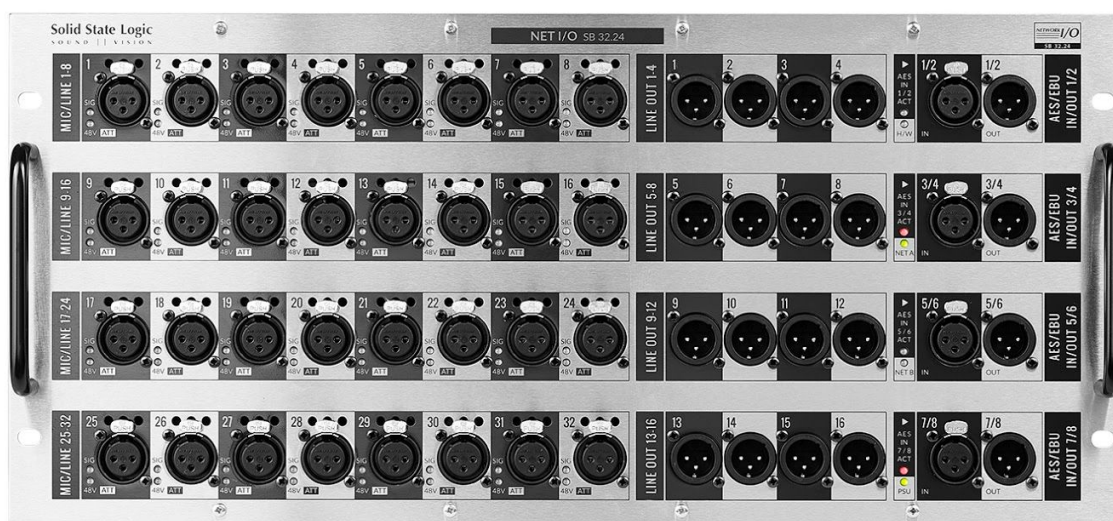


## Network I/O - SB 32.24

### Dual Dante Network Stagebox

### User Guide

Revision: 1.0



**Solid State Logic**  
OXFORD • ENGLAND

# Solid State Logic

O X F O R D • E N G L A N D

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**PLEASE READ ALL INSTRUCTIONS, PAY SPECIAL HEED TO SAFETY WARNINGS.**

E&OE

June 2017

## Document Revision History

FIRST VERSION	Revision 1.0	20th June 2017
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## Introduction

### Overview

SB 32.24 is a 5U, 40-input and 24-output Dante stagebox featuring 32 SuperAnalogue™ mic/line inputs, 4 AES/EBU inputs, 16 analogue line outputs and 4 AES/EBU outputs. All analogue and AES audio connectors are XLR-3 type.

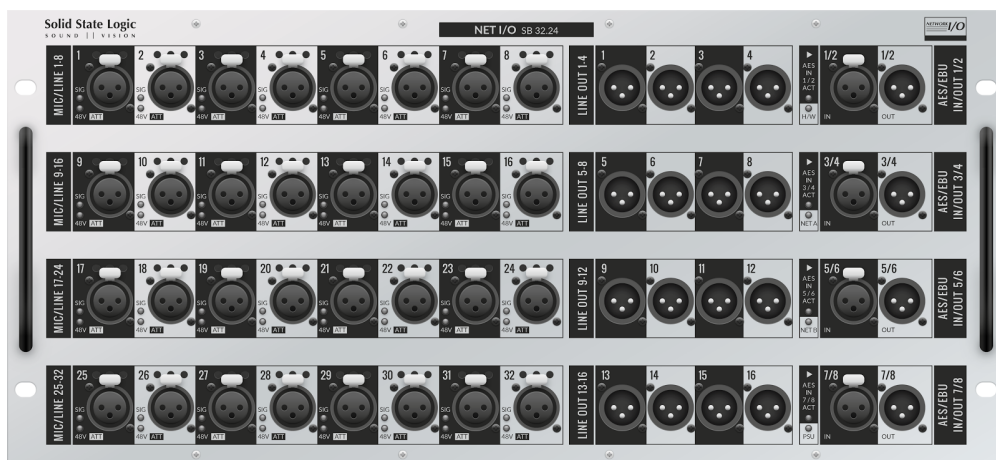
SB 32.24 can be controlled remotely from SSL Live and System T consoles as well as from SSL's Network I/O Controller app for PC.

SB 32.24 is suitable for all high-quality AoIP applications of any scale. Redundant power, redundant ruggedized etherCON Dante connection plus two user-specifiable SFP ports which provide network extension or support a second independent Dante network complete the professional hardware requirement.

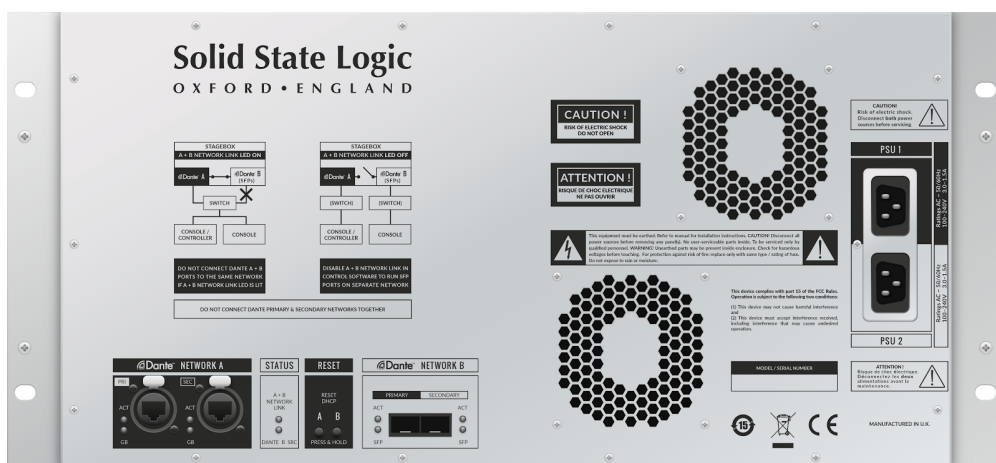
### Key Features:

- Interface between studio/stage/recording-area and IP audio networks using Dante
- SSL SuperAnalogue™ Studio Grade preamps
- Gain-compensated Dante Split available on the same or on a separate (B) network
- Device and parameter ownership assignment to avoid control conflicts
- Redundant PSUs and Dante ports
- Redundant network extension ports
- Clear front panel indication – signal present, phantom power, channel attention on analogue inputs
- Front facing XLR connections
- Network B SFP ports can be configured with RJ45 or optical LC connectors

### SB 32.24 Front Panel



### SB 32.24 Rear Panel



## Mains Power Connections

Each Stagebox includes redundant PSUs with IEC connectors; either supply can individually power the unit. Ideally these should be connected to separate power circuits to provide redundancy of incoming AC power.



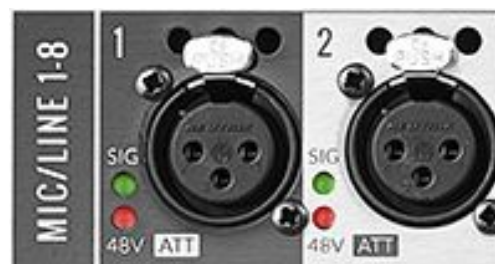
- PSU LEDs are informational and are green in normal operation.
- A flashing red PSU LED indicates the failure of **PSU 1**
- A static red PSU LED indicates a failure of **PSU 2**



## Channel LEDs

- Analogue signal LEDs (**SIG**) are green above -42 dBFS and red at -0.1 dBFS (clipping).
- **48V / ATT** indicates Phantom Power and/or Attention depending on red, green, or flashing combinations as follows:

- Red – phantom power on
- Green flashing – channel Attention active
- Green & red flashing – phantom power on & channel Attention active




**Note: The three holes above each of the XLR sockets are part of the unit's ventilation. Do not block (e.g. with tape!)**

*Net A, Net B and H/W status LEDs*

A series of LEDs towards the right hand side of the front panel indicate statuses as follows.

Label	LED Status			
	Off	Green	Red (priority over flashing red)	Flashing Red
<b>AES IN 1/2 ACT</b>	Analogue inputs 25/26 in use	AES inputs 1/2 in use	N/A	N/A
<b>H/W</b>	N/A	All hardware (fans etc.) good	Hardware fault - check software	
<b>AES IN 3/4 ACT</b>	Analogue inputs 27/28 in use	AES inputs 3/4 in use	N/A	N/A
<b>NET A</b>	N/A	Dante network A good	Dante A Pri Fault	Dante A Sec Fault
<b>AES IN 5/6 ACT</b>	Analogue inputs 29/30 in use	AES inputs 5/6 in use	N/A	N/A
<b>NET B</b>	N/A	Dante network B good	Dante B Pri Fault	Dante B Sec Fault
<b>AES IN 7/8 ACT</b>	Analogue inputs 31/32 in use	AES inputs 7/8 in use	N/A	N/A
<b>PSU</b>	Unit not powered	PSU 1 & 2 good	PSU 1 Fault	PSU 2 Fault



The image shows the right side of the front panel of the Network I/O Stagebox SB 32.24. It features three sets of status LEDs for AES inputs (1/2, 3/4, and 5/6), two sets for network status (NET A and NET B), and one for the power supply (PSU). Each set includes a play button icon, a label for the input group, a status LED (green for good, red for fault), and a label for the specific input or component. The AES input LEDs are labeled 'AES IN 1/2 ACT', 'AES IN 3/4 ACT', and 'AES IN 5/6 ACT'. The network status LEDs are labeled 'NET A' and 'NET B'. The power supply LED is labeled 'PSU'. The input labels are '1/2 IN', '3/4 IN', '5/6 IN', and '7/8 IN'.

## Hardware Connections:

### DANTE Connections



SB 32.24 has two redundant sets of network connections. The Network A ports feature etherCON ruggedised RJ45 connectors, and the Network B ports are SFP cages, which can be fitted with either RJ45, Single-mode or Multi-mode LC fibre connectors.

The SB 32.24 Network connections can be configured in two different modes:

In the first mode, the A and B networks are linked internally (**A+B Network Link** LEDs are ON). In this mode, both Network A and Network B are identical and output both the gain-dependant and gain-compensated audio. Dante devices can subscribe to either one.

In second mode, the A and B networks are discrete (**A+B Network Link** LEDs are OFF), and isolated from each other. In this mode Network A transmits uncompensated audio (and receives audio for the analogue and AES outputs and also control data) and Network B transmits the compensated audio only. **Note that they have to be synchronised to the same clock source.**

#### Status & Reset (DHCP)

**A+B Network Link** LED indicates unit is configured to connect internal A and B networks

**Off:** Networks not linked  
**Green:** Network A and Network B Linked

**Dante B SRC** LED is reserved for future possibilities!

**Reset DHCP** independently resets the internal Networks to DHCP supplied addresses. Insert a small 'prodger' into the relevant opening and press and hold for approx. 3 seconds to reset to DHCP addressing. The LED on the chosen port will briefly turn red to indicate this has happened.

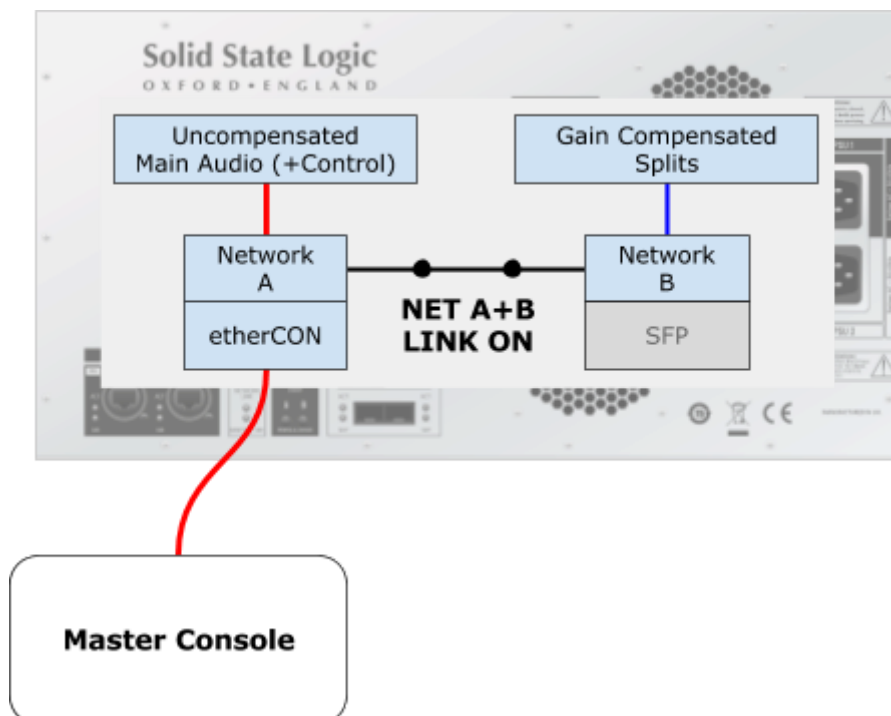
#### Factory Reset

If BOTH **Reset DHCP** buttons are held for 6 seconds, this will trigger a Factory Reset of the stagebox.

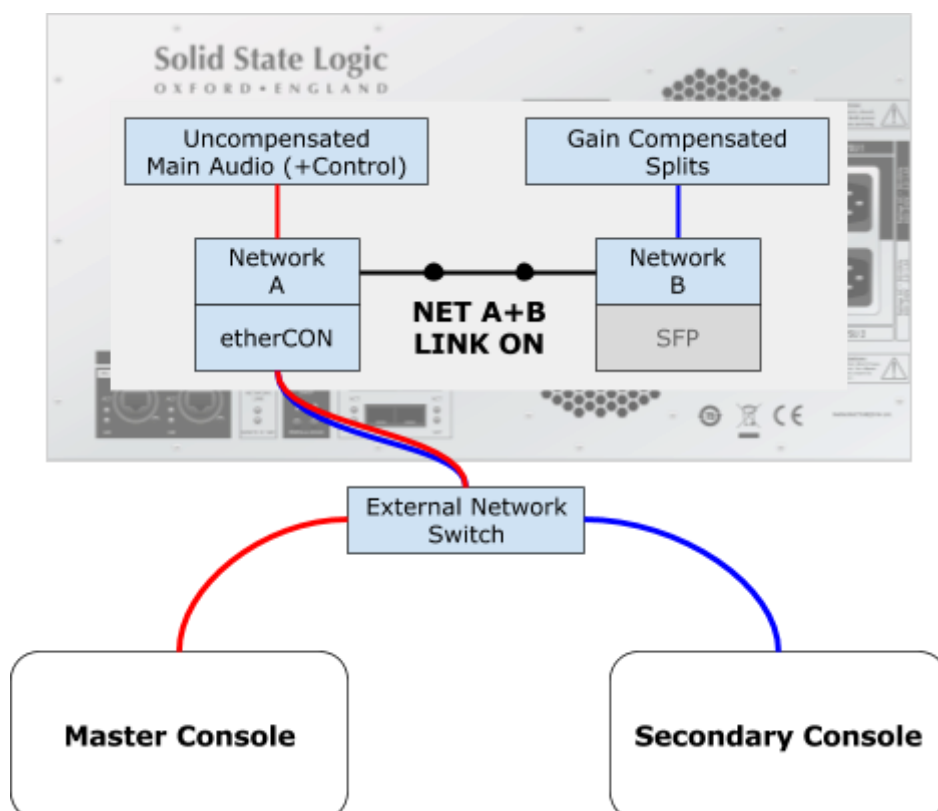


*Dante Connection Examples***Gain-dependant source and gain-compensated splits available to master console**

In this mode, both the gain-dependant and the gain-compensated splits are available to the master console. Stagebox outputs are available to the master console.

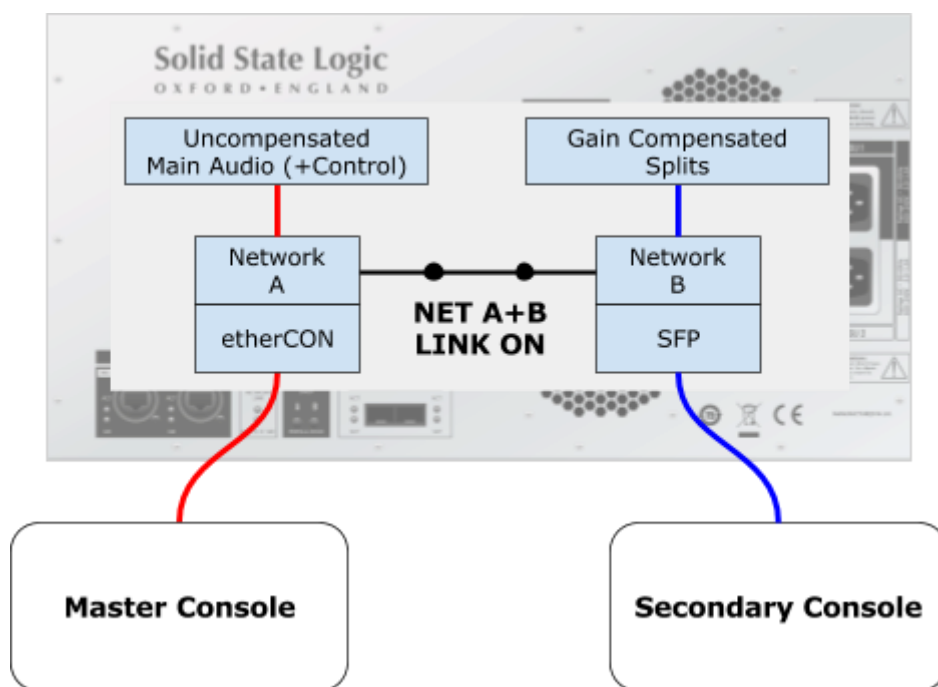
**Gain-dependant source and gain-compensated splits available to both consoles (no SFP's fitted - external switch connected)**

In this mode both the gain-dependant and the gain-compensated splits are available to both consoles (no SFP's fitted - external switch connected). Input ownership and stagebox outputs are available to either console



**Gain-dependant source and gain-compensated splits available to both consoles (SFP's fitted).**

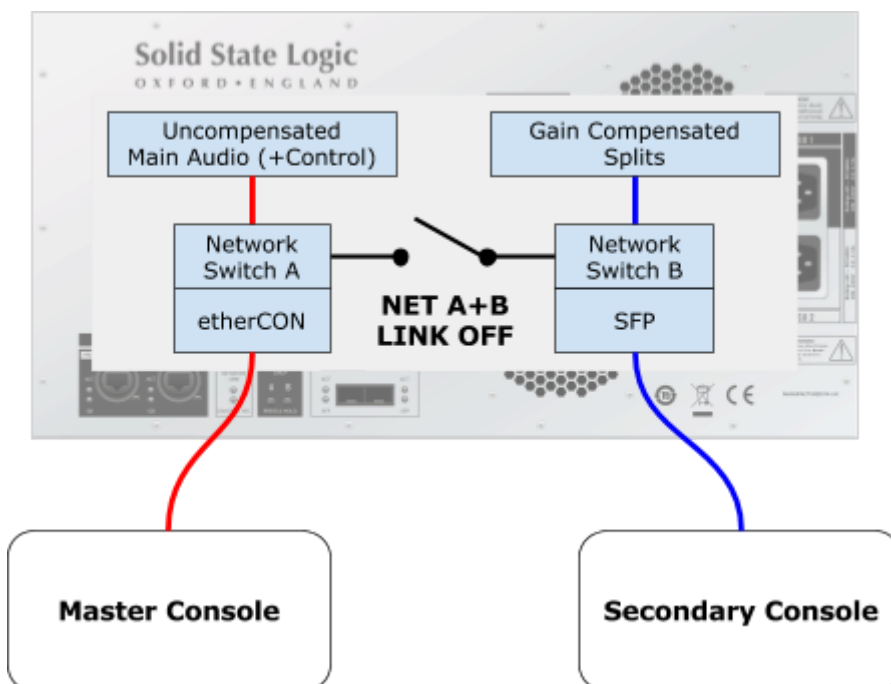
In this mode both the gain-dependant and the gain-compensated splits are available to both consoles (SFP's fitted). Input ownership and stagebox outputs are available to either console.

**Gain-dependant source available to master console, Gain-compensated split available to secondary console.**

In this mode only the gain-dependant split is available to the master console. Only the gain-compensated split is available to the secondary console. Input ownership and stagebox outputs are only available to the master console.

***Please note: Secondary console must be synchronised to the same clock source as the master console.***

To configure the internal network link see [NETWORK CONNECTION](#) later.



## Connecting a PC:

### *Network Connection*

#### SSL Network I/O Controller PC application

When the SB 32.24 is used without an SSL console, configuration and control is achieved using the SSL Network I/O Controller PC application. Download the application from the SSL website using the link <http://www2.solidstatellogic.com/broadcast/network-i-o/downloads>.

Double-click the downloaded file to run the installer, then follow the on-screen instructions.

Once the application has installed:

- Connect the Windows PC to the same subnet as the stagebox. The SSL Network I/O – Controller application uses TCP/IP to communicate with the stagebox, so if communications are not working, check Windows Firewall settings.

You may need to change your computer's TCP/IP settings to match your Dante subnet.

Network configuration should be done before opening the application; subsequent changes to network settings may require 'Network I/O – Controller' to be restarted.

Set your computer to 'Never Sleep' to maintain communication.

For additional information see [Dante Controller section](#).

#### IP Address

Unless shipped as part of a preconfigured system, Stagebox units are shipped with the IP address set to use DHCP.

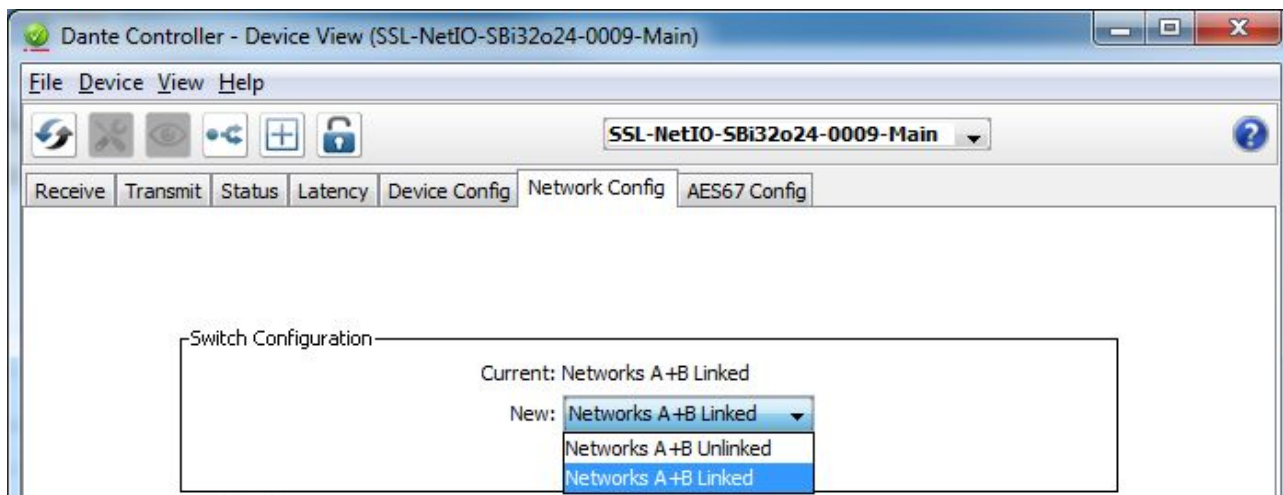
If the IP settings need to be changed to a fixed address – to match the network environment in which the unit is to be installed – this can be achieved using the **Dante Controller** application.

Remember that your computer's TCP/IP network settings will also need to be updated to match those of the stagebox unit.

## Linking/Unlinking Networks A and B

The SB 32.24 can be configured to have both the gain-dependant and gain-compensated audio available on the same network, or to have them assigned to two separate (A/B) networks. To LINK/SEPARATE the A/B networks use **Dante Controller** to configure the network settings as required.


In **Dante Controller** click on the **Device View** tab. Double-click on the main\* device's IP address (\* NOT the Split output's IP address!). Click on the **Network Config** tab. From the **Switch Configuration** drop-down select **Network A+B Linked** or **Network A+B Unlinked**. If the networks are Unlinked, only the gain-compensated splits will be available from network B and only the gain-dependant audio from network A. If the networks are Linked, both gain-compensated and gain dependant splits are available from both network A and B connectors.



## Software Control

### The GUI

The application window is divided into five sections:



**Network View** shows each SSL device on the Dante network. Clicking a device brings its parameters into the **Detail View**. Large arrows on the far left and right scroll for more devices.


**Focus View** shows an expanded view of the selected channel.

**Detail View** shows channel details for the selected device. Large arrows on the far left and right scroll for more channels.

**Page Select** selects the detail view to show inputs, outputs, or setup options for each device.

**Navigation Switches** the in-focus channel and allows for fine gain adjustment. These arrows are also mapped to your physical PC keyboard.

### Network View



**Device Name** is set by the Dante Controller application.

**Selected device** is highlighted with a cyan background.

A **Red Highlight** indicates a device that requires operator action:

- A flashing red background indicates a device with a clipping audio channel
- A solid red border highlights a device with an active Attention flag

If the device requiring attention is not already visible in the Network View window, then the appropriate large scroll arrow will show red to direct you to the appropriate device

**Att, Lock and Mute** tallies show the status of each function for every stagebox channel.

The **Level Meter** shows the real-time signal level for all stagebox input channels. A red clipping indicator is also provided.

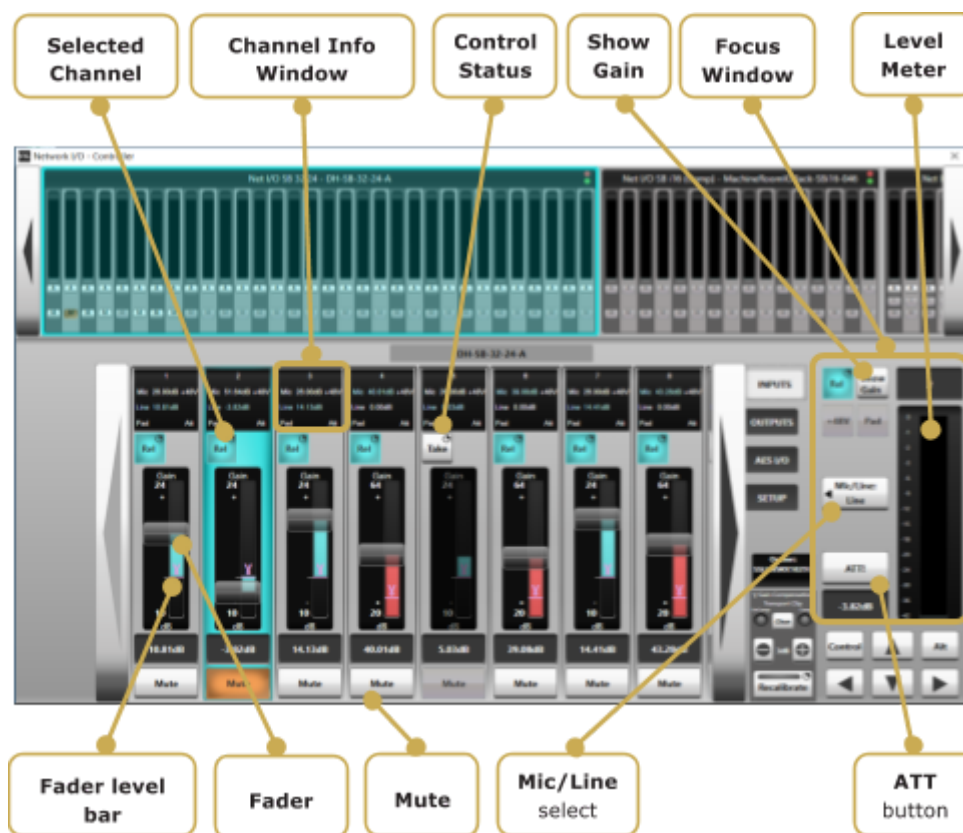
Greyed out devices marked **Offline** are 'known' to the network but uncontactable, typically switched off.

**PSU Tallies** show the status of PSUs 1 and 2 for each stagebox.

## Inputs/Outputs

Select the Inputs or Outputs tab in the Page Select area to view I/O available on the network.

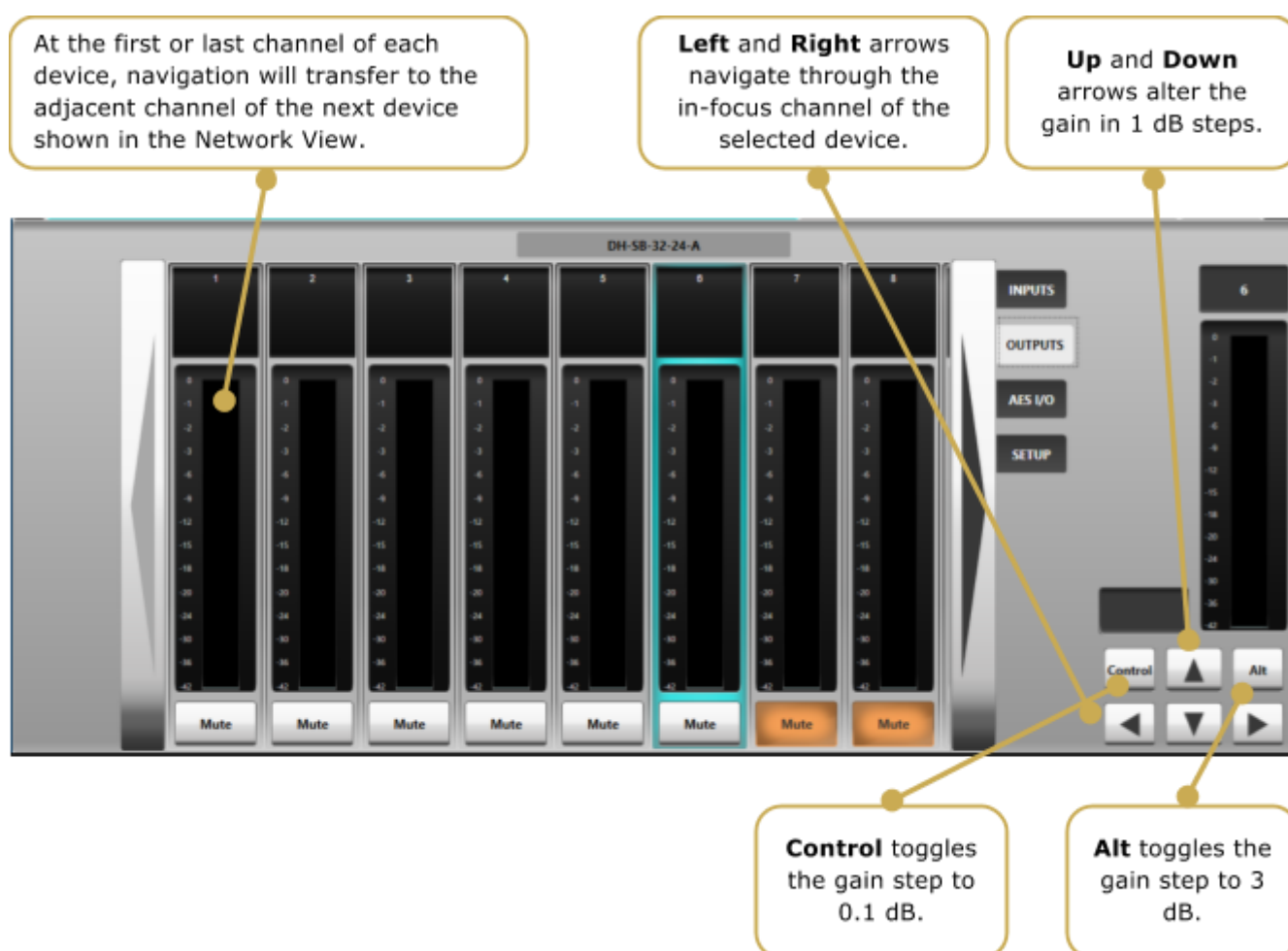
### View Inputs



- **Channel Info** shows all parameters of the channel at a glance. The **ATT** flag will change to red on channels requesting attention.
- **Fader** allows for manual level control via the slider, keyboard arrow keys, or numeric entry by clicking the text Gain Value box.
- The **fader level bar** is coloured red on microphone input channels and cyan on line level inputs.
- **Mute** mutes the input or output channel.
- **+48V** toggles the mic preamp phantom power. Selecting Line input will turn off phantom power.
- **Pad** toggles the -30 dB mic preamp pad.
- **Mic/Line** select toggles the appropriate input gain range and impedance for mic or line level sources.
- **ATT** (Attention) toggles the hardware front panel LED for fast identification of a physical input connector. Multiple channels can have Attention active. All attention signals on a stagebox can be cleared via the Setup window.
- **Level Meter** shows the signal level for the selected channel. A red clipping indicator is also provided.
- **Control Status** shows whether the viewer has control of the input's parameters
  - **Rel** in Cyan indicates that this input is under the control of the viewer. Press and Hold to relinquish control
  - **Take** indicates that the input is NOT under the control of the viewer. Press and Hold to take control from the owner.
- **Show Gain** toggles the fader into the focus view window. Gain can be controlled via mouse, keyboard, or numeric entry.

## View Outputs

The **View Outputs** window shows a reduced option set. **Output level meters** are shown; the **Mute** button's function is as before.



The keys and combinations are mapped to the PC keyboard. For example, pressing ALT+UP on the keyboard will increase the gain by 3 dB.

## Ownership

When multiple SSL consoles are connected to the Dante Network, each console has the ability to adjust all parameters and settings for SSL Network I/O Stageboxes.

SSL Network I/O Stageboxes can be controlled by all SSL Live consoles, SSL System T consoles as well as computers running the SSL Network I/O Controller PC application (which can be downloaded from the SSL website).

The concept of ownership has been introduced to assign one owner to each stagebox parameter, so that there can be no conflicts for control.

To 'own' a Network I/O Stagebox, tap on the stagebox name and its **Detail View** will appear.

*Note: In an SSL Live system, first the device must be listed in the **Configured Devices** list.*

There are three levels of ownership:

- Stagebox ownership: control SB 32.24 setup information only
- Input ownership: control input parameters only
- Input x ownership: control of input parameters on a per input basis

To become the Stagebox owner, press and hold the **STAGEBOX OWNERSHIP** button in the SB 32.24's GUI **Detail View**. The Stagebox owner is listed in cyan beside this button.

To become the owner of ALL inputs, press and hold **INPUT OWNERSHIP**.

To become the owner of one or more specific inputs, first tap **Inputs** to the right of the SB 32.24's **Detail View**. Tap on the desired input and press **EDIT SETTINGS**. Then press and hold **OWN**.

Multiple control devices can 'own' different settings of the device at the same time. But there can never be more than one owner for the same parameter.

To release ownership, locate the owned parameter in the device's **Detail View** and press and hold **REL**.

To release Stagebox Ownership, press and hold the **STAGEBOX OWNERSHIP** button to toggle it off.

Ownership can be 'taken' from other owners. To do this locate the desired parameter and press and hold **TAKE**.

**Note: Ownership does not need to be released before it is taken.**

To find out which device is currently the owner of a parameter, locate the parameter in the device's **Detail View**. Next to the buttons for **OWN**, **TAKE** or **REL** there is a label area showing the network name of the owner device.

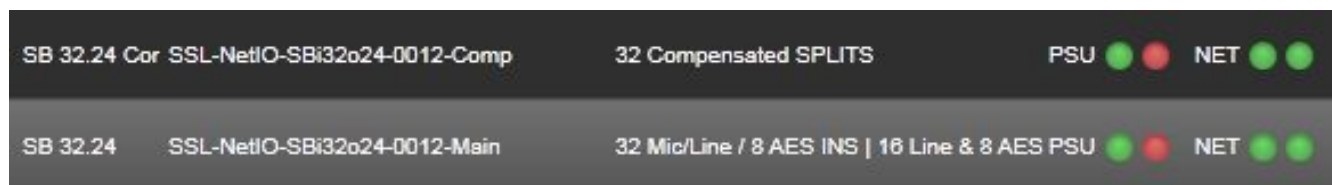
## Gain Compensation

Each stagebox Mic/Line input has two transmit channels that can be subscribed to in the Dante network.

When connected to an SSL console or the Network I/O controller app the main and compensated channels show as two separate devices. Only the Main device offers control of the Stagebox gain settings and other controls. The compensated device can not be "owned" or have any audio functions changed.

When an SSL Network I/O Stagebox is connected to the Dante network it will appear in the Connected Devices list as two separate devices.

One device provides the gain-dependant (uncompensated) signal, and the other device is a gain-compensated split.



Only a device which subscribes to the gain-dependant audio can own and have control of the Stagebox gain settings and other controls. The first (SSL) console to route to an uncompensated channel gets ownership automatically, the Compensated device can never own or have control.

The Compensated device's level is controlled in the Stagebox itself, so any Dante device can receive the compensated signal. It does not have to be an SSL console.

Gain Compensation works by applying a digital trim offset, which is the negative equivalent of the analogue gain change value.

The **Gamma point** is the value at which the analogue gain equals a digital trim value of 0 dB, i.e. there is no digital trim applied. Digital trim will be applied when the analogue gain level is above or below the Gamma point. The Gamma point is indicated on the SB 32.24 input GUI as **γ**.

The owner of an input has access to the Gain Compensation **RECALIBRATE** button. Pressing and holding the **RECALIBRATE** button will reset the **Gamma point**.

When the preamp is in **Line** mode, pressing and holding **RECALIBRATE** will move the **Gamma point** to the current position of the analogue gain knob. This means that the analogue gain value now equals a digital trim value of 0 dB and no digital trim is applied.

When the preamp is in **Mic** mode, pressing and holding **RECALIBRATE** will move the **Gamma point** to 10 dB below the current position of the analogue gain knob. This feature has been designed to protect the compensated signal against digital clipping in the event that the analogue gain control is drastically reduced.

This means that the initial digital trim value is -10 dB, as the analogue gain value is 10 dB above the Gamma point. Pressing the + or - 3 dB buttons raises or lowers the **Gamma point** by 3 dB.

**Note: An SB 32.24 can have the Main device and the Compensated device connected to two separate networks. This isolates the gain-dependant and gain-compensated outputs, and renders the two networks invisible to each other.**

## Dante Controller

For complete details on Dante Controller software, refer to Audinate's user guide. The information below will give you the basics to get started.

Clock sync, device naming and routing are all done within Dante Controller. Dante Controller is the single point of Dante network management. No network related management is implemented from SSL software.

Dante utilises the device name for routing. Each device must have a unique name – if a name is duplicated, it will be appended with a number.

### IP Config

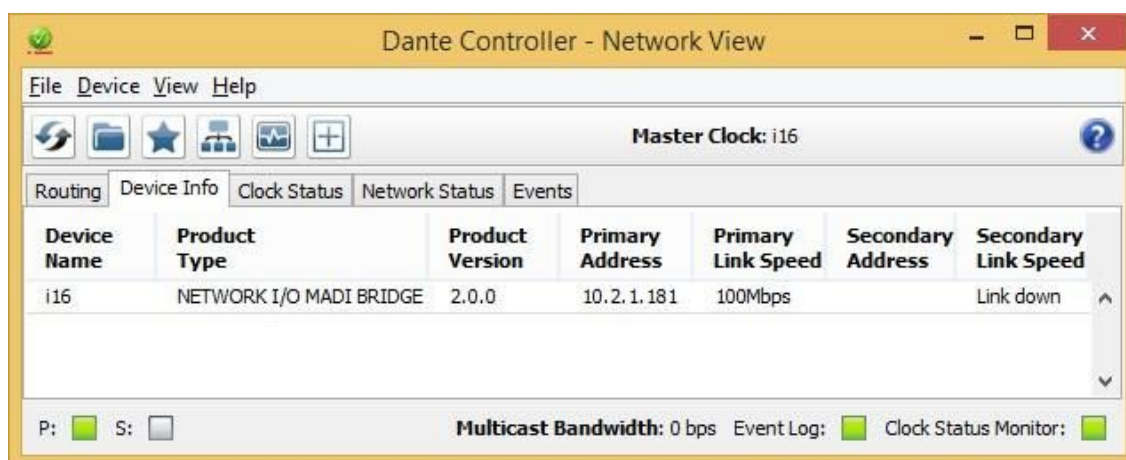
Each device requires a DHCP or fixed IP address. The primary and secondary ports must be on separate networks or VLANs.

**Device Info** tab shows the device IP address.

**Device > Device View...** menu allows setting of DHCP or fixed IP address.

The device will resolve to a link-local address if it is set to DHCP and no DHCP server is present. To access via link-local, set your PC to DHCP, directly connect to the device's primary port, and wait for the link-local addresses to resolve. Link-local addresses use the IP address range 169.254.n.n.

### Dante Controller PC GUI



## Appendices

### Appendix A – Physical specifications

Parameter	Value	Notes
<b>Depth</b>	456 mm 494 mm	(excluding handles) (incl. handles)
<b>Height</b>	5 RU (220 mm)	
<b>Width</b>	431 mm 483 mm	Unit Width Ex. Rack Ears Including rack ears Note: Rack Ears not removeable
<b>Weight</b>	14 kg	
<b>Power</b>	100-240 V 3.0 – 1.5 A 170 W max.	
<b>Boxed size</b>	660 x 620 x 400 (mm)	
<b>Boxed weight</b>	16 kg	

## Appendix B – Performance specifications

Mic/Line Inputs		
Parameter	Value	Notes
<b>Gain Range</b>	+26 to +70 dB -4 to +30 dB -4 to +40 dB	Mic mode, 0 dBFS, 0.1 dB gain step size Line mode, 0 dBFS, 0.1 dB gain step size Mic mode with pad engaged
<b>Maximum Input Level</b>	+27.5 dBu	30 dB Pad inserted
<b>Frequency Response</b>	± 0.2 dB	Mic mode, 20 Hz – 20 kHz Typically ± 0.1 dB
<b>Equivalent Input Noise</b>	< -123 dB	Mic mode, 70 dB gain, A-weighted filter, 22 kHz bandwidth. Typically -124 dB
<b>Usable Dynamic Range</b>	> 115 dB	Mic mode, 0 dBFS, A-weighted filter, 22 kHz bandwidth. Typically 116 dB.
<b>Input Impedance</b>	2.3 kΩ / 10 kΩ	Mic / Line. Selectable per channel
<b>CMRR</b>	> 70 dB > 90 dB	Mic mode, 20 Hz – 20 kHz, 0 dBu Mic mode, 1 kHz, 0 dBu
<b>Crosstalk</b>	> -75 dB > -90 dB	20 Hz – 20 kHz 1 kHz
<b>THD+N</b>	< 0.01 %	Mic mode, 20 Hz – 20 kHz, -1 dBFS, 22 kHz bandwidth.
<b>Phantom Power (Mic Input)</b>	+48 V ±4 V 10 mA	Selectable per channel
<b>Pad (Mic Input)</b>	30 dB	Selectable per channel
<b>Operating Levels</b>	+24, +22, +20, +18, +15 dBu	
<b>Sample Rates</b>	44.1, 48, 88.2 or 96 kHz	
<b>Resolution</b>	24 bit	

### Measurement Parameters

Sample Rate:	96 kHz
Operating Level:	+24 dBu = 0 dBFS
Mic input termination:	150Ω
Mic Mode Gain:	26 dB (unless stated otherwise)

Reference frequency: 1 kHz (unless stated otherwise)

Line Outputs		
Parameter	Value	Notes
<b>Maximum Output Level</b>	+24 dBu	600 $\Omega$ / 10 k $\Omega$ load
<b>Output Impedance</b>	< 50 $\Omega$	
<b>Frequency Response</b>	$\pm$ 0.3 dB	-1 dBFS, 20 Hz – 20 kHz
<b>Usable Dynamic Range</b>	> 116 dB	0 dBFS, A-weighted filter, 22 kHz bandwidth Typically >117 dB.
<b>Crosstalk</b>	> -90 dB > -105 dB	20 Hz – 20 kHz, 0 dBFS 1 kHz, 0 dBFS
<b>THD+N</b>	< 0.01 %	20 Hz – 20 kHz, -1 dBFS. 22 kHz bandwidth Typically < 0.004%
<b>Output Symmetry</b>	> 40 dB	20 Hz – 20 kHz Typically > 50 dB
<b>Sample Rates</b>	44.1, 48, 88.2 or 96 kHz	
<b>Resolution</b>	24 bit	

### Measurement Parameters

Sample Rate: 96 kHz  
 Operating Level: +24 dBu = 0 dBFS  
 Reference frequency: 1 kHz (unless stated otherwise)

Digital Inputs		
Parameter	Value	Notes
Input Impedance	110 $\Omega$	Transformer coupled
Sample Rates	44.1, 48, 88.2 or 96 kHz	176 kHz or 192 kHz with sample rate converters enabled
Sample Rate converters	Yes	Selectable per AES channel pair
Resolution	24 bit	

Digital Outputs		
Parameter	Value	Notes
Output Impedance	110 $\Omega$	Transformer coupled
Sample Rates	44.1, 48, 88.2 or 96 kHz	
Resolution	24 bit	

## Appendix C – Safety Notices

### *General Safety*

1. Please read and keep this document.
2. Adhere to all warnings and follow instructions.
3. This electrical equipment should not be used near water.
4. Cleaning should only be with dry cloths or products compatible with electrical devices – never when the unit is powered.
5. Keep the unit free of dust and use in a clean environment.
6. Do not use near any heat source or in direct sunlight.
7. Do not use near naked flames.
8. Do not place heavy objects on the unit.
9. Only use attachments/accessories recommended by the manufacturer.
10. Unplug the device during lightning storms or long periods of nonuse.
11. The unit can only be serviced by qualified personnel – Seek immediate service if:
  - I. The unit has been exposed to moisture
  - II. The unit has been dropped
  - III. The unit does not operate normally
12. Do NOT modify this unit – alterations may affect performance, safety and/or international compliance standards.
13. SSL does not accept liability for damage caused by maintenance, repair or modification by unauthorised personnel.

### *Installation Notes*

1. When installing this apparatus either fix it into a standard 19" rack or place the apparatus on a secure level surface.
2. When this apparatus is rack mounted, fit all rack screws. Rack shelves are recommended for this apparatus.
3. Allow a 1U gap above and below this apparatus for cooling.
4. Do not obstruct any ventilation cut-outs or exhaust fans.
5. Ensure that no strain is placed on any cables connected to this apparatus. Ensure that all such cables are not placed where they can be stepped on, pulled or tripped over.

## Power Safety

1. The unit is not supplied with a mains lead allowing you to use IEC distribution of mains cables of your choice. Any mains cable used must fulfill the following:
  - I. Refer to the ratings label on the rear of the unit and always use suitable mains cords.
  - II. The unit should ALWAYS be earthed with the earth on both the IEC sockets (when both are used).
  - III. Please use - compliant 60320 C13 TYPE SOCKET. When connecting to supply outlets ensure that appropriate sized conductors and plugs are used to suit local electrical requirements.
  - IV. Maximum cord length should be 4.5m (15').
  - V. The cord should bear the approval mark of the country in which it is to be used.
2. The appliance coupler is used as the disconnect device, ensure that it is connected to an unobstructed wall outlet.
3. The unit is designed for connection to single phase supplies only.
4. The clear markings regarding redundant power supplies detailed on the unit must be transferred into the installation to ensure both power sources are removed before qualified personnel service the unit.

**GB** The apparatus shall be connected to mains socket outlets with a protective earthing connection

**DEN** Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord

**FIN** Laite on liitettävä suojamaadoituskoskettimilla va rustettuumpistorasiaan

**NOR** Apparatet må tikoples jordet stikkontakt

**SWE** Apparatens skall anslutas till jordat uttag



**ATTENTION!** This equipment must be Earthed. Refer to manual for installation instructions.

**CAUTION!** Disconnect all power sources before removing any panel (s). No user-serviceable parts inside – to be serviced only by qualified personnel.



**WARNING!** Un-Earthed metal parts may be present inside enclosure. Check for hazardous voltages before touching.

For protection against risk of fire – replace only with same type / rating of fuse. Do not expose to rain or moisture.

## For EU



The stagebox is CE compliant and fully conforms with the current protection requirements of the European community council directives on EMC and LVD. Note that any cables supplied with SSL equipment may be fitted with ferrite rings at each end. This is to comply with the current regulations and these ferrites should not be removed. Any modifications to this equipment may adversely affect the CE compliance of this product.

## Environmental Declaration



The symbol shown here, which is on the product or its packaging, indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste using a designated collection point for recycling of waste electrical

and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can dispose of your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

**RoHS notice**

Solid State Logic has conformed and this product has conformed to European Union’s Directive 2011/65/EU on Restrictions of Hazardous Substances (RoHS) as well as the following sections of California law which refer to RoHS, namely sections 25214.10, 25214.10.2, and 58012, Health and Safety Code; Section 42475.2, Public Resources Code.

**For USA**

To the User:

- 1. Do not modify this unit! This product, when installed as indicated in the instructions contained in the installation manual, meets FCC requirements.
- 2. Important: This product satisfies FCC regulations when high quality shielded cables are used to connect with other equipment. Failure to use high quality shielded cables or to follow the installation instructions may cause magnetic interference with appliances such as radios and televisions and will void your FCC authorisation to use this product in the USA.
- 3. Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**Electromagnetic Compatibility**

EN55103-1:2009, EN55103-2:2009 Environments E1, E2, E3 and E4

Typical average initial in-rush current: 16.0 A,    Typical peak in-rush current: 63.0 A

The audio input/output and network ports are screened-cable ports and any connections to them should be made using braid-screened cable and metal connector shells in order to provide a low impedance connection between the cable screen and the stagebox. All network connections should be of Cat5e standard or above.

**Environmental**

<b>Temperature</b>	Operating: +5 to 40 deg. C	Storage: -20 to 50 deg. C
<b>Vibration</b>	Operating: < 0.2 G (5–200 Hz)	Non-operating: < 0.4 G (5–200 Hz)
<b>Shock</b>	Operating: < 3 G (11 ms max.)	Non-operating: < 10 G (11 ms max.)