sapphire

ADVANCED
ON-AIR MIXING
CONSOLE

LAWO

LIMITLESS
INTELLIGENT
INSPIRING

sapphire
A STEP AHEAD.

sapphire compact
THE SMART CHOICE.

AS POWERFUL AS EVER, AS ATTRACTIVE AS NEVER BEFORE.
With the new sapphire compact, a mixing console has become available that combines the best of both worlds. It combines the clear surface layout sapphire consoles are renowned for in fixed configurations with the cost-efficient Lawo Compact Engine. The result is a very attractive solution, that makes the benefits of sapphire consoles available for an even broader group of users. sapphire goes a step ahead, providing full modularity, a more powerful system core and fully customized console configurations. sapphire and sapphire compact consoles are not limited to proven cutting-edge technology but also offer an eye-catching design. While technicians will be convinced by the possibility of various upgrades, maximum flexibility and sophisticated functionality, radio hosts will be continually happy by the modern, clearly laid out control surface. In addition, the sapphire offers everything expected from a Lawo mixing console: top quality, intuitive user guidance and clever solutions, all of which guarantee even greater working efficiency.

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A STEP AHEAD.

DESIGNED FOR CUSTOMIZATION.

MODULAR TECHNOLOGY — TODAY'S INTELLIGENT SOLUTION.

Your individual requirements will determine which sapphire configuration is the right one for you. All you need to start broadcasting is a central module, a channel module and a couple of interfaces. However, the sapphire is also able to meet more demanding needs — with the addition of more channel modules, a sapphire can be transformed into a true production mixing console, placing a total of 60 faders at your finger tips. But potential configurations go beyond the console's surface. A specific example: Level and control options are displayed directly above the respective channel in the overbridge, offering more ease of use and the best possible workflow in daily productions.

SMART AutoMix & AutoGain

With the integrated AutoMix function, mixing and hosting a talkshow is a breeze. Simply let the console take over control of the microphone mix, while the talent conducts the interview. AutoMix reduces ambient noise from open microphones while keeping the overall volume of the mix at a constant level. AutoMix also works perfectly as a ducking function for voiceovers live on air.

Looking for even more simplification? With AutoGain, the talent can calibrate all microphone signals easily and without understanding dB values and overloads. At the press of a button, AutoGain levels microphone gains automatically within seconds, while the talent just talks into the microphone.

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INTERACTION

THE CHANNEL MODULE:
SEVERAL LAYERS ON ONE CONTROL SURFACE.

The modular console concept allows for up to 15 channel modules, each with four motorized faders, so that the largest system gives you direct access to 60 channel strips. Each channel strip is clearly laid out, and makes the most important functions always available, based on a source-oriented concept. Virtual channels also allow you to work on several operating levels — thus enabling a channel module to access many more channels than the number of physical faders. And, especially practical during installation, frames with their included modules are connected to each other by just one cable, so they can be placed anywhere in or on the table; this allows your workspace to be configured just the way you want it!
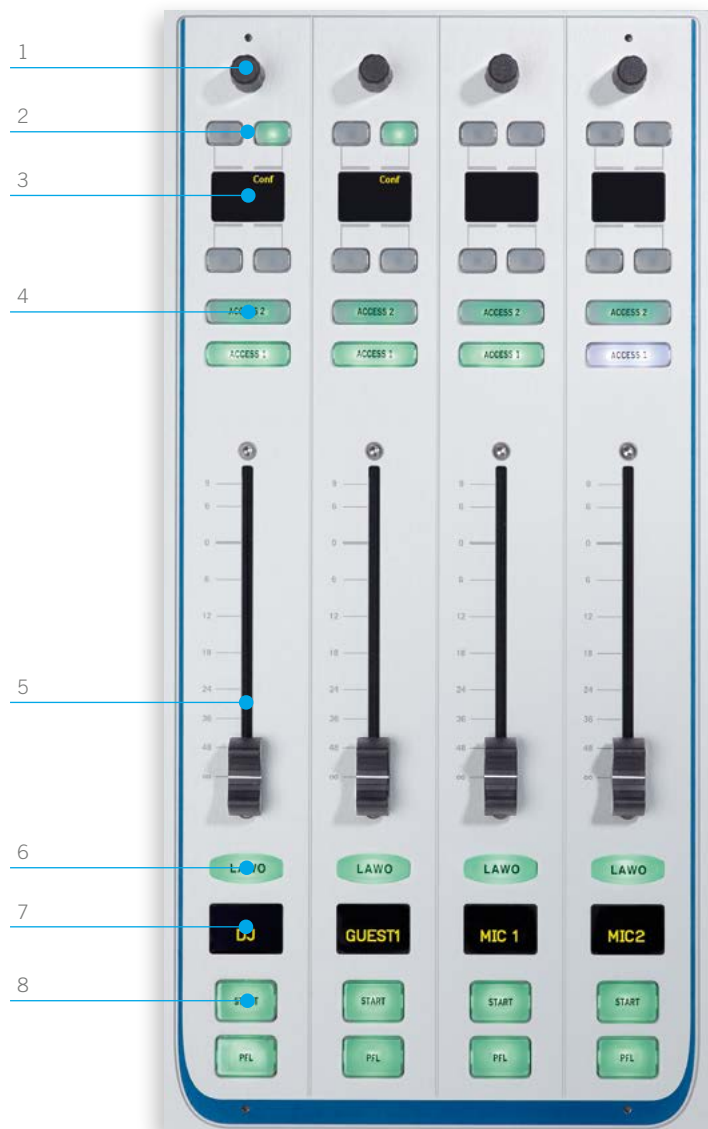
1 **ROTARY CONTROL** Configuration of DSP parameters, plus adjustment of mic, line and aux send levels.

2 **MULTIFUNCTIONAL BUTTONS** Control of DSP parameters and bus assignments, as well as the assignment of individual functions (i.e. PFL, Conference, Talkback). Labelling of buttons is provided on the display while visual feedback is displayed through multi-color LEDs.

3 **OLED DISPLAY** Labelling of the multifunctional buttons and the display of DSP parameters. In addition, bus assignments are presented on this high quality display.

4 **ACCESS BUTTONS** Channel selection to change DSP parameters or source assignments. The layer displayed on the control surface is also adjusted here.

5 **FADER** Durable 100mm motorized fader with integral dust protection.

6 **MULTIFUNCTIONAL STATUS DISPLAY** Display of source groups or audio presence via multi-color LEDs.

7 **OLED DISPLAY** Used to display the source name (label). Maximum operator confidence is achieved by uninterrupted readouts, a large font, and the display's central position.

8 **MULTIFUNCTION BUTTONS** Large buttons for the most important and most frequently used functions, such as ON/OFF, PFL, Mute or start button for source signals, most usefully positioned nearest the operator.

THE CENTRAL MODULE:
FAST ACCESS TO ALL FUNCTIONS.

The compact central module enables access to all signal parameters, bus assignments and snapshot control. The buttons in the monitor section can be used to select monitoring sources or can be assigned to other functions. This makes the most important functions directly accessible, and you gain from a high level of user-friendliness, enabling you to work quickly and with confidence.
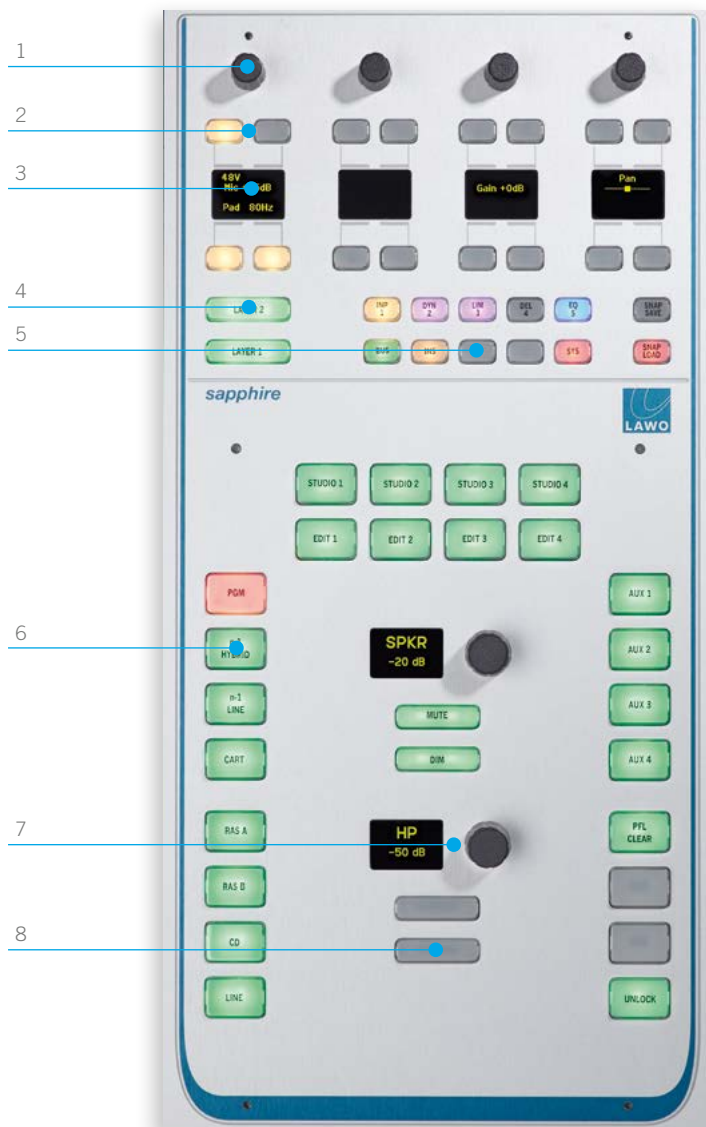
1 **ROTARY CONTROL** to configure DSP parameters

2 **MULTIFUNCTION BUTTONS** can be used to control DSP parameters or may be assigned to individual functions

3 **OLED DISPLAY** to label the multifunction buttons

4 **GLOBAL LAYER BUTTONS** to choose the layer displayed on the surface globally

5 **FUNCTION BUTTONS** for DSP parameter selection of sum and aux busses, as well as the control of snapshots

6 **MULTIFUNCTION BUTTONS** to select sources for the monitoring. These buttons can be assigned and labelled individually.

7 **OLED AND ROTARY CONTROL** to display selected monitoring sources and for level adjustment

8 **MULTIFUNCTION BUTTONS** to dim or mute the monitoring source

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CUSTOMIZATION

THE EXTENSION MODULES:
FOR AN EFFICIENT WORKFLOW.

The fader and central modules provide a basic configuration to
which you can add various optional extensions. These include
additional rotary controls and buttons that can be freely assigned
to different functions. The advantage: you can configure a console
to optimize your personal workflow, according to your specific
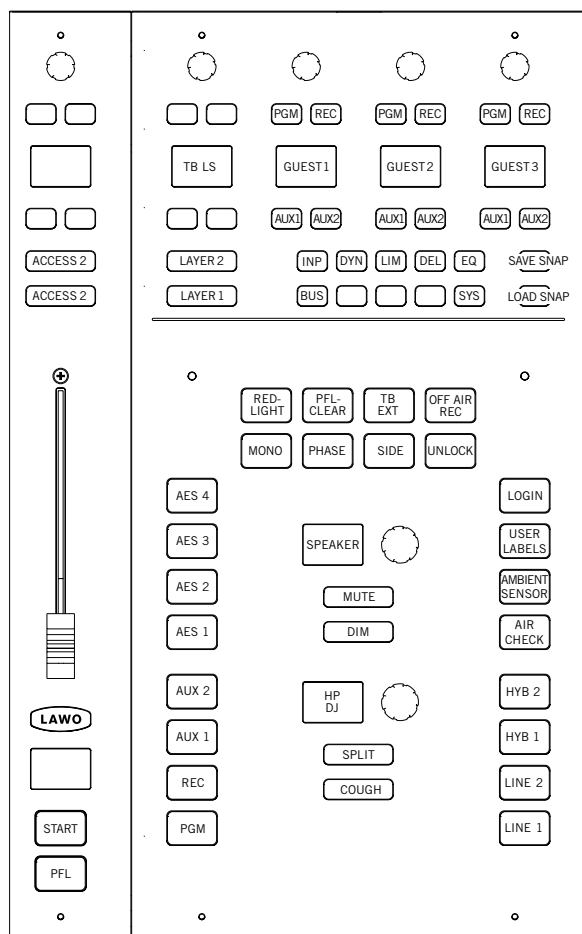requirements.

THE OVERBRIDGE:
BETTER OVERVIEW AND SIMPLIFIED CONTROLS.

The optional overbridge offers integral features that guarantee a highly efficient workflow in daily radio
broadcast. It acts as a visual extension for channels and the central control section, using VisTool to
display levels and other control elements. With its touch functionality it expands the physical user
interface of the sapphire even further. The overbridge is not only available for all versions of the
sapphire, but can even be used as a standalone unit.

READY TO USE OR CUSTOMIZED SOLUTIONS:
CONSOLE CONFIGURATION — THE CHOICE IS YOURS.

No complicated installation, no additional setup and configuration: opt for the standard version of the sapphire and you can get started immediately. This means less effort on your behalf, and you will benefit from a sophisticated pre-set configuration, which is based on feedback from countless users. The pre-configured sapphire is an ideal solution for most standard applications, and the only decision left for you is to choose the console size – for example 12, 16 or 20 faders.

Naturally, you can also choose a custom configuration for your sapphire. This allows the functions and button layout to be customized, so you will get a mixing console that is perfectly suited to your personal workflow. During installation, you can rely entirely on Lawo experts or benefit from customer training by our team.

Surface layout of the standard sapphire.

I/O-SETUP OF A STANDARD SAPPHIRE:	
8x	Mic/Line in
16x	Line In/Out
8x	AES3 In/Out (stereo)
4x	Headphone Out (stereo)
8x	GPI
16x	GPO

SIMPLE, FLEXIBLE, AND MADE TO MEASURE:
CONFIGURING A SAPPHIRE.

Different operator teams, different program formats, individual workflows — and one mixing console that can be adapted perfectly to your needs. Thanks to its top performance and extensive configuration capability, you can set up a sapphire to meet your every need. For example, with the help of the provided software you can enter individual settings for interfaces, sources and summing mixes, freely assign relay functions and flexibly create monitoring systems and remote controls. And all of this by the simple use of a Windows™ graphic application.

SAPPHIRE CONFIGURATION HIGHLIGHTS:
▪ Individual definition of sources, destinations and summing busses, including integral functions and resources
▪ Freely programmable console buttons and monitoring section
▪ Simple allocation of names and control functions
▪ (such as mix minus, talkback or fader starts)
▪ Extensive programming of logic functions including opto-
▪ couplers and relays, e.g. red light control
▪ Individual user administration with personal log-in. Membership of groups defines the individual rights incl. snapshot-groups; administration via VisTool
▪ Channel labels can be changed during runtime

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VISTOOL – THE UNLIMITED USER INTERFACE
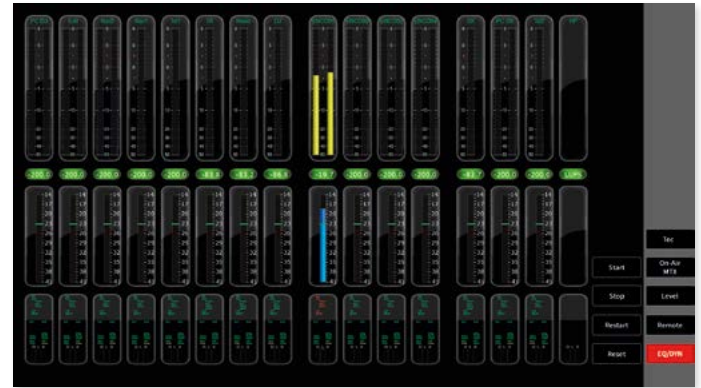
VISTOOL – THE UNLIMITED USER INTERFACE.

FULL FUNCTIONALITY FOR YOUR NEEDS.

VisTool is designed to be the central screen, the information and interaction system for radio hosts. It is a customizable touchscreen optimized software GUI providing full control over all of the relevant functions of a sapphire mixing console. It offers access to channel DSP processes like EQ, dynamics, and bus routings, input parameters and fader channel control. Furthermore, it provides a hi-res graphical feedback of the console operations and acts as a user interface itself. VisTool Standard is an integral part of sapphire and sapphire compact.

A PERSONAL GRAPHICAL USER INTERFACE.

From the simple press of a touchscreen button to activate an individual voice processing or the indication of an incoming call, to extended signal monitoring or the metering of selected signals including any type of loudness indication, VisTool does the job. The intuitive VisTool editor provides a comprehensive library with graphical elements, which can be added to the screen by drag-and-drop. In addition, users can enhance the internal library with custom made graphics.

NEW IN VISTOOL 5.0

- Web objects can be placed on the screen for display and interaction.
- Video thumbnails from Lawo V__ products can be displayed.
- Boolean logic engine creates conditionally-aware functions.
- Integrates with third party devices via the Ember+ control protocol.
- Windows 7, 8 and 8.1 supported

KEY FEATURES

- Wide range of production and mixing console parameters for visualization and control
- Multi-touch operation
- Outstanding user management with user related handling of console and channel snapshots in local or networked databases
- Docked, windowed or full screen – VisTool nicely shares displays with other apps
- Highly flexible configuration tool for creation of custom page layouts
- Scalable GUI items include buttons, meters, text displays, faders and rotary controls
- Includes highly advanced graphical elements like loudness indication, faders, processing curves, etc.

EASY ON THE EYES, PERFECT IN SCALABILITY.

These days, software plays an important role in live operation. VisTool plays it intelligently! It only occupies the space you want it to use. It can either coexist with other applications on the same screen or use multiple screens for extensive visualization, even showing parameters from several consoles simultaneously. By using vector graphics, VisTool can scale elements to any output format without loss of quality. The communication between VisTool and the console is realized via IP – which also makes VisTool ideal for remote studio control.

STATIONWIDE SYTEM MANAGEMENT

A radio system has many user with individual needs and different technical skills. VisTool powerful system management functionality provides the tools to optimize the working environment for everyone. An unlimited amount of Snapshots and DSP profiles can be stored and recalled. These resources can be centralized and accessed from multiple consoles, allowing individual settings to be available everywhere in the station. A sophisticated rights-management grants different access-rights to console and VisTool functionality to individual users or user groups. Snapshot and DSP profile recall can be user dependent to set up automatically just by logging in.

VISTOOL STANDARD

- Preconfigured for highly efficient parameter visualization
- Central overview as docking bar with timer and clock view, monitoring and metering of main outputs and access to snapshot database Multi-touch operation
- Full screen view of channel parameters when access mode is activated
- Included in every shipment

VISTOOL UNLIMITED*

- Unlimited possibilities for configuring customized layouts using the graphics library in VisTool Editor
- Create multiple pages of different layouts, display them on multiple screens and switch them during operation
- Open existing configurations and adapt them to your needs
- Save and reuse groups of items as snippets.
- Download more snippets from our website

*optional

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SYSTEM CORE

MAXIMUM POWER AND SUPERB RELIABILITY:
THE SAPPHIRE'S PROVEN SYSTEM CORE.

A car will only perform as well as its engine, and a digital mixing console is only as good as its system core. The sapphire features a DSP core, based on the proven DALLIS I/O system that is also used in Lawo's large-scale mc²-series mixing consoles, and in Lawo routers. Thus, the sapphire not only benefits from innovative STAR² architecture but also from the modular concept and high quality of the plug-in cards. The system core handles routing, control and central signal processing (DSP). In addition, the core's motherboard provides the interfaces for various connections: from desk modules, panels and external components such as VisTool,

radio automation systems or audio workstations, to maintenance and configuration tools. If the system core is used without control surface modules, the special "Nova17" operating mode makes the sapphire's functionality available as a stand-alone or network-capable router application. Furthermore, the sapphire core runs without the use of a fan or a PC, a feature that assures reliability and short boot times.

SUPERIOR CONNECTIVITY

- Analog Mic / Line (transformer or electronically balanced)
- Headphones (including VCA interface)
- AES / EBU (AES3) with or without sample rate converter
- ADAT ®
- Serial data transfer (RS232, RS422, MIDI)
- GPIO (OC, Relay, VCA)
- 2 or 6 MADI ports on the motherboard
- RAVENNA Audio-over-IP option

SIGNAL PROCESSING IN THE SYSTEM CORE:

- Mono, stereo, surround and simulcast channels with

|	
- Input gain	- Fader
- Signal indicator	- Aux send with Pre / Post switching
- Direct out	- Pan / Balance
- Insert	- AutoGain for each mic input

IN ADDITION, SWITCHABLE IF REQUIRED:

- Equalizer with three fully parametric bands plus high/low pass filters
- Dynamics unit with gate, expander, compressor, limiter
- Delays of up to 340 ms with switchable units (meters, milliseconds, frames)
- DeEsser / AutoMix

MAINTENANCE

FAST, EXACT, AND UNCOMPLICATED:
THE SAPPHIRE'S SERVICE FEATURES.

These days, the central monitoring and easy maintenance of working equipment is becoming increasingly important. It is therefore no surprise that the sapphire, once again, meets the most stringent requirements in this respect. For example: enter the IP of your sapphire on a web browser and (assuming you are online) you get an immediate, complete overview of the current status of your mixing console.
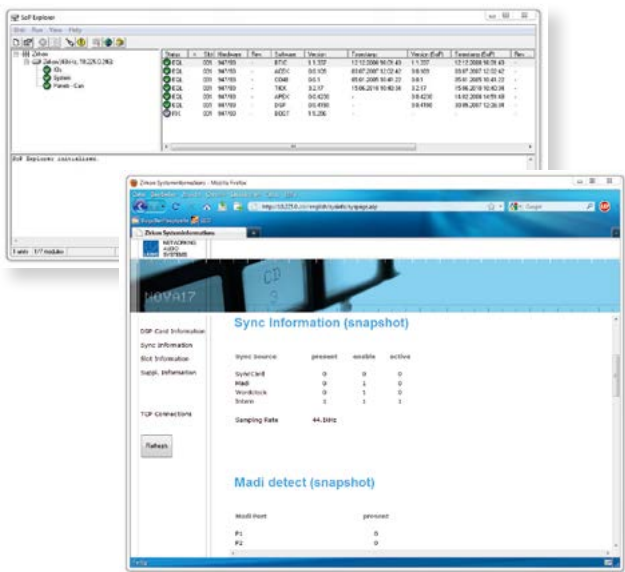
SAPPHIRE MAINTENANCE HIGHLIGHTS:

- Hot-pluggable modules that can even be replaced while on-air
- For error elimination and central monitoring, a web server is integrated with the PC-free control system. This can be accessed via a typical browser and the integral Ethernet TCP/IP interface
- Alert signals in the logic-programming framework can be freely linked, e.g. for status displays on the console's front panel or on the VisTool screen
- Project specific solutions offer the option to log alerts and messages in a central location, from one or several systems
- Simple maintenance – software can be updated from a central location via a network interface

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NETWORKING SAPPHIRES

NETWORKING SAPPHIRES.
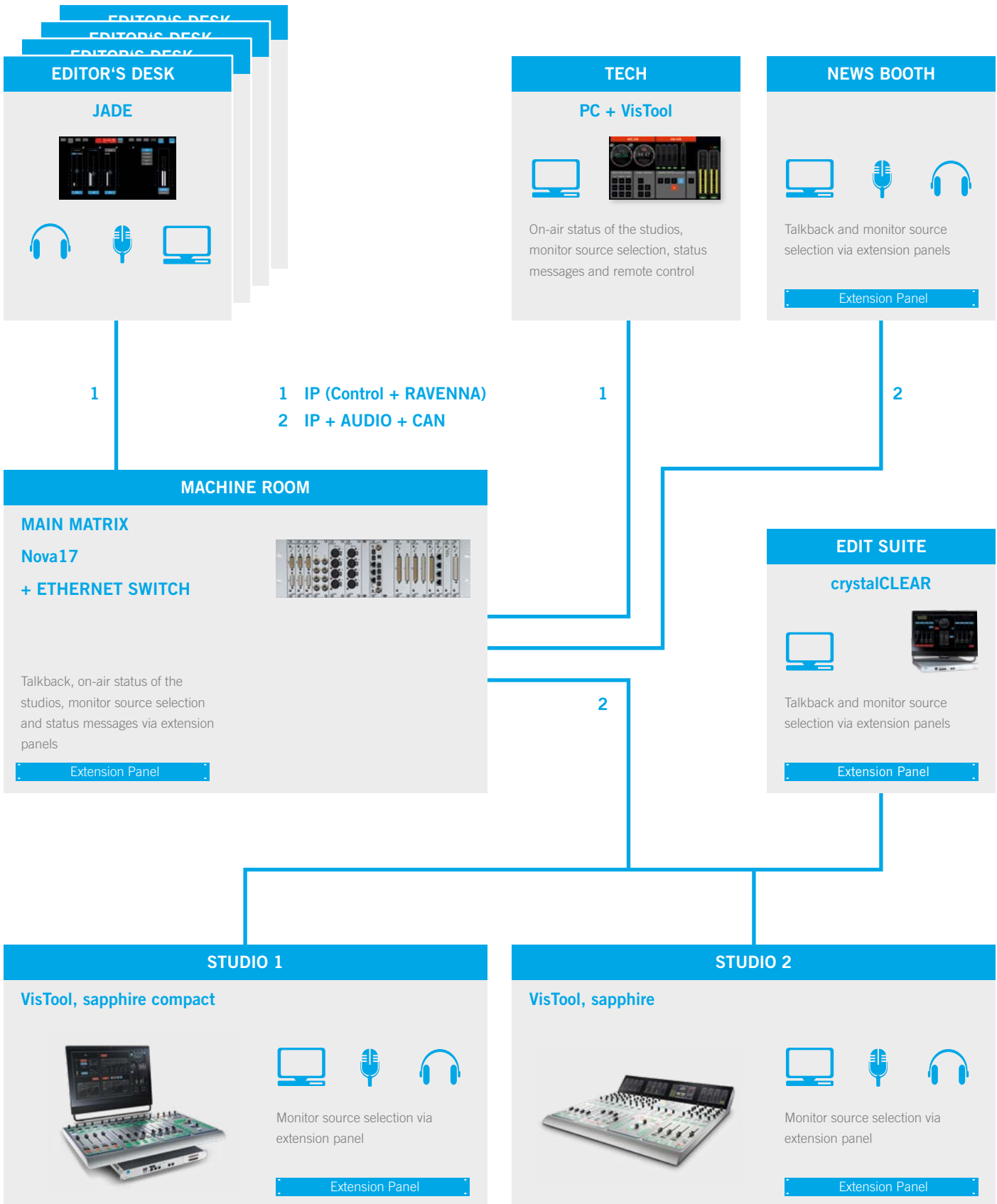
DESIGNED FOR EFFICIENT SYSTEM ARCHITECTURES.

As single workstation solution or as a player in a team, sapphire and sapphire compact consoles offer many features when it comes to networking. From MADI through RAVENNA / AES67 Audio-over-IP to remote control, sapphire series consoles provide full functional integration into comprehensive broadcasting systems. The consoles can also integrate external control panels for specific tasks – e.g. conference use, talkback circuits, I/O routing or prelisten of audio sources from other work areas. Up to 30 panels can be integrated into the system via CAN bus or Ethernet (TCP/IP).

AT A GLANCE

- RAVENNA Audio-over-IP networking (AES67 compatible), e.g. for seamless integration of playout servers
- Cost efficient MADI interfaces for high-performance multi-channel audio networking
- System-wide availability of signals (listen selections, live feeds etc.)
- Network control via TCP/IP for resource sharing or multi-studio operation
- Support of system-wide functions (broadcast button, talkback, control data etc.)
- Integration in video environments and larger systems via MADI and RAVENNA Audio-over-IP

ABOUT RAVENNA. THE OPEN STANDARD FOR REAL-TIME IP MEDIA NETWORKING.

RAVENNA is a technology for real-time distribution of audio and other media content in IP-based network environments. Utilizing standardized network protocols and technologies, RAVENNA can operate on existing network infrastructures. RAVENNA is designed to meet the strict requirements of the pro audio and broadcast markets, and features low latency, full signal transparency and high reliability. While primarily targeting the professional broadcast market, RAVENNA is also suitable for deployment in other pro audio market segments like live sound, install and recording. Possible fields of application include (but are not limited to) in-house signal distribution in broadcasting houses, theaters, concert halls and other fixed installations, flexible setups at venues and live events, OB van support, inter-facility links across WAN connections, and in production and recording applications. Unlike most other existing networking solutions, RAVENNA is an open technology standard without a proprietary licensing policy. RAVENNA is fully compatible with the AES67 standard.

EDITOR'S DESK

JADE

TECH

PC + VisTool

On-air status of the studios, monitor source selection, status messages and remote control

NEWS BOOTH

Talkback and monitor source selection via extension panels

Extension Panel

1

1 IP (Control + RAVENNA)

2 IP + AUDIO + CAN

1

2

MACHINE ROOM

MAIN MATRIX

Nova17

+ ETHERNET SWITCH

Talkback, on-air status of the studios, monitor source selection and status messages via extension panels

Extension Panel

EDIT SUITE

crystalCLEAR

Talkback and monitor source selection via extension panels

Extension Panel

2

STUDIO 1

VisTool, sapphire compact

Monitor source selection via extension panel

Extension Panel

STUDIO 2

VisTool, sapphire

Monitor source selection via extension panel

Extension Panel

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APPLICATIONS

APPLICATIONS.

THE BEST SOLUTION FOR RADIO HOSTS:
MAXIMUM RESULTS WITH MINIMUM EXPENSE.
Whether you are a radio host, DJ or editor, your one main concern is to produce a show that your audience will want to listen to. That means controversial topics, lively presentation and captivating contributions. It also means the right equipment: equipment that can be operated intuitively, is easy to understand and can still handle the multiple requirements of day-to-day radio work. In other words, the sort of features provided by the sapphire — the functional mixing console for hosts who want to focus on what is essential: superb broadcasts.

SAPPHIRE ADVANTAGES FOR HOSTS

- Reduced control surface results in a short learning curve
- VisTool touch screen software for visual feedback and enhanced user interface
- Motorized faders for the best overview and perfect interaction with radio automation systems
- Sophisticated n-1/conference logic for relaxed and secure broadcast operations
- Source-oriented operation – e.g. stereo and surround formats on one fader
- Intelligent user management for increased operating safety (access only to required functions)

THE PERFECT SOLUTION FOR SOUND MIXERS:
MODULAR EXTENSIONS, FLEXIBLE CONFIGURATION.
Central module, channel module, and several extension variants — you can create the mixing console that perfectly suits all your needs, thanks to a number of possible modular extensions. Additional configuration options and software solutions bring the degree of possible customization to a new level. Even when it comes to user-friendliness, the sapphire will provide you with transparent workflows, thus significantly streamlining your everyday tasks.

SAPPHIRE ADVANTAGES FOR AUDIO MIXERS

- Intuitive user interface for rapid access and maximum user confidence
- Access to up to 192 complete DSP channels and up to 120 virtual faders, even on small layouts (multi-layer operation)
- Flexible configuration for individualized workflows
- High-performance networking of audio and control
- (for resource sharing or multi-studio operation in broadcast complexes)
- Extensive portfolio of hardware and software components, plus interfaces for remote control (radio automation, audio workstations, routing etc.)
- Flexible fader assignment including mirroring by mapping function

**THE BEST SOLUTION FOR A BROADCAST COMPLEX:
INTERCONNECTION OF SEVERAL SYSTEMS VIA NETWORK.**

The sapphire is not only a convincing soloist — it also performs as a perfect team player. For example, the sapphire can fit perfectly into broadcast networks. Besides the option of low-cost audio connection via MADI interfaces, broadcasting setups can also be realized at a control level — featuring, of course, resource sharing, standby production cubicles and multi-studio operation. For this, freely configurable control signals can be distributed via Ethernet-TCP/IP to other independent systems, thus enabling multiple and cross-system functions, such as program switches, talkback, conferencing, monitoring selections and red light routing. Another benefit: the high cost-efficiency of integrated sapphire solutions.

**AN EXAMPLE OF NETWORKING OPTIONS
FOR RADIO BROADCASTERS:**

A network comprising a Nova29 router with three sapphire consoles connected via MADI to a complex broadcast system. In an emergency situation, the Nova29 and sapphire consoles can be operated independently, thus assuring the greatest security against downtime.

Main Matrix
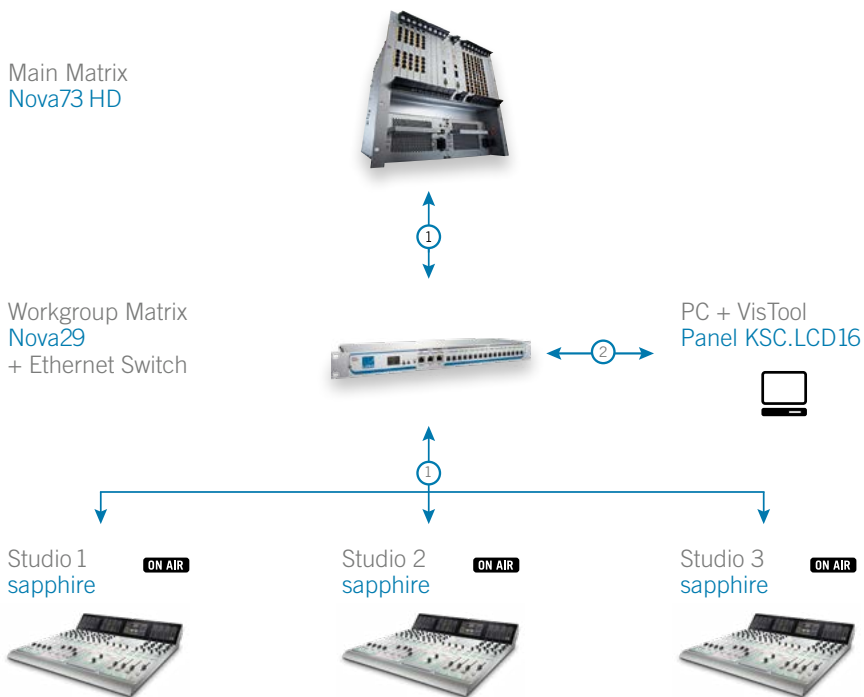Nova73 HD

Workgroup Matrix
Nova29
+ Ethernet Switch

PC + VisTool
Panel KSC.LCD16

Studio 1
sapphire   ON AIR

Studio 2
sapphire   ON AIR

Studio 3
sapphire   ON AIR

1 MADI + Ethernet

2 MADI + Ethernet
   + Audio + CAN

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SPECIFICATIONS

SPECIFICATIONS

CONTROL SURFACE
- Available as desk top or integrated version
- Up to 60 motorized 100 mm faders
- Operation possible with multiple operating layers (multi-layer, up to 120 virtual faders)
- Panel version with extensions available as upgrade
- Optional visual extension with multi touch function to display channel levels and operation modules

SYSTEM CORE
- Modular plug-in card system based on the DALLIS I/O system Central motherboard with integrated control system and signal processing (redundantly designed as an option)
- Integrated matrix with up to 512 inputs and outputs (non-blocking, 384 MADI + 128 DALLIS I/O-slots)
- PC-independent and fan-free operation
- Optional redundant power supply

SIGNAL PROCESSING
- Integrated routing matrix, 768 x 768 crosspoints, non-blocking, transparent routing
- 192 mono DSP input channels (stereo, surround or simulcast, coupling possible) with input gain, panpot/balance, direct out and insert
- AutoGain for each mic input
- 128 individually assignable DSP modules (96 on input channels, 32 on sums, coupling possible like input channels)
- EQ (3 fully parametric bands and 2 filters)
- Dynamic units (gate, expander and compressor)
- Limiter
- Delay (up to 340 ms with switchable units: meters, ms or frames)
- 80 mono summing busses (stereo or 5.1 coupling possible)
- 500 meters (mono; stereo and surround coupling possible) with loudness function on sums and channels
- 64 mini-mixers (2 x 2 + 2 x TB 1 out of 8, for monitoring, stereo-to-mono, etc.)
- 32 Deessers / AutoMix units (mono or stereo)
- Integrated intercom matrix with up to 64 talkback stations

CONTROL
- Up to 5 PFL busses
- Surround sources (5.1 or 5.1+2) and busses (5.1)
- Integrated mix-minus/conference logic
- Freely programmable logic core (redlight, faderstart, program switch, TB integration, etc.)
- IP-based and serial interface for interaction with radio automation systems ("sapphire" operating mode)
- IP-based and serial interface for matrix control ("Nova17" operating mode)
- Controller and routing matrix optionally redundant
- Ember+ interface for integration with master control systems
- Optional MIDI interface for interaction with audio workstations (HUI protocol e. g. for ProTools™)
- Remote control of external Lawo matrices possible (e. g. source selection)

SYNCHRONISATION
- Wordclock input and internal generator
- Optional via MADI
- Supported sample rates 48 kHz and 44.1 kHz
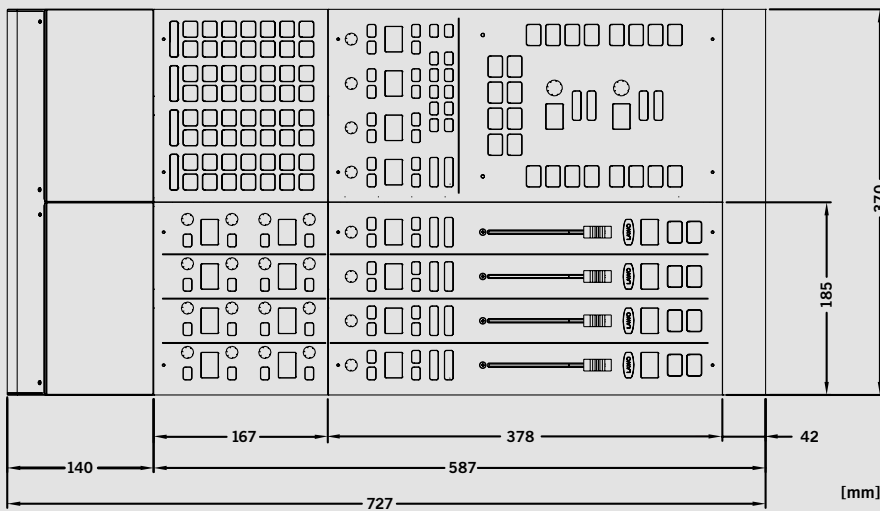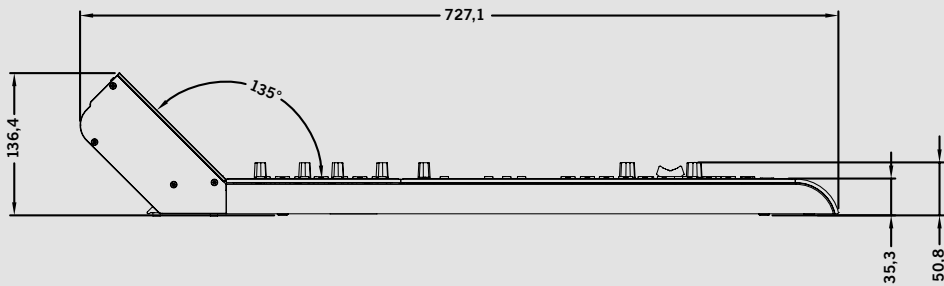
INTERFACES
- Analog Mic/Line (transformer or el. balanced)
- Headset (incl. VCA interface)
- AES/EBU (AES3) with and without sampling rate converter (SRC)
- ADAT® (ADAT® is a registered trademark of Alesis, LLC and is used here under license.)
- Serial data transfer (RS232, RS422, MIDI)
- GPIO (OC, Relay, VCA)
- 2 or 6 MADI ports on the masterboard
- RAVENNA/AES67 Audio-over-IP option

CONFIGURATION AND MAINTENANCE
- Software for system configuration and logic programming
- Integral web server for system diagnosis
- Dedicated SW tool for software updates
- Remote maintenance using VPN

VISTOOL
- Software for the enhancement of the control surface, support of touchscreens
- Visualization of DSP parameters, loudness, signal levels/states
- Additional functions and controls (e.g. timer, snapshots)
- Powerful Snapshot Management Solution
- Sophisticated User Rights-Management
- Remote Control of Ember+ enabled devices
- Display of Websites and Lawo V__line Video Thumbnails
- TCP/IP control connection to Compact Engine
- Min. PC requirements: Intel i5 or higher (CPUBenchmark min. 1350 Points @ http://www.cpubenchmark.net/), min. 2GB RAM, Windows 7 or higher

[mm]

EXTENSION PANELS (OPTION)

- Several panel variants (19"/1 RU) with illuminated buttons, LCD-keys, potentiometers and GPIO
- Control of logic functions and level adjustment for e. g. conferences, talkback and monitoring
- Connection of up to 30 panels via CAN-Bus or TCP/IP

KSC.T20   19"/1RU panel with 20 backlit buttons

KSC.LCD16   19"/1RU panel with 16 LCD buttons

KSC.LCD15P1   19"/1RU panel with 15 LCD buttons, and 1 rotary control
                     (e. g. for level control)

KSC.LCD14P2   19"/1RU panel with 14 LCD buttons, and 2 rotary controls

KSC.GPIO32   19"/1RU panel with 32 GPIO contacts and 8 VCA inputs

sapphire compact

THE SMART CHOICE

PERFECT AS IT IS.

ADVANCED ON-AIR MIXING CONSOLE FOR RADIO.

sapphire compact is the ideal mixing desk for the modern AoIP studio. This console simplifies the workflow of complex and fast-paced live radio shows with a number of new innovative features. AutoGain, for example, quickly optimizes the dynamic range of microphone preamps adaptively with a single button. Another Lawo innovation is AutoMix, our intelligent DSP algorithm which gives presenters the power to create content hands-free and error-free. Additionally, sapphire compact delivers a unique layering

feature which allows the console to manage a live broadcast while also performing alternate tasks such as voice tracking, phone call editing, and even light production. The elegant and flexible control surface design is available in desktop or flush-mounted styles. A deceptively-compact 1RU engine powers the control surface and delivers sophisticated signal processing functions along with a full complement of audio inputs and outputs – both analog and digital, AoIP and baseband.

■ RAVENNA Audio-over-IP networking (AES67 compatible),
■ e.g. for seamless integration of playout servers
■ Cost e

AT A GLANCE

■ Available as 16 live sources with 8 faders or 24 sources with 12 faders
■ Control surface available as split or unibody frame, flush mounted or counter-top
■ Motorized faders always show the current mix levels, no guess-work required
■ One button AutoGain for adaptive microphone level optimization
■ Sophisticated AutoMix for hands-free blending of contribution elements
■ Intuitive layering for one-touch voice tracking and offline work
■ VisTool 5.0 software for extended visualization and control
■ Full complement of mic inputs, analog and digital line inputs and outputs
■ Optional RAVENNA/AES67 networking and MADI
■ Stereo or 5.1 mix outputs

sapphire compact
SYSTEM CORE

4x Mic In / 4x Line In

8x Line In / 8x Line Out

4x AES3 In with SRC / 4x AES3 Out

1x RAVENNA (8/64 channels, redundancy port)

COMPACT ENGINE.

COMPACT SIZE: HIGH PERFORMANCE.

Equipped to the max, the sapphire compact system core can be fired up instantly. In its basic configuration, the compact core comes with all the required audio interfaces and provides complete routing, control and central signal processing (DSP) facilities. Everything is handled within the system core – communication between the control surface and panels, network connections for VisTool and for diagnostics and service, interfaces for external equipment such as radio automation systems and, naturally, audio peripherals. Should your requirements still not be covered, the console can be extended with up to two audio interface cards, fitted to the integral expansion slots. The cards come in various types: mic, analog line, AES3 or RAVENNA Audio-over-IP. In addition, the high-performance MADI option, with up to 256 additional channels, facilitates connection from the core to other mixing consoles or audio networks, via fiber links.

Status display with menu control
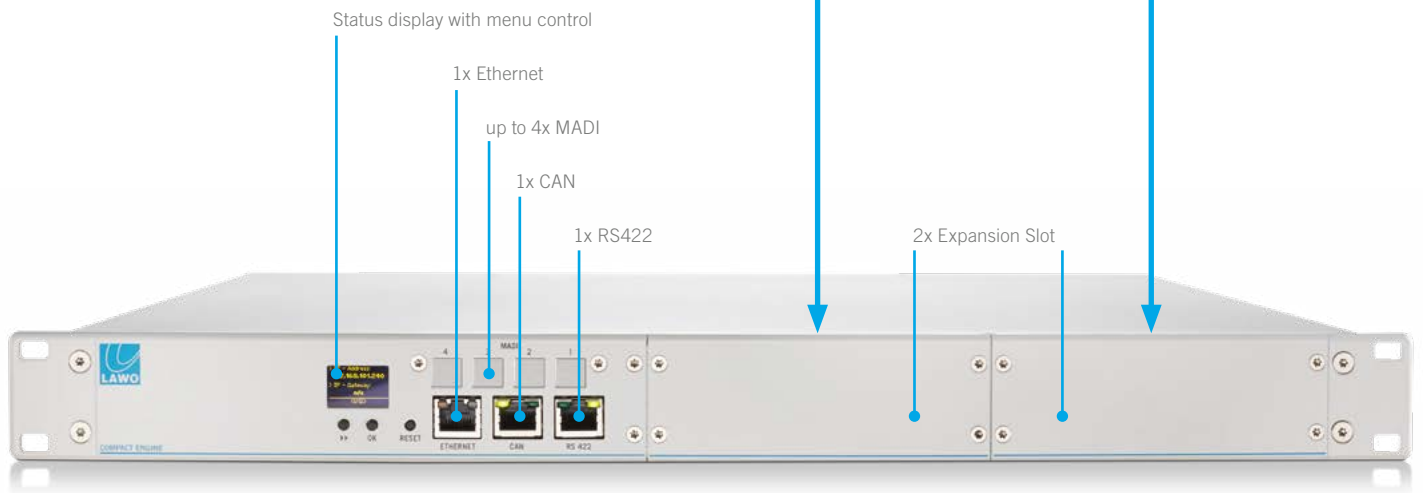
1x Ethernet

up to 4x MADI

1x CAN

1x RS422

2x Expansion Slot

Headphone 1 & 2

8x Line Out

4x Mic In / 4x Line In

4x AES3 In with SRC

4x AES3/EBU OUT

8x GPIO In / 8x GPIO Out

Wordclock In / Out

12V DC Input for power supply redundancy

Mains

sapphire compact
SPECIFICATIONS

SPECIFICATIONS

CONTROL SURFACE

- Available as desk top or countersunk version with 8,12 or 12-fader split
- Motorized 100mm faders
- Two layer operation (up to 24 virtual faders)
- 6 fader maps for individual fader layouts that can be recalled on a single button press
- Sends on fader for precise bus mixing levels

SYSTEM CORE

- Base unit 19"/1 RU with control system, signal processing and audio interfaces
- Integrated routing matrix (non-blocking) with up to 288 inputs and 292 outputs
- Active cross ventilation, system-controlled
- Integral wide-ranging power supply 100–240 V AC and 12 V DC connection with redundancy switch over

SIGNAL PROCESSING

- Lawo AutoGain input calibration for each mic input
- Up to 24 fader channels with input gain (max. +18dB) and pan/balance
- 8 VCA Groups
- 16 Stereo Inserts
- Direct Out per fader
- 64 assignable meters with silence detects and Loopbacks
- Up to 100 definable sources (mono or stereo, 5.1 surround)
- 16 Equalizers: 3 fully parametric bands and 2 semi parametric shelving bends (mono or stereo)
- 16 Dynamics units: gate, expander, compressor (mono or stereo)
- 16 Limiters (mono or stereo)
- 16 De-esser / AutoMix (mono or stereo*)
- 16 Delays, up to 320 ms (mono*)
- 40 Summing buses (mono* including PFL)
- Up to 5 individual PFL Busses
- 64 Minimixers (2 x 2 mixers for monitoring, stereo-to-mono, etc.)
- Internal tone generator
- (*Stereo coupling possible)

CONTROL

- Programmable logic core (red light, fader start, broadcast button, talkback integration etc.)
- TCP/IP remote control for connected Lawo matrix
- Integrated n-1/conference logic (2 independent systems)

- Interface for integration with radio automation systems (serial, TCP/IP)
- Networking via TCP/IP (Ember+)

SYNCHRONISATION

- Wordclock input and internal generator
- Optional sync via MADI or card slot 1 (AES or RAVENNA)
- 48 kHz and 44.1 kHz

INTERFACES

- 4 Analog mic inputs (incl. bass cut, stereo coupling possible, also usable as line inputs)
- 4 Analog line inputs
- 8 Analog line outputs
- 2 Headphone outputs (stereo)
- 4 AES3 inputs (stereo) with sample rate converter (SRC)
- 4 AES3 outputs (stereo)
- GPIO (8 optocouplers, 8 silent cmos relays)
- Optional MADI extension with up to 4 ports (max. 256 mono channels)
- 2 slots for I/O extension cards:
  - 4 Analog mic in/4 Analog line in
  - 8 Analog line in/8 Analog line out
  - 4 AES3 in with SRC (stereo)/4 AES3 out (stereo)
 - RAVENNA/AES67 Audio-over-IP

CONFIGURATION AND MAINTENANCE

- Software for system configuration and logic programming
- Integral web server for system diagnosis
- Dedicated SW tool for software updates
- Remote maintenance using VPN

VISTOOL

- Software for the enhancement of the control surface, support of touchscreens
- Visualization of DSP parameters, loudness, signal levels/states
- Additional functions and controls (e.g. timer, snapshots)
- Powerful Snapshot Management Solution
- Sophisticated User Rights-Management
- Remote Control of Ember+ enabled devices
- Display of Websites and Lawo V__line Video Thumbnails
- TCP/IP control connection to Compact Engine
- Min. PC requirements: Intel i5 or higher (CPUBenchmark min. 1350 Points @ http://www.cpubenchmark.net/), min. 2GB RAM, Windows 7 or higher

SURFACE DIMENSIONS
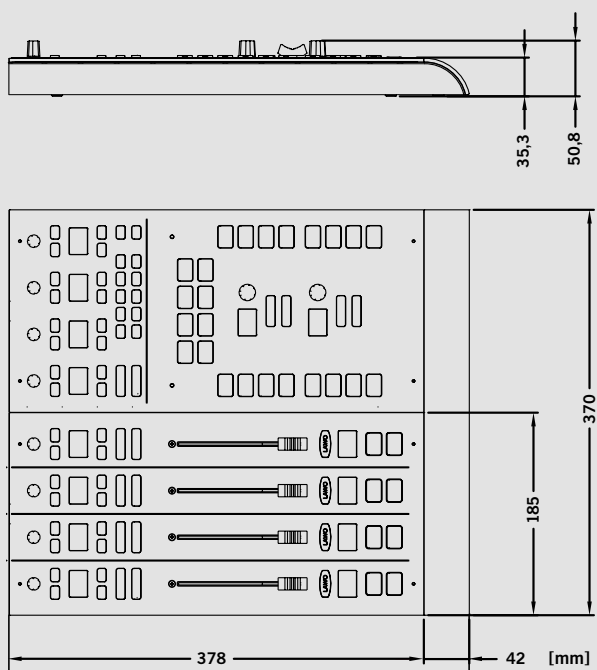
SURFACE CONFIGURATIONS

8,12 and 12-Fader Split

EXTENSION PANELS (OPTION)

- Several panel variants (19"/1 RU) with illuminated buttons, LCD-keys, potentiometers and GPIO
- Control of logic functions and level adjustment for e. g. conferences, talkback and monitoring
- Connection of up to 30 panels via CAN-Bus or TCP/IP

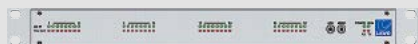|		
	KSC.T20	19"/1RU panel with 20 backlit buttons
	KSC.LCD16	19"/1RU panel with 16 LCD buttons
	KSC.LCD15P1	19"/1RU panel with 15 LCD buttons, and 1 rotary control (e. g. for level control)
	KSC.LCD14P2	19"/1RU panel with 14 LCD buttons, and 2 rotary controls (e. g. for level control)
	KSC.GPIO32	19"/1RU panel with 32 GPIO contacts and 8 VCA inputs

sapphire

ADVANCED
ON-AIR MIXING
CONSOLE

HEADQUARTERS

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Rastatt

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