



System T - S300

Network native compact broadcast console

Broadcast. This is SSL.

Solid State Logic
OXFORD • ENGLAND

System T - S300

Compact Broadcast Console

The S300 is the most powerful, versatile and user-friendly audio console in its class. It offers a compelling combination of extremely powerful features, hugely versatile installation options and outstanding value.

S300 is a compact control surface that can be combined with the complete portfolio of SSL's System T control, processing and I/O options. It can be specified as part of a larger System T installation or in stand-alone configurations for smaller broadcast facilities or OB vehicles.

S300 comes in 2 versions: 16+1 faders and 32+1 faders. It can connect to either a T25 (256 paths @ 48kHz) or a T80 (800 paths @ 48kHz) Processor Engine and runs the same software as larger System T S500 consoles.

S300 presents the extraordinary power and versatility of SSL's System T audio production environment in a streamlined console layout that remains intuitive for operators with a wide range of skill levels. A smaller scale S300 based System T installation offers the simplicity of a console + processor + I/O configuration with the benefit of compatibility with the array of additional fully networked System T control interfaces as required.

Within larger facilities S300 is a superb additional or backup console. Complete showfile compatibility between control interfaces means production can easily move between consoles and control rooms within a facility. Where processing engines are of different sizes SSL's unique compatibility mode allows the pre selection of channel, busses and effects resources that will be inactive on the smaller processing engine. Settings from the larger device are never lost and resources can be reassigned at any point during the show, even with audio passing.



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System Elements

The perfect balance of power and control

There are three main elements to System T S300 installation: an **S300 control surface** that can be combined with other consoles, remote hardware, software and touch screen technology, a **Dante AoIP based Routing & I/O** system which combines SSL's own Dante based Network I/O range with over 1000 third party Dante enabled products (or AES67 or SMPTE 2110-30 devices), and a **Tempest Engine** that delivers the most powerful and versatile audio processing available today.

Fully Networked Control

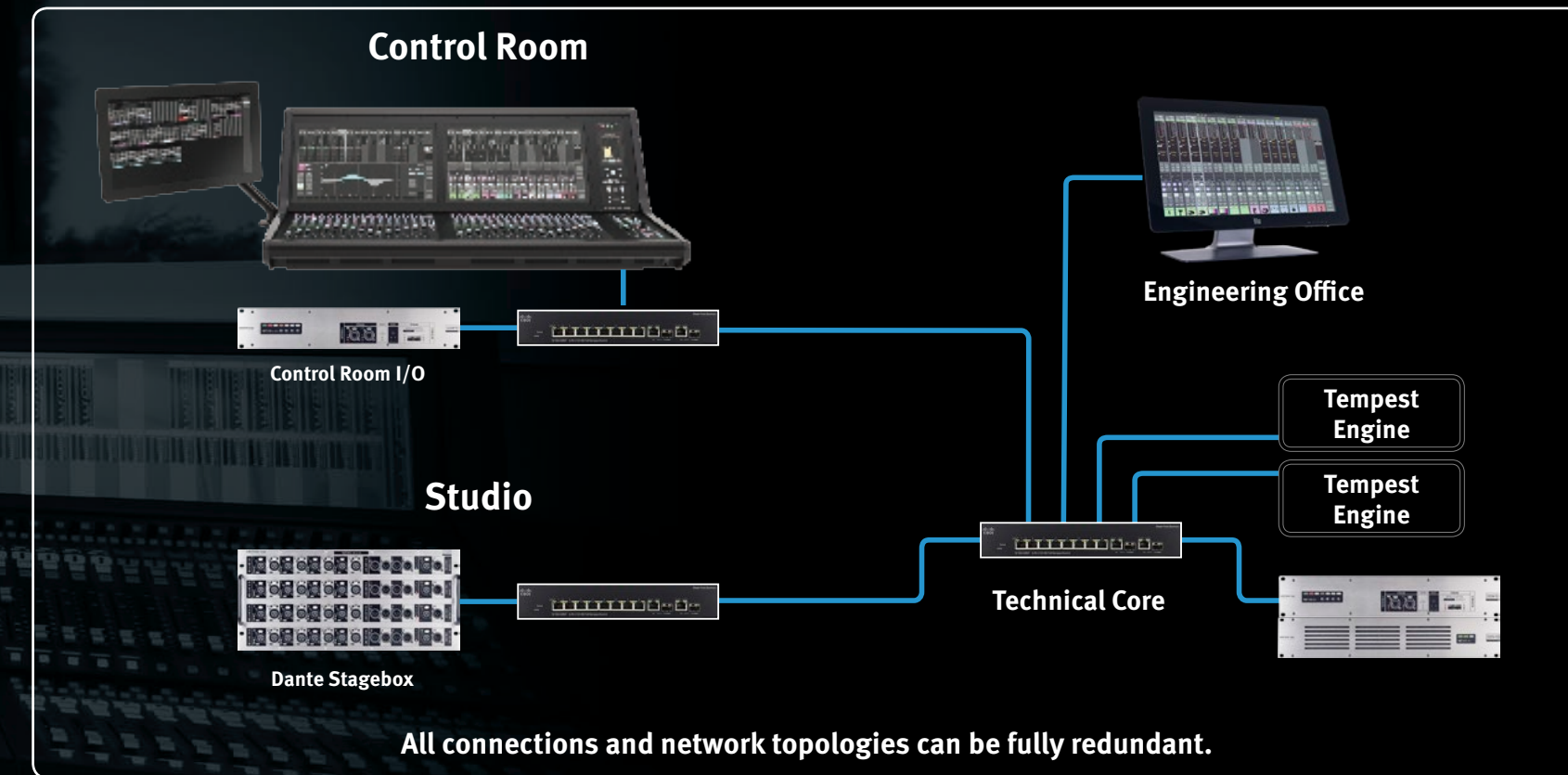
SSL has nearly four decades of classic audio console design legacy with many of the hardware and software control surface paradigms taken as standard today having first appeared on an SSL console. S300 is part of System T, SSL's next generation of broadcast console design. System T is a fully networked control environment so S300 can be combined with modular large format S500 consoles, remotely located computers or touch screen terminals, and remote hardware panels. Up to three Control Interfaces can share a single or redundant pair of processor engines simultaneously. The System T approach to remote control capability enables true network native facility wide control infrastructure design.

Routing & I/O

With System T, Dante AoIP network technology (with complete AES 67 capability) replaces traditional TDM routing with an ecosystem that offers a wide range of operational and commercial benefits. Dante is a licensed IP Audio Network technology which uses standard IT infrastructure for audio transport, routing, device discovery and control. Dante is high capacity, incredibly versatile and fully scalable. A single gigabit network connection can carry 512 audio channels at 48kHz, or 256 channels at 96kHz. With 512 audio channels bi-directionally on a 1GB connection, a single 24 Port GB Switch is capable of equivalent routing capacity to a 12,288 by 12,288 TDM router. Expansion of a network is not subject to the square law growth required when expanding TDM routing systems; additional switches and capacity can be deployed without replacing core hardware.

Dante offers fully interoperable system design; over 350 licensed development partners with more than 1000 devices commercially available enabling you to select and combine devices from different manufacturers. The system includes full current **AES67** and future ready **SMPTE 2110-30** audio transport capability. System T offers full routing control of the Dante network from within our consoles and control interfaces. Routing control can be achieved from an unlimited number of devices or network terminals. Dante employs full plug and play device discovery enabling devices to be moved around the network and re-connected with settings intact. Fully redundant network topologies widely used and proven in many IT applications provide the security required for Broadcast infrastructures.

SSL Network I/O interfaces bring renowned SSL audio performance to Dante networks. They can be used to complete powerful facility wide systems. Six different devices offer mic/line analogue, MADI, AES and SDI embed/de-embed capability wherever it is required. System T Control Interfaces and SSL Dante Control Software offer remote control over SSL mic/line I/O across the network.



Processor Engine(s)

Tempest processor engines deploy SSL's patented Optimal Core Processing (OCP) software using arrayed industrial PC hardware in a controlled operating environment. Housed in a 4RU chassis there are two different Engines available, The **T80** (offering 800 path capacity) and the **T25** (offering 256 path capacity). Paths and processing can be dynamically allocated in real time without interrupting audio. With 3072 inputs and 3072 outputs per engine, System T can handle any large-scale production. Tempest engines can be deployed as mirrored redundant pairs and if required each engine can be placed in separate fire zones. Near instant audio changeover happens via up to 6 Network I/O HC bridging cards, each providing 512 channels of inputs and 512 outputs.

Advanced Broadcast Architecture

Power meets flexibility

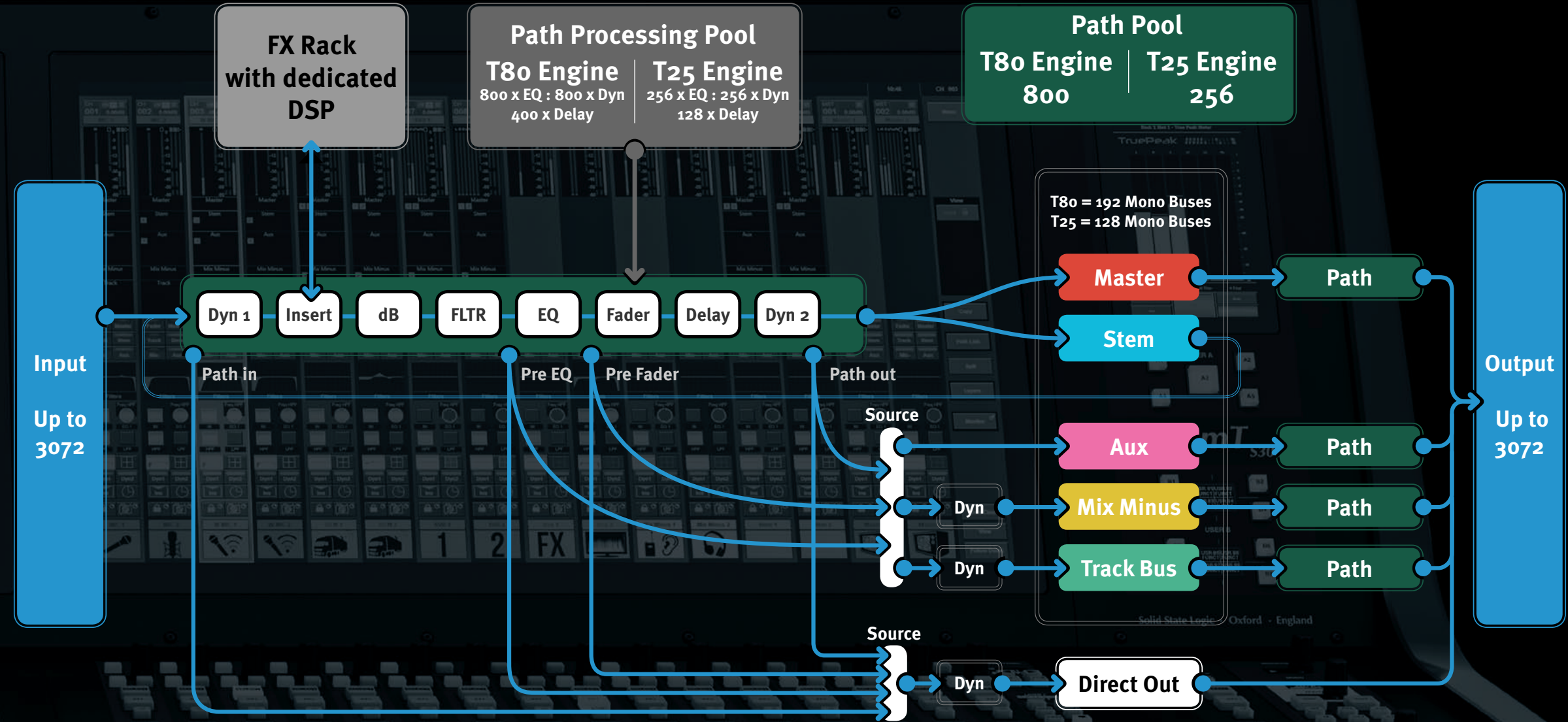
System T offers exceptional power and flexibility with 3072 input and 3072 output connections. The T80 Engine provides 800 active audio paths and the T25 Engine provides 256. Paths are pooled and consumed dynamically according to user configuration. Any console configurations within pool limits are possible. Channel or bus paths can be added or reconfigured at any time without rebooting and without interruption to audio. A pool of up to 192 mono mix buses with the T80 Engine or 128 with the T25 Engine can be used as desired within defined maximums for each bus type (providing up to 16 Master Buses, 32 Stems, 32 Auxes, 48 Mix Minus Buses and 64 Track Buses). Paths and buses can be freely configured in a range of formats up to 5.1. Path to Layer configuration is via an intuitive drag and drop interface.

Path Processing

Dedicated path processing provides EQ's (T80 x 800, T25 x 256), Dynamics (T80 x 800, T25 x 256) and Delays (T80 x 400, T25 x 128). The primary signal path has eight process blocks that can be configured in any order using a drag and drop interface. These are preceded by the Path gain trim (and Input selection/conditioning on Channels). The primary path output feeds either the panning and bus routing (channels and stems) or is available as a source in the main console signal routing (buses). Two dynamics sections can be placed in each path to enable cascaded Compressor/Limiter configurations, or adding dynamics to the channel direct output, mix minus or track bus send. An insert send accesses additional signal processing in the System T FX Rack or external hardware via the console routing.

System T Fx Rack

The System T FX Rack includes a comprehensive set of SSL's acclaimed studio quality signal processors with their own dedicated DSP pool. The selection includes loudness metering, additional tone and dynamic shaping, reverbs, room simulation, ambiance processing, dialogue noise reduction, signal generation and analysis tools. Effects are accessible via the Path inserts, or via the console routing using the Aux and Track buses for parallel time based effects. All settings are saved in the System T Showfiles and snapshot automation.



S300 Interface

Streamlined Intuitive Control

The S300 control surface presents the unique power of System T in an extremely compact form that offers a simple, intuitive operational environment.

Touch Screen World

At the heart of the S300 and System T is an exceptionally elegant software environment accessed and controlled using touchscreens. Channel View and Overview GUI's present a comprehensive bigger picture view of your entire system and immediate screen tap access to a Channel Detail view. System configuration, routing and surface layout are all done using simple, intuitive screen actions. Organising even large scale showfiles is made simple and straightforward. An HDMI output and optional screen arm facilitate use of an external overview screen.

Hands On Hardware

System T's excellent screen interface combines with robust, responsive hardware. The S300 **Fader Tile** has fifteen layers with four banks per layer, giving rapid access to 960 paths via dedicated Layer & Bank buttons. Each fader strip has a 100mm motorised fader and a PFL Solo key plus back stop fader PFL. There are additional keys for Mute, AFL, Select, and a 'Q' key that accesses SSL's unique **Super Q** system. Each strip also features a set of **Quick Controls** (a push switch encoder and three assignable keys) that work in combination with vertically correspondent aspects of the screen interface above. Colour flag LEDs visually indicate selected functions.



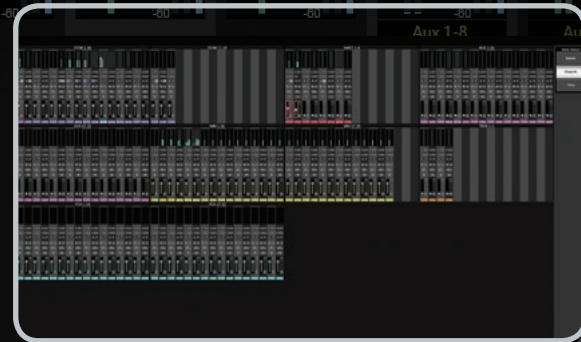
Slimline Master Section

S300 features a powerful, condensed Master Section. In the lower right area of the console a single tile combines a Monitor Section, a Focus Fader and a set of User Keys. The **Monitor Section** consists of main and misc monitor encoders (with displays), accompanied by DIM, CUT, and External source selection keys. The **Focus Fader** is a channel strip with a fader and full set of function keys that can be set to follow the currently selected channel or locked to a specific function.

In the upper right is a tile containing a five inch **touchscreen** that provides an FX rack meter viewer. Inbuilt Loudness, True Peak and Phasescope metering removes the need for external metering. The master section includes 21 physical user keys, providing immediate control of features most relevant for each production.

Software Environment

Complete, effortless multi-touch control



System Configuration

System T software includes all setup GUIs directly on the console's large touch screen. Additional channels or busses can be configured without audio interruption via the Console Configuration page. Layer Manager provides intuitive drag and drop assignment of paths to any hardware fader. Physical Dante I/O configurations can be organised, managed and easily searched and routed with SSL's unique I/O tagging and logical device I/O management and routing GUIs. Showfile management, Presets, Event Manager (GPIO and Macro programming), Access control, Scene Automation and other options all benefit from intuitive on screen graphical interfaces.

Channel View

The main operating environment for System T is the Channel View. It provides a clear and logical interface for detailed channel information. This GUI aligns with the faders in the Fader Tile and provides touch access for all path functions. SSL Eyeconix displays ensure that channel identification is immediate. Double tapping individual channels opens up detailed GUI's for routing assignments, EQ, Dynamics and Panning. Uniquely, System T allows changes in path processing order and bus architecture on the fly through straightforward drag and drop actions. The Quick Encoders in the Fader Tile work in conjunction with selected Channel View functions.

Overview Screen

The Overview Screen provides an at-a-glance view of the whole console's signal flow on a touchscreen that enables the operator to immediately access a channel or bus that needs attention. Selection of any channel or bus to the Focus Fader is literally one press away at all times. With meters and bright red overload indicators for every input and output, identifying such sources is easy and a single press brings the full set of path controls to hand. Colour coding enables input channels, mix buses, auxiliaries, mix minuses, main outputs and VCA groups to be readily recognised.

More System T Control Interfaces

An array of network objects



Larger Modular S500 Consoles

S300 can be specified alongside the complete range of System T S500 control surfaces. The S500 takes a modular approach and allows a range of frame sizes to be configured with a selection of Fader, Master and Channel Control Tiles and Touchscreens to suit requirements. S500 consoles can have optional meter bridges and feature Intelligent Bay Switching and integrated KVM to ensure that the right interface is always in front of the operator at all times.

Remote Tiles & Screens

System T is designed for truly versatile, distributed control via a console connectivity VLAN. S300 can be specified with remote user interfaces which can combine PC's running T-SOLSA with touchscreens and remote S500 Fader Tiles. Creation of additional operator positions in Production Galleries or additional control rooms is straightforward.

Remote Control Software

T-SOLSA (the System-T On/Offline Setup Application) can be used offline to prepare for productions or online as a remote control application, directly connected or via suitable wi-fi. The application mirrors all of the console's functionality without the audio processing: configurations can be built, input routing assigned and named, buses allocated, effects inserted, VCA and mute group subgroups set up and Eyeconix images allocated. During a production T-SOLSA can be used to enable a second pair of hands to manage supplementary tasks. T-SOLSA also acts as a useful training tool enabling users to get up to speed offline at their convenience.

Tempest Control Rack

Control interface PC in a 3U rack with retractable touchscreen

The Tempest Control Rack (TCR) offers an ideal solution for situation where a powerful broadcast audio mixer is required but a traditional console is not.

The Tempest Control Rack consists of a 3 RU PC enclosure with an optional retractable 15.6" touchscreen. TCR runs the complete System T control software so acts as a stand-alone control interface for a System T installation. The custom screen mounting system enables the screen to be used at a wide range of angles, allowing the unit to be mounted in a traditional 19" rack or in angled studio furniture. TCR features dual PSU, Primary and Secondary OCP Network Connections, Primary and Secondary Dante Networks connections, Studio Integration Network connections (for Production Automation systems) and SSL Network connectivity for other System T control interfaces or T-SOLSA control from any PC on the network. There are HDMI and DVI-D video outputs, plus front and rear panel USB connections for Keyboard, Mouse and USB storage devices.

When combined with a4RU T25 (or T80) Engine, the Tempest Control Rack creates a stand-alone System T mixer in just 7RU of space. This combination is ideal for Production Automation controlled studios or can be combined with SSL Stageboxes to create a 'Flypack' for remote production. Free standing or furniture mounting touchscreens are also available.



Production Automation

Integration with Production/Newsast Automation systems

System T can be integrated with Grass Valley Ignite, Ross Overdrive, Sony ELC and Viz Mosart systems. The SSL Broadcast Automation interface provides the production automation system with a remote controlled mixer. This mixer follows commands issued from the Automation System (or the vision mixer/switcher) and thus controls the audio mix of the production. The Automation System works in parallel with the console's physical controls, so if the audio operator adjusts the level of a channel under automation control, the audio will change level. The fact that the level has changed will also be flagged to the automation system. The limited abilities of the Automation System (fader level, on/off etc.) mean that the console is likely to be pre-configured for a specific show, to set mic gains, EQ's, master bus settings etc.

This can all be simplified by the creation of projects to work with specific automated productions. Automation can be applied to anything from a single channel up to as many audio channels as the specific production automation system supports, but typically a small number of channels are controlled. The Channel faders under control can be hidden from the operator's view of the surface, so that the console can be used simultaneously by an operator and the automation system without distraction. Automation can globally be switched on/off.

Key Features

- Support for Grass Valley Ignite, Ross Overdrive, Sony ELC and Viz Mosart
- Automation can be applied to a flexible number of console paths, including channels, stems, masters and auxes
- Channel faders under control can be hidden from the operator's view
- Automation can globally be switched on/off from the console surface



SSL Network I/O

SSL interfaces for Dante & AES67 based IP networks

A16.D16

A versatile combination of mic/line and digital I/O

The A16.D16 provides a combination of SSL SuperAnalogue™ and AES3 digital I/O. A16.D16 includes redundant network connections* and PSUs. It features 16 line inputs - four of which also have switchable mic circuits, 16 line outputs and 16 digital I/O in 8 AES3 pairs. There are four GPIO.

A32

Bulk analogue line level I/O

The A32 provides 32 inputs and 32 outputs of SSL SuperAnalogue™ line level I/O. A32 includes redundant network connections* and PSUs.

D64

AES to Dante conversion wherever you need it

The D64 provides 32 input/output Pairs of AES3 digital audio I/O. Sample Rate Convertors allow seamless integration of unlocked AES sources. D64 includes redundant network connections* and PSUs.

*Network B connectivity provides a future hardware upgrade path for direct SFP fibre connection

SDI

SDI embedder/de-embedder to Dante and MADI

The SDI provides bidirectional bridging between Embedded SDI Audio and an IP network. It has eight SDI circuits, each capable of Embedding and De-Embedding. It has dual Dante and triple MADI connectivity (2 x optical, 1 x coax I/O). SDI also allows direct bridging between SDI and MADI. Channel-by-channel routing enables flexible routing between all three domains. SDI includes redundant network connections and PSUs.

Dante PCIe

Fully redundant high capacity Dante computer connectivity

Providing Dante connectivity to any suitable Mac or PC, the SSL Dante PCIe interface has Primary and Secondary network connections and streams up to 128 channels. Minimum latency and synchronisation is less than 1 μ Sec.

MADI-Bridge

MADI to Dante interface with confidence monitoring

The MADI-Bridge provides up to 64 channels of bidirectional bridging between MADI and an IP network. MADI-Bridge offers a collection of versatile features including; Split Mode (merge 2 x 32 ch 96kHz streams into 1 x 64 ch 48kHz stream), Sample Rate Conversion, redundant sync inputs for use as a self-redundant Dante grand master clock, control tunnelling, front panel headphone monitoring with source selection controls, metering and GPIO.

SB32.24 - Stagebox

The SB32.24 is a 5U ruggedised enclosure featuring dual redundant power supplies, 32 mic/line inputs, 16 analogue line outputs and 8 digital inputs and outputs on four AES3 pairs. It has a pair of redundant RJ45 Dante network connections in addition to a user configurable SFP port that can be fitted with RJ45 or optical connectors. These can be used for network extension or to provide network separation for the gain-compensated Dante “split”, for connection to a second Dante-equipped console or appropriately equipped device on a different network. It has individual signal present, clip and phantom power LED’s as well as global indication of PSU, Network A and B and Hardware status. The SB32.24 can operate at 96kHz or 48kHz sample rates.

SB8.8 & SBi16 - Stageboxes

These 2RU units offer slightly different configurations but share identical features. The SB8.8 offers eight mic/line inputs and eight line level outputs. SBi16 offers sixteen mic/line inputs. Both models feature a pair of redundant network connections, a pair of network extension connections, GPIO connectivity and redundant PSU's. They have individual signal present, phantom power and local attention LEDs to provide front panel feedback. They feature inbuilt limiters and SSL's innovative AutoPad system that automatically applies a Pad according to gain setting. The AutoPad is applied if the gain is set at a low value that would require a pad to achieve making the entire possible mic gain range seamlessly available at all times. An Audition feature provides an automatic gain reduction when checking mic levels, greatly simplifying pre show mic checks for operators of any skill level.





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