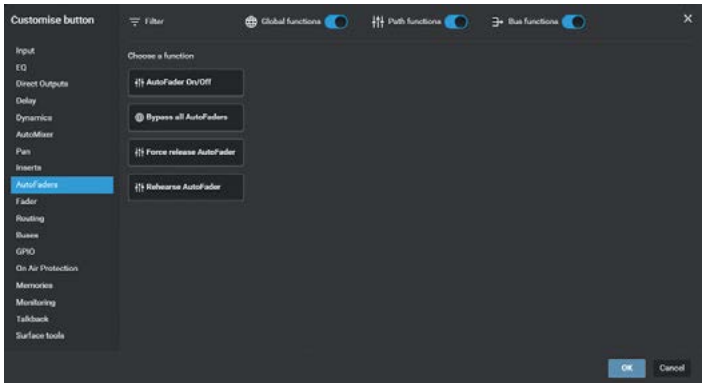
FADER LAYOUT CONTROLS - PAN



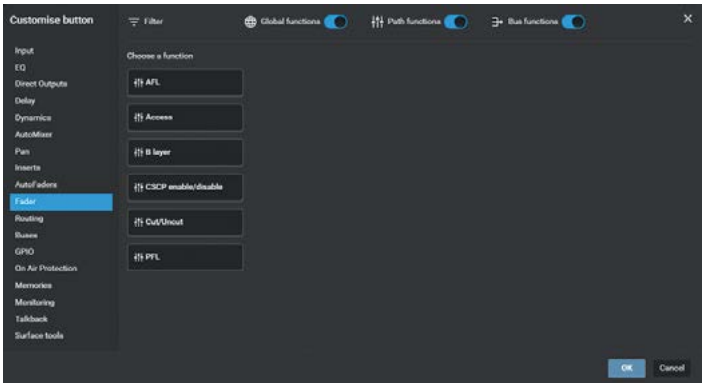
FADER LAYOUT CONTROLS - INSERTS



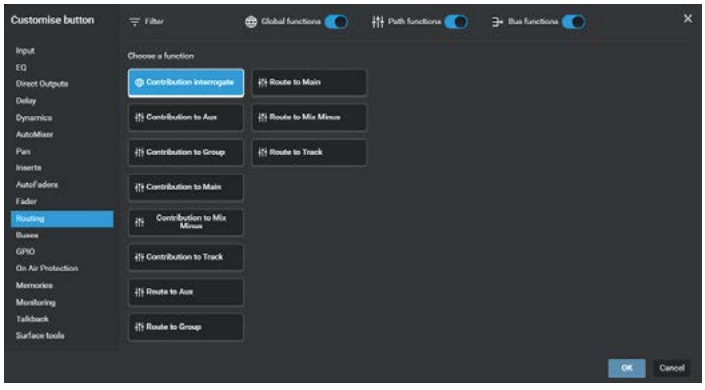
FADER LAYOUT CONTROLS - AUTOFADERS



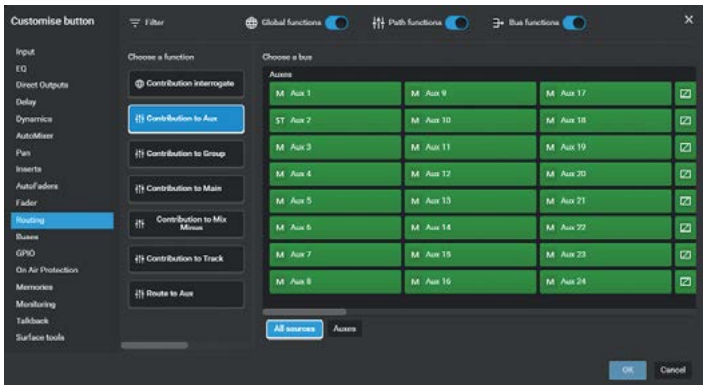
FADER LAYOUT CONTROLS - FADER



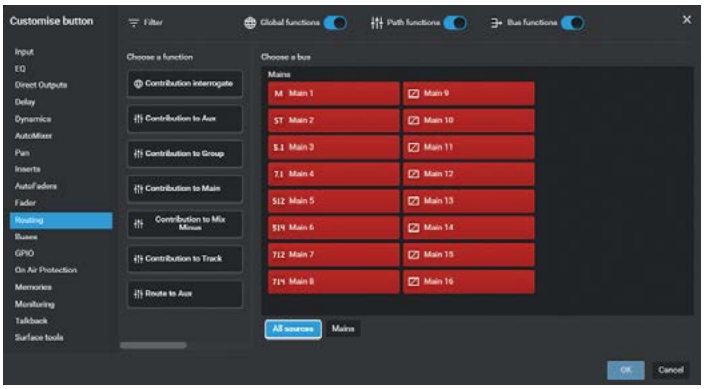
FADER LAYOUT CONTROLS - ROUTING -CONTRIBUTION INT



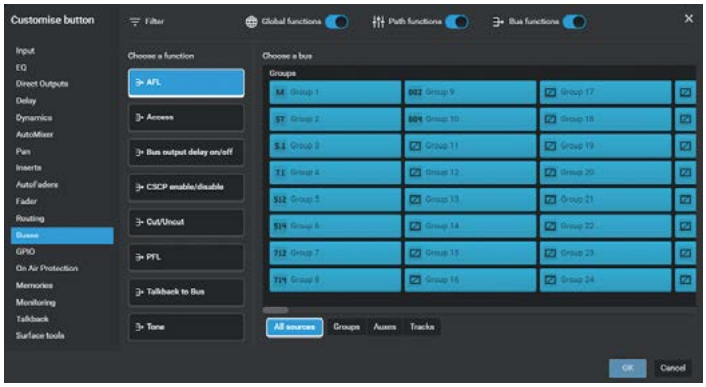
FADER LAYOUT CONTROLS - ROUTING - CONTRIBUTION AUX



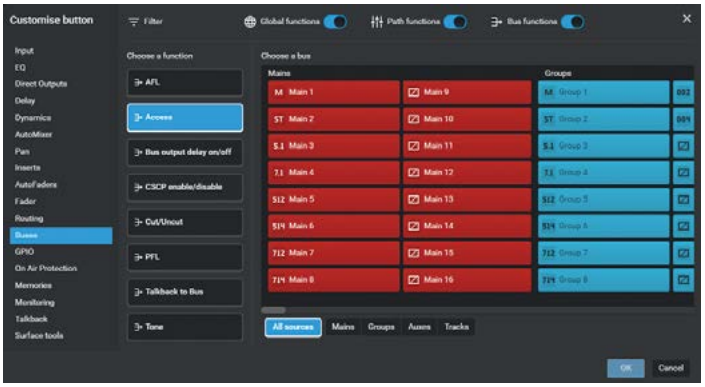
FADER LAYOUT CONTROLS - ROUTING - ROUTE MAIN



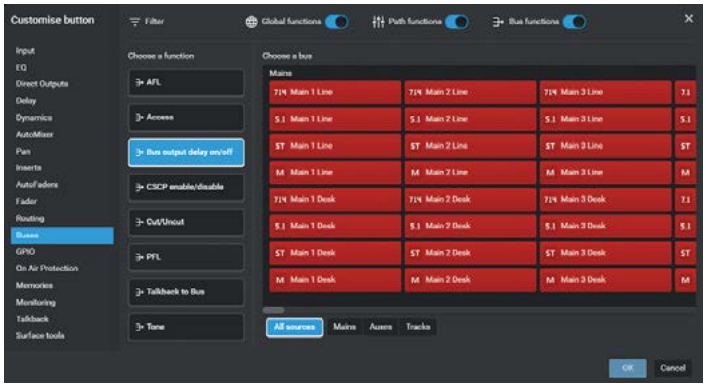
FADER LAYOUT CONTROLS - BUSES - AFL



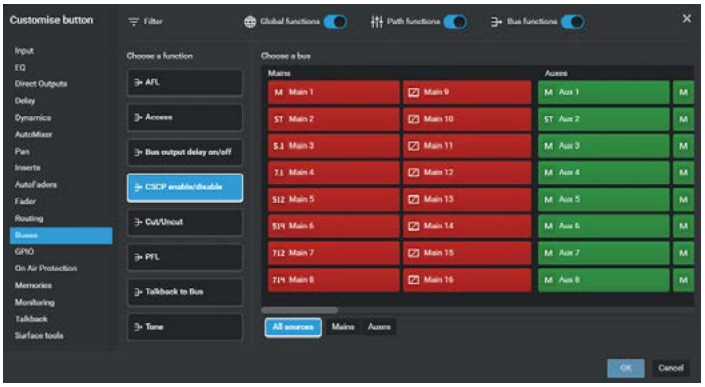
FADER LAYOUT CONTROLS - BUSES - ACCESS



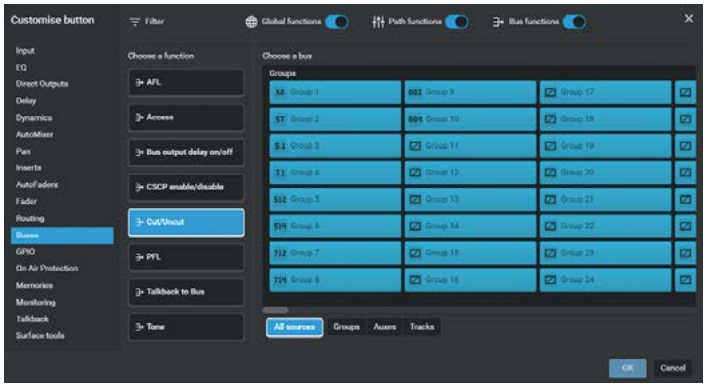
FADER LAYOUT CONTROLS - BUSES - BUS OUTPUT DELAY



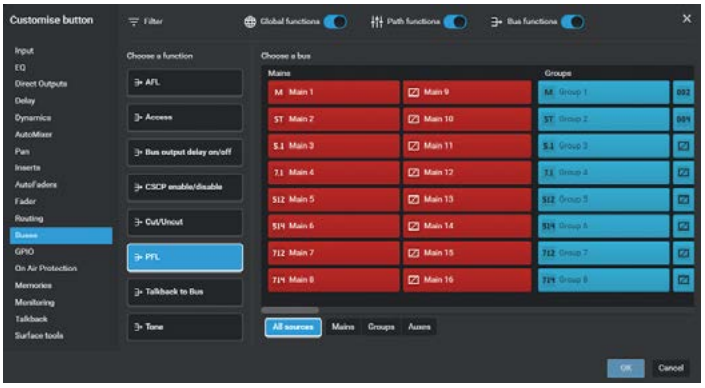
FADER LAYOUT CONTROLS - BUSES - CSCP ENABLE



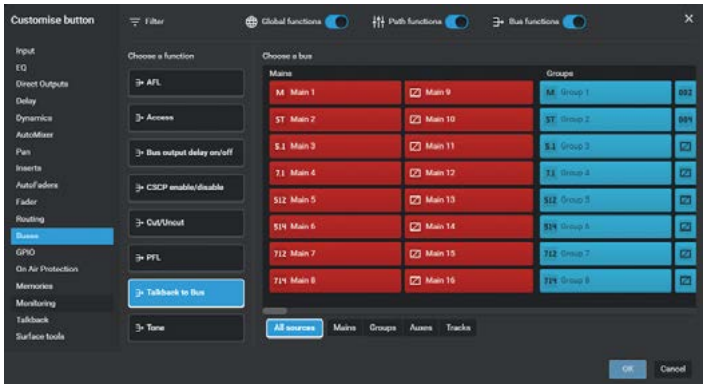
FADER LAYOUT CONTROLS - BUSES - CUT/UNCUT



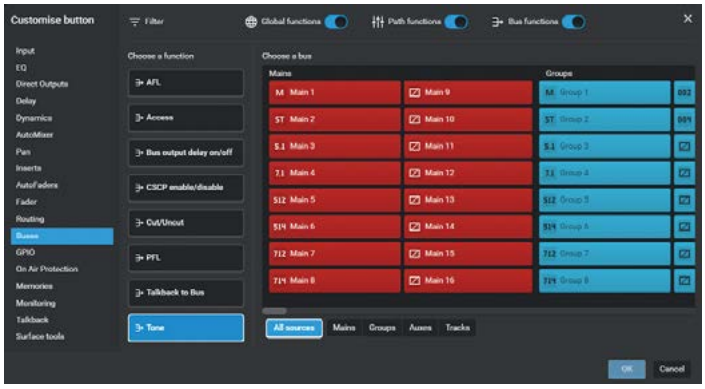
FADER LAYOUT CONTROLS - BUSES - PFL



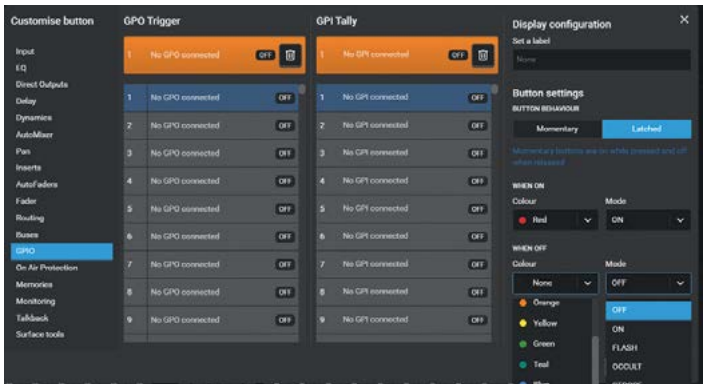
FADER LAYOUT CONTROLS - BUSES - TALKBACK TO BUS



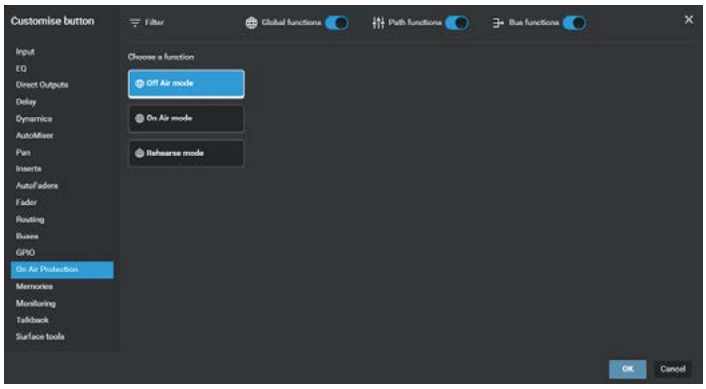
FADER LAYOUT CONTROLS - BUSES - TONE



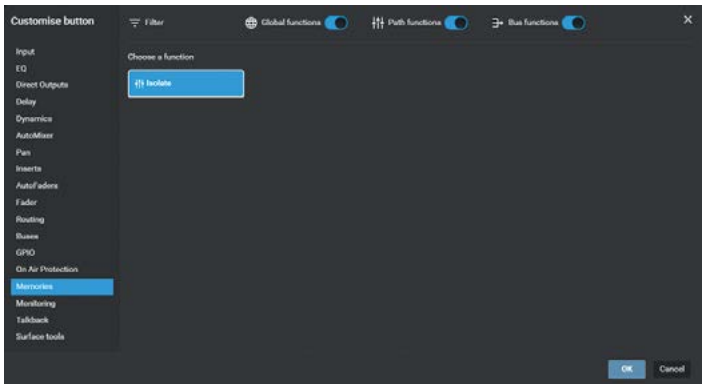
FADER LAYOUT CONTROLS - GPIO TALLY & TRIGGER



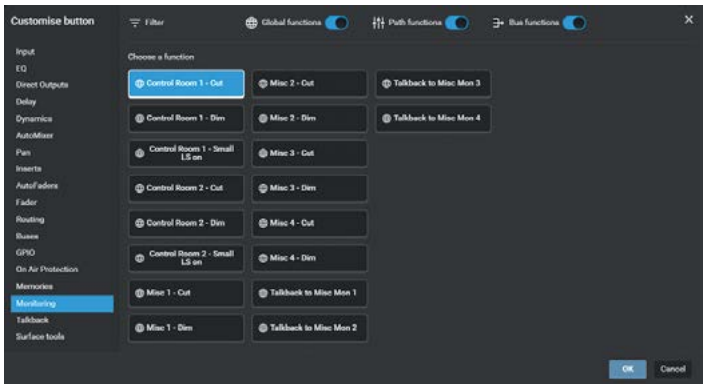
FADER LAYOUT CONTROLS - ON AIR/REHEARSE/OFF AIR



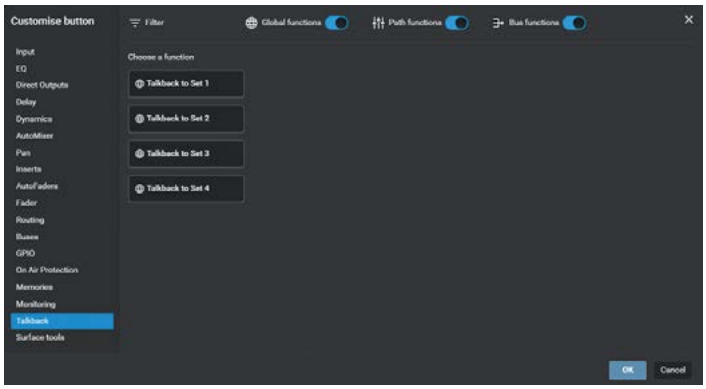
FADER LAYOUT CONTROLS - MEMORIES - ISOLATE



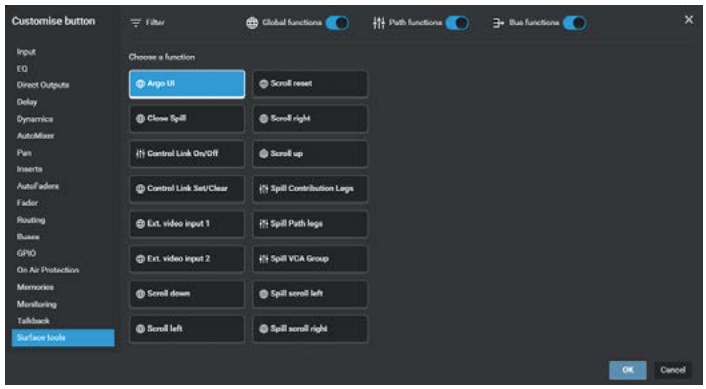
FADER LAYOUT CONTROLS - MONITORING



FADER LAYOUT CONTROLS - TALKBACK SETS



FADER LAYOUT CONTROLS - SURFACE TOOLS



The image to the right shows that the buttons 1 & 2 for the selected path have been defined as '**Input 1**' & '**Input 2**' respectively. Buttons 3 & 4 have been linked together by tapping on the '**Link**' button as shown so that either button actions the control which in this case is **'Link Input Trim'**.

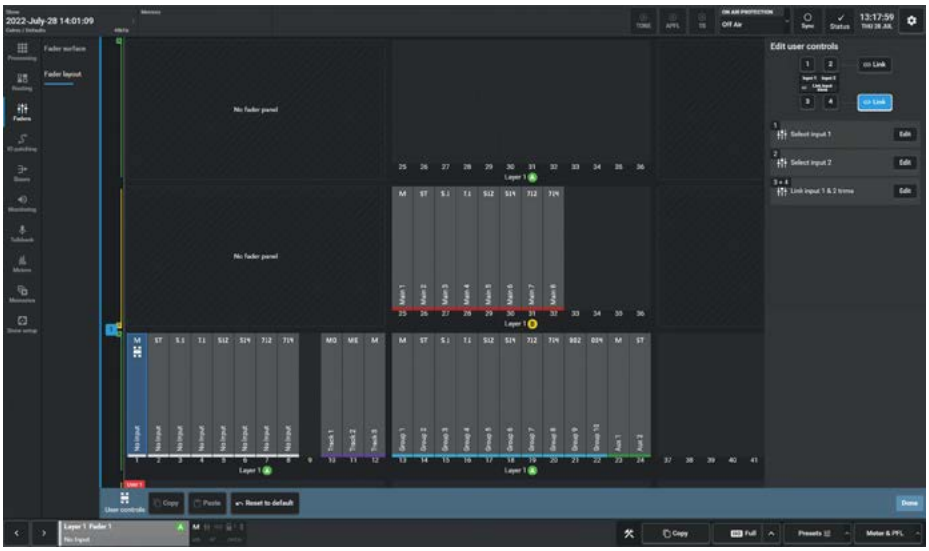
The selected controls also appear under the Button functions list along with an **'Edit'** button which allows the user to change the control assignments again as required. These functions are shown in the display and also on the Argo surface.

The path in the fader layout area now shows the User Controls Icon as highlighted, this button configuration can be copied and pasted to other paths if they require similar customised controls using the '**Copy**' & '**Paste**' buttons in the footer of the User Controls dialogue.

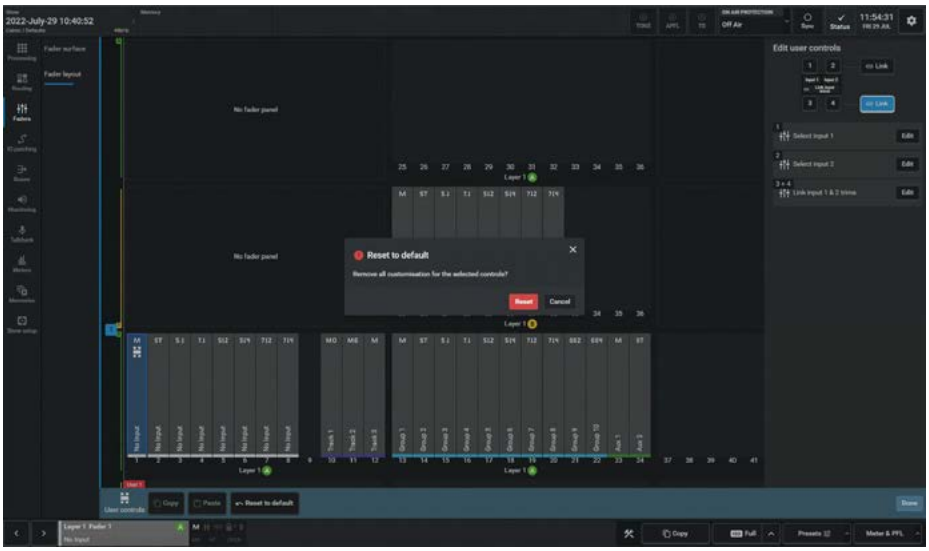
Selecting the '**Reset to default**' button opens a confirm dialogue box asking if they want to **"Remove all customisation for the selected controls?'**. Pressing **'Reset'** clears all the custom controls from the 4 button cell reverting the controls back to their defaults which are defined in **System Settings>Default Controls**.

Once all the User Control editing has been completed the user taps on '**Done**' to return to the Fader Layout sub-menu page which it came from.

FADER LAYOUT - USER CONTROLS EDITOR APPLIED TO PATH L1F1A



FADER LAYOUT - USER CONTROLS EDITOR FOR PATHS - RESET TO DEFAULT



ARGO ASSIST
IO PATCHING

CALREC

INPUT AND OUTPUT PATCHING

Argo IO Patching connects Sources to Destinations in any combination.
A source can be a console DSP output, such as an Aux or Monitor output, an AoIP receiver, VPB output or Port list input.

A destination can be a console DSP input such as a Channel or Talkback input, an AoIP transmitter, VPB input or Port list output.

Each source can be patched to multiple destinations but a destination can only have one source. When patching an input port via an RX receiver to multiple input channels it is important to remember that phantom power (48V), input gain and sample rate conversion are all set within the source. Altering these controls from any point on the surface will affect that feed for every instance of it across the surface and across the AoIP network.

The IO patching Screen

The IO patching screen is accessed via the **IO Patching** menu entry as shown above right and is split into two halves, sources are displayed on the left and destinations on the right. Each side has a set of tabs running along the top for the user to select which source/destination type they wish to access.

Selecting Sources and Destinations

Tap on a source or destination selection button and a dropdown reveals all available options of that type, as sets of buttons within a table.

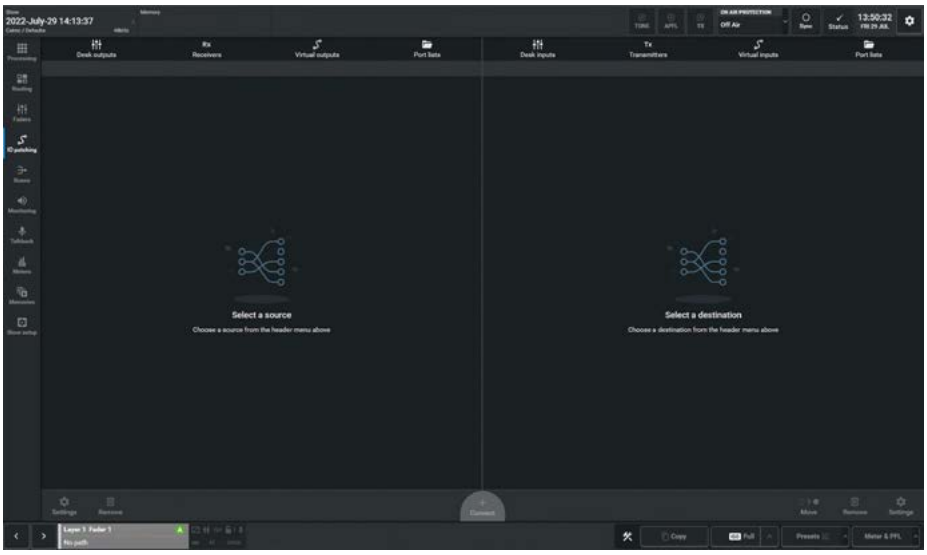
The images middle right show the various Desk output/input & Virtual output/input type dropdowns available.

The images below right show the various Console receiver/transmitter & User Rx/Tx port list type dropdowns available.

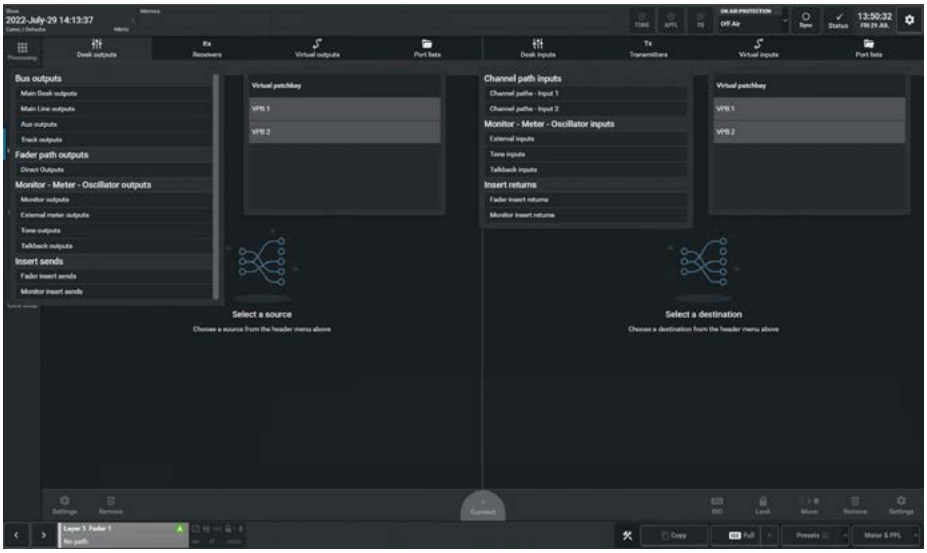
Note: only one dropdown will appear at a time in Assist, but have shown all types here that are available.

Tapping on an entry in each dropdown list makes that the source or destination selection to be used for IO patching.

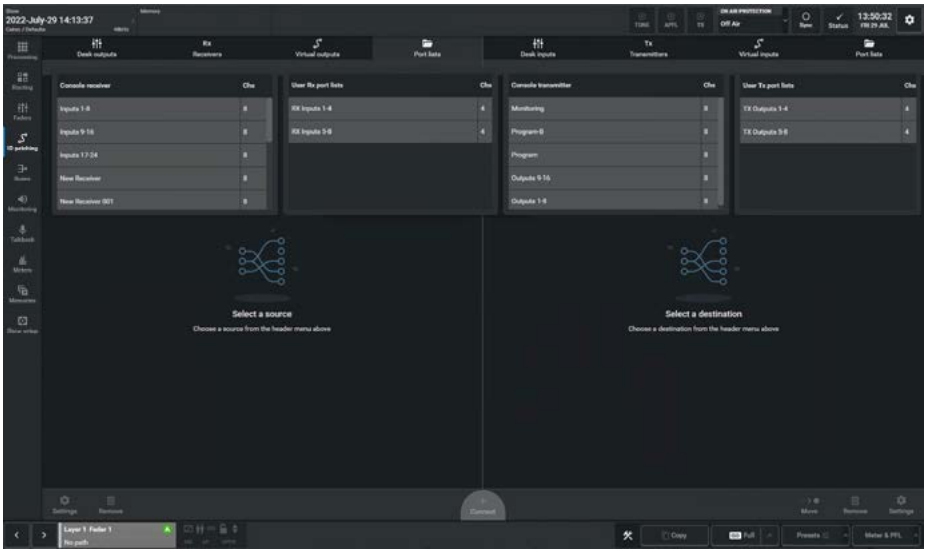
EMPTY IO PATCHING SCREEN ON FIRST ENTRY



DESK OUTPUT/INPUT AND VIRTUAL OUTPUT/INPUT DROPDOWNS



RX RECEIVER/TX TRANSMITTER AND PORT LIST INPUT/OUTPUT DROPDOWNS



AoIP Receiver to Desk Input
This is one of the two basic patching requirements to get received audio signals from an external IO interface box into DSP input channels on the console.

The image above right shows that a source from Rx Receiver>Inputs 1-8 containing 8 mics has been selected as the source list and that Mic1 has been patched to a mono input channel on fader L1F4A which was selected from the Desk Inputs > Channel paths-Input 1 by selecting source and destination and clicking or tapping on the **'Connect'** button at the bottom.

The Connected destination and Connected source column entries confirm that this patch has been made.

Note: the current source and current destination type tabs are highlighted.

Desk Output to AoIP Transmitter
This is the another of the basic patching requirements to get the DSP output buses out of the console into transmitted audio signals to an external IO interface box. The image middle right shows that a source from Desk Outputs>Main Desk Outputs has been selected as the source list and that a 5.1 Main output (Main3) has been patched to 6 output channels on Ch-03 to Ch-08 which was selected from Tx Transmitters>Outputs 1-8 by selecting source and destination then clicking or tapping on the **'Connect'** button.

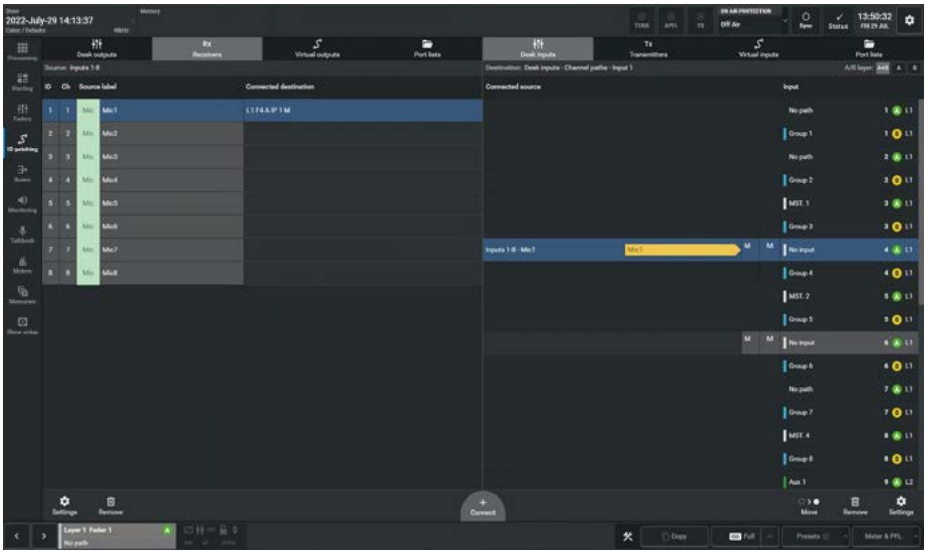
The 6 Connected destinations and the 6 Connected source column entries confirm that this patch has been made.

Note: that another patch from Main 2 to Ch-01 & Ch-02 is ready to connect.

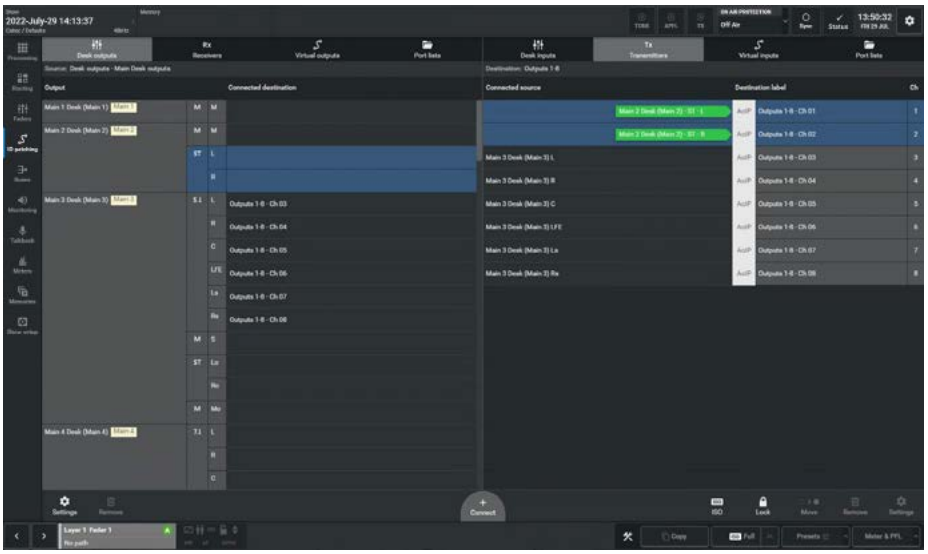
AoIP Receiver to AoIP Transmitter
The image below right shows I/O inputs being patched directly to I/O outputs from the source Rx Receiver>Inputs 9-16 to the destination Tx Transmitters>Outputs 9-16.

This can be useful for format conversion where the user may want to bring in an AES port and send it back out to an Analogue port without it passing through a console DSP process.

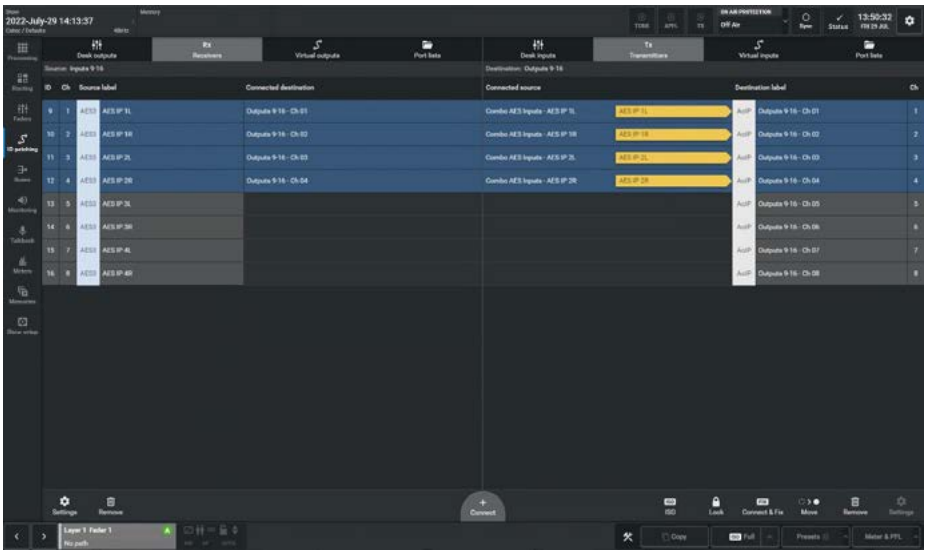
INPUT PATCHING AOIP RX RECEIVERS TO DESK INPUTS



OUTPUT PATCHING FROM DESK OUTPUTS TO AOIP TX TRANSMITTERS



PATCHING AOIP RX RECEIVERS TO AOIP TX TRANSMITTERS



Desk Output to Desk Input
The image above right shows Desk Outputs have been patched directly to Desk Inputs in this case, which is a stereo Aux Bus Output patched into a stereo channel input in this case on fader L1F2A.

This can be useful when further signal processing is required, for instance applying further EQ signal processing to an Aux bus output without having to send the audio signal out of the console to an output port and then use a cable to return the audio signal back to a channel on the console via an input port.

The channel can then be used to apply Eq to the Aux output and then subsequently be sent back out on say a Direct output from the channel.

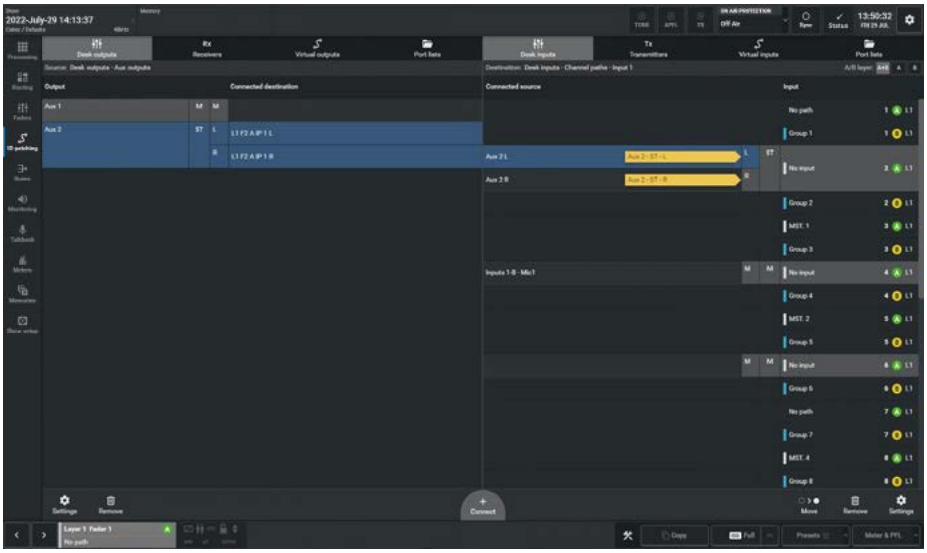
Within the IO patching screen, sources and destinations have separate setting options, which are accessible from the left and right of the patching screen footer. The available settings vary depending on which connection type is in view.

Source Settings
If more than one destination is connected to a source, there is a **'Settings'** button on the bottom left side of the footer which opens a pop up, allowing the user to compact the view as shown middle right, or expand the view of the connected destinations column as shown below right.

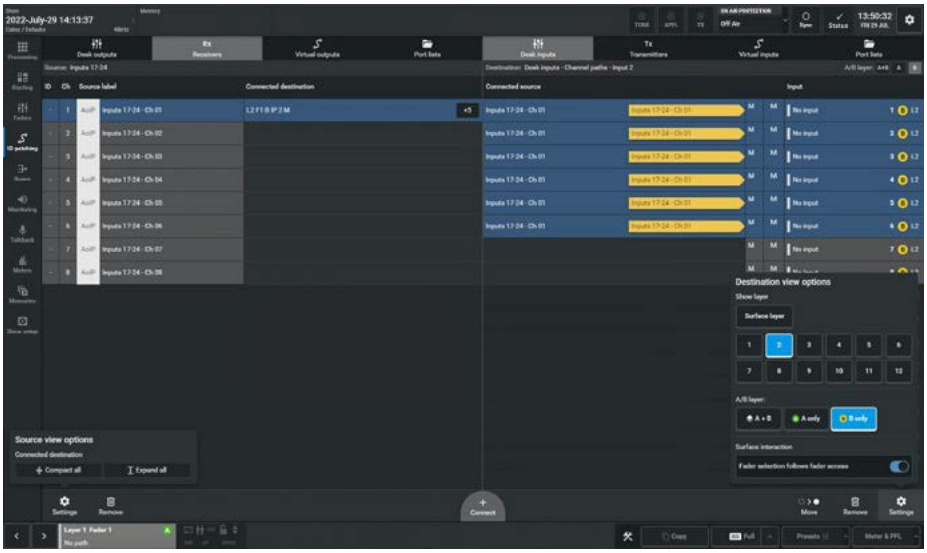
Destination Settings
When viewing fader specific paths, such as channel inputs, layer view options will be available. There is a **'Settings'** button on the bottom right hand side of the footer which opens a pop up, allowing the user to select faders to view on the surface layer, layers 1-12, sub-layer A only, sub-layer B only as shown middle right, or both A & B sub-layers as shown below right.

Surface Interaction
Also in the destination footer pop-up is the '**Fader selection follows fader access**' button. When this function is enabled, pressing the Fader Access buttons in Assist, changes the Fader selection on the physical console and vice-versa.

PATCHING - DESK OUTPUTS TO DESK INPUTS SELECTION



SOURCE & DESTINATION VIEWS 1



SOURCE & DESTINATION VIEWS 2

Virtual Patchbays
VPBs are virtual patchbays within the Impulse core. Like physical patchbays, VPBs are used for signal re-routing and distribution. VPBs have a number of input patchpoints which are 'hard wired' to output patchpoints.

For patching purposes, virtual patchbay inputs are destinations and virtual patchbay outputs are sources, these appear as Virtual inputs and Virtual outputs tabs shown in the header along with the other destinations and sources as shown in all the IO Patch pages.

When a source is patched to a virtual input, it immediately becomes available at the corresponding virtual output. For example, if a console operator patches a direct output to a virtual input, it becomes available to all users on the same core (who have been granted access), at the corresponding virtual output.

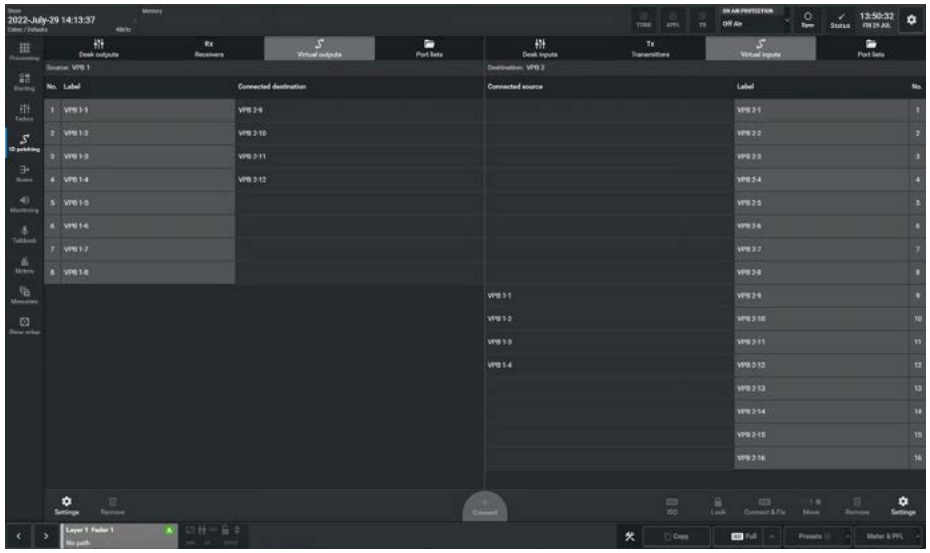
Virtual Patchbay Inputs & Outputs
The image above right shows two Virtual Patchbay sets showing the available outputs of VPB1 which has 8 channels and appears on the sources side and the available inputs of VPB2 which has 16 channels on the destination side of the IO patching page.

Note: as shown here the VPB outputs of a VPB can be routed to the inputs of other VPB inputs in order to rearrange/ reroute signals and distribute them accordingly.

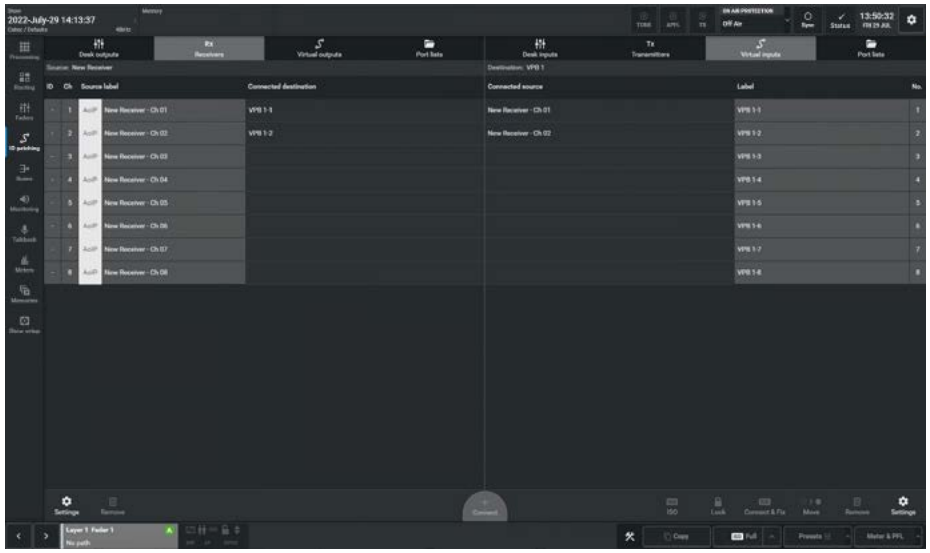
AoIP Receivers to VPB Inputs
The image middle right shows the patching of an AoIP Rx Receiver labelled "New Receiver" which is an 8 channel input stream to a local VPB input set labelled "VPB 1" which is an 8 channel virtual patchbay

VPB Outputs to AoIP Transmitters
The image below right shows the patching of a local VPB output set labelled "VPB 2" which is a 16 channel virtual patchbay patched to an AoIP Tx Transmitter labelled "Program" which is an 8 channel output stream .

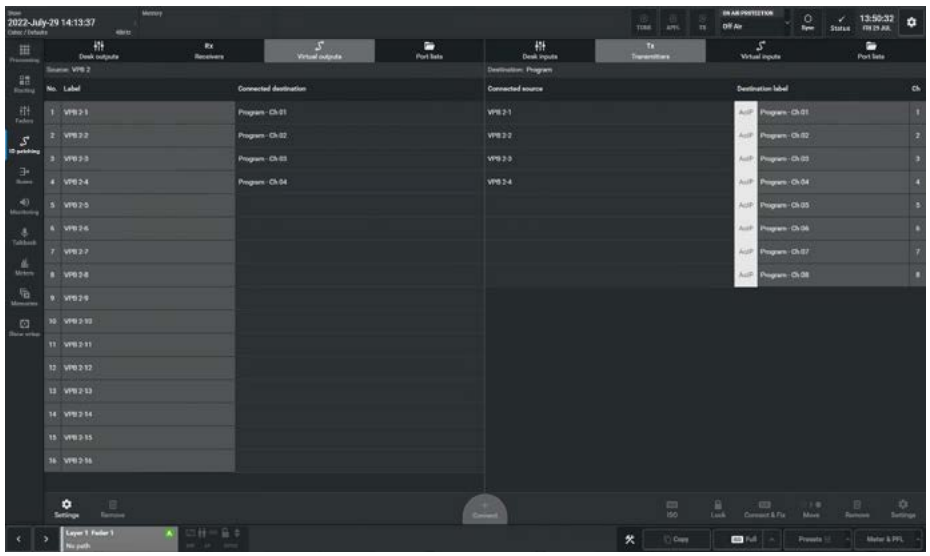
VIRTUAL PATCHBAYS AS SOURCES & DESTINATIONS



PATCHING AOIP RECEIVERS TO VIRTUAL PATCHBAY INPUTS



PATCHING VIRTUAL PATCHBAY OUTPUTS TO AOIP TRANSMITTERS



Port Lists
Ports can be assigned to user port lists There are 2 kinds of port lists:- the Receiver or Transmitter Port Lists which contain complete streams and appear in the Rx Receivers and Tx Transmitters tabs for patching and User Rx and User Tx Port Lists that can be created from the Rx Receiver and Tx Transmitter streams to provide a customised set of ports.

This provides a way of filtering and ordering the information shown when patching ports. The user can put a specific set of ports into their own list, rather than having to search through the hundreds of ports inside each receiver and transmitter list that may be available, when patching.

Port List Inputs & Outputs
The image above right shows 2 Port List sets, one called 'RX Inputs 1-4' , showing its 4 inputs on the sources side and the other showing its 4 outputs for a port list called 'TX Outputs 1-4' appearing on the destination side of the IO patching page.

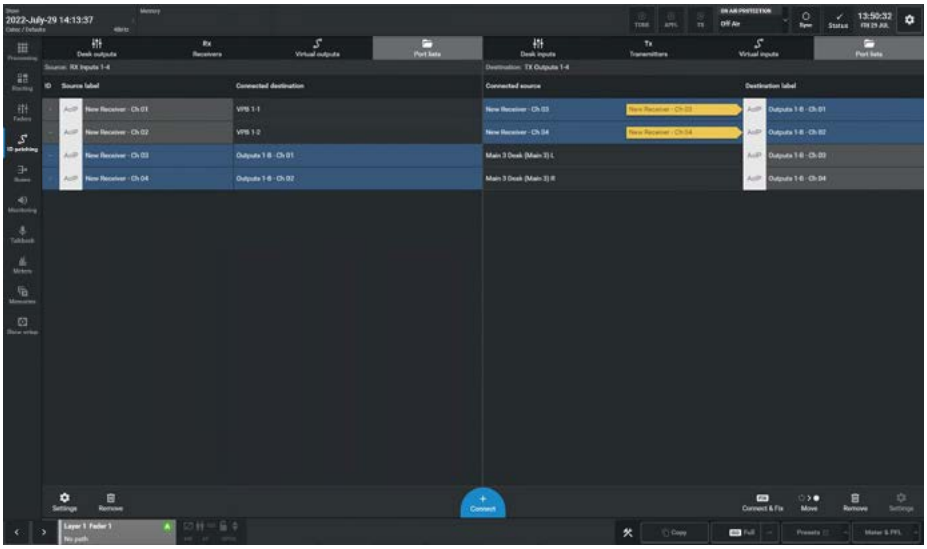
Note: as shown here the inputs of an Rx port list can be patched directly to the outputs of other Tx port lists in order to rearrange/reroute signals accordingly.

Port List Rx Inputs to Desk Inputs> Channel Paths Input 2
The image middle right shows a group of 3 violin mics labelled Mic6, Mic7 & Mic8 on the 'Violins' Rx Port List being patched to 3 mono channel input 2 connections for faders 1B, 2B & 3B on Layer 2 .

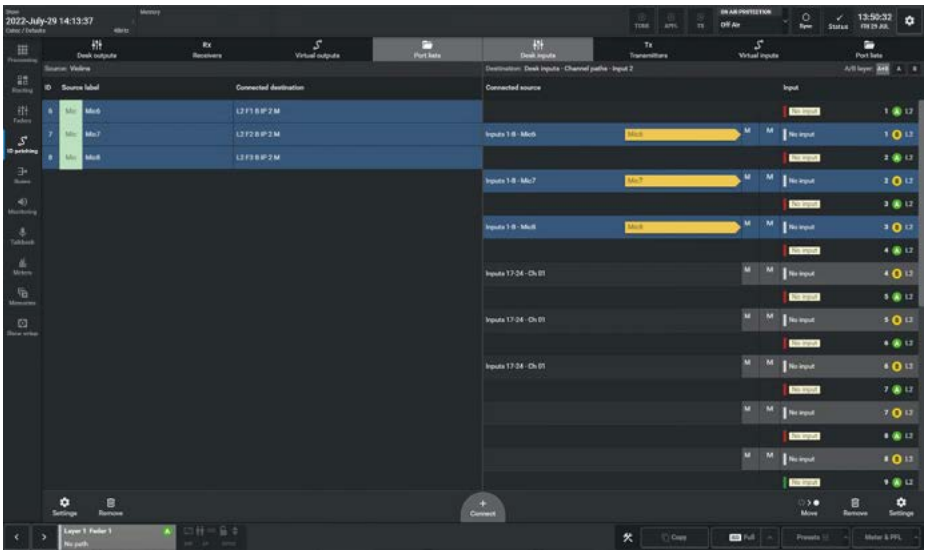
Desk Outputs>Monitor Outputs to Port List Tx Outputs.
The image below right shows the Monitor 1 Control Room LS which is a 5.1 monitor set being patched to a Tx Port List labelled '5.1 Monitors' containing a set of 6 outputs.

Arranging ports like this makes the task of patching simpler as searching for the required Receiver and Transmitter streams can be time consuming.

PORT LISTS AS SOURCES AND DESTINATIONS



PATCHING RX RECEIVER PORT LIST ENTRIES TO CHANNEL INPUTS-2



PATCHING MONITOR OUTPUTS TO TX TRANSMITTER PORT LIST ENTRIES

Footer functions
The remaining functions in the source and destination sides of the footer are described below:-

Connected Destination/Sources
The user can view connected destinations from sources and view connected sources from destinations. Both are displayed within the centre columns.

Viewing and Sorting
Ports are displayed within sortable tables. The sorting options vary between port types:

- AoIP receivers/transmitters can be sorted by name or number.
- Desk connections can only be sorted by resource number e.g. Aux 1 to 4.

Making a Patch
To patch a source to a destination:

1. Select a source type from the source screen header.
2. Select a destination type from the destination screen header.
3. Tap to select a source.
4. Tap to select a destination.
5. Tap on **'Connect'**.

Moving a Destination
Once a patch has been made, the destination can easily be changed as shown above right:

1. Select a destination.
2. Tap **'Move'** in the screen footer.
3. Select an alternative destination, (at this point you can also select a new destination type).
4. Tap on **'Move'** once more.

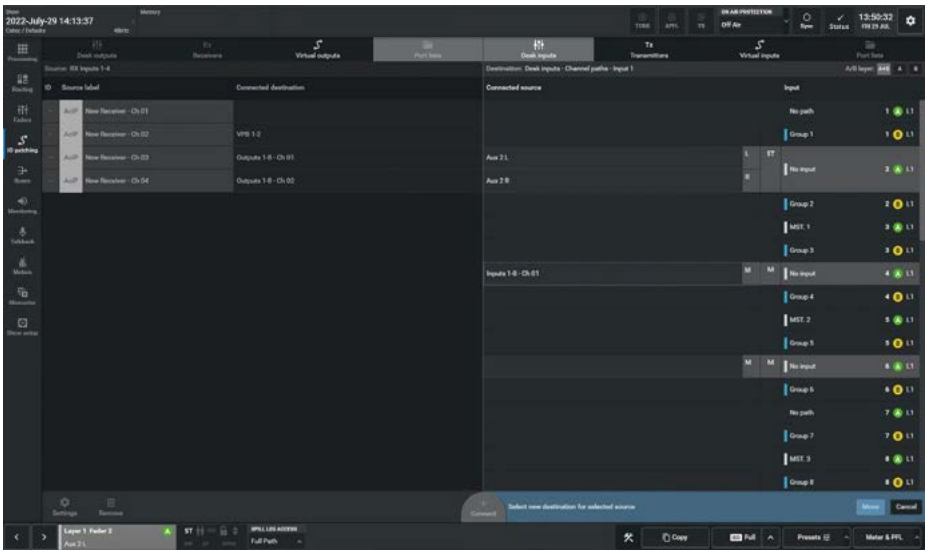
Isolating a Patch
Isolating a patch protects it from changes due to memory loads, but it differs from patch fixing in that patch isolation only relates to actions performed locally.

Isolated patches can still be over-patched by other users and by snapshot loads on other consoles on the network.

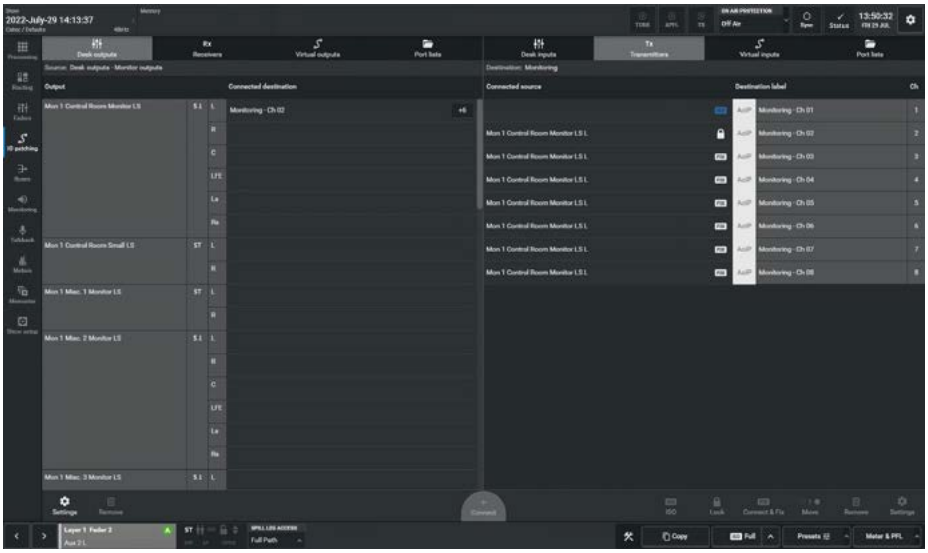
To isolate a patch:

1. Select one or more patches on the destination side.

MOVING A SOURCE TO A DIFFERENT DESTINATION



ISOLATE LOCKED AND FIX STATUS ICONS



2. Tap on '**ISO'** in the screen footer. The ISO icon is displayed against the patch entry as shown below right.

3. To de-isolate the patch, tap on **'ISO'** again.

Locking output port patching
Output ports may be locked to protect their patching from unintended changes. To do this, select one or more output ports in the Transmitters list then touch the **'Lock'** button below. Repeat the process to unlock the ports again. Locked ports are indicated by padlock symbols on both source & destination as shown below right.

Protect a Patch from Memory Loads
Patches can be 'Fixed', isolating them from snapshot load changes. Fixed patches are also protected under the port protection system in the same way as ports which are in use by multiple network users.

To Fix a patch:

1. Select one or more patched destinations.
2. Tap **'Connect & Fix'** in the footer. The 'Fix 'icon appears against the fixed patches as shown below right.
3. To un-fix the patch, tap on **'Connect & Fix'** again.

Removing Patches

To remove patches from the system:

1. To remove connected sources from a destination, select one or more of the connected sources from the destination side on the right.

2. Tap on **'Remove'** in the right side of the footer. The patches are automatically removed as shown above right.

Removing Multiple Patches

3. If sources are connected to a number of destinations then they can all be removed by selecting the sources from the source side on the left.

4. Tapping on the **'Remove'** button on the left side of the footer will remove all patches from the selected sources to all the connected destinations as shown below right.

Inputs 1 and 2

Every channel has two inputs, labelled Input 1 and Input 2, to which two entirely separate feeds can be patched.

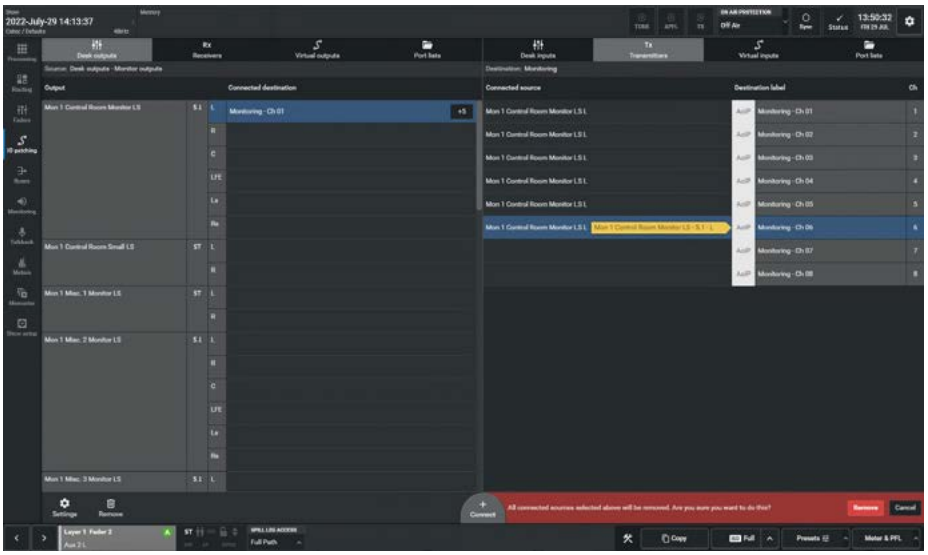
Input 2 is generally used for patching a back-up microphone so that if the feed to input 1 fails, you can quickly switch to use input 2, which has exactly the same processing, routing and output patching applied to it as input 1.

Patching Outputs to Inputs

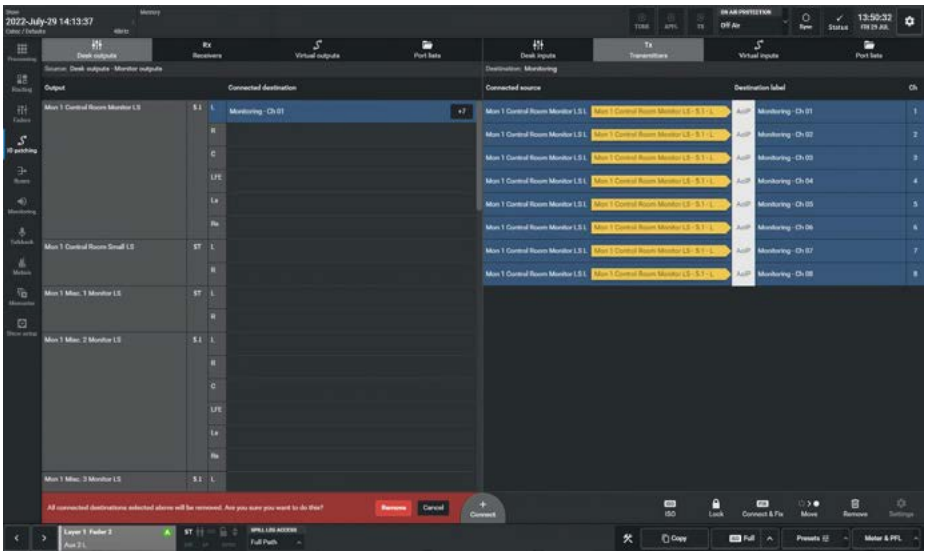
Desk outputs & buses can be connected directly back into channel inputs.

Note: this method of control is different to just attaching a console output to a fader, which just uses the fader as the bus output level rather than patching it into a channel input as a source.

REMOVING PATCHES FROM THE DESTINATION SIDE



REMOVING PATCHES AND MULTIPLE PATCHES FROM THE SOURCE SIDE



Desk Output Types

The following output types appear in the Desk Outputs dropdown:-

Bus outputs:
Main Desk outputs for up to 16 mains
Main Line outputs for up to 16 mains
Aux outputs for up to 48 aux outputs.
Track output for up to 96 track outputs.

Fader path outputs:
Up to 4 Direct outputs per channel/group.

Monitor-Meter-Oscillator outputs:
Monitor outputs
External meter outputs
Tone outputs
Talkback outputs.

Insert sends:
Fader insert sends
Monitor insert sends.

Desk Input Types

The following inputs types appear in the Desk Inputs dropdown:-

Channel path inputs:
Channel paths Input 1
Channel paths Input 2.

Monitor-Meter-Oscillator inputs:
External inputs
Tone inputs
Talkback inputs.

Insert returns:
Fader insert returns
Monitor insert returns.

INPUT AND OUTPUT PORT PROTECTION

Calrec Impulse, Type-R and their various companion AoIP based I/O products provide a scheme to protect against changes to physical audio input port settings & patches to destinations that already have sources patched by other users.

Input Port Protection States
Audio input sources can be shared by all consoles connected on the same audio network. All operators can control a shared input using their own console's input controls, but no operator has direct control of the shared input's Mic Gain, phantom power (48v) or SRC. To help avoid unwanted or accidental changes, these critical input controls can be placed in 1 of 3 states which are set using the 'Connect' application:-

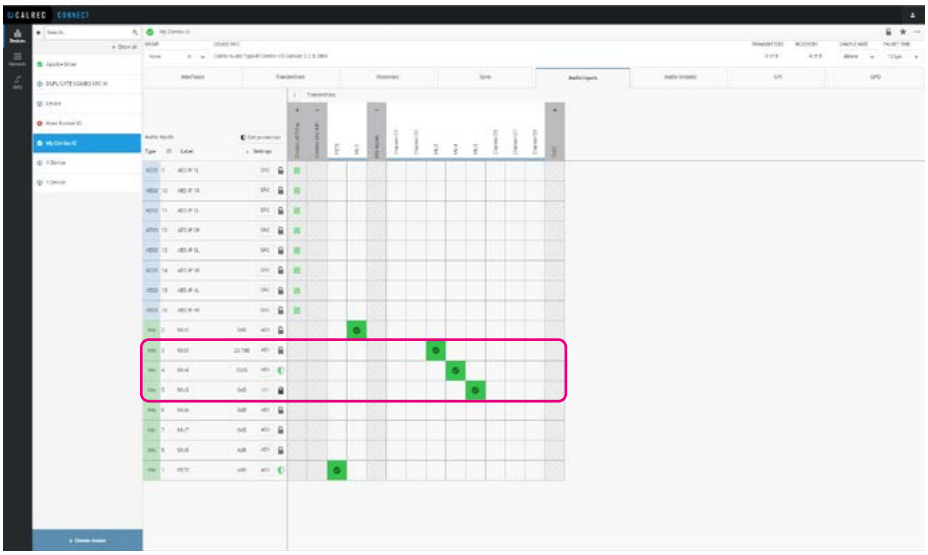
Unlocked:- When an Input port is unlocked it's settings can be changed by any network user and operates on the basis of the last control change received.
Protected:- When an Input port is protected, users can change its settings, but they have to make this a conscious operation, they are made aware that the port is marked as protected and have to make an extra step to change settings.
Locked:- When an Input port is locked, its settings (Input gain & phantom power for Mic/Line inputs, SRC for AES3 inputs) cannot be changed by any network user.

The image above right shows these three highlighted states as set in the 'Connect' application. Mic 3 is Unlocked as shown by the open padlock, Mic 4 is Protected as shown by the shield and Mic 5 is Locked as shown by the closed padlock.

The four images (shown in light mode) below, display the various indications that appear on the **Processing>Input** page for Unlocked, Protected, Protected Overwritten, and Locked for the 3 Mic channels in turn.

Note: Mic 4 has been set as protected and its Input port controls are greyed out, but pressing the 'Enable temporary control' button makes those controls available, however Mic 5 has been set as locked and its Input port controls are greyed out and cannot be adjusted.

SETTING INPUT PORT PROTECTION IN CONNECT



MIC 3 UNLOCKED PORT SHOWN IN ASSIST'S INPUT PAGE

MIC 4 PROTECTED PORT SHOWN IN ASSIST'S INPUT PAGE

MIC 4 PROTECTED PORT OVERWRITTEN SHOWN IN ASSIST'S INPUT PAGE

MIC 5 LOCKED PORT SHOWN IN ASSIST'S INPUT PAGE

Loading Shows/Memory Files
There are also implications for protected and locked inputs' Mic Gain, 48v and SRC settings during the process of loading shows and user memories. If memories are loaded which affect protected and locked inputs, a pop-up appears on the assist application screen, see above right.

This pop-up contains an information table to help in deciding which protected input settings, if any, need to be overwritten.

All protected/locked inputs are listed with their current settings and potential overwrite settings. Both Mic 4 & Mic 5 have different values in the memory being loaded as shown in the pop-up, Mic 4 can be overwritten, Mic 5 is locked and cannot be changed. The left hand check box column is used to choose which settings to overwrite. Initially all changes are de-selected.

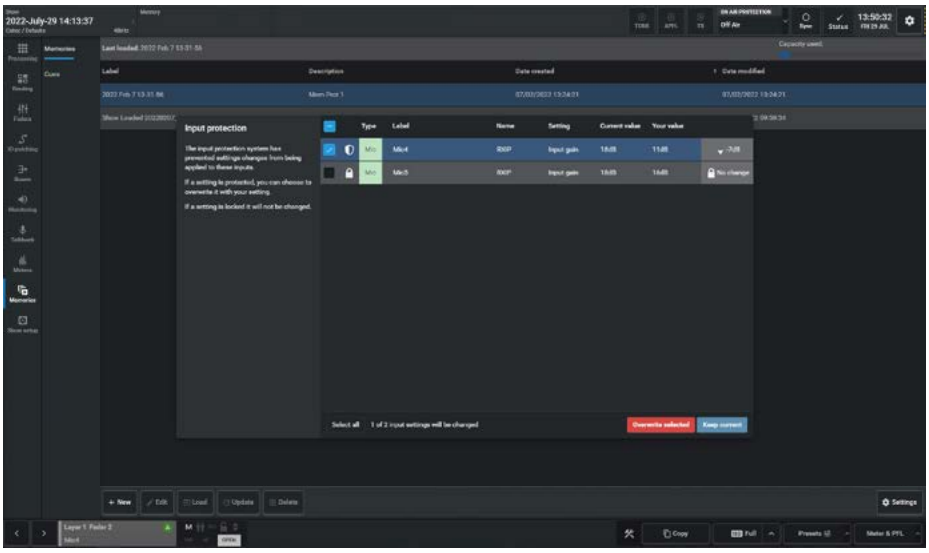
Once selections have been made, the **'Overwrite selected'** button can be pressed to accept the selected changes and prevent changes that are deselected. the **'Keep current'** button will prevent any changes to settings.

In both cases the protected/locked input sources will still be patched to the desired console paths, it is changes to Mic Gain, 48v and SRC that are being protected.

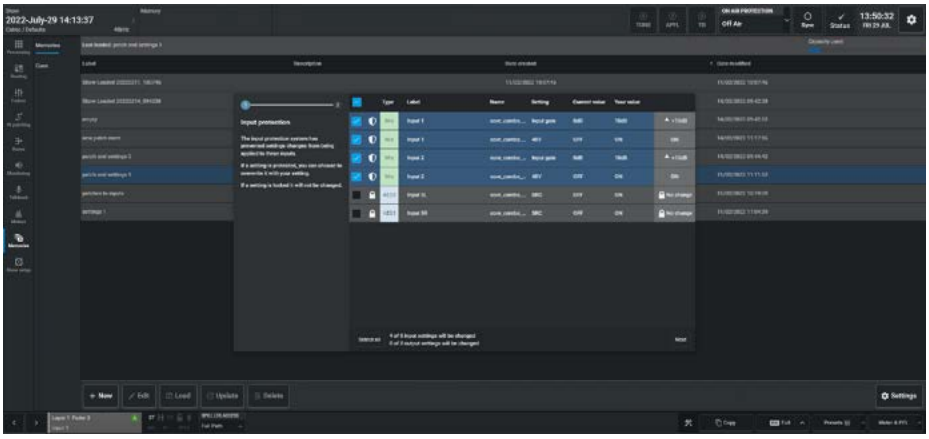
Remember to ensure you know what the effect of the memory load will be before selecting 'Overwrite selected' as this will alter the protected input sources for all operators!

The pop-up in the Assist application may have 2 steps - Input Protection and Output Protection. This indicates that the memory to be loaded also contains changes to outputs which are in use by other operators, see below middle right for input settings and below right for output settings.

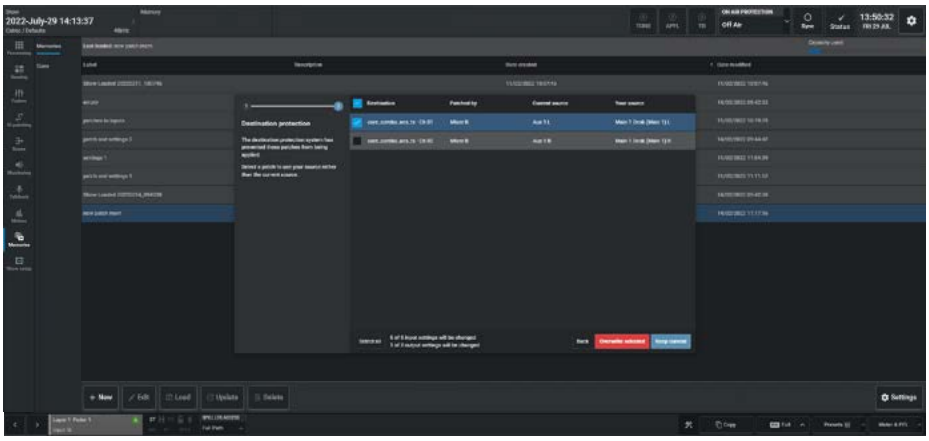
OVERWRITE INPUT PORT PROTECTION DIALOGUE IN ASSIST



INPUT & OUTPUT PORT PROTECTION 2 STEP DIALOGUE IN ASSIST - STEP 1



INPUT & OUTPUT PORT PROTECTION 2 STEP DIALOGUE IN ASSIST - STEP 2



Output Port Protection States

Output port protection/locking is a system that notifies operators, when they are attempting to patch to outputs that are already in use by other people elsewhere on the network and provides information to assist in deciding whether to go ahead with each patching decision for protected outputs and advise when an output port is locked and therefore cannot be changed.

Output protection/locking does not directly relate to the audio outputs of AoIP I/O boxes, rather it relates to destinations in I/O patching screens. Assist provides the functionality to protect/lock output patches. This prevents users accidentally changing or removing the source that is patched to protected/locked destinations.

There are both manual and automatic port protection facilities provided:-

The image above right shows the states of the destinations to the TXOP transmitter. Selecting a connected source/destination output enables the Isolate & Lock buttons in the footer ready to be **manually** protected. In this case TXOP channels 7 & 8 have been locked with Aux 4L and Aux 4R patched to them, any attempt to overpatch them is prevented.

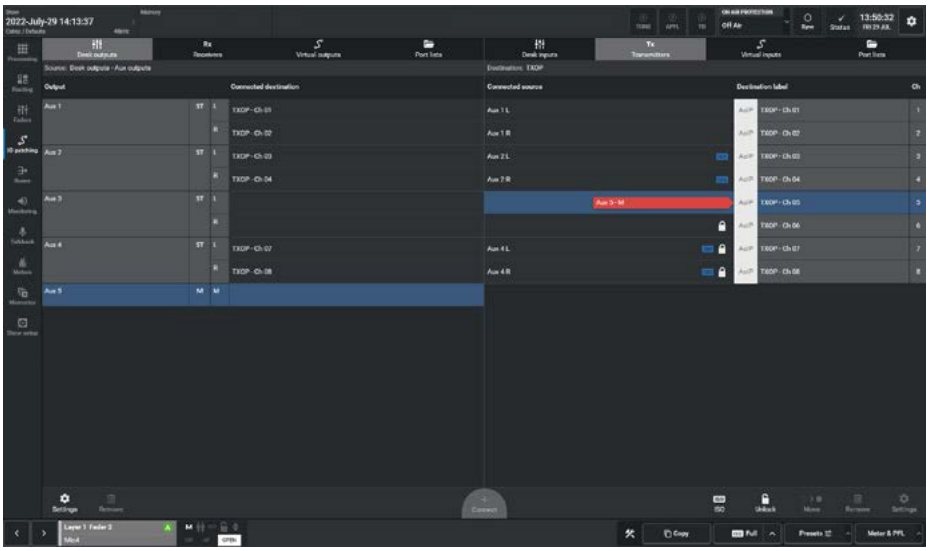
TXOP channels 5 & 6 have been locked without any patches made effectively reserving them. The attempt to patch the Aux 5M output to the locked TXOP channel 5 displays a RED arrow indicating that the patch cannot be made.

The image (shown in light mode) middle right shows that the Aux1 L/R connections from Mixer A have been patched to two AES ports and the shield icons show that as such these output ports are **automatically** protected.

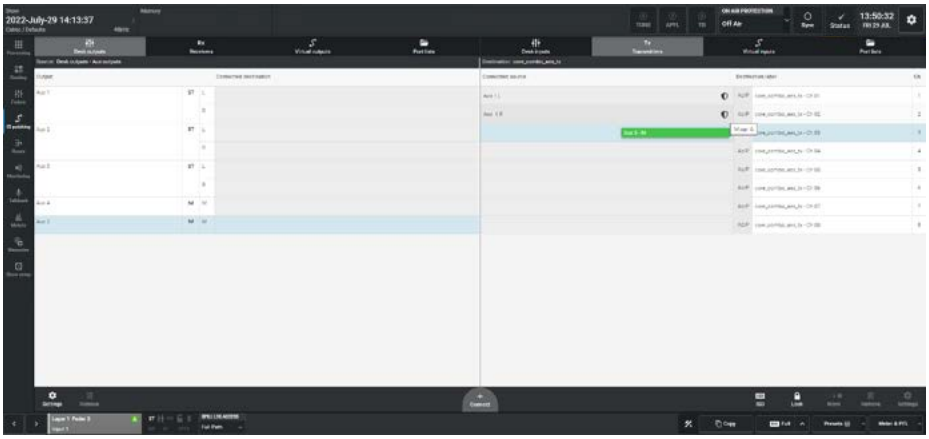
Note: when the user hovers the cursor over the shield it displays the source of the patch as shown middle right.

The image below right shows that Mixer B has loaded a memory that had previously patched the Main 1 Desk L/R outputs to the same two AES ports, which are now used by Mixer A and as such the port protection dialogue has been triggered.

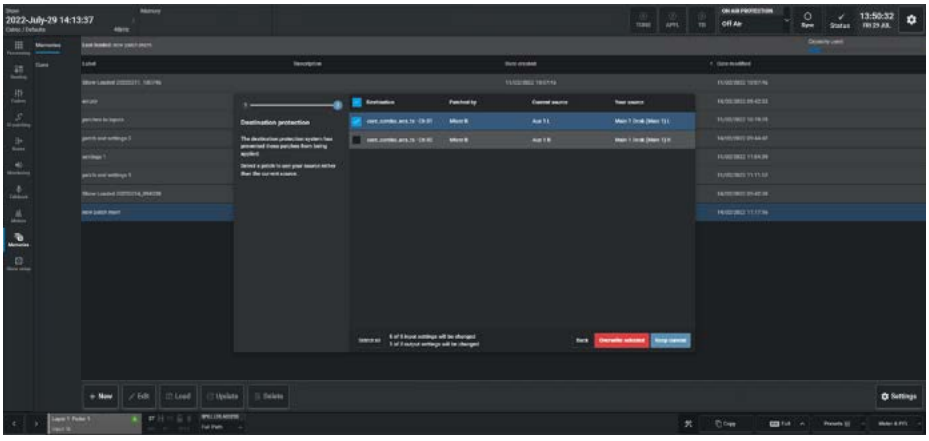
MANUAL OUTPUT PORT PROTECTION PADLOCKS IN ASSIST>IO PATCHING



AUTOMATIC OUTPUT PORT PROTECTION SHIELDS SHOWN WITH 'HOVER' ID



INPUT & OUTPUT PORT PROTECTION 2 STEP DIALOGUE IN ASSIST - STEP 2



The mechanism for selection and either overwriting or keeping the current settings from the port protection dialogue box is the same as that shown for input port protection.

When loading shows or user memories, it is likely that **both** protected outputs and shared inputs will be affected by the memory load, and as such the two step protection dialogue box will appear.

ARGO ASSIST
BUSES

CALREC

MAIN BUSES

The purpose of this screen is to configure and control the Main output buses. It provides the user with a page of controls related to up to 16 configurable main buses. On which they can:- set it as the accessed path, change its name, width, output level, pre fader listen outputs, talkback and tone settings.

Main Bus Output Controls
After tapping on the menu selection **Buses>Mains**, the image above right is displayed and arranged in a block of 16 buses showing their name, width and current level. Tapping on any of the entries in the upper window allows the user control access in the bottom of the contents area.

The following controls are available:-
Width dialogue box: Clicking/tapping on an empty entry in the upper window such as Main 9, opens this box and lets the user choose the width of the 'New' main bus to be added to as Mono, Stereo, 5.1, 7.1, 5.1.2, 5.1.4, 7.1.2 or 7.1.4 as shown below right.

Bus Outputs Pool:
There is a pool of bus output legs that are shared between mains and groups which can be arranged to provide various bus width combinations. The dialogue box shown in the image below right shows the number of main/group resources remaining in terms of Mono legs at the bottom.

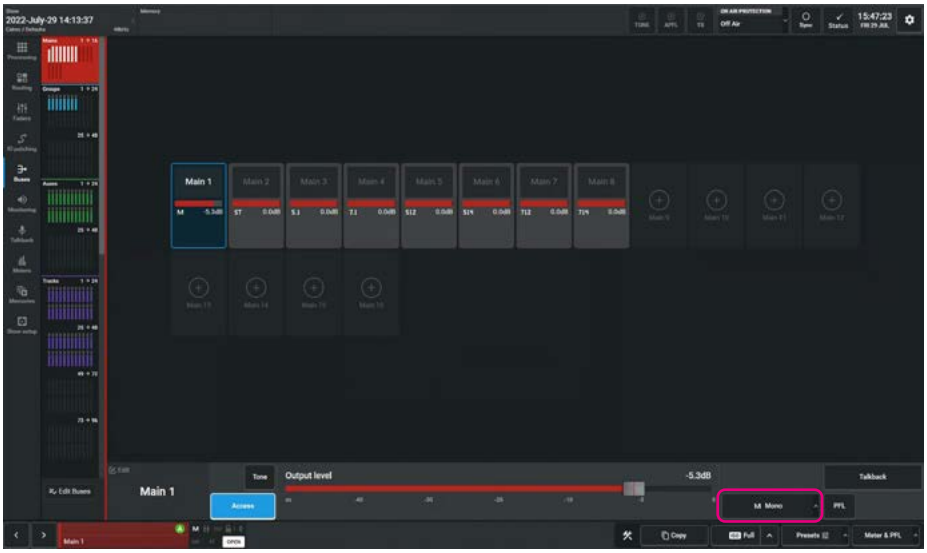
Label window: Allowing the main to be edited with a user label.

Access button: Lets the user call the selected main to the access screens.

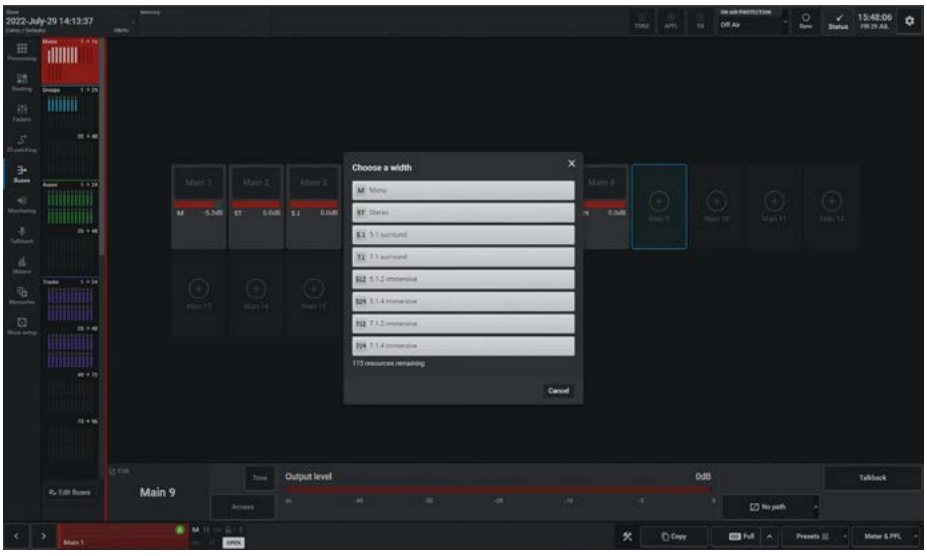
Tone: Select to inject tone into the main output, replacing the main output feed with the correct tone for the path width. A tone button applies a tone signal to that output.

Main Output Level: Slide the level control to alter the output level between 'off' & 0dB.

MAIN BUSES



MAIN BUSES - CHOOSE WIDTH FOR A NEW BUS



Change Width Pop-up button: This shows the current width of the existing selected bus. As shown above right the user has selected the Main 1 bus which is Mono. The highlighted button opens a pop-up as shown on the next page below right for the Group 1 bus which allows the user to change the width to any of the widths shown.

Note: this pop-up also has the 'No Path' option allowing the user to remove the bus from the system.

PFL: The user can listen to the individual buses' PFL (pre fader listen) using the PFL button.

Talkback: Replaces the main output feed with whatever is routed to the talkback input. A talkback button allows the user to talk to that output.

Note: a talkback input should be setup in the **IO patching** screen for this to work.

GROUP BUSES

The purpose of this screen is to configure and control the Group buses. It provides the user with 2 pages of controls related to up to 48 configurable group buses. On which they can set it as the accessed path, change its name, width, bus level, cut, various listen outputs, talkback and tone settings.

Group Bus Controls
After tapping on the menu selection **Buses>Groups**, the image above right is displayed and arranged in 2 blocks of 24 buses showing their name, width and current level. Tapping on any of the entries in the upper window allows the user control access in the bottom of the contents area.
The following controls are available:-
Width dialogue box: Clicking/tapping on an empty entry in the upper window such as Group 11, opens this box and lets the user choose the width of the 'New' group bus to be added to as Mono, Stereo, 5.1, 7.1, 5.1.2, 5.1.4, 7.1.2, 7.1.4, 0.0.2 or 0.0.4.

Bus Outputs Pool:
There is a pool of bus output legs that are shared between mains and groups which can be arranged to provide various bus width combinations. The dialogue box shows the number of main/group resources remaining in terms of Mono legs at the bottom.

Label window: Allowing the group to be edited with a user label.

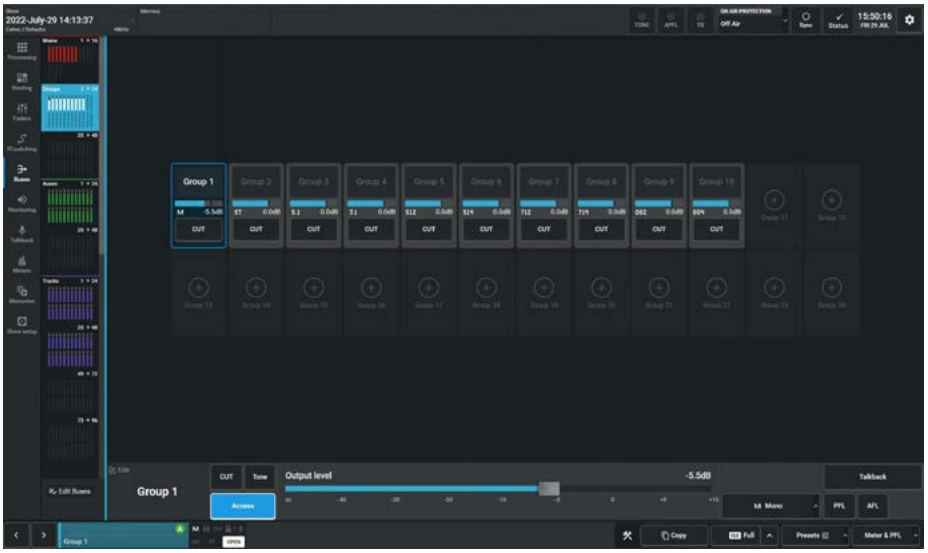
Access button: Lets the user call the selected group to the access screens.

Tone: Select to inject tone into the group bus, replacing the group bus feed with the correct tone for the path width. A tone button applies a tone signal to that bus.

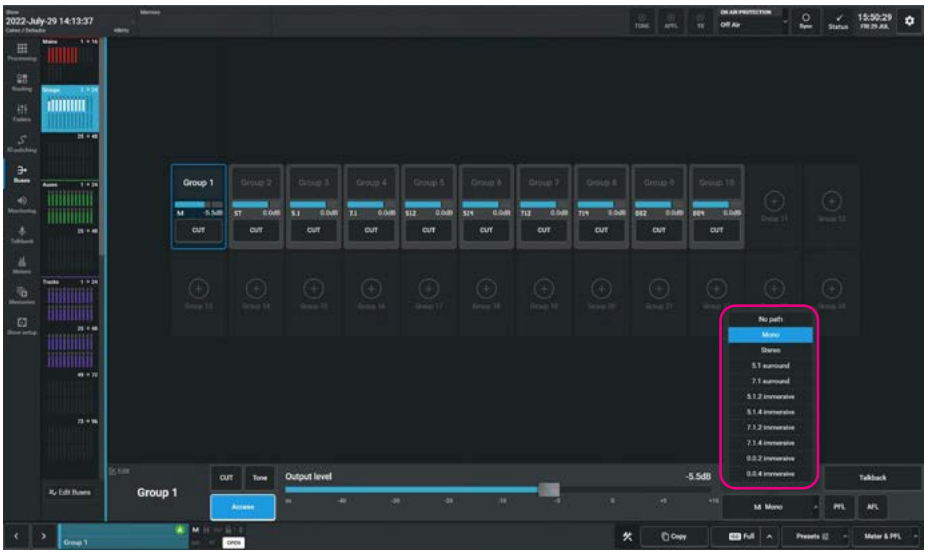
Group Cut: The user can Cut/Mute the output of the group path by tapping on this button.

Group Bus Level: Slide the level control to alter the bus level between 'off' & +10dB.

GROUP BUSES



GROUP BUSES -CHOOSE A NEW WIDTH FOR AN EXISTING BUS



Change Width Pop-up button: This shows the current width of the selected bus. As shown below right the user has selected the Group 1 bus which is Mono, the highlighted pop-up allows the user to change the width to any of the widths shown.

Note: this pop-up also has the 'No Path' option allowing the user to remove the bus from the system.

PFL & AFL: The user can listen to the individual buses' PFL (pre-fader listen) or AFL (after fader listen) using the PFL or AFL buttons.

Talkback: Replaces the group bus feed with whatever is routed to the talkback input. A talkback button allows the user to talk to that bus.

Note: a talkback input should be setup in the **IO patching** screen for this to work.

AUX BUSES

The purpose of this screen is to configure and control the Auxiliary output buses. It provides the user with 2 pages of controls related to up to 48 configurable aux buses. On which they can:- set it as the accessed path, change its name, width, output level, cut, various listen outputs, talkback and tone settings and Pre-fader aux send cut options.

Aux Bus Output Controls
After tapping on the menu selection **Buses>Auxes**, the image above right is displayed and arranged in 2 blocks of up to 24 buses showing their name, width and current level. Tapping on any of the entries in the upper window allows the user control access in the bottom of the contents area.

The following controls are available:-
New Bus Width dialogue box: Clicking or tapping on an empty entry in the upper window opens this box and lets the user choose the width of the 'New' Aux bus to be added to as Mono or Stereo.

Bus Outputs Pool:
There is a pool of up to 48 bus output legs that can be configured as Mono or Stereo. The dialogue box shows the number of Aux resources remaining in terms of Mono legs at the bottom.

Label window: Allowing the aux to be edited with a user label.

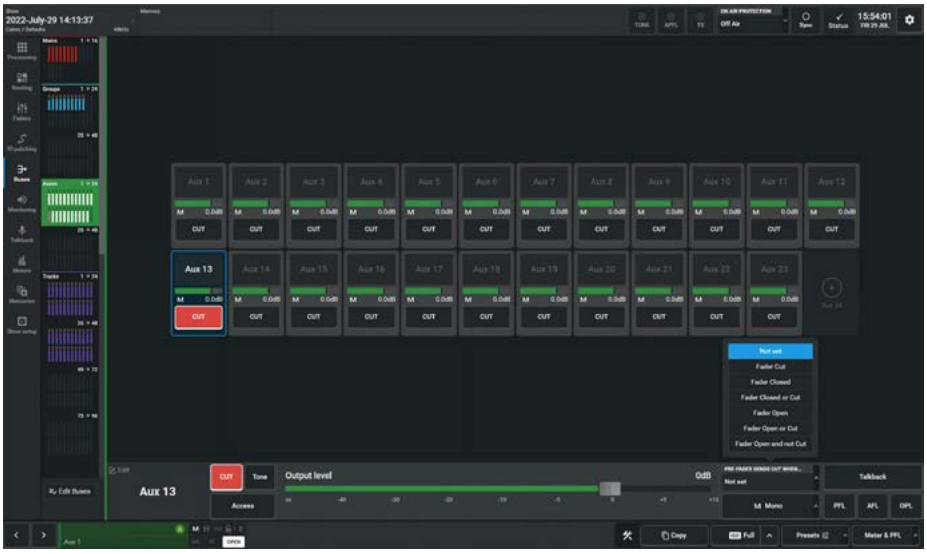
Access button: Lets the user call the aux to the access screens.

Tone: Select to inject tone into the aux output, replacing the aux output feed with the correct tone for the path width. The tone button applies a tone signal to that output.

Aux Cut: The user can cut/mute the output of the aux path by tapping on this button .

Aux Output Level: Slide the level control to alter the output level between 'off' & +10dB.

AUXILIARY BUSES SHOWING PRE FADER CUT OPTIONS



Change Width Pop-up button: Lets the user change the current width of the selected aux bus to be either 'No path' (to remove it), Mono or Stereo.

PFL & AFL: The user can listen to the individual buses' PFL (pre-fader listen) or AFL (after-fader listen) using the PFL or AFL buttons.

Output Listen: Similar to AFL but the feed is taken post output delay.

Talkback: Replaces the aux output feed with whatever is routed to the talkback input. A talkback button allows the user to talk to that output.

Note: a talkback input should be setup in the **IO patching** screen for this to work.

Pre-fader send cut options
Path sends to Aux output buses can be configured to cut under certain conditions, such as the send path's fader being open/closed and/or the path being cut.

These options are set from the 'Pre fader sends cut when' pop-up as shown on the right hand side of the image above right.

The options are set on an output basis, but it is the send from each path feeding the outputs that are independently cut depending on the status of each path routed to the aux output.

For example, if pre-fader send cut When **'Fader Closed'** is selected for Aux output 1, the pre-fader sends from each path routed to Aux 1 will be muted whilst their fader is closed.

As soon as the fader is opened, the path will send audio to the aux at pre-fader level. Pre-fader sends whose faders are open, as well as any paths feeding post fader will still be passing audio to Aux 1.

The available options for Pre-fader send cut to each aux output are:-

- Not Set
- 'Fader Cut' (or not 'on' if fader have path On buttons rather than cuts).
- 'Fader Closed'
- 'Fader Closed or Cut'
- 'Fader Open'
- 'Fader Open or Cut'
- 'Fader Open And Not Cut' - the send is active only if fader closed, or path cut (or not 'on' if on buttons fitted rather than cuts).

The pre-fader send cut when fader cut option can be selected in combination with either the cut when fader open or fader closed options, however other combinations would conflict with each other and as such, selecting one will cancel others.

TRACK BUSES

The purpose of this screen is to configure and control the Track output buses. It provides the user with 4 pages of controls related to up to 96 configurable track buses. On which they can:- set it as the accessed path, change its name, width, output level, cut, various listen outputs, talkback and tone settings.

Track Bus Output Controls
After tapping on the menu selection **Buses>Tracks**, the image above right is displayed and arranged in 4 blocks of up to 96 buses showing their name, width and current level. Tapping on any of the entries in the upper window allows the user control access in the bottom of the contents area.

The following controls are available:-
New Bus Width dialogue box: Clicking on an empty entry in the upper window opens this box and lets the user choose the width of the Track bus to be added to as Mono Odd/Mono Even or Mono.

Bus Outputs Pool:
There is a pool of up to 96 bus output legs that can be configured as Mono Odd, Mono Even or Mono. The dialogue box shown in the image above right shows the number of Track resources remaining in terms of Mono legs at the bottom.

Label window: Allowing the track to be edited with a user label.

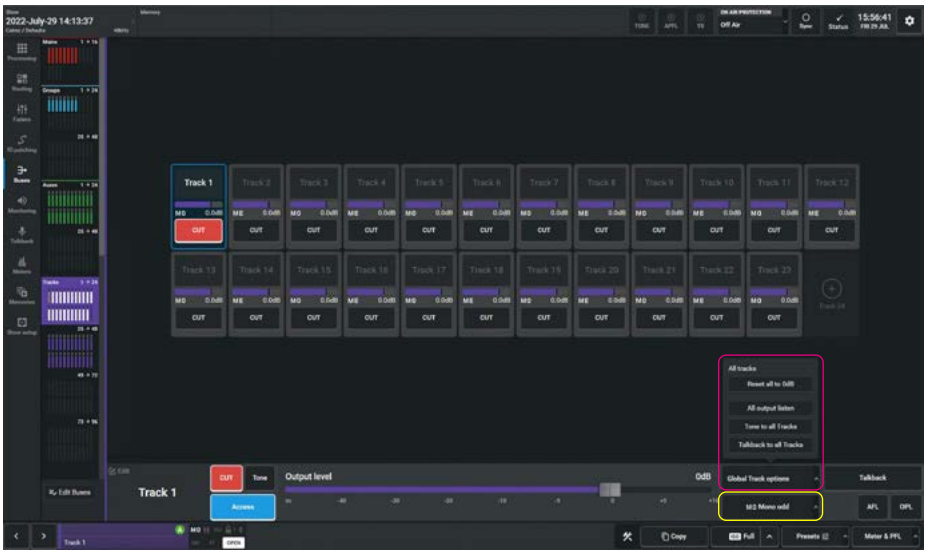
Access button: Lets the user call the track to the access screens.

Tone: Select to inject tone into the track output, replacing the track output feed with the correct tone for the path width. A tone button applies a tone signal to that output.

Track Cut: The user can cut/mute the output of the track path by tapping on this button .

Track Output Level: Slide the level control to alter the output level between 'off' & +10dB.

TRACK BUSES SHOWING WIDTH OPTIONS



Change Width Pop-up button: This shows the current width of the selected bus. As shown above right the user has selected the Track 1 bus which is 'Mono Odd', tapping on that pop-up as highlighted in yellow above allows the user to change any odd numbered track between 'No Path', 'Mono' or 'Mono Odd' and any even numbered track such as Track 2 which is currently 'Mono Even', between 'No Path', 'Mono' & 'Mono Even'.

Note: the 'No Path' option allows the user to remove the bus from the system.

AFL: The user can listen to the individual buses' AFL (after-fader listen) using the AFL buttons.

Output Listen: Similar to AFL but the feed is taken post output delay.

Talkback: Replaces the track output feed with whatever is routed to the talkback input. A talkback button allows the user to talk to that output.

Note: a talkback input should be setup in the **IO patching** screen for this to work.

Global Track options
In addition to the above there are a number of controls which can be applied to all the tracks simultaneously which appear in the Global Track options pop-up as highlighted in Magenta in the image above right:-

Reset all to 0dB: This prompts a pop-up asking the user if they really want to reset all the track output levels to 0dB. The user can either accept or cancel this function as required.

All output Listen: Listens to all the tracks with the feeds taken post output delay.

Tone to all Tracks: This switch allows the user to apply tone to all the track outputs at the same time. This is used as a 'lineup' facility with all the track outputs being fed with tone at the same output level rather than turning each individual tone switch on for all the tracks. This is sometimes called Tone Omni.

Talkback to all Tracks: Replaces the track output feed for all the tracks with whatever is routed to the talkback input. This is sometimes called Talkback Omni.

EDIT BUSES

The Edit Buses pages allows the user to quickly add or remove buses of that type and define the width of the selected bus or buses and lock the bus widths.

After tapping on the **Buses** menu selection, a button labelled '**Edit Buses**' is shown at the bottom of the buses submenu.

Tapping on this opens one of the 4 edit buses pages as shown above right.

The 4 pages provide edit configuration controls for Mains , Groups, Auxes and Tracks.

Editing Main Buses

The image above right shows the current state of each of the 16 Main buses.

The user can select the Main buses for editing in a variety of ways:- clicking or tapping on or dragging down the table of buses will highlight them.

The highlighted buses will have a "tick" placed in the first column and this allows the user to edit all the selected buses together in one step.

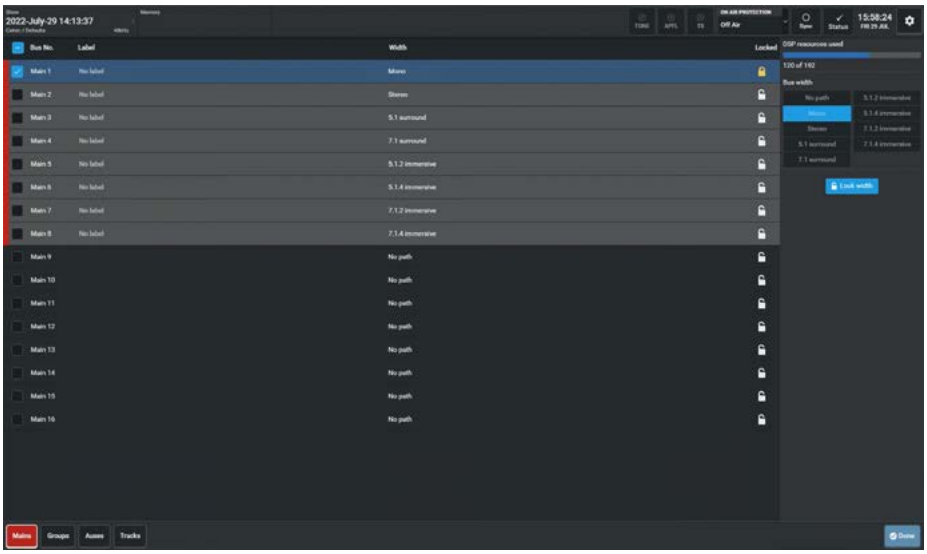
At the top of the column is a header "tick" box, when there are any selected entries in the table a minus sign appears in the header "tick" box.

Tapping on this will deselect all the selected entries and all the "ticks" will be removed. In addition tapping an empty header "tick" box will select all the buses on that page.

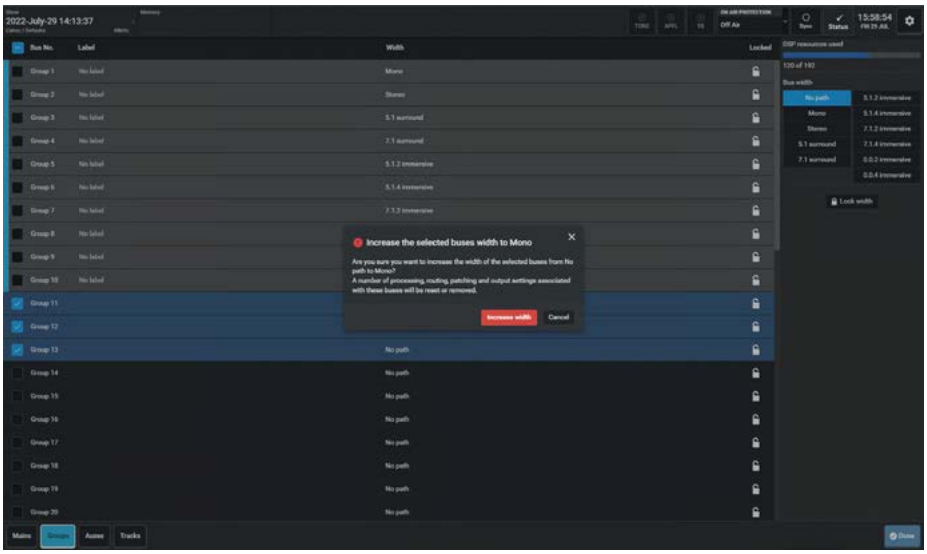
The image above right shows that Main 1 has been selected and the panel on the right of the page shows Main 1 has had its width locked using the '**Lock Width**' button as indicated by the locked padlock.

This prevents the user from accidently changing the width for the selected bus on this or any other page in Assist by greying out the Bus Width controls for that bus.

EDIT MAIN BUSES



EDIT GROUP BUSES



Editing Group Buses

The image below right shows the current state of each of the 48 Group buses. As there are more entries than the page can contain the higher numbered buses are accessed using the scrollbar. The user can select the Group buses for editing in a variety of ways:- clicking or tapping on or dragging down the table of buses will highlight them.

As described for the Main buses the highlighted buses will have a "tick" placed in the first column allowing the user to edit all the selected buses together in one step as shown below right.

Group buses 11, 12 & 13 have been selected, are currently set as 'No path' and the user tapped the '**Mono**' width to be applied to these Groups.

A confirmation dialogue box appears before increasing the selected buses width to the chosen width advising that:-

"A number of processing, routing, patching and output settings associated with these buses will be reset or removed."

At the top right of each page is shown the amount of DSP resources used and for Mains and Groups is a shared pool of 192 mono legs.

Editing Aux Buses
The image above right shows the current state of each of the 48 Aux buses.

As there are more entries than the page can contain the higher numbered buses are accessed using the scrollbar.

The user can select the Aux buses for editing in a variety of ways:- clicking or tapping on or dragging down the table of buses will highlight them.

As described for the Main buses the highlighted buses will have a “tick” placed in the first column allowing the user to edit all the selected buses together in one step.

Aux buses 13, 14, 15, 16, 17 & 18 have been selected and can be set to either ‘Stereo’ or a ‘No path’ state using the same method as shown for Mains & Groups.

In addition the Aux buses have an extra set of conditions that can be applied to cut the Pre fader sends of the Aux, this is shown in the panel on the right hand side of the page.

At the top right of each page is shown the amount of DSP resources used and for Auxes is a pool of 48 mono legs.

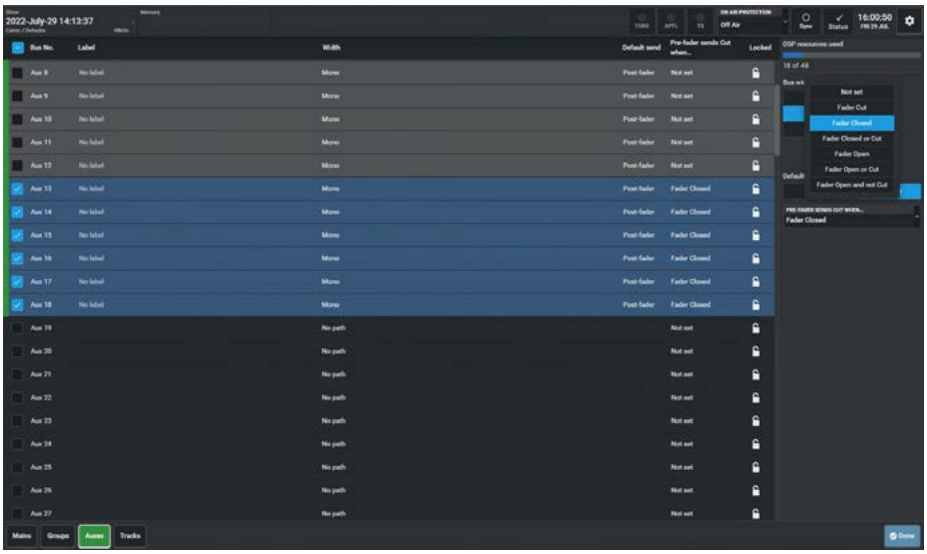
Editing Track Buses
The image below right shows the current state of each of the 96 Track buses.

As there are more entries than the page can contain the higher numbered buses are accessed using the scrollbar.

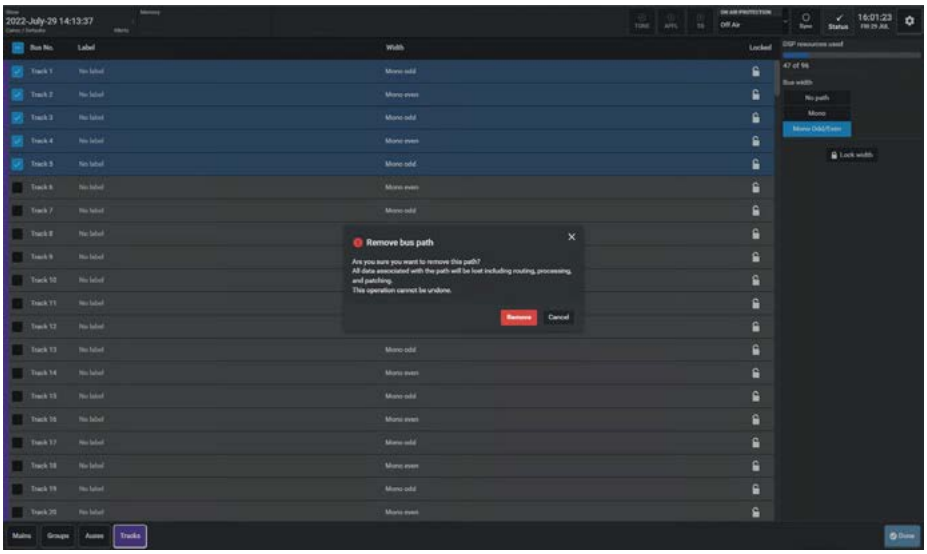
The user can select the Track buses for editing in a variety of ways:- clicking or tapping on or dragging down the table of buses will highlight them.

As described for the Main buses the highlighted buses will have a “tick” placed in the first column allowing the user to edit all the selected buses together in one step.

EDIT AUX BUSES



EDIT TRACK BUSES



Track buses 1, 2, 3, 4 & 5 have been selected and in this case the user selected the ‘**No path**’ option from the Bus width selection shown in the panel on the right hand side of the page.

A “Remove bus path” confirmation dialogue box appears before removing the bus paths advising that :-

“All data associated with the path will be lost including, routing, processing and patching” and “this operation cannot be undone.”

At the top right of each page is shown the amount of DSP resources used and for Tracks is a pool of 96 mono legs.

Once the user has finished using the Edit Buses pages, tapping on the ‘**Done**” button at the bottom right corner of the page will close the page returning the user to the previous Buses sub-menu page it came from.

ARGO ASSIST
MONITORING

CALREC

MONITORING ON ARGO

Argo offers extensive monitoring controls which are arranged into four sub-menus areas from the Monitoring Menu Entry:-

Control room monitors

This sub-menu area is arranged into two pages, each page representing a different monitor related to the Control Room:-

- **Monitor 1 LS** is the main monitor loudspeaker set in the control room.
- **Monitor 2 LS** is the alternative monitor loudspeaker set in the control room which could be a domestic surround system or may be used for a second operator when the console has User Splits applied.

Miscellaneous monitors

This sub-menu area is arranged into four pages, each page representing a different monitor related to the Misc Monitors:-

- **Misc monitors 1-4** are general monitoring outputs which can be used for a variety of purposes such as headphone outputs & green rooms.

User meters

This sub-menu area is arranged into four pages, each page representing a different monitoring/metering related function:-

- **User Meters 1-4** allows the user to select what sources are to be made available to the four user meters which can be output externally.

Listen and talkback

This sub-menu area is arranged into three pages, each page representing a different monitoring related function:-

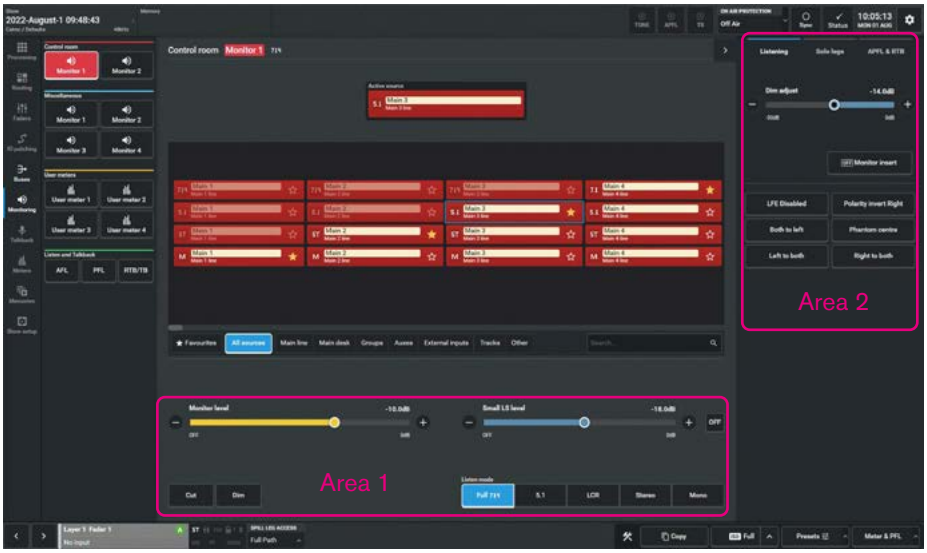
- **AFL** this page is used to set the system level of the AFL monitor.
- **PFL** this page is used to set the system level of the PFL monitor.
- **RTB/TB** this page is used to set the system level of the RTB 1-3 Trim levels and the TB trim level.

Control Room Monitoring Controls

After selecting Monitor 1 or Monitor 2 from the **Monitoring>Control Room** area of the Menu, the screen shown above right appears. It is arranged into three areas:-

Area 1 at the bottom half of the screen area contains the monitor output controls which can be adjusted a number of ways-

CONTROL ROOM MONITOR 1 CONTROLS



- Dragging the sliders left and right
- Using the + and - buttons at the end of the sliders.

The resultant numeric values are shown in the top right hand corner of each control:-

The following controls are available for both Monitor 1 LS & Monitor 2 LS:-

Monitor Level: Controls the level of the monitor outputs between 'off' & 0dB.

Cut and Dim buttons: Cuts or dims the monitor output.

Small LS Level: With the Small LS active this provides control over the level of the secondary speakers between 'off' & 0dB.

Small LS On: When tapped this switches the monitoring over from the Monitor 1 or Monitor 2 loudspeakers to a secondary set of loudspeaker, usually to hear how the programme sounds on a small set of domestic speakers in the home.

Listen modes: These allow the operator to listen to the selected source at various widths and is shown at the bottom right of the page. This in turn is based on the monitor width which is shown at the top left of Area 3 and it's width is defined in **System Settings>Monitor Widths.**

Area 2 on the right side of the screen is the monitor options panel this is subdivided into 3 sections:-

Listening (with the following controls as shown in the image above right):-

Dim Adjust Level: Alters how much the dim button changes the monitor level between -30dB & 0dB.

Monitor Insert: Switches in the monitor insert which is typically connected to an encoder/decoder for reference listening.

Leg monitoring options: LFE Disabled, Polarity Invert Right which reverses the polarity of the right speaker signal, Both to Left, Left to Both, Right to Both, and Phantom Centre which routes centre monitor feed to left & right speakers.

Solo legs (as shown in the image in the middle of the next page.)

Each leg of the monitor has its own Solo button tapping any of these Solos that monitor output leg, so each leg can be auditioned individually or in combination.

Note: the number of solo legs available depends on the width of the monitor and the listening mode used.

APFL (as shown in the image at the bottom of the next page.)

PFL to Mon: When tapped this sends the PFL signal to the console monitor rather than to a dedicated PFL speaker.

Miscellaneous functions:

Clear APFL, Clear AFL or Clear PFL also a PFL from GPI enable button.

PFL System Level: Adjusts the PFL monitor level between 'off' & 10dB.

AFL System Level: Adjusts the AFL monitor level between 'off' & 10dB.

Note: Area 2 can be hidden or revealed by tapping on the arrow shown in the top right corner of Area 3.

CONTROL ROOM MONITORING

Control Room Source Selection
Area 3 at the top half of the screen is for source selection which consists of:-
Active source: Current monitored source is shown at the top of the source list.

Favourites: The user can configure a number of sources by marking them with a star. Favourites to be monitored as shown above right allowing quick selection.
A different set of favourites can be configured for each monitor destination and the Favourites button accesses this set. The image shows Monitor 1 is listening to the 7.1 Group 4 bus. In order to create a Favourite the user taps on the empty Star symbol of the source in the source lists to create a Favourite entry, or clicks on the full Star symbol to remove it from the Favourites set for that monitor.

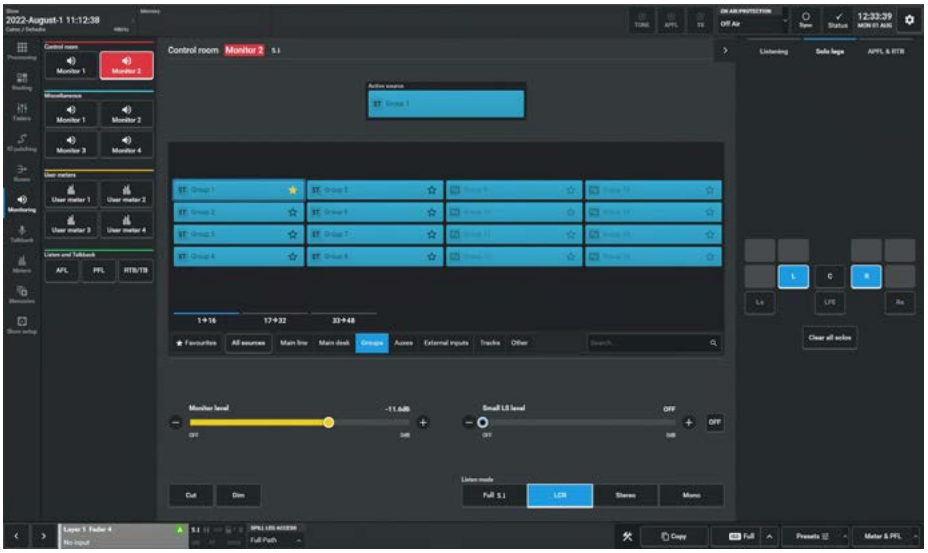
Source List: The source list display, this contains all the sources available to the monitoring. In order to listen directly to any source in the list the user can tap on the required source. A blue outline box appears around the current entry.
To change the monitor source from the list, the user can simply select it from the 'All sources' list or use the source filters.

Source Filters: At the bottom of the source list area are a number of filters which are used to filter the source list to make the monitor source selection easier. There are many sources available including:- 16 'Main line' & 16 'Main desk' sources each of which can also have up to 3 downmix versions i.e. 64 Main line and 64 Main desk outputs, 48 'Groups', 48 'Auxes', 152 'External Inputs', 96 'Tracks' and various Tone Outputs and Follow Mon options in 'Other'. The user selects which source type they require using the filter buttons at the bottom of the source list. Once selected there are a number of pages of that source type, which appear just above the filter buttons. Tapping on a page range e.g. 1-16 will show the sources numbered 1-16 of that source type with Groups 1-16 shown for Monitor 2 middle right and Aux 1-16 as shown below right.

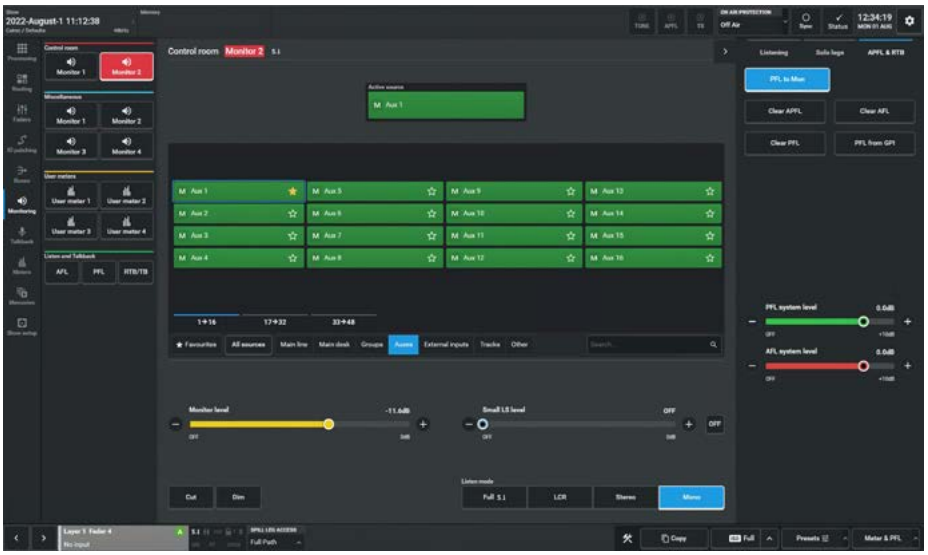
Note: it is also possible to use the search box at the bottom right of the source list to find system labels such as 'Aux 1' or user labels such as 'IFB 1'.

CONTROL ROOM MONITOR 1 SHOWING FAVOURITES AS SOURCE SELECTIONS

CONTROL ROOM MONITOR 2 SHOWING GROUPS AS SOURCE SELECTIONS



CONTROL ROOM MONITOR 2 SHOWING AUXES AS SOURCE SELECTIONS.



MISCELLANEOUS MONITORING

Misc Monitoring Controls
After selecting the Misc Monitor 1 button from the **Monitor>Miscellaneous** section of the Menu, the screen shown above right appears.

The upper half of the screen shows the currently active source for this monitor, in this case 'MO Track 1/ME Track 2' just above the Select Source List which is available to all the monitors.

The Favourites Set, Source List and the Source filters operate in the same way as described for the Control Room monitors described on the previous page.

The lower half of the screen shows the controls available to Misc Monitors 1-4 which all operate in the same way.

The following controls are available:-
Monitor Level: Controls the level of the monitor outputs between 'off' and 0dB.

Cut and Dim buttons: Cuts or Dims the monitor output.

Note: The Dim level for the Misc Mons is fixed at -30dB.

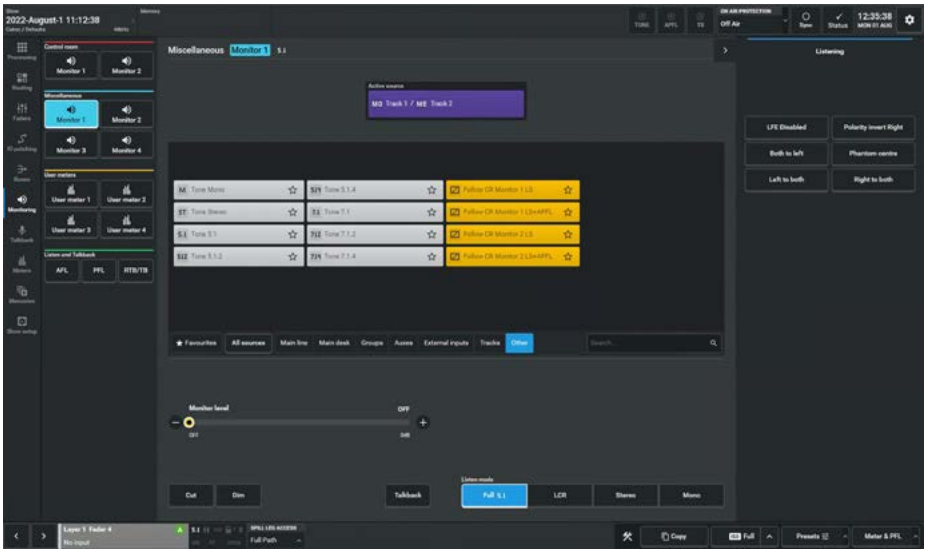
Talkback: This allows the user to talkback to the misc outputs from the Operator Talkback mic.

Listen modes: These allow the operator to listen to the selected source at various widths based on the width of the monitor width which is shown at the top right of the page or the possible downmix levels.

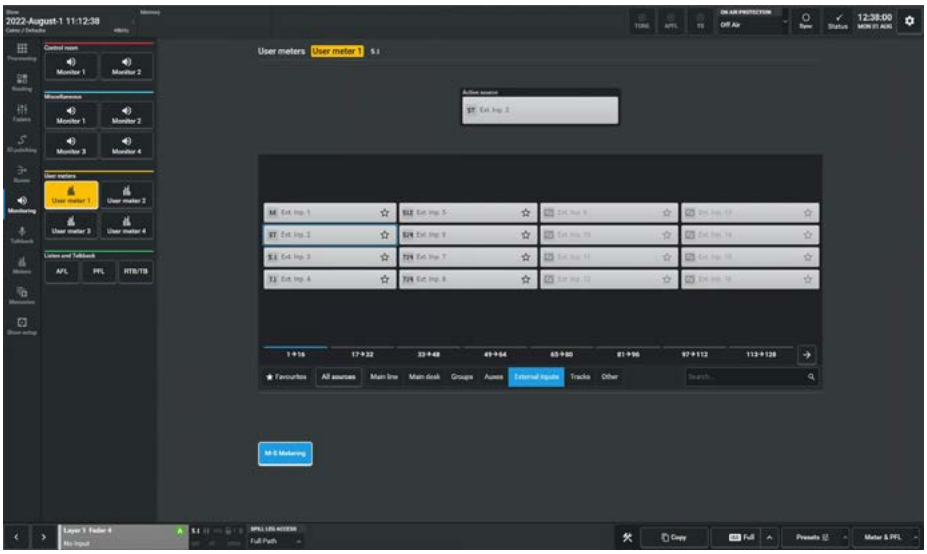
Listening Settings
The right side of the screen shows the various listening options available to the Misc Monitors 1-4:-

Leg monitoring options: LFE Disabled, Polarity Invert Right which reverses the polarity of the right speaker signal, Both to Left, Left to Both, Right to Both, and Phantom Centre which routes centre monitor feed to left & right speakers.

MISC MONITOR 1



USER METER CONTROLS



User Meter Controls
After selecting the User Meter 1 button from the **Monitor>User Meters** section of the Menu, the image below right appears.

The upper half of the screen shows the currently Active source for this monitor, in this case 'Ext. Inp 2' above the Select Source List. The lower half of the screen is blank as no controls are required.

If the user requires to apply tone to the user meters they can select the tone source to send from the 'Other' option in the source list as shown in the image above. The method of source selection for the user meters is the same as for Misc Mons via the source list.

Note: that there is an optional setting under the select source list filter buttons labelled 'M-S metering' which changes the stereo meter output to M-S format.

LISTEN AND TALKBACK SETTINGS

Listen and Talkback Controls
AFL Controls
After selecting the AFL button from the **Monitor>Listen and Talkback** section of the Menu, the screen above right appears.

The following controls are available:-
AFL 1 Level: Controls the level of the AFL 1 LS output between 'off' & 10dB.
AFL 2 Level: Controls the level of the AFL 2 LS output between 'off' & 10dB.
AFL 3 Level: Controls the level of the AFL 3 LS output between 'off' & 10dB

Note: AFL 2 & AFL 3 are dependent on Assist having APFL systems 2 & 3 active.

PFL Controls
After selecting the PFL button from the **Monitor>Listen and Talkback** section of the Menu, the screen middle right appears.

The following controls are available:-
PFL 1 Level: Controls the level of the PFL 1 LS output between 'off' & 10dB.
PFL 2 Level: Controls the level of the PFL 2 LS output between 'off' & 10dB.
PFL 3 Level: Controls the level of the PFL 3 LS output between 'off' & 10dB

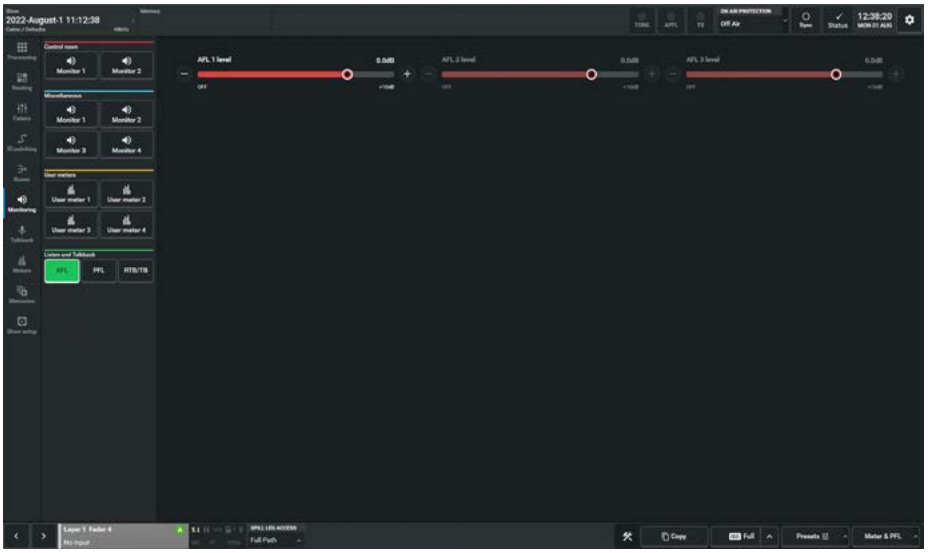
Note: PFL 2 & PFL 3 are dependent on Assist having APFL systems 2 & 3 active.

RTB/TB Controls
After selecting the RTB/TB button from the **Monitor>Listen & Talkback** section of the Menu, the page below right appears.

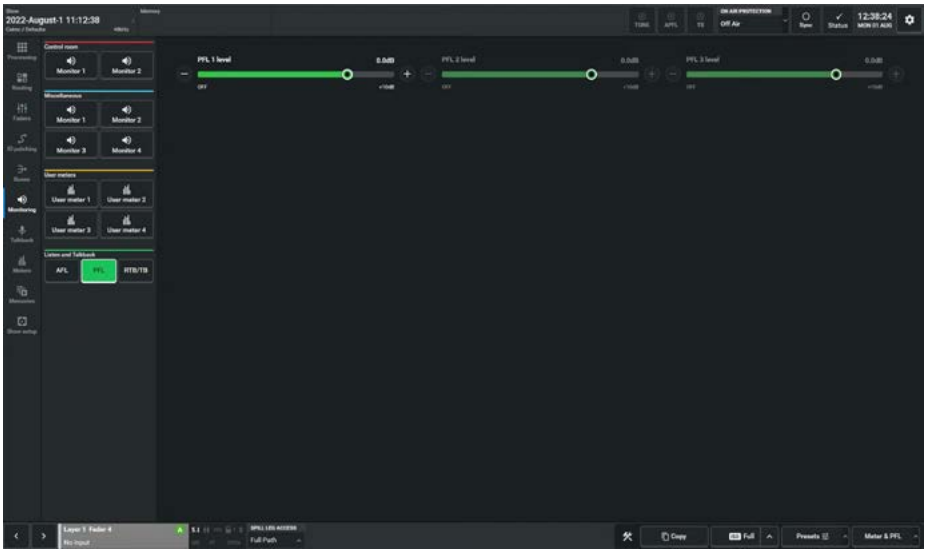
The following controls are available:-
RTB 1-3 Trim Level: Alters the RTB trim level of each of the 3 RTBs feeding into the PFL LS output between 'off' and 0dB.
RTB 1-3 Enable buttons: These buttons enable the audio from the RTB 1-3 buses to be mixed into all three of the PFL buses. If not enabled that RTB bus output is CUT e.g if RTB 1 is not enabled then it cannot be mixed into the PFL1, PFL2 and PFL3 bus outputs.
Talkback Level: Alters the Talkback trim level between 'off' and 0dB.

Note: the Talkback level is applied after the input gain, but is independent of any input trim, if also sent to a channel.

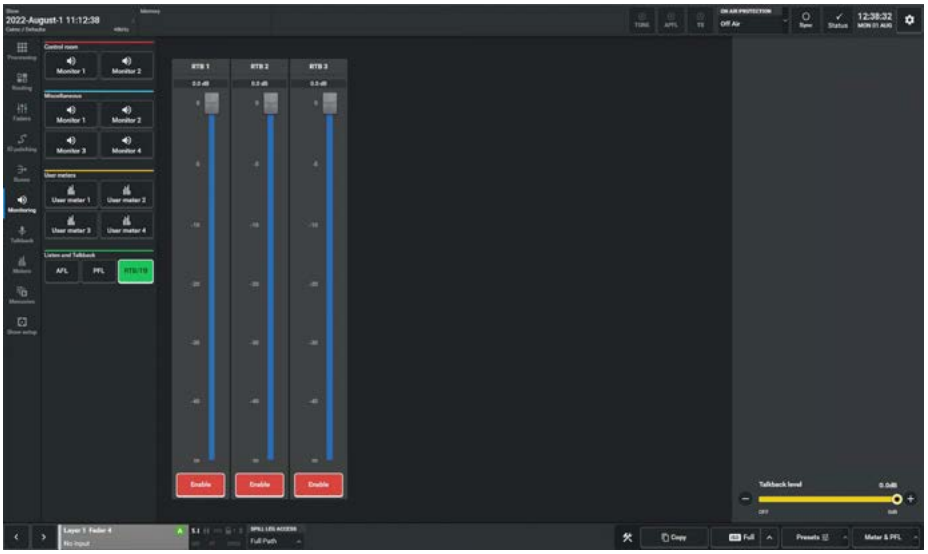
AFL CONTROLS



PFL CONTROLS



RTB 1-3 & TB CONTROLS



ARGO ASSIST
TALKBACK

CALREC

TALKBACK ON ARGO

On each of the bus output pages and the 4 misc monitor outputs there is a momentary Talkback button. In the header area at the top of the assist screens there is a TB button to show that there is an active Talkback somewhere.

Note: Talkback buttons are always yellow in assist when active and not the matching function colour, this is to help identify them when active.

In addition to talking back to Mains, Groups, Auxes, Tracks, Direct Outputs & Mix Minus Outputs, using the Talkback buttons on those pages, the Misc Mons 1-4 can also have talkback applied.

Talkback Sets
After selecting **Talkback** from the main Menu, the image above right appears.

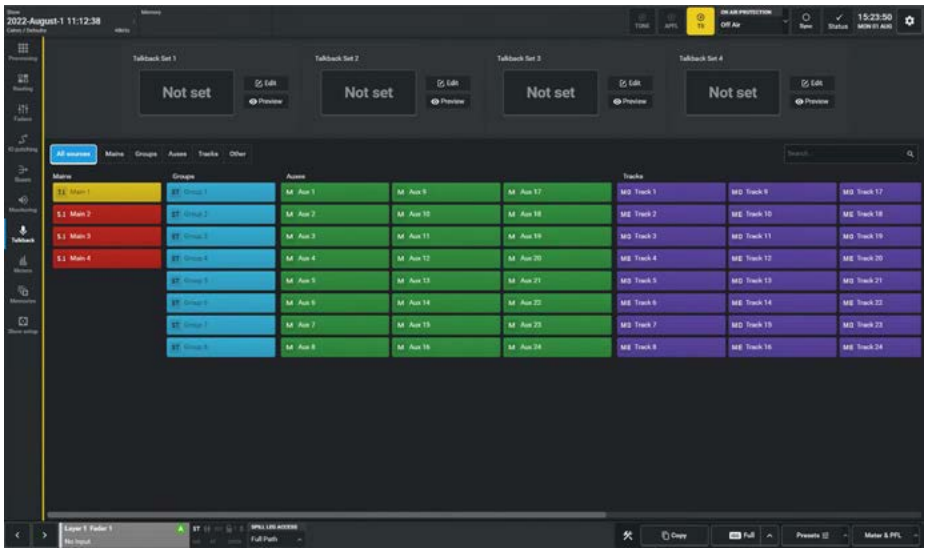
Argo provides four talkback sets to be created and selected from. A talkback set allows the user to talk to multiple destinations with a single button press.

To the right of each talkback button is the '**Edit**' button, used to select the destinations to be included in the Talkback Sets and under that is a '**Preview**' button which when selected shows the list of destinations currently in the set.

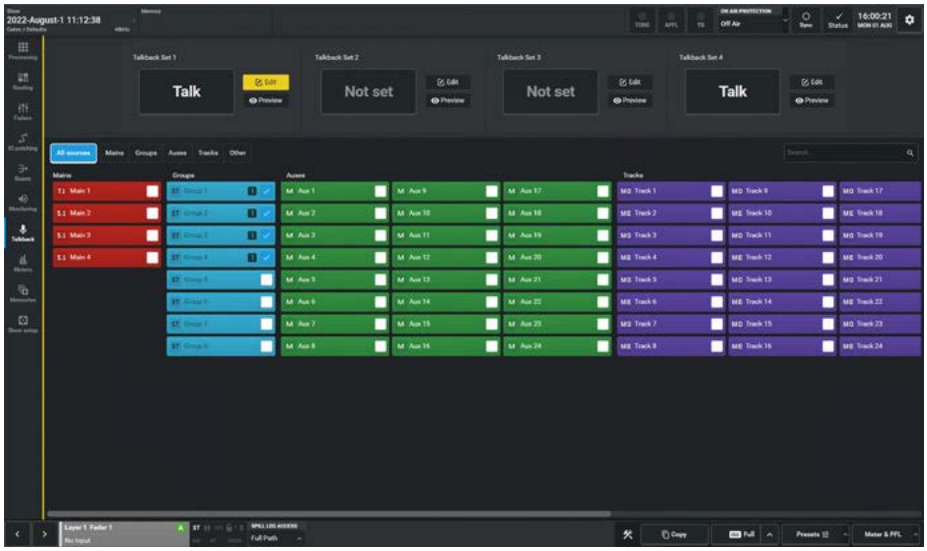
Below the 4 Talkback button Sets is shown a list of all the destinations that the user can Talkback to. In order to create "Talkback Sets" and to add/remove destinations to/from a talkback set, the user first presses the appropriate **'Edit'** button and deselects the '**Preview**' button for the selected Talkback set so they can see all the destinations or a filtered subset of the destinations list, at which point "tick boxes" appear next to each destination button as shown below right.

The selected TB Destinations shown can be toggled on and off from the list to make up the set as required. Each destination is tagged with the Talkback Set number 1 thru 4 and the destination can appear in multiple sets as required. Once a TB entry is added to the set its label changes from '**Not set**' to '**Talk**'

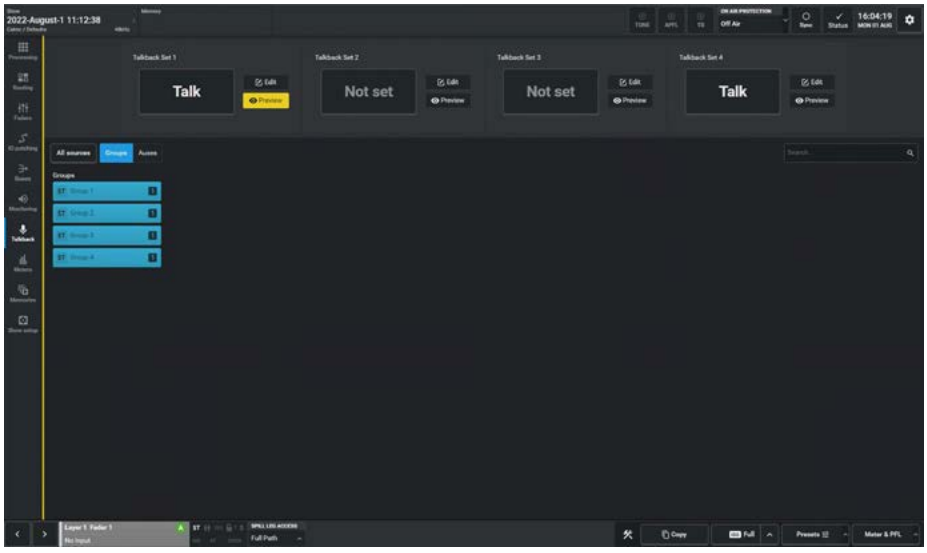
TALKBACK SETS



TALKBACK SET 1 SELECTING DESTINATIONS



TALKBACK SET 1 PREVIEWING DESTINATIONS



Once the selection is complete the user can then press the **'Edit'** button again to deselect it. The user can then select the **'Preview'** button to look at only what is included in the Talkback set as shown at the bottom of the previous page.

The user then simply uses the bigger **'Talk'** buttons to Talkback Set 1, 2, 3 or 4 to talk to the selected set. The user can still talk to one of the destinations in the set by holding down the individual destination instead..

The image above right shows that the user is currently talking to Talkback Set 1 as it is highlighted in yellow. Also note that the destinations included in that set are also highlighted.

If no selection is made for a particular '**Talk'** buttons to Talkback Set 1, 2, 3 or 4 it is greyed out. When none of the Selector for TB Set buttons or Talk to Talkback Set buttons are active the Select Talkback destination list at the bottom of the page will, when pressed function act as individual talkback buttons.

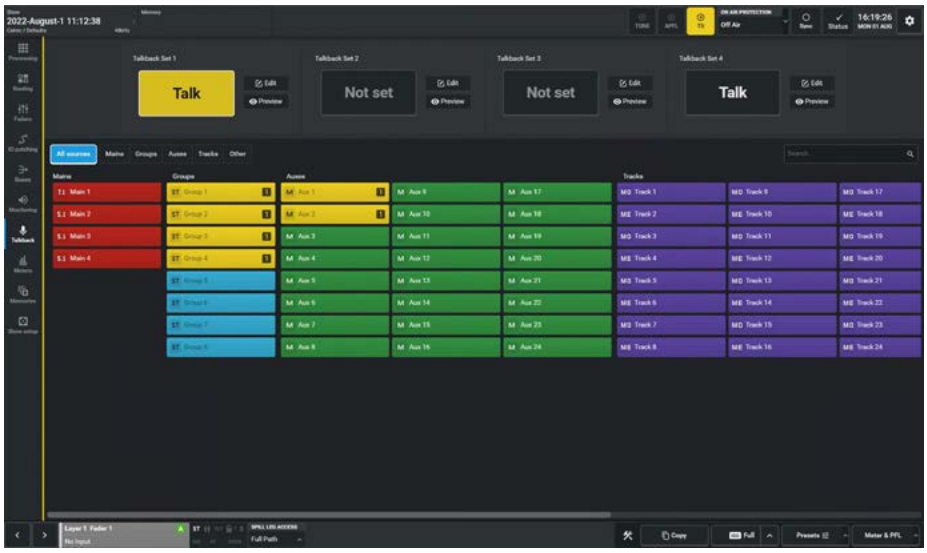
There is a search box at the top right of the destinations list to allow the user to quickly find system labels such as "Aux 1" or user labels such as "IFB 1". This is especially useful when trying to find a particular path using its label.

The image below right shows that the user was selecting destinations for Talkback set 4 but needed to talk Talkback set 2.

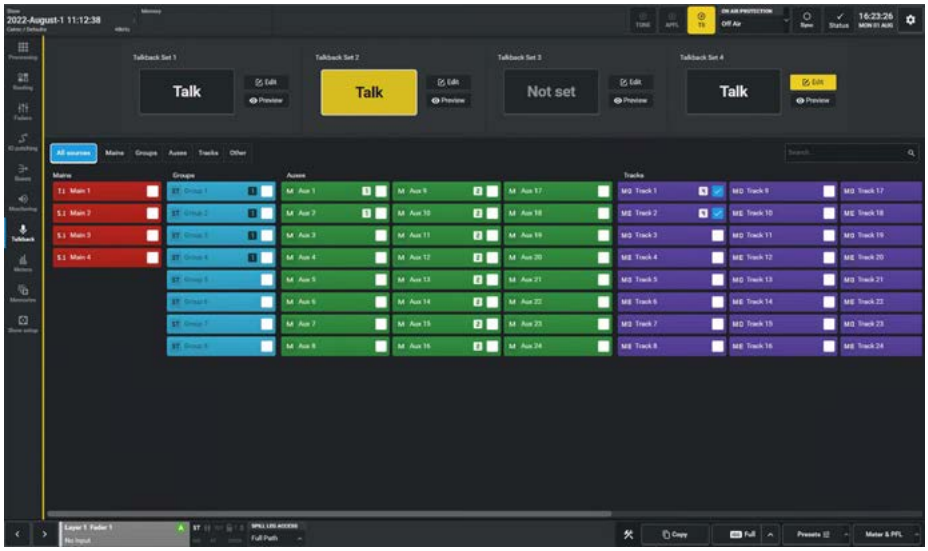
The **'Talk'** buttons are always available even whilst the set is being edited.

Note: if the Argo is in On-Air mode then talkback to the Main Outputs is prevented, this includes any Main Outputs that have been added to the Talkback Sets.

TALKBACK SET 1 ACTIVE SHOWING DESTINATIONS IN SET



TALKBACK SET 2 ACTIVE WITH SET 4 SELECTING DESTINATIONS



ARGO ASSIST
METERS

CALREC

METERS EDIT & VIEW

Metering on Argo
Assist offers the ability to layout and display any of the available sources and buses on a single meters screen. The meter display is designed to run on a 1920px x 1080px monitor and has 96 meter elements arranged as 4 rows of 24 meter elements. The meter layout grid is used to configure a layout of selected sources. Accessing the **Meters** menu opens a further three sub-menus:-

View Meters
This is the display screen that shows the live meter data from the sources selected.

Edit Assist & Panel Meters
This is where the meter sources are selected and placed onto a meter display screen. In addition meter presets may be stored here allowing the user to change the meter display as required.

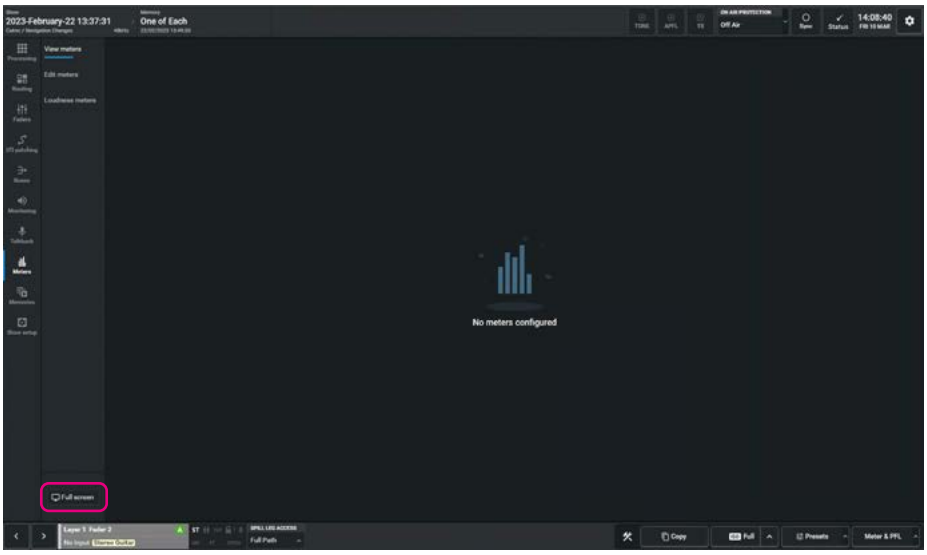
Loudness Meters
This page is used to Start, Pause or Reset up to 16 loudness meters, change their mode and scales and display the Target Loudness, Target Variance and Max true peak values associated with that mode. See **"Loudness Meters" on page 119.**

Empty Meter Display
The image above right shows the "View Meters" display screen when a new show is created without meters, ready to be configured in the Meter Layout Page. The **'Full screen'** button highlighted, lets the user see the meters at full screen size. Press **'esc'** on the keyboard to return.

Empty Meter Layout
The image middle right shows an empty "Edit meters" layout grid. In addition to editing the Assist meter layout, this editor can configure the meter displays of the Argo TFT meter panels, by tapping on the **'Assist'** button or the left & right arrow buttons to edit the chosen display.

Source Selection
To select a source to meter the user first selects **Meters>Edit meters** from the Menu to access the **'Create a meter'** button as shown middle right. Tapping on this opens the "Select a source" dialogue box as shown below right.

EMPTY METER DISPLAY



EMPTY METER LAYOUT

SOURCE SELECTION ALL SOURCES

The available sources to meter are:-
16 Main Output Buses, 48 Group Buses, 48 Aux Buses, 96 Track Buses, Faders (depending on the size of the console), 152 External Inputs and Others including:- CR Monitors 1 & 2, APFL 1-3, AFL 1-3, PFL 1-3, Mix Minus 1 & User Meters 1-4. Near the footer of this dialogue box is shown a scrollbar used to scroll across the source list. A set of filters for each source type, each of which is arranged in pages, is placed along the bottom of the source list to simplify the selection.

There is also a search option which will find a named source based on the source's system name or user label. The image above right shows the search facility was used to find Main 8's user label "714 Prog" to be used as the source.

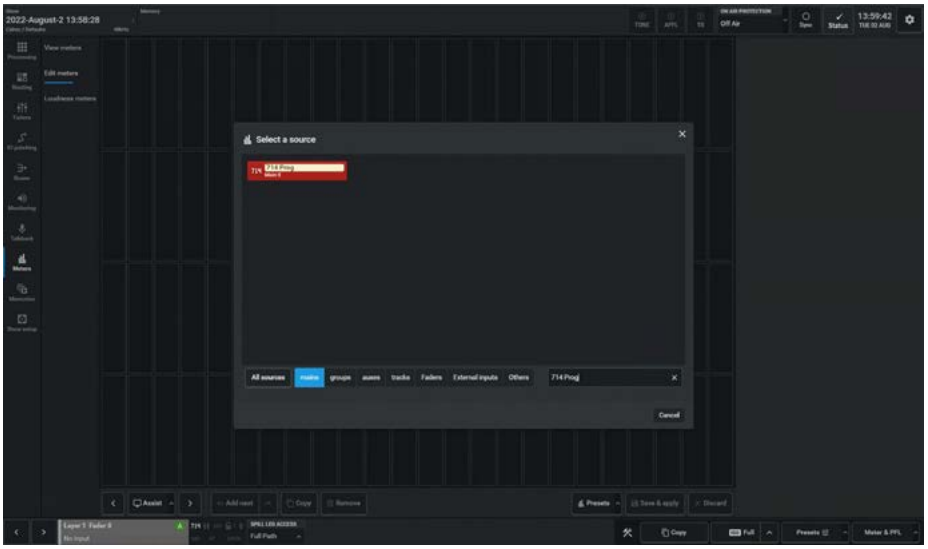
The user then taps on the source and the display changes to the "New meter" panel with the selected source ready to be configured as required then placed on the meter layout grid. Many of the meters have a minimum size of 2 meter elements such as the faders, so as a rule of thumb the user can place 12 meters in a row.

Creating a Bus Meter
The image middle right shows that the user has selected Main 8 which currently takes up 2 meter elements. The meter can then be further configured using the Meter options shown in the panel. These options change depending on the source type and width and will be described later.

Source Placement on Meter Grid
Once the configuration changes to the selected source are made the user can either drag the meter design in the panel on to the grid, position it at the required location and release the drag placing the source on the meter grid, or tap on a location on the grid and then using the **'Add to grid'** button place the meter as shown middle right at that location.

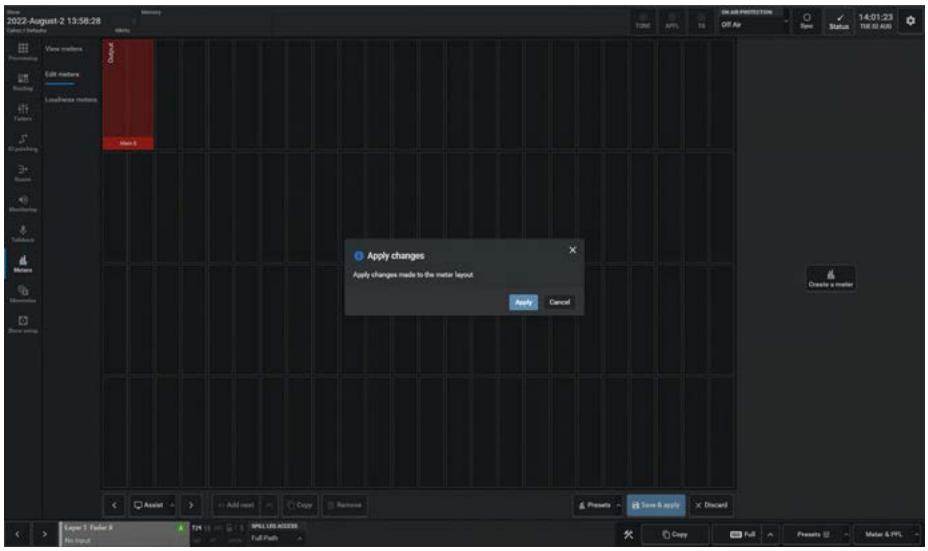
In order to display changes made to the meters, the user taps the **'Save & apply'** button as shown below right. The user can then display the actual meters by tapping on **'View Meters'**. If the layout is not what is required they can tap on **'Discard'** which will revert the display to its last saved state.

SOURCE SELECTION USING SEARCH FUNCTION



CREATE A BUS METER

PLACE AND SAVE BUS METER ON DISPLAY GRID



Meter Display of Created Meter
The image above right shows the created meter with signal applied to display the Meter in operation. The meter shows the 12 meter legs for the 7.1.4 path each with the leg suffices i.e. LR, C, e, S, R, TF & TR.

Creating Fader Meters
Most Meter layouts start by configuring the fader meters that are to be displayed. In the image middle right, the user has already selected Fader 1 from the source list and is ready to apply meter options.

Fader Type meters default to being two meter elements wide, displaying the Audio meter and Dynamics metering if any. There is also a Full immersive display option, which when selected, shows the height meters to the right of the normal surround meters using the same scale rather than the condensed scale shown in the image above right.

Note: using this option removes the dynamics meter display in order to fit the audio meter in a 2 meter element width.

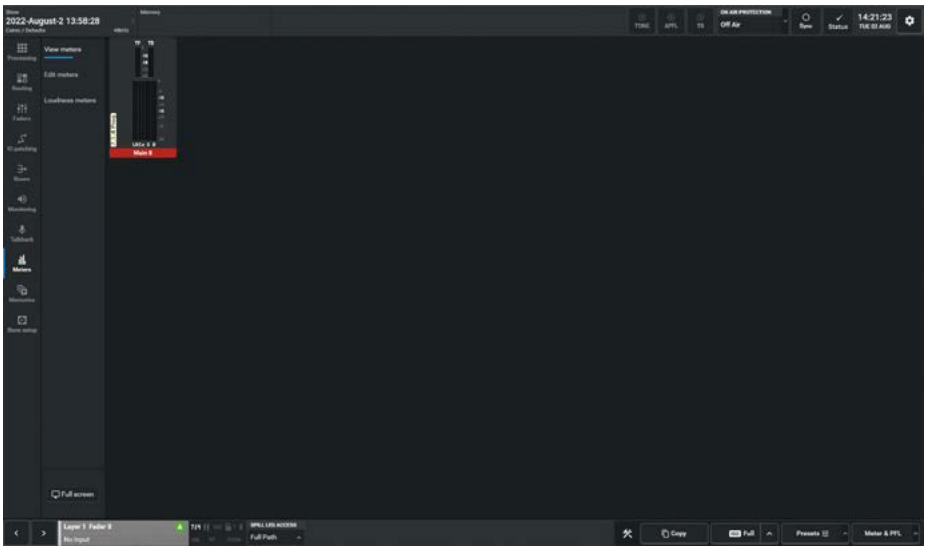
Follow Fader Option
Above the Dynamics or Full immersive options is a "Follow A/B" dropdown box. This allows the user to select this meter to only show what is on sub-layer A or sub-layer B or allow it to follow the change between sub-layer A & sub-layer B on the same meter, which is the default option.

The image bottom right shows Fader 1 has already been put on the grid but the user wants to re-edit its options. Selecting a meter from the grid allows changes to be made to the meter layout including the ability to edit meter options.

Meter Style Option
This box to the left of the Follow A/B button is the meter style option that is used as meters are created. This can be altered to allows the user to apply different meter scales and characteristics on a per meter basis if required.

There are 8 meter style options available:- PPM 8/20, PPM 9/15, PPM 10/18, PPM 12-18, VU 8/20, VU 12/20, VU 20 & Nordic PPM for use at 0dBFS=-18dBU.

METER DISPLAY SHOWING CREATED BUS METER



CREATING FADER METER DISPLAYS

EDITING FADER METER OPTIONS

Double Height Meters
Fader 2 has been defined as a double height meter as shown above right. It has also been set to Follow A/B, and been set to display the Full immersive meter size.

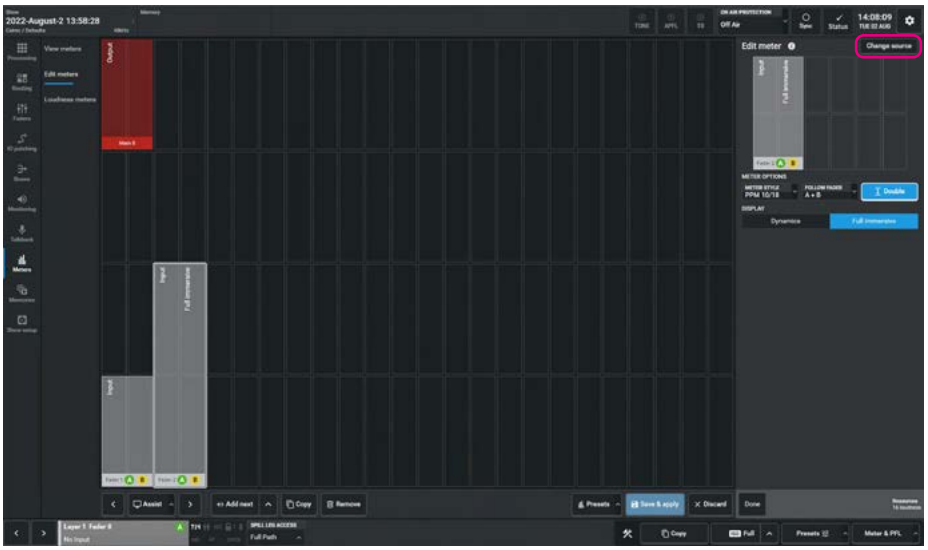
Change Source Option
Either during creation or re-editing the **'Change source'** button highlighted in the top right corner of the content area allows the user to change the selected source to be replaced by reopening the Source list and selecting a different source.

Add Next Function
In order to speed up the creation process there is a button labelled **'Add Next'** in the footer. If the user selects a meter in the grid e.g. Fader 9AB as shown middle right a white outline appears around it and the '**Add Next'** button becomes available. Tapping on this will place and select the next meter (Fader 10AB) with the same options as Fader 9AB, immediately to the right of it. Continuing to tap on **'Add Next'** will auto increment the number so that a set of sequential meters can be created. Alternatively opening the dropdown box from the right of that button offers 2 other methods of creating meter rows:-
'Fill empty space' repeats the Add to next until it finds a non-empty space or row end and **'Overwrite row'** overwrites any existing meters to the end of the row. The image middle right shows Fader 9 is to be used to fill to the end of the row.

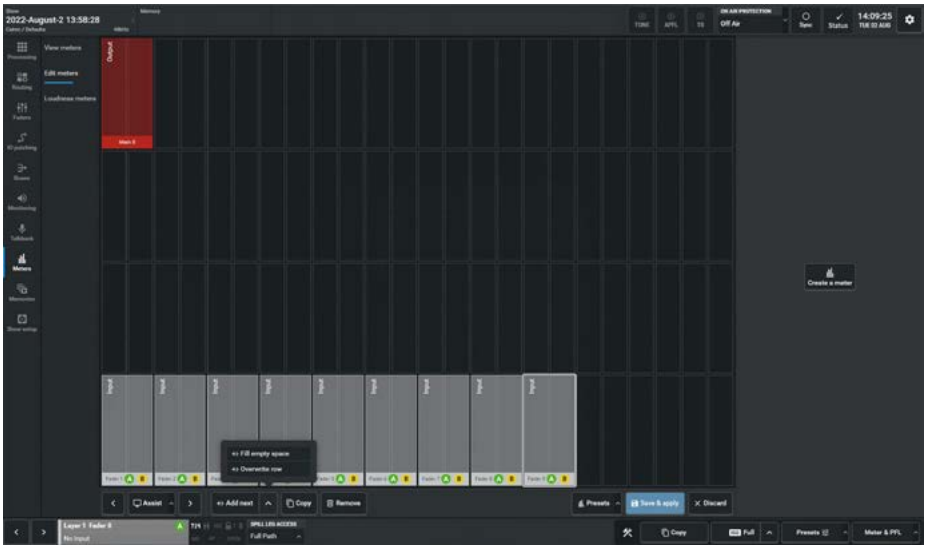
Faders 1-12 Metering Display
Once Apply Changes has been applied, selecting **Meters>View Meters** from the Menu shows the actual meters. The Meters shown below right represent the various fader meters at various widths:-
Fader Meters 1-8 show the 8 different channel widths with the 'Dynamics' option.
Faders 5-8 show immersive meters with the compressed height meters placed above the surround meters.
Faders 9-12 show meters with the 'Full Immersive' height meters option placed to the right of Channel meters on Groups 1-4.

Note: the 'Full screen' button at the bottom of the Meters submenu, lets the user see the meters at full screen size. Press 'esc' on the keyboard to return.

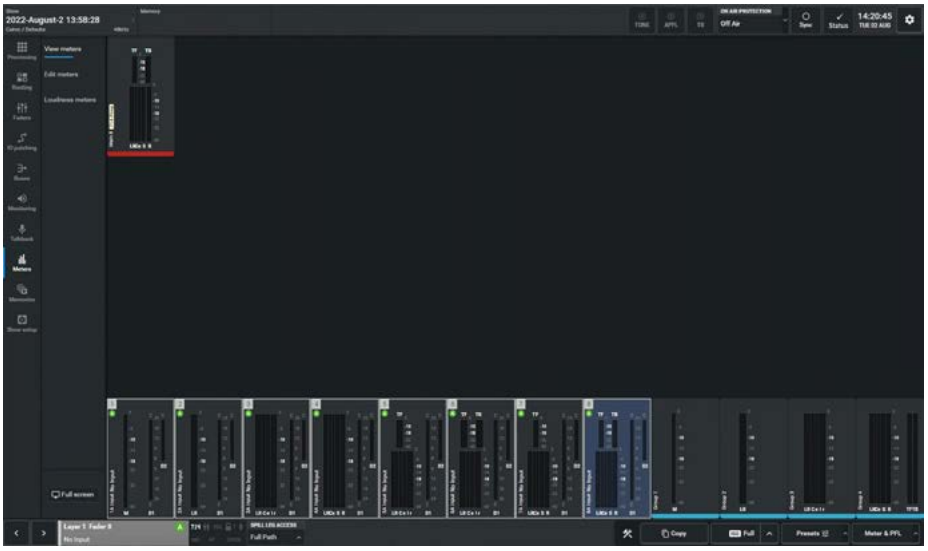
DOUBLE HEIGHT METERS



ADD NEXT FUNCTION AND FILL/OVERWRITE OPTIONS



VIEW OF METERS FOR FADERS 1-12



Creating Main Meters

The various Main meter options available on both the "Edit Meter" layout grid are shown above right and the "View meters" display is shown below right, the same meter source has been displayed in both single height and double height sizes and start from the left with no additional meter options across to the right which has all the additional options. Each bus meter is identified by a position overlay as shown.

The available variants for this 7.1.4 Main meter have all been placed on the same grid and shown on the actual display, these are described as follows:-

No options: The 1st Main bus meter shows the audio meter using compressed immersive height meters TF & TB placed above the surround meters.

Dynamics: The 2nd Main bus meter shows the audio meter, but now includes gain reduction meters for Dynamics 1 Comp/Lim and Expander & Dynamics 2 Comp/Lim.

Full Immersive: The 3rd Main bus meter shows the audio meter but using the Full size immersive meters TF & TB placed to the right of the surround meters.

Full Immersive & Dynamics: The 4th Main bus meter shows the audio meter using Full size immersive meters and the Dynamics gain reduction meters.

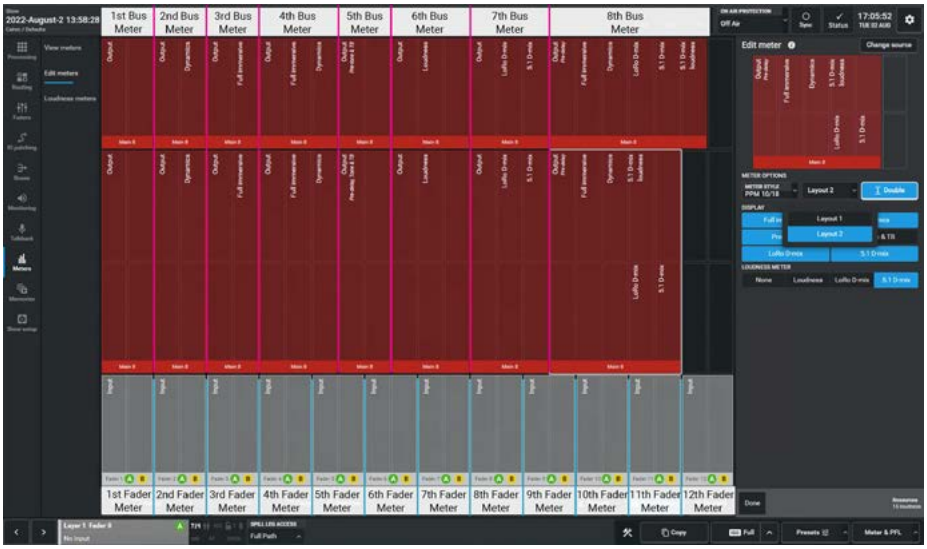
Pre-tone & TB: The 5th Main bus meter shows the audio meter, note the meter data is taken before Tone & TB is injected.

Loudness: The 6th Main bus meter shows the audio meter, but now includes the loudness meter and its appropriate data for the 7.1.4 signal, as described in the loudness meter section.

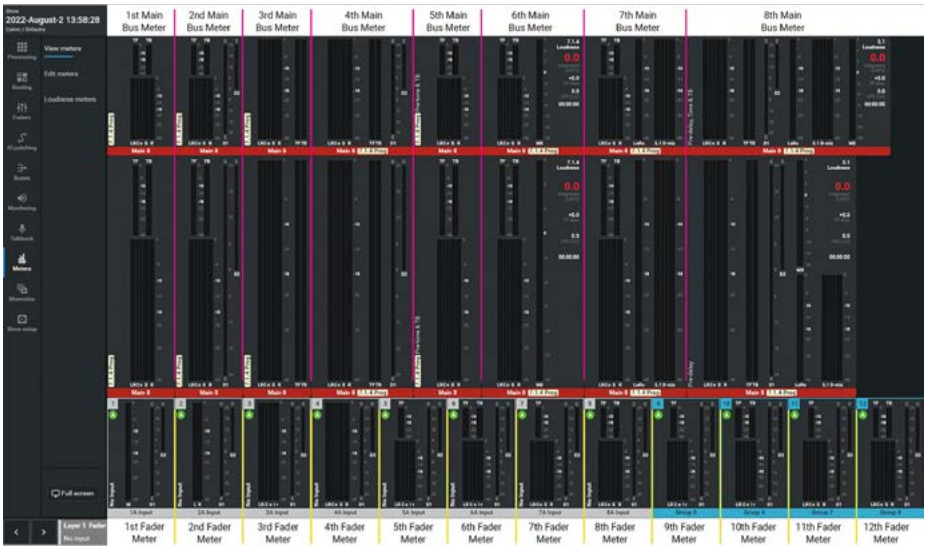
LoRo and 5.1 D-Mix: The 7th Main bus meter shows the audio meter, but now includes two downmix meters: a 5.1 D-Mix meter derived from the 7.1.4 to 5.1 D-Mix and a LoRo D-Mix meter derived from a 7.1.4 to a LoRo D-Mix.

Pre-delay Output, LoRo/5.1 D-Mix & LoRo/5.1 D-Mix Loudness: The 8th Main bus meter shows a full combination of all the options. The Pre-delay option allows the user to see the audio meter at the pre-delay point when a delay process has been added, the normal audio output being at the post-delay point.

CREATE MAIN METER VARIANTS



VIEW MAIN METER VARIANTS



The output meter is displayed here in Full immersive form with its Dynamics gain reduction meters. Also shown are the LoRo and 5.1 D-Mix meters and on the right of this 6 element wide meter is placed a 5.1 D-Mix loudness meter. There is also an alternative loudness meter option that can be displayed which shows the LoRo loudness meter.

Layout Options

When meter designs include many options they can also take a lot of space on the meter grid, especially when the double height metering option is chosen.

In order to save space, in these situations an extra Layout dropdown button appears which can offer a number of different layouts. This is achieved by using a combination of single and double height elements to produce more compact displays which provide the same metering information in a smaller display format. This is shown in the double height version of the 8th Main bus meter saving space by using single height downmix and loudness meters.

Note: if the Main Source cannot be immersive then the Immersive and 5.1 D-Mix options will not display.

Creating Group Meters

The various Group meter options available on both the “Edit Meter” layout grid are shown above right and the “View meters” display is shown middle right, the available variants for this 7.1.4 Group meter have all been placed on the same grid and shown on the actual display, these are as follows:-

No options: The 1st Group bus meter shows the audio meter using compressed immersive height meters TF & TR.

Dynamics: The 2nd Group bus meter shows the audio meter, but now includes gain reduction meters for Dynamics1 Comp/Lim and Expander & Dynamics 2 Comp/Lim.

Full Immersive: The 3rd Group bus meter shows the audio meter but using the Full size immersive meters TF & TR.

Full Immersive & Dynamics: The 4th Group bus meter shows the audio meter using Full size immersive meters and the Dynamics gain reduction meters.

Loudness: The 5th Group bus meter shows the audio meter and the loudness meter with its data for the 7.1.4 signal.

Full Immersive, Dynamics & Loudness: The 6th Group bus meter shows the audio meter, using Full size immersive meters, Dynamics gain reduction meters and the 5.1.4 loudness meter with its data.

Creating Aux Meters

The various Aux meter options available on both the “Edit Meter” layout grid shown below right and the “View meters” display is shown middle right, the available variants for this Stereo Aux meter have all been placed on the same grid and shown on the actual display, these are as follows:-

No options: The 1st Aux bus meter shows the audio meter using a stereo meter.

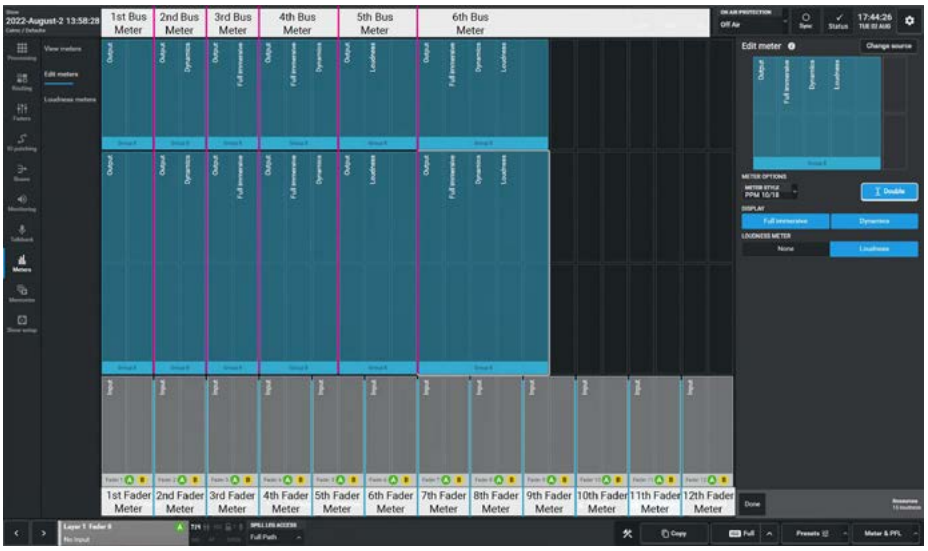
Pre-Delay: The 2nd Aux bus meter shows the Pre-delay version of the audio signal.

Dynamics: The 3rd Aux bus meter shows the audio meter, but now includes gain reduction meters for Dynamics1 Comp/Lim and Expander & Dynamics 2 Comp/Lim.

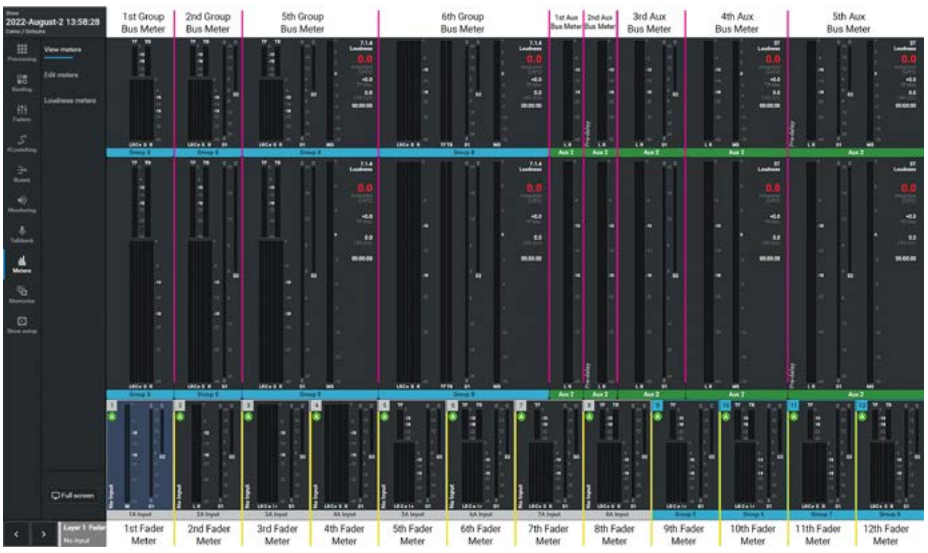
Loudness: The 4th Aux bus meter shows the audio meter and the loudness meter with its data for the Stereo signal.

Dynamics & Loudness: The 5th Aux bus meter **(on layout only)** shows the audio meter, but now includes Dynamics 1 & 2, and Loudness meters.

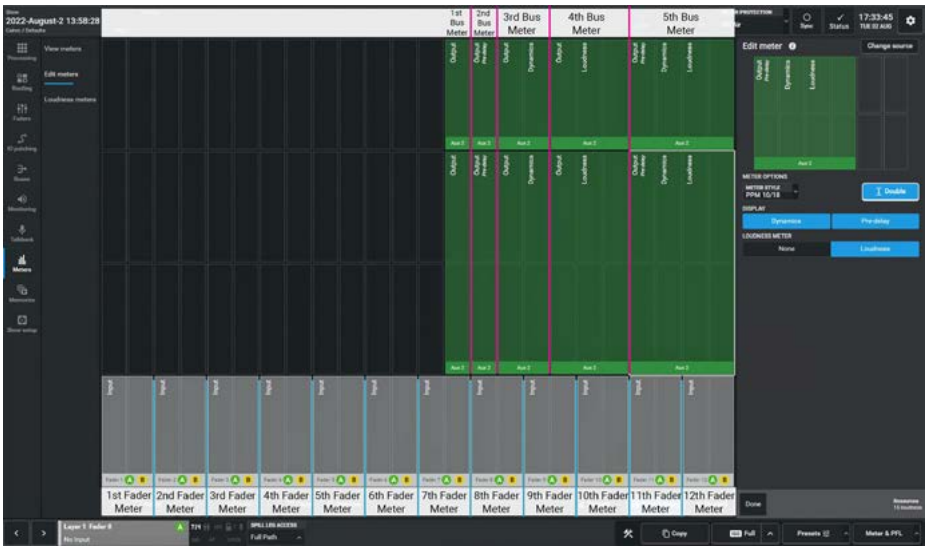
CREATE GROUP METER VARIANTS



VIEW GROUP & AUX METER VARIANTS



CREATE AUX METER VARIANTS



Creating Track Meters

The various Track meter options available on both the “Edit Meter” layout grid are shown above right and the ”View meters” display is shown middle right, the available variants for Odd/Even and Mono Track meters have all been placed on the same grid and shown on the actual display, these are as follows:-

No options: The 1st Track bus meter shows the audio meter using a Mono odd meter.

Pre-Delay: The 2nd Track bus meter shows the Pre-delay audio meter using a Mono odd meter at the Pre-delay point once a delay process has been added, the normal audio output being at the post-delay point.

2 Track display: The 3rd Track bus meter shows a pair of mono track outputs 1 & 2 side by side.

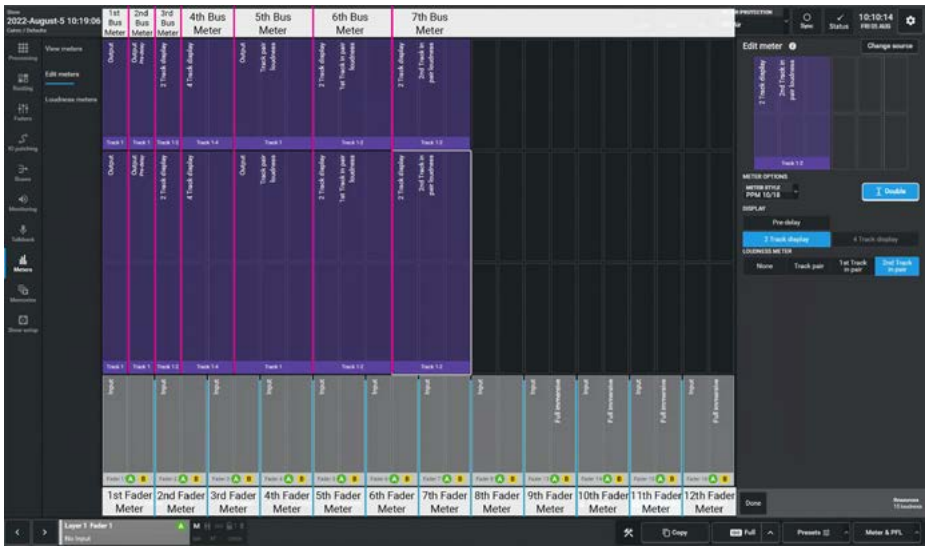
4 Track display: The 4th Track bus meter shows 4 mono track outputs 1, 2, 3 & 4 side by side.

Track Pair Loudness: The 5th Track bus meter shows the mono track outputs 1 & 2 and the loudness meter and its appropriate data for the combined track pair.

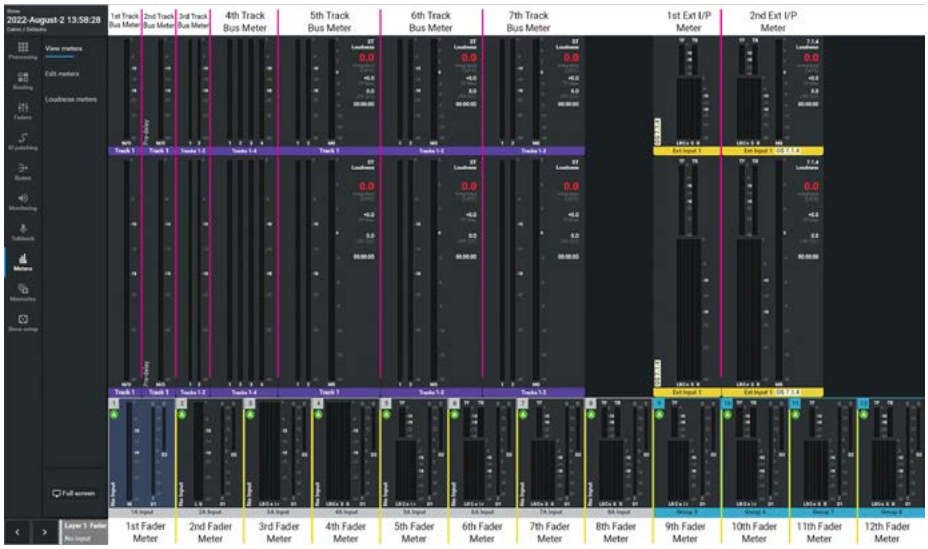
1st Track in Pair Loudness: The 6th Track bus meter shows the mono track outputs 1 & 2 and the loudness meter and its appropriate data for the 1st track in the pair.

2nd Track in Pair Loudness: The 7th Track bus meter shows the mono track outputs 1 & 2 and the loudness meter and its appropriate data for the 2nd track in the pair.

CREATE TRACK METER VARIANTS



VIEW TRACK & EXTERNAL INPUT METER VARIANTS



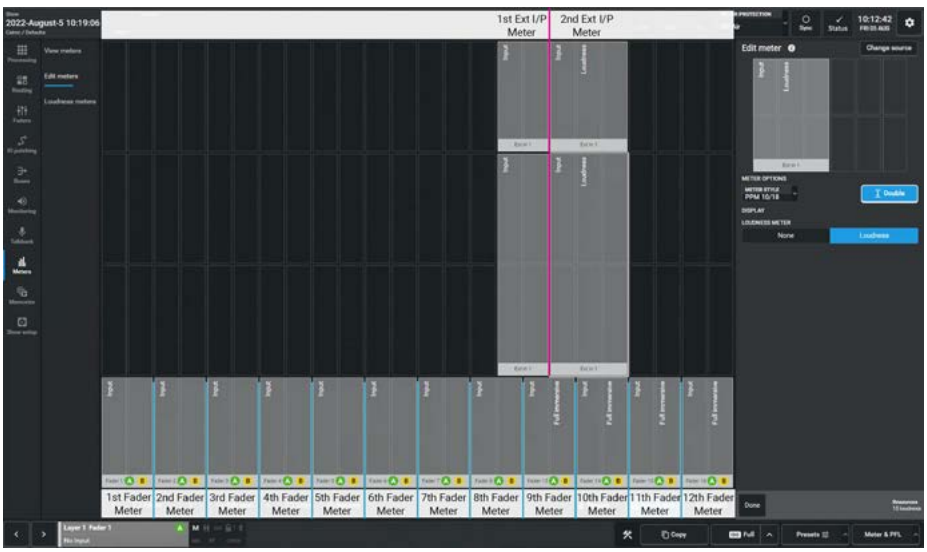
Creating External Input Meters

To show the various External input meter options available on both the “Edit Meter” layout grid as shown below right and the “View meters” display is shown middle right, the available variants for this External Input meter have all been placed on the same grid on the actual display, these are as follows:-

No options: The 1st External input meter shows the mono input meter.

Loudness: The 2nd External input meter shows the audio meter, but now includes the loudness meter and its appropriate data for the mono input.

CREATE EXTERNAL INPUT METER VARIANTS



Creating Other Meters

The various Monitor meter and Mix-Minus bus meter options available on both the "Edit Meter" layout grid are shown above right and the "View meters" display is shown middle right. All the 'Other' meter sources can be shown in both single height and double height sizes. The available variants for:- CR Monitors 1 & 2 meters, PFL 1-3, AFL 1-3, APFL 1-3 , User meters 1-4 and the Mix Minus Bus meters have all been placed on the same grid and shown on the actual display, these are as follows:-

No options: The monitor meters shows the audio meter that has been selected in the Monitoring page at the width of the monitor as defined in the monitor widths and APFL widths setting.

The Monitor 1 meter, Monitor 2 meter and the 4 User meters show the source being monitored up the left side of the each monitor meter.

Loudness: Each of the 'Other' meters shows the audio meter being monitored, but now includes the loudness meter and its appropriate data for the signal being monitored.

Copying Meters

In the meter layout footer is a button labelled **'Copy'** and is provided to make a copy of any meter placed on the grid.

The user first selects the meter to be copied in the grid and a white highlight is applied, the **'Copy'** button then becomes available, tapping on that button opens the copy dialogue in the footer as shown.

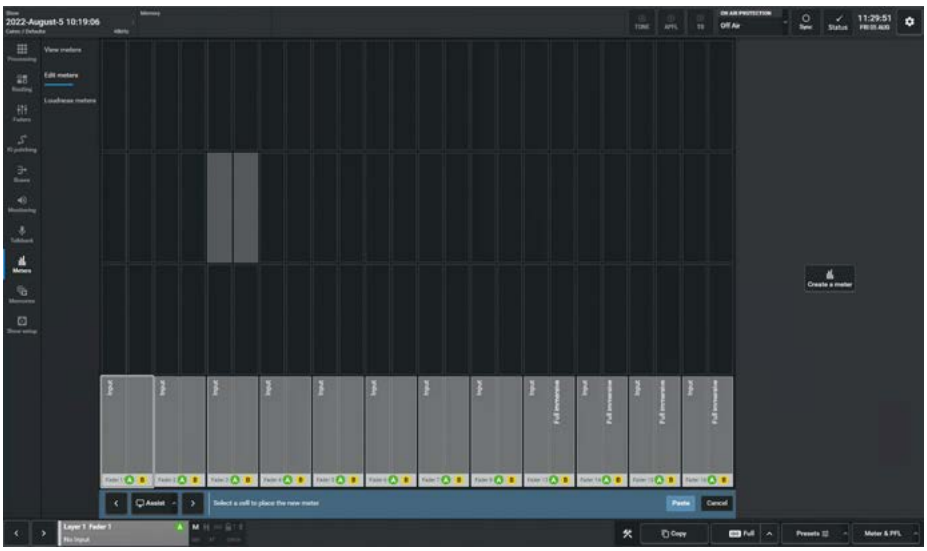
The user then taps on the location that the copy is to be placed. Once the location of the intended copy is set then the '**Paste**' button becomes available. Tapping on the '**Paste**' button, places the copy at the selected location. Tapping on the '**Cancel**' button exits and closes the Copy dialogue in the footer.

Note: in addition to copying a meter for Assist, it can copy/paste meter displays between Assist and each of the available Argo TFT meter panels by tapping on the '**Assist**' button as shown or left & right arrow buttons allowing the user to choose which displays to copy from or paste to.

CREATE OTHER METER VARIANTS

VIEW OTHER METER VARIANTS

COPYING METERS



Moving Meters in the Grid

The user may decide that the meter arrangement needs to change and to facilitate this the user can tap and drag or click and drag the meter to be moved to the desired new location in the grid.

The image above right shows the Console Monitor 1 meter being dragged to a new location, in the background an outline appears over the nearest location. If the location is empty then releasing the drag places the meter in it's new location. If the desired location already has meters placed on that area of the grid then a dialogue box appears as shown advising that the user is about to overwrite an existing meter. Tapping on the '**Overwrite**' button removes the meter(s) that are underneath the required space and places the meter in the same location, clicking on '**Cancel**' exits the move and puts the meter that was moved back to its original location.

Removing Meters from the Grid

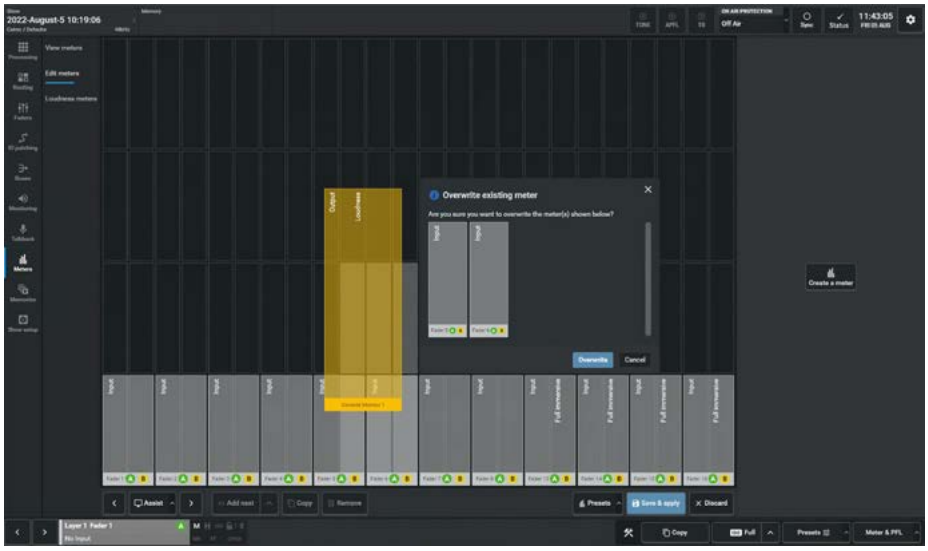
In the Meter Layout footer is the '**Remove**' option. The image middle right shows that Faders 13B thru 24B are going to be removed. The user selects the first meter to be removed in the grid and a white highlight is applied, the **'Remove'** button then becomes available, tapping on that button opens the remove dialogue in the footer as shown. The user can then tap on all the meters that are to be removed or use the **'Select All'** or **'Select None'** buttons in the footer. Each meter to be removed has a white highlight applied. The user taps on the **'OK'** button in the footer dialogue which removes the selected meters from the grid, tapping on the '**Cancel**' button exits the dialogue without removing any meters.

Typical Meter Layout

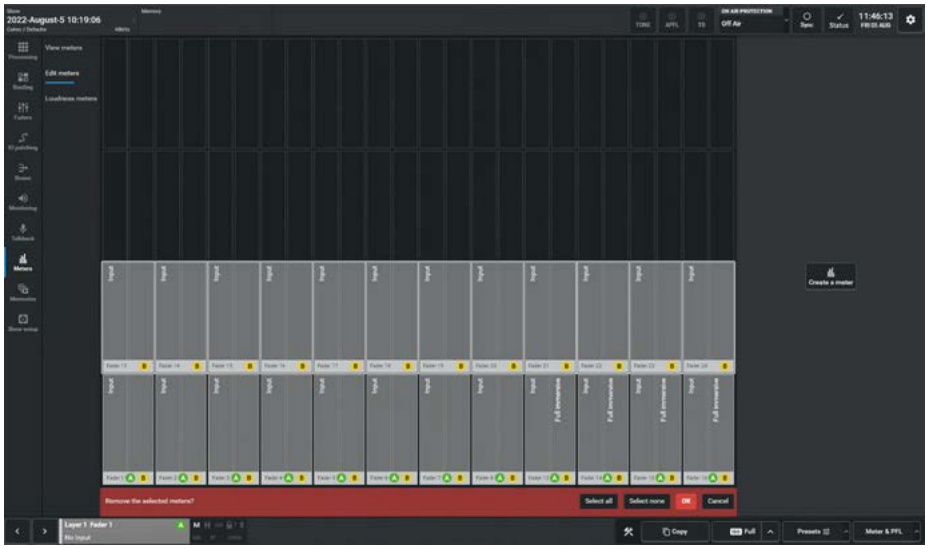
The image below right shows an example of a typical meter layout consisting of:-

- 24 Fader meters
- 8 Group meters
- 4 Main meters
- 5 Aux meters
- 8 Track Meters
- 2 User/External meters
- 1 CR Monitor meter (Double Height)

MOVING METERS



REMOVING METERS



TYPICAL METER LAYOUT

Add Video window to Meter Display
The Argo surface offers the option of two Video inputs via SFP's connected in the back of the surface which can be displayed on any of the Upstand TFT meter panels. These Video inputs are labelled '1' and '2'.

The image above right shows the Edit Meters page is looking at Section 1 of the Argo Surface (faders 1-12) and when looking at an Argo section an additional Meter option is available to Insert a video window onto the Upstand Meter.

When the **'Add Video'** button is pressed the Add Video panel appears on the right side of the screen instead of the Audio Meter Configuration panel.

The image middle right shows an empty meter page as the user is going to use it to show the full screen video window on the TFT screen on section 2 (faders 13-25). If there are meters already on the page then when the '**Add to Grid**' button is pressed the Overwrite dialogue box will appear so that the user can either overwrite them or cancel the operation.

The size and placement of the video is determined by first selecting either a Full window or 1/4 window size.

The TFT display is Full HD so if the Full screen is selected the display will use the full 1920px X 1080px window area to show the video, if a 1/4 screen option is made the user can choose where to place the 960px X 540px window area to show the video. The initial options are top left, top right, bottom left & bottom right.

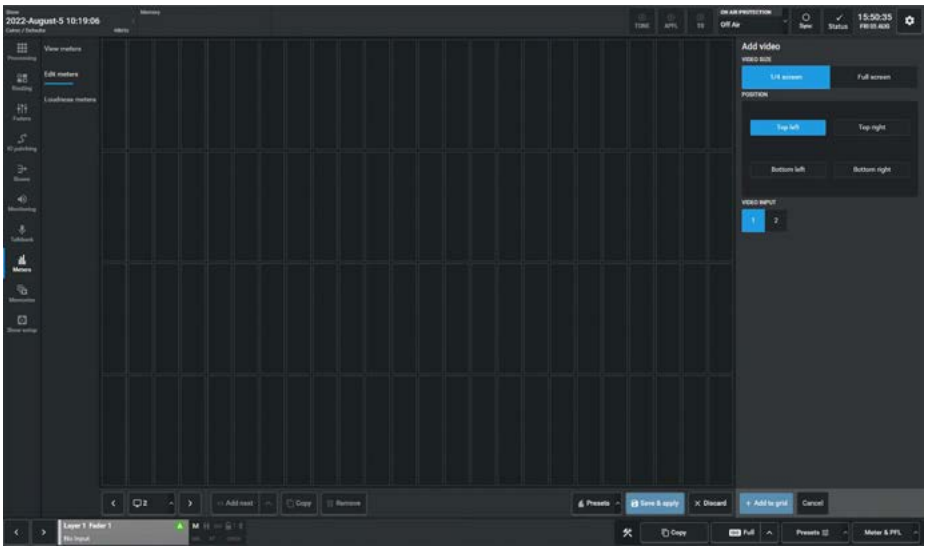
Beneath the video position options is the Video input selection which determines which video input 1 or 2 will be the source.

The image bottom left shows that a 1/4 size Video window has been placed top left on section 3 (faders 25-36) and that it will appear at the top left of the TFT display. The remaining area has been populated with Audio Meters as normal.

Note: the position of the Video window, its size and which section it's placed in is saved as part of the meter preset.

METER LAYOUT ON ARGO TFT SECTION 1- ADD VIDEO OPTION

METER LAYOUT ON ARGO TFT SECTION 2 - ADD VIDEO SETUP PAGE



METER LAYOUT ON ARGO TFT SECTION 3 - 1/4 WINDOW VIDEO & AUDIO METERS

METER LAYOUT PRESETS

Meter Layout Presets Function
There is a requirement to store and recall meter layouts, this is carried out in the Presets dialogue. The user can access these by tapping the **'Meter Presets'** button in the meter layout page. The presets are contained in preset folders and typically a user will have their own preset folder.

The image above right shows the meter layout presets dialogue box, it is arranged into two areas:- the left side allows the user to create, label or delete preset folders each of which can contain any number of meter layout files. The right side shows the presets that are contained in the selected preset folder.

Meter Layout Preset Folders
The following functions are available:-
Create Preset Folder: To create a new preset folder, the user taps on '**New**' on the preset folders side and types in a name for the preset in the **"Create preset folder"** dialogue box as shown middle right. Once the **'Create'** button is tapped it creates a new empty preset folder.

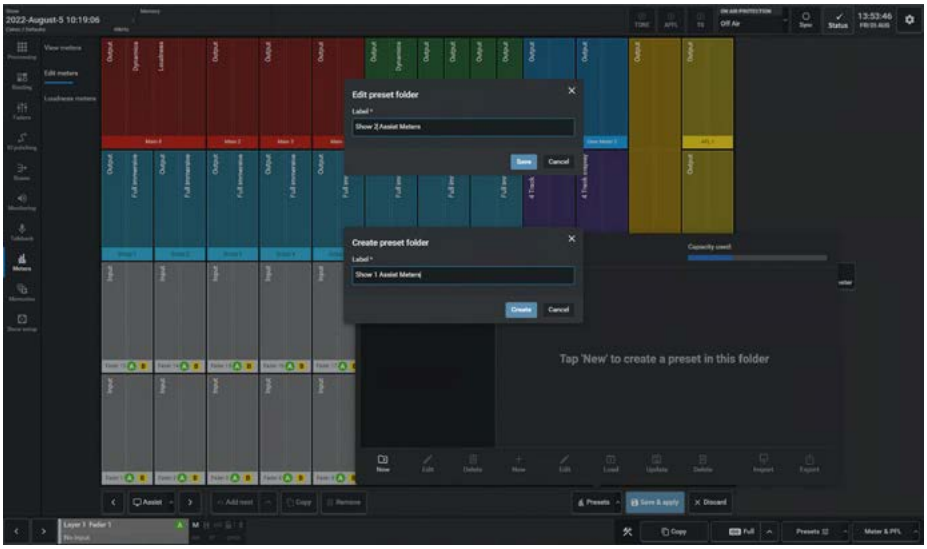
Edit Preset Folder: To edit the name for an existing preset folder, the user selects the folder to be renamed, taps on '**Edit**' on the preset folders side and types in a replacement name for the folder in the **"Edit preset folder"** dialogue box, which appears instead of the create preset folder and is shown for convenience inset middle right. Once the **'Save'** button is tapped it applies the edited name to the folder and saves it.

Delete Preset Folders: To delete an existing preset folder, the user selects the folder to be deleted and taps on '**Delete**' on the preset folders side.
The **"Delete selected folders"** dialogue box appears as shown below right. This shows the presets contained in the folder and asks for confirmation to permanently delete the folders and the presets they contain. A graphic is inset showing the names of the folders and files affected. Once the **'Confirm'** button is tapped it deletes the selected folders and presets.

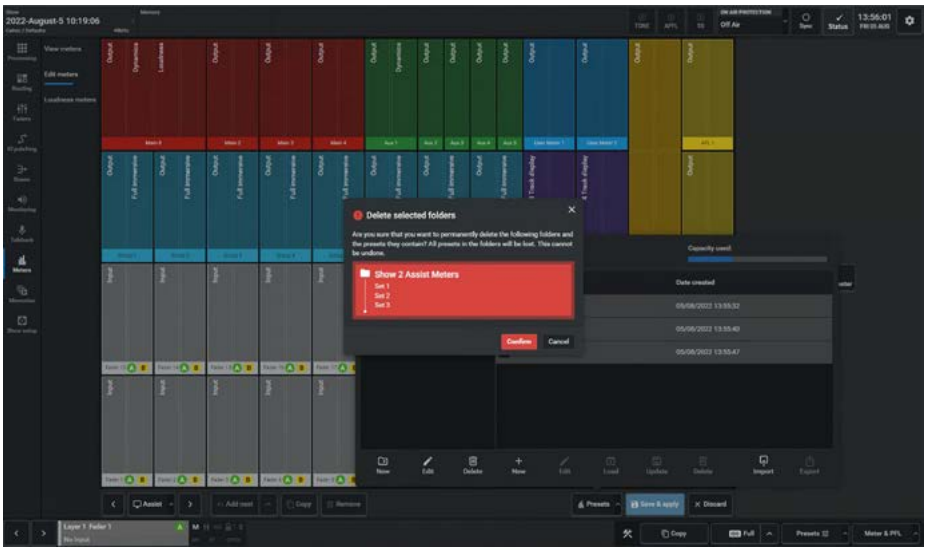
Note: this cannot be undone.

METER PRESET FOLDER/PRESETS FUNCTION

CREATE PRESET FOLDER & EDIT PRESET FOLDER



DELETE PRESET FOLDERS



Meter Layout Presets
The following functions are available:-
Create Preset: To create a new preset, the user selects the preset folder that the preset is to be put in, then taps on '**New**' on the presets side and types in a name for the preset in the "Create preset" dialogue box as shown above right.

Once the **'Create'** button is tapped it creates a new preset in the preset folder.

Note: the Meter Preset file contains the meter layout not only of the Assist meter page but also each of the Argo TFT meter upstand displays as well.

Edit Preset: To edit the name for an existing preset, the user selects the preset to be renamed, taps on '**Edit**' on the presets side and types in a replacement name for the preset in the "Edit preset" dialogue box, which appears instead of the create preset dialogue box and is shown for convenience inset above right.

Once the **'Save'** button is tapped it applies the edited name to the preset and saves it.

Load Preset: The image middle right shows the process of loading a meter preset. When the **'Load'** button is tapped a "Load" dialogue box pops up to ask the user if they are sure that they want to load this preset. Once the **'Load'** button is tapped it loads the preset into the grid.

Update Preset: The image below right shows the process of updating a meter preset. When the **'Update'** button is tapped an "Update" dialogue box pops up to ask the user if they are sure that they want to update this preset.

Once the **'Update'** button is tapped it overwrites the stored preset with the current meter layout in the grid.

Note: make sure that the correct existing preset has been selected before applying 'Update' as it will be overwritten.

CREATE PRESET & EDIT PRESET LABEL

LOAD PRESET

UPDATE PRESET

Delete Presets: To delete existing presets, the user selects the presets to be deleted and taps on '**Delete**' on the presets side. The "Delete selected presets" dialogue box appears as shown above right. This shows the selected presets and asks for confirmation to permanently delete them. A graphic is inset in the dialogue box showing the names of the presets affected. Once the **'Confirm'** button is tapped it deletes the selected presets.

Note: this cannot be undone.

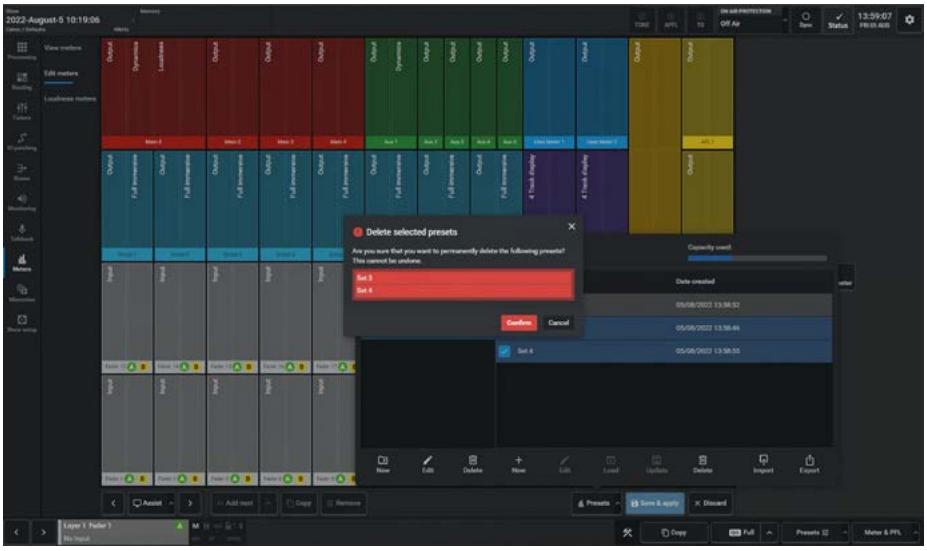
Importing & Exporting Meter Presets
The ability to save & recall presets is provided using the Import & Export buttons in the Meter presets footer:-

Import presets: The user taps on the **'Import'** button on the presets side and a dialogue box appears as shown middle right. This allows the user to drag a **'.CalrecMeterPreset'** file into it or browse for the file on the computer. Here the user has tapped the **'Choose file'** button which opened an explorer window, which is used to find and open **'.CalrecMeterPreset'** files. The explorer window shown has found the required meter preset file and tapping on the **'Open'** button will import the meter preset file into the currently selected preset folder. This can be loaded into the meter layout grid and the **'Save & apply'** button pressed ready to display the meters via the "View meters" sub-menu.

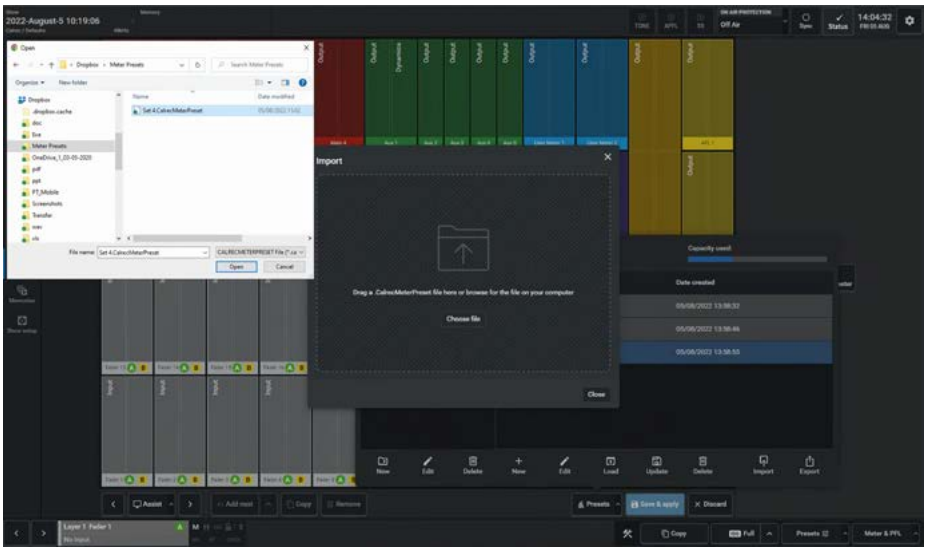
Export Presets: The user selects the Presets to be exported, taps on the **'Export'** button on the presets side and a dialogue box appears as shown below right. This advises that the files are being prepared, to wait for the file to download and opens an explorer window, which is used to save **'.CalrecMeterPreset'** files prefixed with the name of the preset. The explorer window shows the required meter preset file name and tapping on the **'Save'** button will export the meter preset file.

In addition to the preset functions there is a search box which allows the user to search for the name of a particular meter preset file and a Capacity Used indicator bar shown at the top of the meter presets dialogue box.

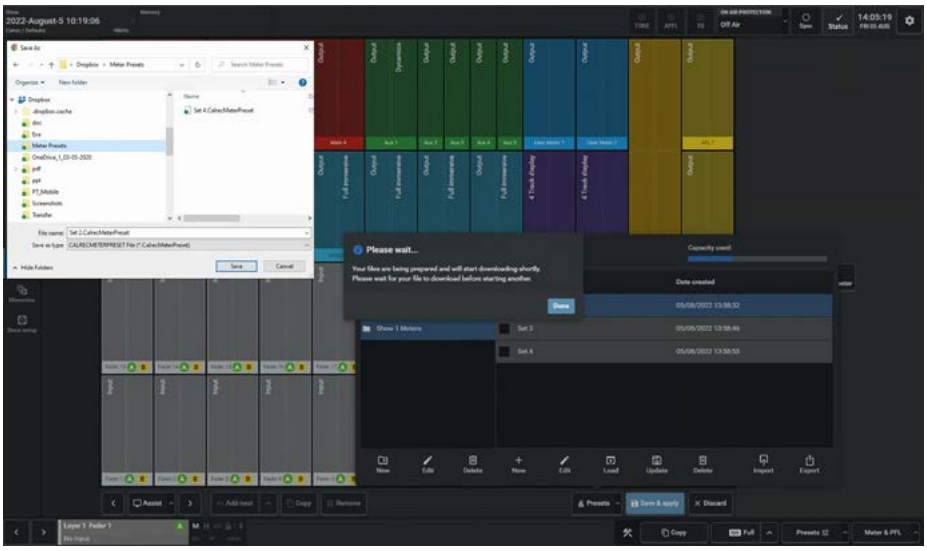
DELETE PRESETS



IMPORT PRESETS



EXPORT PRESETS



LOUDNESS METERS

Loudness meters provide a way to monitor and regulate average loudness levels over the duration of a programme.

16 loudness meters are available to assign to any output. Loudness meters can be included in the 'View Meters' display using the method described in the Setup Meter layout section.

Loudness Metering Modes

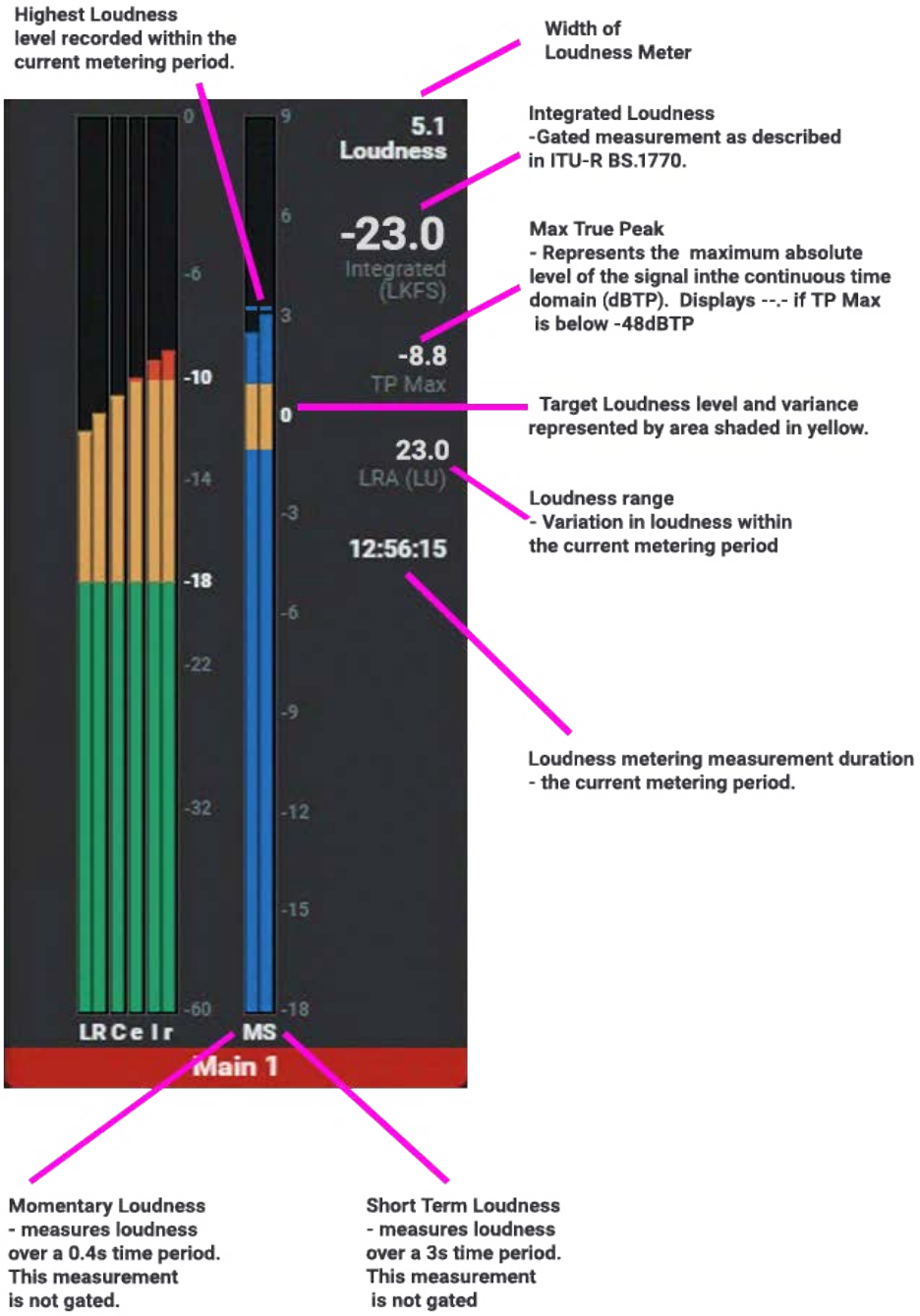
There are a number of loudness metering modes available on the console, this is shown in the drop down mode box the details of which are displayed in a table on the following pages. The loudness meter mode is set globally.

An appropriate loudness metering scale can also be set from this screen, as shown in the following pages. These alter the scale of all loudness meter bar graphs - the example shown on the right is displaying EBU mode with +9...-18 LU scale.

Loudness meter modes relate to standards set by organizations in different geographical regions. EBU (European Broadcasting Union) relates to Europe, ATSC (Advanced Television Systems Committee) to North America and ARIB (Association of Radio Industries and Businesses) to Japan. These are currently the main standards and are being widely adopted in other geographical regions.

See **"Loudness Metering Modes" on page 121** for a table of Loudness Metering Modes.

LOUDNESS METER - ANATOMY OF COMPONENTS



- The current metering period refers to the period since the meter(s) were last reset.
- A gated measurement is calculated ignoring signals below the gate threshold.

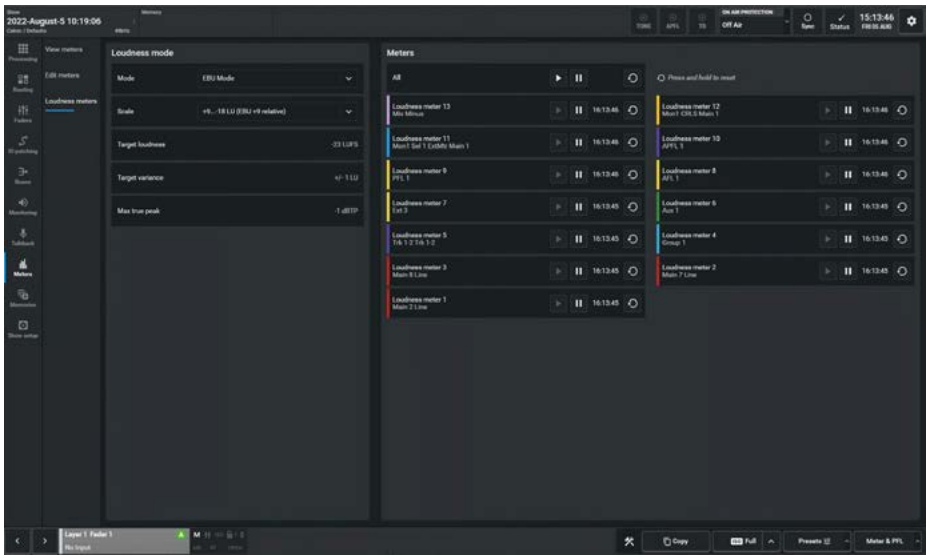
LOUDNESS METER OPTIONS

Loudness Meter page
Argo offers 16 loudness meters which can be assigned to any of the Outputs or the External Inputs from the 'Edit meters' layout page.

This is accessed from the menu via the **Meters>Loudness meters** page as shown above right.

It is split into two halves the left side deals with the various loudness modes and scales available and the right side controls the Start, Pause & Reset of up to 16 loudness meters.

LOUDNESS METER PAGE



Controlling Loudness Meters
Once loudness meters have been set up in the "Edit meter" layout, the controls for each loudness meter shown middle right can be accessed from this page.

As well as individual control cells for each loudness meter, there is a global control cell called 'All' which starts, pauses and resets all loudness meters together.

LOUDNESS METER CONTROLS

Start Loudness Meter

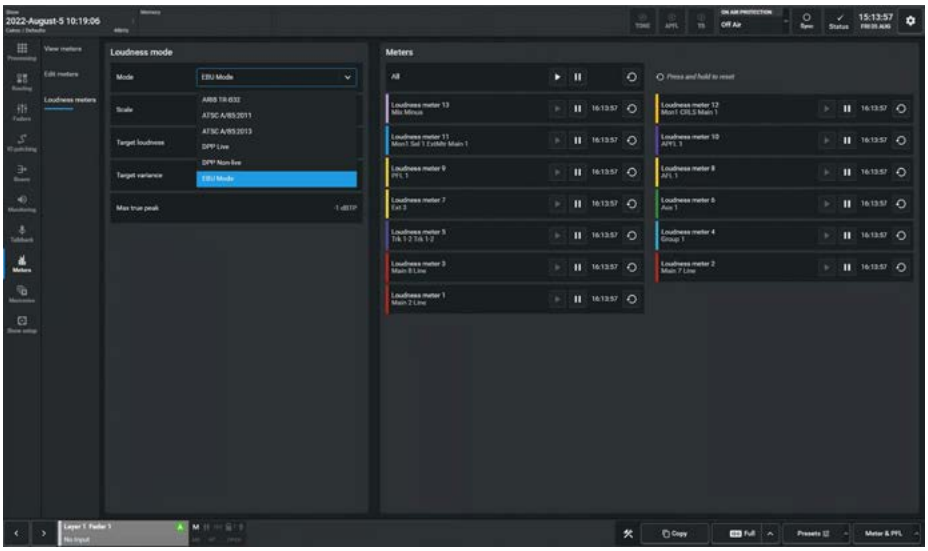
Pause Loudness Meter

Reset Loudness Meter

Loudness Modes
The various loudness modes are selected from the Loudness Mode dropdown box shown below right.

The details of the current loudness limit settings for each of these modes are shown in the Loudness Metering Modes table on the next page.

LOUDNESS MODES



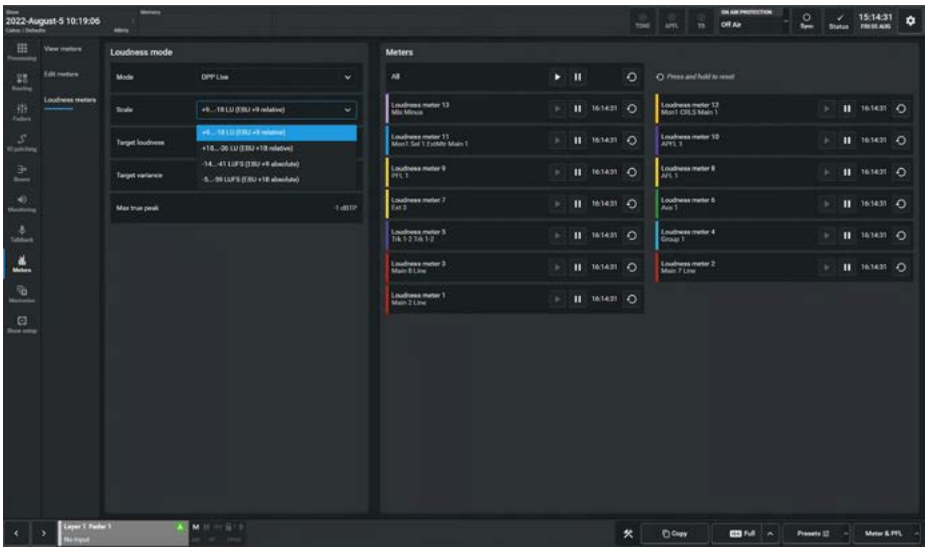
LOUDNESS METERING MODES

	Scale	Target Loudness	Target Variance	Max True Peak	Relative Gate
EBU Mode	+9...-18 LU (EBU +9 relative) +18...-36 LU (EBU +18 relative) -14...-41 LUFS (EBU +9 absolute) -5...-59 LUFS (EBU +18 absolute)	0LU (-23 LUFS)	+/- 1 LU	-1 dBTP	-10.0 LU
ATSC A/85: 2011 (BS1770-1)	+9...-18 LU (+9 relative) +18...-36 LU (+18 relative) -15...-42 LKFS (+9 absolute) -6...-60 LKFS (+18 absolute)	0LU (-24 LKFS)	+/-2 LU	-2 dBTP	N/A
ATSC A/85: 2013 (BS1770-3)	+9...-18 LU (+9 relative) +18...-36 LU (+18 relative) -15...-42 LKFS (+9 absolute) -6...-60 LKFS (+18 absolute)	0LU (-24 LKFS)	+/- 2 LU	-2 dBTP	-10.0 LU
ARIB TR-B32	+9...-18 LU (+9 relative) +18...-36 LU (+18 relative) -15...-42 LKFS (+9 absolute) -6...-60 LKFS (+18 absolute)	0LU (-24 LKFS)	+/- 1 LU	-2 dBTP	-10.0 LU
DPP Live	+9...-18 LU (EBU +9 relative) +18...-36 LU (EBU +18 relative) -14...-41 LUFS (EBU +9 absolute) -5...-59 LUFS (EBU +18 absolute)	0LU (-23 LUFS)	+/- 1 LU	-1 dBTP	N/A
DPP Non-Live	+9...-18 LU (EBU +9 relative) +18...-36 LU (EBU +18 relative) -14...-41 LUFS (EBU +9 absolute) -5.-59 LUFS (EBU +18 absolute)	0LU (-23 LUFS)	+/- 0.5 LU	-1 dBTP	N/A

Loudness Scales

Within each loudness mode is a set of four loudness scales, two of these are absolute scales and the other two are relative scales, which allows the user to view different ranges as shown below right.

LOUDNESS SCALES



ARGO ASSIST
MEMORIES

CALREC

MEMORIES

User memories are files which store processing, routing and patching information which can be recalled at any time.

To access memories, the user selects **Memories>Memories** from the menu as shown above right.

Storage Capacity

There is a capacity indicator highlighted at the top right of the memories screen which shows the available storage space. If more space is required, the user should delete any old shows and memories which are no longer needed. The capacity indicator shows the amount of space available on the controller card for storing shows & memories, however, the controller card is also used for other files & folders, so the capacity may vary.

Creating a New User Memory

To create a new user memory with current surface settings:

1. Tap on **'New'** in the memories footer.
2. Enter a label and optionally a short description for the new user memory.
3. Tap on **'Save'** or **'Cancel'**. as shown middle right.

Editing a User Memory Label

To edit a user memory label:

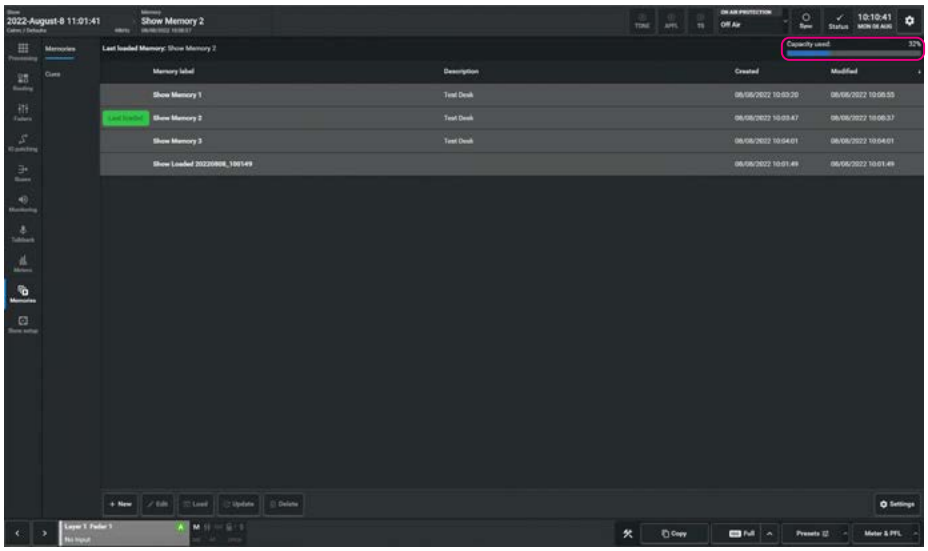
1. Select the memory to be renamed
2. Tap on **'Edit'** in the memory footer.
3. Edit the label and optionally the short description for the user memory.
4. Tap on **'Save'** or **'Cancel'**. also shown inset in the image middle right.

Loading an Existing User Memory

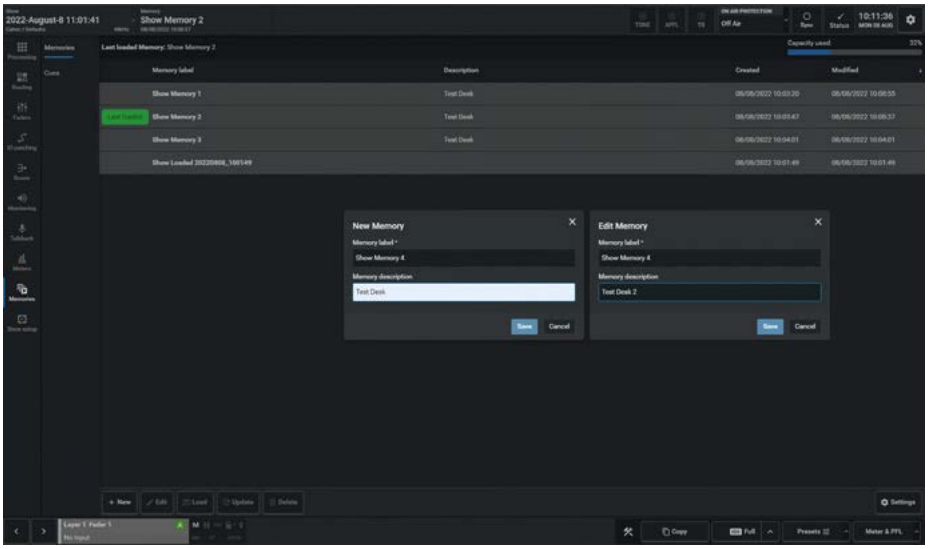
To load a user memory:

1. Tap to select the user memory required and tap on **'Load'**.
2. The loading memory symbol may or may not appear (depending on memory size) in the background and the name of the memory loaded with the last loaded label is shown as highlighted in image below right.
3. There is a settings icon at the bottom right of the page, which allows the user to set a confirmation before loading a memory as a safety feature if required. Otherwise the memory loads without asking the user for confirmation, as shown below right.

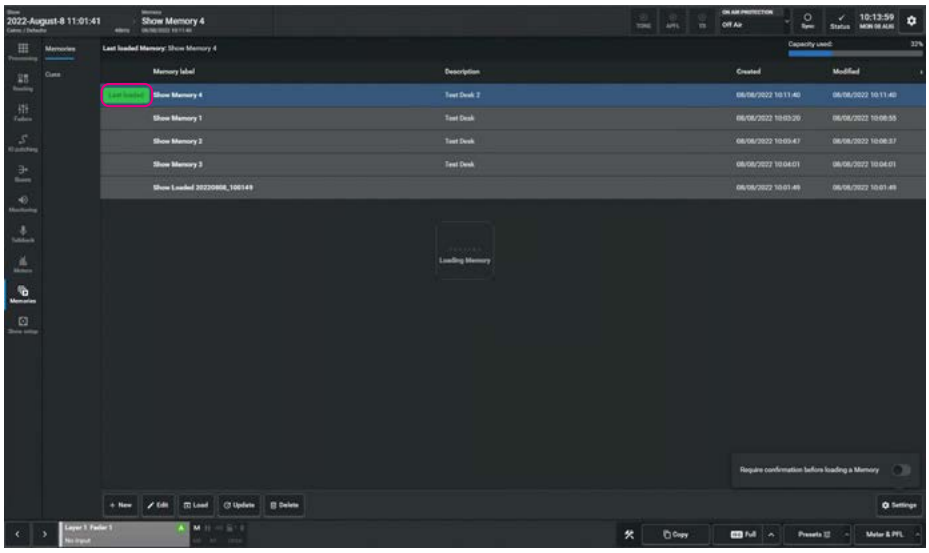
MEMORIES PAGE



NEW USER MEMORY & EDIT USER MEMORY LABEL



LOAD USER MEMORY (WITHOUT CONFIRMATION)



Loading with Confirmation On

To load a user memory with confirmation:

1. Tap to select the user memory required and tap on **'Load'**.
2. A dialogue box appears to show the confirmation request which asks the user to confirm by tapping on **'Load'** or **'Cancel'** as shown above right.

Updating a User Memory

To update a user memory with the current surface settings:

1. Select the user memory that is to be updated and tap on **'Update'** in the memories screen footer.
2. A prompt will appear for the user to confirm by tapping on either **'Update'** or **'Cancel'** as shown middle right.

Deleting a User Memory

To delete a user memory that is not the current loaded memory:

1. Tap to select the user memory to be removed and tap on **'Delete'** in the footer.
2. This opens the delete dialogue in the footer which provides information about deleting multiple shows by tapping on all the shows to be deleted.
3. Once the memories to be deleted have been selected the user taps on the **'Delete'** button and this deletes those memories as shown below right or the user can **'Cancel'**.

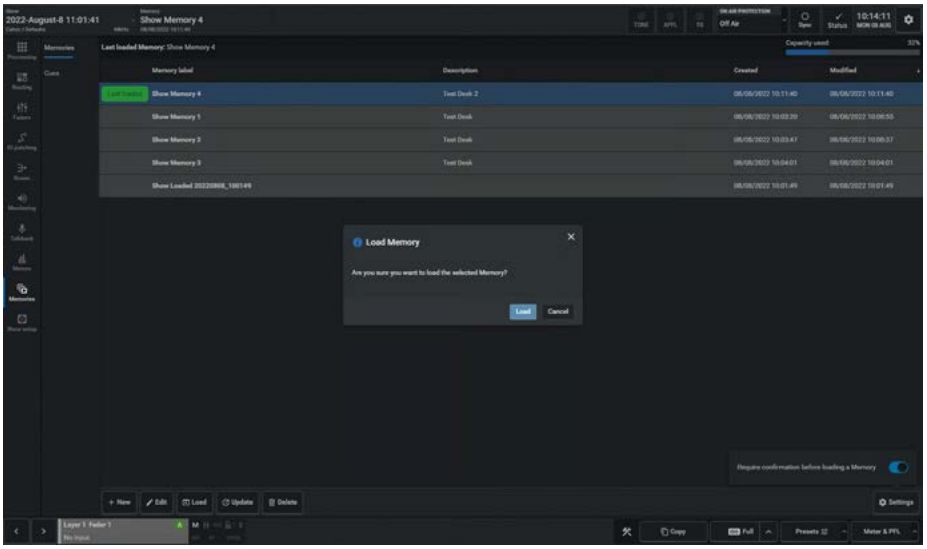
Note: the currently loaded memory cannot be deleted.

Creating Multiple User Memories

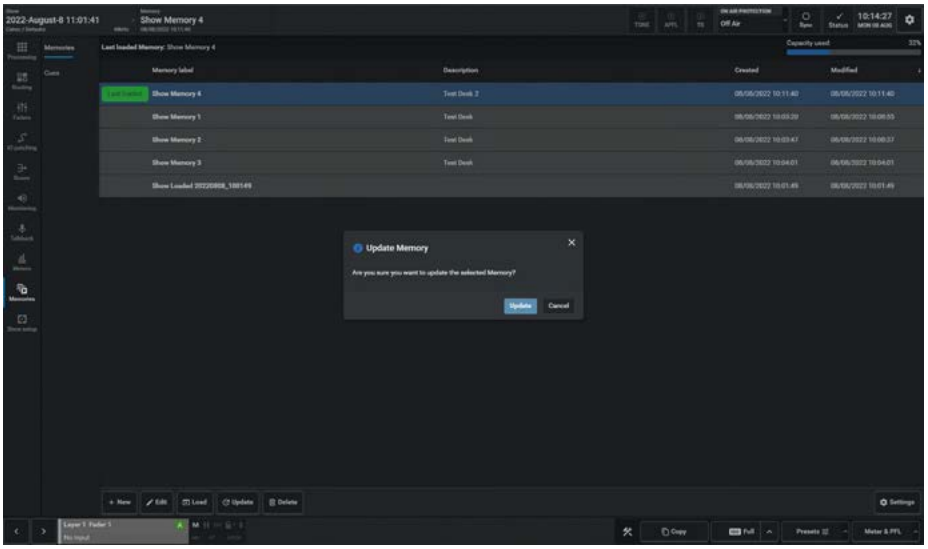
Best practice is to create one "default" user memory, test it, make any necessary changes, and then use this as the basis for all other user memories in the show. This speeds up the process by reducing the need to make the same changes to many different user memories.

To do this, create, test and update what is to be the 'default' user memory as described above. With this user memory still loaded on the surface, tap on **'New'** and the information will be saved into a new user memory, effectively duplicating it.

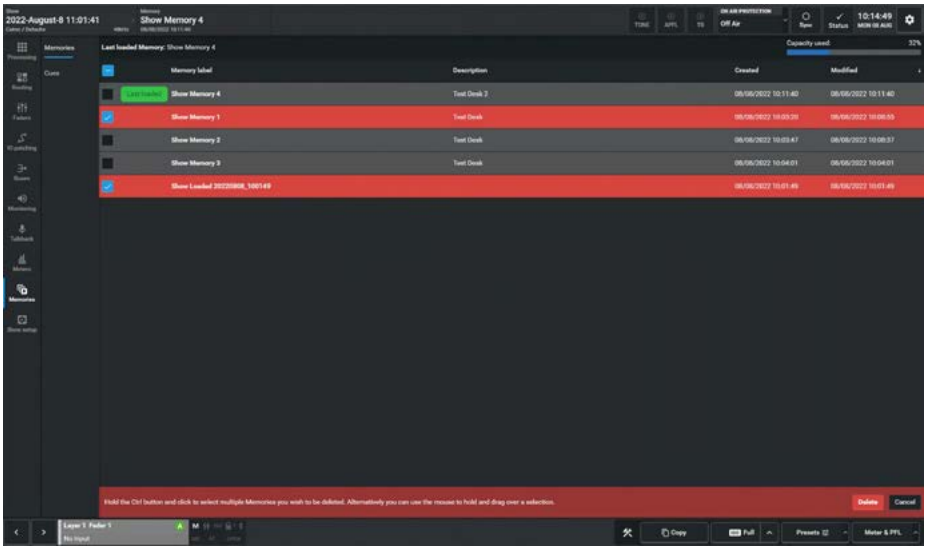
LOAD USER MEMORY WITH CONFIRMATION



UPDATE USER MEMORY



DELETE USER MEMORY



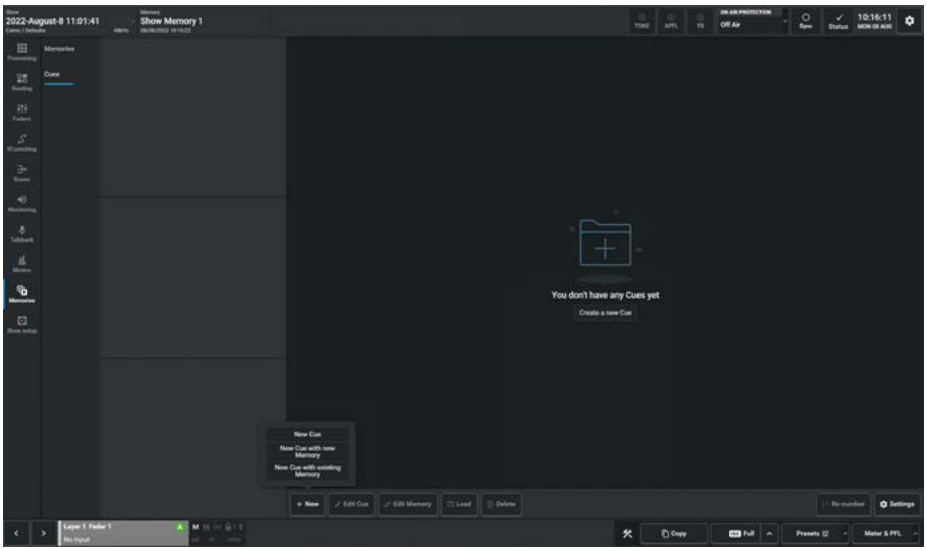
CUES

The Cues List allows user memories to be stacked in order to be able to recall them in sequence.
To access cues, the user selects the **Memories>Cues** entry from the menu.

Creating a New Cue
Each user cue has an associated memory which is added to the sequence list.

To add a cue to the list, tap the **'New'** button in the memories footer as shown above right. This presents the user with three options:- Selecting **'New Cue'** puts a place-holder into the list which can be later edited to add a user memory.

ADD NEW CUE OPTIONS

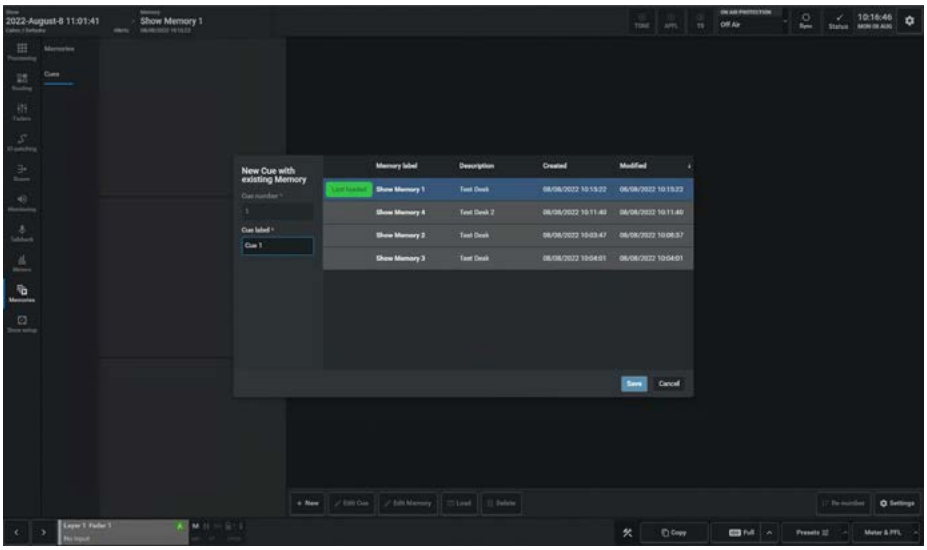


Creating a New Cue with memories
Selecting **'New Cue with new Memory'** will save the current console settings as a user memory and add it to the cue list. This memory also becomes available to load from the memory list like any other memory.

Tap on **'Save'** to create a New Cue or **'Cancel'** to exit the dialogue as required as shown middle right.

As an alternative selection **'New Cue with existing Memory'** allows the user to choose a pre-saved user memory from the current show to add to the cue list.

NEW CUE WITH EXISTING MEMORY

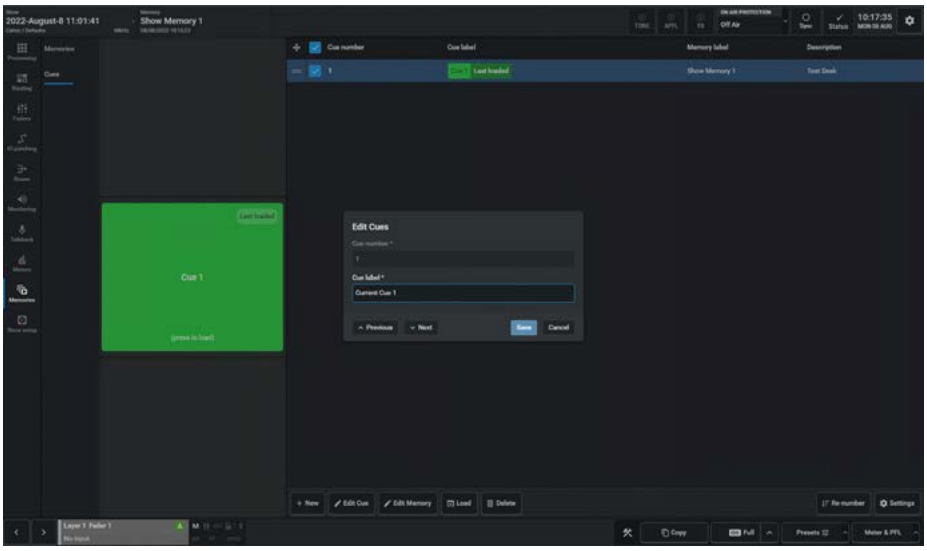


Editing a Cue Label
The Edit Cue icon in the memories footer allows the user to relabel the cues. The user enters the replacement Cue Label "Current Cue 1" in the Cue Label field as shown below right.

The **'Previous'** and **'Next'** buttons allow the user to select each of the cues in turn and relabel them as required without exiting the Edit Cues dialogue.

The user taps on **'Save'** when finished or '**Cancel**' to exit the dialogue as required.

EDIT CUE LABEL



Editing a Memory
The Edit Memory button in the memories footer as shown above right provides the user with a number of options relating to both Memories and their related Cues:-

Create new Memory & attach to Cue:
Tapping this will bring up the **'New'** dialogue, which behaves as described in the **Memories>Memories** section.
When the new memory is created, it is also attached to the selected cue, replacing any existing memory attachment.
The previously attached memory is not deleted and remains in the console, so this does not need confirmation.

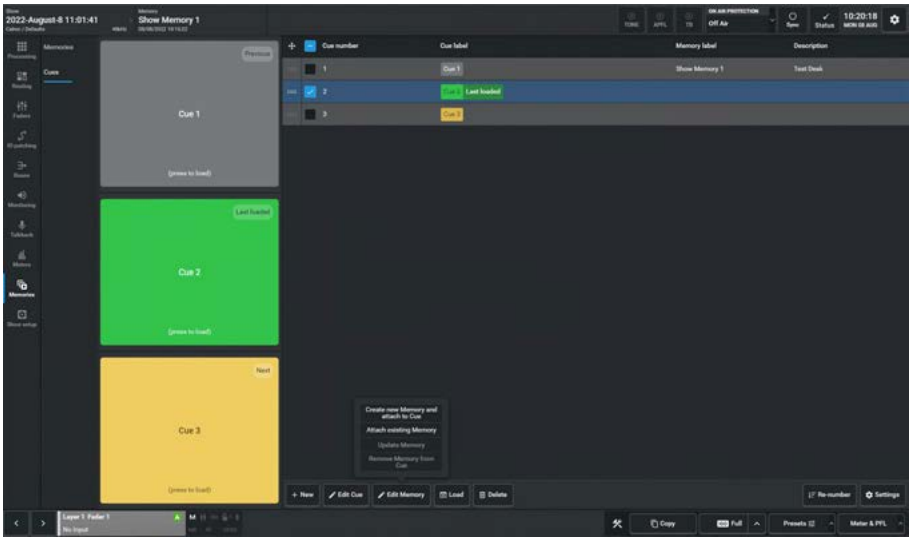
Attach existing Memory: Tapping this brings up a dialogue list of all existing memories in the show and behaves as in the "New Cue with Existing Memory" dialogue. The selected existing memory replaces any previous memory.

Update Memory: Tapping this will initiate the same "Update" dialogue which behaves as described in the **Memories>Memories** section. The memory to be updated is the one attached to the cue and will affect any other cues that use the same memory.
If this isn't what the user wants, they can use **'Create New Memory and attach to cue'** instead.

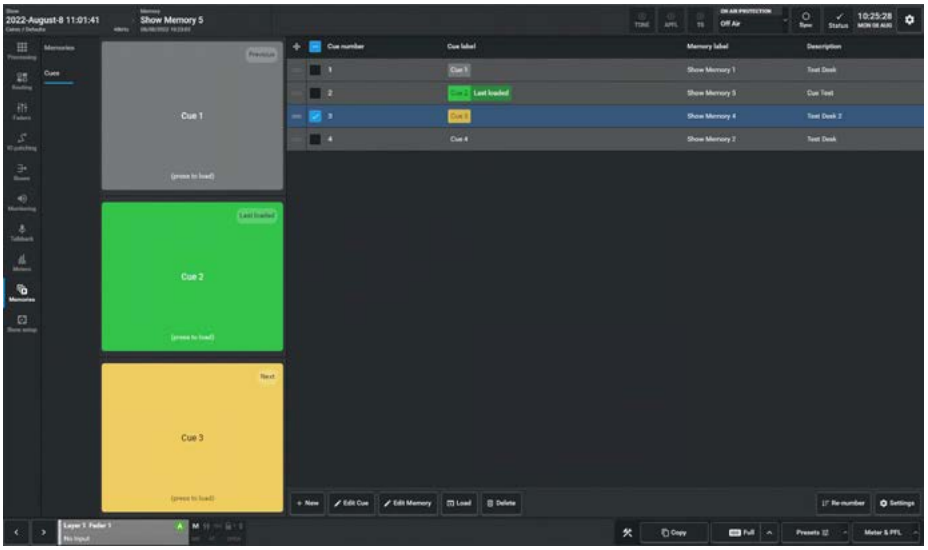
Remove Memory from Cue:
Tapping this will remove any existing memory attached to the selected cue or cues, it is disabled if there is not a memory attached. This can be applied to multiple cues and the memories themselves won't be deleted, so no need for confirmation.

Loading Cues
Tapping on the Load Icon in the footer will load the next cue number in the list.
Items in the cue list are colour-coded as green for current, yellow for next and gray for previous. The user can also tap on the Grey, Green and Yellow blocks to load those cues and associated memories directly.
The image middle right shows that Cue 2 is the last loaded and Cue 3 is the next one to load. After the Load button is tapped Cue 2 becomes the previous cue, Cue 3 becomes the last loaded cue and the next cue, Cue 4 appears as the next one in the list as shown below right.

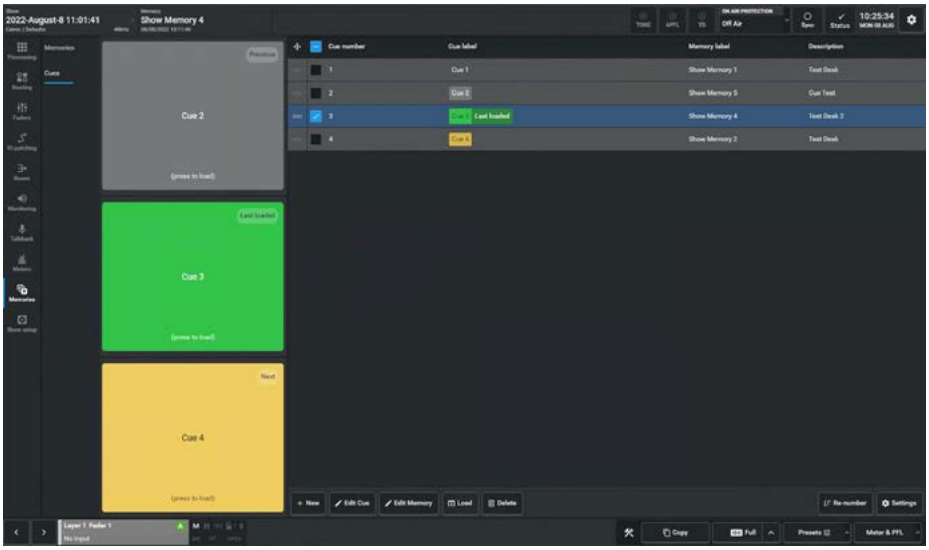
EDIT MEMORY



CUES BEFORE LOAD



CUES AFTER LOAD



Deleting Cues

To delete selected cues, pick the cues from the cue list and then tap on the **'Delete'** Icon in the footer, the **"Delete selected Cues"** dialogue appears as shown above right which displays the cues to be deleted. Tap on **'Delete'** or **'Cancel'** as required. The memories attached to the deleted cues will not be deleted and the numbering of all the remaining cues remain the same.

Reordering and Renumbering Cues

On the left side of the cue list is a manual sort column, with '**:::::**' drag handles. The user can select items in this column and drag them up or down the list, to create a cue list order for use during a show. The numbers of the selected cues that were moved remain as they were prior to the move. The Cue order was 1, 2, 3, 4, but is now 3, 2, 4, 1 as shown middle right. If Cue 2 and then Cue 1 were dragged to the top their cue numbers would be back in sequence as shown above right.

Loading the **'Next'** cue or **'Previous'** cue via the large cue buttons will always follow the order in which the list appears, even if cue numbers are out of sequence.
Once the list is sorted the user can renumber all the cues to make the order simpler and more obvious by tapping on the **'Re-number'** Icon in the footer.
This opens the Renumber Sequence dialogue as shown middle right, actioning this would cause the first cue to become cue number 1 and all subsequent cues will be given incremental integers. Tap on **'Re-number'** or **'Cancel'** as required.

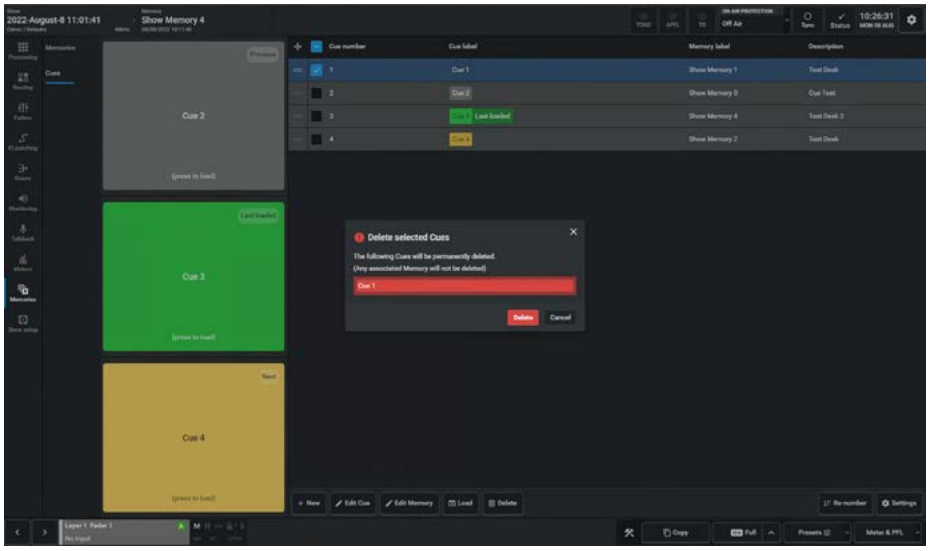
Cue List Settings

On the right side of the Cue footer is a Settings icon which when tapped reveals two optional features:-

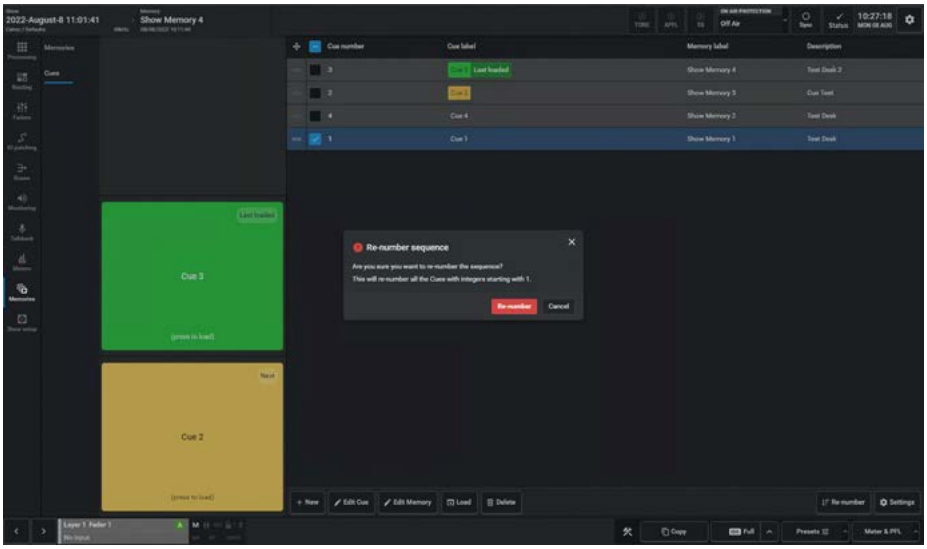
External Sequence control:
An external controller can, by using GPI's or a Control Protocol such as Ember+, load the previous cue or next cue. The external sequence control slider switch can enable or disable this remote control functionality.

Keep Last Loaded Cue in View:
This slider control keeps the last loaded cue visible in the list by automatically scrolling the cue list.

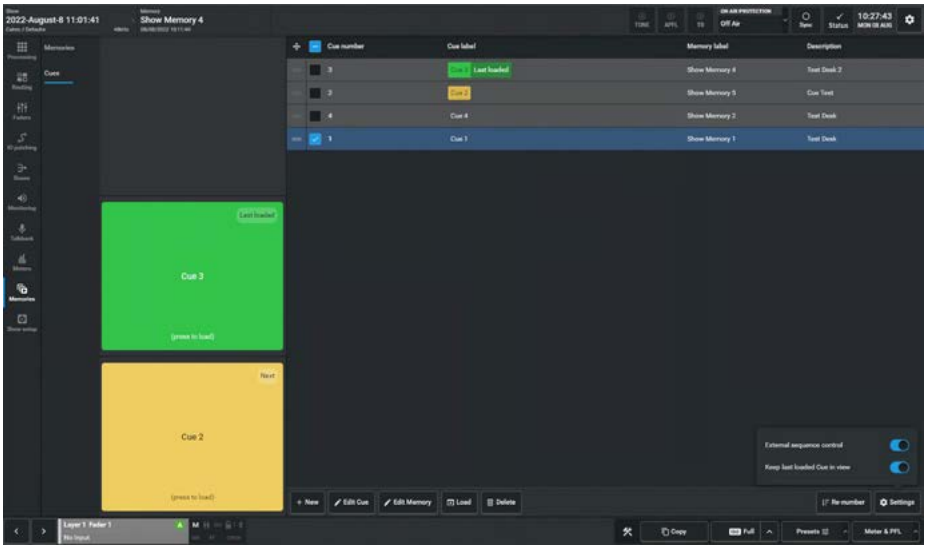
DELETE CUES



RENUMBER CUES



CUE LIST SETTINGS



ARGO ASSIST
SHOW SETUP

CALREC

CUSTOMISE PANELS

Custom Controls - Fader Panels
The Argo console has the ability to display custom configured functions on each of the control panels. The 4 x 4 button control cells placed top right on the IU6576 Standard Fader panel can be used for this purpose.

The first of these 4 cells allows the user to select different pages (Pages 1 & 2) for the other 3 cells which are highlighted as shown on the fader panel images above right. The 3 cells can have their buttons configured to perform a customised set of button functions.

This is carried out by first selecting the panel to have its control cells configured from the Surface panel layout shown when entering the **Show setup> Customise panels** page. The user then selects the cell to add a control to on that panel by tapping on it, which highlights the cell as shown middle right. Selecting this option opens the user controls editor and on the right side of the editor is shown the 4 button layout with the currently undefined user controls shown in the display in the centre.

Tapping on any of the 4 buttons in the display or any of the 4 Add buttons under button functions, opens the Customise button menu as shown below right.

The following pages detail the extensive set of control options that each of the 4 buttons for the selected path can be customised to perform.

In order to simplify some of these selections, 3 filter sets are provided:-

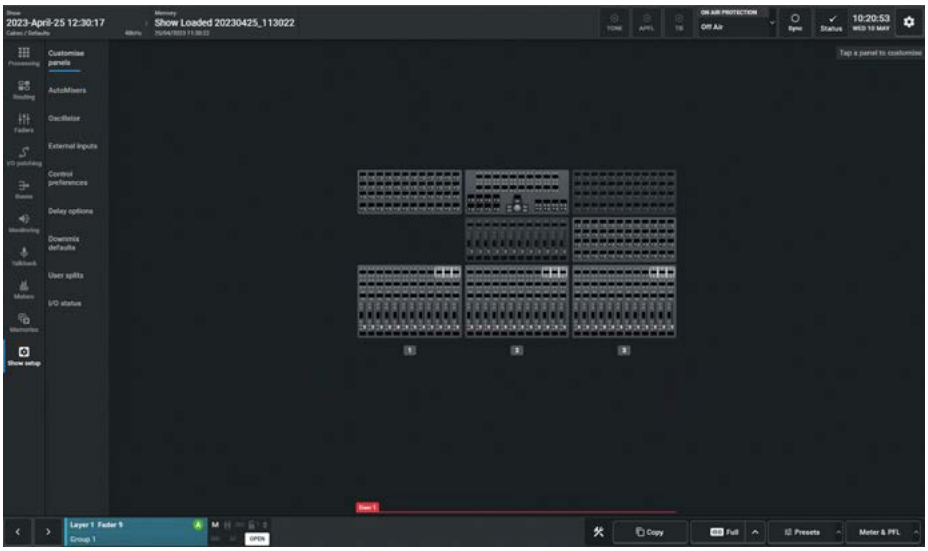
- Global Functions: these controls are console wide.
- Path Functions: these controls apply to the selected path.
- Bus Functions: these controls apply to buses only.

The sliders filter for that type of function in the control option lists.

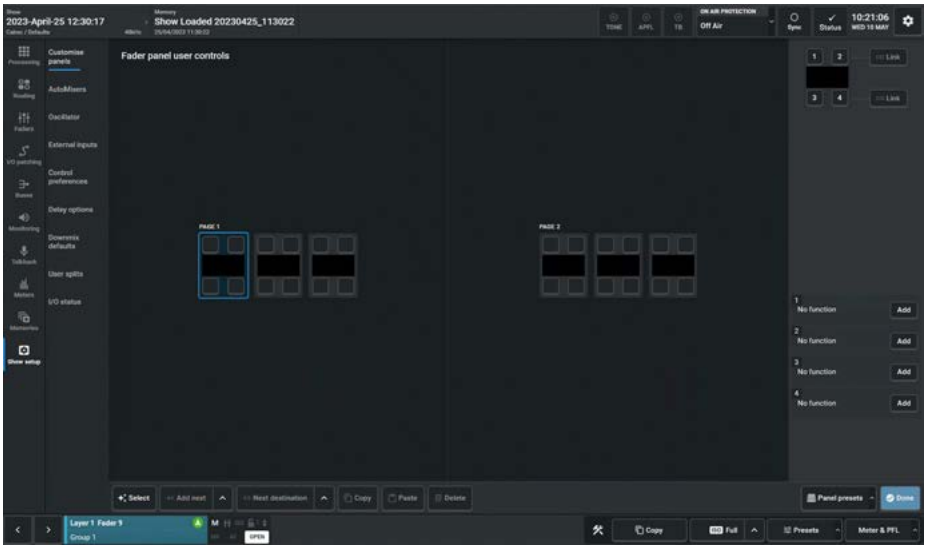
The user taps on **OK** once the selection is made or **Cancel** to exit unchanged.

All the control options and operation are the same as those shown in the User controls editor in the **Faders>Fader Layout - Controls** page and as such will not be repeated here. See **"User Controls Editor" on page 69.**

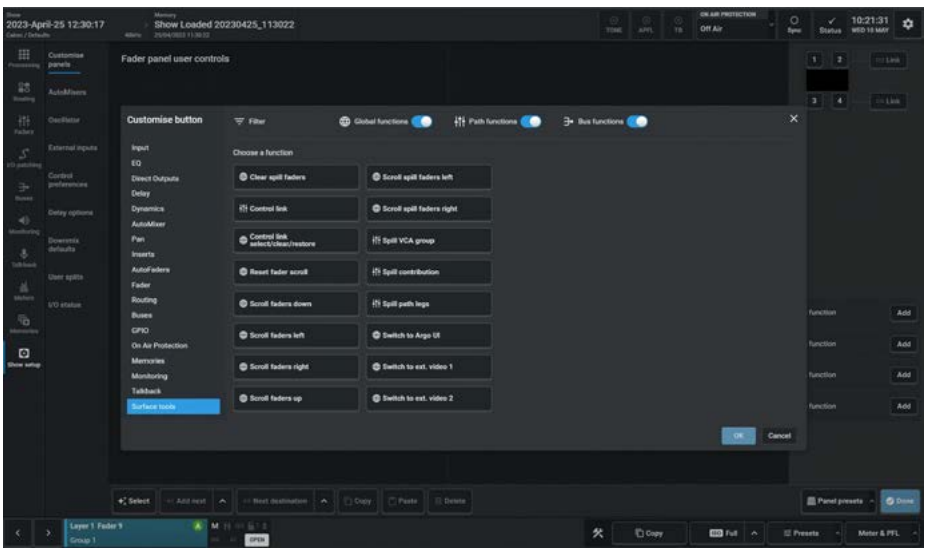
SURFACE PANEL LAYOUT



FADER PANEL CUSTOM CONTROLS



ASSIGNING FUNCTIONS TO FADER PANEL CUSTOMISED BUTTONS



Only Path Functions Follows Accessed Path

The Path functions follow area at the bottom right of the Customise panels page shows that any path functions will follow the Accessed path and it should be noted that Global and Bus functions are independent of this follow mode."

This means that when appropriate the custom controls will appear with the settings that relate to the currently Accessed path.

In the case of mixed control cells such as that highlighted above right, only the Tone and Bypass controls would only be applied to the currently accessed path, whilst the Global CR Mon 1- CUT control and Bus Aux 1- CUT control are fixed.

Path Input Functions Follows Accessed Path

The image middle right shows that the highlighted 4-button cell contains path functions related to Input controls.

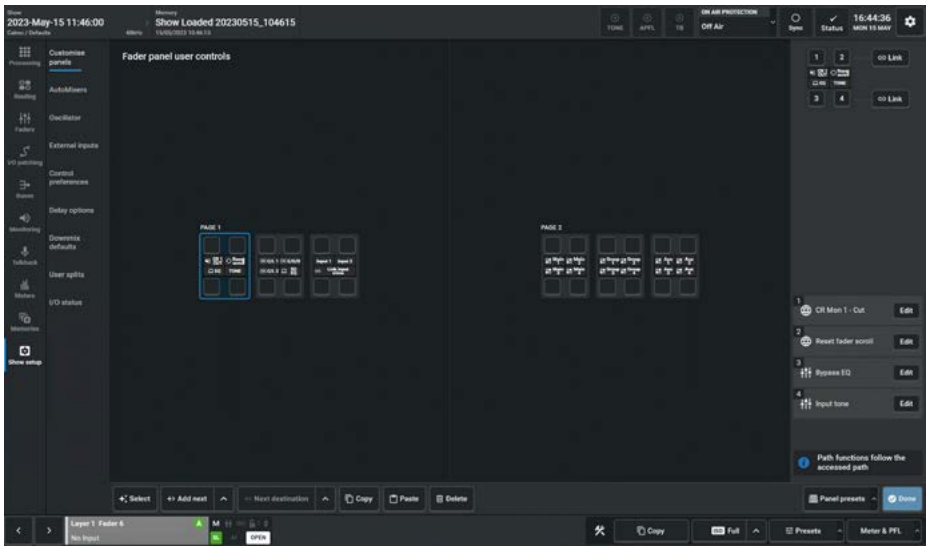
This means that when appropriate the custom controls will appear with the settings that relate only to the currently Accessed path. In this case the Input 1 and Input 2 selectors and the Link input trims would appear for channel input paths but would not be available when not applicable such as on a Main bus when accessed.

Path Routing Functions Follows Accessed Path

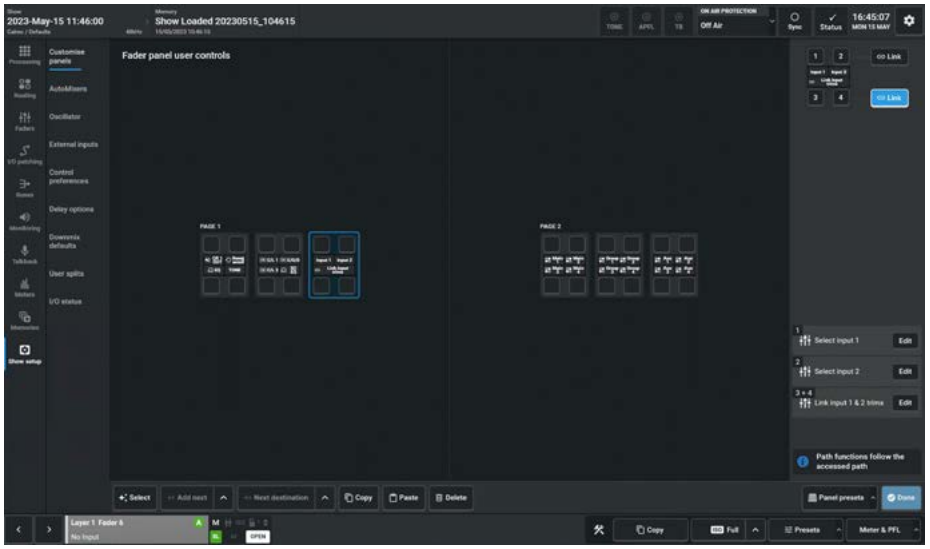
The image below right shows that the highlighted 4-button cell contains path functions related to routing to Main outputs 1-4.

These functions would appear for paths that can be routed to Main outputs such as Channels and Groups, but would not be available when not applicable such as on an Aux bus when accessed.

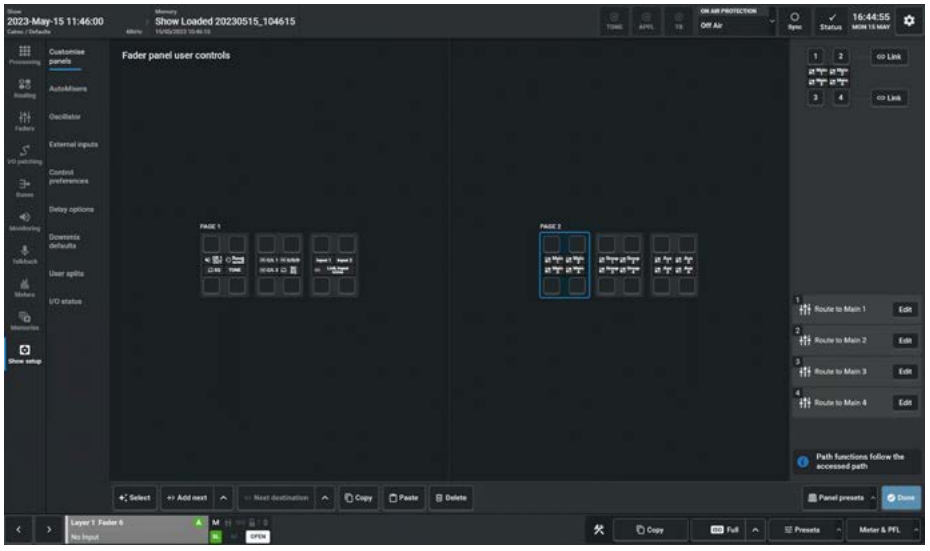
ONLY PATH FUNCTIONS FOLLOW ACCESSED PATH



PATH INPUT FUNCTIONS FOLLOW ACCESSED PATH (WHEN APPLICABLE)



PATH ROUTING FUNCTIONS FOLLOW ACCESSED PATH (WHEN APPLICABLE)



Custom Controls - Wild panels
The Argo console has the ability to display custom configured variable controls on the Wild Assign or Monitor panels. The rotary control cells on the CA6575 Wild Assign panel has 48 cells that can be used for this purpose as shown in the image above right.

This is carried out by first selecting the panel to have its control cells configured from the Surface panel layout shown when entering the **Show setup> Customise panels** page. The user then selects the cell(s) that they wish to add controls to on that panel by tapping on the required cell(s).

Then tap on the '**Add control**' button which appears on the right of the panel. This opens the rotary controls template which contains all the current control variants that can be applied. The selected cell(s) can have one of the many templates attached to it by choosing which control to use tapping on that control from the template sets as shown in the image middle right and tapping on the 'OK' button. There are many pages of Templates to choose from arranged in various ways:

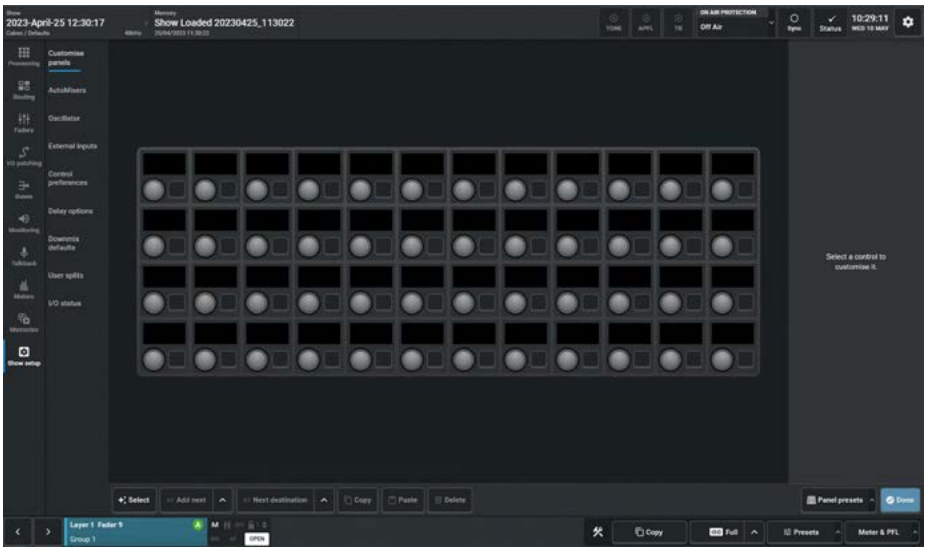
'All templates' as the name suggests contains them all, or a particular template such as the Input can be selected displaying the associated subset.

Alternatively the user can search for a particular control or set of controls using the search box top right of the 'Choose a template' pop-up.

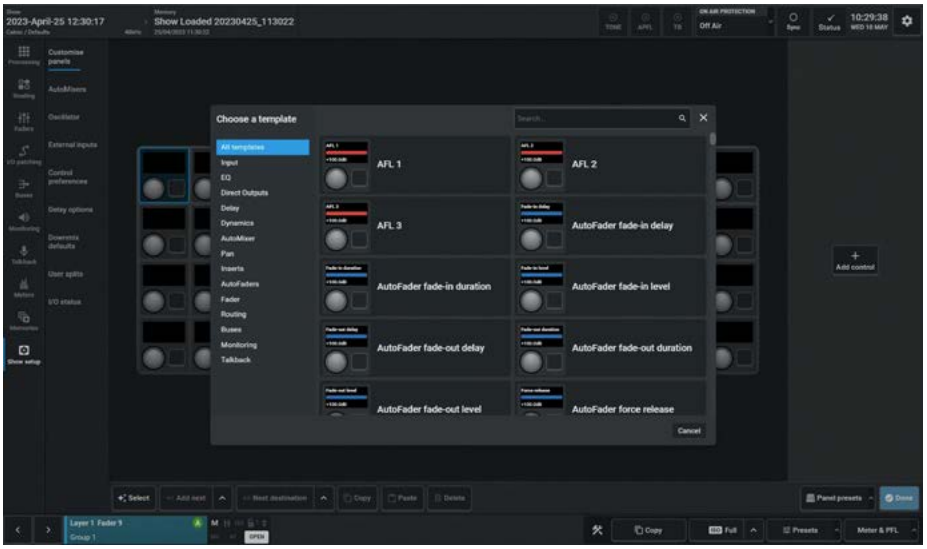
The image below right shows that a set of templates have been put together to provide a combined Equaliser and Dynamics 1 control set. When the user selects a cell that has already had a control assigned its name appears along with an edit button allowing the user to change the function of that cell.

These completed sets of controls can then be saved as presets by tapping on the **'Panel Presets'** button at the bottom right of the panel page allowing them to be saved, updated and loaded as required.

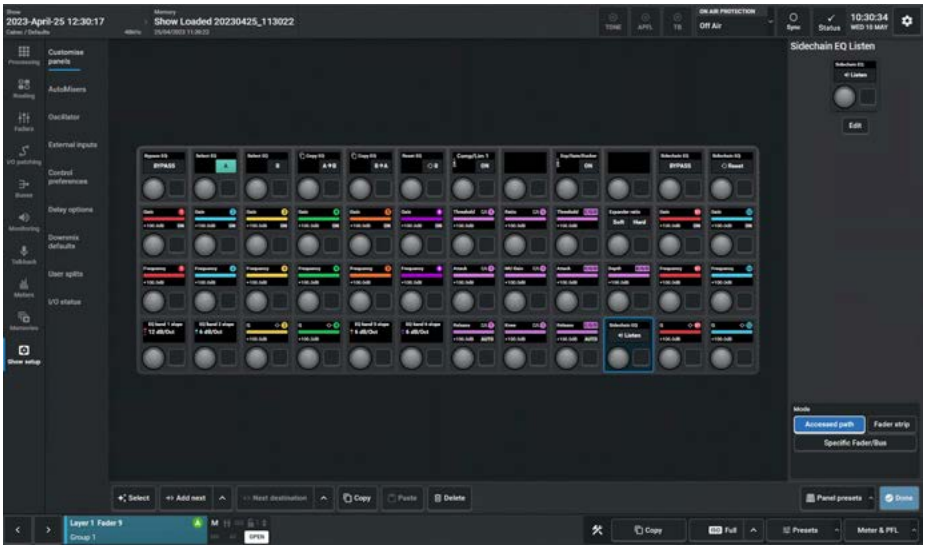
WILD PANEL CUSTOM CONTROLS



WILD PANEL CONTROLS TEMPLATE



EQUALISER & DYNAMICS 1 BUILT FROM TEMPLATE CONTROLS



Custom Controls - Monitor panels
The Argo console has the ability to display custom configured variable controls on the Wild Assign or Monitor panels. The rotary control cells and button cells on the MY6574 Monitor panel with its 18 button control cells, 8 rotary control cells and 4 rotary -3 button control cells can be used for this purpose.

This is carried out by first selecting the panel to have its control cells configured from the Surface panel layout shown when entering the **Show setup> Customise panels** page. The user has selected the Monitor panel as shown in the image above right. The user then selects the cell(s) that they wish to add controls to on that panel by tapping on them, which highlights the cells, then taps on the '**Add control**' button on the right of the panel.

This opens either the button or rotary controls template depending on the type of control cells selected. In this case a rotary control cell was selected and inside the Direct Outputs template set, the user has searched for the word Level which has selected the 'Direct O/P 2 Level, TB & position selector' as shown in the image middle right.

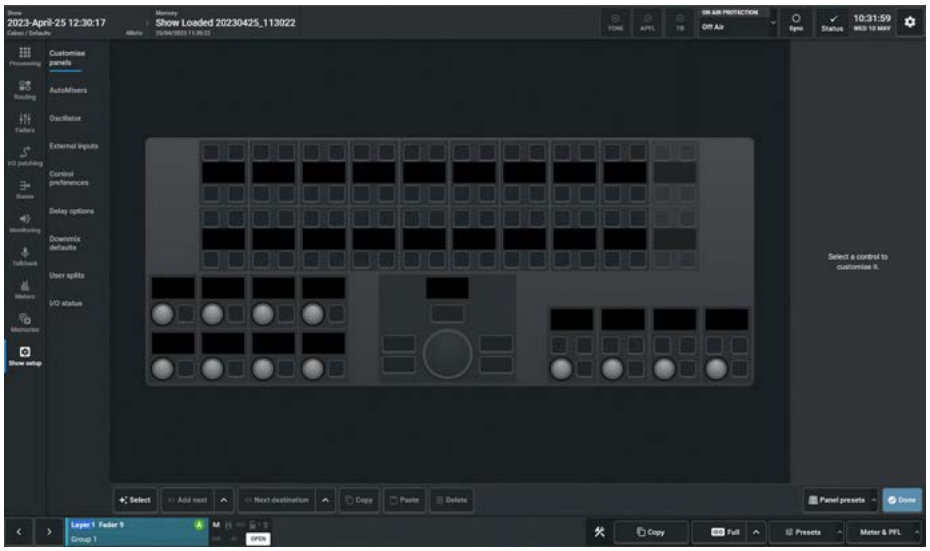
The image below right shows a monitor panel template set in the process of construction with various controls added in the process which contains all the current control variants that can be applied. Once completed these sets of controls can then be saves as presets by tapping on the **'Panel Presets'** button at the bottom right of the Customise panels page allowing them to be saved, updated and loaded as required.

Note: there are separate Panel Preset files for each panel type: Standard fader, Wild assign and Monitor.

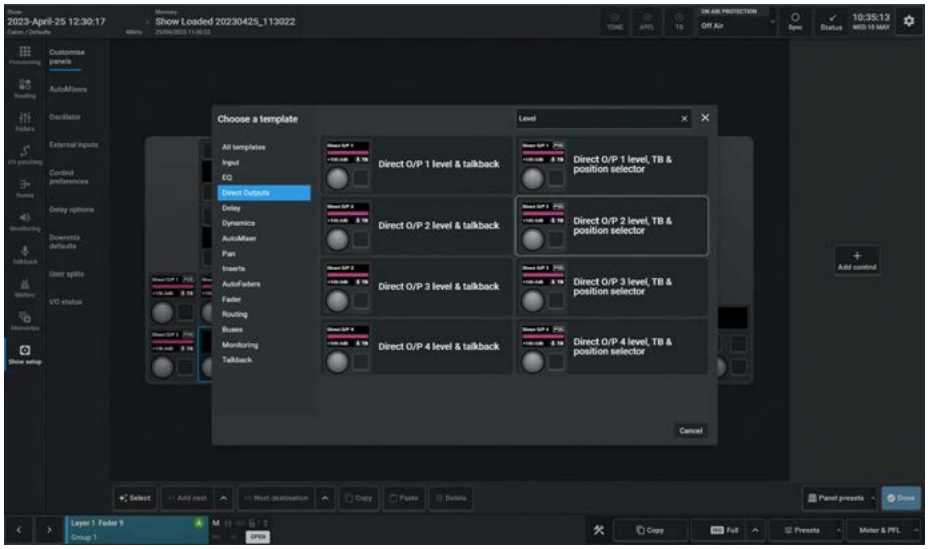
All the button cell templates are already shown in the User controls editor in the **Faders>Fader Layout - Controls** page and as such not be repeated here. See **"User Controls Editor" on page 69.**

The following pages show all the current pages of templates available to be applied to the rotary control cells.

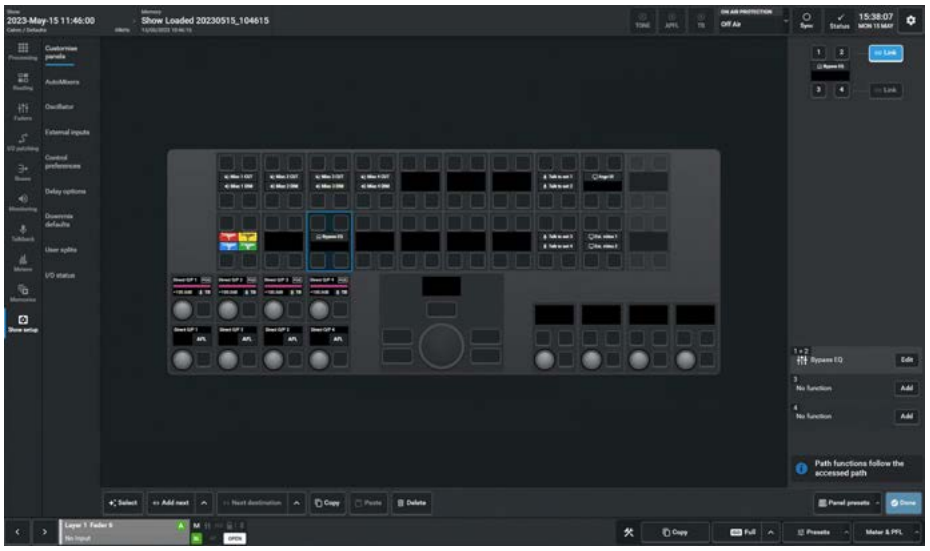
MONITOR PANEL CUSTOM CONTROLS



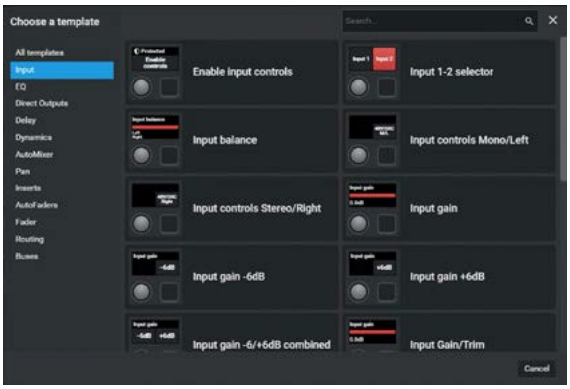
MONITOR PANEL CONTROLS TEMPLATE



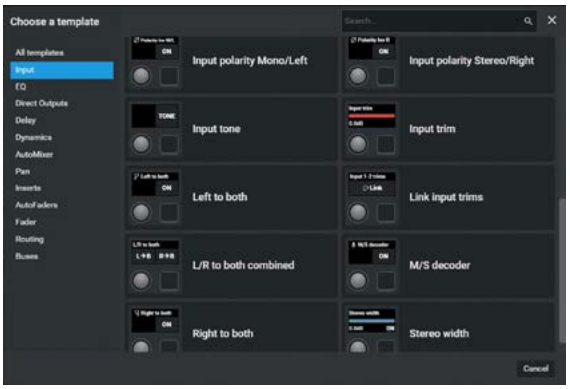
DIRECT OUTPUT, MISC MON CUT/DIM AND TALKBACKS



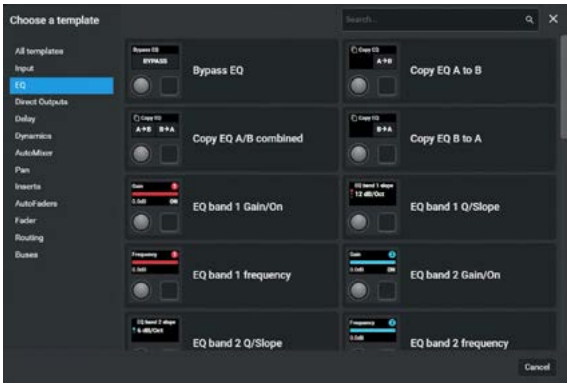
CONTROLS TEMPLATE - INPUT PAGE 1



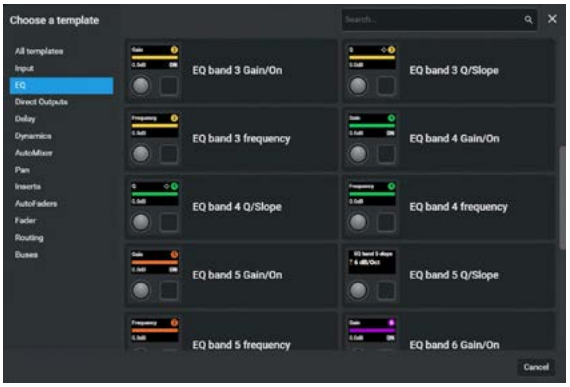
CONTROLS TEMPLATE - INPUT PAGE 2



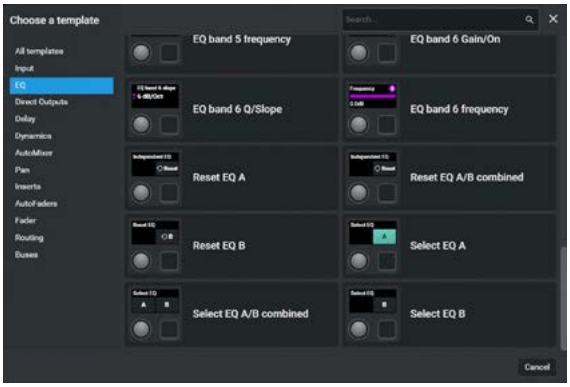
CONTROLS TEMPLATE - EQ PAGE 1



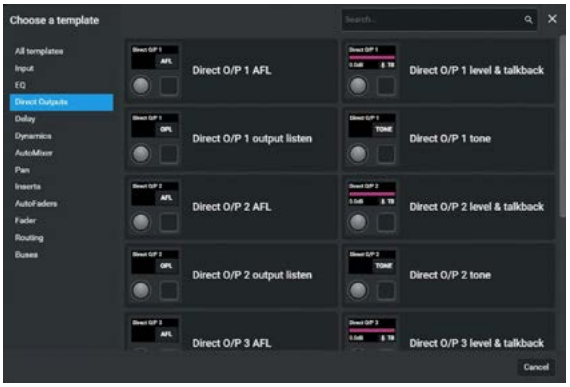
CONTROLS TEMPLATE - EQ PAGE 2



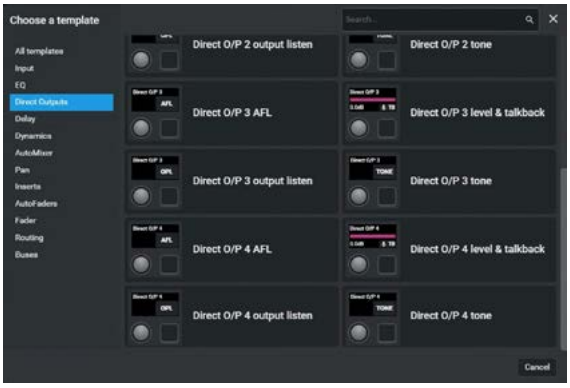
CONTROLS TEMPLATE - EQ PAGE 3



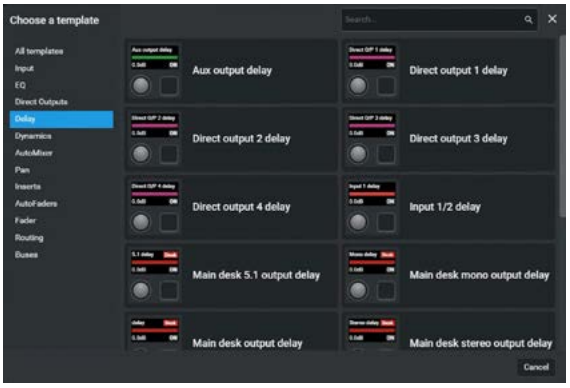
CONTROLS TEMPLATE - DIR OUTPUTS PAGE 1



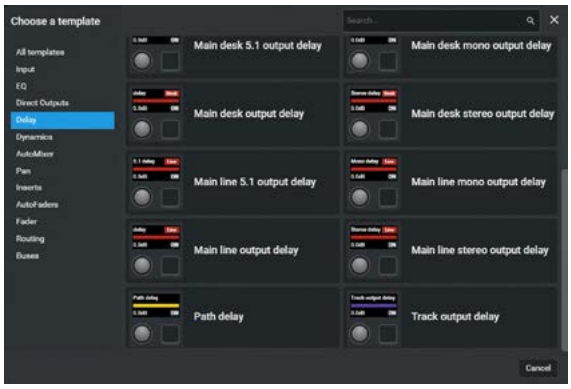
CONTROLS TEMPLATE - DIR OUTPUTS PAGE 2



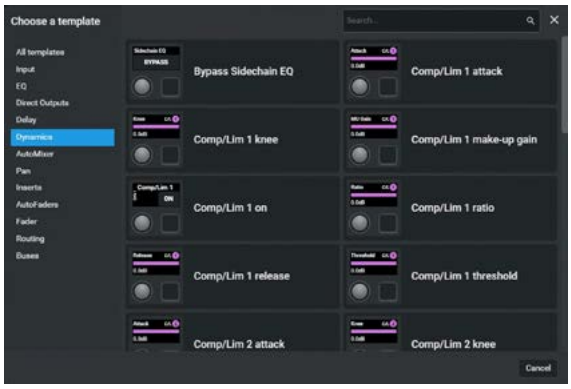
CONTROLS TEMPLATE - DELAY PAGE 1



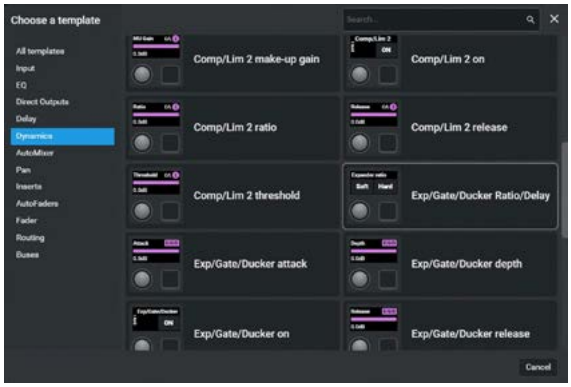
CONTROLS TEMPLATE - DELAY PAGE 2



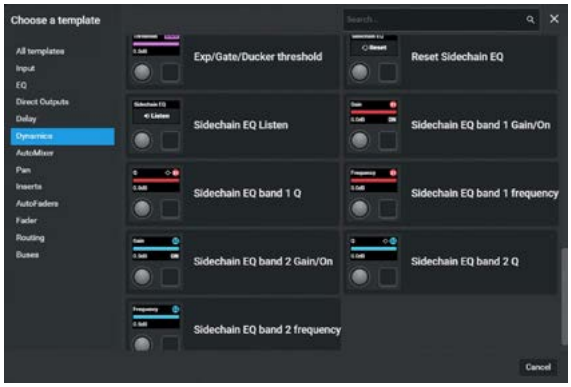
CONTROLS TEMPLATE - DYNAMICS PAGE 1



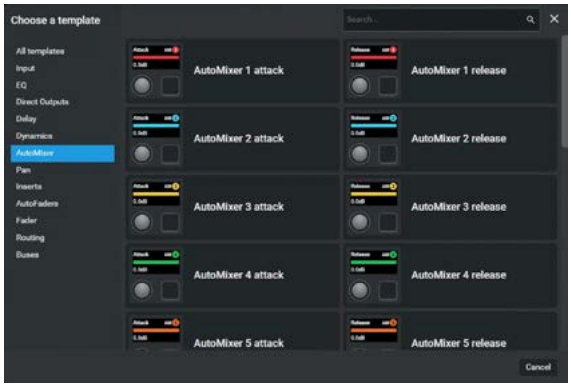
CONTROLS TEMPLATE - DYNAMICS PAGE 2



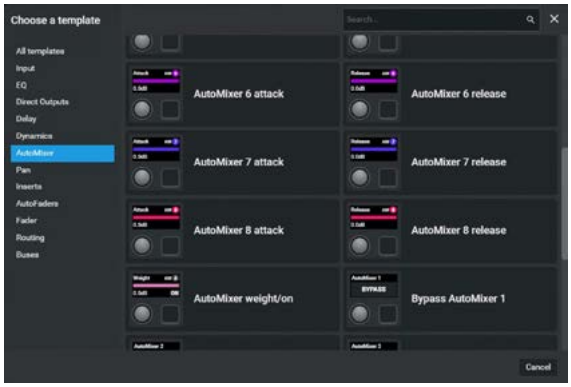
CONTROLS TEMPLATE - DYNAMICS PAGE 3



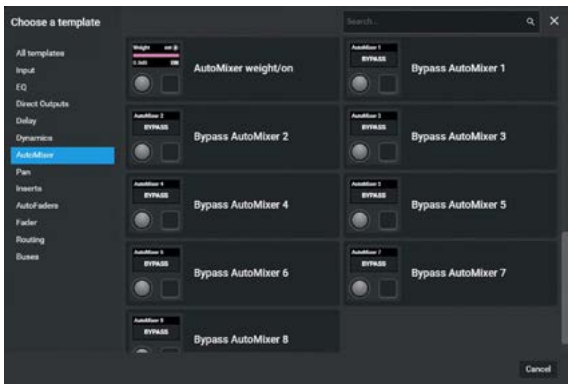
CONTROLS TEMPLATE - AUTOMIXER PAGE 1



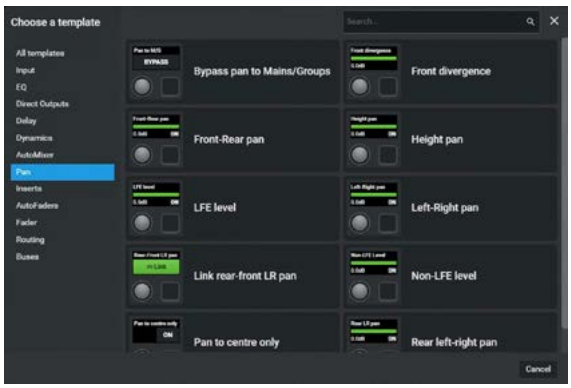
CONTROLS TEMPLATE - AUTOMIXER PAGE 2



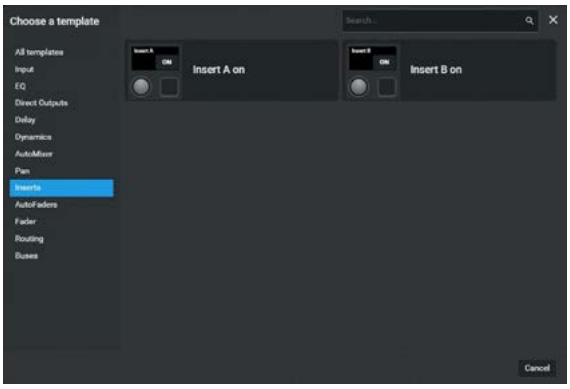
CONTROLS TEMPLATE - AUTOMIXER PAGE 3



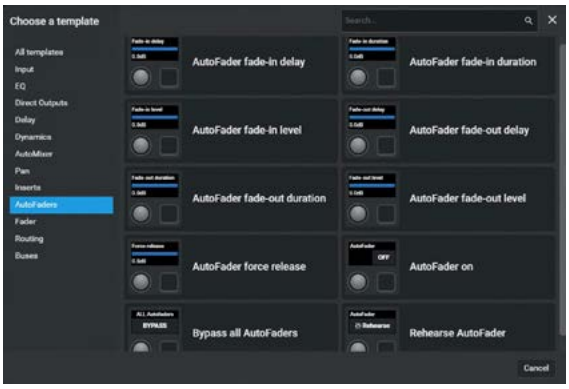
CONTROLS TEMPLATE - PAN PAGE 1



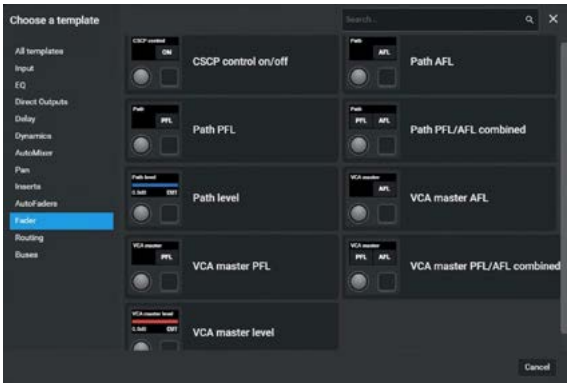
CONTROLS TEMPLATE - INSERTS PAGE 1



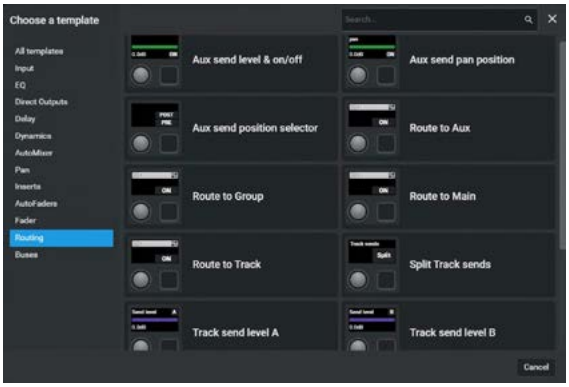
CONTROLS TEMPLATE - AUTOFADERS PAGE 1



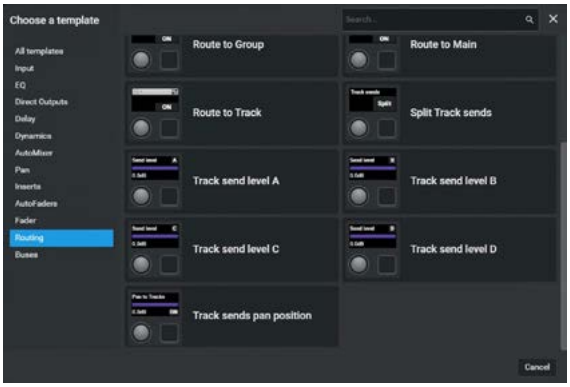
CONTROLS TEMPLATE - FADER PAGE 1



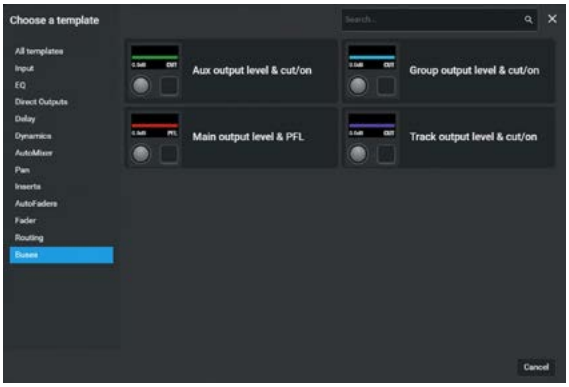
CONTROLS TEMPLATE - ROUTING PAGE 1



CONTROLS TEMPLATE - ROUTING PAGE 2



CONTROLS TEMPLATE - BUSES PAGE 1



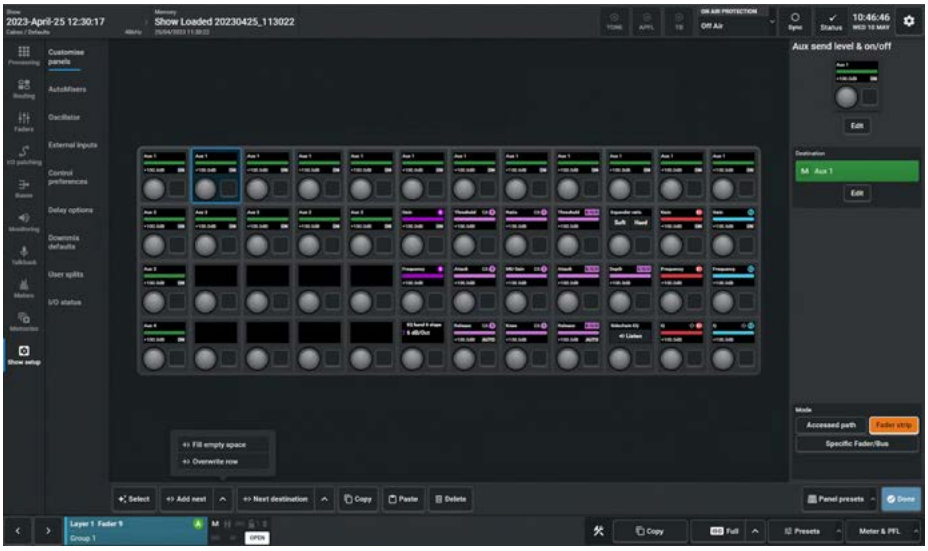
Using Add Next & Next Destination
In order to speed up the creation of customised panel layouts there are two buttons labelled **'Add next'** and **'Next destination'** provided.

Add next:- the image above right shows a Wild Assign panel custom controls layout being edited. The user selected the top left rotary cell and clicked on the **'Add next'** button which has made a copy and placed it in the next adjacent cell. If the user clicks on the up arrow to the right of this button two options appear:- **'Fill empty space'**, when selected, places copies to the right of the selected cell into empty cells until it finds a full cell then stops. This is shown on row 2 which filled up to the Dynamics control. **'Overwrite row'**, when selected, places copies to the right of the selected cell till it reaches the end of the row, overwriting any full cells after first showing a warning. This is shown on row 1 which overwrote the dynamics controls. This is a useful method of creating fader strips where the same controls are used for each fader.

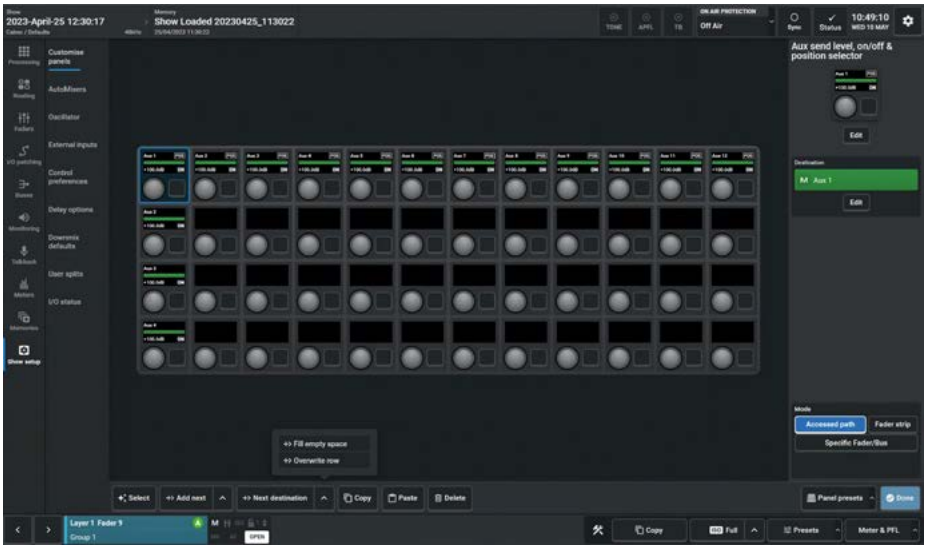
Next Destination:- the image middle right shows a Wild Assign panel custom controls layout being edited. The user selected the top left rotary cell and clicked on the '**Next destination'** button which has made an incremental copy and placed it in the next adjacent cell. If the user clicks on the up arrow to the right of this button, the same two options appear:- Fill empty space, and Overwrite row which operate as described above. This is a useful method of creating a set of common controls that increment such as Aux send 1, Aux send 2 etc.

Deleting multiple custom controls
The '**Select**' button when pressed, opens a select footer which allows the user to:- 'Select all' the panel cells, 'Select row' of cells by first selecting a member of that row, select individual cells or 'Select none' of the cells, ready to delete multiple controls from button or rotary cells. Once the user has selected the required cells for deletion the user taps on the **'Delete'** button. A dialogue box appears labelled 'Delete selected controls?'. The user then taps on the red '**Delete**' button to remove the selected control(s) from a panel layout. The image below right shows that the user has tapped on **'Select all'** and **'Delete'**, this provides a quick way to delete all the custom controls from a panel.

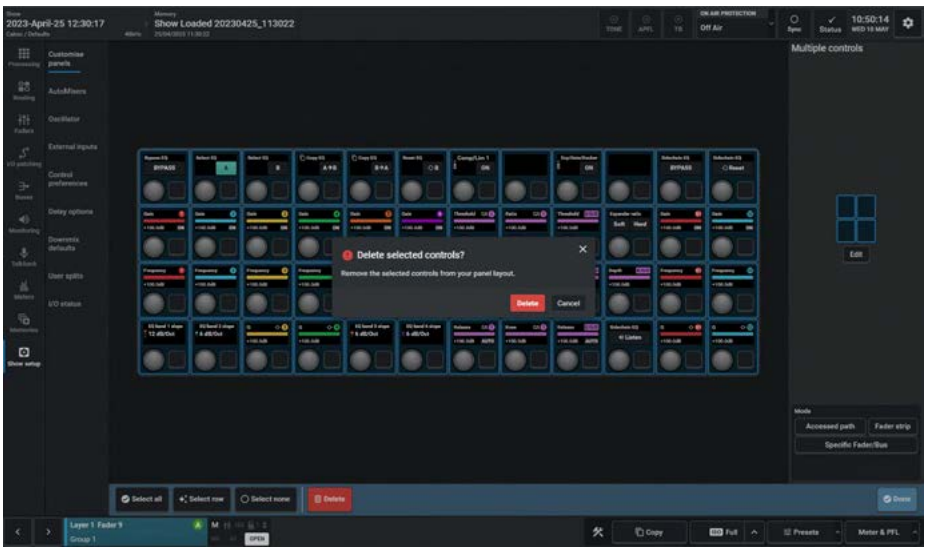
USING ADD NEXT FOR FADER STRIPS



USING NEXT DESTINATION FOR CONSECUTIVE AUX SENDS



DELETING MULTIPLE CONTROLS FROM A WILD ASSIGN PAGE



Copy and Paste Custom Controls
The Customise panel operation has the ability to Copy & Paste control cells. The user first selects the Cell to copy and taps on the '**Copy**' button, a confirmation pop-up **"Controls copied"** appears to confirm the copy at the bottom of the page as shown in the image above right.

The Copy is entered into the Paste buffer ready to be placed as required. In this case a **"Comp/Lim 1 On"** cell has been copied and as an example is going to be pasted into the Adjacent cell.

COPYING A CUSTOM CONTROL

The user selects the destination cell that is to have the copy pasted into it and a confirmation pop-up **"Controls pasted"** appears once the '**Paste**' button is tapped as shown in the image middle right.

Note: the copy will overwrite any already occupied control cell if selected.

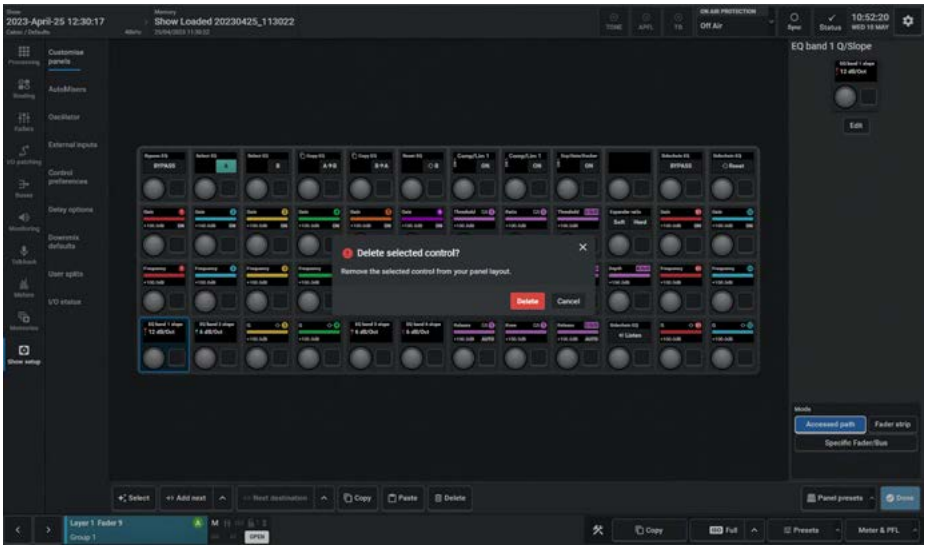
PASTING A CUSTOM CONTROL

Delete a Selected Custom Control
In order to remove controls from button or rotary cells the user selects the cell(s) to be deleted and taps on the **'Delete'** button. A dialogue box appears labelled 'Delete selected control?'. The user can either tap on the red 'Delete' button to remove the selected control(s) from your panel layout or tap on **'Cancel'** to cancel the operation.

The image below right shows that a cells has been selected for deletion.

Once the Delete/Cancel selection is complete the dialogue box closes.

DELETE A SELECTED CUSTOM CONTROL



CUSTOM PANEL PRESETS

Custom Panel Presets Function
There is a requirement to be able to store and recall custom panel layouts, this is carried out in the Panel presets dialogue. The user can access these by tapping the **'Panel presets'** button in the Customise panels pages for the Standard Fader, Wild Assign & Monitor panels. The presets are contained in these preset folders and typically a user will have their own preset folder.

The image above right shows the custom Panel presets dialogue box, it is arranged into two areas:- the left side allows the user to create, label or delete panel preset folders each of which can contain any number of custom panel layout files. The right side shows the presets that are contained in the selected preset folder.

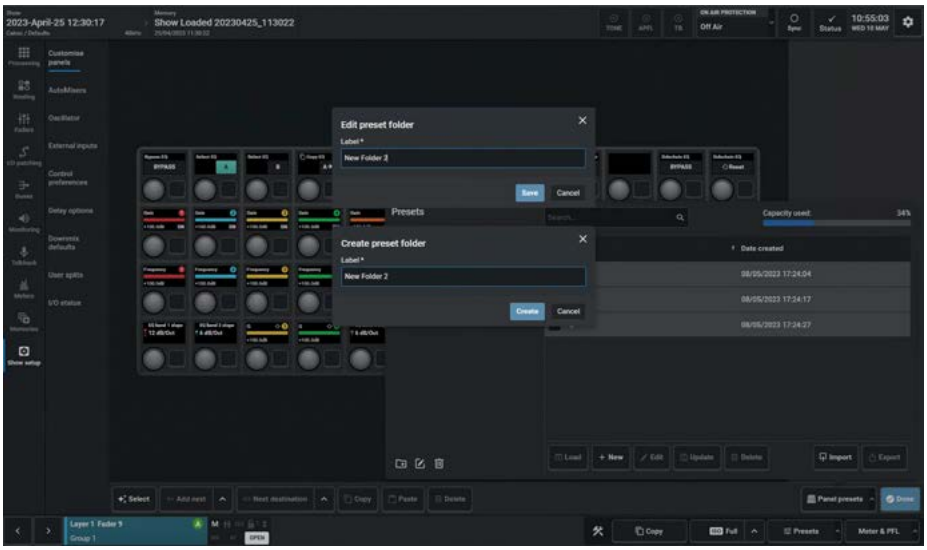
Custom Panel Preset Folders
The following functions are available:-
Create Preset Folder: To create a new preset folder, the user taps on the Create folder icon' on the preset folders side and types in a name for the preset in the 'Create preset folder' dialogue box as shown in the image middle right. Once the **'Create'** button is tapped it creates a new empty preset folder.

Edit Preset Folder: To edit the name for an existing preset folder, the user selects the folder, taps on the Edit icon on the preset folders side and types in a replacement name for the folder in the 'Edit preset folder' dialogue box. This appears instead of the create preset dialogue box and is shown inset in the image middle right. Once the **'Save'** button is tapped it applies the edited name to the folder and saves it.

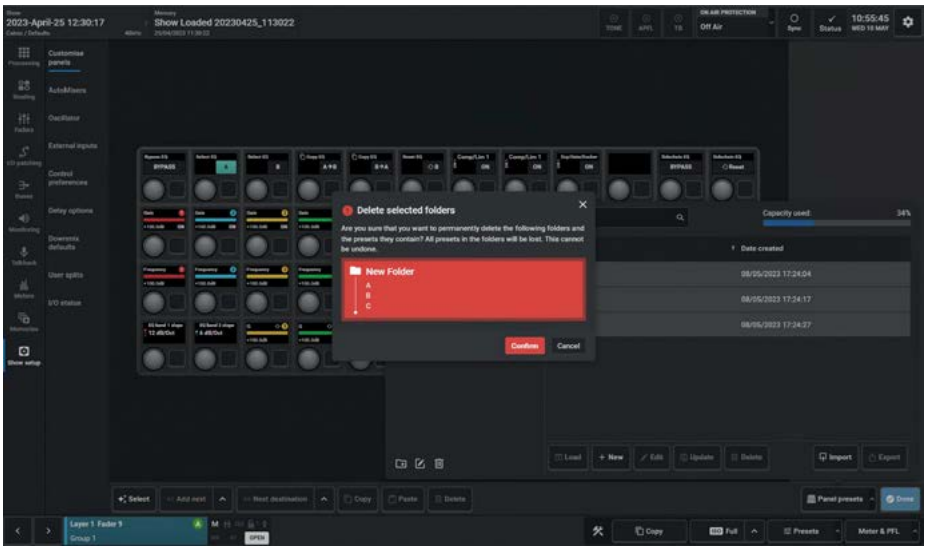
Delete Preset Folders: To delete an existing preset folder, the user selects the folder to be deleted and taps on the Delete icon on the preset folders side. The 'Delete selected folders' dialogue box appears as shown in the image below right. This shows the presets contained in the folder and asks for confirmation to permanently delete the folders and the presets they contain.

CUSTOM CONTROLS PRESET FOLDER/PRESETS FUNCTION

CREATE PRESET FOLDER & EDIT PRESET FOLDER



DELETE PRESET FOLDERS



A graphic is inset showing the names of the folders and files affected. Once the **'Confirm'** button is tapped it deletes the selected folders and presets.

Note: this cannot be undone.

Custom Panel Presets
The following functions are available:-
Create Preset: To create a new preset, the user selects the preset folder that the preset is to be put in, then taps on '**New**' on the presets side and types in a name for the preset in the 'Create preset' dialogue box as shown in the image above right. Once the **'Create'** button is tapped it creates a new preset in the preset folder.

Edit Preset: To edit the name for an existing preset, the user selects the preset to be renamed, taps on '**Edit**' on the presets side and types in a replacement name for the preset in the 'Edit preset' dialogue box. This appears instead of the create preset dialogue box and is shown inset in the image above right. Once the **'Save'** button is tapped it applies the edited name to the preset and saves it.

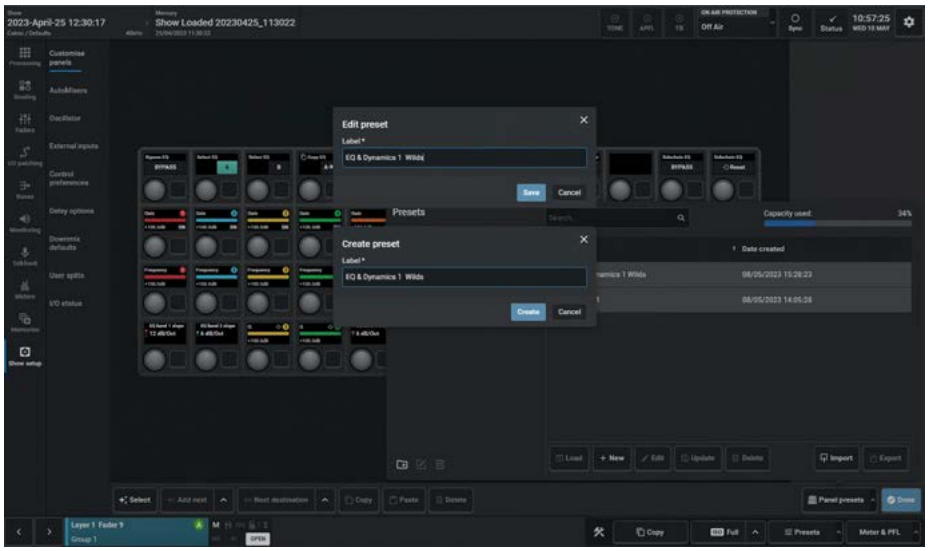
Load preset: The image middle right shows the process of loading a panel preset. When the **'Load'** button is tapped a 'Load' dialogue box pops up to ask the user if they are sure that they want to load this preset. Once the **'Load'** button is tapped it loads the preset into the panel.

Update Preset: The image below right shows the process of updating a custom panel preset. When the **'Update'** button is tapped an 'Update' dialogue box pops up to ask the user if they are sure that they want to update this preset.

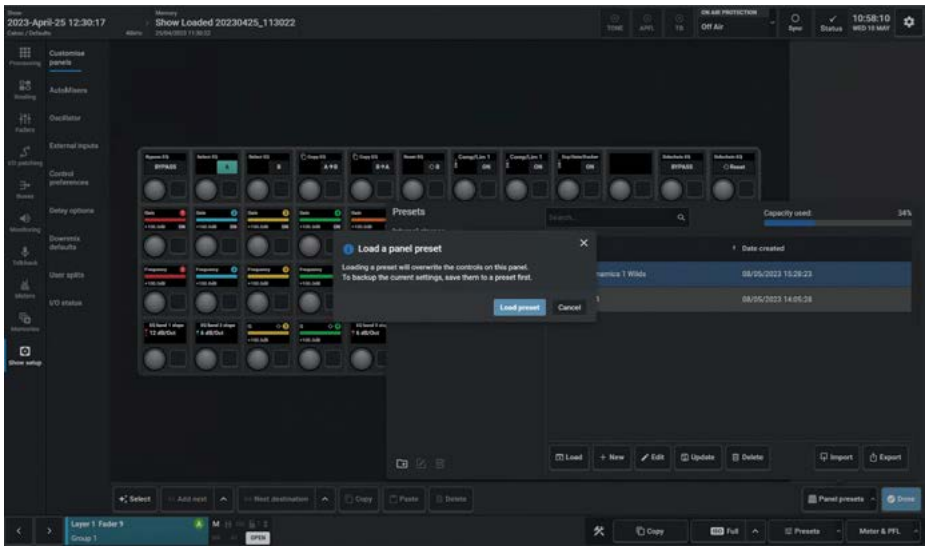
Once the **'Update'** button is tapped it overwrites the stored preset with the current custom panel layout.

Note: make sure that the correct existing preset has been selected before applying 'Update' as it will be overwritten and cannot be undone.

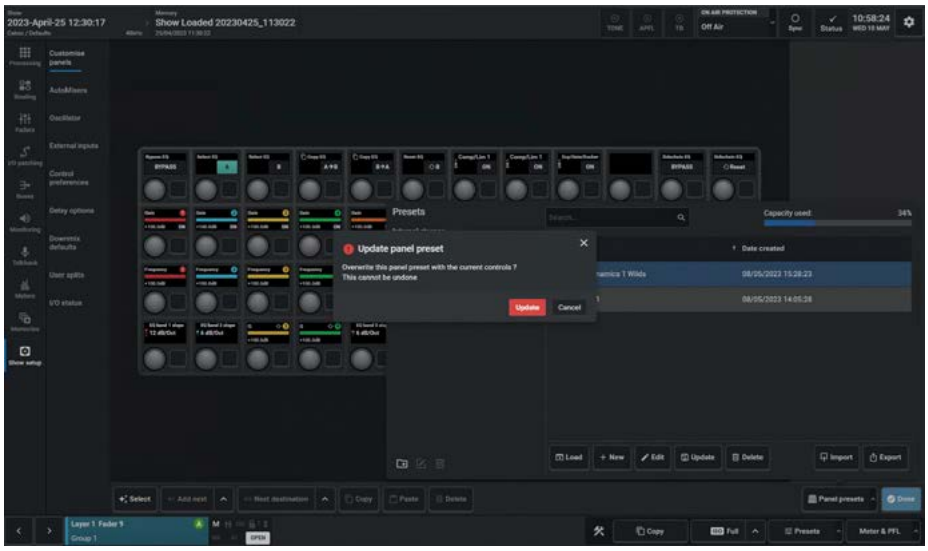
CREATE PRESET & EDIT PRESET LABEL



LOAD PRESET



UPDATE PRESET



Delete Presets: To delete existing presets, the user selects the presets to be deleted and taps on '**Delete**' on the presets side. The **"Delete selected presets"** dialogue box appears as shown above right. This shows the selected panel presets and asks for confirmation to permanently delete them. A graphic is inset in the dialogue box showing the names of the presets affected. Once the **'Confirm'** button is tapped it deletes the selected custom panel presets.

Note: this cannot be undone.

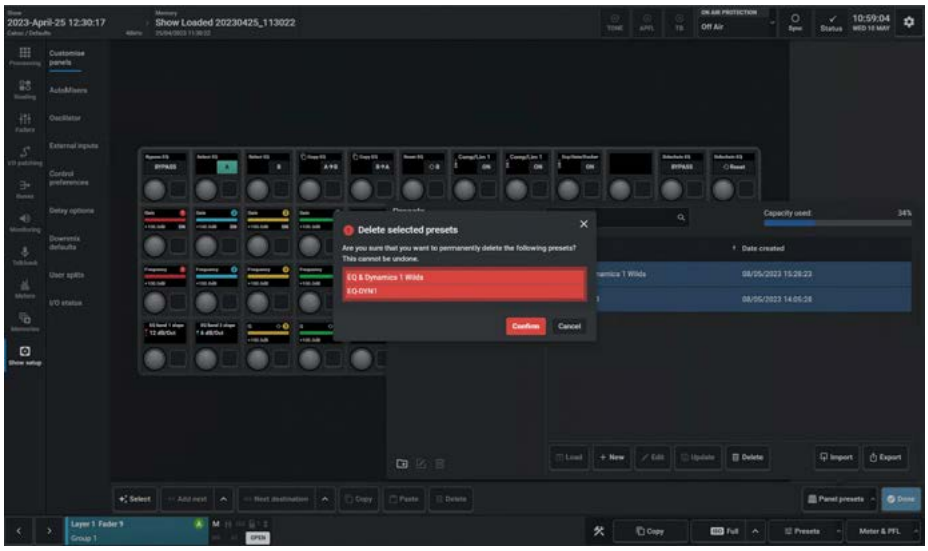
Importing & Exporting Panel Presets
The ability to save & recall presets is provided using the Import & Export buttons in the panel presets footer:-

Import presets: The user taps on the '**Import**' button on the presets side and a dialogue box appears as shown middle right. This allows the user to drag a **'.CalrecPanelPreset'** file into it or browse for the file on the computer. Here the user has tapped the '**Choose file**' button which opened an explorer window, which is used to find and open **'.CalrecPanelPreset'** files. The explorer window shown has found the required custom panel preset file and tapping on the '**Open**' button will import the custom panel preset file into the currently selected preset folder.

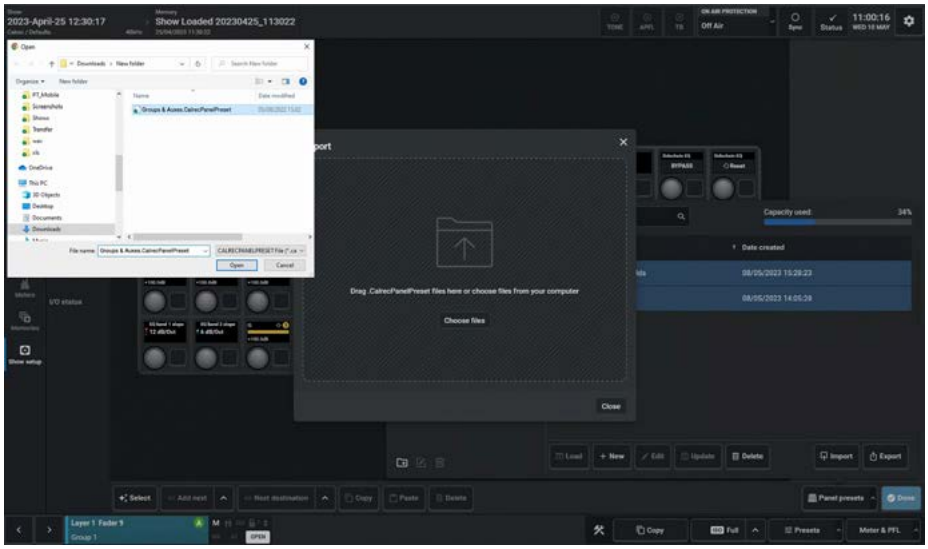
Export Presets: The user selects the Presets to be exported, taps on the '**Export**' button on the presets side and a dialogue box appears as shown below right. This advises that the files are being prepared, to wait for the file to download and opens an explorer window, which is used to save **'.CalrecPanelPreset'** files prefixed with the name of the preset. The explorer window shows the required custom panel preset file name and tapping on the '**Save**' button will export the custom panel preset file.

In addition to the preset functions there is a search box which allows the user to search for the name of a particular custom panel preset file and a Capacity Used indicator bar shown at the top of the presets dialogue box.

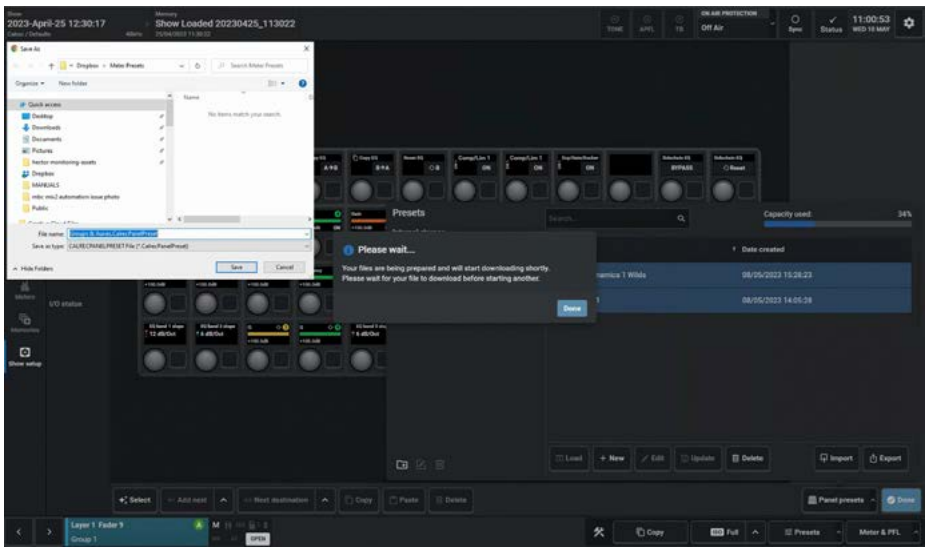
DELETE PRESETS



IMPORT PRESETS



EXPORT PRESETS



AUTOMIXER SETTINGS

AutoMixer Global Controls
Each of Argo's eight AutoMixers have their own global attack, release and bypass controls. Attack and release are used to smooth out the signals prior to the level ratio calculation being made.

A compromise must be made between fast attack and release, which leads to a more erratic but fast-acting functioning, and slow attack and release times, which leads to a slower acting but smoother functioning.

To access the AutoMixer global controls , the user selects **Show setup>Automixers** from the menu as shown above right.

Tapping the **'Bypass'** button disables that selected AutoMixer for all assigned paths.

The Attack Time for each AutoMixer can be set between 50us (default) and 0.2s

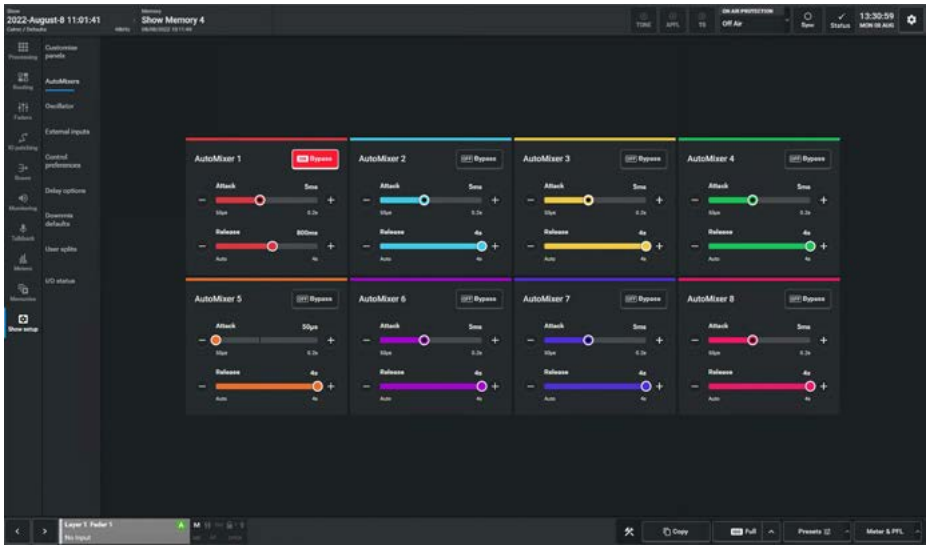
The Release Time for each AutoMixer can be set between 75ms and 4s (default).

Auto Release: In 'Auto' mode a filter is applied which determines how quickly the signal comes out of attenuation by measuring the amount and duration of the attenuation attack. This is useful in dealing with both sudden noises which recover quickly and sustained noises such as applause which recover slowly.

Auto Release is enabled when the slider is dragged all the way to the left.

If the user wants to momentarily take a path out of the AutoMixer assignment, the **'AutoMixer Control'** On/Off switch should be used which can be found on the individual path's AutoMixer processing tab, see **"AutoMixer" on page 31"**.

AUTOMIXER GLOBAL CONTROLS



OSCILLATOR SETTINGS

Oscillator Controls
Internal tone signals are generated by the Argo oscillators which are accessed from **Show setup>Oscillator** as shown above right. The oscillators provide control of internal tone parameters and the option to override the internal tone generators with external tones. The system provides 2 fixed oscillators & 2 user oscillators which can be adjusted using the level & frequency controls on the left of the screen. The user can set the oscillators to generate a fixed frequency tone at a specified frequency, or a stepped 20Hz to 20kHz tone frequency sweep.

Fixed Oscillators
These can provide different tone sources for Mono, Stereo & 5.1 outputs, using the internal and external tone source buttons. Selecting **'Internal'** uses the DSP internal oscillators as the tone source for that path width, whereas selecting **'External'** uses the feed(s) currently patched to the external tone input(s). Each leg of stereo or 5.1 tone sources can be muted using their leg mutes.

Stereo/mono (ST/M) downmix option
For the downmix outputs of 5.1 and wider paths there is an option to use the ST/M oscillator instead of the 5.1 or User Oscillators which normally feed the Lo/Ro & Mo D-Mix O/Ps from Mains and L/R/M Direct O/Ps from Channels and Groups.

Note: 0.0.2/0.0.4 O/Ps such as Groups are always fed tone from ST/M oscillators.

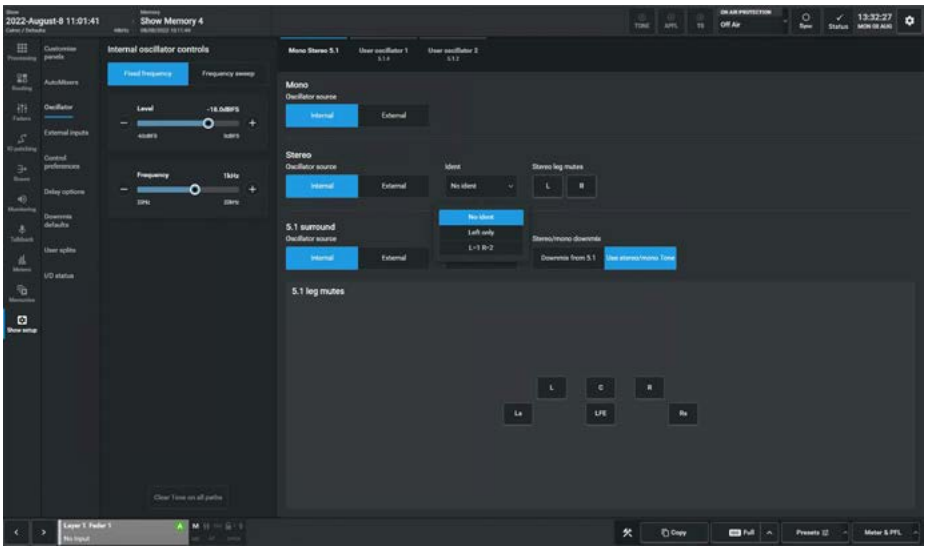
Clearing Tone
Tapping the '**Clear tone on all Paths'** button switches off all tone on all paths.

Oscillator Tone Idents
Tone idents are variations in the tone signal used to identify legs of multichannel paths when verifying routing and patching. To set an ident for a stereo path, tap its **Ident** selector drop-down button to display a pop-up menu populated with the following path width ident options:-

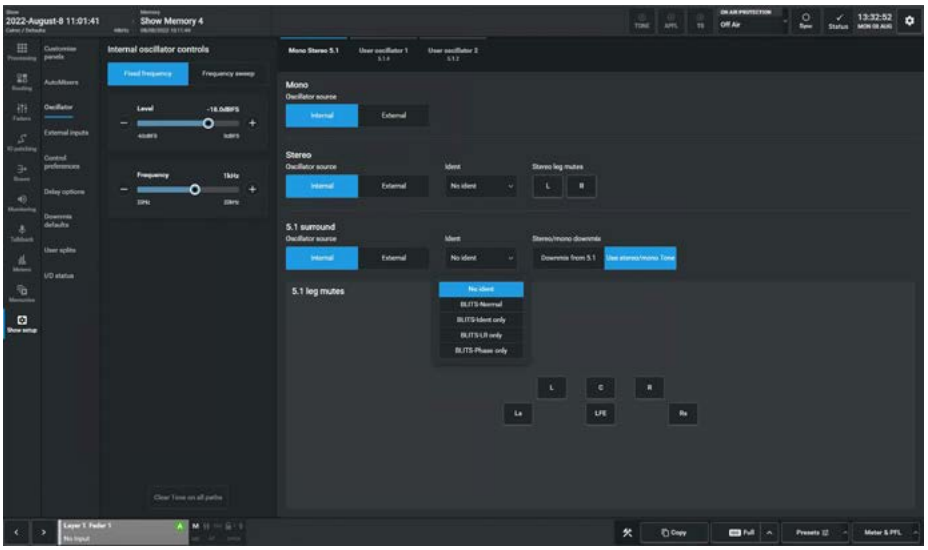
Left Only is similar to the EBU ident specification. The tone on the left audio channel is repeatedly interrupted whilst the right channel remains constant.

L=1, R=2 is similar to the GLITS ident specification. Tone is repeatedly interrupted on both left and right channels.

OSCILLATOR SHOWING STEREO IDENT OPTIONS & LEG MUTES



OSCILLATOR SHOWING SURROUND IDENT OPTIONS & LEG MUTES



Each interruption on the left channel is followed by two interruptions on the right channel. These are stereo idents and will only be applied to tone being injected onto stereo paths/outputs. If tone is selected directly onto a surround output (rather than on a fader routed to an output) the stereo ident only affects stereo downmix outputs.

Note: only one of the two stereo idents can be selected at any given time.

To set an ident for a 5.1 path, tap its **'Ident'** selector drop-down button to display a pop-up menu populated with the following path width ident options:-

BLITS ident is for use on 5.1 surround paths and will not affect tone on mono or stereo paths, it can be selected & used at the same time as one of the stereo idents. Four different modes can be selected for the BLITS format, selectable from the 5.1 ident drop down shown below right.

'Normal' is the full BLITS cycle mode - First, is the 'Ident' stage, a short burst of tone is applied to each of the channels, one at a time, in order. 4 tone frequencies are used at this stage for channel ID:-

5.1 applies L/R at 880Hz,
C at 1320Hz,
Lfe at 82.5Hz,
Ls/Rs at 660Hz.

This is followed by the 'LR' stage a 1kHz tone on the L & R legs only, the right channel is continuous, whilst the left channel is repeatedly interrupted.

The last stage of the cycle is 'Phase' which applies 2kHz tone on all channels simultaneously before restarting the cycle. The different frequencies used also help to identify each part of the cycle, for example if 1kHz can be heard anywhere other than front L/R there must be a problem with routing or patching. The **'Ident Only'**, **'LR Only'** and **'Phase Only'** options are there to provide each stage of the BLITS ident separately.

User Oscillators

In addition to the Mono/Stereo & 5.1 fixed oscillators, the DSP also provides 2 User definable oscillators. Each of these can be independently set to provide 7.1, 5.1.2, 5.1.4 7.1.2 & 7.1.4 immersive tones, the image above right shows the width dropdown used to change the source tone width.

The image middle right shows the "Ident" dropdown to apply the parts of the BLITS ident. The user oscillators provide an extended version of the BLITS ident on top of the **5.1** version to identify the extra legs by using the following frequencies:-

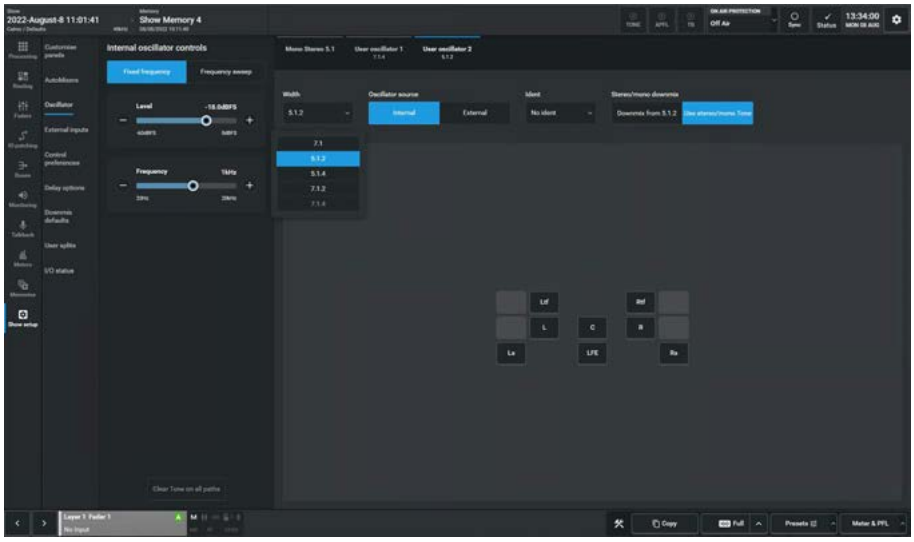
7.1 applies Lss/Rss at 660Hz,
Lrs/Rrs at 330Hz.
5.1.2 applies Ltf/Rtf at 1760Hz.
5.1.4 applies Ltf/Rtf at 3520Hz,
Ltr/Rtr at 440Hz.
7.1.2 applies Lss/Rss at 660Hz,
Lrs/Rrs at 330Hz,
Ltf/Rtf at 1760Hz.
7.1.4 applies Lss/Rss at 660Hz,
Lrs/Rrs at 330 Hz,
Ltf/Rtf at 3520Hz,
Ltb/Rtb at 440Hz.

Each leg of the selected user oscillator widths can also be muted as shown middle right for the C leg of the 7.1.4 leg mutes.

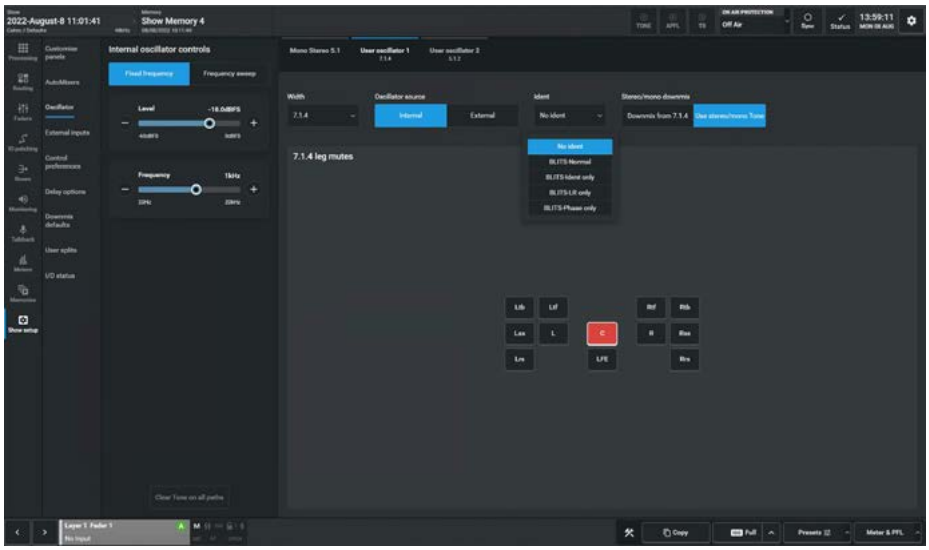
External Tone Inputs

The Ext Mono, Ext Stereo, Ext 5.1 sources used as the external option for the fixed oscillators & the Ext 7.1, Ext 5.1.2, Ext 5.1.4, Ext 7.1.2 & Ext 7.1.4 sources used as the external options for User Oscillators 1 & 2 can be patched to the Tone Inputs as shown below right. All four Tone sources are separated to support their idents. External tone can be applied and selected individually to each width of tone view, meaning a mixture of internal and external tone could be used if required.

USER OSCILLATOR WIDTH OPTIONS



USER OSCILLATOR IDENT OPTIONS



PATCHING EXTERNAL SOURCES TO TONE INPUTS

EXTERNAL INPUTS

Creating External Inputs
External Inputs are typically used to bring in outside sources into the monitoring and metering systems of the console. Argo provides a pool of 152 mono inputs which are used to create external inputs at the selected width, ready to patch from the outside sources.

The external inputs page is accessed from **Show setup>External inputs** and the image above right shows the creation of new external inputs. The user taps on empty external input entries, for example "Ext Input 11" as shown and then taps on the '**New**' button in the footer, this presents the user with a path width pop-up. The user selects the width (in this case 5.1) and the "ticked" external input(s) will be set to that width. In the IO patching page the user then ports the inputs from the IO receivers to the external inputs.

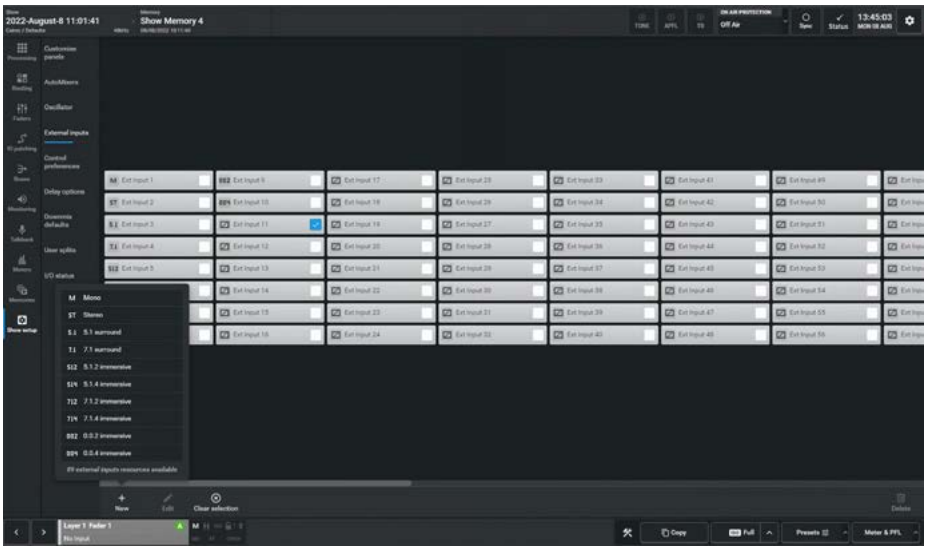
Labelling External Inputs
Each external input can have a more meaningful label attached to it as shown middle right. The user selects an external input entry from the table and the **'Edit'** button becomes available, tapping on this opens an external input label footer which allows the user to enter an appropriate label. The user can tap on **'Previous'** or **'Next'** to continue editing other labels or **'Done'** to exit the dialogue.

Note: tapping on Previous or Next, acts as an acceptance of the new label. Tapping on Cancel will only ignore the current external input label change.

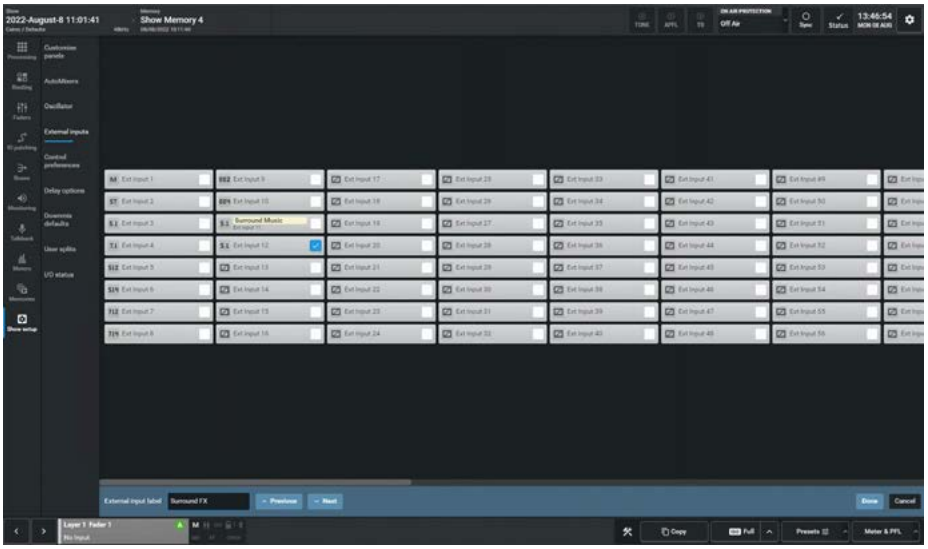
Deleting External Inputs
Existing external inputs can be deleted when no longer required. The user selects the external inputs by tapping on those external inputs to be deleted as confirmed by the "tick" in each entry and the **'Delete'** button becomes available, tapping on this opens the "Delete external input" dialogue which contains a list of external inputs that are to be deleted. The user can then tap on **'Delete'** to confirm which will remove any connected sources or **'Cancel'** to leave the external inputs as they were as shown below right.

Clear Selection
This button will deselect any external inputs that have been "ticked" during the '**New**' or '**Delete**' process.

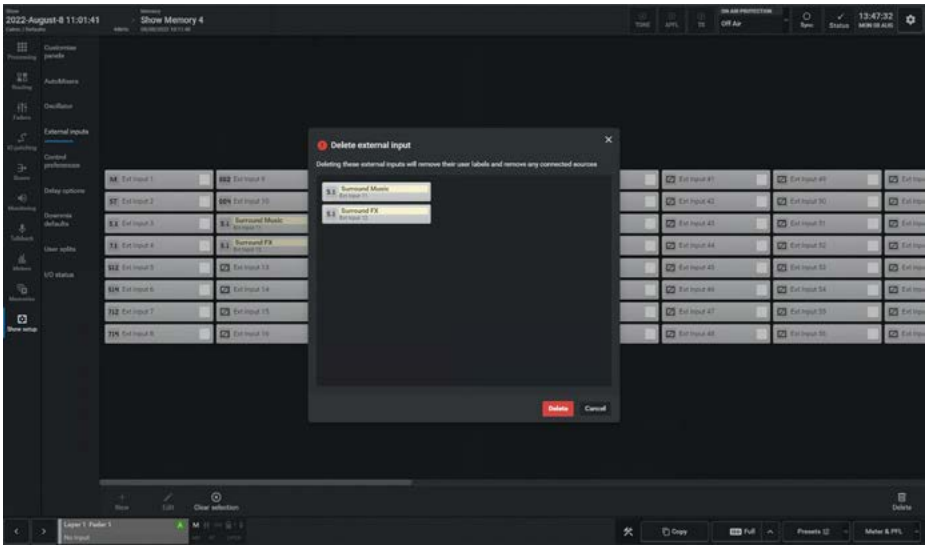
CREATE EXTERNAL INPUTS



LABEL EXTERNAL INPUTS



DELETE EXTERNAL INPUTS



CONTROL PREFERENCES

Control Preference Options
These Preferences determine how the various features will behave. The Control preferences page is accessed from:-
Show setup>Control preferences
as shown above right and details of the various preferences are described below:-

Access:-
When the '**Access follows link**' slider switch is on and the user creates a link across a range of faders by simultaneously pressing two link buttons, the left-most path in the link will be accessed. Using this option eliminates the worry about accessing the right path after the link is created.
The user can now also link faders that do not contain paths, this makes it very quick to select a range of faders.

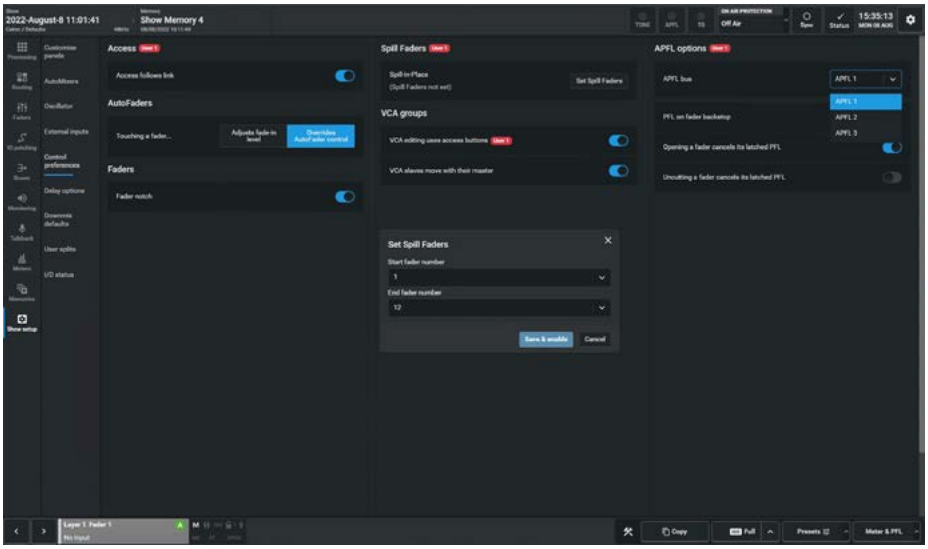
AutoFaders:-
Touching a fader when fading has two options, '**Adjusts fade-in**' levels or as an alternative '**Overrides AutoFader Control**'.

Faders:-
Argo faders are provided with a notch feature where the fader motor applies a pulse to indicate when passing through the 0dB position, this can be turned off with the '**Fader Notch**' slider switch.

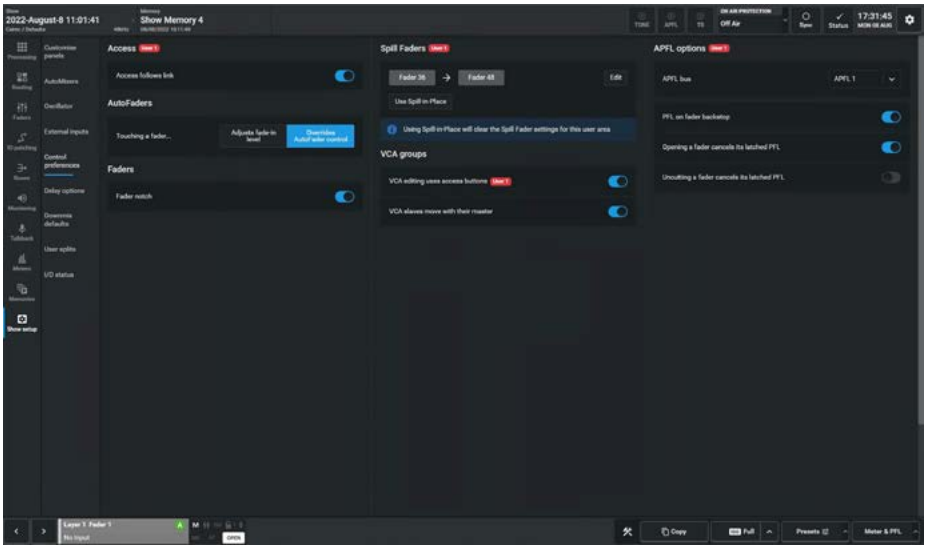
Spill Faders:-
The Argo surface allows the user to either allow Spill-in-place where the spill legs are opened to the side of the selected "path" or pre-define a range of faders that can be used as a Spill area. This is setup by tapping on the '**Set Spill Faders**' button, which opens the "Set Spill Faders" dialogue box and then defining a start and end fader number and finally pressing the '**Save & enable**' button as shown above right. The image below right shows that a Spill area from faders 36 to 48 is set, this range can be changed with the '**Edit**' button which opens the Set Spill Faders dialogue box or removed with the '**Use Spill-in-Place**' button which clears the Spill Fader settings for this user area.

VCA Groups:-
By default VCA groups are edited using the Access buttons, this process can be disabled to protect VCA assignments or stop VCA groups being made accidentally. Also, by default the "**VCA slaves move with their master**" preference is set so that when VCA slave levels are changed by their VCA master then the VCA slave faders move under motor control.

CONTROL PREFERENCES- INCLUDING SPILL-IN-PLACE



CONTROL PREFERENCES - INCLUDING SPILL ZONE



This functionality can be switched off and the VCA slaves will remain stationary.
Note: combined master/slave levels will still be indicated by nulling indicators in the fader displays.

APFL and PFL options:-

APFL Bus
The APFL bus to use for each User area is selected from the APFL bus dropdown. The APFL1, 2 or 3 buses can be selected for use in any of the 3 User areas or by multiple user areas. APFL1 is the default.

PFL on Fader Backstop
By default, the PFL can be turned on momentarily by pulling the fader down below its off position, and deactivated once released. This can be switched off per user area.

Opening a fader cancels latched PFL
By default, if a fader is closed and this option is selected, when it's PFL is on, it will be automatically turned off when the fader is opened. This feature can be switched off per user area.

Uncutting a fader cancels latched PFL
If a fader is cut and this option is selected then any PFL that is latched on will be cancelled when the path has its "Cut" turned off. This feature can be switched off per user area.

Note: The User 1/User 2/User 3 indicators that are displayed in the UI are used to flag that those settings only apply to that user area. Settings without this flag apply to the entire control surface.

DELAY OPTIONS

Delay Option Settings
The delay options page is accessed from **Show setup>Delay options** as shown in the image above right.

This page allows the user to decide if the delay period applied should be defined in Time or in Frames, the default units are time based in 0.1ms intervals. There are three global delay settings available:-

Delay Units sets the resolution type for all new delay assignments, the interface is a two state button switching between '**Time**' in milliseconds and '**Frames**' in frames per second.

This 'ms'/'frames' selection can be applied to all existing delay assignments by tapping the button labelled '**Apply to all existing delays**'.

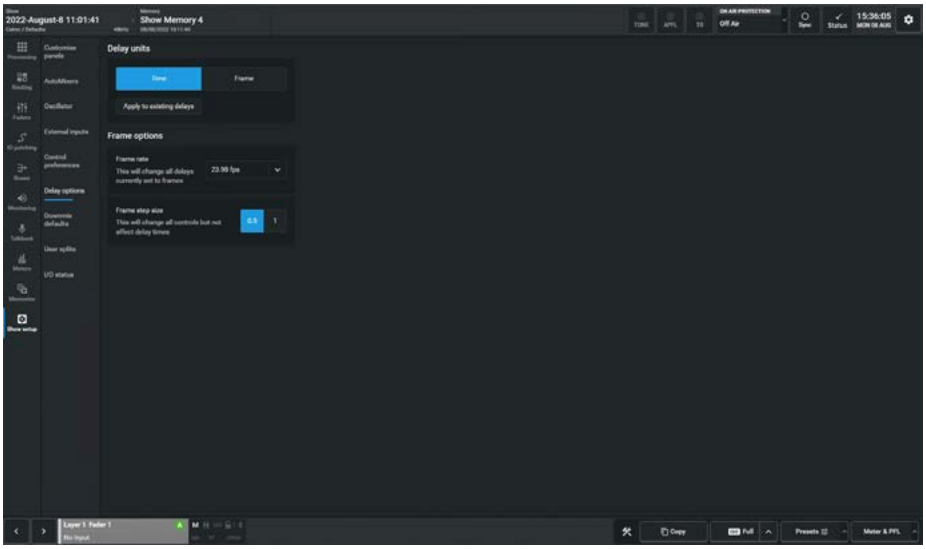
The **Frame rate** selection button is used to set the video frame rate for all frame-based delay assignments.

The frame rate should be set to match the frame rate of the video signal that the audio feed is related to. The various frame rates available are shown in the frame rate options dropdown as shown below right.

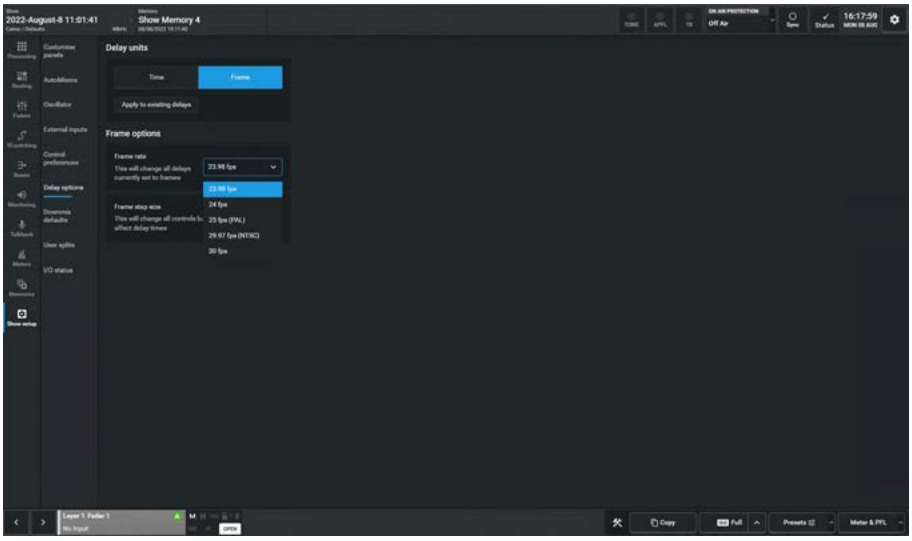
Finally there is the **Frame Step Size** selection button which sets the resolution of the stepper button within the surface or on the **Processing>Delay** page in Assist. There are two step size options available: 0.5 frame and 1 frame.

Note: the time step size in time is not affected by frame step size changes and remains at 10ms throughout.

DELAY OPTIONS



FRAME RATE OPTIONS



DOWNMIX DEFAULTS

Downmixes are conversions of surround or immersive path, downmixing occurs automatically whenever a surround or immersive signal is routed on to a bus of a width that is smaller than the original path.

Downmixes ensure that all the required elements of a surround or immersive signal are maintained and mixed together at appropriate levels when used to feed destinations of a smaller width.

In some circumstances, it may be preferable not to downmix elements of a surround path to a certain bus, for example, if a presenter is fed a surround source into their mono earpiece, it may be beneficial to omit the rear channels to enhance the clarity of any dialogue in the front.

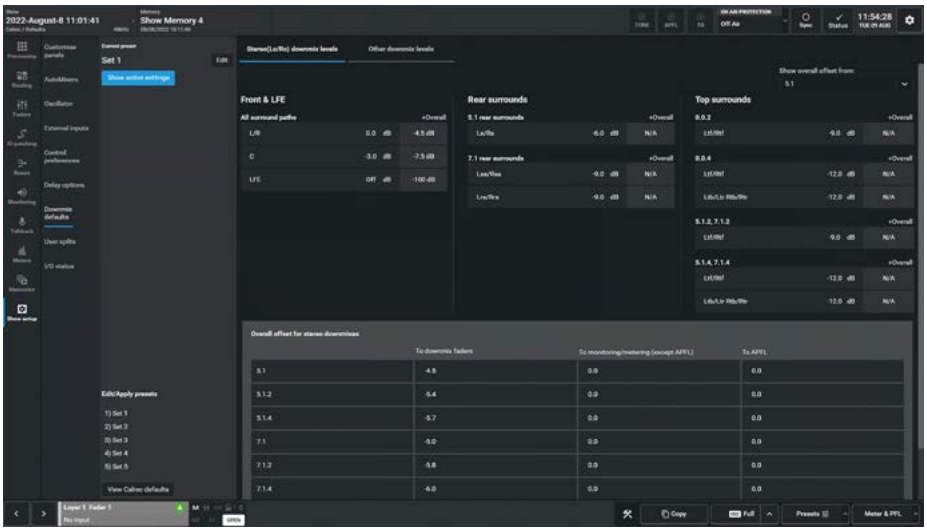
In this case, the audio should not be routed from the surround/immersive master which would cause a downmix. Select the surround/immersive path on the surface instead, then select the front L/R or C element of the surround or immersive path from the spill area or spill-in-place area will make the front L/R only the currently assigned path and allow it to be routed on its own, to the required destination.

When a surround or immersive path is routed to a narrower bus from its master, rather than from a spill leg, a downmix is automatically applied. Surround or immersive stereo downmixes maintain stereo separation by mixing front L, rear L & C together and in the case of immersive sources top L front & rear to create a Lo - 'Left Overall' channel, and front R, rear R & C together and in the case of immersive sources top R front & rear to create a Ro - 'Right Overall'.

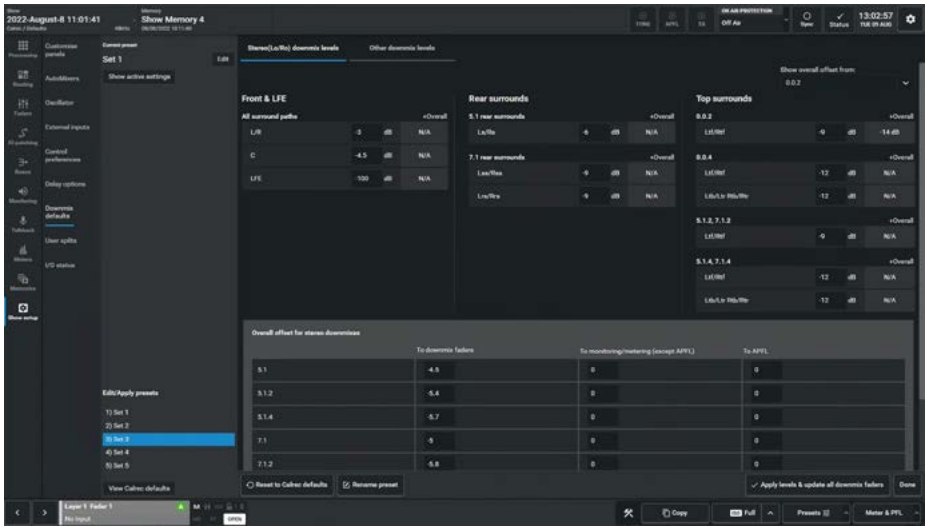
Default downmixes do not include the LFE channel, but this can be added if required.

The levels that the surround/ immersive elements mix together to form a downmix are defined by the downmix set, default downmix values are applied console wide. Initially Set 1 thru Set 5 are set up with Calrec factory defaults, however these sets can be edited and the user can select and then apply any of the five pre-defined downmix sets. This selection is made from the left panel of the **Show Setup> Downmix Defaults** page.

DOWNMIX DEFAULTS - DOWNMIX SET 1 SELECTED



DOWNMIX DEFAULTS - CHANGING TO DOWNMIX SET 3



The image above right shows that the Current downmix preset is Set 1 and the table is showing its active settings. In order to change to a different downmix preset the user taps on the required preset (Set 3) as shown in the image below right, the table values then change to show the downmix values that are contained in Set 3 for instance the Front L/R and C have been changed to -3dB and -4.5dB respectively and the '**Show active settings**' button will be turned off.

If the user wants to apply this downmix set then they tap on the '**Apply Levels and update all down mix faders**' button, this will activate Set 3 as the current preset and the '**Show active settings**' button will be turned on again. The downmix values at the top of the table shows the various levels applied by default to the Stereo Lo/Ro downmix from each of the Spill elements of the source path.

The first column shows the contribution from the Front left and right L/R legs that exist in all surround/immersive paths, the Centre leg C and the Low Frequency Effects leg LFE which is usually set as OFF i.e -100dB.

The second column shows contribution levels from the Rear surrounds from either 5.1 Ls/Rs source legs or 7.1 Lss/Rss and Lrs/Rrs source legs.

The third column shows contribution levels from the Top surrounds from 0.0.2 Ltf/Rtf source legs & 0.0.4 Ltf/Rtf & Ltb-Ltr / Rtb-Rtr source legs which are from height only paths or 5.1.2 & 7.1.2 Ltf/Rtf source legs and 5.1.4 & 7.1.4 Ltf/Rtf & Ltb-Ltr / Rtb-Rtr source legs which are from fully immersive paths.

The downmix level is the sum of each leg and Overall offset levels where applicable, the image above right shows the overall offset levels to be applied from each source into the LoRo downmix and the "Show Overall offset from" dropdown box (top right) displays those values in the table on the previous page for each source width selected from the dropdown.

As well as the LoRo downmix tables, the "Other downmix/upmix levels" TAB shown below right, displays the change in levels to be applied from Source legs to Destination legs when routed, in tabular form.

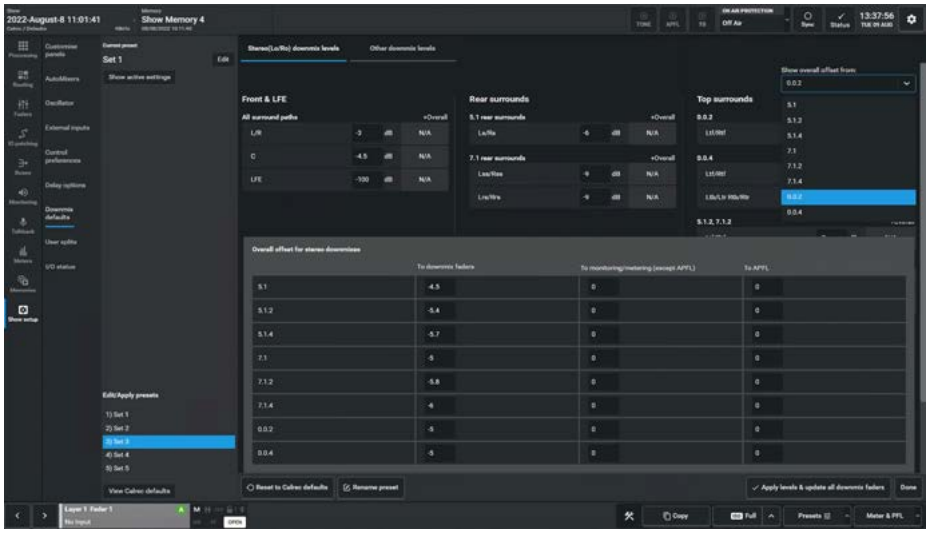
The upper entry shows the Front L/R, C & Lfe legs of all surround paths being fed into 0.0.4 & 0.0.2 destinations showing what levels are to be applied.

The upper middle entry shows the 5.1/5.1.2 & 5.1.4 rear surround Ls/Rs source legs being fed into 7.1/7.1.2 & 7.1.4 front L/R, side surrounds Lss/Rss, rear surrounds Lrs/Rrs and the 0.0.4 & 0.0.2 destinations showing what levels are to be applied.

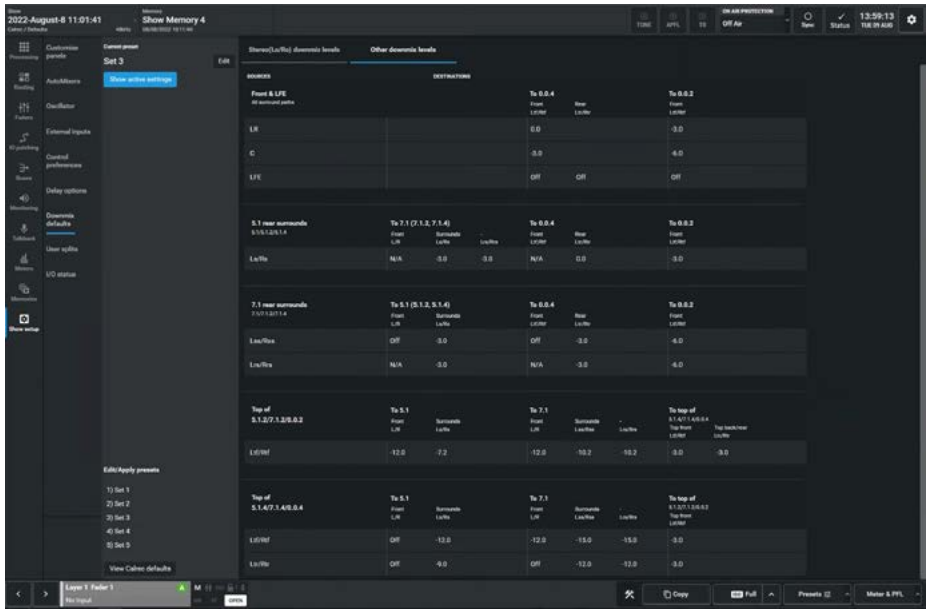
The middle entry shows the 7.1/7.1.2 & 7.1.4 rear surround Lss/Rss and Lrs/Rrs sources being fed into 5.1/5.1.2 & 5.1.4 front L/R, surrounds Ls/Rs and the 0.0.4 & 0.0.2 destinations showing what levels are to be applied.

The lower middle and lower entries show what levels are to be applied from the Top surrounds when routed to destinations of different widths.

DOWNMIX DEFAULTS - OVERALL OFFSET LEVELS FOR LORO



DOWNMIX DEFAULTS-OTHER DOWNMIX LEVELS



In the lower middle entry, the top of 5.1.2/7.1.2 & 0.0.2 Ltf/Rtf source legs being fed into 5.1 front L/R & surround Ls/Rs and 7.1 front L/R, side surround Lss/Rss & rear surround Lrs/Rrs and the top front Ltf/Rtf and top back/rear Ltb-Ltr / Rtb-Rtr of 5.1.4/7.1.4 & 0.0.4 destinations, showing what levels are to be applied.

The lower two entries show the top of 5.1.4/7.1.4 & 0.0.4 Ltf/Rtf & Ltr/Rtr source legs being fed into 5.1 front L/R & surround Ls/Rs or 7.1 front L/R, side surround Lss/Rss & rear surround Lrs/Rrs and the top front Ltf/Rtf of 5.1.2/7.1.2 & 0.0.2 destinations, showing what levels are to be applied.

Setting downmix defaults
Users can set up any or all of the five different downmix defaults (any of which can be set to the default set up by Calrec using the '**Reset to Calrec defaults**' button).

One of these defaults can then be selected by operators to be the default for their show.

Users can edit settings in each downmix set, as shown in the image above right, they first select the preset to edit or if it is the current set they can tap on the '**Edit**' button at the top of the left panel and the editable fields change background colour.

The user here is editing Set 3 and has altered Set 3's Centre leg level from -3dB to -5dB as shown above right.

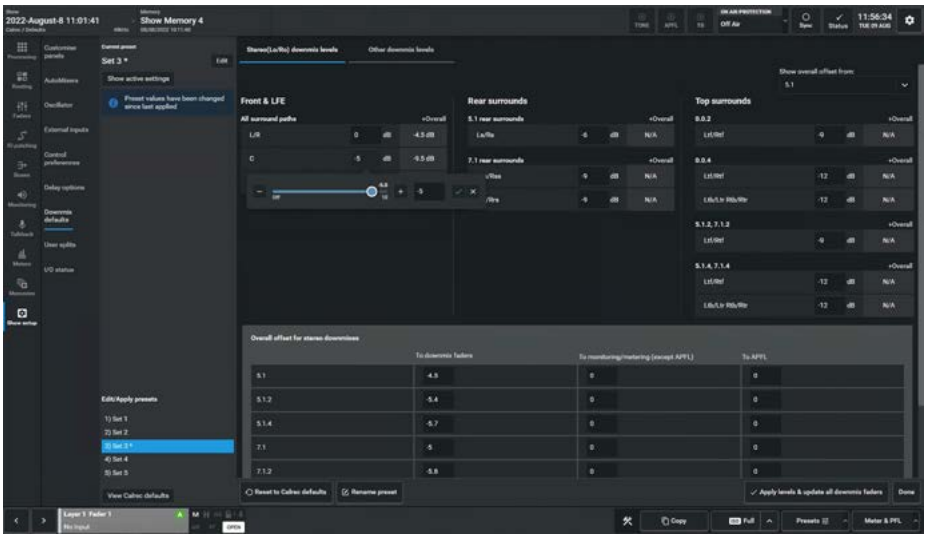
Each level can be altered by tapping on it which opens the editing dialogue box where the values can be altered using the +/- buttons, the slider or typing in a numeric value.

Once the value is set the user taps on the "tick" icon to **'Save'** the level changes or the "cross" icon to **'Cancel'** the level changes.

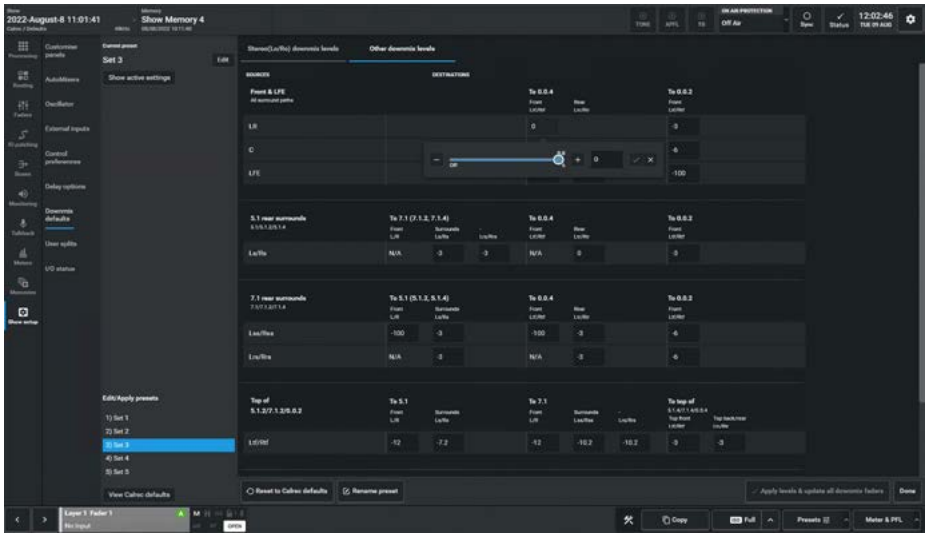
Changes take effect immediately and an asterisk is shown next to the altered Set 3 *, the changes are applied to all user memories within the current show, including downmixing for internal system routing, surround or immersive main outputs and surround or immersive channel/group direct outputs which have downmixed versions available for patching to output transmitters.

In the image below right the user is just about to change the level that will be sent from the Front LR of all surround paths to the 0.0.4 Front Ltf & Rtf outputs.
When levels have been changed an information message appears in the left panel informing the user that "Preset values have been changed since last applied".

DOWNMIX DEFAULTS - SET 3 EDITING C LEVEL FOR STEREO (LO/RO)



DOWNMIX DEFAULTS - SET 3 EDITING LR LEVEL FOR 0.0.4 FRONT LTF/RTF



If the user wants to save these preset value changes they can click on the **'Apply Levels and update all downmix faders'** button to save the values into the selected set and make it active. It is then saved as part of the user memory and the "Preset values ..." message and the asterisk adjacent to the edited preset is removed.

Note: at the bottom of the left panel is a '**View Calrec defaults**' button, this allows the user to do a quick comparison between the current preset values and the Calrec default values without changing the settings.

Renaming Presets
As shown above right the name of the preset may be altered by tapping on the '**Rename preset**' button, entering a new name in the "Rename preset" dialogue box and tapping on the '**Rename**' button or '**Cancel**' button as required.

Reset to Calrec defaults
As shown above right at the bottom left of the table area is a '**Reset to Calrec defaults'** button, which when tapped opens the **"Reset this preset to defaults"** dialogue box.

'Tapping on the **'Reset'** button overwrites all the downmix values of the current Set selection with the default values in the Calrec defaults, providing an easy way to clear any unwanted edits and start creating a new downmix setup from a known default set of values.

Bypassing Downmix levels
When routing a surround or immersive path or bus to a bus of narrower width, the downmix levels set by the downmix faders are applied automatically. To bypass the downmix faders for a given bus, select the bus in Routing mode and slide the '**Bypass Downmix Faders**' switch.

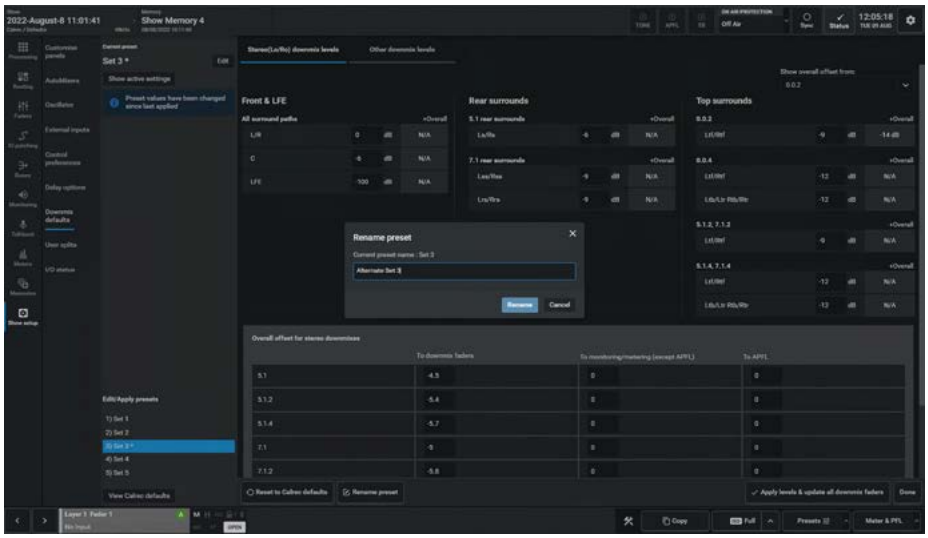
Pre-fader downmixes
Should a surround or immersive path or bus be sent to a bus pre-fader, it may be necessary to have the spill fader levels applied to make the downmix the same as the post-fader downmix.

This is because the post-fader downmix is processed after the spill faders, and so adjustments to individual legs on the spill faders will have an effect on the resultant downmix.

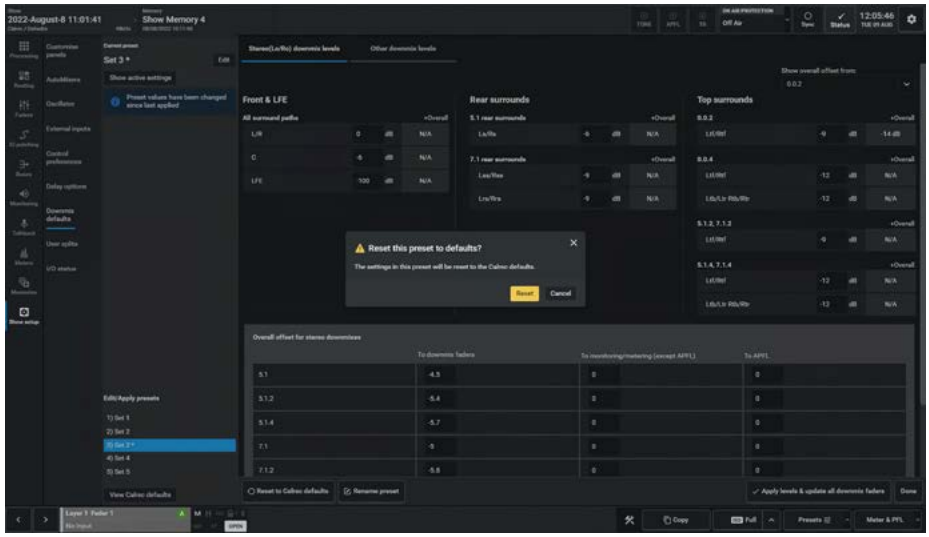
To make the pre-fader send follow the spill faders (but not the overall path fader) to produce the correct downmix, select the destination bus in Routing mode and slide the '**Follow Spill Fader levels**' switch.

Note: this button will only be accessible if the send or route is pre-fader.

DOWNMIX DEFAULTS - RENAMING PRESETS



DOWNMIX DEFAULTS - RESET TO CALREC DEFAULTS



Note: globally applied downmix settings can be adjusted on a path by path basis from the Processing>Faders -Downmix page.

With a surround or immersive path assigned, selecting the **Processing> Fader** - Downmix faders mode in Assist allows the user to alter the contribution made from each element of the surround or immersive path to a downmixed feed.

Unless previously adjusted on that path, the faders should show the levels as dictated by the globally configured downmix set.

Adjusting the faders in downmix mode alters the downmix contributions from the currently accessed path.

USER SPLITS

User splits allow the control surface to be sectioned, allowing multiple operators to work without impacting upon each other.

User splits are also often used to separate an extended control surface or sidecar from the main control surface.

A maximum of three user splits can be set across the combination of main console and extension/sidecar, user splits can be placed between control panels to provide separate areas of control for up to three operators. User splits partition faders and the assignable panel modes.

The assignable panel modes can only affect the currently assigned path within their user area. Each area can have its own currently accessed path.

Changing the accessed path within an area does not change or cancel the accessed path or focus of assignable panels in other user areas. Also, changing layers only affects faders within the user area that the change was made from.

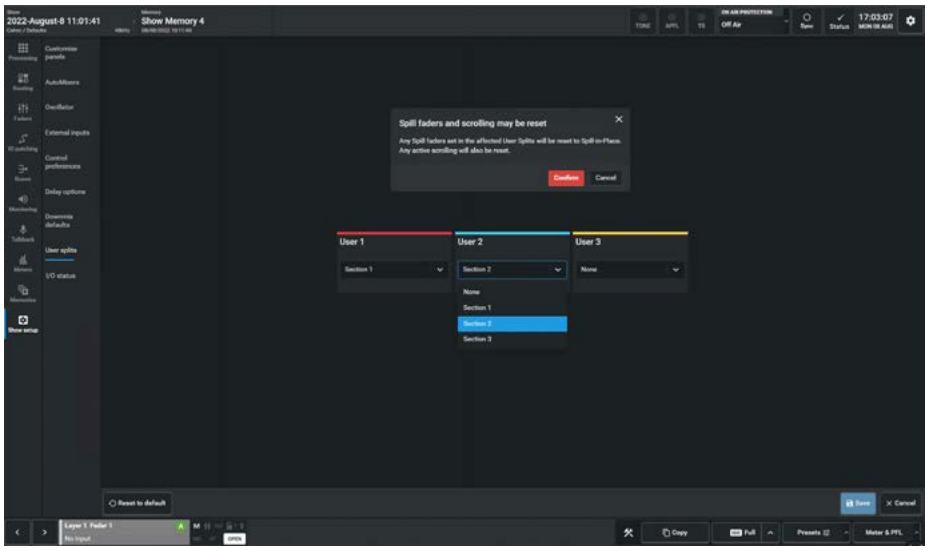
If multiple operators require their own monitoring, speakers/headphones can be fed from monitor output 1, monitor output 2 or miscellaneous monitor outputs, and each operator then use the controls relevant to their area.

The PFL and AFL listen outputs of the faders within each user are can be selected to feed one of three different APFL bus sets, each of which can be patched to outputs for local monitoring and this is chosen from **Show Setup>Control Preferences.**

The two main monitors can be configured to be interrupted by different APFL sets, allowing each user to be able to listen to their paths without affecting each other's monitoring. Please refer to Monitoring section for details on configuring monitoring for multiple users.

Creating / removing user splits
User splits are managed from the **Show Setup>User Split** screen, as shown above right.

USER SPLITS



USER SPLIT SHOWN IN ASSIST FADER SURFACE

Clicking on the various dropdown buttons for each user area displays the list of sections for users 1, 2 or 3 to select and includes those panels to the right of it up to the next user split. Tapping the **'Save'** button in the bottom right of the footer applies the user split settings on the screen to the surface, or **'Cancel'** to put it back as it was. Tapping the **'Reset to default'** button will remove all user splits.

After tapping on '**Save**' a confirmation pop-up appears advising the user that

"Any Spill Faders set in the affected User Splits will be reset to Spill-in-Place. Any active scrolling will also be reset."

Note: the User split configuration is saved in the Show, but no changes are applied to the surface until the Save button is tapped.

Identifying User Split Locations
The location of active user splits is shown on the fader surface page as shown below right.

The panels to the left of the User 2 split highlighted marker are in the User 1 area. Any panels to the right of the User 2 marker will belong to the User 2 area until another User Split marker or the end of the surface is reached.

I/O STATUS

The I/O Status page in the Show Setup mode is used to shown the Online or Offline status of any IO device that this console has been attached to, from the Connect application.

The I/O Status page is managed from the **Show Setup>IO Status** screen, as shown above right.

I/O Status Messaging

The IO devices in the table may or may not be in use by other surfaces in the network, this page allows the user to Receive or Ignore status messages from those IO devices that this user has an interest in.

A '**Receive status messages**' slider switch is provided for each IO device so that the user can select the boxes as necessary.

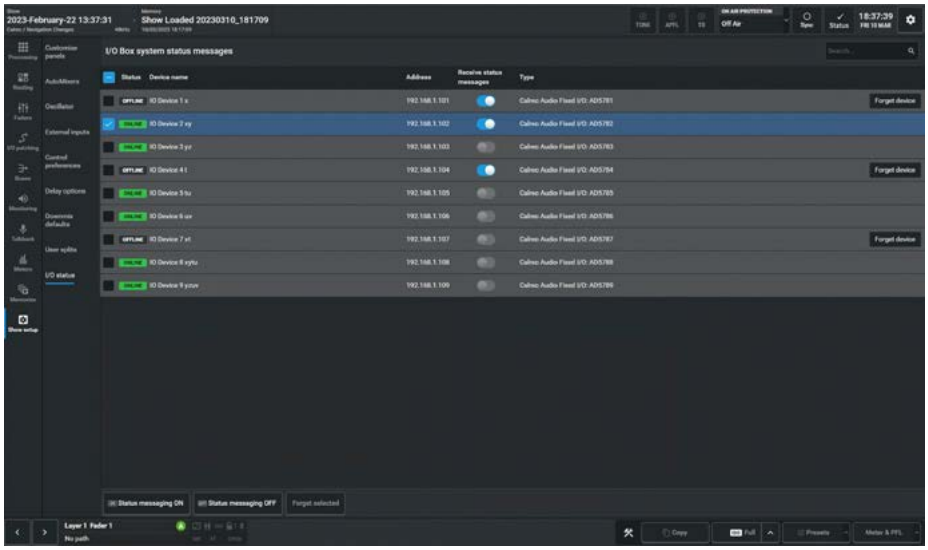
When an IO device is Offline a further option appears which allows the user to forget the device as shown below right.

If the box is no longer required by this user then tapping on the **'Forget device'** button will remove that device from the table.

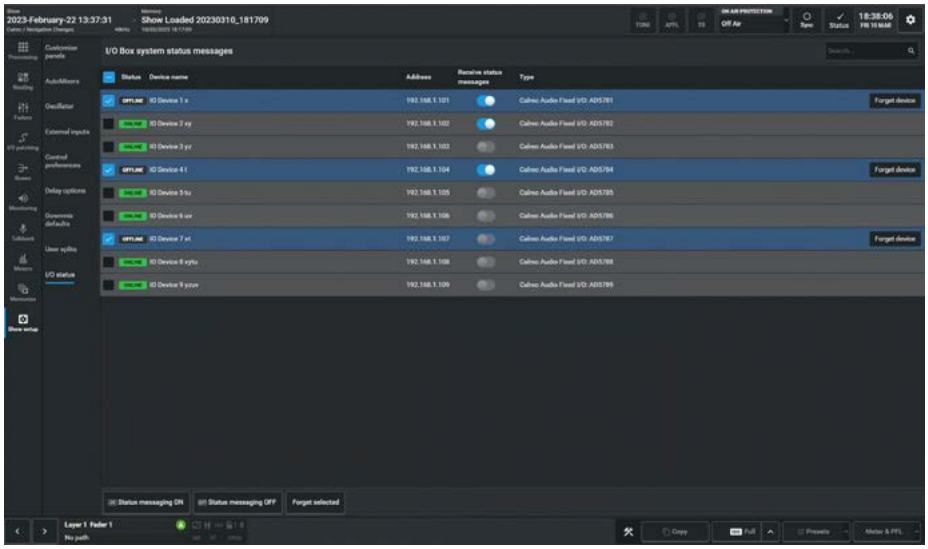
The three buttons at the bottom of this page allows the user to turn the **'Status messaging ON'**, turn the **'Status messaging OFF**' or to **'Forget selected'** IO Devices based on the selection '**Tick**' boxes on the left side of the IO Device table.

Note: the **'Forget device'** button is only available when the box is OFFLINE.

I/O STATUS WITH ONLINE DEVICE HIGHLIGHTED



I/O STATUS WITH OFFLINE DEVICE HIGHLIGHTED



ARGO ASSIST
SHOWS

CALREC

SHOWS

Accessing the Shows List
In order to access the shows list the user taps on the area highlighted as shown above right and the Shows list appears.

On the left side of the screen is shown information about the system including which Surface, Mixer and Current Show is loaded and a Disk space indicator at the bottom.

Along the footer of this screen are shown the various actions that the user can perform:- create a **'New'** show, **'Edit'** the show label and show description, **'Load'** the show, make a **'Duplicate**' of the show, **'Import'** a show typically from a USB memory stick plugged into the PC/laptop, **'Export'** a show again typically from a USB memory stick plugged into the PC/ laptop or **'Delete'** the show.

Note: Import/Export not available in V1.0.x use Assist instead

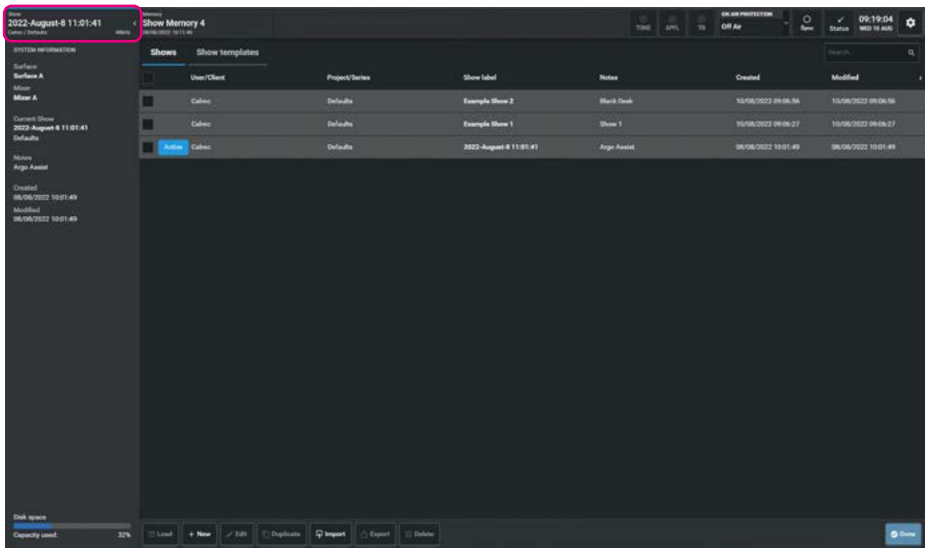
New Show
As part of the system, a templates folder containing default shows can be made for this desk type and used to create any number of new shows as required.

Note: there is always at least one default template (which cannot be deleted) available for use to create a show.

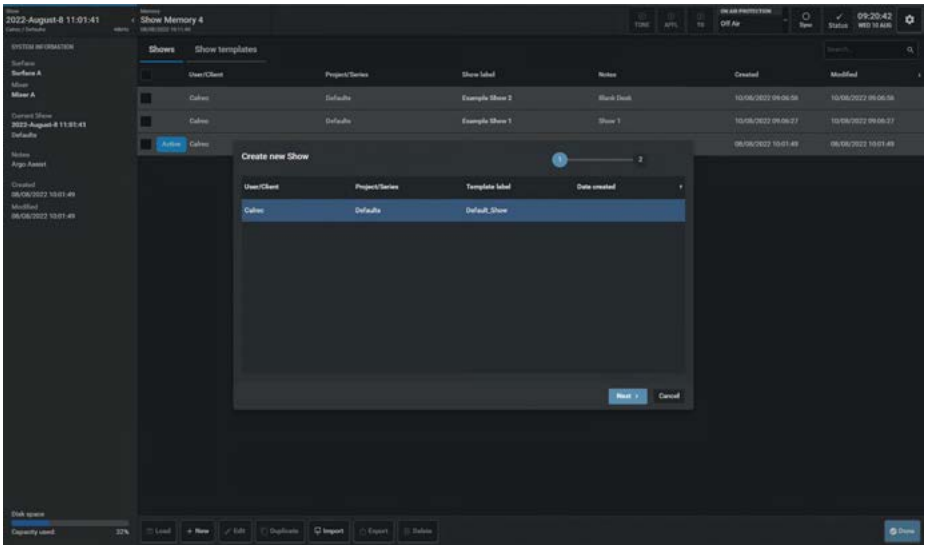
Tapping on the **'New'** icon in the footer of the shows list (above right) opens the "Create new show" dialogue as shown middle right. The user selects the show template to be used in step 1 by tapping on it and then proceeds to step 2 by tapping on the **'Next'** button. Step 2, shown below right, allows the user to change the User/Client, Project/Series, Show Label & Show Description fields.

Once these fields have been entered the user then taps the **'Create'** button and this new show is automatically loaded which then switches to the **Faders>Fader Layout** screen so that the user can proceed to configure the required paths.

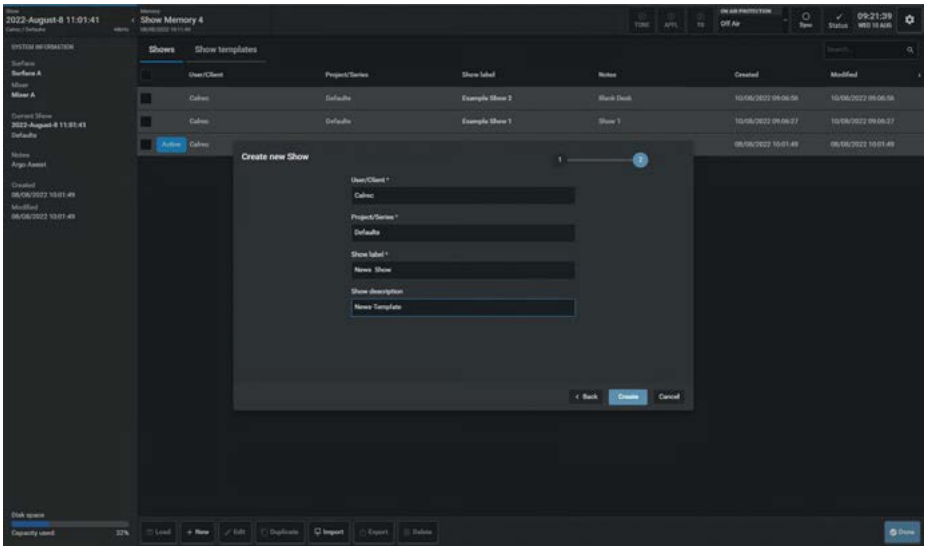
SHOWS LIST



CREATE NEW SHOW STEP 1



CREATE NEW SHOW STEP 2



Edit Show Label

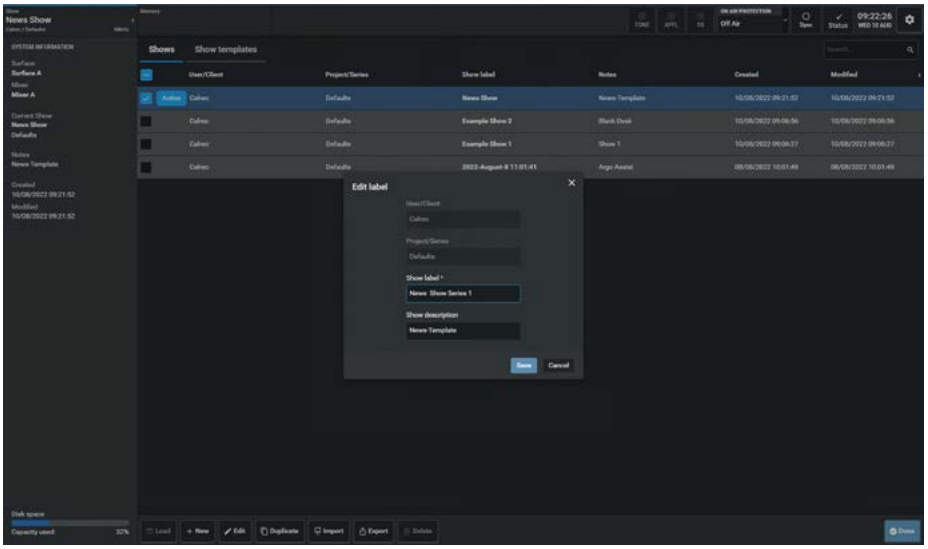
Once a show exists in the shows list the user can edit its show label and show description to make it more meaningful.

This is done by selecting the show, tapping on it and then tapping the **'Edit'** icon in the shows list footer.

This opens the "Edit label" pop-up and the user edits the show label and show description fields as required. See above right.

Note: in order to Save Changes the show label or show description must have been edited.

EDIT LABEL

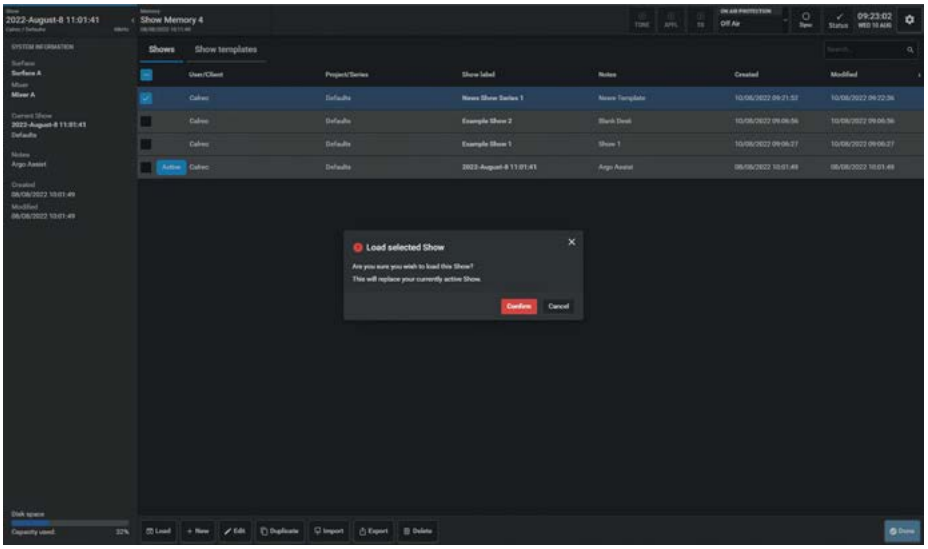


Load Show

In order to Load a Show the user selects the show to be loaded by tapping on it and then tapping on the **'Load'** icon in the footer.

This opens the "Load selected show" confirmation pop-up and the user taps the '**Load**' button as shown middle right.

LOAD SHOW



Duplicate Show

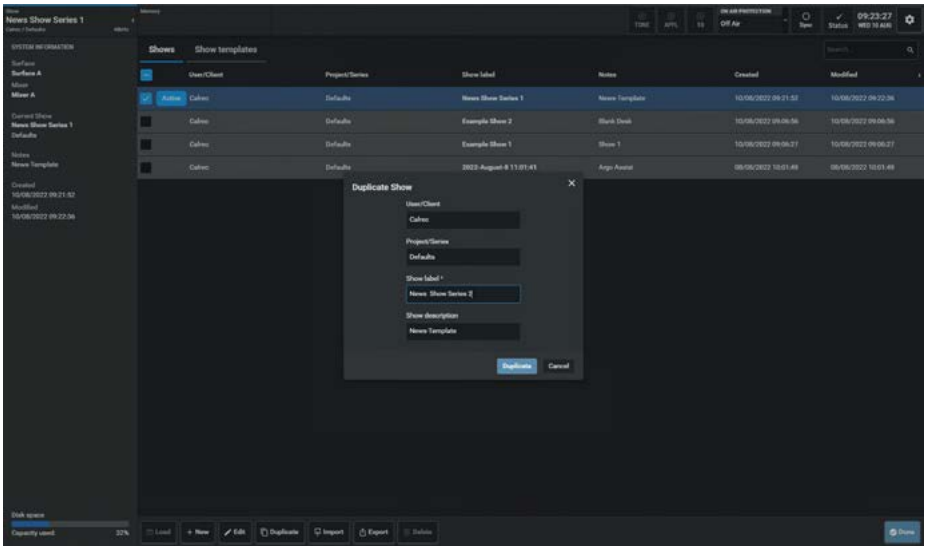
Sometimes it is useful to have an unedited or different copy or duplicate of a show.

In order to Duplicate a Show the user selects the show to be duplicated by tapping on it and then tapping on the **'Duplicate'** icon in the footer.

This opens the "Duplicate show" pop-up which allows the user to change the User/Client, Project/Series, Show Label & Show Description fields as required.

Once these fields have been edited the user taps on the **'Duplicate'** button and this creates a duplicate copy of the show, as shown below right.

DUPLICATE SHOW



Import Show

In order to Import a Show the user taps on the **'Import'** icon in the footer. This opens the "Import" dialogue box which allows the user to drag a **'.CalrecShow'** file into it or browse for the file on the computer. The user has tapped the '**Choose file**' button which opened an explorer window, which is used to find and open **'.CalrecShow'** files. The explorer window shown has found and selected the required Show file and tapping on the '**Open**' button will import the show file into the shows list as shown above right. For example, the shows may be on a USB memory stick on which shows have previously been exported. This imports the show into the shows list ready to be loaded and edited if necessary.

Export Show

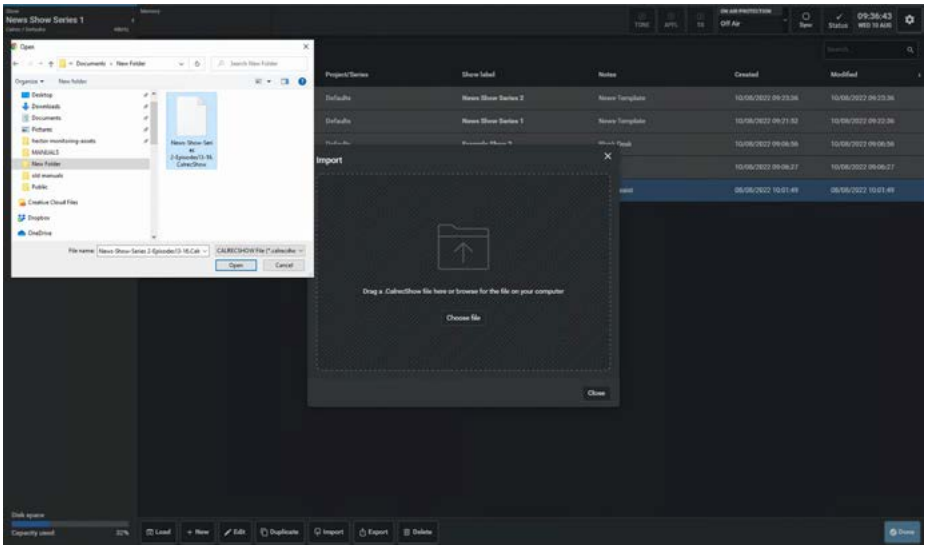
In order to export shows the user selects a show to be exported by tapping on it and then tapping on the **'Export'** icon in the footer. This advises that the files are being prepared, to wait for the file to download and opens an explorer window, which is used to save **'.CalrecShow'** files prefixed with the name of the file. The explorer window displays the required Show file name and tapping on the '**Save**' button will export the meter preset file as shown middle right. For example, onto a USB memory stick. We would also advise setting the 'Ask where to save each file before downloading' option in the Chrome://settings> advanced settings> downloads section, so that the exports are saved to the users preferred destination.

Delete Show

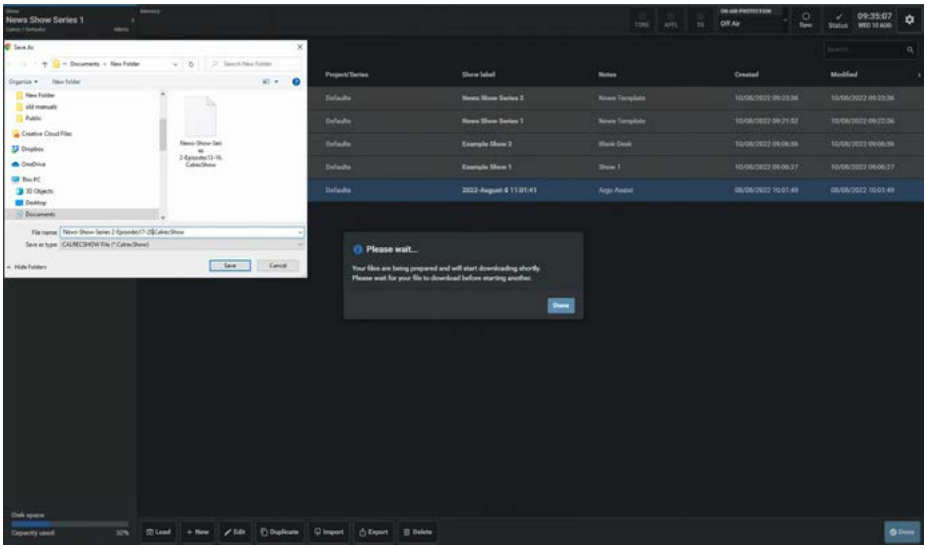
When shows are no longer required the user can select and delete them. To delete shows the user selects the shows to be deleted by tapping on them as confirmed with the "tick" icon and then tapping on the **'Delete'** icon in the footer. This opens the delete dialogue footer which provides information about deleting multiple shows as shown below right. Once all the shows to be deleted have been selected the user taps on the **'Delete'** button in the dialogue footer and this deletes them.

Note: the loaded 'Active' show cannot be deleted.

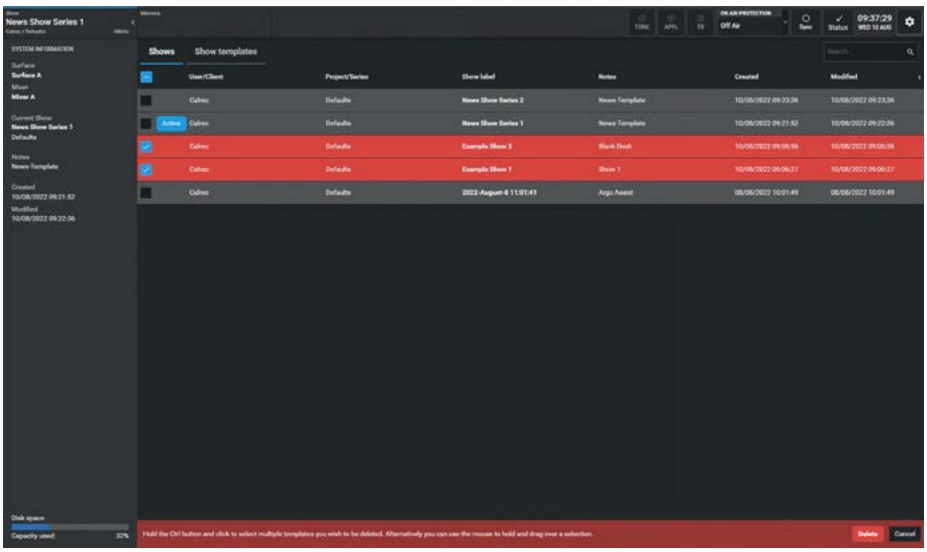
IMPORT SHOW



EXPORT SHOW



DELETE SHOWS



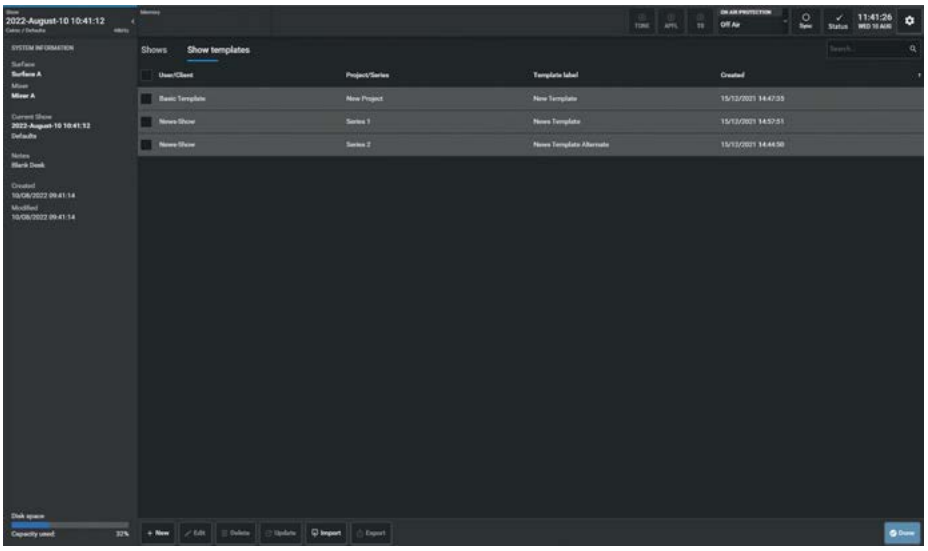
Show Templates

Once a show exists in the shows list it can be used as a Show template. This is done by tapping on the **'Show templates'** tab to the right of the 'Shows' tab.

This opens the show templates screen as shown above right.

Note: the Calrec Default Show Template doesn't appear in this list but it is always present in the system and appears when a new show is being created.

SHOW TEMPLATES



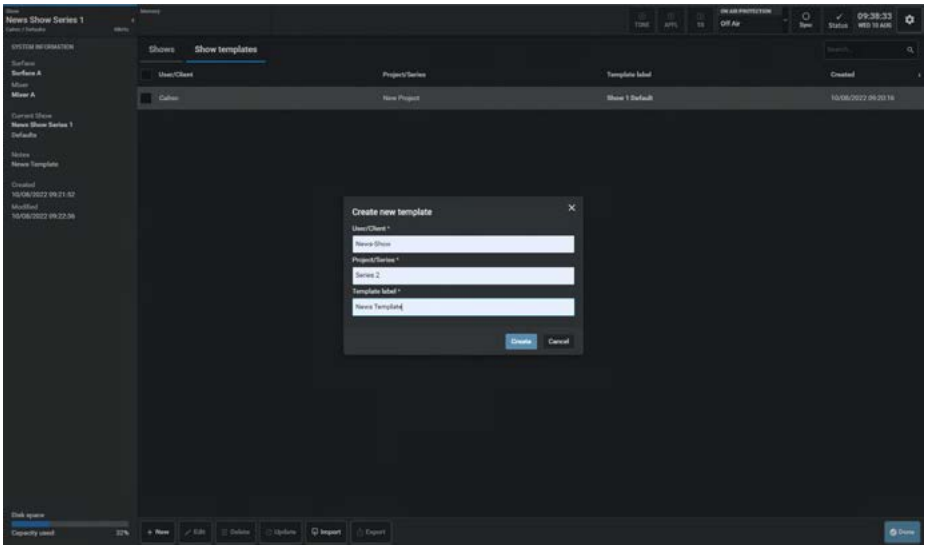
New Show Template

The User taps on **'New'** in the Show templates footer and the "Create new template" dialogue box appears.

The user can then add User/Client, Project/Series and Template Label information as shown middle right.

Once the **'Create'** button is tapped the currently loaded 'Active' show becomes the new Show template and is now saved as a Show template file.

NEW SHOW TEMPLATE



Edit Show Template Label

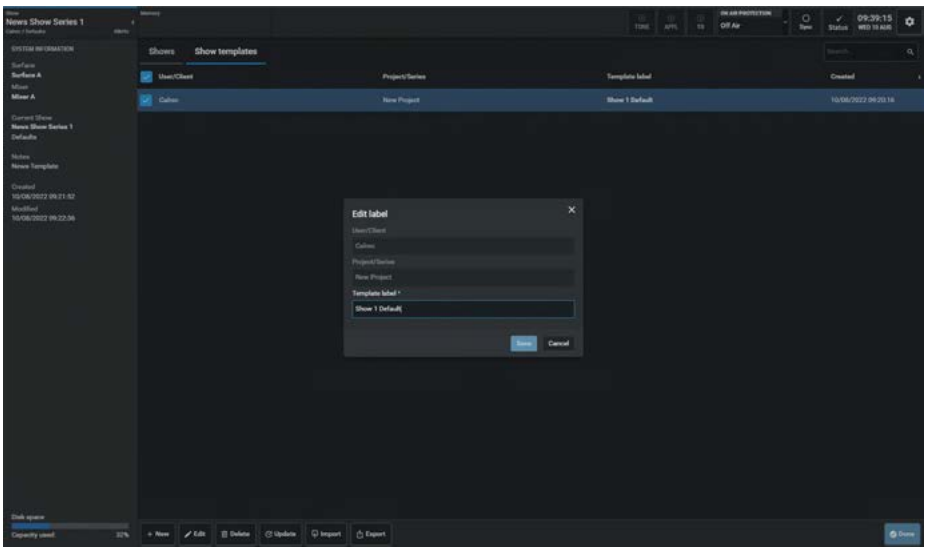
Once a template exists in the show templates list the user can edit its label and make it more meaningful. This is done by selecting the template and then tapping the **'Edit'** icon in the show template list footer.

This opens the "Edit label" dialogue box and the user edits the 'Template label' as required as shown below right.

Once the **'Save'** button is tapped the new label for the show template is applied.

Note: the User/Client and Project/Series fields cannot be edited from here and are greyed out.

EDIT SHOW TEMPLATE LABEL



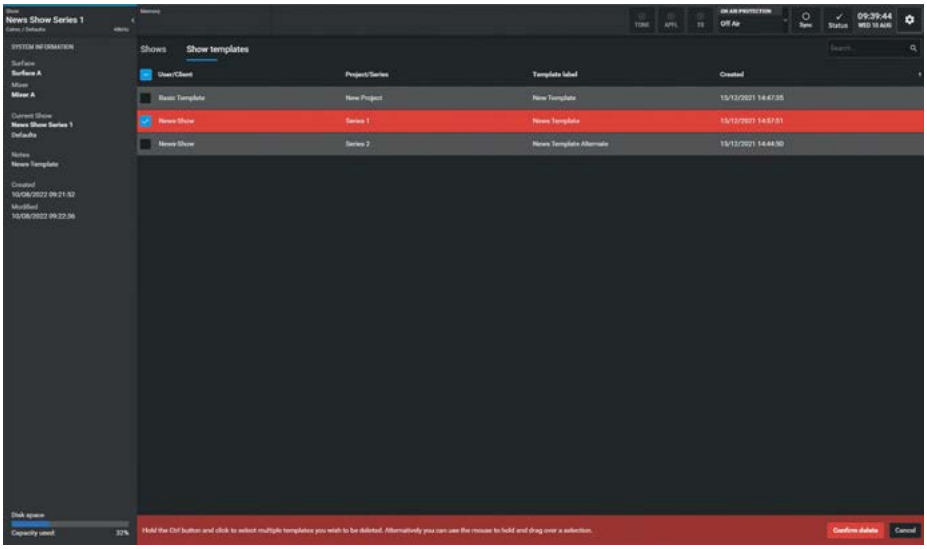
Delete Show Template
When show templates are no longer required the user can select and delete them. In order to delete show templates the user selects a show template to be deleted by tapping on them as confirmed with the "tick" icon and then tapping on the **'Delete'** icon in the footer.

This opens the delete template dialogue footer which provides information about deleting multiple shows by tapping on all the shows to be deleted.

Once the templates to be deleted have been selected the user taps on the **'Delete'** button and this deletes them, as shown above right. Once all the show templates to be deleted have been selected the user taps on the **'Confirm Delete'** button in the dialogue footer and this deletes them.

Note: the Calrec default template cannot be deleted and is not shown in the Show templates list.

DELETE SHOW TEMPLATES

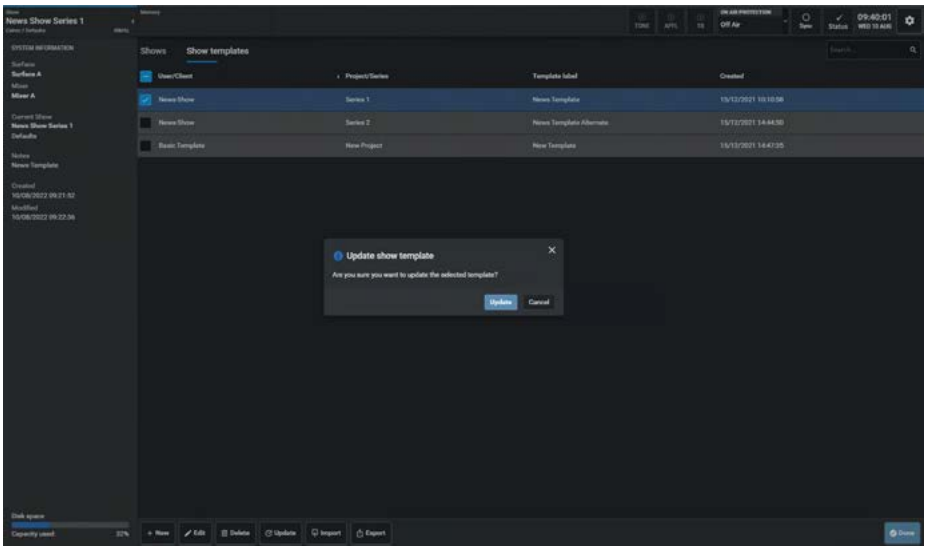


Update Show Template
The image below right shows the process of updating a Show Template. In order to update a show template the user selects the required show template to be updated by tapping on it as confirmed with the "tick" icon and then tapping on the **'Update'** icon in the footer.

This opens the "Update show template" dialogue which asks the user if they are sure that they want to update the selected template. Once the **'Update'** button is tapped it overwrites the stored show template with the loaded Active show.

Note: make sure that the correct existing Show template has been selected before applying 'Update' as it will be overwritten.

UPDATE SHOW TEMPLATE



Import Show Template
In order to Import a Show template the user taps on the **'Import'** icon in the Show template footer. This opens the "Import" dialogue box which allows the user to drag a **'.CalrecShowTemplate'** file into it or browse for the file on the computer. Here the user has tapped the '**Choose file**' button which opened an explorer window, which is used to find and open **'.CalrecShowTemplate'** files.

The explorer window shown has found and selected the required Show template file and tapping on the **'Open'** button will import the show template file into the show templates list as shown above right.

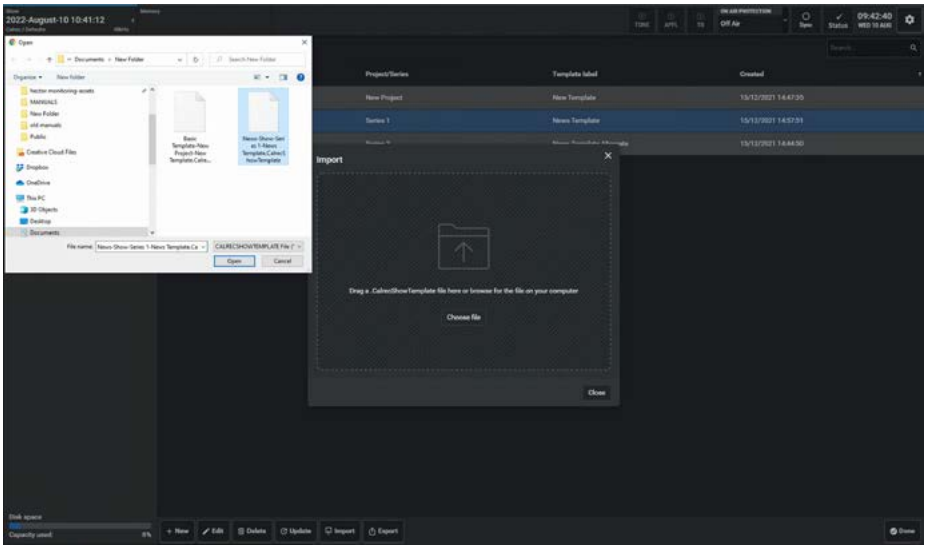
For example, the shows may be on a USB memory stick on which show templates have previously been exported. This imports the show template into the show templates list ready to be used to create new shows.

Export Show Template
In order to export show templates the user selects a show template to be exported by tapping on it as confirmed with the "tick" icon and then tapping on the **'Export'** icon in the footer. This advises that the files are being prepared, to wait for the file to download and opens an explorer window, which is used to save **'.CalrecShowTemplate'** files prefixed with the name of the file.

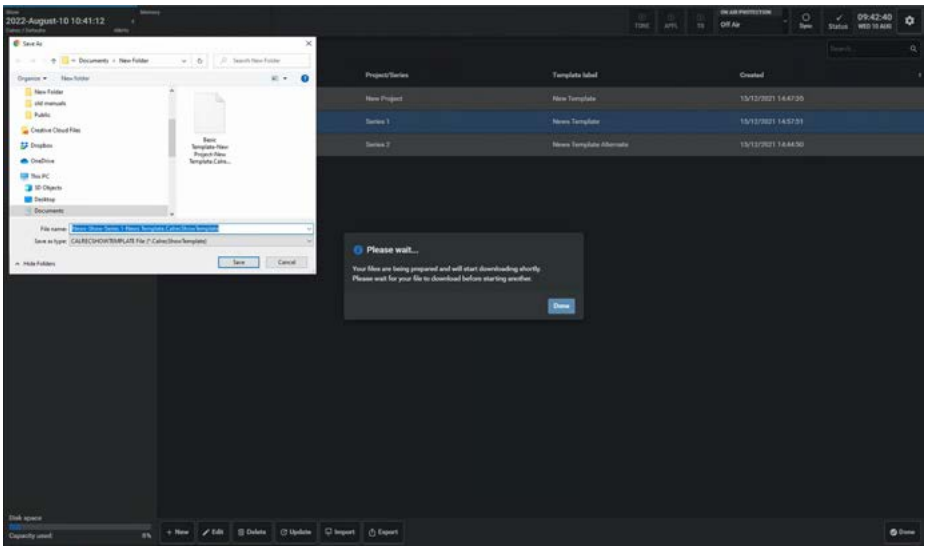
The explorer window displays the required Show template file name and tapping on the **'Save'** button will export the meter preset file to the user's selected destination, for example onto a USB memory stick as shown middle right.

We would also advise setting the 'Ask where to save each file before downloading' option in the Chrome:// settings> advanced settings> downloads section, so that the exports are saved to the users preferred destination.

IMPORT SHOW TEMPLATE



EXPORT SHOW TEMPLATE



ARGO ASSIST
SYSTEM SETTINGS

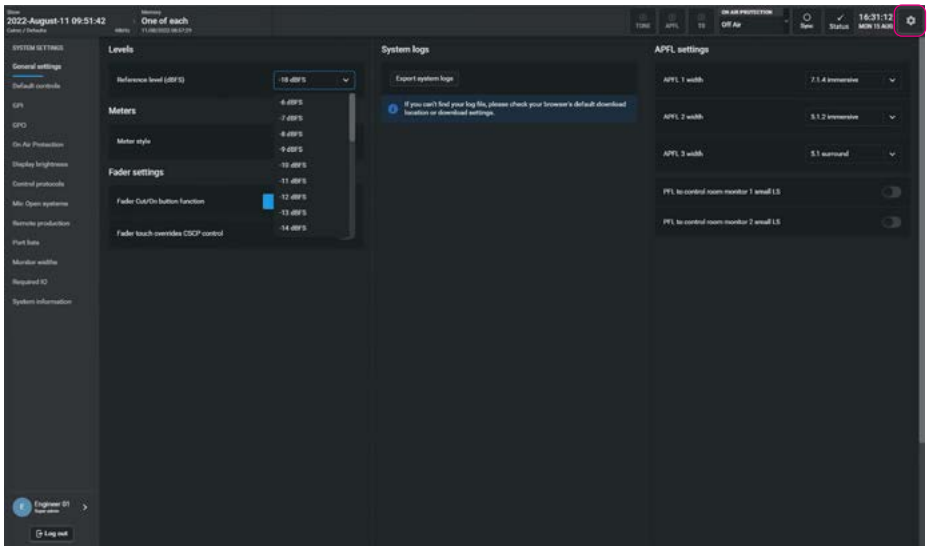
CALREC

GENERAL SETTINGS

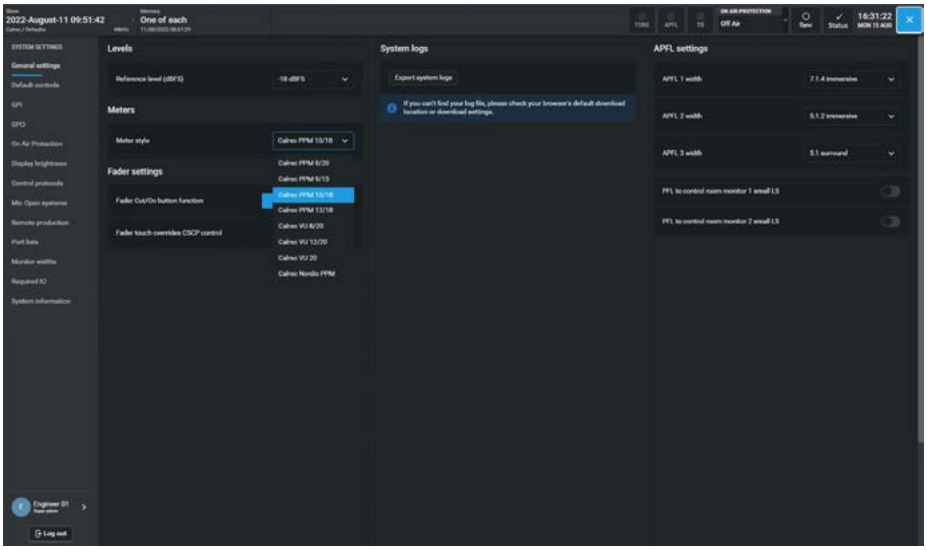
Accessing System settings
To access the System settings drawer the user taps on the gear wheel highlighted as shown above right, the "SYSTEM SETTINGS" drawer appears as shown above right. On the left side of the screen is shown the various sub-menu pages for system settings. The menu normally opens on 'General settings' however if not on this page, tap on the **System Settings> General Settings** option from the sub-menu on the left side.

Operational Settings
Levels:
Reference Level (dBFS) - can be set to an integer value from -6 to -32dBFS. The reference level sets default level values for the dynamics and oscillator modules, see the image above right.
Meters:
Meter Style - can be set for all meters on the meter displays. Various PPM or VU scales can be chosen from a dropdown, see image middle right. This changes the default meter style used when new meters are created, although the meter style can be changed later in the "Edit meters" page. The existing meters are unaffected by this.
Fader settings:
Fader Cut/On Buttons - This setting switches the Cut/On buttons operation between Lit when Cut & Lit when On for the faders and in the user interfaces.
Fader touch overrides CSCP control -if this switch is active the CSCP control of the faders can be overridden from the touch sensitive faders if touched.
System logs:
Export Logs button- when tapped this exports the operational logs to a file for diagnostic purposes. All the log files from around the system are compressed into a gzip tar archive and written to a chosen location e.g. on a USB memory device.
APFL Bus Widths:
APFL 1,2 & 3 Width dropdowns- when these are tapped a dropdown appears for each of the APFL buses, which is used to select the width of the AFL and PFL buses associated with that APFL bus.
PFL to CtrlRoom monitor 1/2 Small LS:
These switches allow the user to listen to the output of the PFL bus using the Small LS output rather than a dedicated PFL LS or using PFL to Mon.

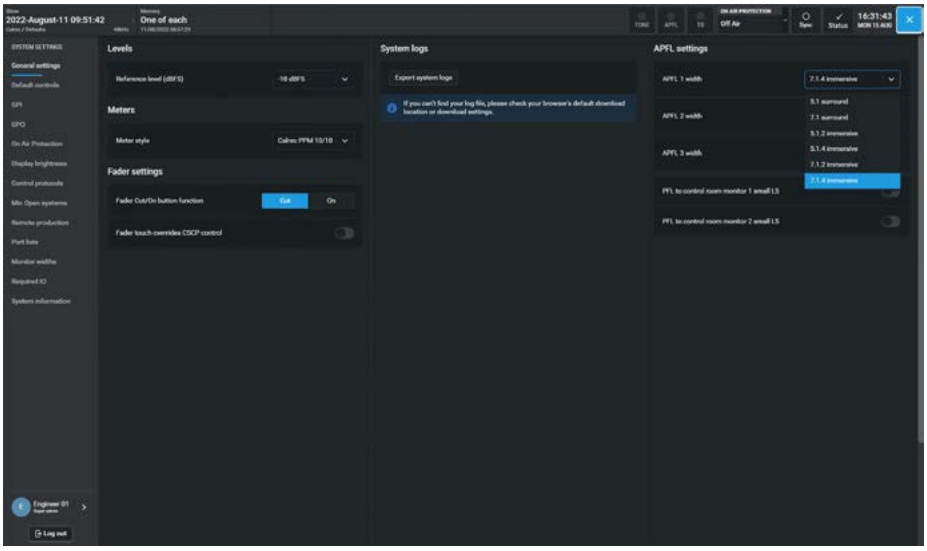
ACCESSING SYSTEM SETTINGS & REFERENCE LEVEL SELECTION



METER SCALE SELECTION



APFL WIDTH SELECTION



DEFAULT CONTROLS

Setting Default Strip Controls

To access the Default controls sub-menu tap on the **System Settings>Default Controls** option from the sub-menu on the left side of the system settings drawer as shown above right. The page is arranged in two halves the left side of the screen is used to set the default controls that appear on the standard fader panel's lower row of 4 button control cells placed just above the faders Cut/On button on the IU6576 Standard Fader panel. This row of 4 button cells are described in the **"User Controls Editor" on page 69**.

The right side of the screen is used to set the default fader button controls, that appear on both the standard 12 fader panel which has 3 definable buttons and the short fader panel which only has 2 definable buttons.

Tapping on any of the buttons in the 4 button cell or any of the 4 Add buttons under button functions, or any of the 3 or 2 buttons next to the faders on the standard or short fader panels opens the Customise button menu with the Input Control page shown middle right.

There are an extensive set of control options that each of the buttons can be set to use as the default functions.

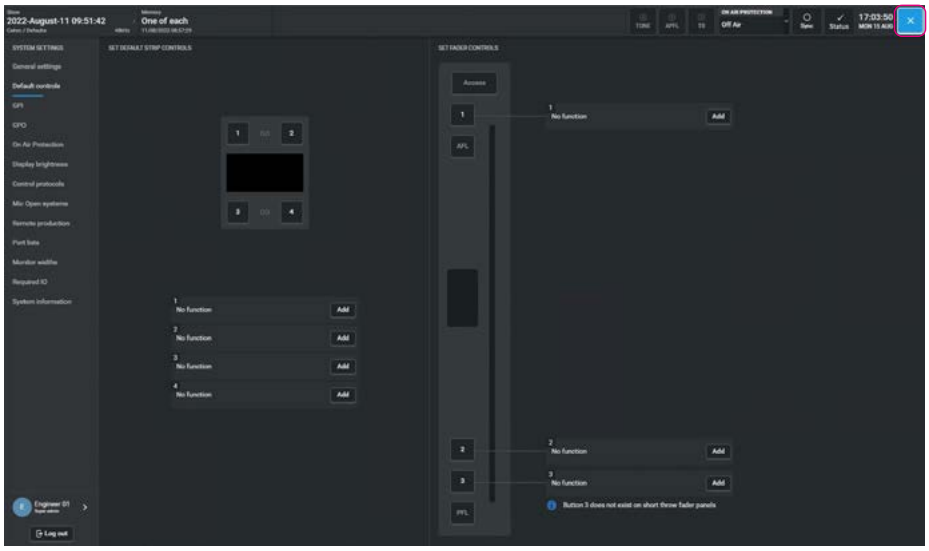
In order to simplify some of these selections, 3 filter sets are provided:-

- Global Functions: these controls are console wide.
- Path Functions: these controls apply to the selected path.
- Bus Functions: these controls apply to buses only.

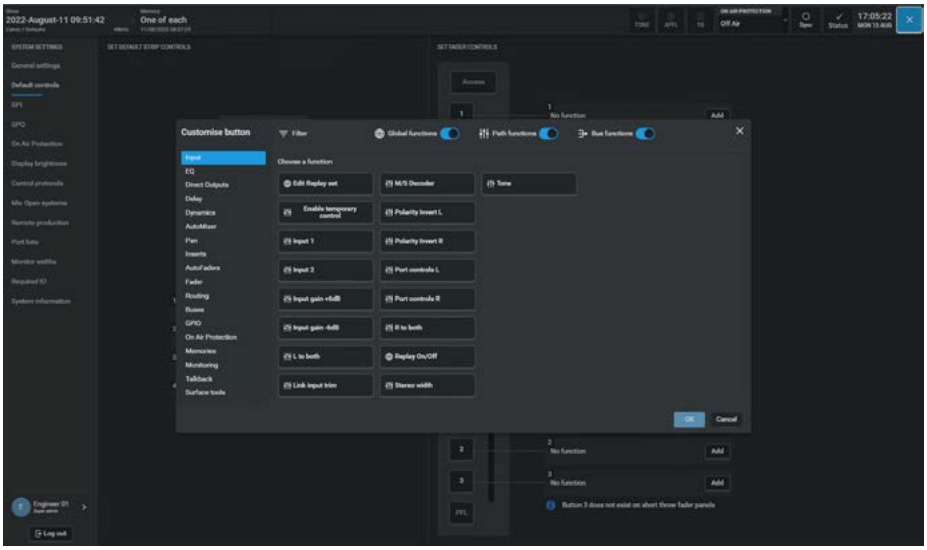
All the button cell templates are already shown in the User controls editor in the **Faders>Fader Layout - Controls** page and as such not be repeated here, see **"User Controls Editor" on page 69**.

The image bottom right shows the user editing the number 1 button next to the fader to be the **'B layer'** button by default.

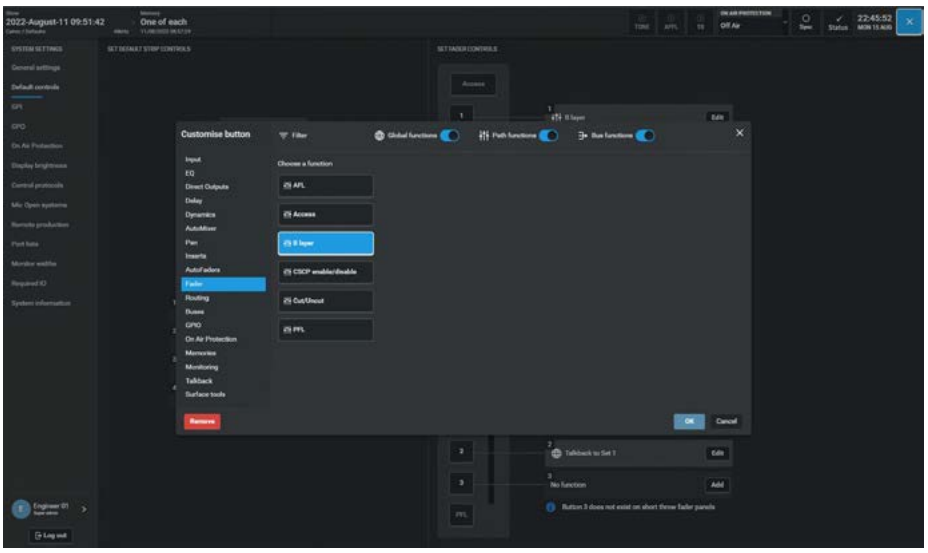
SETTING THE DEFAULT STRIP CONTROLS



CUSTOM BUTTON TEMPLATES



B LAYER SELECTION



GPI

Opto-isolated general purpose inputs (GPIs) can be configured to allow the Argo to respond to external control signals.

GPI Functions

To access the GPI setup screen, tap **System Settings>GPI** from the sub-menu on the left side.

The page shown above right will appear with the available incoming GPI control signals appearing on the left side of the screen and the functions they will be controlling appearing on the right side of the screen. The remote GPI is arranged as sets of Remote GPI receivers.

These are then connected to physical GPI sources located in AoIP devices using the 'Network' page of the '**Connect**' application which is described in detail in '**Connect Guide (926-292)**'

In the screen above right, the user selected the Remote GPI 01 circuit and selected the "AutoFaders" option from the list of functions to act on.

The table to the right shows the functions controllable from GPI sources:-

GPI functions listed within the **"Functions"** pop-up, are specific to console functions and GPI Tallies.

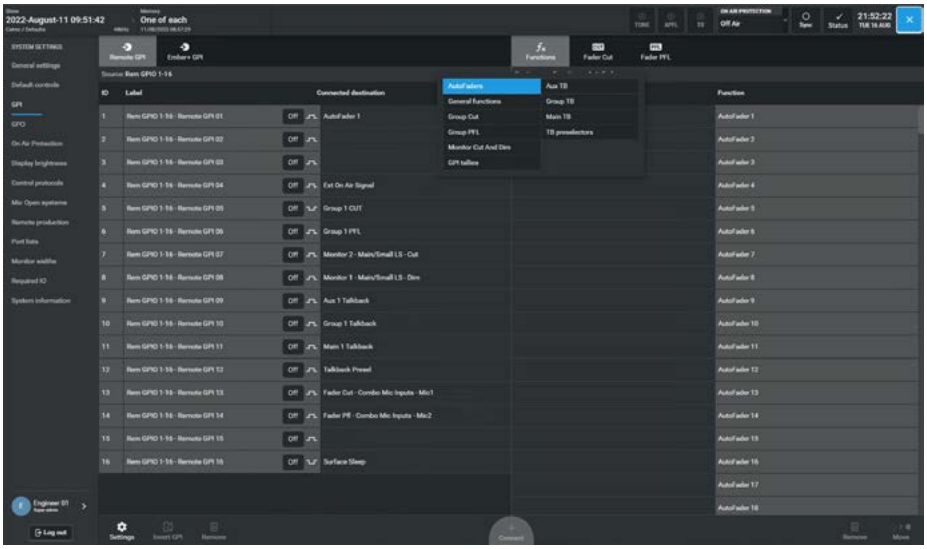
The 'Fader Cut' and 'Fader PFL' functions are audio receiver input port/channel specific. For example, if a user connects a GPI to a port's 'Fader Cut', that GPI will stay connected to that port's fader cut even if the port is moved to another fader.

The 'Audio Receiver' input ports are derived from Remote AoIP Inputs received on AoIP streams.

Settings

If more than one destination is connected to a source there is a settings button on the bottom left hand side of the footer which allows the user to compact or expand the view of the connected destinations as required.

GPI PATCHING SCREEN



FUNCTION SELECTION TABLE FOR GPI SOURCES

Function	Description
AutoFaders	Trigger any number of the 256 independent AutoFaders via a GPI signal
General Functions	Ext On Air Signal - Use an external signal to switch into 'On-Air' mode Ext Reh Signal - Use an external signal to switch into 'Rehearse' mode Tracks Omni TB- Use an external signal to Talkback to all Tracks. Tracks Omni Tone - Use an external signal to send Tone to all Tracks. Next Cue- Use an external signal to Load the next cue in sequence. Previous Cue- Use an external signal to Load the last cue in sequence. Surface Sleep- Use an external signal to turn off its displays.
Group Cut	Apply CUT to any of the Group Buses
Group PFL	Apply PFL to any of the Group Buses
Monitor Cut & Dim	Apply a CUT or DIM to any of the Mon1 LS, Mon2 LS or the 4 Misc Mons
GPI Tallies	Use external signals to switch any of the 256 GPI Tallies On/Off
Aux Talkback Group Talkback Main Talkback	Route Talkback to any of the Aux Outputs Route Talkback to any of the Group Outputs Route Talkback to any of the Main Outputs
TB Pre-selectors	Use an external signal to action any of the 4 Talkback Pre-selectors
Fader Cut	Apply CUT to the Fader to which a specific port is patched
Fader PFL	Apply PFL to the Fader to which a specific port is patched

In compact mode, the number in the Connected Destination field shows the number of connections to that source.

GPI Status Flag

To the right of the Source column is shown the GPI status flag for each GPI. If the GPI circuit is not activated then the 'Off' icon will appear as shown above right, if the GPI circuit is activated then an 'On' icon will appear in its place.

Invert GPI

The Invert GPI button in the footer of the GPI patching screen allows the user to change the trigger between an active high input and an active low input. The user first selects the required Remote GPI and then taps the **'Invert GPI'** button.

The symbol on the right of the Source column will invert to show the required trigger state.

Connect GPIs to Functions
In order to connect GPI sources to destination functions, the user first selects the required GPI source from the left side table and then taps on the required destination function from the right side table as shown above right.

A green arrow will appear indicating which GPI is about to be connected to which function. The user then taps on the **'Connect'** button in the centre of the footer and the connection is made at which point the arrow turns yellow.

Note: a GPI can be assigned to control more than one function if required.

Remove Connected Destinations
In order to remove connected destinations from the GPIs the user selects the connected destinations to be removed and taps on the **'Remove'** button in the left side footer. This opens the footer remove dialogue as shown middle right. The user can then tap on **'Remove'** in the footer to complete the procedure or **'Cancel'** if the user changes their mind.

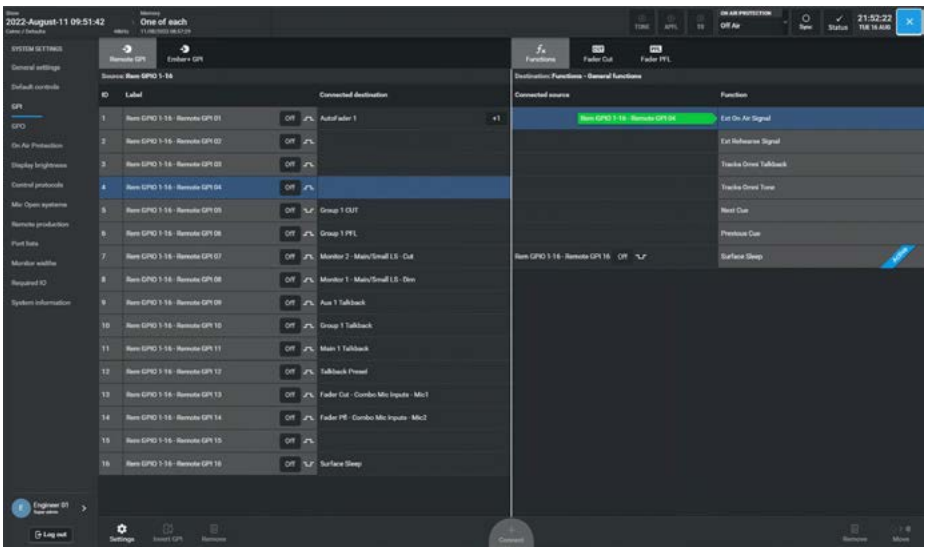
If the GPI is connected to more than one destination as shown by the **"+1"** icon then all connected destinations will be removed.

Note: the procedure for removing single connected sources is the same as above but applied to the right side of the page.

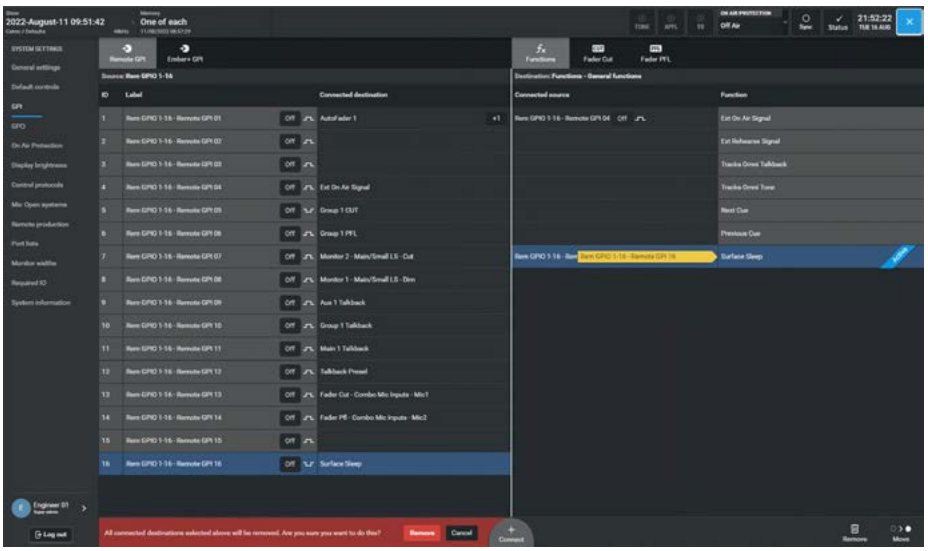
Move Connected Sources
In order to move a connected GPI source from one destination function to another, the user selects the connected source to be moved and taps on the **'Move'** button in the right side footer. This opens the footer move dialogue as shown below right. The user then taps on the new destination for the selected source.

A green arrow will appear indicating which GPI is about to be connected to which function. The user can then tap on the **'Move'** button in the footer dialogue to complete the procedure or **'Cancel'** if the user changes their mind.

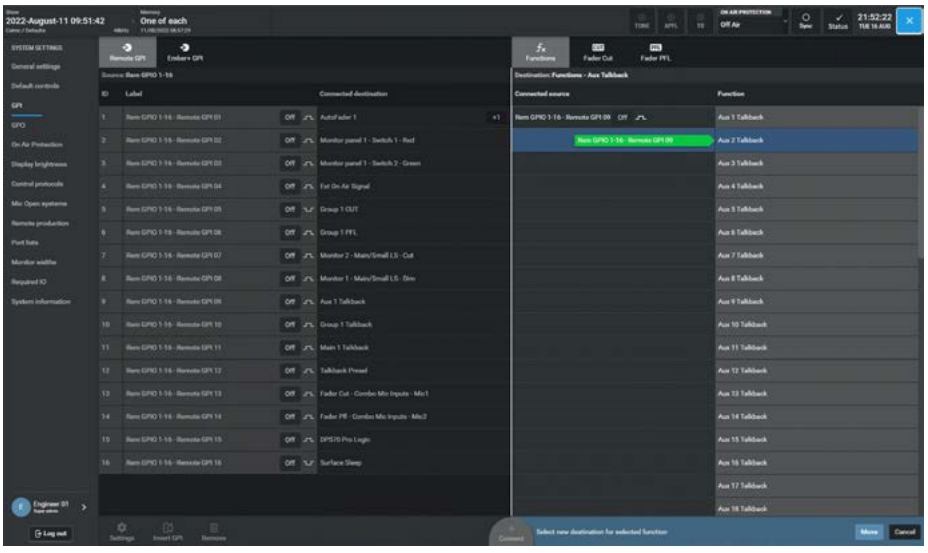
CONNECT GPI SOURCE TO DESTINATION FUNCTION



REMOVE CONNECTED/DESTINATIONS/SOURCES FROM GPI/FUNCTIONS



MOVE CONNECTED GPI SOURCES TO DIFFERENT FUNCTIONS

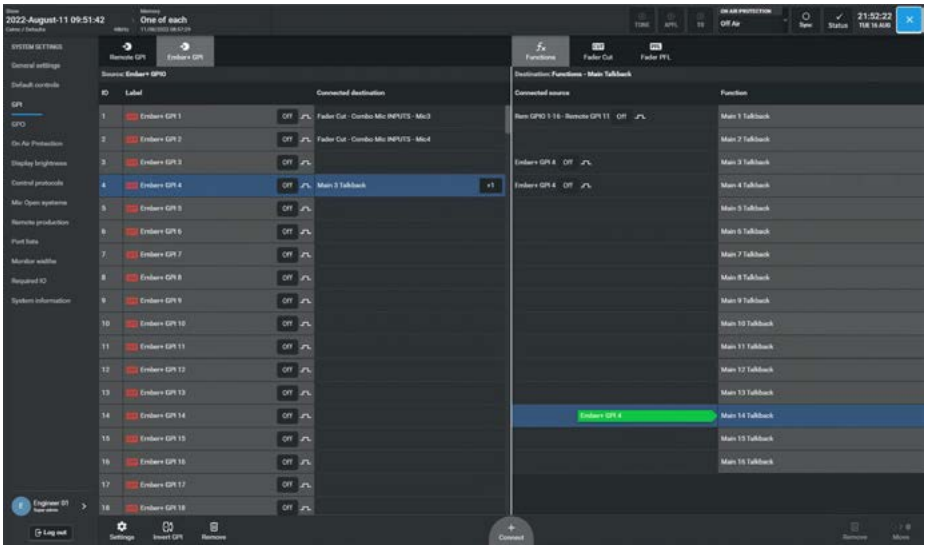


Connect Ember+ GPIs to Functions
In order to connect Ember+ GPI sources to Destination Functions, the user first taps on the **'Ember+ GPI'** button in the left side function header then taps on the required Ember+ GPI Source from the left side table and destination function from the right side table as shown above right.

An arrow will appear indicating which Ember+ GPI is about to be connected to which function. The user then taps on the **'Connect'** button in the centre of the footer and the connection is made.

Note: a GPI can be assigned to control more than one Function if required as shown for Ember+ GPI 4 controlling both Main 3 & Main 4 talkback circuits.

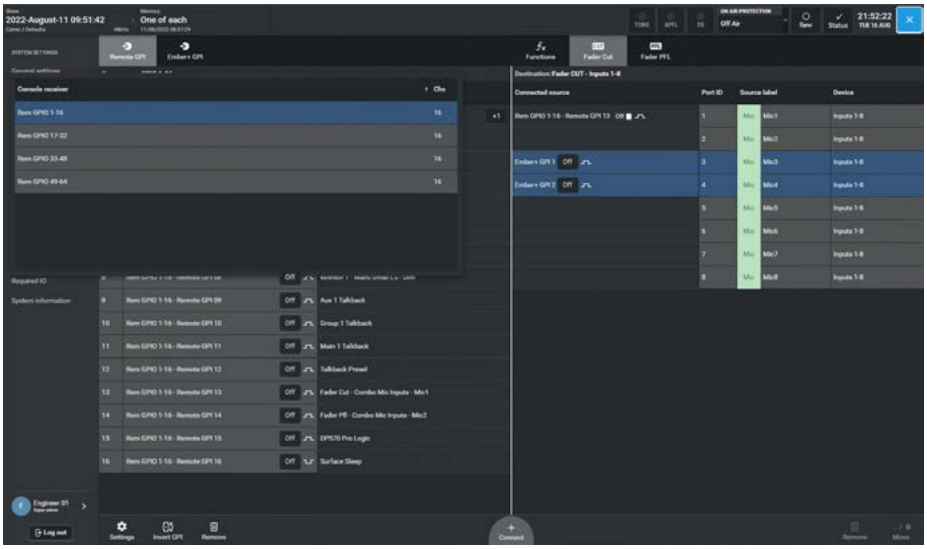
CONNECT EMBER+ GPI SOURCE TO DESTINATION FUNCTION



Select Remote GPI Receiver Stream
In order to select which Remote GPI the user requires they first have to select which GPI Console receiver stream the remote GPI is contained in. To do this the user taps on the **'Remote GPI'** button in the left side function header.

This opens the Remote GPI Console receiver stream list as shown middle right. The user then selects the appropriate GPI receiver stream and then the GPI receiver channel in that stream.

SELECT REMOTE GPI RECEIVER STREAM

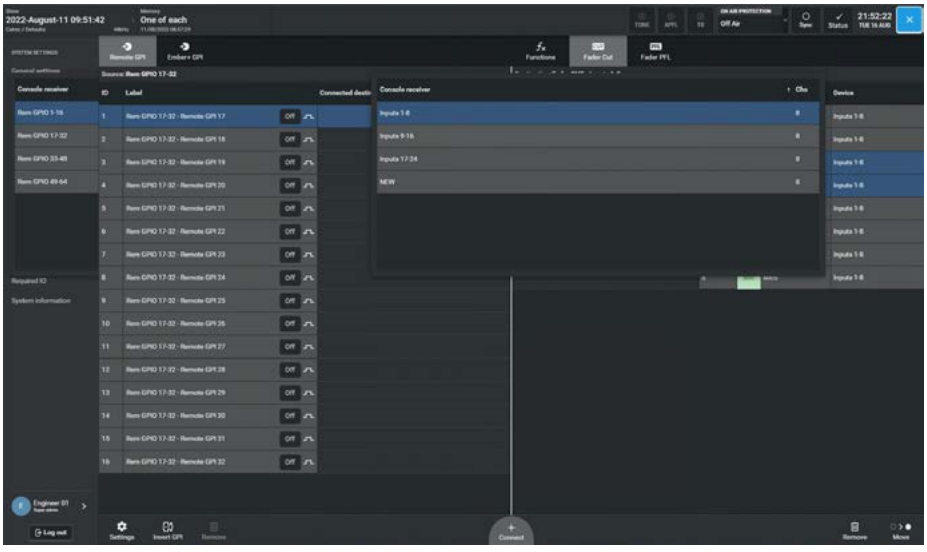


Select Audio Receiver Stream
In order to select which Audio receiver channel the user wants to associate with either the Fader Cut or Fader PFL function the user first has to select which Audio receiver stream the Audio receiver is contained in.

To do this the user taps on the **'Fader Cut'** or **Fader PFL'** button in the right side function header.

This opens the Audio receiver stream list as shown below right. The user then selects the appropriate Audio receiver stream and then the Audio receiver channel in that stream.

SELECT AUDIO RECEIVER STREAM



Connect Remote GPI to Fader Cut
In order to externally control a fader's cut state, the user selects a Remote GPI from the source list on the left side of the screen, the '**Fader Cut**' function button from the function header, then the required audio receiver channel on the right side of the screen and clicks or taps on the '**Connect**' button as shown above right.

The Remote GPI, when activated switches that Fader's Cut on/off as required. 'Fader Cut' functions are audio receiver specific. For example, if a user connects a GPI to an audio receiver Fader Cut that GPI will stay connected to that audio receiver's Fader Cut even if the audio receiver is moved to a different fader.

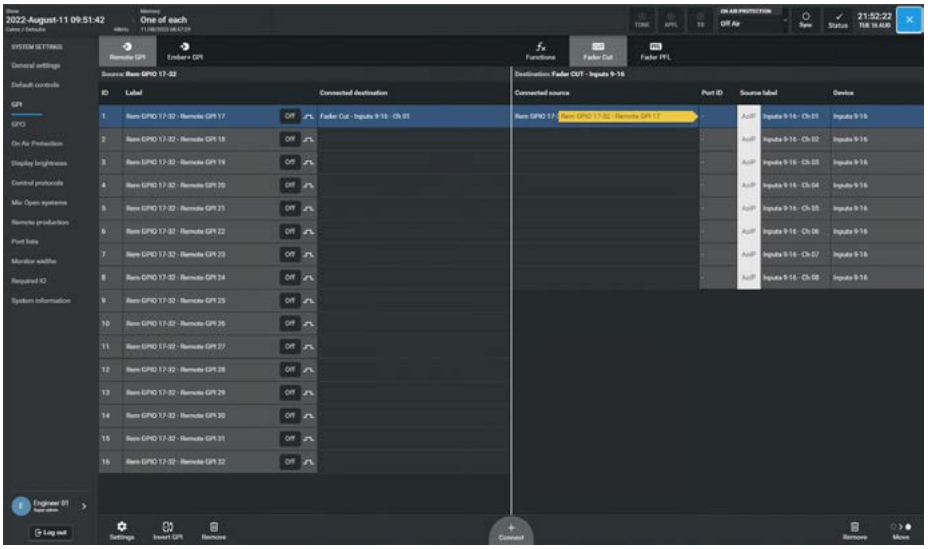
Connect Remote GPI to Fader PFL
In order to externally control a fader's PFL state, the user selects a Remote GPI from the source list on the left side of the screen, the **'Fader PFL'** function button from the function header, then the required audio receiver channel on the right side of the screen and clicks or taps on the **'Connect'** button as shown middle right.

The Remote GPI, when activated switches that Fader's PFL on/off as required. 'Fader PFL' functions are audio receiver specific. For example, if the user connects a GPI to an audio receivers Fader PFL, that GPI will stay connected to that audio receiver's Fader PFL even if the audio receiver is moved to a different fader.

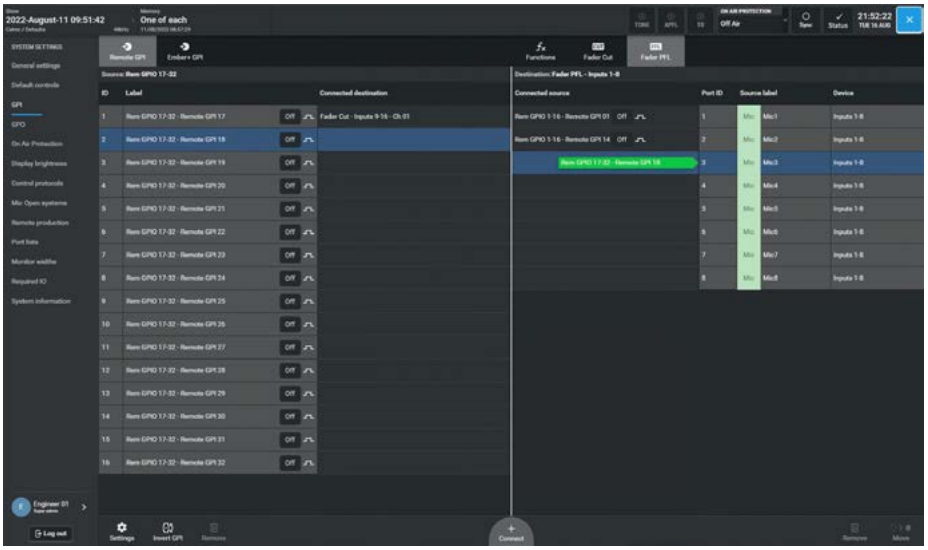
Connect Remote GPI to tally
In order to control a Tally from a Remote GPI, the user selects a Remote GPI from the left side of the screen, selects a Tally from the **System Settings>GPI> Functions>GPI Tallies** on the right side of the screen and clicks on the **'Connect'** button as shown below right.

The 256 tallies available are subsequently used to flag that various external events have occurred and take the appropriate action such as indicating Mic Open conditions.

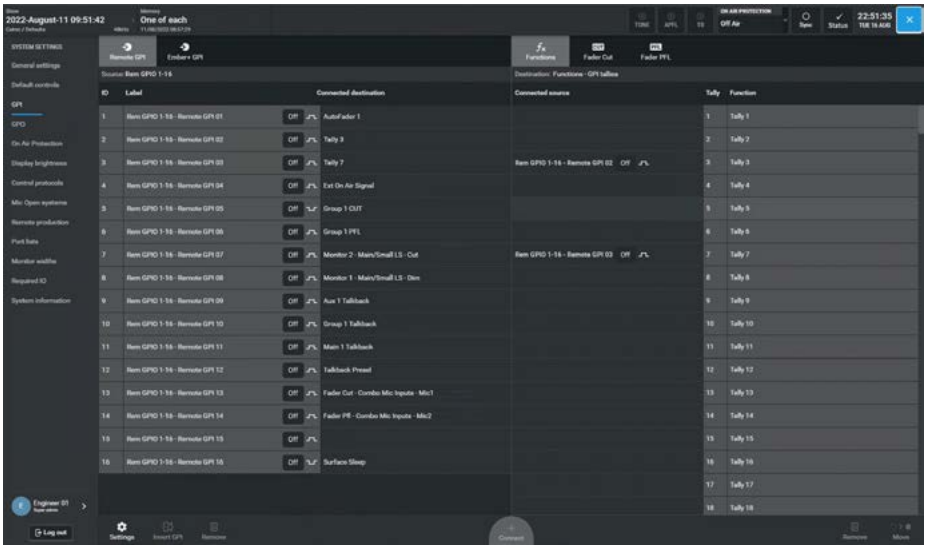
CONNECT REMOTE GPI SOURCE TO FADER CUT



CONNECT REMOTE GPI SOURCE TO FADER PFL



CONNECT REMOTE GPI SOURCE TO TALLY



GPO

Argo can output control signals via general purpose outputs (GPOs) to control external equipment.

GPO Functions

To access the GPO setup screen, tap **System Settings>GPO** from the sub-menu on the left side.

The page shown above right will appear with the functions appearing on the left side of the screen and the available outgoing GPO control signals appearing on the right side of the screen.

The remote GPO is arranged as sets of Remote GPO transmitters.

These are then connected to physical GPO destinations located in AoIP devices using the Network page of the Connect application which is described in detail in '**Connect Guide (926-292)**'

In the screen above right, the user selected the Remote GPO 01 circuit as the Destination and the 'Functions - GPO Triggers' option from the list of Source functions to activate the GPO

The table to the right shows the functions available:-

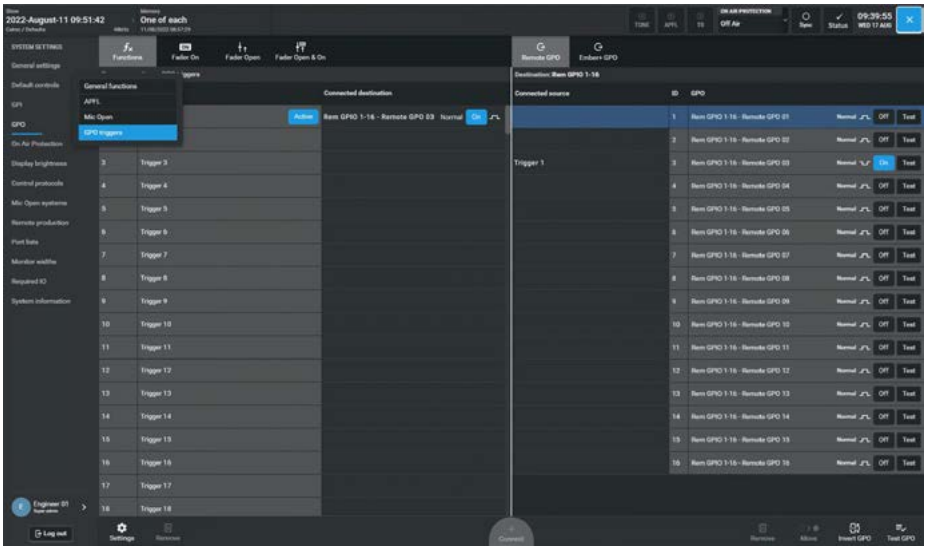
GPO functions listed within the "**Functions**" pop-up, are specific to console functions.

The 'Fader On', 'Fader Open' and 'Fader Open & On' functions are I/O port specific, so if the user connects a GPO to a port's 'Fader Open' that GPO will stay connected to that port's 'Fader Open' even if the port is moved to a different fader.

Settings

If more than one destination is connected to a source there is a settings button on the bottom left hand side of the footer which allows the user to compact or expand the view of the connected destinations as required.

GPO PATCHING SCREEN



FUNCTION SELECTION TABLE FOR GPO FUNCTIONS

Function	Description
General Functions	On Air Signal - Use an On-Air ON state to activate a GPO Rehearse Signal - Use a Rehearse ON state to activate a GPO Red Light - Use a Red Light ON state toto activate a GPO Fire Alarm Mute - Use a Fire Alarm Light ON state to activate a GPO Error Warning - Use an Error message from the Core to activate a GPO
APFL	AFL 1, 2 & 3 ON - Use an AFL ON state to activate a GPO PFL 1, 2 & 3 ON - Use a PFL ON state to activate a GPO
Mic Open	Use any of the 5 Mic Open buses being active to activate a GPO
GPO Triggers	Use any of the 256 GPO triggers to activate GPO for Cue lights and other purposes where a signal trigger needs to be sent.
Fader On	Fader On (not Cut) with fader position ignored activates GPO for any Port
Fader Open	Fader Open with Path On/Cut state ignored activates GPO for any Port
Fader Open & On	Fader Open & Path On (Not Cut) activates GPO for any Port

In compact mode, the number in the Connected Destination field shows the number of connections to that source.

GPO Status Flag & Test GPO buttons

On the right of the destination column is shown the GPO status flag for each GPO.

If the GPO circuit is not activated then the 'Off' icon will appear as shown above right, if the GPO circuit is activated a blue 'On' icon will appear in its place.

To the right of this is placed a momentary '**Test**' button which when held will directly activate the selected GPO, by-passing its associated function for test purposes.

Connect Functions to GPOs
In order to connect source Functions to GPO destinations, the user first selects the required source function from the left side table and then taps on the required destination GPO from the right side table as shown above right.

A green arrow will appear indicating which function is about to be connected to which GPO. The user then taps on the **'Connect'** button in the centre of the footer and the connection is made at which point the arrow turns yellow.

Note: a Function can be assigned to control more than one GPO if required.

Remove Connected Sources
In order to remove connected sources from the GPOs, the user selects the connected sources to be removed and taps on the **'Remove'** button in the right side footer. This opens the footer remove dialogue as shown right, the user can then tap on **'Remove'** in the footer dialogue to complete the procedure or **'Cancel'** if the user changes their mind.

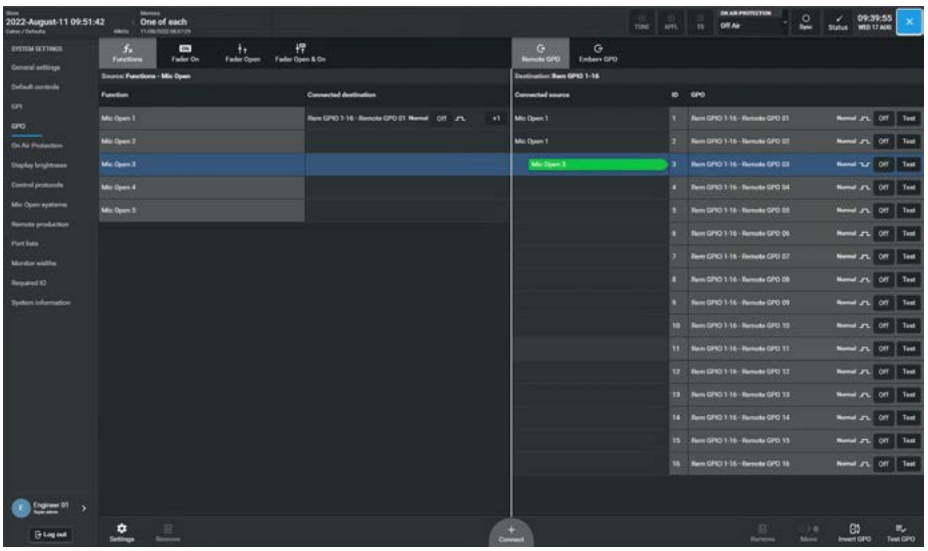
If more than 1 GPO destination is connected to from a function as shown by the **"+1"** icon then all connected destinations will be removed when using the **'Remove'** option from the left side of the screen.

Note: the procedure for removing Connected Destinations is the same as but applied to the left side of the screen.

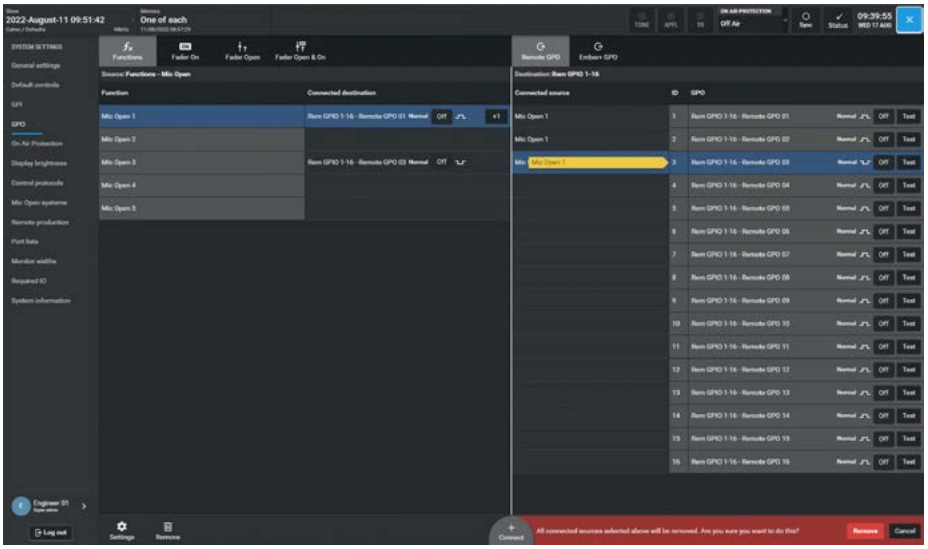
Move Connected Sources
In order to move a connected function source from one destination GPO to another the user selects the connected source to be moved and taps on the **'Move'** button in the right side footer. This opens the footer move dialogue as shown below right. The user then taps on the new destination for the selected source.

A green arrow will appear indicating which function is about to be connected to which GPO. The user then taps on the **'Move'** button in the footer dialogue to complete the procedure or **'Cancel'** if the user changes their mind.

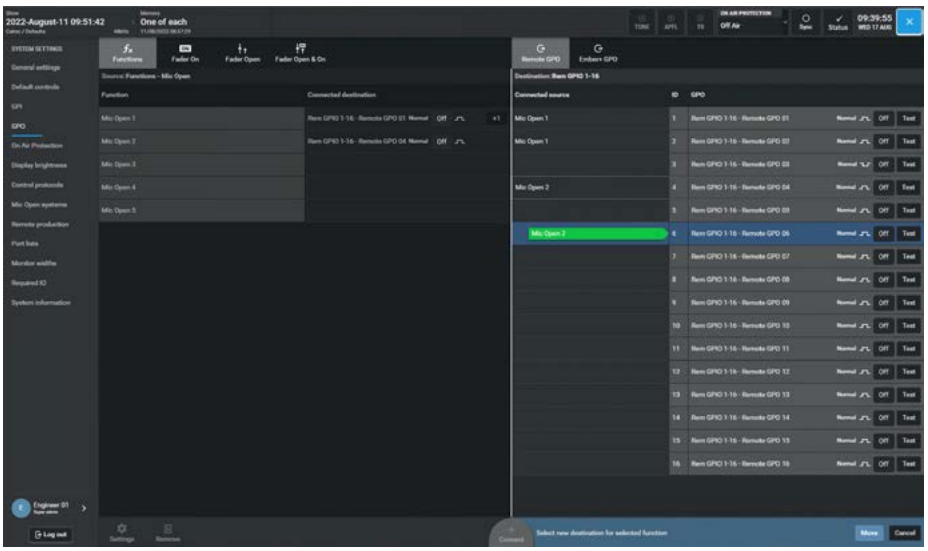
CONNECT SOURCE FUNCTION TO GPO DESTINATION(S)



REMOVE CONNECTED/DESTINATIONS/SOURCES FROM GPO/FUNCTIONS



MOVE CONNECTED SOURCES TO DIFFERENT GPO DESTINATIONS



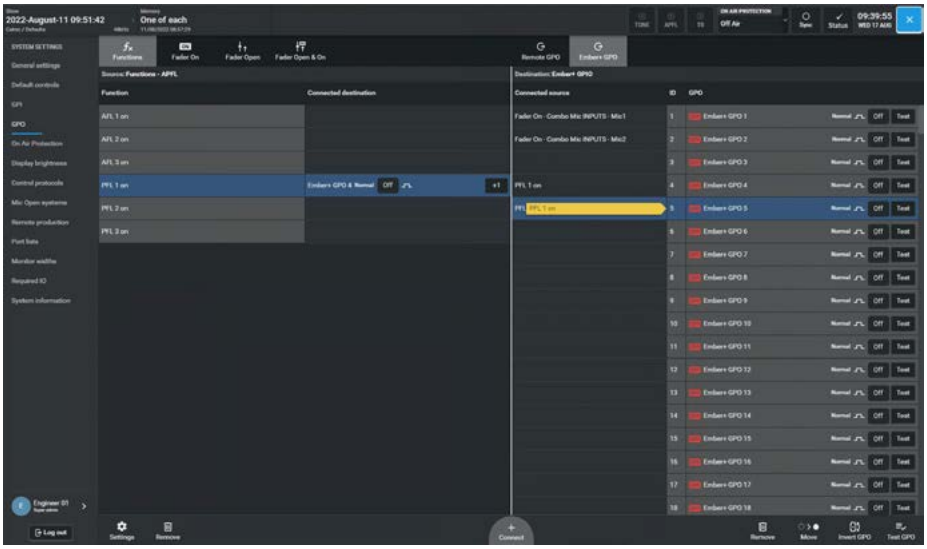
Connect Functions to Ember+ GPOs

In order to connect Source Functions to Ember+ GPO destinations, the user first taps on the **'Ember+ GPO'** button in the right side function header then taps on the required Ember+ GPO Destination from the right side table & source function from the left side table as shown above right.

An arrow will appear indicating which Ember+ GPO is about to be connected to which function. The user then taps on the **'Connect'** button in the centre of the footer and the connection is made.

Note: a function can be assigned to control more than one GPO if required as shown for PFL1 on triggering Ember+ GPO 4 & Ember+ GPO 5 circuits.

CONNECT SOURCE FUNCTION TO EMBER+ GPO

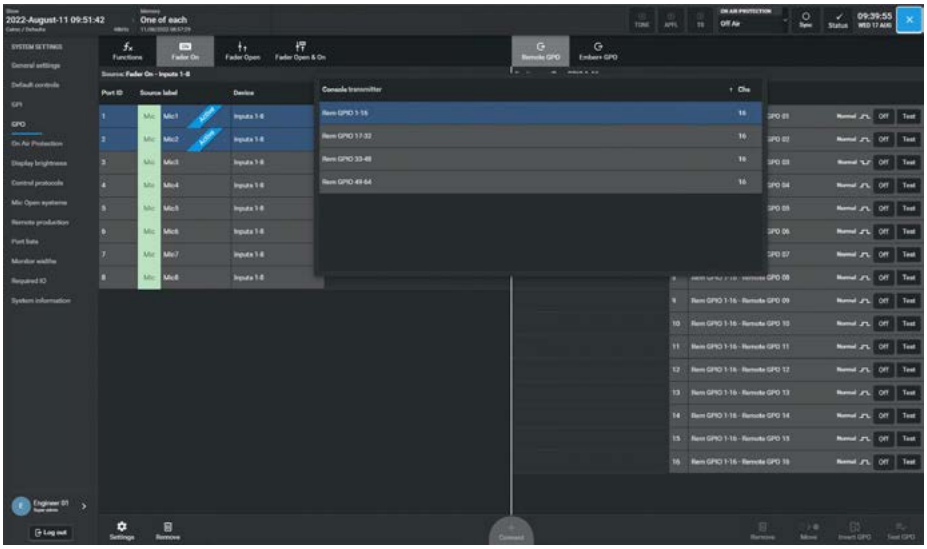


Select Remote GPO Transmitter Stream

In order to select which Remote GPO the user requires, they first have to select which GPO Console transmitter stream the remote GPO is contained in. To do this the user taps on the **'Remote GPO'** button in the right side function header.

This opens the Remote GPI Console transmitter stream list as shown right. The user then selects the appropriate GPO transmitter stream and then the GPO transmitter channel in that stream.

SELECT REMOTE GPO TRANSMITTER STREAM



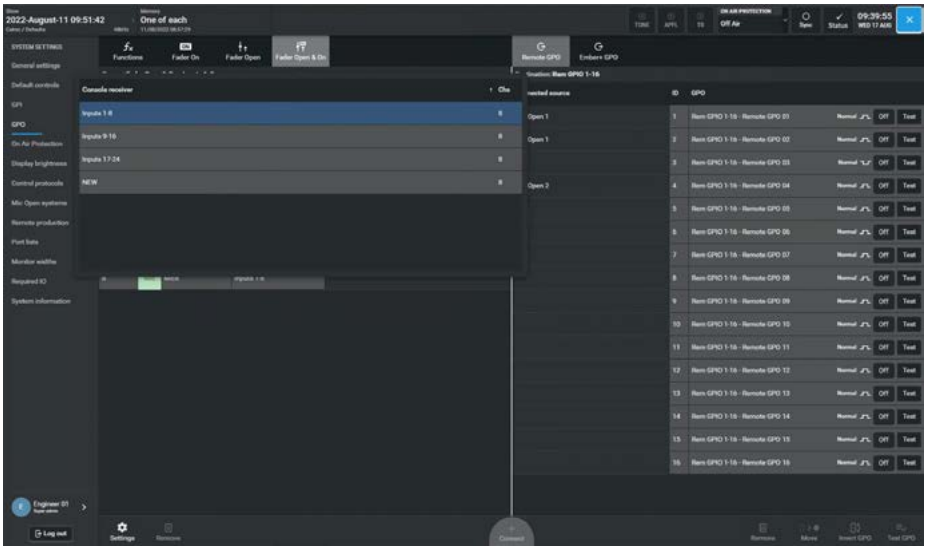
Select Audio Receiver Stream

In order to select which Audio receiver channel the user wants to associate with either the Fader On, Fader Open or Fader Open & On function the user first has to select which Audio receiver stream the Audio receiver is contained in.

To do this the user taps on the **'Fader On'** or **'Fader Open'** or **'Fader Open & On'** button in the left side function header.

This opens the Audio receiver stream list as shown below right. The user then selects the appropriate Audio receiver stream and then the Audio receiver channel in that stream.

SELECT AUDIO RECEIVER STREAM



Connect Fader Open & On to Remote GPO

In order to control a 'Remote GPO' from a 'Fader Open or On state', the user selects a Remote GPO from the destination list on the right side of the screen, the required audio receiver channel on the left side of the screen and clicks on **'Connect'** as shown above right. The Fader Open & On controls, when activated, switches that Remote GPO On/Off as required. 'Fader Open & On' functions are audio receiver specific. For example, if the user connects a GPO to an audio receiver 'Fader Open & On', that GPO will stay connected to that audio receiver's Fader Open & On even if the audio receiver is moved to a different fader.

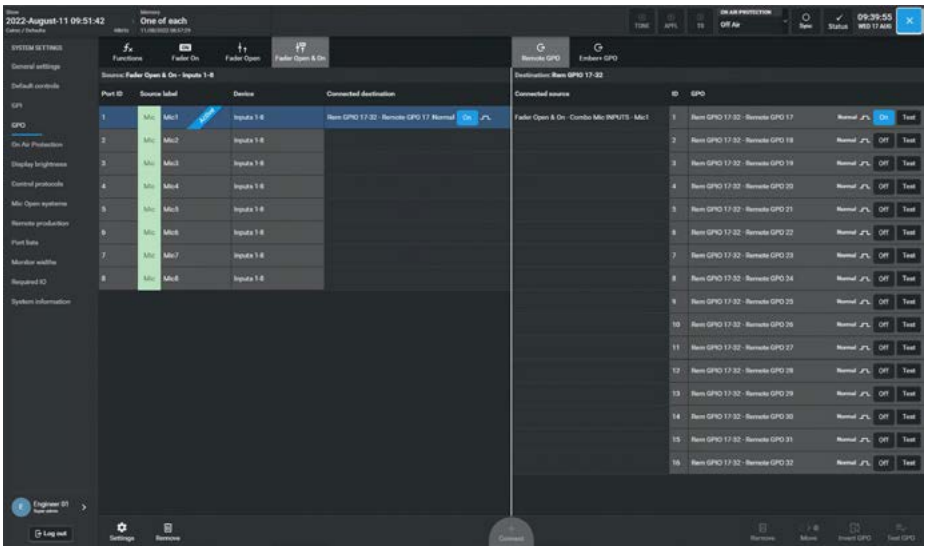
Connect Fader On to Remote GPO

In order to control a 'Remote GPO' from a 'Fader On' state, the user selects a Remote GPO from the destination list on the right side of the screen, the required audio receiver channel on the left side of the screen and clicks on the **'Connect'** button as shown right. The Fader On controls, when activated, switches that Remote GPO On/Off as required. 'Fader On' functions are audio receiver specific. For example, if the user connects a GPO to an audio receiver 'Fader On', that GPO will stay connected to that audio receiver's 'Fader On' even if the audio receiver is moved to a different fader.

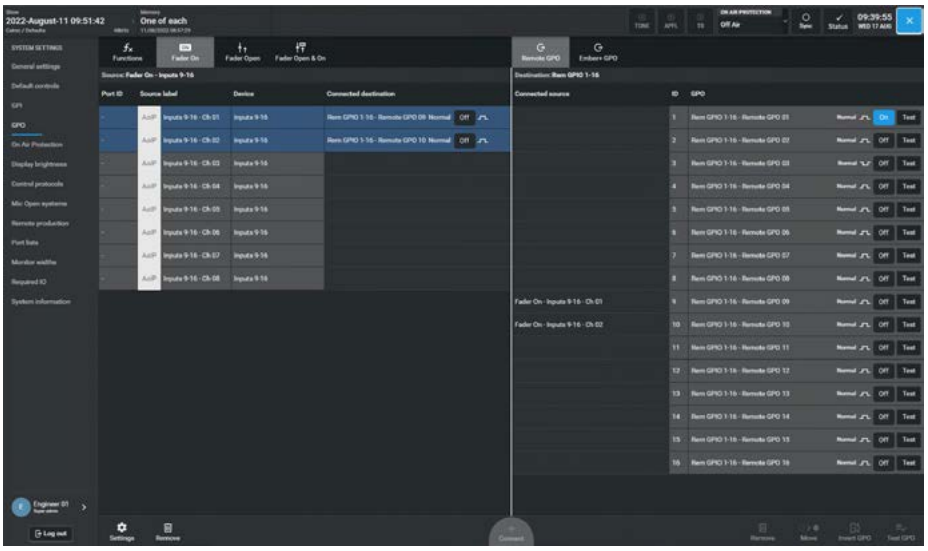
Connect AFL trigger to Remote GPO

In order to control a 'Remote GPO' from a 'Trigger', the user selects a Trigger switch source from the **System Settings>GPO >Functions>GPO Triggers** on the left side of the screen, selects a Remote GPO from the right side of the screen and clicks on the **'Connect'** button as shown below right.

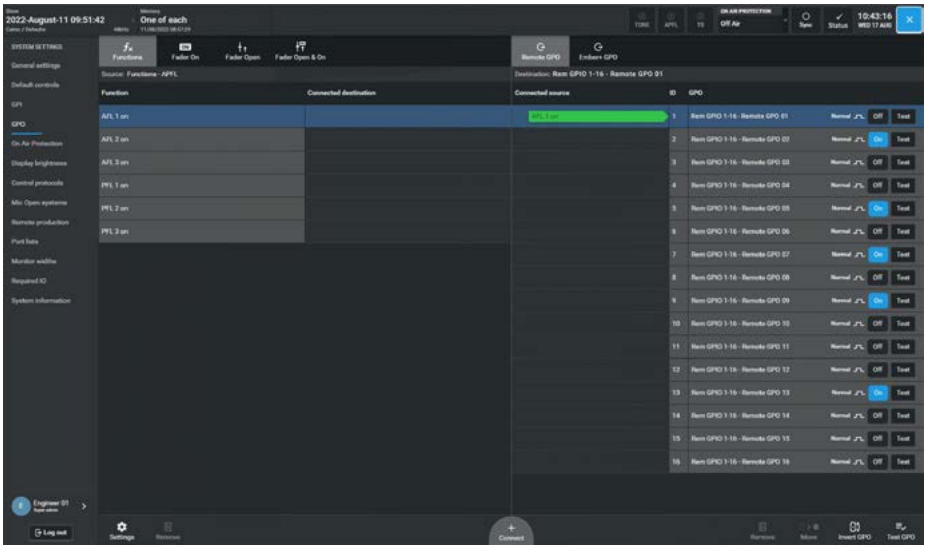
CONNECT FADER OPEN & ON TO REMOTE GPO DESTINATION



CONNECT FADER ON TO REMOTE GPO DESTINATION



CONNECT AFL ON/OFF TRIGGER TO REMOTE GPO DESTINATION



ON AIR PROTECTION

To access Argo's On Air Protection settings, the user selects:-
System Settings>On Air Protection from the menu on the left hand side.

As shown above right, this page is used to apply different functions to the various monitors in the system when in an On-Air, Rehearse or Off-Air state based on the condition of the Mic Open Systems or in the case of Talkback the option to prevent Talkback as a manual override.

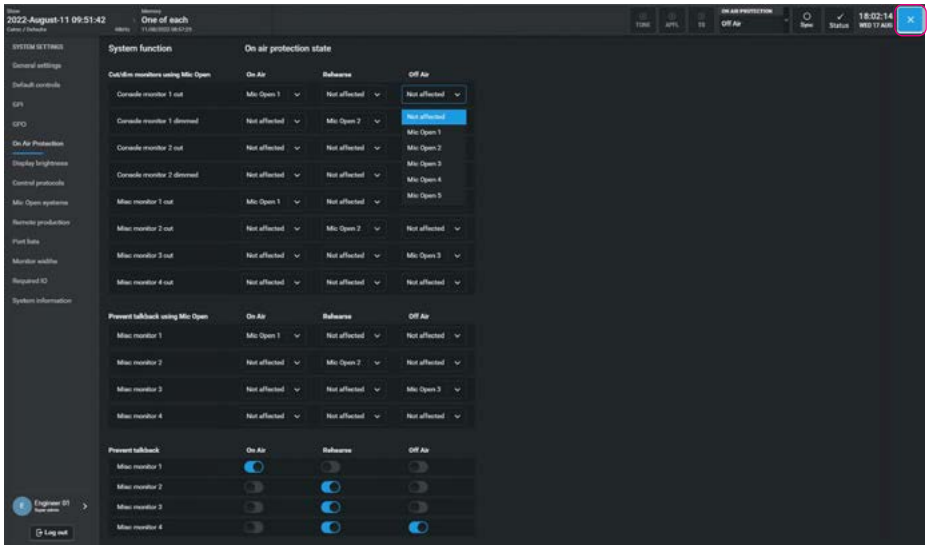
Cut/Dim monitors using mic open
The two Console monitors can be Cut or Dimmed under the 3 different states of the On-Air, Rehearse and Off-Air flags from a selection of one of the 5 Mic Open systems that are available. See **"Mic Open Systems" on page 177.**

The Misc Monitors can be Cut under the 3 different states of the On-Air, Rehearse and Off-Air flags from a selection of one of the 5 Mic Open systems that are available. See **"Mic Open Systems" on page 177.**

Prevent talkback using mic open
The Misc Monitors can have Talkback to them prevented under the 3 different states of the On-Air, Rehearse and Off-Air flags from a selection of one of the 5 Mic Open systems that are available. See **"Mic Open Systems" on page 177.**

Prevent talkback
The Misc Monitors can have Talkback to them prevented under the 3 different states of the On-Air, Rehearse and Off-Air flags by sliding the appropriate toggle switch manually.

ON AIR PROTECTION OPTIONS



DISPLAY BRIGHTNESS

To access Argo's Display brightness and sleep options, the user selects System Settings>Display brightness from the menu on the left hand side.

As shown above right, this page is used to screen-save the displays and adjust the brightness of those displays on Argo's surface.

Surface Sleep

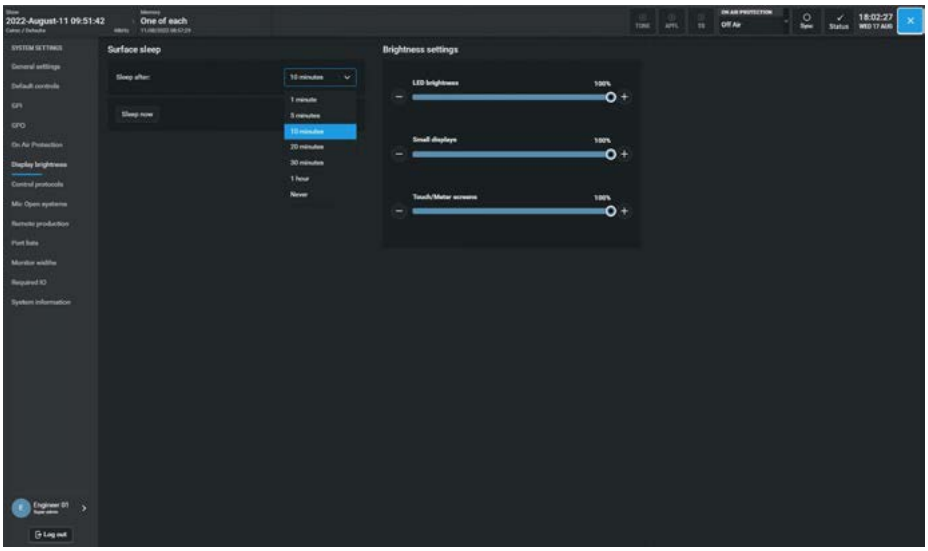
The user can set a time delay whereby if none of the controls are touched for the period of time set in the Sleep after dropdown box, the displays will go to sleep i.e. turn the displays off. The optional times are:- 1 min, 5 min, 10 min, 20 min, 30 min, 1 hr or Never. Alternatively the user can turn off the displays immediately by tapping on the **'Sleep Now'** button.

Brightness

The three controls in this area allows the user to adjust the brightness of the LED's Small TFT displays and the Touchscreen and Meterscreen panels as required.

The user can either tap on the '+' or '-' buttons or drag the slider left and right to adjust the brightness of each display type.

DISPLAY BRIGHTNESS AND SLEEP OPTIONS



CONTROL PROTOCOLS

In addition to GPI activated controls, Argo supports various protocols to allow 3rd party equipment to remotely control various features.

Two of these protocols can directly affect control surface operation:- CSCP and Ember+.

CSCP

Calrec Serial Control Protocol (CSCP) allows remote control from 3rd party equipment over fader positions, PFLs, path CUT/ON status, routing to Auxes and Mains, and Aux output levels.

Accessing the following sub-menu page on the left side, **System Settings> Control protocols** allows these remote control interfaces to be enabled and disabled. This screen shown above right, displays TCP ports which are used to access the system are setup for the serial control interfaces that are installed.

Note: as part of the system settings, these settings are not saved as part of a show or memory.

When a new CSCP interface is created the user can label it as shown middle right.

CSCP Per Fader

CSCP can be enabled and disabled per fader using the CSCP switch in the header of the **Processing>Fader** page for each fader. Further information on CSCP is available on request.

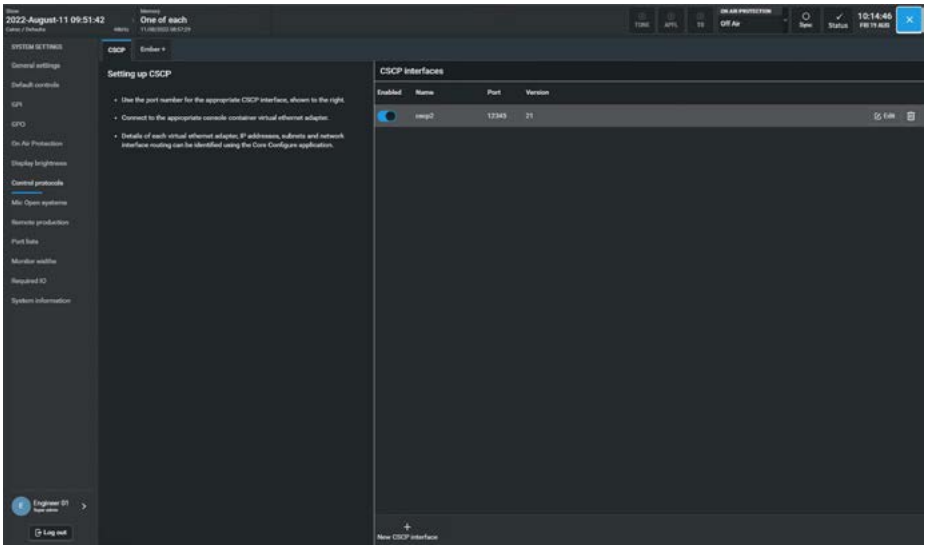
Ember+

The Ember+ controller can when enabled:-

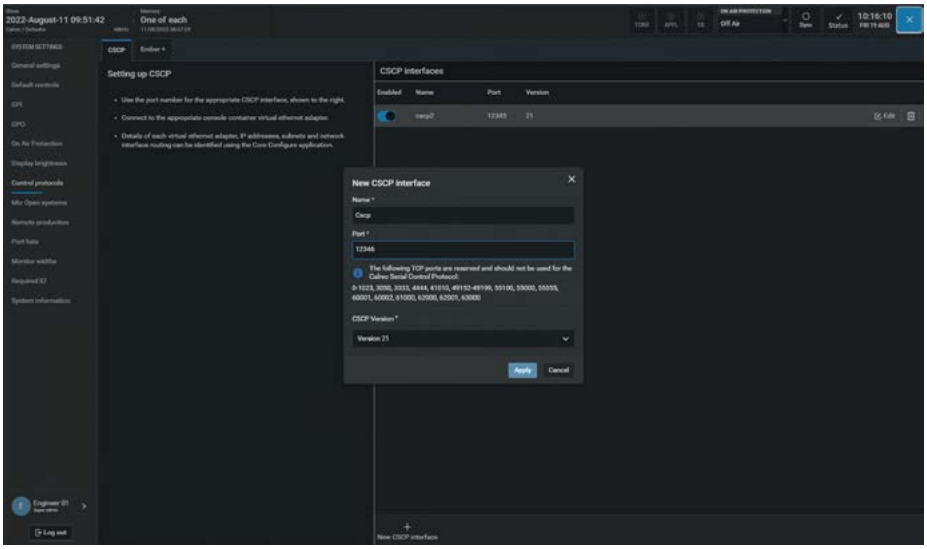
- Change the user memory/show recall that is on the control surface.
- Change I/O input settings, labels and SDI output channel mutes.
- Allow the use of Virtual GPIO which can control and respond to all the functions available to physical GPIO as shown below right.

See **"Connect Ember+ GPIs to Functions" on page 168** and **"Connect Functions to Ember+ GPOs" on page 172.** Further information on Ember+ is available on request.

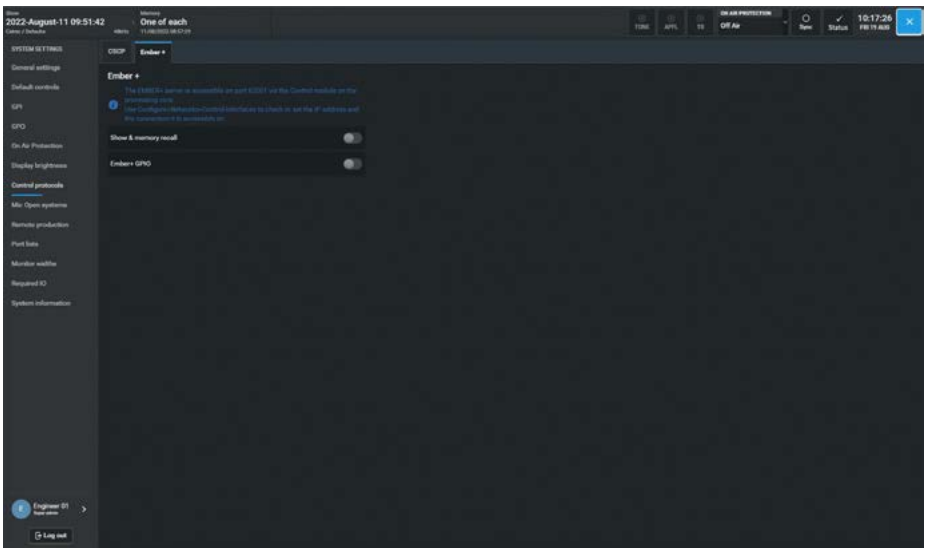
CSCP INTERFACES



LABELLING CSCP INTERFACES



EMBER+



MIC OPEN SYSTEMS

Mic Open Systems
These are used to control external devices, relative to the 'On Air' status of a signal source. Mic open systems can CUT or DIM a loudspeaker to avoid feedback, or control GPO relays for switching purposes, such as turning on ON AIR lights.

To access the mic open systems page, tap on the **System Settings>Mic Open systems** entry in the sub-menu on the left side as shown in the image above right.

There are 5 mic open systems available on the console, each is normally associated with a physical area for control, such as a studio or area of a studio floor.

Note: Mic open systems work for all input signals not just microphones.

Mic open systems detect whether the assigned signal sources are on air.

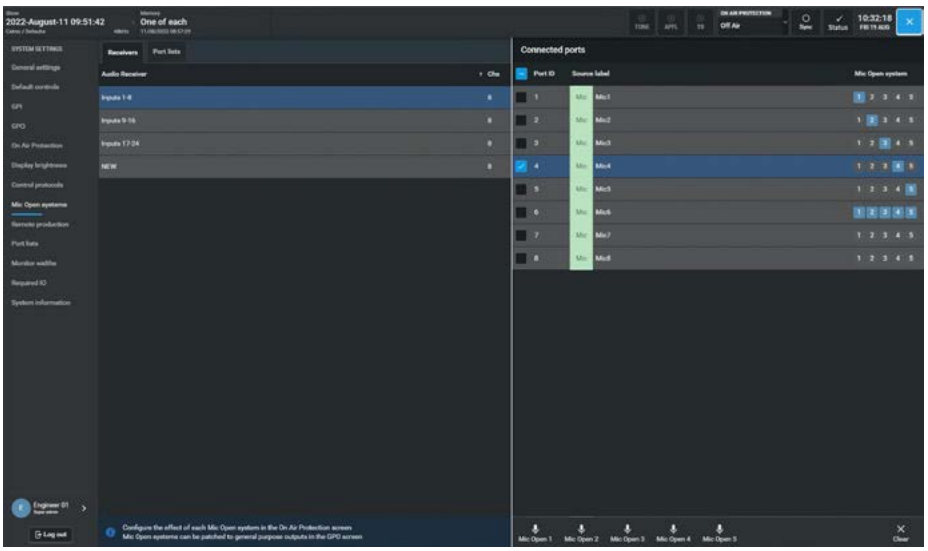
A signal is deemed to be on air if:
- It is assigned to a channel input (one or two).
- The channel is selected to that input (one or two).
- Its fader is open and not cut.
- It is routed to a main output.
- That main output's fader is open.
- If a signal is routed via a group or a number of groups in series before being routed to a main output, those group faders must also be open and not cut.

Note: the fader open trigger happens at -90dB and the fader close trigger happens at -95dB.

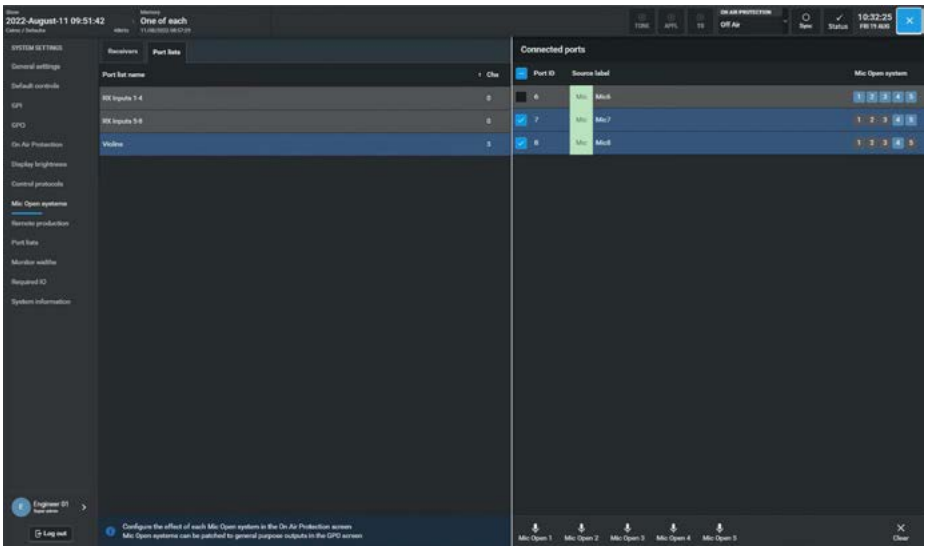
When a mic open system detects that a signal is on air, it switches on and the associated GPO/CUT/DIM is executed.

Assigning Inputs to Mic Open Systems
To allocate an input port to any of the 5 mic open systems, the user selects either an audio receiver from an incoming audio receiver stream or a port from one of the port lists and taps on the required connected ports at which point a "tick" appears.

MIC OPEN SYSTEM-AUDIO RECEIVERS



MIC OPEN SYSTEM-PORT LIST RECEIVERS



Note: the user can select multiple ports rather than actioning one port at a time as required.

The 5 **'Mic Open n'** buttons in the footer shown below right can then be used to select which of the 5 mic open systems they wish to associate these ports with.

Note: connected ports can be associated with more than one mic open system.

For example, the image below right is showing that when any fader using Mic 7's Input is opened it will be set to trigger Mic Open systems 4 & 5.

Clicking/tapping on each of the Mic Open buttons toggles the attachment of the port to the selected Mic Open system.

If the user no longer wishes to have a port associated with a mic open system then selecting the port(s) and tapping on '**Clear**' button from the footer will clear all its mic open system selections and all the Mic Open system icons will be turned off.

To select / deselect all the connected ports tap on the icon box in the Port ID header area, this in combination with the '**Clear**' button will turn off all the Mic Open system icons on that page.

REMOTE NETWORK ACCESS

Managing Remote Networks Access
In order to determine and/or alter the connected status of remotely networked RP1 units, the user selects the **System Settings> Remote Networks** entry in the sub-menu on the left side and is shown in the image above right.

The list of remote networks are identified by the RP1 unit name and its primary / secondary IP addresses as entered in the 'Configure' application.

For further Information about setting up and operating RP1 refer to the **'Remote Production RP1 System Manual Impulse Edition (926-308)'**.

Everything other than the 'Try to Connect' field and the 'Block Fader/Cut Control' field from RP1 is read only and the 'Status' and 'Latency' fields for the primary and secondary IP addresses are updated by occasional polling of each of the remote networks but no connection is established by the host until the **'Try to Connect'** switch is selected.

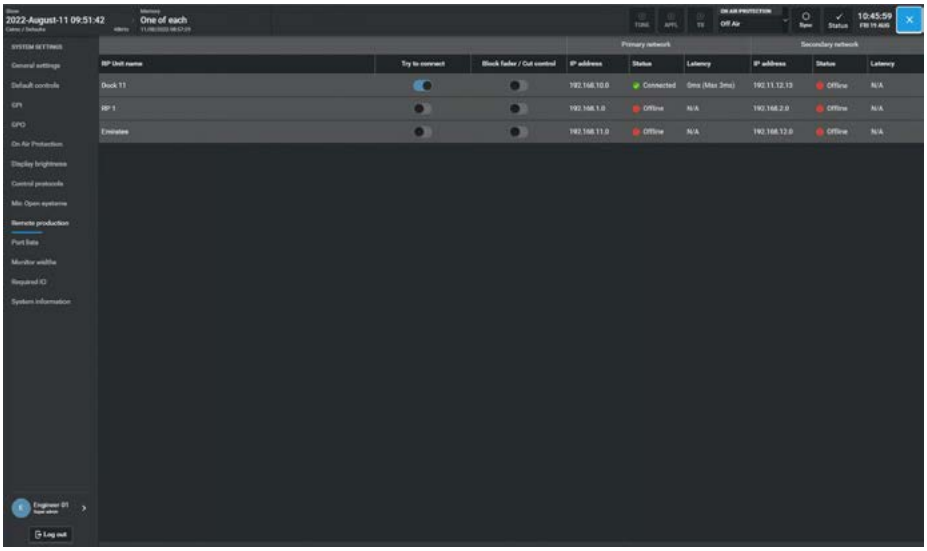
The latency fields represent the current time taken to send commands from the console and get an acknowledgement (Ping). The status fields have one of 5 states:- 'Offline', 'Available', 'Connected', 'In Use' or 'Incompatible'.

Clicking the **'Try to Connect'** switch into an ON state sends a request to connect to that remote network. If 'Available', the remote network responds with a connect message which changes the status to 'Connected'.

If the request to connect is sent to a remote network which is 'Offline' or 'In Use' or 'Incompatible' then the system continues to poll that remote network at a higher frequency rate until a connected message is received.

Note: 'In Use' means that someone else is using the selected RP1 unit and 'Incompatible' means that there is a software mismatch between the RP1 unit and the host preventing correct operation.

REMOTE NETWORKS ACCESS



Once connected, the RP1 fader and RP1 aux master fader parameters and the routing between them is established and sent from the remote network to setup the remote faders and remote aux master parameters and the routing between them on the host console.

If the 'Block Fader/Cut Control' switch is OFF (which is the case during setup), the RP1 parameters are sent to the host. If the **'Block Fader/Cut Control'** switch is ON, (which is usually the case during a transmission), the RP1 parameters are sent from the host.

A further description of the 'Block Fader/Cut Control' function is described in the **'Remote Production RP1 System Manual Impulse Edition (926-308)'**.

Clicking the **'Try to Connect'** switch into an OFF state sends a request to disconnect to that remote network. As its status was 'Connected', the remote network responds with a disconnect message which changes its status to 'Available'.

At this point the host releases the remote network which can then respond to other requests to connect from other hosts.

If a remote network that was 'Connected' goes 'Offline' then its status is reflected in the display and the latency value becomes indeterminate as shown for the Secondary Network in the image above.

If the 'Try to Connect' field is still in the ON state then it will poll that remote network again at a higher frequency rate until a connected message is received.

If a remote network has its 'Try to Connect' field set to the OFF state there will be no attempt to connect made although the system will continue to poll it at a low frequency rate to establish its status.

The status of the 'Try to Connect' field is stored in the system settings of the host and as such is not affected by show or memory loading.

Reserving Connectivity between an RP1 unit and a Host console
The current design allows any host to connect to any RP1 unit in its list.

If a connection is lost to a RP1 unit and another host has its 'Try to Connect' switch set for the same RP1 unit the other host could steal the connection (unintentionally).

Note: to avoid this each user is expected to manually disconnect from an RP1 unit when finished with it, so that it is available for another host console.

REMOTE PRODUCTION RP1 OPTION

Argo Consoles have the ability to act as 'Host Consoles' for the RP1 remote production unit.
The RP1 remote production unit is designed to be a self-contained compact mixing console without a control surface.

RP1 gives you the power to manage I/O and create zero-latency monitor mixes at venues all over the world, all from the comfort and familiarity of the Calrec console at the host production facility over long distance using IP services.
For an overview of remote production see '**Guide to remote production (926-253)**' downloadable from the Calrec website.

Once the RP1 unit has been setup at the remote site using a Web browser interface called '**Calrec Assist'** which can be accessed and controlled from the surface of an Argo console at the host studio, either as a standalone system or as part of a network after it has been added as a 'Remote Network' in the host networks application. The operation and integration of the RP1 remote production unit with the Argo console range is the subject of a separate manual :- **'Remote Production RP1 System Manual Impulse Edition (926-308)'** which is downloadable from the Calrec website. In that manual, is a chapter called 'Operation Via Host Console' which shows how to setup and operate the RP1 remote production unit via a host console, in this case Argo.

Function Table for Parameter Control of Remote Paths
Once the RP1 is connected, the Argo consoles currently allow the user to control a range of functions for the 'Remote Faders' & 'Remote Aux Masters' from the host as shown in Fig 1.

The table is arranged as Mono, Stereo & 5.1 remote fader types and Mono & Stereo remote aux master types arranged in columns. Each of the rows across the table represent a different parameter that can be controlled from the host console.

In addition to the table, all the controls that are relevant to the RP1 remote faders and remote aux masters are available as wild controls.

REMOTE PATH PARAMETER CONTROLS FROM HOST

Mono RP1 Fader	Stereo RP1 Fader	5.1 RP1 Fader	Mono RP1 Aux	Stereo RP1 Aux
Fader Level	Fader Level Master	Fader Level Master	Fader Level	Fader Level Master
Cut	Cut Master	Cut Master	Cut	Cut Master
	Spill Fader Levels For L&R	Spill Fader Levels For LR, C, Lfe & LsRs		Spill Fader Level For L & R
	Spill Cuts For L&R	Spill Cuts For LR, C, Lfe & LsRs		Spill Cut For L & R
		Downmix Fader Levels For LR, C, Lfe & LsRs		
On the	***Processing page***	***Overview***		
IP Trim Level	IP Trim Level Master	IP Trim Level Master		
	Spill IP Trim Levels For L&R	Spill IP Trim Levels For LR, C, Lfe & LsRs		
IP1-IP2 Switch	IP1- IP2 Switch	IP1- IP2 Switch		
Link IP1 & IP2 Trims	Link IP1 & IP2 Trims	Link IP1 & IP2 Trims		
Polarity M	Polarity L&R			
	IP Bal/IN	IP Bal/In on LR & LsRs		
	L>B & R>B	L>B & R>B on LR & LsRs Spill Legs		
	MS Decode	MS Decode on LR & LsRs Spill Legs		
	ST Width/In	ST Width/In on LR & LsRs Spill Legs		
Mic Gain (Protected)	Mic Gain (Protected) Master	Mic Gain (Protected) Master		
48v (Protected)	48L&48R (Protected) Master			
	Spill Mic Gains (Protected) For L&R	Spill Mic Gains (Protected) For LR, C, Lfe & LsRs		
	Spill 48v (Protected) For L&R	Spill 48 L, 48R or 48v (Protected) For LR, C, Lfe & LsRs		
SRC (Protected) AES	SRCL&SRCR (Protected) Master			
	Spill SRC (Protected) For L&R	Spill SRC, SRCL, SRCR (Protected) For LR, C, Lfe & LsRs		
On the Sends &	***Routes page for***	***RP1 Aux Sends***	***1-12 from***	***each RP1 fader***
RP1 Aux Send Level	RP1 Aux Send Level Master	RP1 Aux Send Level Master		
RP1 Aux Send On/Off or Route on TFT	RP1 Aux Send On/Off Master or Route Maste on TFT	RP1 Aux Send On/Off Master or Route Maste on TFT		
RP1 Aux Send Pre-Fader/Post in Focus Window	RP1 Aux Send Pre-Fader/Post Master in Focus Window	RP1 Aux Send Pre-Fader/Post Master in Focus Window		
	*RP1 Spill Aux Sends Levels, On/Off & Pre/Post	*RP1 Spill Aux Sends Levels, On/Off & Pre/Post	*Note these are now Aux Sends*	*as yet undefined, for are Masters only*
RP1 Stereo Aux Send Pan Position/In	RP1 Stereo Aux Send Pan Position/In Master			
	RP1 Spill to Stereo Aux Send Pan Positions/In For L&R	RP1 Spill to Stereo Aux Send Pan Positions/In For LR, C, Lfe & LsRs		
On the Strips	***IP subpage***	***for each Remote***	***RP1 Fader***	
IP1/2 Trim Level	IP1/2 Trim Level Master	IP1/2 Trim Level Master		
Mic Gain	Mic Gain Master	Mic Gain Master		
Polarity M	Polarity L&R			
	Stereo Width			
	IP1/2 Bal			
IP2 button	IP2 button	IP2 button		
On the Strips	***Aux subpage***	***for each Remote***	***RP1 Fader***	
RP1 Aux Send Level	RP1 Aux Send Level Master	RP1 Aux Send Level Master		
RP1 Aux Send On/Off	RP1 Aux Send On/Off Master	RP1 Aux Send On/Off Master		
RP1 Aux bank buttons	RP1 Aux bank buttons	RP1 Aux bank buttons		

Note: strips mode under development

PORT LISTS

Port lists
Ports can be assigned to various lists. Port Lists provide a way of filtering and ordering the information shown when patching ports. The user can put a specific set of ports into their own list rather than having to search through the hundreds of ports that may be available on the network.

To access ports lists, go to **System Settings>Port Lists** from the sub-menu as shown above right.
The pages are arranged into Input Port Lists as shown above right and Output Port Lists as shown middle right.

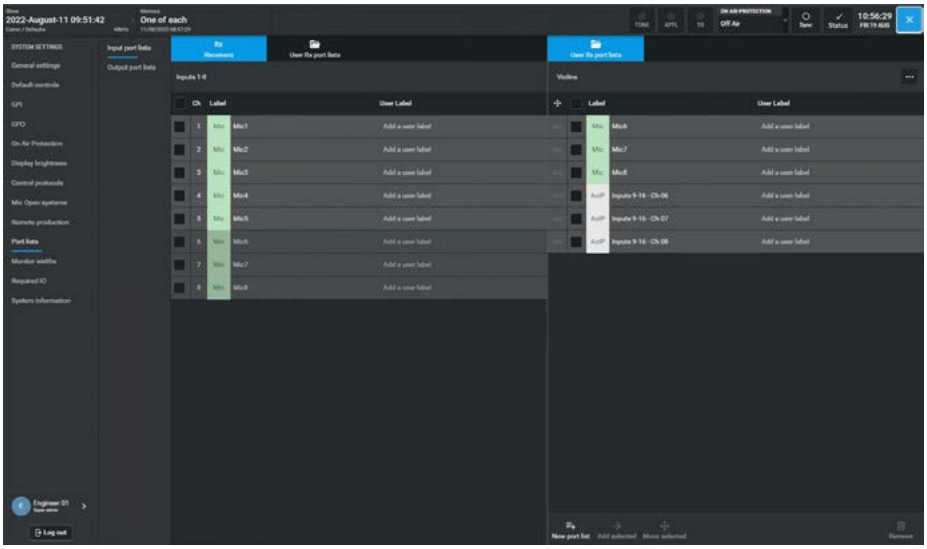
In either case the left side of the screen shows the Receivers or all the User port lists that have been created. If the user has not yet created any the right side of the screen will be empty otherwise it shows the last selected port list. Tapping on the header folder opens the current set of port lists on the right side of the screen, each of which contains the user defined subset of input or output ports available from the IO network.

Note: the Receivers & Transmitters cannot be deleted and is only affected by the IO streams available in the system. When IO boxes are brought online, these IO streams become available for use.

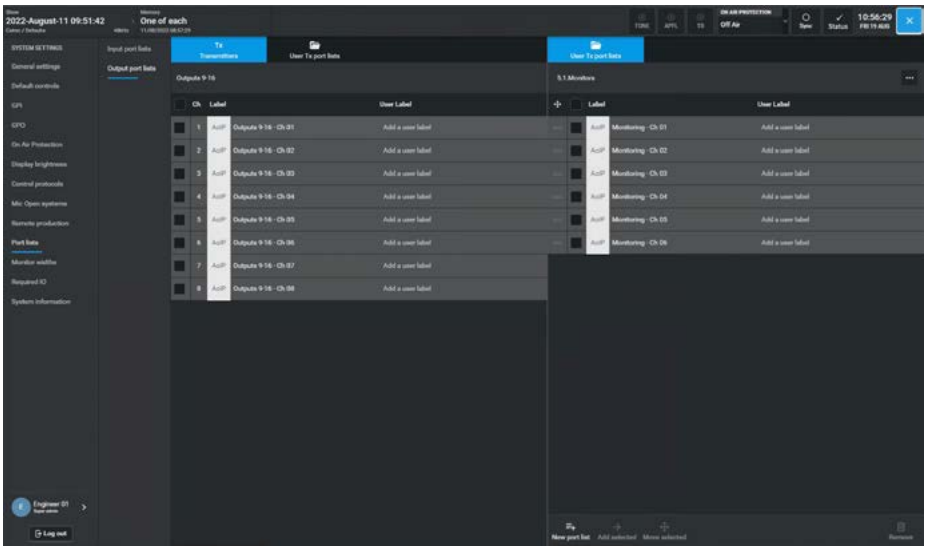
The right side of the screen is used to manage the selected port list and allows the user to create a New port list, Add or Move ports to an existing port list, Label ports in a port list or Remove ports from the various existing port lists.

Creating lists
To create a new user port list, the user can either tap the '**New port list**' button from the right side of the footer. A popup will appear prompting for the name of the new list as shown below right. Once created, the new list will appear below the default lists and will initially be an empty list. The next step would be to add ports into this new list from the Default list. Alternatively the user can select ports first from the left side of the screen and then tap the '**New port list**' button creating a new port list with the selected ports already added.

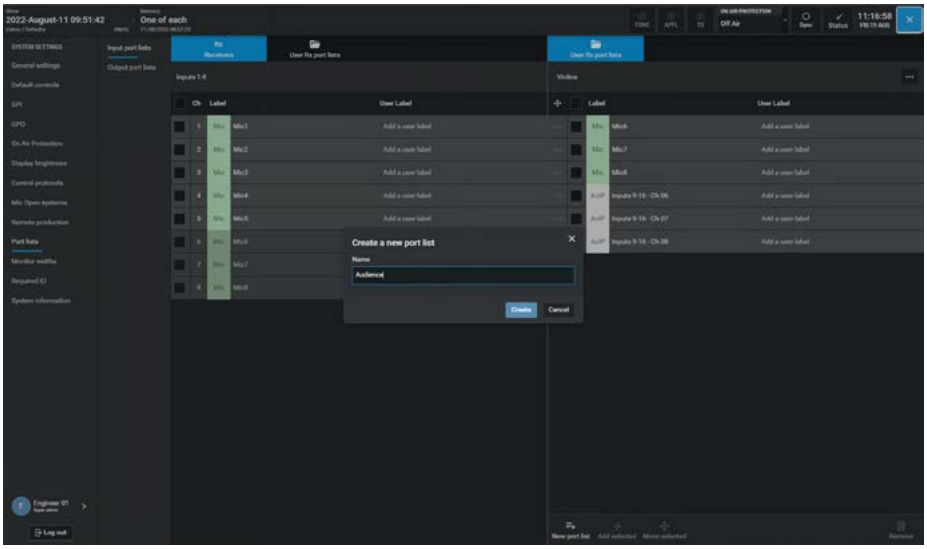
INPUT RX RECEIVERS & USER RX PORT LISTS



OUTPUT TX TRANSMITTERS & USER TX PORT LISTS



CREATING A NEW USER PORT LIST



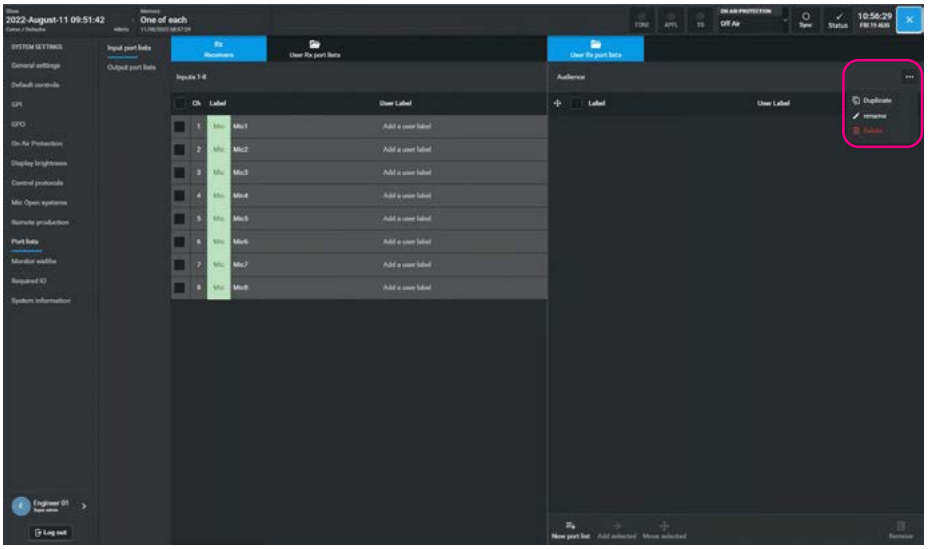
Port List Options

The Port Lists displayed in the right side of the screen can have various options applied to them. These are accessed by tapping on the **'. . .'** area as highlighted in the image above right.

When tapped the Port List options dropdown appears, this allows the user to either:-

- Rename the Port List
- Remove/Delete the Port List
- Duplicate the Port List

PORT LIST OPTIONS



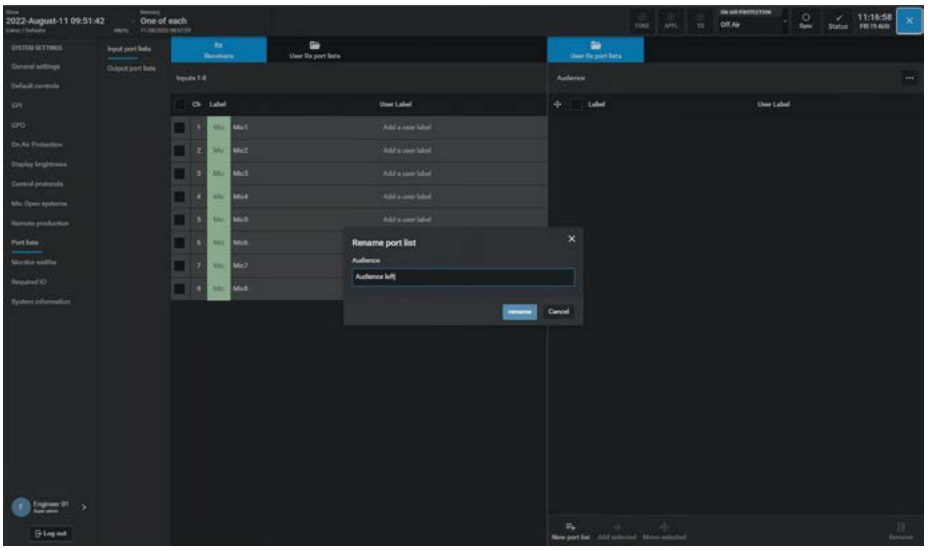
Renaming Port Lists

To rename a port list the user selects the required port list and then taps on the port list options **'. . .'** area. From the dropdown the user then taps on the '**Rename**' button to bring up a popup dialogue.

The "Rename port list" dialogue allows the user to enter a different name for the Port List.

The user then either taps on **'Rename'** in the dialogue box or they can **'Cancel'** if not required as shown middle right.

RENAME PORT LIST

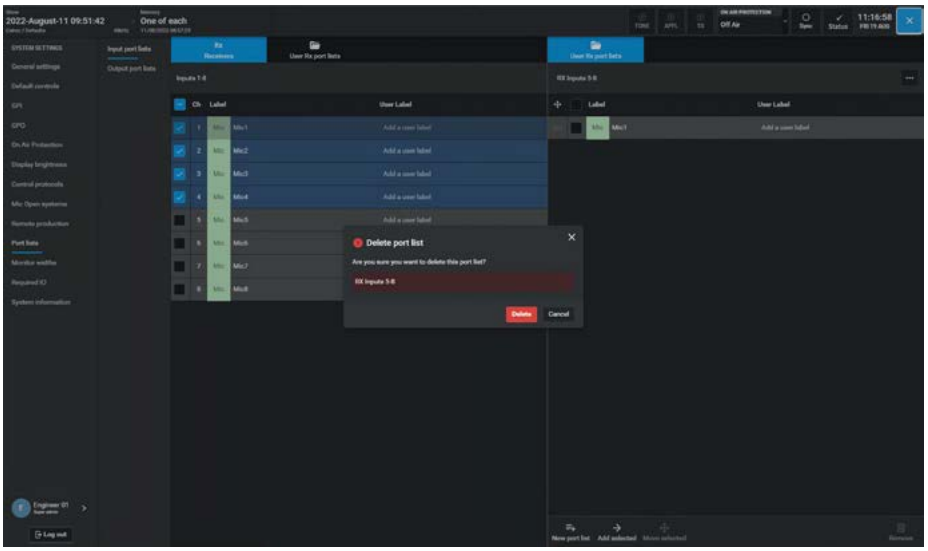


Removing Port Lists

To remove a port list, the user selects the required port list and then taps on the port list options **'. . .'** area. From the dropdown the user then taps on the **'Remove'** button to bring up a pop-up dialogue.

The "Delete port list" dialogue asks for confirmation of the removal. The user then either taps on **'Delete'** in the dialogue box or they can **'Cancel'** if not required as shown below right.

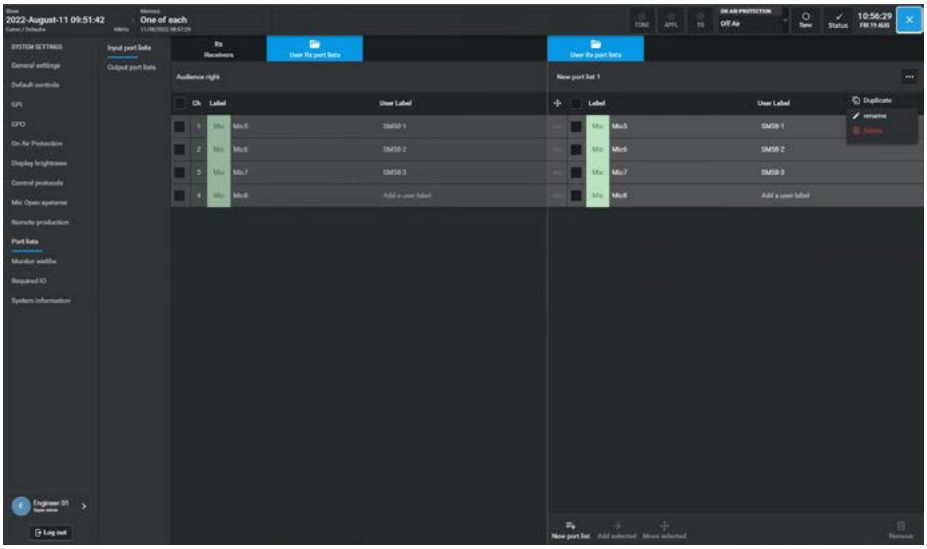
REMOVE PORT LIST



Duplicating Port Lists

To duplicate a port list, the user selects the required list and then taps on the port list options **'. . .'** area. From the dropdown the user then taps on the '**Duplicate**' button. This creates an exact copy of the selected port list and names it as **'New port list 1'** as shown above right.

DUPLICATE PORT LIST



Port Labelling

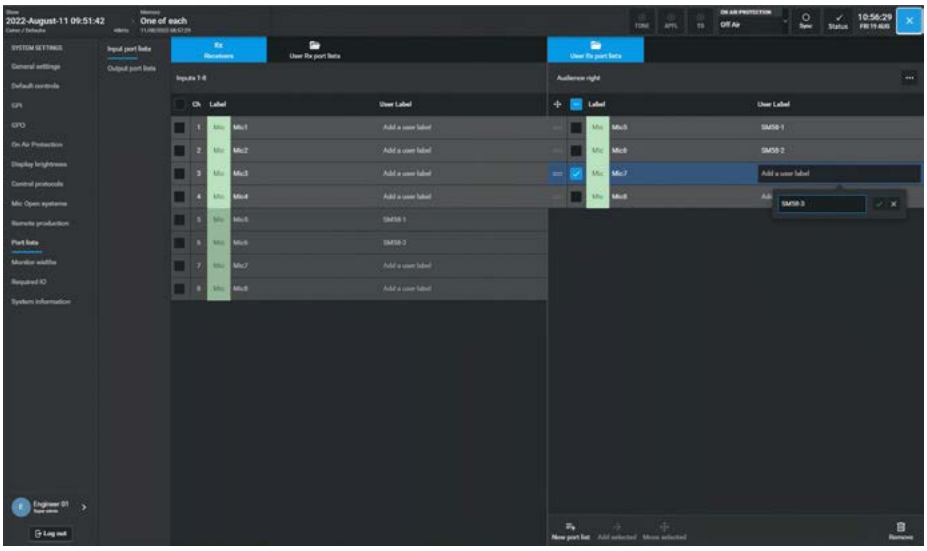
Each port in the system can be given a local port label so that they can be more easily identified than when using the network port label e.g SM58-3 rather than Mic7 as shown middle right.

The user selects a port to highlight it on the right side of the screen and then taps on the **"Add a user label"** area of the port**.** This opens the label dialogue adjacent to the port entry which allows the user to enter the required name in the entry field.

Each label is updated when the "tick" is selected, the 'X' cancels the change.

The image below right shows the user entering labels for a Transmitter port list which will eventually be is an 8 channel stream feeding a 5.1.2 Monitor.

PORT LABELLING - INPUTS



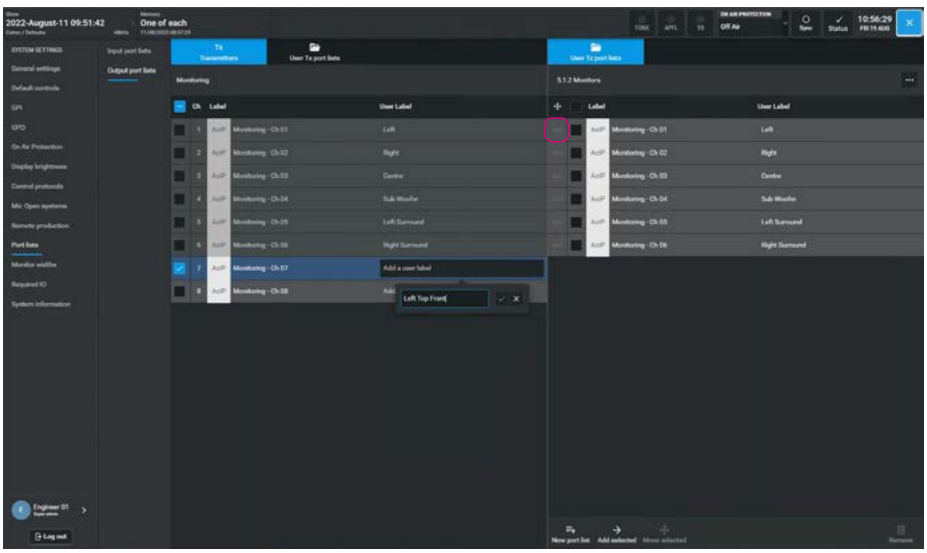
Reordering ports in a port list

In the right side of the screen each port has an ordering icon **':::'** as highlighted.

The user may want to reorder the ports as they appear in the port list for ease of IO patching later on. If the user taps and drags on the icon the associated port entry can be moved up and down the list enabling the user to reorder the ports as required.

In the case shown below right the ports have been arranged so that they follow the ITU speaker order for a 5.1.2 monitor port list.

PORT LABELLING OUTPUTS



Adding ports to port lists
Ports can be added to port lists either directly from the Receiver or Transmitter streams or from other port lists by selecting the required ports in the required list such as the Receivers list or the User Rx port list.

Here the **"Rx Inputs 1-4"** port list in the left side as shown in the image above right has had the 'Mic3' port selected and touching the **'Add selected'** button in the right footer will add it to the port list.

The selected ports will appear in the port list on the right side of the screen.

Moving ports to other port lists
Ports can be moved to other port lists by selecting the required ports in the list such as another User Rx port list.

Here the **"Rx Inputs 1-4"** port list in the left side as shown in the image middle right has had the 'Mic4' port selected and touching the **'Move selected'** button in the right footer will move it to the 'Rx Inputs 5-8' port list in the right side.

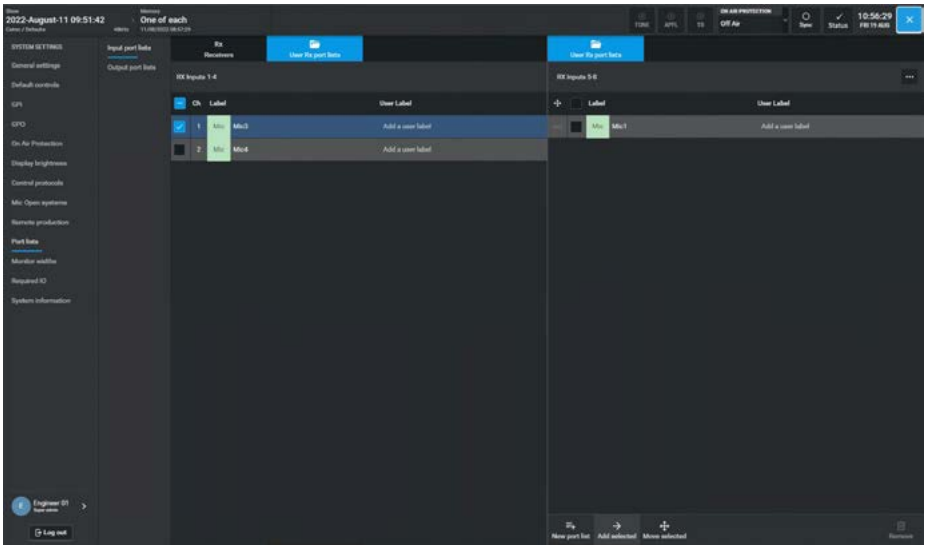
The selected ports will appear in the port list on the right side and be removed from the port list on the left side. The main difference between Add and Move is that in the move process the ports are also removed from the source list.

Note: in the case of the Receiver or Transmitter streams, the ports cannot be removed from it via the move or remove process.

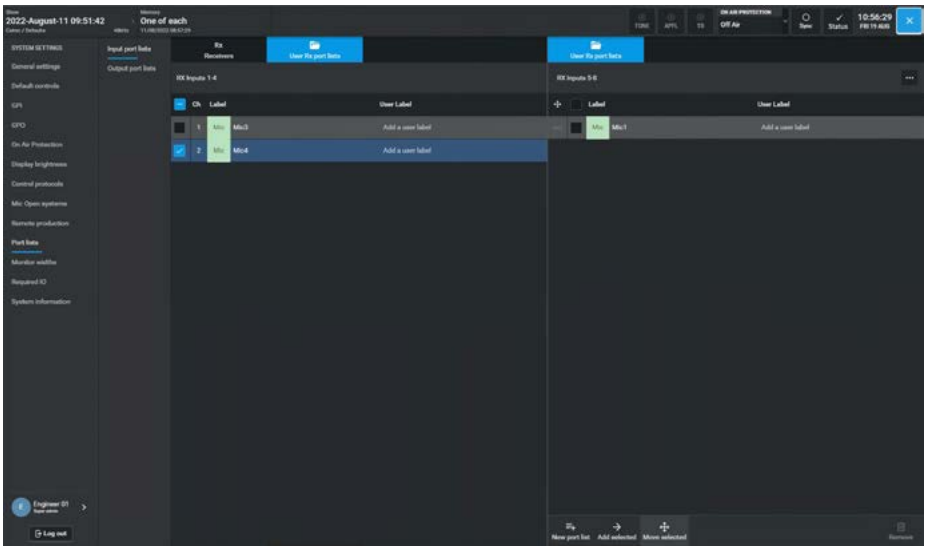
Removing ports from lists
To remove ports from a port list, select the required ports from that list and touch the '**Remove**' button in the footer. As the ports still exist in the Receiver or Transmitter streams, the selected ports are removed without confirmation.

To select / deselect all the ports in a port list, tap on the icon box in the Label header area, this in combination with the '**Remove**' button will remove all the Mic selected ports from the port list.

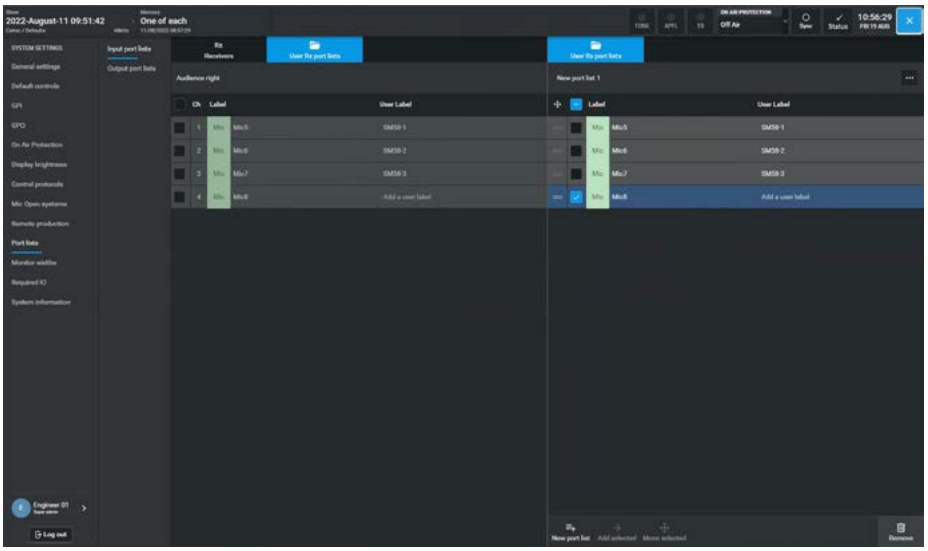
ADDING PORTS TO PORT LISTS



MOVING PORTS TO OTHER PORT LISTS



REMOVING PORTS FROM PORT LISTS



MONITOR WIDTHS

For Argo the monitoring system provides fully immersive monitoring up to a 7.1.4 width in a 3D space for a variety of monitor outputs.

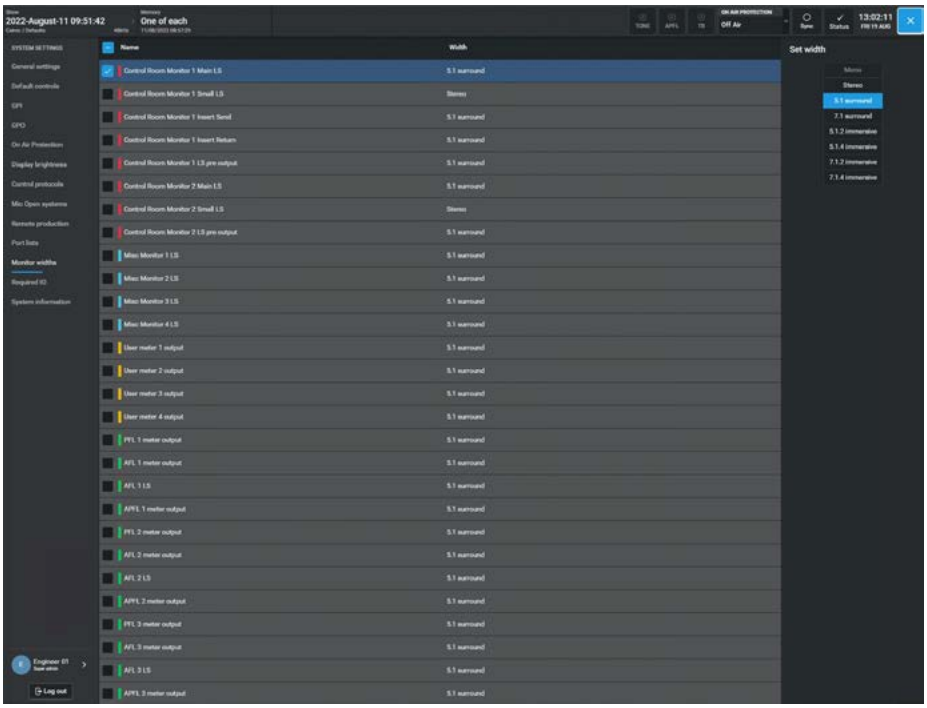
Each of the monitoring and metering outputs shown above right are capable of having their widths set not only to the Mono, Stereo & 5.1 settings but also incorporates 7.1 surround and immersive monitoring widths that include height based speakers to provide a 3D sound field monitoring arrangement from 5.1.2 up to 7.1.4 widths. The final .2 or .4 indicates that there are either 2 or 4 speakers placed at ceiling height to provide a truly immersive experience.

The 5.1.2 width and 7.1.2 width monitoring system includes 2 height speakers, placed Left top front & Right top front, whilst the 5.1.4 and 7.1.4 width monitoring system includes 4 height speakers, placed Left top front, Right top front, Left top back & Right top back.

Channel Inputs, External Inputs, Groups and Mains are all capable of being set to immersive widths and so the monitoring system is designed to allow the user to listen to those inputs and mix outputs at those widths.

Note: Groups can also be set to height widths only e.g. 0.0.2 and 0.0.4.

MONITOR WIDTHS SELECTION



The monitor widths are setup on the **System Settings>Monitor Widths** page as shown above right selecting an output in the list highlights its current width in the Set Width column on the right. The user then selects its new width as required remembering to patch the outputs for that output as needed.

The Control Room Monitor 1 & Control Room Monitor 2's Main, Small LS and LS pre outputs, Misc Monitors 1-4, User Meter Outputs 1-4 and the PFL, AFL & APFL systems 1-3's metering and loudspeaker monitoring outputs can all be individually set to the required widths to listen to the immersive paths being monitored.

REQUIRED IO BOXES

The IO Box resource page shows the IO resources that are currently online and available to this Argo system.

To access the required I/O screen, tap the **System Settings>Required IO** entry in the sub-menu on the left side as shown in the image above right.

The screen is spilt in two halves:- the left side shows the "Online Resources" available and the right side shows the "Resources Required by this Console"

Note: if the required resource does not appear in the right side list then it will NOT be available for use by this console.

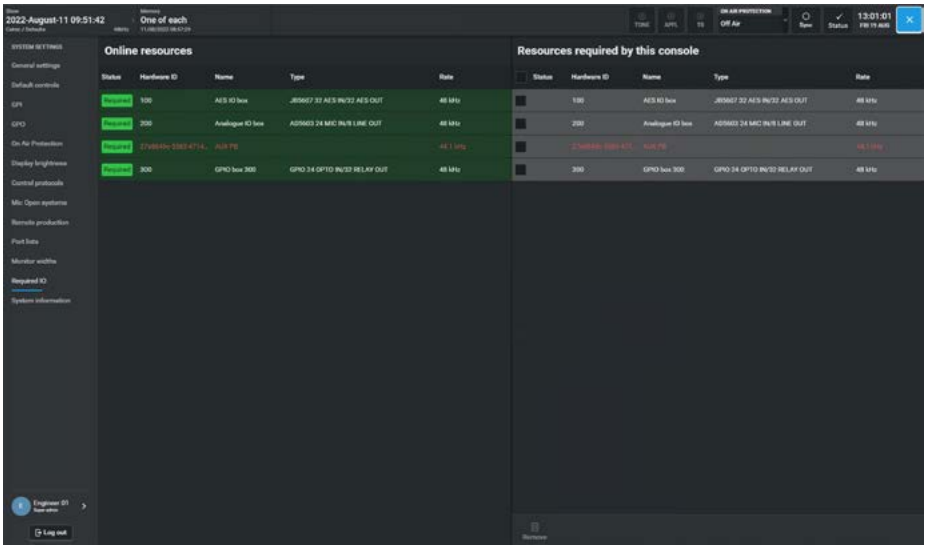
Resources are automatically added when the Audio streams are created in the Connect application and the Virtual Patchbays are created in the Configure application, they becomes available.

In order to remove a resource from the required list, the user taps on the resource that is no longer required from the list on the right side of the screen, as shown in the image below right, which then highlights, the **'Remove'** button becomes available in the footer of the right side of the screen. Tapping on this opens the "All required resources selected will be removed. Are you sure you want to do this?" dialogue in the right side of the footer.

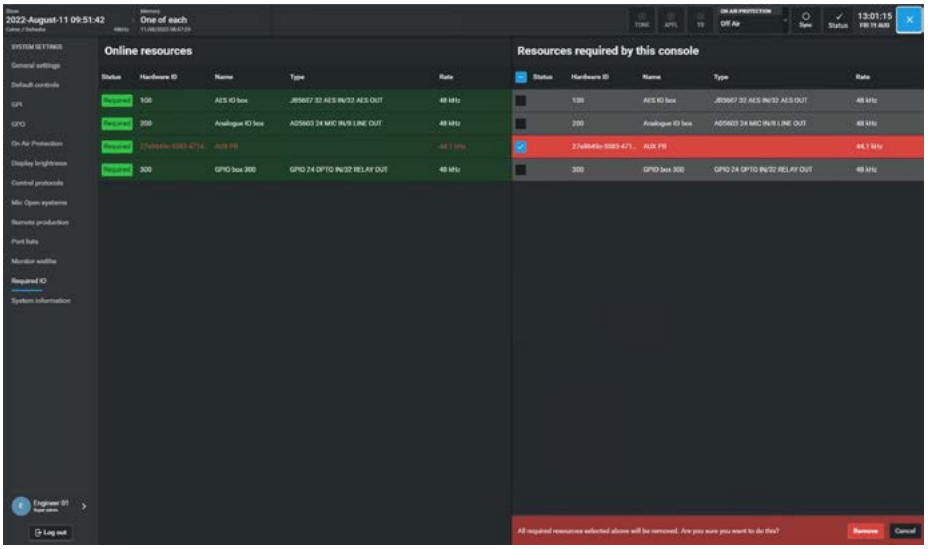
If the user wants to proceed they tap on the **'Remove'** button which removes those resources from the right side of the screen, if not they can the **'Cancel'** operation.

Note: When resources are removed they cannot easily be re-added. Some resources are re-added on re-detection (TX/Rx) and others may require a reboot.

IO BOX RESOURCES ONLINE AND REQUIRED



REMOVE RESOURCES



SYSTEM INFORMATION

To access the system information screen, tap the **System Settings>System Information** entry in the sub-menu on the left side as shown in the image above right.

It contains general information about:-

- System Type
- Mixer A/B/C/D
- Software Version
- Number of Faders
- DSP Licence
- List of 3rd party licences used to create this application.

SYSTEM INFORMATION

USER ASSIST ACCOUNTS

The User Assist accounts preferences are accessed from the bottom of the Main menu in the System Settings page and shows the various settings that the current user can alter.

User areas and Assist

This changes how Assist access interacts with the control surface:
"Link the Assist accessed path selection with a control surface user area" when active ties the surface path access to one of the three user splits. If this switch is not selected Assist operates independently of the control surface.
The "Assist access/selection operated within" dropdown allows this user to access a particular user split section.

Appearance

The interface theme can be changed to operate in Dark mode (which is the mode used throughout this manual) or Light mode as shown in the image middle right.

Note: this image also shows that the User Account has changed to an Operator rather than an Engineer.

User Input

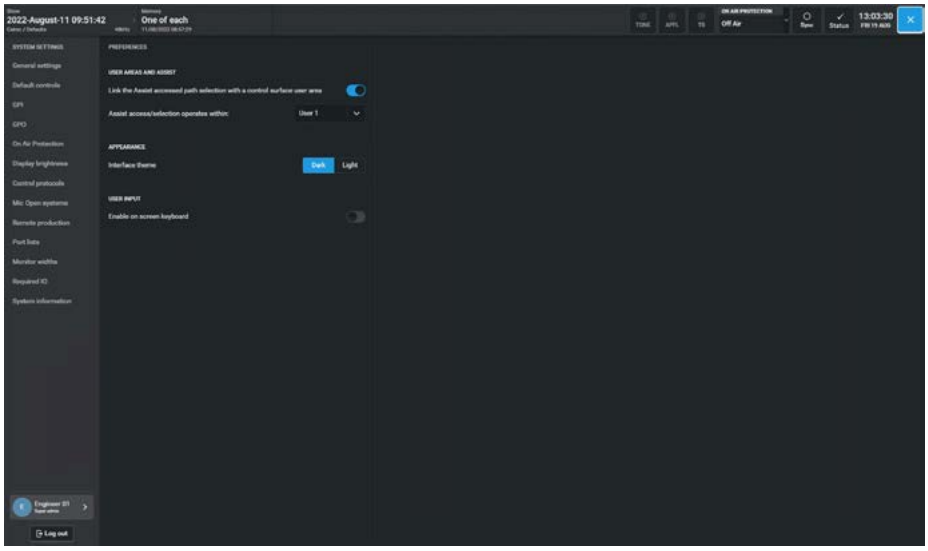
The user can "Enable the on screen keyboard" which can be used instead of a USB plug-in keyboard for entering labels/ names as required by sliding the switch.

Note: if the user taps on the **'Log out'** button at the bottom of the main menu column, the Assist application will exit and return to the Log in page, see **"Assist Login Page" on page 14**.

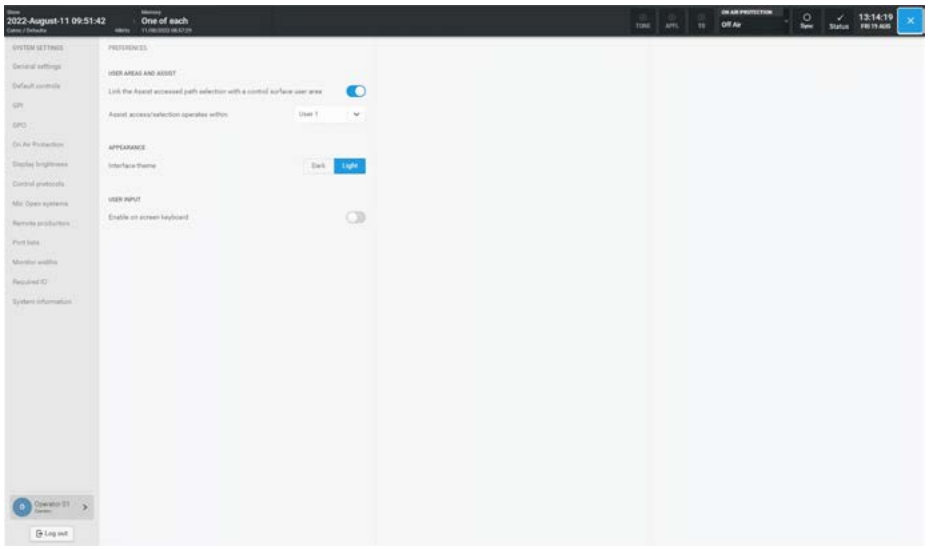
Equaliser in Light Mode

The image below right shows the **Processing>EQ** page as an example of the light mode interface theme.

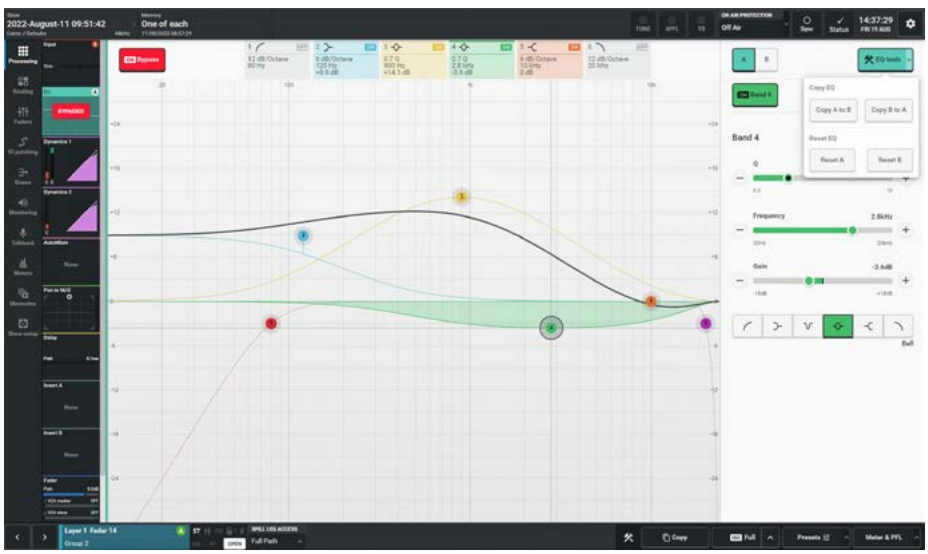
USER ASSIST ACCOUNTS (DARK MODE)



USER ASSIST ACCOUNTS (LIGHT MODE)



PROCESSING>EQ (LIGHT MODE)



ARGO ASSIST
HEADER FACILITIES & TOOLS FOOTER

CALREC

STATUS CLEAR FACILITIES

In the header of Assist there is a set of Status clear buttons.

Replay Clear
The Replay button in the header is lit when the Replay switch in **Processing>Input** -Settings dropdown is active to indicate that all the selected channels have been switched to Input 2 as shown above right. Tapping on this button clears the Replay status and the button is removed from the header.

Tone Clear
The Tone button in the header is lit when any path has Tone applied to it as shown above right. Tapping on this button clears all active tone assignment and then greys out.

APFL Clear
The APFL button in the header is lit when any path has either PFL or AFL applied to it as shown middle right. Tapping on this button clears all PFL and AFL active assignments and then greys out.

TB Clear
The TB button in the header is lit when any path has Talkback applied to it as shown in Fig 4. Tapping on this button clears all latched Talkback assignments (such as Direct outputs) and then greys out.

Note: For momentary talkback on the surface the TB indicator lights for as long as the selected TB button is held down and when released deactivates the talkback, unless there is another active talkback in use. It is also possible to Trigger Talkback via GPI.

REPLAY CLEAR

TONE CLEAR

APFL CLEAR

TALKBACK CLEAR

ON-AIR PROTECTION

In the header of Assist there is an On-Air Status box which can set the On-Air, Rehearse and Off-Air condition for the Argo system.

The images to the right show the three states of the On-Air status.

The On-Air status determines a number of other functional states in the system for instance when **'On-Air'** is activated the tone and talkback to main is disabled and the three On-Air status states have an effect on the mic open systems see "Mic Open Systems" on page 177.

The user can set the On-Air state by tapping on the **'On-Air Protection'** status box in the Access header which provides a dropdown to select one of the three states or the user can switch states at any time using GPIs.

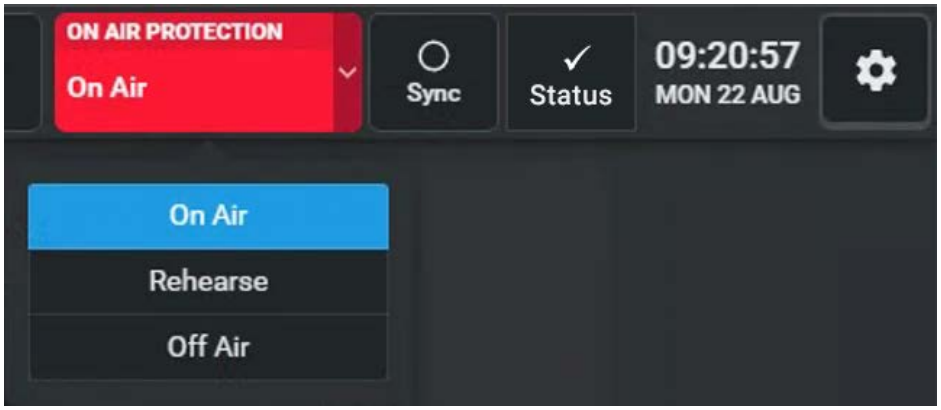
Argo provides two GP inputs which are labelled '**Ext On Air Signal'** and **'Ext Rehearse Signal'**, the relevant function is active while the selected GPI signal is active.

If both a GPI function and a user selection of state are active, then the highest selection will take priority. From high to low this is:- On-Air, Rehearse, Off-Air.

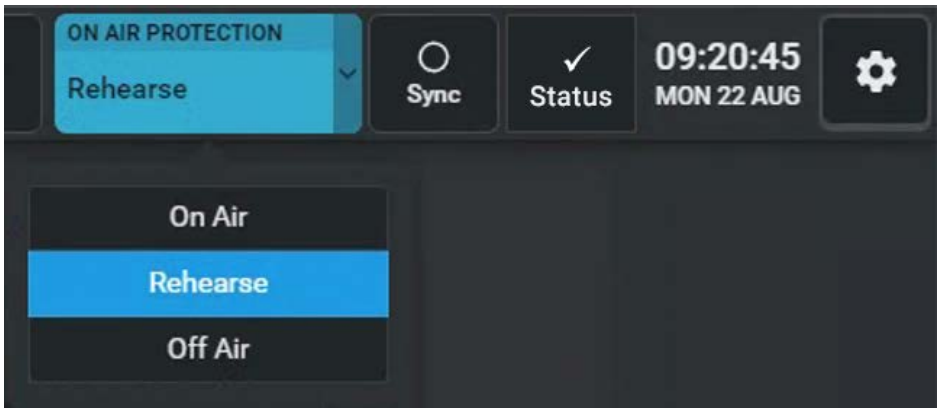
If both GPI functions are active, the **'On-Air'** GPI function will take priority over the **'Rehearse'** GPI function.

Argo also provides two GP outputs which are labelled **'On Air Signal'** and **'Rehearse Signal'**, when the relevant function is active the selected GPOs can be used to provide external control signals such as to control indicators outside a Control Room or Studio.

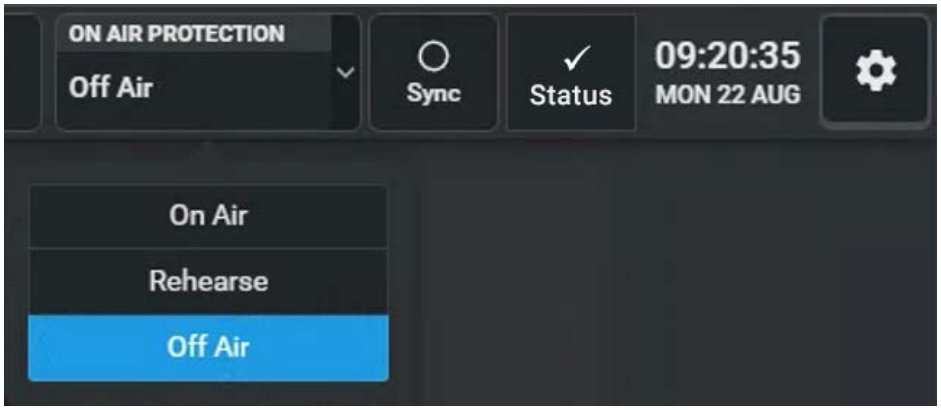
ON-AIR STATUS



REHEARSE STATUS



OFF-AIR STATUS



SYNC STATUS

Argo features Sync Status messaging which reports the current sync state via Assist.

The System monitors all sync components with respect to PTP clock sources.

Sync status notifications
Under normal operating circumstances, the system status notifications area to the right of the On-Air Protection block in the Access header will show a “tick” mark to show that everything is OK and that a valid PTP clock source is being received.

Tapping on the Sync button in the Access header provides a dropdown displaying the Current PTP Sync state of each core.

The active sync source also indicates whether the core is acting as a PTP master or as a PTP slave as well as which source the core’s clock is currently referenced to.

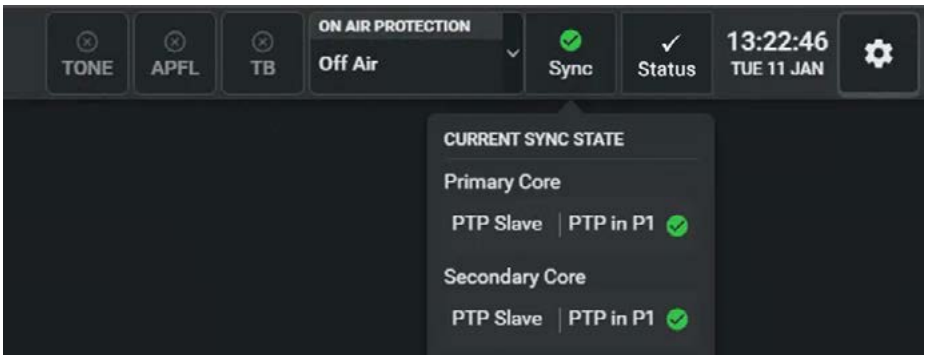
Note: the PTP settings are configured from the Connect application and are also shown in the Configure application which offers additional Synchronisation options.

In addition to acting as a PTP slave, there are Wordclock and a number of Video sync input selections available in Configure which can be used to provide a sync reference to a core but only whilst that core is acting as a PTP master.

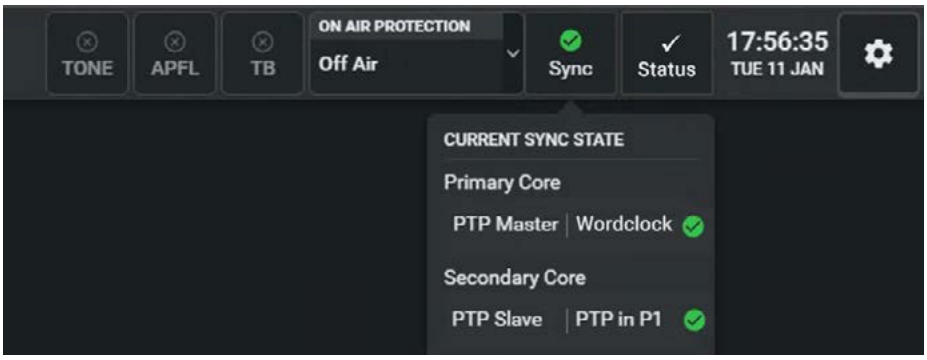
The image below right shows that the Sync status has changed and that whilst the Secondary core is still synced as a PTP slave, the Primary Core is now acting as a PTP master but referenced to a 48kHz Wordclock sync input.

Note: these sync inputs are unused when the core is acting as a PTP slave (as shown above right). In this case the core’s clock is being referenced to one of the PTP inputs (P1) instead which is coming from an external AoIP IO box.

CURRENT SYNC STATUS PTP SLAVE FROM EXTERNAL PTP CLOCK



CURRENT SYNC STATUS PTP MASTER FROM CORE REFERENCED TO WORDCLOCK



SYSTEM STATUS

Argo features System Status messaging which reports warnings, errors and system information via Assist.

System status monitors all system components and connections.

System status notifications

Under normal operating circumstances, the system status notifications area to the right of the header will show a “tick” mark to show that everything is OK and that there are ‘No events to display’. See the image above right.

In the event that a message needs to be displayed, the notifications area will display the relevant colour depending on the message type.

Information (blue), a warning (amber) or an error (red) message.

Tapping on this notification area will bring up the system status screen.

The most serious notification will be shown as a priority i.e. error messages then warning messages then information messages.

Message types

Three types of message are reported by system status:-

Error Messages

Reports serious errors that could cause, or has caused the system to fail.

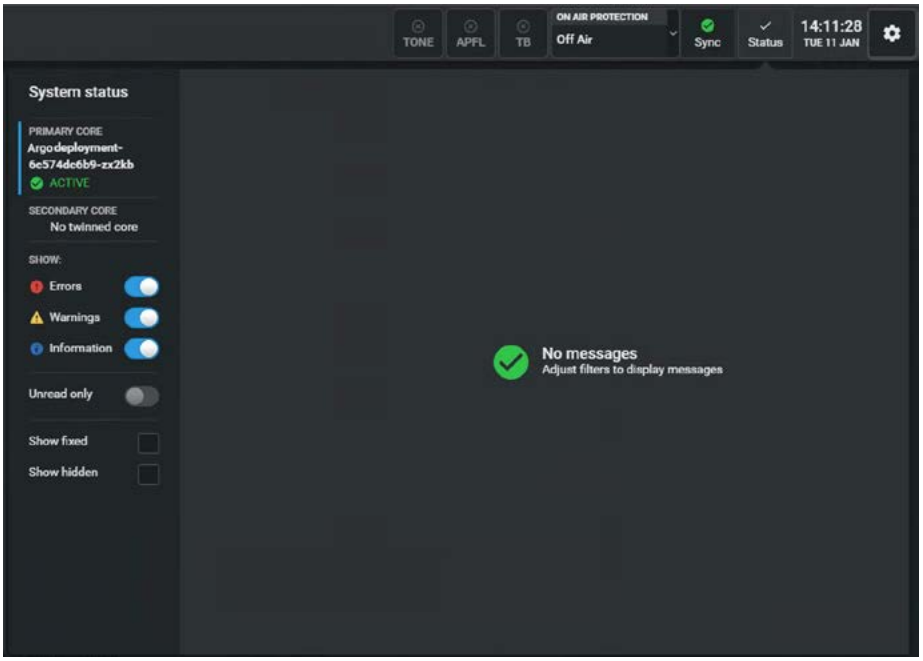
Normally this requires user intervention to correct the problem before operation can continue.

Warning Messages

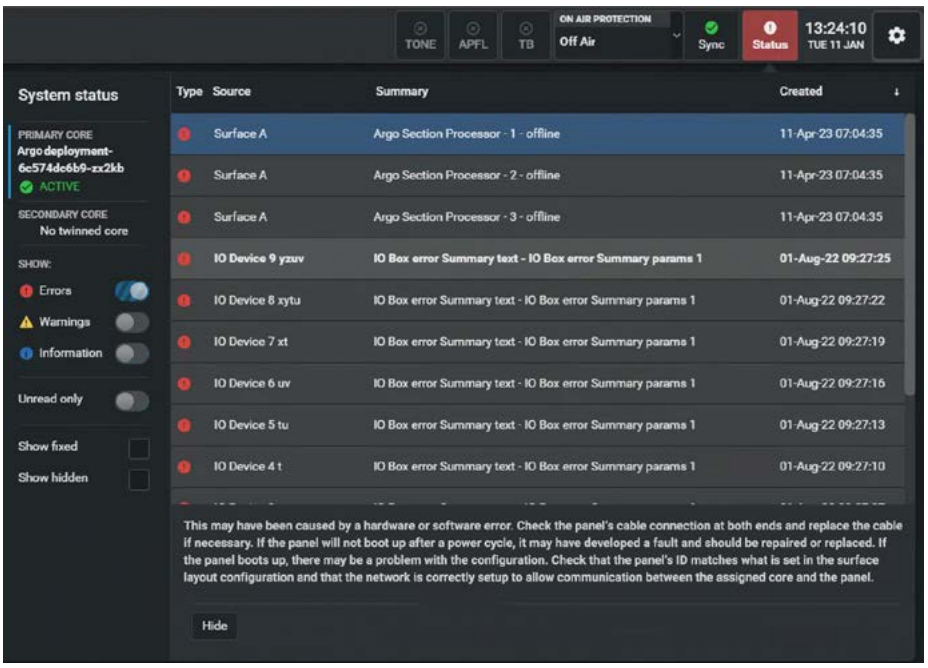
Indicates where the system has located a fault or failure, but will still operate without intervention from the user. See the image top right on the next paget with a yellow warning indicator.

Certain messages should be checked as the system may be running on its secondary components.

SYSTEM STATUS DROPDOWN FROM ACCESS HEADER - OK STATE



SYSTEM STATUS DROPDOWN FROM ACCESS HEADER - ERROR STATE



Information Messages

Informs the user when certain actions take place. They do not report errors, and no action needs to be taken to respond to them. See the image below right on the next page with a blue indicator.

Managing Messages
The messages are reported in a list and each message in the list has an associated icon shown in the left column.

This identifies the type of message to the user. Message types can be filtered using the buttons in the left hand panel.

The top 3 slider switches are used to select **Error**, **Warning** & **Information** message types either individually or in combination.

The 4th switch labelled **Unread only** allows the user to hide messages that have already been read. Read messages have a darker background as shown as an example below right, second entry down.

In addition items that have been "Fixed" or "Hidden" can be included or excluded from the status list using the '**Show fixed**' and '**Show hidden**' check boxes.

Selecting a message in the list will update the selected entry description window area on the bottom right of the display to show the message in greater detail.

The Error, Warning & Information images on this and the previous page all show a hide button when a message is selected.

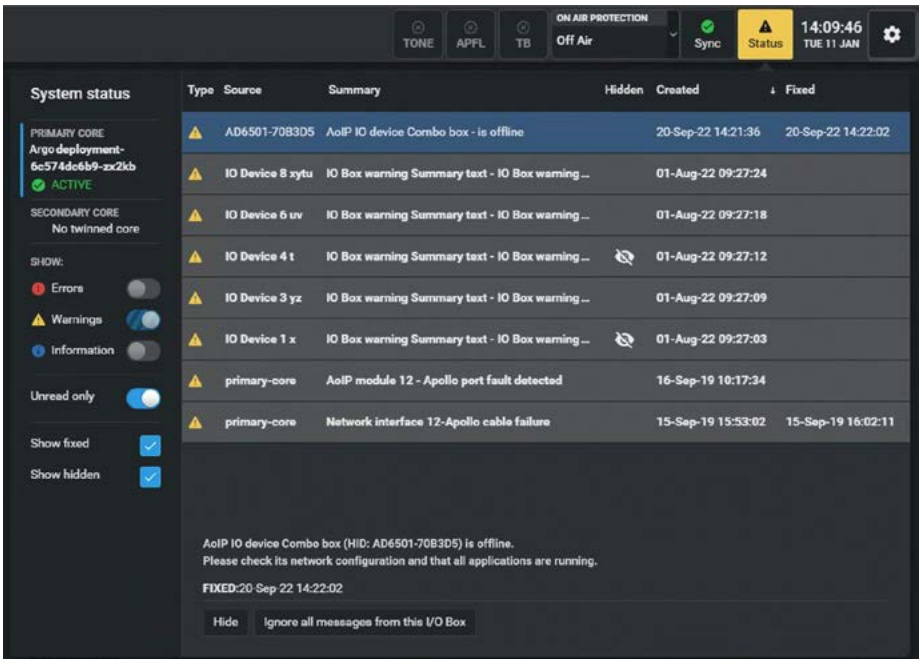
If the **'Hide**' button is pressed the "Eye" logo appears to show it is hidden as shown in the image above right and when the 'Show hidden' checkbox deselected those messages are removed from the list.

To "Unhide" them again uncheck the 'Show hidden' check box and select the message(s) with the "Eye" logo.

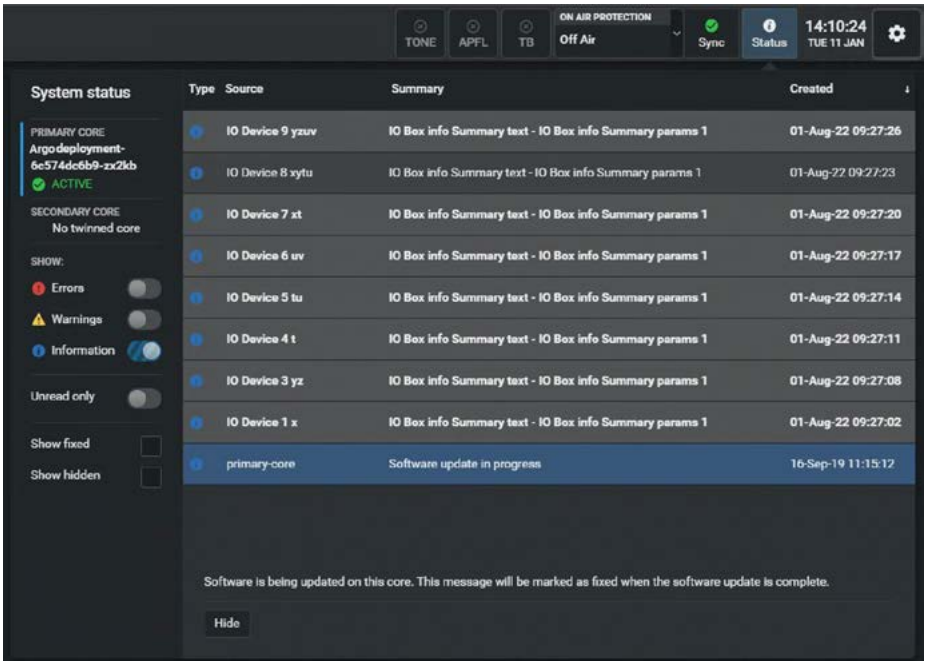
The **'Hide'** button below will now act as an **'Unhide**' button.

In some situations an I/O box may be connected to the system but not be required for this production. In order to avoid receiving unwanted messages from that box, as it would if it goes offline and starts sending error messages.

SYSTEM STATUS DROPDOWN FROM ACCESS HEADER - WARNING STATE



SYSTEM STATUS DROPDOWN FROM ACCESS HEADER - INFO STATE



The user can select it and click on the **'Ignore all messages from this I/O Box'** button as shown in the image above right. This then blocks all its messages to the system.

Note: the **'Ignore all messages from this I/O Box'** button performs the same function as the receive Status messaging On/Off slider switches shown on the I/O status page, see **Show Setup>IO Status** for details.

COPY AND PASTE

This tools facility in the footer makes it quick and easy to copy properties from one path and paste them to another.

The user accesses the path to copy the properties from and taps **'Copy'** as highlighted in the tools footer as shown above right.

This opens the "Copy path parameters" dialogue box as shown below right.

The user then selects the parameters to copy or can tap on **'Select all'** or **'Select none'** if required and then taps on **'Copy'** or **'Cancel'**.

Note: if 'Select None' is selected the 'Copy' button will grey out.

To apply the copied properties, the user selects the path(s) sequentially to paste the properties to and taps **'Paste'** in the Function Header. The **'Paste'** selection remains available until the **'Cancel'** button in the footer is tapped.

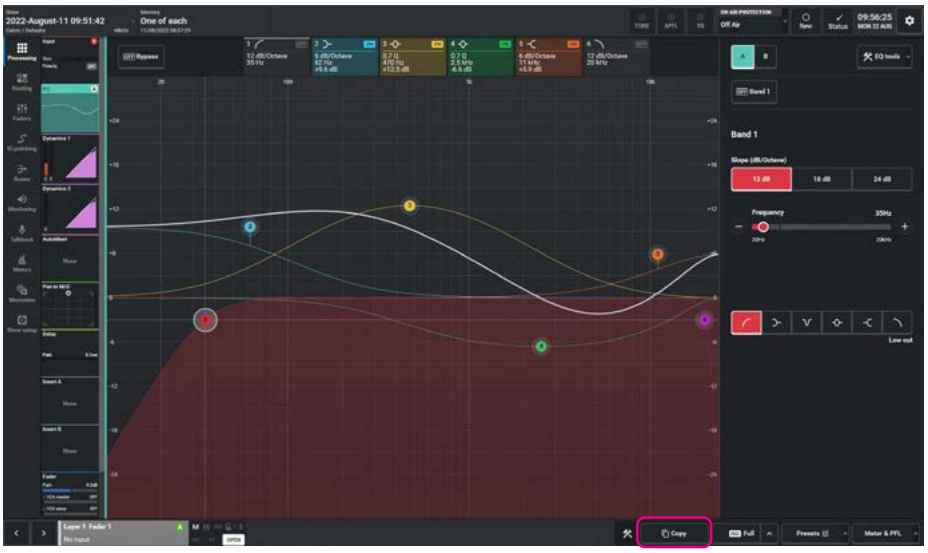
If the user wishes to alter the contents of the Paste buffer they can tap on the **'Edit Selection'** button in the footer.

This reopens the Copy path parameters dialogue box. The user will need to tap on **'Copy'** again to update the paste buffer ready for further copying.

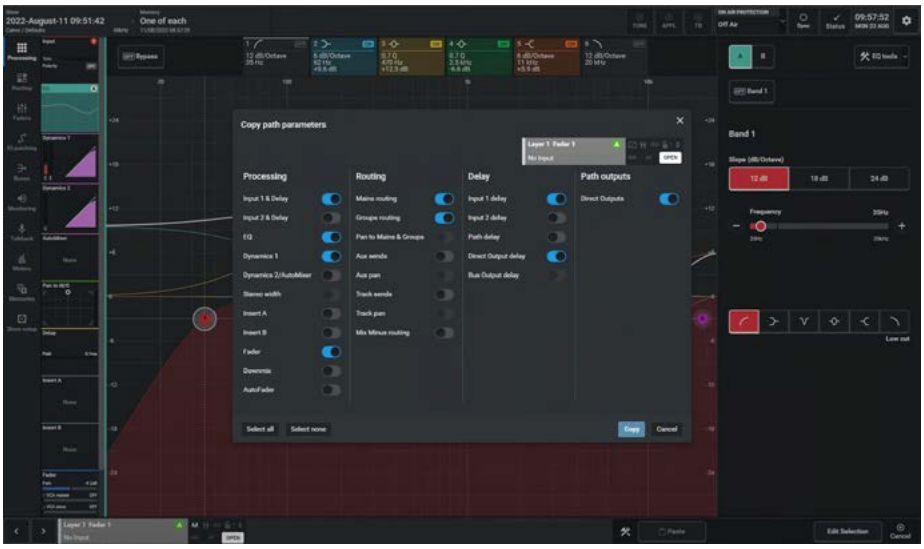
Once the user has finished copying the required parameters they tap on the **'Cancel'** button in the footer to close the Copy & Paste tools.

Note: When pasting path parameters that have been copied to a path that is in a Control Link it is important to realise that ALL the paths in the control link will have their settings overwritten.

COPY FROM TOOLS FOOTER



COPY TEMPLATE DIALOGUE BOX



ISOLATE

This tools facility in the footer allows the user to Isolate parameters in the selected paths from change due to memory loads.

Isolate settings are stored in the continuous memory of each show, therefore each show may have different isolate settings.

Basic path isolation

Paths may be isolated using the **'ISO'** button in the Tools footer as highlighted in the image shown above right. With this function selected on a fader, the paths on that fader will keep their current settings when a new memory is loaded.

The MEM ISO function may either be set as ISO full in blue or ISO partial in green as shown in the footer images middle right.

ISO Full means that all parameters of the selected path are isolated from memory loads whereas ISO Partial means that only selected parameters have been chosen to be isolated from memory loads, the selection of which is determined by individually setting the various parameters to be included/excluded from isolation.

Setting the scope of memory isolation

Isolating a path does not necessarily mean that all settings associated with the path are isolated. It is possible to only isolate the EQ settings on a certain path, just the EQ and input settings, or maybe all or some of its routing.

To set the scope, touch the '**^**' part of the ISO button in the tools footer. This will open the Isolate path parameters dialogue box as shown below right.

The selected Mono path has all the parameters applicable to it selected and therefore a Full Isolate would be applied.

To change the selection tap the relevant switches to toggle the elements which should be isolated when the accessed path is isolated, the selected elements will illuminate.

ISOLATE FROM TOOLS FOOTER

ISOLATE FULL & ISOLATE PARTIAL ACTIVE STATES AS SHOWN IN TOOLS FOOTER

ISOLATE FULL & ISOLATE PARTIAL ACTIVE STATES AS SHOWN IN TOOLS FOOTER

The **'Isolate all'** and **'Isolate none'** buttons in the dialogue box switch all the elements on or off respectively.

When only a subset of the path parameters are set the ISO button has a 'Partial' suffix in place of the 'Full' suffix.

Once the required isolate elements have been set, tapping on the '**^**' part of the ISO button in the tools footer again or anywhere else other than the dialogue box on the display will exit the dialogue.

PRESETS

A preset is a complete copy of a path from which you can choose elements to load onto another path. Using presets can speed up the workflow when several paths with similar settings are required.

When a new preset is made a full copy of the path is taken. Setting the scope of a preset defines which elements of the path are copied to a path when the preset is loaded. The scope of the preset can be set at any time.

The image above right shows the Preset Dialogue box which is accessed when the user taps on the **'Presets'** button in the tools footer.

Creating a Preset Folder

To create a preset folder:

1. Tap **'Presets'** in the tools footer.
2. On the left side of the dialogue box tap on **'New'** and the "Create preset folder" popup appears.

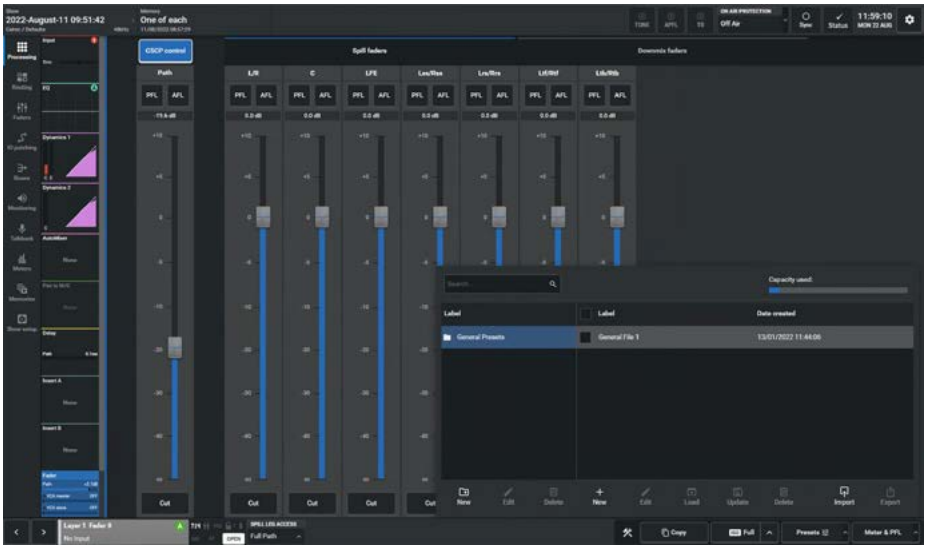
The user enters a label for the folder and then taps on **'Create'** to make the folder as shown middle right.

Editing a Preset Folder Label

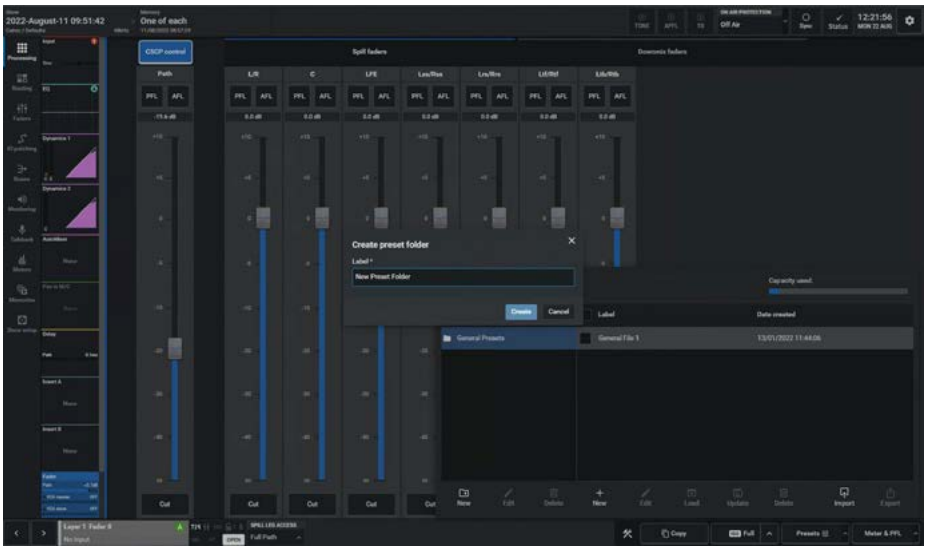
To Edit a Preset Folder label with the Preset dialogue box opened:

1. Select the Preset Folder to relabel.
2. On the left side of the dialogue box tap on **'Edit'** and the "Edit preset folder" popup appears.
3. The user enters a different label for the folder and then taps on **'Save'** to rename the folder as shown below right.

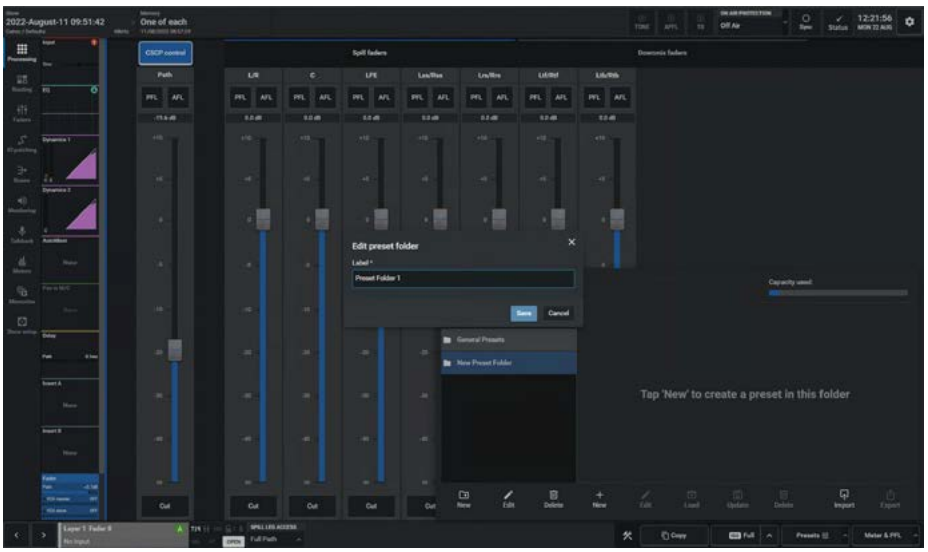
PRESET DIALOGUE BOX FROM THE TOOLS FOOTER



CREATE PRESET FOLDER



EDIT PRESET FOLDER LABEL



Deleting a Preset Folders

To delete a preset folder:

1. Tap **'Presets'** in the tools footer.
2. On the left side of the dropdown select the folder(s) to be deleted.
3. Tap on **'Delete'** and the "Delete selected folders" pop-up appears.
4. The user taps on **'Confirm'** to delete the folder as shown above right.

Note: all the Presets contained in the folder will also be deleted & "tickboxes" next to each entry can be used to select multiple folders & files to be deleted.

Creating Presets

To create a preset from the currently accessed path:

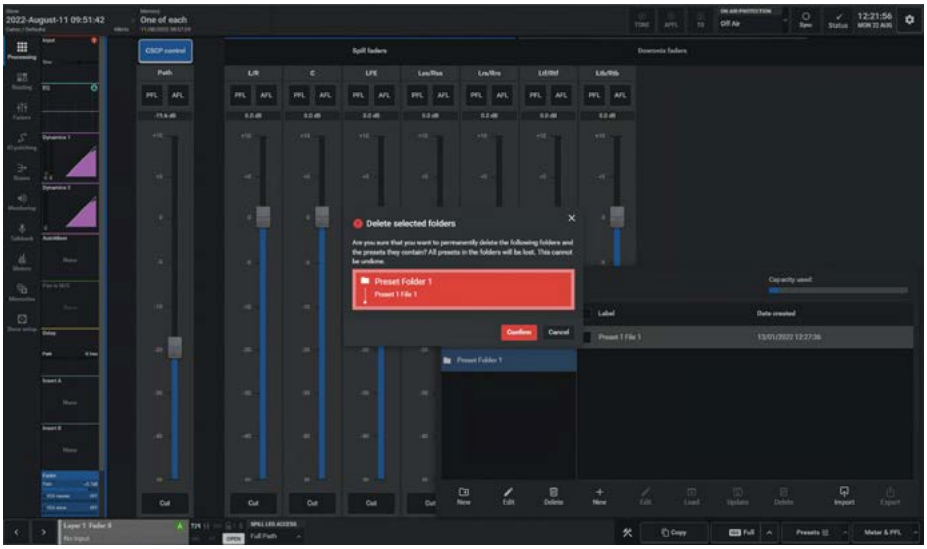
1. Tap **'Presets'** in the function footer.
2. Navigate to where you wish to save the preset, by first selecting a preset folder or making a new preset folder if necessary.
3. Tap **'New'** on the right side of the screen and the "Create Preset" pop-up appears as shown right.
4. The path identifier block inset top right shows the source for the preset.
5. Slide the switches to the right for those parameters to be loaded when Load is tapped on.
6. The image shown right, shows all the parameters that can be loaded for this path type. Also the **'Select all'** or **'Select none'** buttons can be used for quick selection/deselection.
7. The user enters a label for the preset in the top left corner.
8. Then taps on **'Create Preset'** to create the preset and place it in the selected folder as shown middle right.

Editing a Preset Label

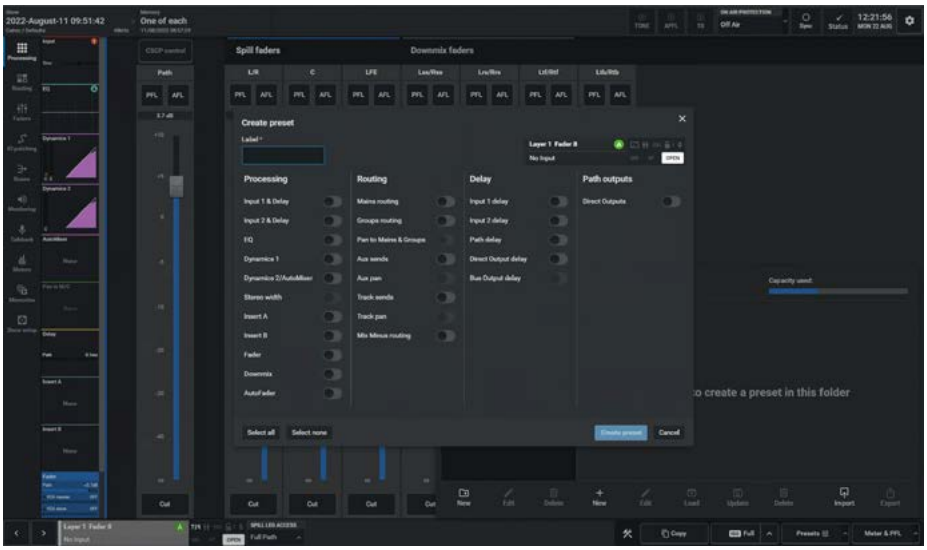
To Edit a Preset label with the Preset dialogue box opened:

1. Select the Preset to label.
2. On the right side of the dialogue box tap on **'Edit'** and the "Edit preset" pop-up appears.
3. The user enters a label for the preset and then taps on **'Save'** to rename the preset as shown below right.
4. The user may also alter the settings to be applied on loading the preset by changing the switch settings on the elements in the Edit preset box.

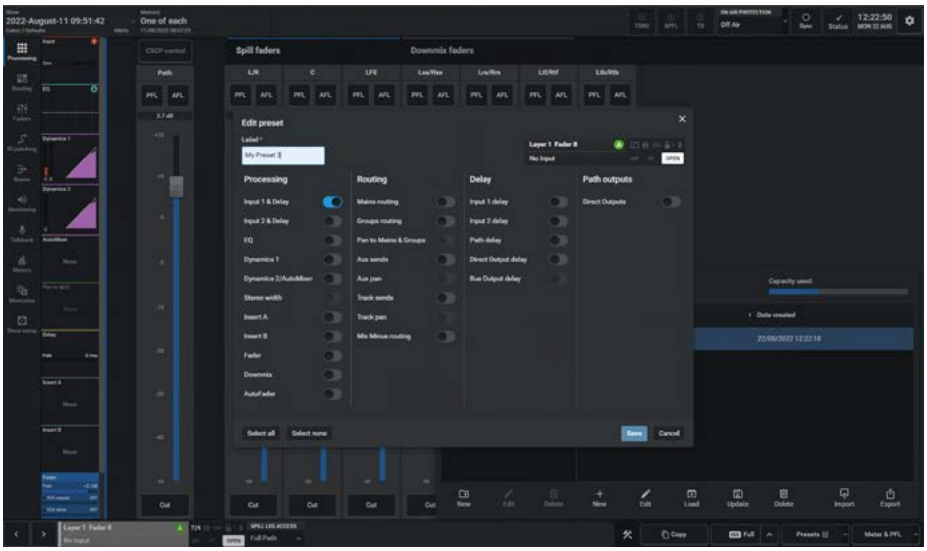
DELETE PRESET FOLDERS



CREATE PRESET PARAMETERS



EDIT PRESET LABEL AND/OR PATH ELEMENTS

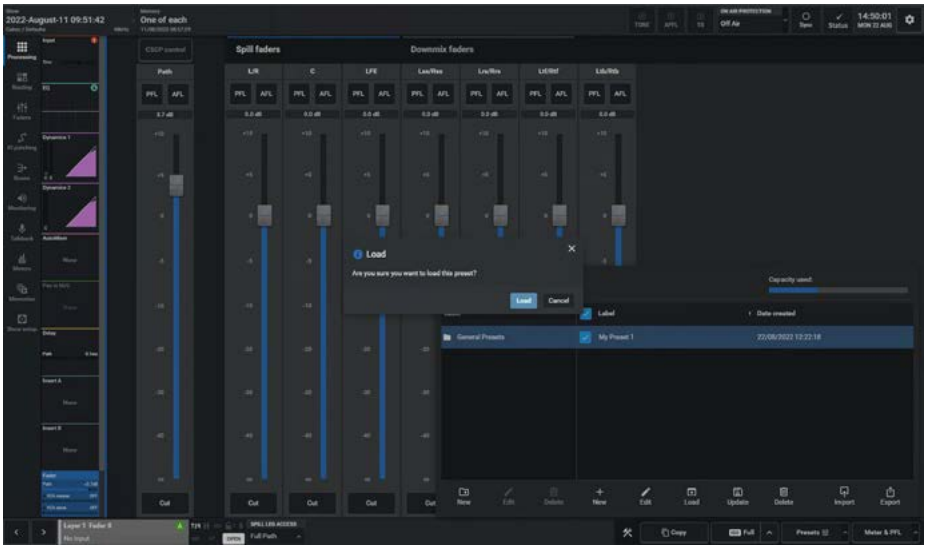


Loading a Preset

To Load a Preset:

1. Select the access path the Preset is to be applied to.
2. Tap **'Presets'** in the tools footer to open the dialogue box.
3. Select the Preset to be loaded.
4. On the right side of the dialogue box tap on **'Load'** and the "Load" confirmation popup appears as shown above right.
5. The user taps on **'Load'** to apply the preset to the selected path.

LOAD PRESET

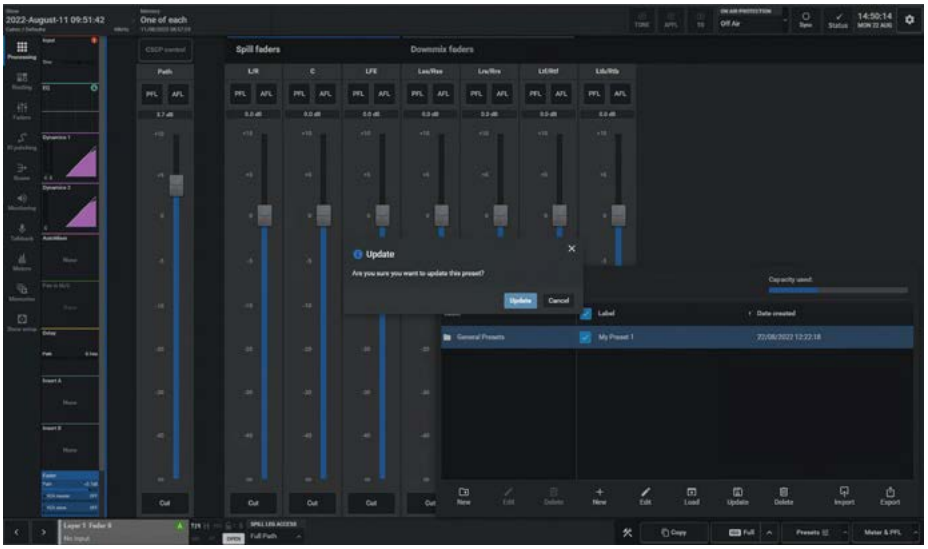


Updating a Preset

To Update a Preset:

1. Select the access path the Preset is to be updated from.
2. Tap **'Presets'** in the tools footer to open the dialogue box.
3. Select the Preset to be updated.
4. On the right side of the dialogue box tap on **'Update'** and the "Update" confirmation popup appears as shown middle right.
5. The user taps on **'Update'** to copy parameters to the preset from the selected path.

UPDATE PRESET



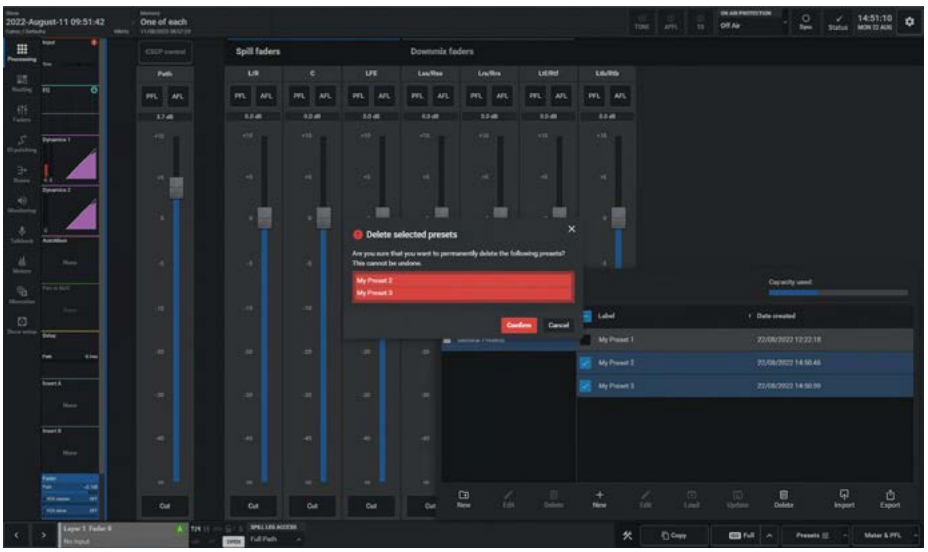
Deleting Presets

To delete a Preset with the Preset dialogue box opened:

1. Select the Preset(s) to be deleted.
2. On the right side of the dialogue box tap on **'Delete'** and the "Delete selected presets" confirmation popup appears as shown below right.
3. The user taps on **'Confirm'** to delete this preset from the system.

Note: that the "tickboxes" next to each entry can be used to select multiple presets to be deleted.

DELETE PRESETS



Importing Presets

To Import Presets:

1. The user taps on the **'Import'** button in the tools footer and the image shown above right appears.
2. To import a Preset file either Drag and Drop a file or browse for a file by tapping on the **'Choose files'** button.
3. Using the **'Choose files'** method the user selects presets to import from a list when the explorer browser appears showing the various folders on the storage device. The user looks for suitable **'.CalrecPathPreset'** files from those folders as shown.
4. The selected File name(s) appears as a name entry and the user taps on **'Open'** to import the file(s).
5. An Import confirmation box appears showing that the file has successfully been imported as shown middle right.
6. Tap on **'Done'** to remove the box.

Exporting Presets

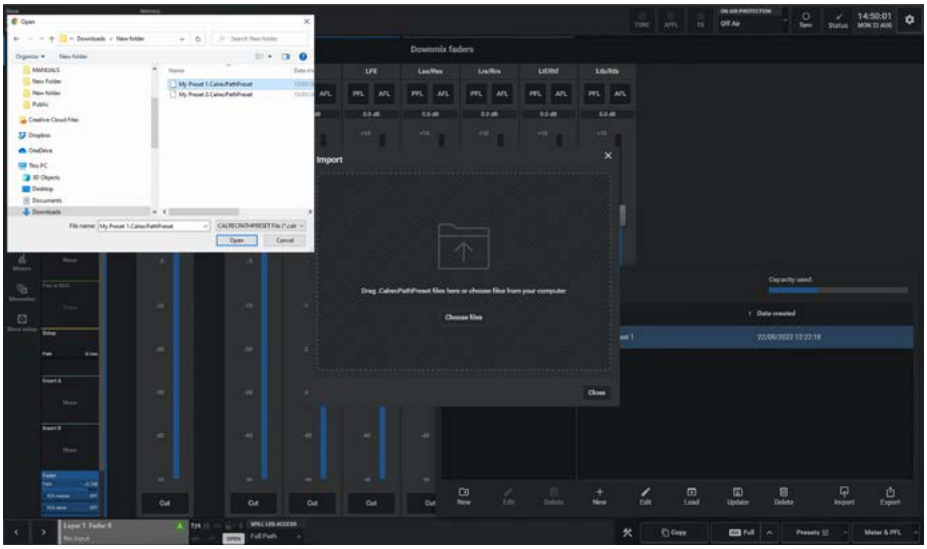
To Export Presets:

1. Select the required Preset layout files.
2. Then tap on the **'Export'** button on the far right of the Presets dialogue box footer.
3. The explorer browser appears showing the various folders on the device, and the user selects the folder to export to as shown below right.
4. Tap on '**Save**' in the Save as window and it will export the Preset files with a **'.CalrecPathPreset'** suffix and close the '**Save as'** explorer window.
5. The user can exit the export process by tapping on the '**Done'** button at the bottom right of the 'Please wait..' box.
6. Once the Export process has been completed a message footer appears at the bottom of the screen as highlighted to confirm this.
7. Tapping on the 'X' on the right side of the message footer will remove it.

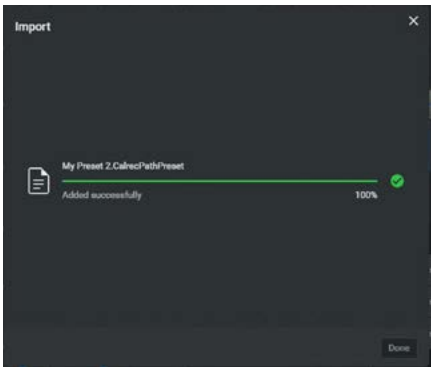
If the user selects a single preset file then taps on the **'Export'** button in the footer as shown below right, then it will export a **'.CalrecPathPreset'** file to the required folder, however if a number of layout files are selected and the **'Export'** button is tapped, then the system will export those files into a 'ZIP' archive.

Note: if exporting multiple templates is blocked by the web browser, then resetting the browser settings and restarting the web browser is required.

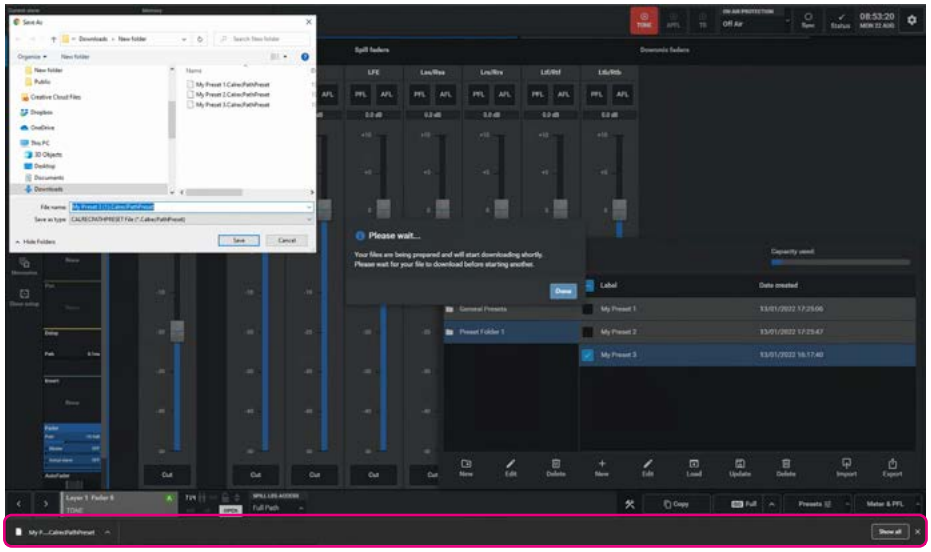
IMPORT PRESETS



IMPORT PRESET CONFIRMATION



EXPORT PRESETS



We would also advise setting the 'Ask where to save each file before downloading' option in the Chrome:// settings> show advanced settings> downloads section, so that the exports are saved to the users preferred destination e.g. a USB memory stick rather than the default destination on the PC/laptop.

METER & PFL OPTIONS

The Meter and PFL path positions dialogue box in the tools footer allows the user to select where the Metering or PFL point in the selected audio path is taken from.

The '**Meter & PFL**' button is located in the tools footer as shown above right.

Meter Source

The metering pick off point can be taken from :

- Input (at the start of path processing)
- Pre EQ
- Post EQ
- Pre Fader
- Post Fader
- Post (at the end of path processing)

Note: this selection only applies to the currently selected audio path.

Optionally there is an **'Apply to all paths in user area'** button at the bottom of the Meter source list if this is to be applied globally.

PFL Source

The PFL pick off point can be taken from :

- Input (at the start of path processing)
- Pre EQ
- Post EQ
- Pre Fader

Note: this selection only applies to the currently selected path.

Optionally there is an **'Apply to all paths in user area'** button at the bottom of the PFL source list if this is to be applied globally.

The Meter and PFL path positions dialogue box is closed by tapping again on the **'Meter & PFL'** button.

METER AND PFL PATH POSITIONS

ARGO ASSIST
FURTHER READING AND USER NOTES

CALREC

FURTHER READING – IMPULSE

Impulse has a number of Manuals associated with it. This is the Argo Assist Manual:-

1. Impulse - Argo Product Info Sheet (926-320)
This information sheet shows how to collect information on Impulse - Argo

2. Impulse - Argo Start Up Guide (926-321)
This guide shows how to Power Up and Access/Configure the Impulse core, Configure the Argo Surface IP connections, Connect the Argo Surface to the Impulse Cores, Power Up the Argo Surface & Create a New Show, Configure Network Switches & Devices, Access the Configure/Connect/Software Updater/Assist* applications, Update the Core Software to the latest version (optional), Configure AoIP Router & AoIP Device IP addresses, Connect Audio Switches & AoIP Devices to the Core and Examine an example system.

3. Impulse Installation Manual (926-288) * Updated for Argo S & Argo Q
This contains a number of chapters including an overview of the Impulse system, Defining the system elements of an Impulse core, Core DSP pack options, Synchronisation, Surface Connections, AoIP network connections, Redundancy, AoIP network examples, External Control connections and Technical specifications.

4. Impulse Configure Application Guide (926-290) * Updated for Argo S & Argo Q
This defines how Impulse system Core(s) can be configured and partitioned into different mixing surfaces with varying amounts of DSP processing channels available in different 'Pack' sizes under licence. It provides guidance on updating the system software, backing up and restoring user data, setting the sample rate, controlling the application containers that run the system and provide maintenance logs. It's also used to configure the IP addresses of the Network Interface Controllers for the application containers, manage the Remote Network interfaces such as the RP1, AoIP interfaces for the Audio Routers, PTP interfaces for synchronisation, setting up Argo Control Surface layouts, synchronisation sources, Core I/O Virtual Patchbays and Users, Roles & Permissions.

5. Connect Guide (926-292)
This defines how the Impulse/Type R Core IP Input and Output streams are connected to AoIP based interfaces and how the AoIP streams are managed including GPIO devices. These can be connections to and from either Calrec AoIP Devices or other 3rd party AoIP streams.

6. AoIP I/O Manual (926-293)
This contains information about AoIP devices available for use with Impulse/Type R in terms of Control, Audio & GPIO Connections.

7. Argo Installation Manual (926-312)
This contains information about the installation and setup of the Argo surface for use with Impulse systems.

8. Argo Operator Manual (926-313)
This defines how an installed Argo console is configured and controlled via its surface. It includes creating/managing shows, setting up shows in terms of configuring paths, displaying and controlling the fader surface, saving and loading snapshots and patching inputs and outputs to the channels and buses. There are then various sections about parameter access including:- processing, routing, configuring and controlling the buses & outputs and setting up the monitoring & metering. The show setup and system settings sections provide configuration tools for both show and system configuration.

9. Argo Assist Manual (926-317)
This defines how an Argo with or without a physical console is setup and controlled via Calrec Assist, which is Calrec's web-based user operation tool.

USER NOTES

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