



# DiGiCo SD Version 1143 Release Notes

November 2019

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**NOTE: V1143 is now compatible with Waves SuperRack in addition to Waves MultiRack**

### Errors Fixed since V1090

- In Broadcast Mode the no source audio source was not always audible.
- The bank layout is now checked when sessions are loaded and any duplicates used by set spill are removed.
- Aux-To-Masters option no longer remains active when loading sessions which have been converted to a console without this option.
- Aux node on/off was not following Klang node on/off when enabling Klang nodes.
- Layer switch macro not working if not captured (SD9).
- Klang levels were not being adjusted using aux to faders when the channel was located in a master section.
- You could not remove the Waves Port from a non SD12 Session converted to SD12.
- FX Presets would not recall, saying "Too many FX channels already in use" when there was still FX resources.
- Some numerical displays would flicker when adjusted.
- Quantum 7 reverb pre-delay was not functioning correctly

## 1.1 Spice Rack (Quantum 7 Only)

Spice Rack is the new audio processing Rack on the Quantum 7. It is released with the Chilli 6 Multiband Compressor.

The Spice Rack can be accessed by touching the Master Screen > **Processors** then **Spice Rack**.

**Soloing** a channel with a Spice Rack processor inserted will bring up the Spice Rack and the relevant slot.

### 1.1.1 Chilli 6

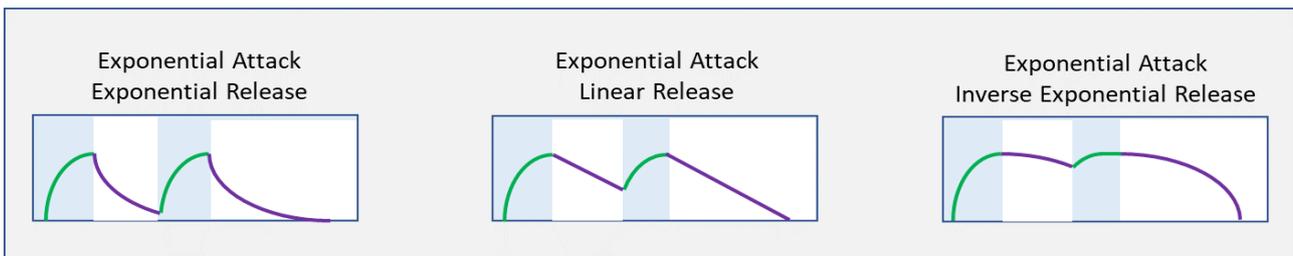
#### Overview

The screenshot shows the Chilli 6 interface within the Spice Rack. On the left is a list of 16 slots, with the first slot labeled '1. Chilli 6 - Kick'. The main interface includes a 'Release Shape' graph at the top, a frequency response graph below it, and a grid of controls for four bands (Low, Mid, High) and an Output section. Annotations with red lines point to various features: 'The channel and insert where the device is routed' points to the top bar; 'Safe the current Spice Rack processor' points to the 'safe' button; 'Open the presets window' points to the 'presets' button; 'The user interaction type' points to the 'faders' and 'touch turn' buttons; 'Link two Chilli 6 units together' points to the 'mono' and 'stereo' buttons; 'Select the Spice Rack device type (released with Chilli 6)' points to the 'type' button; 'List of current units in the Spice Rack slots. Inserted units display the channel name.' points to the left-hand list; 'The current frequency response of the processed signal' points to the top graph; and 'The dB range that the compressor will act over' points to the bottom graph.

Chilli 6 is a classic multiband compressor with four flat top filter type bands with shared crossover slope and two separate parametric bands. It allows frequency specific dynamic control with compression or expansion applied to audio above a set threshold. When stereo channels are routed to the Spice Rack, two consecutive slots are automatically set to stereo, therefore ganged together. They can be set back to mono to allow the units to have different parameters.

The green line represents the frequency response of the processed audio and reflects the compression or expansion applied in real time.

The **Release Shape** is used to alter the release characteristic with curve type exponential (0) through linear (0.5) to inverse exponential (1). Inverse exponential is a new feature which reduces sharp decays between peaks in signal, whilst maintaining the same overall decay time.



**Dynamic Angle** affects how far above the threshold the signal needs to be before the full range of EQ is applied, similar to a ratio with a smooth transition through the threshold. This can be set anywhere between 1 (default) equivalent to a higher ratio and 0, a lower ratio. Also similar to a knee, when the Dynamic Angle is set to a value less than 1, gain reduction will be applied to signal below the threshold however will always maintain a soft curve.

**P1** and **P2** are the two parametric bands which have a centre frequency range of 20Hz – 20kHz and Q of 0.35 – 60.

Bands **1 – 4** have three crossover filters which are used to position the bands over the desired spectrum. A global **Crossover Slope** adjusts the filter slope between second order (0) and true fourth order (1).

**Gain** acts as a level adjustment for each band.

**Range** determines the limits of compression or expansion applied to a particular band. When activated, the range is shown by a blue highlight either above (expansion) or below (compression) the current gain in the graphical display.

**Attack** and **Release** determine the speed at which the compression or expansion acts on the signal.

**Threshold** sets the point where compression or expansion is applied.

There is an overall **Output** fader which can be used to make-up or reduce a post-effect gain difference.

Any of the bands can be set to **Bypass** which sets the gain and range for that band to 0dB, maintaining the overall phase. **Bypass All** applies a blanket bypass across all bands which keeps the state of the individual bypasses.

Single bands can be set to **Listen** to hear the effect of the processing on that band, this is destructive and alters the output of the unit.

**User interaction options**

**1. Faders**

Parameters can be touched on screen to determine which row of controls are assigned to the Quantum 7 upper master faders. Mute buttons act as bypass and solos act as listen in this option.

**2. Touch turn**

Each parameter can be pressed individually to be controlled by the touch turn rotary. The touch turn button toggles the bypass state when on-screen rotaries for that band are selected and listen state when the on-screen faders are selected.

**Presets**



Presets allow the ability to recall and save parameters for a particular setup of a Spice Rack effect. **New** will create a preset with the current parameters in the effect, this will be stored under a group. **Default** will recall the default settings for the effect in the current slot.

When **edit name** is selected, the group name, preset name and notes can be altered. Factory presets are locked and cannot be altered or deleted.

A variety of factory presets are available as starting points for use on different audio sources.

## 1.2 Mustard Channels (Quantum 7 Only)

Mustard channels are a new feature to the Quantum 7 console and work alongside standard SD channel strip processing, with both being available at once.

Mustard provides a tube/preamp modelling section, an EQ, a compressor with four different models and a gate/ducker.

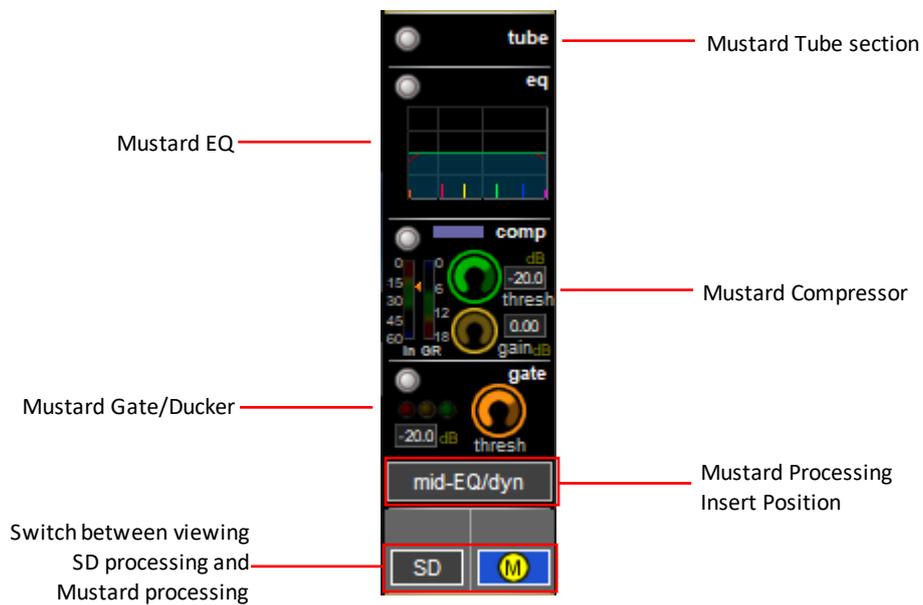
Up to 64 Mustard channel strips can be used across the console at any one time. A channel is counted as having Mustard processing active once any one of the Mustard modules are turned on.

When this is the case, the channel will display the 'Active' icon above the Mustard processing icon, as shown below.



### 1.2.1 Mustard Channel Strip

The Mustard channel strip layout and operation is similar to that of the SD channel strip, as shown below.

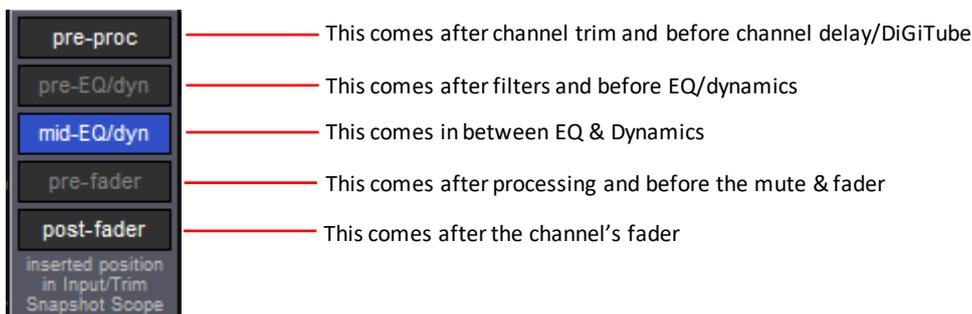


### 1.2.2 Insert Position

There are 5 selectable positions to choose from when enabling Mustard processing on a channel.

The default position for Mustard processing is between the EQ & Dynamics module (depending on the EQ/Dynamics order).

Two options will be unavailable as these are the locations of the channel's Insert A and Insert B. These insert positions can be selected for the Mustard processing by changing the location of Insert A/B, at which point they become available.



### 1.2.3 Safes/Scopes

Each Mustard module (tube, EQ, dynamics) can be safed individually with the tube safe including the insert position of the Mustard processing.

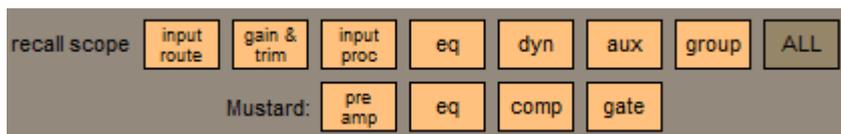
The global scopes follow SD processing with tube under input/trim, EQ under EQ and the compressor and gate under dynamics. Input/trim scope also includes the insert position of Mustard processing.

### 1.2.4 Presets

Channel presets can be created as normal and each Mustard module can be included or excluded in the recall scope.

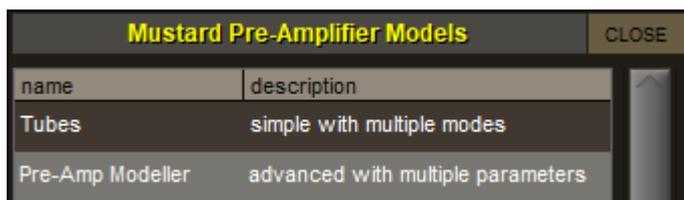
Recalling a preset from within the view of a particular module will include only that module in the recall scope by default.

Similarly to channel safes, the insert position of the Mustard processing is included within the pre-amp scope.



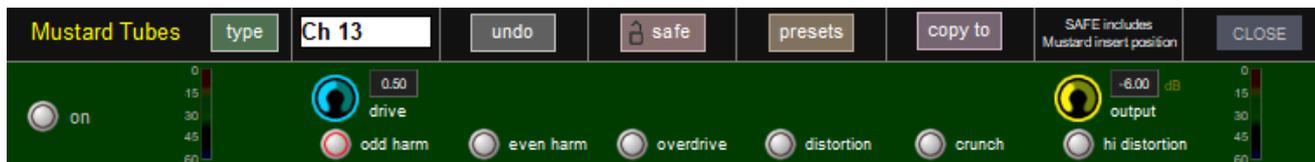
### 1.2.5 Pre-amplifier Modelling

The Mustard pre-amp modelling section provides the user with a choice of either a simple tube model or a more advanced pre-amp model. This is chosen by selecting **type**, where a menu will display with the two options.



### Mustard Tubes

Mustard Tubes has a **drive** control, an **output** gain control, an on/off button and six selectable preset options.



- Odd harm** – This is a modern sounding, low gain distortion preset
- Even harm** – This is a vintage sounding, medium gain distortion preset
- Overdrive** – This is modern sounding, medium gain distortion preset
- Distortion** - This is modern sounding, compressed, high gain distortion preset
- Crunch** – This is a vintage sounding, high gain distortion preset
- High distortion** – This is a modern, heavy sounding, very high gain distortion preset

### Mustard Amp Model

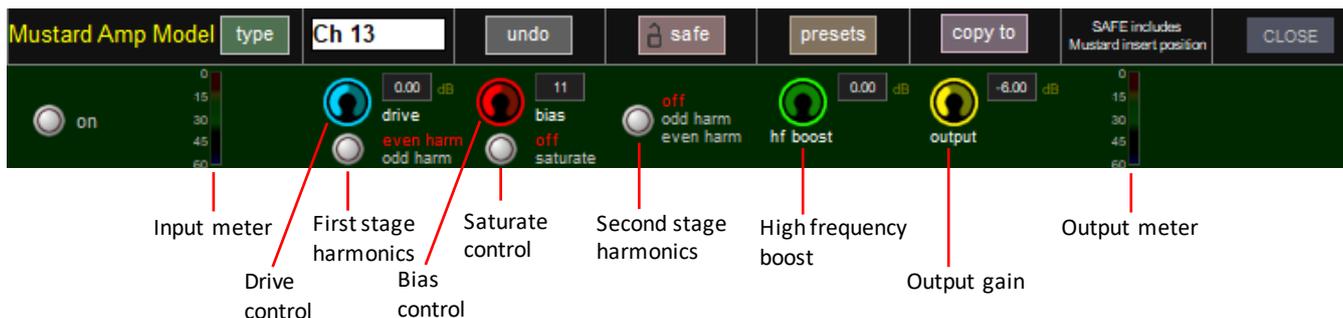
The Mustard Amp Model is a two-stage, highly customisable distortion & overdrive processor.

Both stages can be switched to **odd** or **even** harmonics independently of each other. Even harmonics can create a triode-style distortion whereas odd harmonics can create a pentode-style distortion.

The **drive** control alters the input level to the first stage of distortion.

A **bias** control between the two stages can create asymmetrical distortion if desired. The midpoint value of 11 is the most transparent. Turning on the **'saturate'** option increases the effect of the bias setting.

There is a **high frequency boost** after both stages which applies a shelving boost above 6kHz. This is followed by the output gain.



### 1.2.6 Equaliser

Mustard EQ operates in a similar manner to the standard SD channel EQ, with four fully parametric bands.

When used on a channel alongside the standard SD processing, this allows the user to have double the amount of fully parametric bands. The top and bottom bands can be switched to act as high and low shelf filters respectively, rather than bell. The middle two bands can be switched from bell filters to all-pass filters.

There are also high-pass and low-pass filters (both 24dB/8ve).

### 1.2.7 Compressor

The Mustard channel strip gives the user a choice of four different compressor models, which are modelled on classic analogue compressors.

All of the compressor types give the user an on/off button, a wet/dry **mix** knob, and an output **gain** control. Other controls vary depending on the type selected.

The **mix** knob controls the balance between the wet (compressed) audio and the dry (uncompressed) audio. If it is set to 100%, there will only be the compressed signal at the output.

On all but the Green FET Limiter, there is a **threshold** control, along with high and lowpass filters in the compressor's side chain controlled by the **low** and **high** rotaries. The effect of the filters on the sidechain signal can be monitored by pressing the **s/c listen** button.

An external sidechain, that is shared with the gate/ducker, can be used with the compressor by selecting a sidechain source in the box underneath the gate/ducker controls and then selecting to send it to the compressor sidechain.

#### Classic

The Mustard classic compressor is a general-purpose feed-forward compressor design with multiple controls allowing flexibility. The **threshold**, **attack** time, **release** time, and **ratio** can be all controlled by the user.

A **hard** or **soft** knee can also be selected, and the sidechain's amplitude sensing can be changed between **RMS** (Root Mean Squared) level and **peak** (instantaneous) level.



**Vintage VCA**

The Vintage VCA compressor models classic VCA compressors, with a fixed attack time and an auto-release time. The user can set the **threshold** and **ratio**.



**Optical**

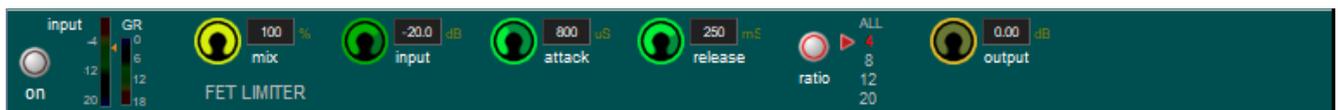
The optical compressor models classic opto-compressors, with a unique release characteristic that models the gain reduction provided by an optical compressor circuit. It has three options for **attack** time and **recovery** time, along with a **ratio** control.

The gain reduction also behaves uniquely by having a ratio-dependent maximum gain reduction value, with the compressor continuing to be linear above this value.



**FET Limiter**

The FET limiter has a fixed threshold like many classic FET limiters, however the **input** and **output** gain knobs can be adjusted accordingly in order to achieve the desired output level and gain reduction. The **attack** and **release** values can be adjusted and the **ratio** can be set at either 4:1, 8:1, 12:1 or 20:1.



**1.2.8 Gate/Ducker**

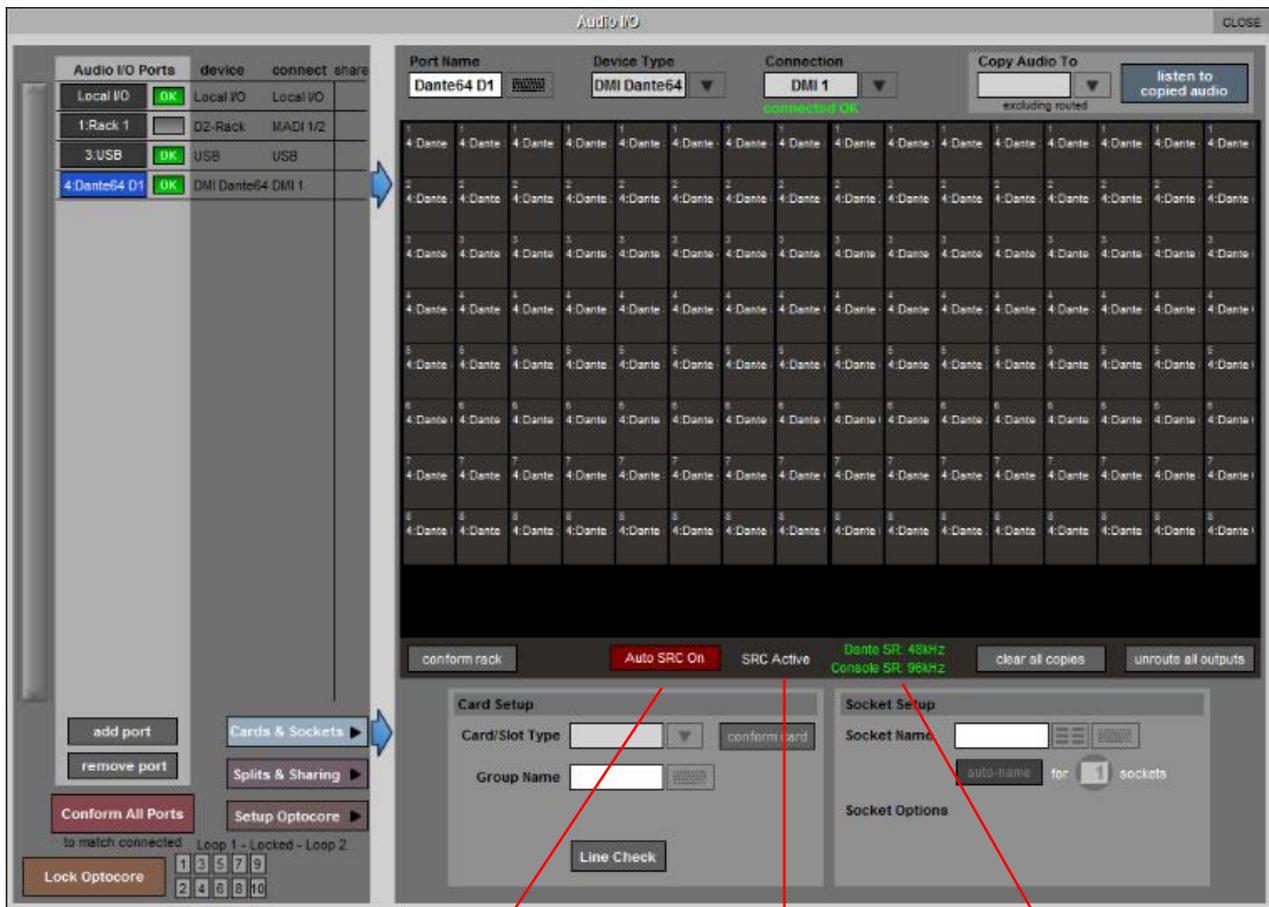
The gate/ducker works functions similarly to the gate and ducker found in the standard SD channel strip, however it has different attack and release shape characteristics.

An external sidechain source can be selected, which can then be sent to the sidechain of the compressor and/or gate/ducker.



### 1.3 DMI Dante 64@96

This release includes support for the new DMI Dante 64@96 card for consoles with DMI ports. This card provides 64 input and 64 output channels at both 48kHz/96kHz, along with support for SRC (Sample Rate Conversion). This enables the desk to run at a different sample rate to the Dante network.



Toggle Auto SRC

State of sample rate conversion

Current sample rate for the Dante card and Console

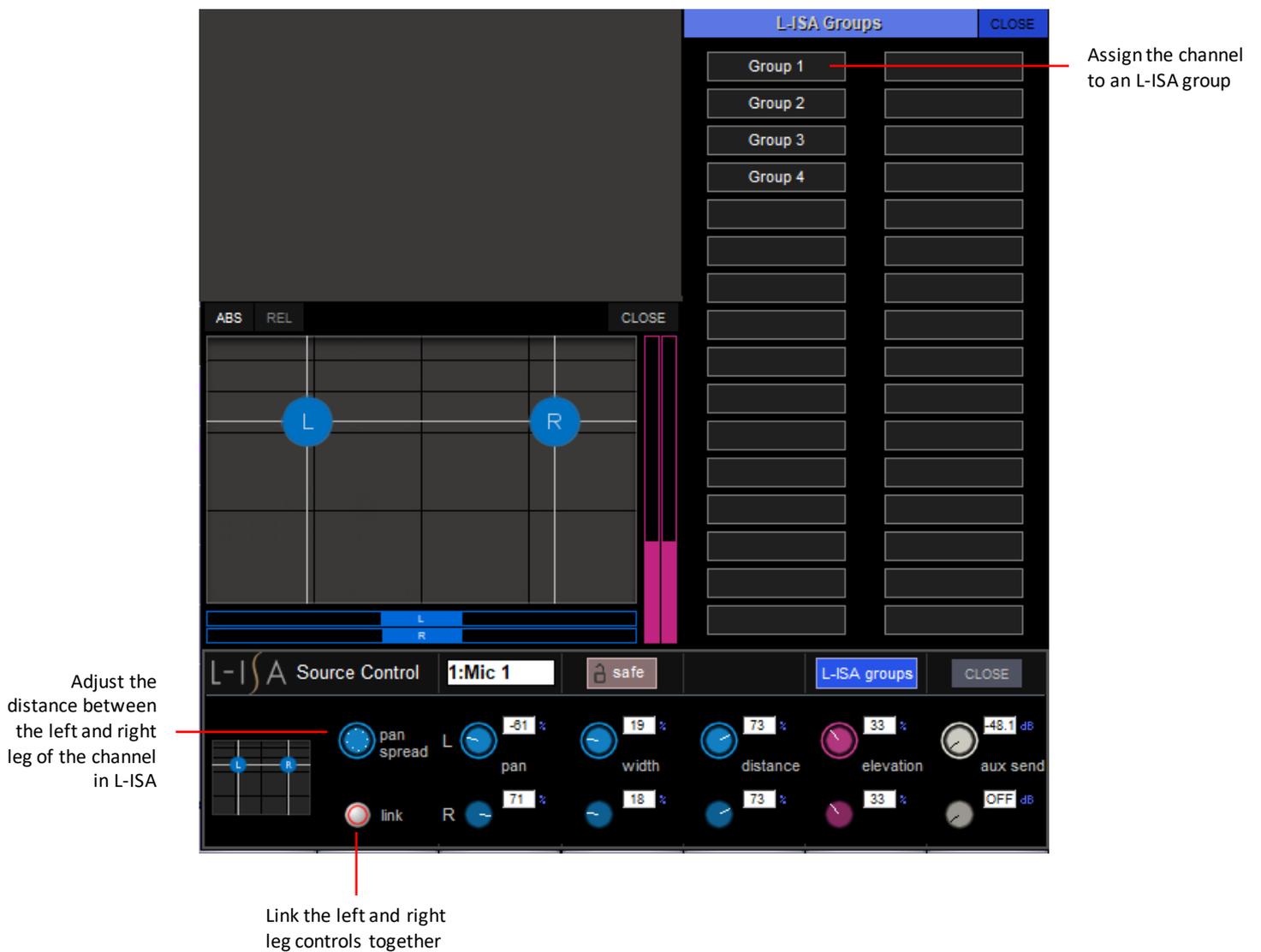
DMI Dante 64@96 cards can be manually added by selecting a Dante64 port in the **add port** section of Audio IO panel or by pressing **Conform All Ports**. Setup of SRC is also performed in this panel, where **Auto SRC** can be toggled on or off.

Auto SRC keeps track of the sample rates of the Dante network and the Console and will sample rate convert if they do not match e.g. the Dante network at 96kHz and console structured at 48kHz. SRC will not affect the number of input and output channels that can be routed.

### 1.4 L-ISA Control

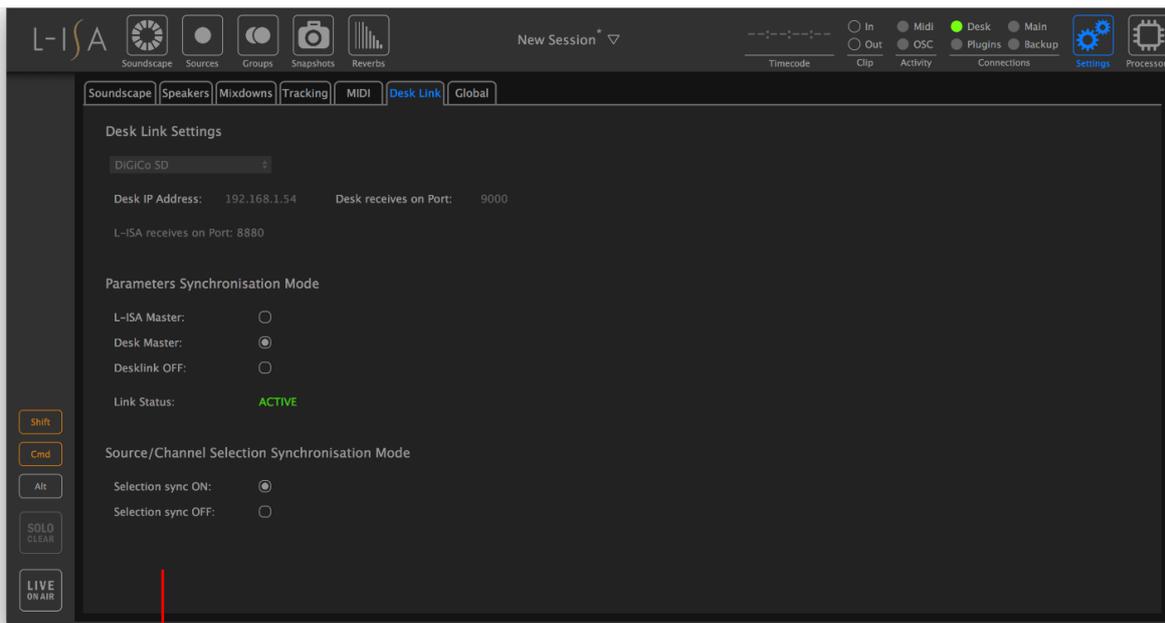
- New console L-ISA controls for Stereo channels – 2 rows of controls are now provided, can be optionally linked and a new display shows two objects and an additional pan spread control
- L-ISA “Groups” can now be selected and controlled from the console
- Any console channel can be user defined to act as the L-ISA “Master” fader in the External Control Panel
- The selected console channel can also be automatically selected in L-ISA Controller and vice versa

#### 1.4.1 Stereo channels and group selection



The updated L-ISA Source Control on SD consoles with the addition of the L-ISA groups panel and two rows for stereo channel control.

### 1.4.2 Selection & Solo Sync

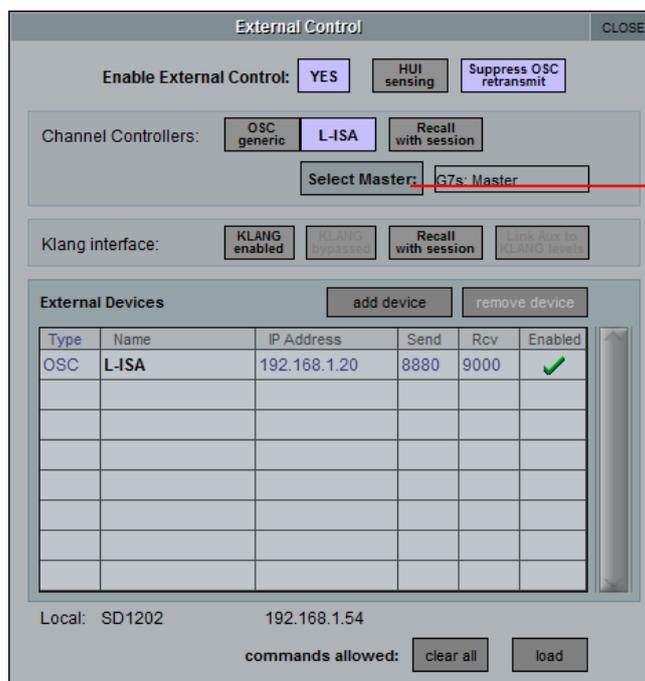


Have channel selection on desk and L-ISA follow each other

L-ISA control software showing the 'Desk Link' window open where the state of the Selection Sync can be set.

With the Selection Sync in place, when a channel is selected on the linked SD console, the respective channel will be selected in the L-ISA controller and vice versa, allowing easy access to the channel settings in L-ISA.

### 1.4.3 Master Fader selection



Select the fader to link to the L-ISA master fader

External Control window of SD software where L-ISA is configured, and the master fader of L-ISA is now linked  
 Now that a channel fader is linked with the L-ISA master fader, the output of L-ISA can be adjusted without leaving the console surface.

### 1.5 OSC Generic Control on Group Outputs

OSC generic controls can now be opened and controlled on Group Output channels.

### 1.6 Nodal Processing Copying (Quantum 7 Only)

'Copy To', 'Copy From', and 'Copy From Channel' are now implemented for Nodal Processing via a popup panel on the nodal processing expanded view. Processing can be copied from other nodal dynamics or SD channel strip dynamics.



The processing can be copied from the main channel strip or from other nodes

### 1.7 4REA4 IO Control

An SD console can now control the IO of a DiGiCo 4REA4 over either MADi or Optocore. This enables a 4REA4 to be used similarly to a Rack, and as part of an Optocore loop configuration.

**NOTE:** In this configuration the SD Console must be running at 96KHz to match the sample rate of the 4REA4

Connect any SD console to an 4REA4 with MADi or Optocore and have Rack audio and parameter control of up to 64 IO sockets on Racks connected to the 4REA4.

With an external Rack connected via MADi to the 4REA4, the MADi Mode Selection should to be set to "Rack Control" and Rack Control Mode to "Full Control" in order to send control data to the connected Rack.

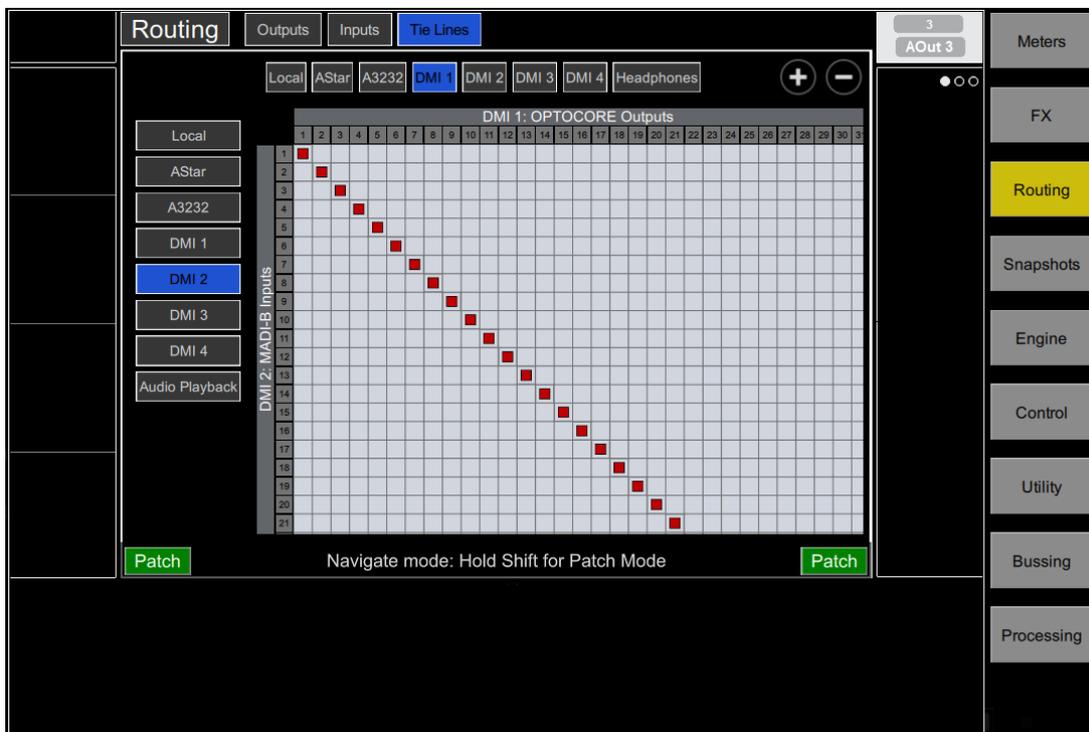
This is found under the relevant DMI port I/O settings in Engine -> Audio on the 4REA4 controller. A168 Racks can also be controlled in this manner when connected to the 4REA4 via an A3232 port.



With an SD console connected via Optocore to the 4REA4, the Input Channel Count and Output Channel Count should be set to the number of channels that need to be controlled. The SD console can also be connected via MADi to the 4REA4 with the MADi Mode Selection set to “SD Console.”

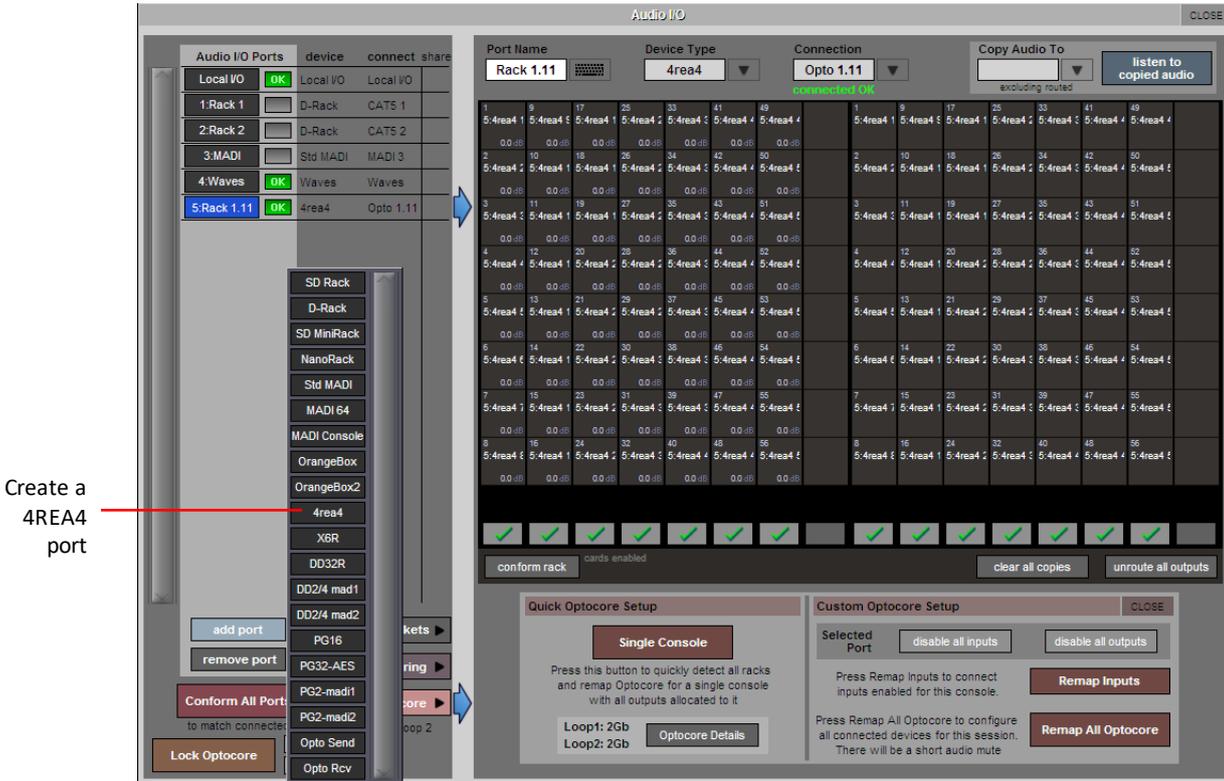


Tie Lines connecting the MADi Rack inputs to the Optocore outputs, Tie Lines can be set up in the other direction to allow output socket control. This creates a link for audio and control data. The whole IO or specific sockets can be tie lined up to a total of 64.



Once the 4REA4 has been set up with the correct DMI card settings and Tie Lines are in place, in the SD Console Audio IO window, a “4REA4 Port” can be added from the Add Port drop down menu and then using the Conform Port function or by using the Conform All Ports function.

This will populate that port with the relevant socket types that have been declared and “tie-lined” in the 4REA4. When 4REA4 Rack input sockets are subsequently routed into channels on the SD console, the relevant analogue gain and +48V controls will be available in those channels. For output sockets, the output pads can be toggled and for AES the SRC state can be turned on or off.



### 1.8 Renaming of fader layers (Quantum 7 Only)

Fader layer names can now be customised on the Quantum 7 console. These names will be displayed on the fader bank layer LCD displays. To do this, go to **Layout** on the main screen, then **Fader Banks**.



### 1.9 Miscellaneous Features

Aux Nodes Panel behaviour has been amended to align with the Matrix input Panel node assignment which does not relinquish Touch Turn control when switching screens. Consequently, Aux Nodes remain controlled by Touch Turn when master screen is not visible.