50+ YEARS
ENGINEERING
THE FUTURE.

LAWO

Lawo
compact
2023
SPRING

PRODUCTS

Product Overview

BROADCAST CONTROL & IP ORCHESTRATION

VSM
THE IP Broadcast Control System

vsmGEAR / vsmPANEL
Hardware & Software Control Panels

vsmTALLY
Multi-Studio Tally Management System

IP NETWORK MANAGEMENT & MONITORING

HOME
IP Infrastructure Management Platform

IP VIDEO INFRASTRUCTURE

.edge
Hyper-Density SDI/IP Conversion/Routing Platform

V__matrix
Software-defined IP Routing & Processing Platform

V__matrix: vm_avp
4K/HDR Gateway and A/V Processing App

MULTIVIEWERS

V__matrix
Software-defined IP Routing & Processing Platform

V__matrix: vm_dmv
4K/HDR Distributed Multiviewer App

theWALL
Drag&Drop Multiviewer Control Solution

VIDEO PROCESSING

V__matrix
Software-defined IP Routing & Processing Platform

V__matrix: vm_jpegXS
JPEG XS compressed streaming app

V__matrix: vm_udx
4K Up/Down/Cross Conversion App

V__pro8
8-Channel Audio/Video Processing Toolkit (SDI)

AUDIO PRODUCTION CONSOLES

mc² 36
All-in-One Audio Production Console

mc² 56
Audio Production Console

mc² 96
Grand Production Console

RADIO CONSOLES

crystal
Radio Broadcast Console

diamond
Modular Broadcast Console

RƎLAY VRX
PC-based Virtual Studio Console

IP AUDIO PROCESSING, ROUTING & I/O

A__UHD Core
Ultra-high Density Network DSP Engine

Power Core
High-Density Modular AoIP DSP and I/O node

Compact Engine
AES67 Audio Node with Onboard DSP

IP AUDIO I/O

A__line
WAN-capable Audio-to-IP Interfaces

Power Core GATEWAY
Modular IP Audio I/O Node for mc² Consoles

Power Core RP
IP Audio I/O & DSP Node for Remote Production

RADIO SOFTWARE

VisTool
PC-based GUI Building Software

RƎLAY VPB
PC-based Virtual Audio DSP Engine

RƎLAY VSC
PC-based Virtual Sound Card

Product News 2023

PROUDLY SUPPORTING:

AIMS — Alliance for IP Media Solutions

RAVENNA

EMBER+

REST API

lives @ HOME

HOME Apps

Server-based Processing Platform

NEW

HOME Multiviewer

High-quality multiviewer functionality for monitoring UHD, 3G, HD and SD video as well as audio sources, with pixel-perfect mosaics and ultra-low latency.
The input and output formats can be specified independently (ST2110, SRT, JPEG XS or NDI®).

HOME UDX (with HDR processing)

In addition to up, down, cross and aspect ratio conversion, the UDX app with HDR processing features frame synchronization and non-linear edge enhancement.
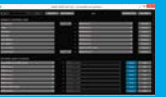The input and output formats can be specified independently (ST2110, SRT, JPEG XS or NDI®).

HOME Stream Transcoder

The Stream Transcoder app allows operators to convert incoming video streams to one of the supported output formats. It is the perfect tool for a variety of applications. The following input and output formats are supported: ST2110, NDI®, SRT, and JPEG XS.

HOME Graphic Inserter

The HOME Graphic Inserter app allows users to turn 2D or 3D animated graphics into video streams. Simply add the URL of your HTML5 graphic, pick your output resolution and specify the required output format. The following output formats are supported: ST2110, NDI®, SRT and JPEG XS.

lives @ HOME

What is it?

The abstraction of broadcast and media functionality from the hardware that does the compute heavy lifting. When you need it, where you need it, with a revolutionary commercial model.

What does it do?

Designed with Lawo-grade processing quality in a nifty, containerized software guise, HOME Apps can be spun up and down instantly via HOME's intuitive user interface, which will conveniently preserve your settings for future use. App usage is based on permanent licenses for constant, long-term availability, if so desired. The Lawo Flex model, on the other hand, offers peak-time relief and frees operators from the pressure (and budget constraints) of getting the project planning right for the life of the CapEx period, with little or no wiggle room once the budget has been approved.

Based on a series of deliberate choices, HOME Apps processing is provided by means of microservices running in containers to ensure maximum agility. Containers are cloud-native, standalone executable software packages comprising the applications and their dependencies.

Thanks to the native integration of Lawo's apps with HOME, operators enjoy a straightforward, fast and streamlined user experience. They are free to run HOME Apps only when they need them and where they need them, without any long-winded configuration sessions or expert knowledge.

Three usage models can be leveraged with Lawo's HOME Apps:
Permanent availability—Staple processing capability can be acquired with perpetual licenses, which is similar to purchasing dedicated hardware.

Lawo Flex—Subscription license for processing resources with a high degree of flexibility and frequent temporary capacity top-ups where needed. This license scheme covers all current and future HOME Apps—not just a specific one.

Hybrid Permanent and Flex licensing—Perpetual licenses for cruise-speed usage, and Lawo Flex licensing for temporary capacity top-ups at peak times.

Get the complete HOME Apps brochure here.

KEY FEATURES

Run apps on standard servers where it makes most sense: on premise, in private data centers or in the cloud.

Caters to all formats and requirements at the click of a button, with instant spin-up/spin-down

Mix and match the SMPTE ST2110, NDI®, JPEG XS and SRT protocols on a single network

Decide for yourself whether and how much to invest upfront

Complement your existing hardware pool with software apps

Resolution: SD, HD, 3G, UHD

One overarching solution for private datacenters and public clouds caters to the building blocks of your processing infrastructure

.edge

Hyper-Density SDI/IP Conversion and Routing Platform

NEW

lives @ **HOME**

What is it?

Hyper-Density SDI/IP Conversion and Routing Platform.

What does it do?

.edge is designed with simplicity, flexibility, agility and economic efficiency in mind. Software-defined by nature, it can be used as a drop-in replacement for traditional SDI routers, and expanded with flexible software licenses to provide the perfect mix of advanced features. With .edge, OPEX meets CAPEX in the leanest of ways.

.edge's compact 2RU housing accommodates up to 192 HD-BNC connectors for SDI interfacing and can be clustered to provide matrices well beyond 1152 x 1152 crosspoints. Your next large SDI router can be IP-native, 24RU small, consume only 24x 100Gbps network ports—a third of what other offerings require—and still be more powerful, scalable and future-proof.

All-in bundles turn .edge into a user-friendly, drop-in replacement for an SDI router. In this capacity, .edge outclasses the competition in all respects: footprint, power requirements and weight. All of these considerations are as important for OB trucks as they are for ventilation requirements.

KEY FEATURES

Primary target application: SDI/IP router (drop-in replacement of a legacy router)

Pre-configured, selectable configurations: 24 in/24 out, 32 in/16 out, 16 in/32 out

SDI signal transparency

Clean and quiet switching

Innovative CALL HOME button

Audio embedding, de-embedding and shuffling

Audio and video delay, frame synchronization

3G UHD Gearboxing and UHD Link Rotate

Support of multiple timing planes

SPECS

Control: HOME, Ember+ and REST API

4x SFP28 (25GbE) cages, 2x QSFP28 (100GbE) cages, 2x SFP (1GbE) cages

Standards: ST2110, ST2022-7 Seamless Protection Switching

Processing: SD/HD–4x 25GbE (SPS redundancy mode); 3G/12G–2x 100GbE (SPS redundancy mode)

.edge rear I/O plate: 48 micro HD-BNC SDI connectors, license-activated

Reference connectors: 5x micro HD-BNC (2x in, 2x loop-through, 1x out)

.edge has been designed from the ground up to be a HOME-native client. It is automatically discovered and registered within the HOME environment and benefits from all of HOME's next-generation management features.

Basic video and audio processing functions come as standard, whilst power-user features can be added as and when you need them—even for a limited time.
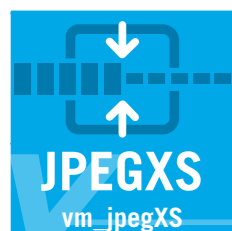
.edge is one of the only gateway solutions to boast high-capacity symmetrical IP ingress and egress, providing the sender and receiver count you expect from an IP pro. Hyper density is now available as a service.

Get the .edge brochure here.

vm_jpegXS

NEW JPEG XS Compressed Streaming for V__matrix
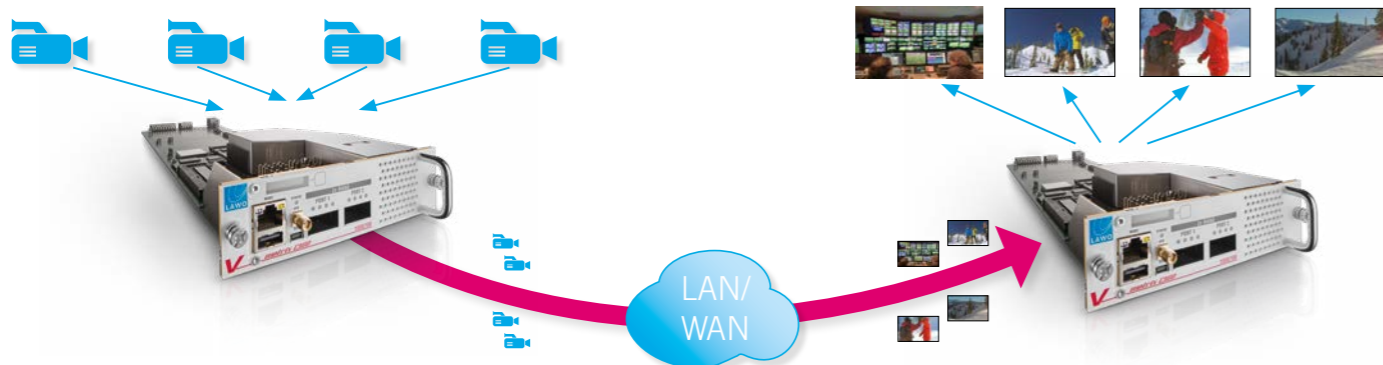

JPEGXS
vm_jpegXS

What is it?
Based on the TicoXS codec (ISO/IEC2112-1-compliant), the vm_jpegXS app solves two customer goals: it provides comprehensive ST2110 compatibility for perfect interoperability, and it offers higher video compression ratios.

What does it do?
In response to strong market demand, the V__matrix ecosystem adds a powerful video compression solution to its future-proof portfolio: vm_jpegXS is a dedicated virtual-module app for C100 processing blades that delivers the popular JPEG XS video compression technology.

LAN/WAN

vm_jpegXS supports compression ratios between 5:1 and 36:1 and offers 4x encoding + 4x decoding from, and to, JPEG XS (ST2110-22). Uncompressed signals can be interfaced with SMPTE ST2110, ST2022-6 or SDI.

Thanks to the basic feature set derived from other V__matrix apps, vm_jpegXS is a versatile audio and video tool with ample processing and glue functionality for V__matrix applications where bandwidth-conscious WAN video transport is required. Audio delay, shuffling, mixing, audio SRC and color correction are included.

Built-in image-quality optimization modes include Peak S/N Ratio and Visual Optimization. SMPTE ST2022-7 seamless protection switching, ST2110-30/31 support for IP audio interfacing, and ST2110-40 compatibility for ancillary data as well as IP stream format conversion, and frame-accurate video switching using destination-timed clean and quiet switching (MBB and BBM) with audio V-fades are provided as standard.

KEY FEATURES

Broadcast-grade low-latency IP and SDI JPEG XS compression gateway app for V__matrix C100 processing blades

TicoXS (JPEG XS, ISO/IEC 21122-1 compliant) intra-frame video compression for formats up to 3G.

Support for IP and SDI sources in 3G, HD and SD—rear plate/format dependent

Encoding for up to 4x IP video transmitters and decoding for up to 4x IP video receivers

Able to synchronize to PTP or video reference

Optional add-on licenses to unlock additional interfacing and processing features

Compression ratios: 5:1 – 36:1, visually lossless up to 6.66:1

---

vm_udx

4K/HDR Format Converter App for the V__matrix Platform

udx
vm_udx

What is it?
Virtual module (app) for the V__matrix eco-system providing format conversion between SD, HD and 4K/UHD formats with audio embedding/de-embedding, frame-sync, HDR to SDR color space conversion and color correction.

What does it do?
The vm_udx app provides independent paths of format conversion between SD, HD and 4K/UHD for IP and/or SDI signals. Conversion between SD and HD formats use one path while conversion to/from 4K uses four paths. Each path provides video framesync and audio sample rate conversion as well as audio delay functionality. Every path also has full audio embedding/de-embedding capabilities with audio gain and shuffling. Broadcast quality RGB and YUV color correction is provided for every processing path.


With the +HDR option the vm_udx app gets 4 instances of SDR<->HDR color space conversion using 3D LUTs. A large selection of LUTs developed by the BBC for live production are included, and users are able to upload their own custom LUTs. The included LUTs allow for conversion between SDR and HDR in HLG and PQ.

Fundamentally designed with IP networking in mind vm_udx natively supports both ST2022-6 and ST2110-20 IP video as well as ST2110-30/AES67 and RAVENNA IP audio streams. Conversion between IP video and IP audio standards is also possible, e.g. ST2022 to ST2110. To ensure high availability ST2022-7 seamless protection switching (SPS) is natively supported. With the available io_bnc rear-plates vm_udx allows for legacy connection to SD-, HD- and 4K-SDI. Both single-link 12G-SDI as well as quad-link (2SI) is supported, as is the ability to convert between single-link and quad-link.

+++ NEW FEATURES +++ NEW FEATURES ++

- Web UI to monitor which video content is currently processed by a given C100 blade. The Live Video Preview display allows users to visualize the video content received by an SDI or IP input, or the output of a processing stage.
- Enhanced +hdr color space 3D LUT conversion engine: each of the four vm_udx paths provides tetrahedral interpolation.
- Newly designed downmix engine with 2,048 mono-equivalent inputs into 256 mono-equivalent summing busses.
- Able to handle ANC data in 2110-40, 2022-6 and SDI signals simultaneously, users can keep, or remove, individual DID/SDID contained in the ANC payload.

Get the complete
V__matrix brochure here.
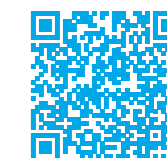
HOME

IP Infrastructure Management Platform

What is it?
"You connect everything, you push a button and it configures itself." HOME is a management platform for IP-based media infrastructures. It is designed to connect, manage and secure all aspects and instances of live production environments. HOME provides the tools and centralized services for swift and effective interaction of engineers with their tools.

What does it do?
HOME is cloud-native by design and ready to run anywhere, irrespective of the system's size. With HOME, the cloud starts on your campus, private and locally. It turns an array of devices, setups, sites, hubs and data centers into a powerful, agile network — quickly and in a perfectly secure way.

Inside HOME, discovery of devices is automatic, while registering and admitting them to the network is only a button press away. It addresses all pressing issues real-world operators face today and tomorrow. In one place and via a single, platform-agnostic, intuitive user interface.

Compatible devices are registered in one central location with their name, location, status and type. This inventory list acts as the entry point into device-specific configurations. It applies to both Lawo and third-party solutions, the latter via NMOS IS-04.

Devices unknown to HOME get quarantined when they appear on the network, to guard the network against undesirable effects. In today's hectic live broadcast environments, operators are reliant on a speedy, unified device configuration routine, especially when it comes to setting generic device parameters or configuring senders and receivers. Possibilities to save and recall configurations are highly welcome, too.

Based on its cloud-native architecture, HOME becomes the mission control for these processes. It provides fast access to device parameters through a unified user interface made for easy

Watch the HOME presentation video here.

lives @ HOME

tweaking, irrespective of the end point being controlled.
HOME does not replace the broadcast controller: it complements it and helps to speed up configuration and operation.
The extensive array of aspects that can be edited within HOME includes settings on the routing page, audio parameter control, connecting virtual mixers to physical surfaces, channel mapping and stream parameterization, labeling, and license management. Other applications, like the creation of snapshots and multiviewer control, are also available.

While a robust security system needs to cover all aspects of media infrastructure and content creation, the key lies in its simplicity, its initial design and deployment as well as in its on-going maintenance and support. Security starts on-premise by protecting the operational network from undesired collateral damage.
HOME's architecture is prepared for managing services such as transport layer security for user interfaces, control data and media essences.

The HOME platform is built on functional blocks of microservices, which are self-contained and supply functionality to operators or other services. On top of this architecture, HOME provides the corporate user interfaces to manage the infrastructure.
Whenever a system is required to scale, either in size or geographically, HOME automatically scales with the system. Additional instances of the required resources can easily be added. In a multi-location setup, more HOME instances can be added and networked with each other to ensure that all resources can be accessed from anywhere.

KEY FEATURES

Connects, secures and manages IP networks

Discovery & registration, NMOS compatibility (JT-NM)

Protects the network and your content

System-spanning user authentication

Device management

Operability: device parameter control via intuitive UI

Agility

Cloud-native by design, scalability in its genomes

Open to all vendors

SPECS

Network segmentation following IEEE802.1X routines

LDAP-based user authentication either locally or via your corporate IT infrastructure, e.g. Microsoft® Active Directory

Well-established IT security mechanisms: HTTPS, RADIUS, MACsec and IPsec.

Built-in DHCP server

Built-in DNS

Definition of address ranges for device IP addresses and automatic assignment

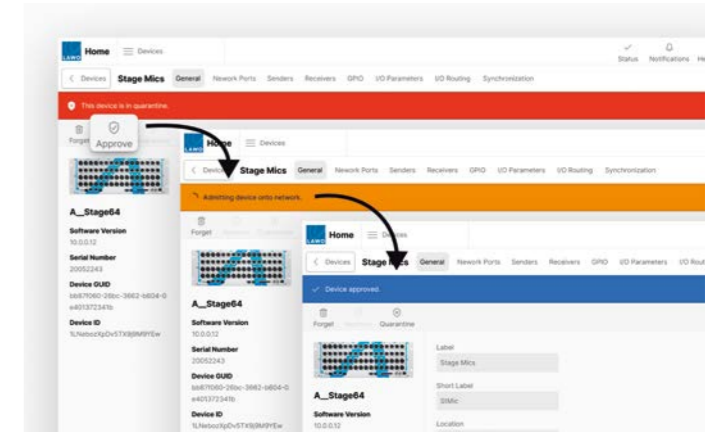Automatic VLAN port allocation based on port function

Supports OpenConfig

Retrieval of network configuration information

Supports: SMPTE ST2110, RAVENNA, AES67

Designed to run in clustered setups (concurrent active instances, no master/slave redundancy)

NMOS IS-04 & IS-05 compatible

VSM

IP and Baseband Broadcast Management System

Get the complete VSM brochure here.

What is it?
IP Broadcast Control and Workflow Solution

What does it do?
VSM (Virtual Studio Manager) is a vendor independent Broadcast Control System and custom workflow solution that runs on an IP backbone and integrates easily with the majority of the most popular broadcast equipment on the market. These include IP edge devices and network infrastructures as well as traditional video routers, video switchers, audio routers, audio consoles, multiviewers, intercoms, modular equipment and other third-party devices. Equipment from different manufacturers can be seamlessly "glued" together, giving unmatched recall and logic control possibilities on top of a scaleable TCP/IP backbone with a strong redundancy concept. Operators can control their production facility intuitively through highly customizable touchscreen-optimized software panels and a wide range of hardware LCD button panels, giving them the freedom of individual workflows. Advanced features such as dynamic resource management (pooling), Tally management (vsmTally), Boxing, dynamic tieline management, virtual devices and lots more set the benchmark for IP broadcast control systems.

ORCHESTRATION

Operational	vsmGear	vsmPanel	vsmWebPanel

Logical
3rd Party Control — Ember+ Gateway — vsmSTUDIO

Physical

			Switches
			e.g. ARISTA, CISCO ... Switches
e.g. AES67	e.g. 2022-6/7	e.g. 2110	
I/O Nodes	I/O Nodes	I/O Nodes	

KEY FEATURES

Control system for all areas of broadcasting, especially cutting-edge facilities

Integrates with the majority of the most popular equipment

Constant evolution, based on customer requests

Based on an IP backbone using standard IT hardware

Single control interface for numerous devices (baseband and IP)

Third-party hardware manufacturer-independent

Dynamic router tieline management with transparent Tally logic

Robust redundancy architecture designed for 24/7 non-stop operation

Control complete broadcast facilities with LCD button panels or custom designed configurable GUIs

Users can easily deploy their individual workflows and production setups

KEY IP BENEFITS

Vendor neutrality for network nodes and IT switches

Designed for multi-vendor employment

Unified northbound matrix representation of the network through vsmStudio

Capable of Hitless Merge

Sophisticated system redundancy

Broadest third-party control capabilities

Highest operational UI flexibility using VSM hardware and software panels

No workflow changes for the operator
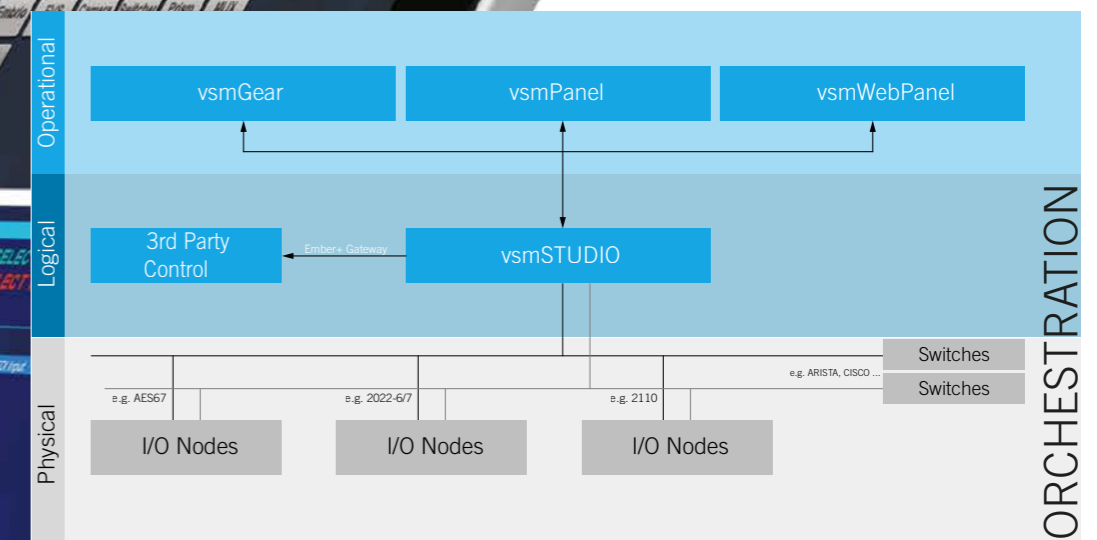
+++ NEW FEATURES +++ NEW FEATURES ++

NEW: Arista MCS (Media Control Service) Integration
The integration with the Arista MCS / CVX SDN controller gives VSM a consolidated access to an Arista 2110 fabric in a variety of scales and architectures. The MCS/CVX provides crucial features such as Arista fabric pathfinding, bandwidth allocation and management are embraced by VSM into its rich hybrid IP, multivendor, end-to-end signal routing solution. Furthermore, CVX/MCS provides VSM with consolidated feedback on the discovered connected endpoints and any live changes of connectivity. This allows VSM to automatically manage signal routing in situations when devices are dynamically connected to different parts of a SDN orchestrated Arista fabric.

NEW: Enhanced vm_dmv Support
This new logic module delivers single-step „source to PiP" routing, dramatically reducing the configuration time for DMV control. Furthermore, it embraces DMV's scalability by flexible head pooling and provides an unparalleled integrated system between a control system, vm_dmv and theWALL.

lives @ HOME

LAWO

CAM 1 CAM 2 CAM 3 CAM 4 CAM 5 CAM 6 MON 2 MON 3 MON 4 MON 5 MON 6 MON 7 MON 8 Escape Volume 0 VSM

mc²36xp

NEW Small Footprint, Well Connected

What is it?

A welcome addition to Lawo's top-of-the-line audio production console range, with Lawo's acclaimed audio quality, IP network and processing redundancy, and eligibility for a multi-slice console array.

What does it do?

Physically identical to the mc²36, but without on-board processing, the mc²36xp supports up to 256 DSP channels and offers Lawo's acclaimed audio quality, IP network and processing redundancy, and eligibility for a multi-slice console array based around a single A__UHD Core processing unit.

The mc²36xp caters to the expectations of sound supervisors who wish to benefit from a consistent user experience in all of their production hub's audio control rooms, OB trucks and venues where space is at a premium.

True to its "xp" moniker, the console requires external processing. In combination with the optional Pooling 8 license, it can share the DSP heft of one A__UHD Core with up to seven other virtual or physical console surfaces for cost-effective premium audio processing.

Available with 16, 32 and 48 faders in a sleek, ergonomic footprint, the mc²36xp comes with the same pro-grade controls and touchscreens as the mc²56 and mc²96. Its on-board I/O capability is identical to the inputs and outputs offered by its all-in-one mc²36 console sister: 16 Lawo-grade Mic/Line inputs, 16 Line outputs, eight AES inputs and outputs, eight GPI/Os, plus a local MADI port (SFP).

The mc²36xp supports 48kHz and 96kHz operation, state-of-the-art immersive audio mixing and all relevant IP standards (SMPTE ST2110, AES67/RAVENNA, ST2022-7).

It is a HOME native and offers seamless production file compatibility with its mc² siblings.

lives @ HOME

Get the complete
mc²36 xp brochure here.

KEY FEATURES

Compact addition to Lawo's unrivaled audio production console series

Lawo 100mm high-performance faders with permanent input meters; 16-, 32- and 48-fader models available

HD TFT with PCT precision-capacity sensing technology

LiveView™ video thumbnails for ultra-intuitive channel identification (standard labeling also available)

HOME native: analog-style, intuitive IP setup

Up to 256 DSP channels (number of inputs and buses depends on A__UHD Core and configuration); supports A__UHD Core Pooling 8 license

Immersive audio support up to 9.1.6

3D multichannel downmixing for all supported immersive channel counts

Parallel "New York" Compression

Comprehensive Local I/O: MADI, AES3, internal SMPTE2022-7 I/O redundancy

Automated mixing assistants incl. Automix, Audio-follows-Video, Downmix, and KICK 2.0

Integrated EBU R128 and ATSC A/85 loudness metering

Convenient data portability among mc²-series consoles

SPECS

Frames with 16, 32, 48 faders (dual fader arrangement)
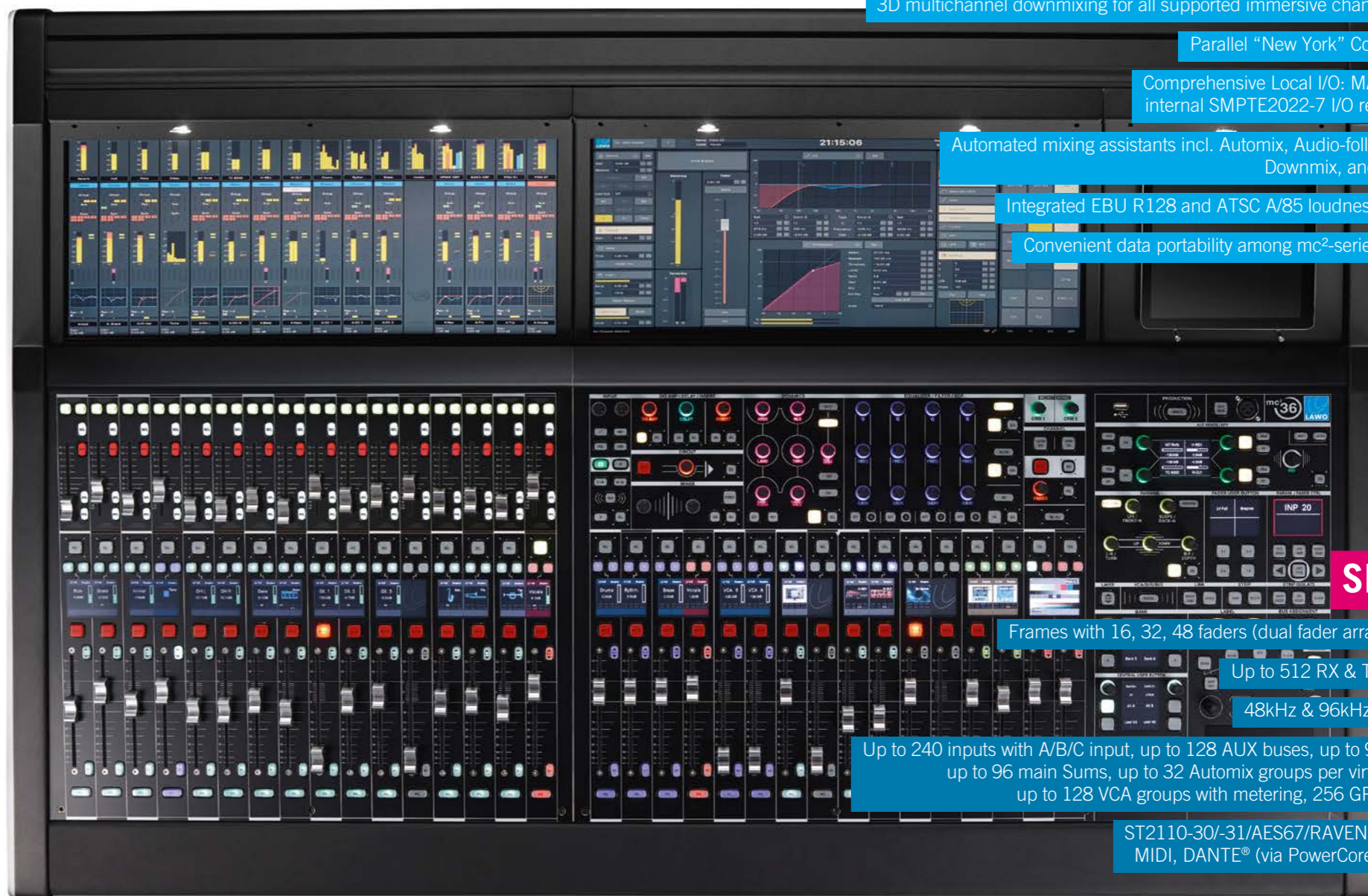
Up to 512 RX & TX streams

48kHz & 96kHz operation

Up to 240 inputs with A/B/C input, up to 128 AUX buses, up to 96 groups, up to 96 main Sums, up to 32 Automix groups per virtual mixer, up to 128 VCA groups with metering, 256 GP channels

ST2110-30/-31/AES67/RAVENNA, GPIO, MIDI, DANTE® (via PowerCore GATEWAY/RP)

mc²56

A Global Standard Re-defined

What is it?

The 3rd generation of the mc²56 represents the next step in the evolution of a console that has dominated the audio production industry with thousands of desks in operation around the world.

What does it do?

Designed to deliver unrivaled innovation, the mc²56 provides not just pure and simple access to ultimate performance – it's a global standard redefined.

The mc²56 inherits several groundbreaking features from Lawo's mc²96 flagship console, without sacrificing the identity of its predecessors – retaining virtues like compact size, flexibility and versatile design for applications ranging from broadcast trucks and studios to live performance and recording.

For optimized performance within IP video production environments, there is full support for native ST2110, AES67, RAVENNA and DANTE®, while Lawo's revolutionary LiveView™ feature enables thumbnail previews of video streams directly in the fader labeling displays.

Best-in-class performance in networking applications has been taken to the next level with the addition of unique capabilities such as HOME support and DSCA™ Dynamic Surface-to-Core Allocation. All of this, and more, cements this console's place as the number-one choice within complex IP-based production infrastructures.

Push the envelope and take your audio production capabilities even further than you imagined with the new mc²56. Now, more than ever, the global standard for audio production consoles.

lives @ HOME

KEY FEATURES

- Powered by A__UHD Core: Up to 1,024 DSP channels; supports A__UHD Core Pooling 8 license
- Lawo 100mm high-performance faders with permanent input meters; 16 to 144 fader models available
- HD TFT with PCT precision-capacity sensing technology
- LiveView™ video thumbnails for ultra-intuitive channel identification (standard labeling also available)
- HOME native: Analog-style, intuitive IP setup
- Immersive audio support up to 9.1.6
- Up to 256 summing and 128 AUX busses
- Parallel "New York" Compression
- Coexistence of 48 & 96kHz; sampling frequency individually selectable in HOME
- Automated mixing assistants incl. Automix, Audio-follows-Video, Downmix, AMBIT Upmix and KICK 2.0
- Integrated EBU R128 and ATSC A/85 loudness metering
- Convenient data portability among mc²-series consoles

SPECS

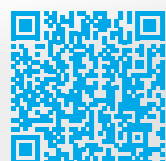- Free control section with direct access to four parameters in addition to gain control
- 48kHz & 96kHz (mixed) operation
- Frames from 16 to 144 faders
- 1,024 DSP channels (768 inputs and 256 summing busses)
- Rapid channel/bus switching to mono/stereo/Surround
- ST2110-30/-31/AES67/RAVENNA, GPIO, MIDI, DANTE® (via PowerCore GATEWAY/RP)

Get the complete mc²56 brochure here.

A__UHD Core

Ultra-high Density
Next-Gen IP Audio Engine

What is it?

The A__UHD Core is a network-based, software-defined audio DSP engine with unparalleled processing density and flexible, environment-conscious console core functionality.

What does it do?

The A__UHD Core is the next-generation audio engine for Lawo's mc² audio production consoles, designed as a network-based, software-defined IP DSP engine for mc² 36xp, mc² 56 and mc² 96 production consoles.

Its ultra-high processing density translates into 1,024 mc²-grade DSP channels, which can either be utilized by a single mc² console – to cope with even the most challenging productions – or be shared among multiple consoles for effective and space-efficient resource pooling.

A flexible licensing model makes the A__UHD Core ideal for both mobile applications and facility use. Its scalable DSP performance with temporary licenses is a clever way to turn CAPEX into OPEX. Resource pooling and flexible allocation of DSP resources to multiple physical and GUI-based mixing surfaces maximizes ROI for your audio infrastructure.

The A__UHD Core features low-noise cooling and is set to meet and exceed exacting demands regarding production quality and reliability. Eight independent 10/1 GbE network interfaces enable the use of redundant networks via ST2022-7 Class C seamless protection switching (SPS) in both LAN and WAN environments. Full hardware redundancy can be achieved using a second hot-spare unit.

+++ NEW FEATURES +++ NEW FEATURES ++

NEW: Pooling 8 License

The optional Pooling 8 license allows operators to use a single A__UHD Core to power up to eight mixing consoles, each utilizing DSP resources in multiples of 32 channels. Each slice comes with its own routing matrix and mixing console peripherals, and is operationally completely independent.

In addition to its pristine DSP processing, the A__UHD Core features Lawo's IP Easy™/HOME functionality, which makes IP setups for Lawo mc² consoles as simple as analog. Best of all: the A__UHD Core is a future-proof investment with a feature-set that keeps expanding.

KEY FEATURES

- 1,024 Lawo-grade DSP channels on 1RU (48Hz and 96kHz modes)

- Designed as the console core and DSP powerhouse for mc² 36xp, mc² 56, mc² 96 and headless consoles

- Remarkably space, weight and power efficient

- IP network processor based on open standards (ST2110-30/-31, AES67, RAVENNA)

- Full redundancy: SPS stream redundancy (ST2022-7) with 8x 10/1GbE-capable independent SFP network interfaces plus hardware redundancy via hot-spare redundancy unit

- Sub-millisecond network latency via special high-performance RAVENNA profile

- Scalable DSP performance via flexible (permanent and temporary) licensing system

- Futureproof, software-defined hardware – more stellar features to come…

- HOME native: Analog-style, intutive IP setup

SPECS

- Dimensions (H x W x D): 44mm (1RU) x 483mm (19") x 353mm (13.9") Weight: 7.4kg (16.3lb)

- Connectivity: 8x 10/1GbE ports via SFP (switchable, RJ45 or fiber options) 2x 1GbE ports via RJ45 (management)

lives @ HOME

diamond

Modular Broadcast Console
A Cut Above

What is it?
Multipurpose modular broadcast console with advanced workflows for fast-paced production.

What does it do?
diamond blends form, function and sophisticated workflow capabilities into a brilliant new broadcast mixer. Completely modular, it sizes from 2 fader "personal" consoles up to 60-fader master-control and production configurations; dual-layer operation effectively doubles fader count. Nine different module types allow diamond to be perfectly tailored to main studios, production facilities, news booths, and remote studio operation.

Productivity is diamond's forte. Each control can be programmed to fit individual user preferences. Function keys and rotary selectors with LED backlights are color-coded by function for fast operation. Tight integration with popular playout systems, coupled with context-sensitive color displays and premium motorized faders, provide an information-rich mixing environment.

Optional Virtual Extension modules seamlessly integrate touchscreen control into the mixing surface. Their big 13.3" adjustable-angle HD color touchscreens complement physical controls with context-sensitive PPM and loudness metering, access to DSP and routing functions, user and snapshot management, and custom control screens (designed using Lawo VisTool) for playout systems, third-party studio gear and custom logic functions.

diamond's mixing/routing core, the award-winning Power Core, is a native RAVENNA/AES67 device. In addition to providing expandable I/O for AES67, MADI, analog, AES3 and Dante® audio sources and destinations, each Power Core supports up to 4 mixing consoles/studios with the MAX license package, making diamond + Power Core a compelling choice for studios of any size.
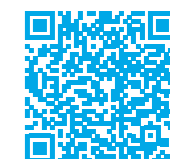
lives @ HOME

Get the complete
diamond brochure here:

Power Core + AIOX

High-Density Modular AoIP DSP and I/O Node

What is it?

The Power Core is the most power-packed software-defined DSP mixing engine in the world. Now more versatile than ever, it supports hundreds of I/O channels and dozens of mixing busses and DSP channels, using open standards-based RAVENNA/AES67 AoIP networking. Its companion – Audio I/O Extender (AIOX) – allows broadcasters to expand and extend audio infrastructure easily, quickly, and efficiently.

What does it do?

Power Core is only 1RU in size but it can support consoles as large as 60 faders (120 using dual layers) with up to 96 DSP channels, 80 summing busses, and advanced DSP features including EQ, dynamics, de-essing, delay, AutoMix, AutoGain, and PPM and loudness metering. Used with Lawo's stunning diamond control surface or VisTool virtual interface, it is a powerful mixing and routing engine. Six upgradable license packages tailor Power Core to a variety of operational needs and price points. Analog, Mic, AES3, MADI and DANTE® I/O, plus GPIO control signals, are accommodated via 8 rear-panel expansion slots.

The new Audio I/O Extender (AIOX) allows users to easily and economically expand their RAVENNA/AES67 networks. Populate AIOX with any of the 8-channel Power Core I/O cards, then connect to Power Core using TP, coax, single or multi-mode fiber for point-to-point transfer of audio and control data. Up to 20 AIOX

devices can connect to a single Power Core, expanding system I/O count by as many as 1,280 additional audio inputs, outputs and GPIO connections.

With exceptional audio signal density and expandable audio capacity, Power Core is the ideal gateway between baseband audio formats and RAVENNA/AES67 IP media networks. Standard front panel I/O includes 6 SFP Ethernet ports, 2 redundant control and 4 media ports (up to 256 bi-directional RAVENNA/AES67 streams and 512 audio channels), and 4 SFP MADI ports (up to 256 audio channels) – perfect for native MADI-to-AES67 AoIP conversion and AoIP gateway applications such as AES67 to DANTE®, LAN to LAN or LAN to WAN.

lives @ **HOME**

KEY FEATURES POWER CORE

- Compact 1RU design, expandable with multiple analog and digital I/O options, plus GPIO
- 4x RAVENNA/AES67 with SFP cages (each 256 channels I/O; incl. stream redundancy)
- 4x MADI (each 64 I/O channels) with SFP cages (MADI ports can be grouped for redundancy)
- Software-defined hardware: 6-tiered license options plus multiple feature add-on licenses
- Dynamics suite includes AGC, EQ, compressor, gate, expander, de-esser, limiter and delay
- Up to 256 channels of metering, loopbacks and silence detects
- SD card accessible from the front panel

NEW FOR POWER CORE

- New COMPACT license optimized for deployment of 2~16 fader mixing consoles
- RAVENNA/AES67 ports doubled – 4 ports accommodate up to 512 channels of AoIP audio
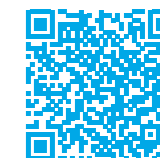- RAVENNA/AES67 unicast streaming support
- New low-latency Loudness Input Leveler feature matches audio to pre-set loudness target
- Self-keyed sidechain filter for dynamics, high-granularity EQ and enhanced de-esser
- New GPIO expansion card adds 8 GPI, 8 GPO and 2 VCA inputs per card

AVAILABLE POWER CORE LICENSES

License	Description
EDGE	Baseband-to-AoIP conversion or for adding I/O capacity to AoIP networks. 2x64 MADI & 64 RAVENNA streams, $1,280^2$ routing matrix
SAN (SUPER AUDIO NODE)	AoIP conversion with DSP capability. 4x64 MADI & 64 RAVENNA streams, 32 fader-assignable sources, $1,728^2$ routing matrix, 16 DSP inputs, AutoMix
CONSOLE COMPACT	2~16 fader single-layer consoles. 64 RAVENNA streams, 96 fader-assignable sources, $1,728^2$ routing matrix, 32 DSP inputs, AutoMix
CONSOLE L	Typical on-air and production studio with dual-layer mixing console. 4x64 MADI & 64 RAVENNA streams, 128 fader-assignable sources, $1,728^2$ routing matrix, 48 DSP inputs, 2 AutoMix groups
CONSOLE XL	MCR-style dual-layer consoles. up to 60 physical (120 virtual) faders, 4x64 MADI & 128 RAVENNA streams, 254 fader-assignable sources, $1,920^2$ routing matrix, 96 DSP inputs, 4 AutoMix groups
CONSOLE MAX	System core for multi-studio facilities. Same resources as XL license, but simultaneous access by up to 4 average-sized mixing interfaces (physical or virtual)
GATEWAY (for mc²)	Modular, networked I/O node for Lawo mc² audio consoles. 64 channels of standard I/O (Mic, Line, AES3 and GPIO cards) plus MADI

FEATURES AUDIO I/O EXTENDER

- Multi-purpose 1RU extension device for new and existing Power Core AoIP installations
- Ultra-low delay point-to-point audio transport with zero-configuration setup
- Audio and control travel via redundant direct copper or fiber connections using new 'AIOX' protocol
- 8 expansion slots to host up to 64 channels of audio I/O and/or 16 GPIO
- Connect up to 20 AIOX devices to one Power Core to expand the system I/O by up to 1,280 signals (rev.2 or rev.3)

Get the complete Power Core brochure here.

HOME of IP Media Infrastructure.

LAWO

HEADQUARTERS

LAWO AG
Rastatt
GERMANY
+ 49 7222 1002 0
sales@lawo.com
www.lawo.com

INTERNATIONAL OFFICES

CANADA	+ 1 416 292 0078
CHINA	+ 86 10 6439 2518
NORWAY	+ 47 22 106110
SINGAPORE	+ 65 9818 3328
SWITZERLAND	+ 49 7222 1002 0
UK	+ 44 333 444 5296
USA	+ 1 888 810 4468

RENTAL SERVICE

+ 49 7222 1002 0
rental@lawo.com