mc² 36

ALL-IN-ONE
PRODUCTION
CONSOLE

LAWO

EASY
VERSATILE
RELIABLE

DESIGNED FOR YOUR APPLICATIONS

mc²36

ALL-IN-ONE PRODUCTION CONSOLE

With experience gathered over more than 40 years, Lawo is distinguished by its engineering and manufacturing of most reliable and most advanced audio mixing consoles available. Originally developed for broadcast environments with zero tolerance for failure, Lawo consoles are also widely chosen for their audio quality in theater, studio and live performance applications.

The new mc²36 is the German company's first all-in-one console, designed for maximum ease-of-use and "unbelievable" value-for-money, to make the benefit of this expertise available for an even broader group of users. The compact size, in-built DSP and I/O make the new console equally perfect for permanent installations with limited space and rental companies' transportation demands.
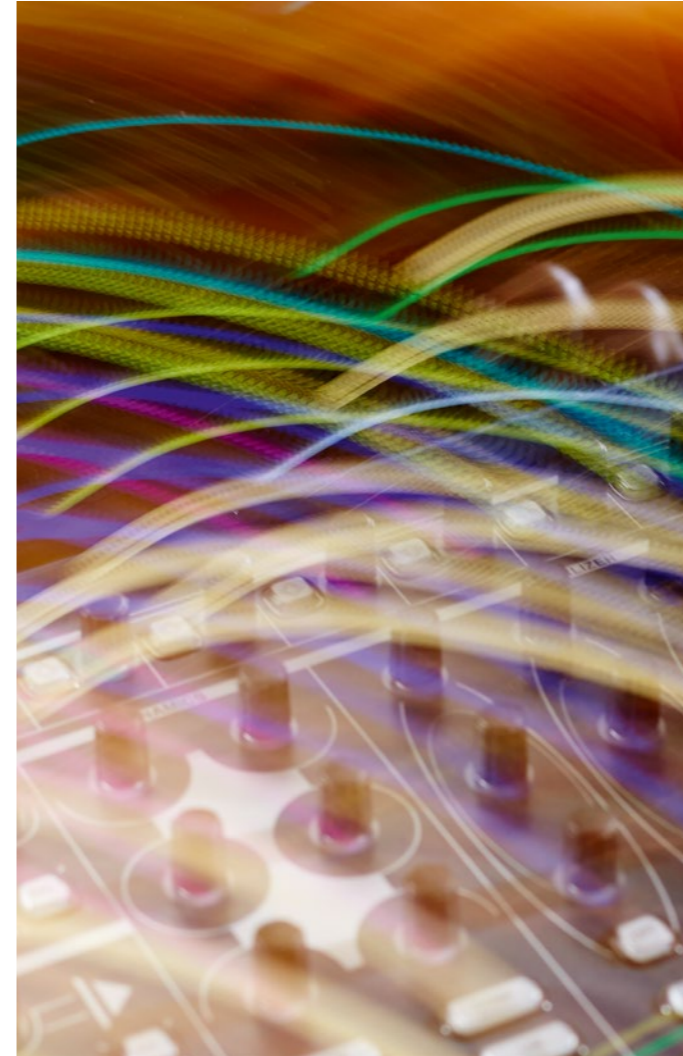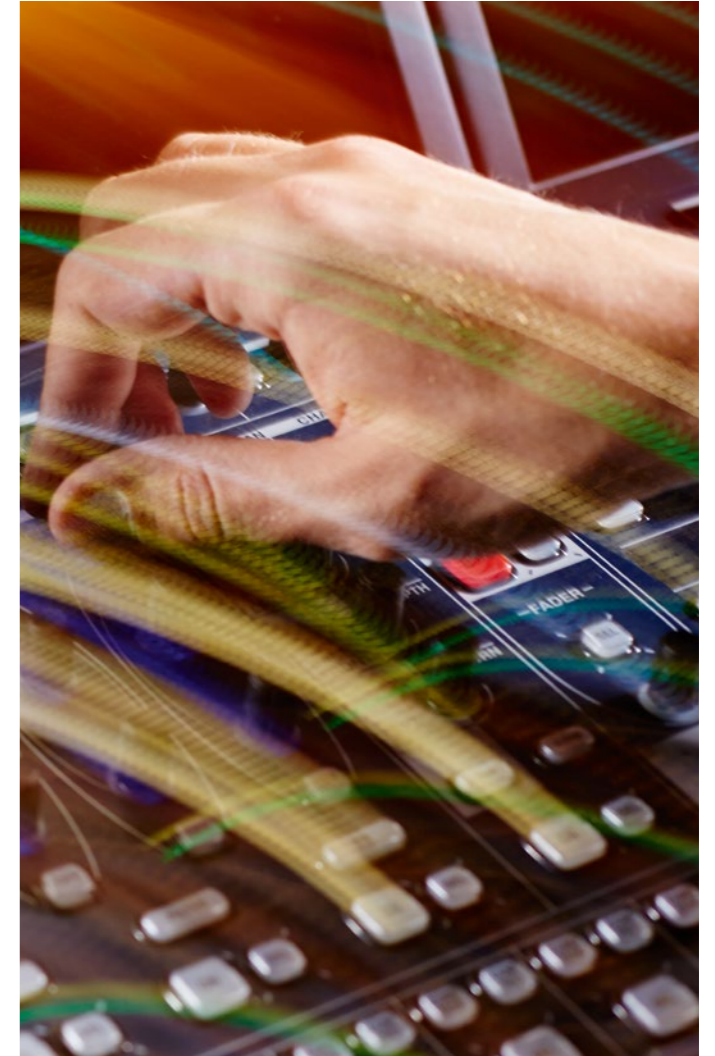
mc²36
CAPABLE & ADAPTABLE

LAWO QUALITY – AUDIO UNCOMPROMISED
Like all Lawo consoles, the mc²36 is a precision tool designed to give uncompromised audio quality and maximum reliability. Beyond the feature set of a fully equipped audio console, the mc²36 provides additional Lawo-specific features that improve the workflows and quality of any broadcast, theater production or live performance.

LAWO OPENNESS – FUTURE-PROOF BY DEFINITION
While the mc²36 comes fully prepared for stand-alone operation, it is also equipped for expansion and networking with other mc²36/56/96 consoles or Lawo Nova audio routers. A MADI tie-line port and three RAVENNA/AES67/ST2110-30/-31 Audio-over-IP ports provide future-proof connectivity for additional I/O devices and networking.

LAWO FLEXIBILITY – TRULY UNIVERSAL
And even though the mc²36 is ready-to-go, it is not limited to a fixed configuration. Any aspect of the console can be adapted to meet specific users' needs. All production data can be easily saved on a USB-stick and transferred to another console – particularly convenient for rental applications.

mc²36

UNBELIEVABLE EASE OF USE

A PERFECT SYMPHONY OF HARDWARE & SOFTWARE CONTROLS
The Lawo mc²36 was designed as a truly universal console with focus on its ease-of-use. The pleasing console geometry combines with perfectly integrated displays and controls, to provide an ideal tool for various applications. The 21.5" full HD touch-screens work hand-in-hand with the touch-sensitive color-illuminated rotary encoders. E.g. the equalizer window will automatically pop-up when touching the equalizer encoders – and after adjusting the parameters the auto-close function will close the window without additional user action to restore the full overview.

mc²36

UNBELIEVABLE EASE OF USE

THE PHYSICAL USER INTERFACE

The Lawo mc²36 has a newly designed console layout. While looking familiar to existing mc² users, the console is now even more intuitive to novice users. Its new central user section is extremely compact and combines easy access to all parameters with an enhanced overview.

THE TOUCH-SCREEN USER INTERFACE

Super-bright 21.5" HD touch-screens provide excellent overview of all aspects of the console, and allow immediate operation via touch-optimized dialog windows. For input patching, it is only necessary to touch the input section of the desired fader strip and select the source directly on the screen. Tasks such as VCA allocation, bus or aux assignments and mix-minus configurations are also performed intuitively via the touch-screen. Again, the console can be readily adapted to user's requirements by

adjusting the channel display accordingly – just choose and display those parameters that are important and hide any unnecessary or distracting elements. For example, you could de-select the track buses or show 16 instead of eight aux buses. The metering automatically scales to the maximum available space, showing all fader levels permanently on the HD display. In addition, multi-row metering allows for permanent metering of signals from other layers or banks.

1 Channel Touch Screen	**5** User Buttons
2 Central Touch Screen	**6** Monitoring Section
3 Central Control Section	**7** Bank & Fader Control
4 Channel Strip	**8** Screen Control Section

mc²36

A FEATURE RICH ENVIRONMENT

INTERACTION

The mc²36 is a universal console, providing a comprehensive feature set for broadcast, theater, house of worship, live and install applications. To make this possible, Lawo has optimized its features to provide benefits not only for one application, but for all. The one common factor is that everything is optimized for fast-paced operation in demanding environments. Here are just some of the highlights of these workflow optimization tools.

mc²36

A FEATURE RICH ENVIRONMENT

LOUDNESS METERING

Originally requested for broadcast applications, Lawo has developed built-in loudness metering into a tool that is useful in live, theater and house of worship applications. The feature provides full loudness control in accordance with ITU 1770 (EBU/R128 or ATSC/A85) and features peak and loudness metering either separately or in combination. In addition to the sums, Lawo Loudness Metering can also measure individual channels, which allows a fast and convenient "visual" mixing, e.g. of background singers or multi-microphone setups for brass sections, strings and choirs.

LISTEN SENSE

Lawo's unique Listen Sense function allows an offline modification of channel parameters like EQ or dynamics. Unnoticed by the audience, a sound engineer can adjust the settings and listen to his result PFL. Once all is set, the engineer can switch the settings online. This allows unnoticeable sound adjustments, e.g. when a live set-up changes with no time for prior EQing of a channel.

AUDIO-FOLLOW-VIDEO

The Audio-follow-Video function allows automated fades from one camera (and associated audio channels) to another. These fades are triggered by events, e.g. a camera tally, or other events. Parameters like Rise Time, On Time, Hold Time, Max Time and Fall Time, as well as On/Off Levels, give full control over the envelope and the sonic result. Advanced parameters also allow short sequences of up to 128 individual events to be controlled.

UPMIX / DOWNMIX / AUTOMIX

The automated mixing assistants include a Downmix function and Lawo's highly acclaimed AMBIT Upmix function, which guarantees perfect conversion of stereo signals into amazingly authentic surround sound using very few parameters. In addition, the Automix function automatically adjusts the levels of active and inactive microphones, while keeping a constant ambient level. The feature provides unique functionality especially in live productions requiring several presenters or performers. Lawo Automix can be used for any signals, from mono and stereo to multiple surround channels. Automix minimizes background noise and crosstalk, guaranteeing reduced sound coloration. Truncated sentences and late fade-ins are things of the past, and the sound engineer can focus on balance and sound quality.

WAVES SOUNDGRID® INTEGRATION

The Lawo mc²36 offers seamless integration of Waves SoundGrid® servers, providing a solution for extensive real-time signal processing in addition to the console's internal processing engine. The system gives operators access to Waves' extensive plug-in selection, allowing them to conveniently control plug-ins like reverbs, multi-tap delays, graphic equalizers or multiband compressors via the console's keyboard, touch-screen and rotary encoder. No additional screens or control devices are needed, which results in a clean working space and a minimum of external hardware. All plug-in settings can be easily stored and recalled with the console's snapshot and production files.
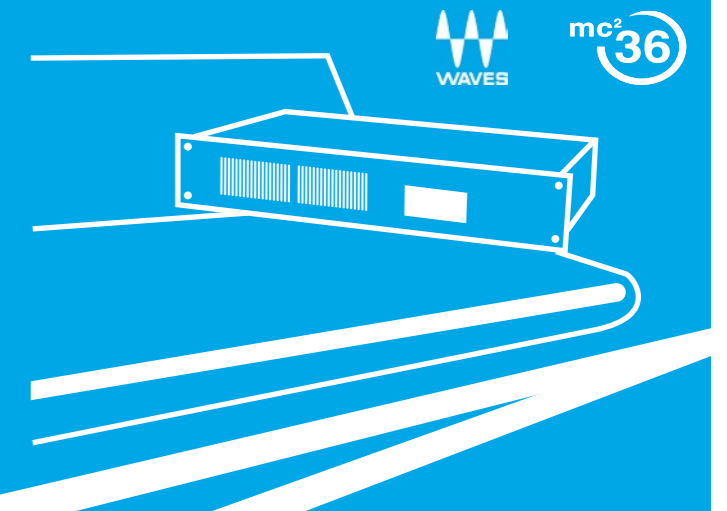
mc²36

A FEATURE RICH ENVIRONMENT

REMOTE DESKTOP

Lawo's integrated Remote Desktop function allows the seamless integration of multiple external PCs with third-party solutions into the console's user interface. With the switch of a button, the external PC and its software is displayed in the console's screen while the console's keyboard, touchpad and touchscreen provide control. In this way, you can integrate a multitrack recording system for offline soundchecks using the console's A/B inputs for switching between live and recorded sources, or control PA software or external effect engines. As a result, less equipment is needed and the engineer can control the complete set-up conveniently from a single, central position.

mxGUI

The mc²36 comes with mxGUI, intuitive software for Mac and PC allowing complete offline configuration and advance show preparation. You can lay out your console, configure the matrix in list or XY view, set mic pre-amp gain and then generate production data for your mc²36. In addition, you can change the layout of your user buttons at any time, and assign new tasks from an extensive function list. mxGUI is also perfect for remotely operating the console from a tablet PC, e.g. for adjusting the mix from within the audience.

FULL CHANNEL STRIP CUSTOMIZATION

To perfectly fulfill the creative needs of their users, Lawo mc² consoles allow users to re-arrange the order of all DSP modules – including channel direct outputs, meter point, fader and aux sends without restriction. Even the different modules of the dynamics section (Gate, Expander, Compressor and Limiter) or the internal Digital Amplifier can be placed individually within each channel's signal chain.

REVEAL FUNCTION

The Reveal function enables automatic input sorting of VCAs. When activating Reveal for a dedicated VCA fader, the console sorts all channels of that specific VCA group at a pre-defined position, giving instant access no matter in which bank or layer the channels are originally based. After deactivating Reveal, the console returns to its prior fader layout. This makes it possible to conveniently handle large productions without the need for dozens of faders.

READY FOR THE ROAD

With its all-in-one approach, the compact mc²36 is especially attractive for mobile productions and rental companies: Only one flightcase is required for console, DSP core and I/0. In addition to the German quality chassis and electronics, the mc²36 can be ordered in a heavy-duty flightcase version ready for the road. But its not just the hardware factors that make the mc²36 a perfect choice for rental companies – features like saving and loading configurations and show files easily via USB sticks are especially valuable in the rental and touring business, where several consoles and users might be involved.

mc²36
UNBELIEVABLE SOUND

LAWO SOUND HAS NEVER BEEN THIS AFFORDABLE

Lawo consoles have been synonymous with excellence in audio quality for more than 40 years – and the mc²36 is no exception. From input to output, from its microphone preamps to its DSP processing algorithms, this console is a precision tool for any audio production, providing a level of sound quality never before achieved in this price segment.
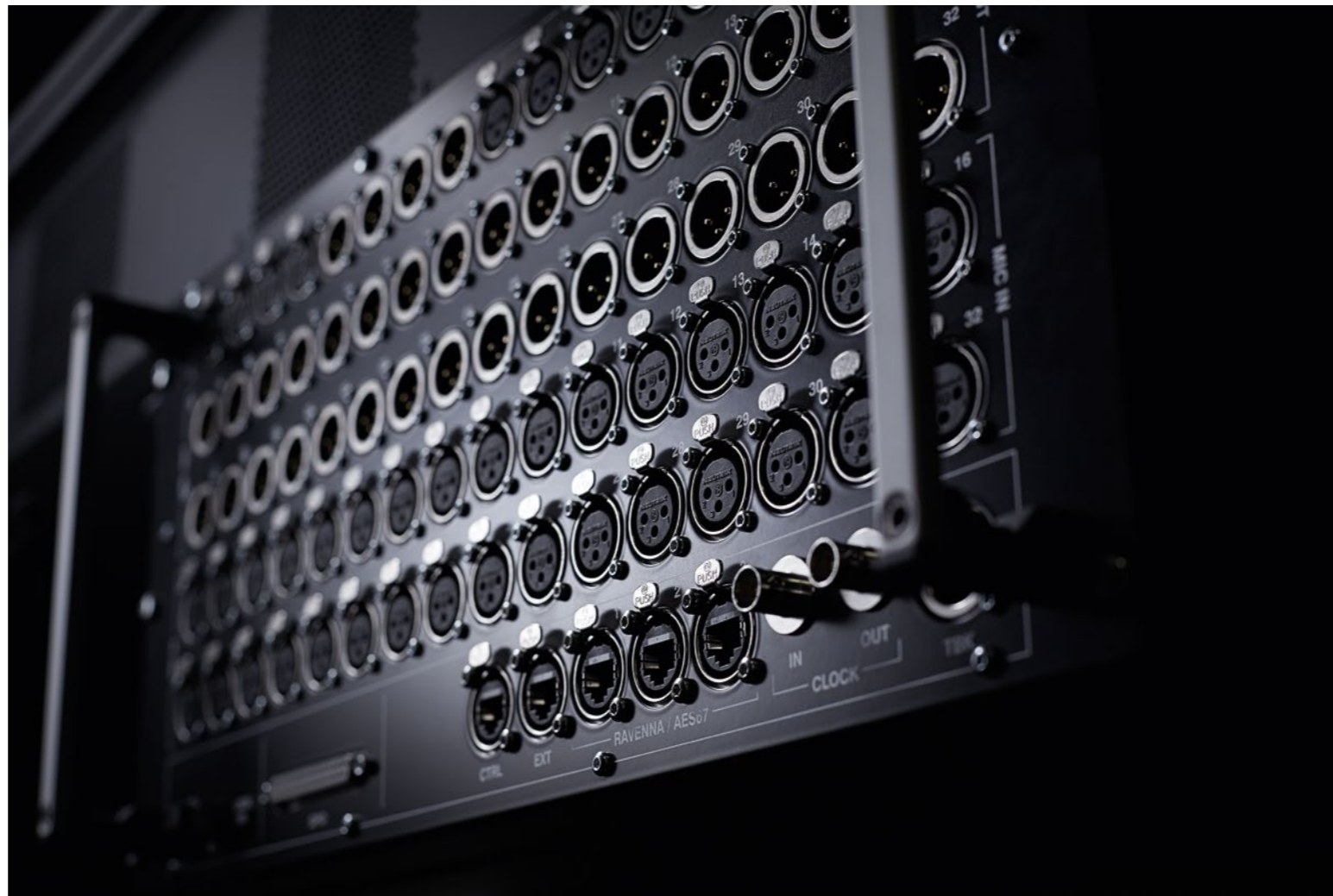
mc²36

UNBELIEVABLE SOUND

ONBOARD I/O

The Lawo mc²36 features integrated input and output connectivity to meet for a broad range of broadcast and install applications, as well as FOH and monitoring. The 32 Lawo microphone preamps are identical with those found on Lawo's renowned 941/55 microphone card for DALLIS systems, providing an extremely linear frequency response of only 0.03dB between 20Hz and 20kHz and an unbelievably low THD of 0.0006%.

I/O OVERVIEW

32 Mic/Line inputs
32 Line outputs
8 Digital AES3 inputs
8 Digital AES3 outputs
8 GPIO
1 MADI (SFP)
3 RAVENNA/AES67/ST2110-30/-31
1 Headphones

In addition to the onboard inputs and outputs, a MADI tie-line connection and three RAVENNA/AES67/ST2110-30/-31 Audio-over-IP ports provide future-proof connectivity for up to 384 external inputs and outputs, resulting in a total capacity of 496 physical inputs and outputs. The mc²36 is fully prepared for intelligent networking with other mc² 36/56/96 consoles. It can also be operated in combination with Lawo Nova audio routers, giving instant access to thousands of audio channels. Lawo mc² consoles provide intelligent mechanisms, including user-right management to allow input sharing between several consoles.

IF PLENTY IS NOT ENOUGH…

The mc² Compact I/O is a convenient and cost-efficient way to expand the mc²36's connectivity and to provide a distant stagebox solution in addition to the On-board I/O. Connected via CAT5 or fiber (optional), the ruggedized 5RU stagebox provides 32 Mic/Line inputs, 32 Line outputs, 8 digital AES3 inputs, 8 digital AES3 outputs, 8 GPIO and a MADI (SFP) port. The mc²36 allows for connecting up to three mc² Compact I/O.

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. Using standard network protocols and technologies, RAVENNA can operate over existing network infrastructures, while meeting 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 areas 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 compliant with the AES67/ST2110-30/-31 standards.

mc²36

UNBELIEVABLE SOUND

INTEGRATED DSP MICRO-CORE

The Lawo mc²36 features a new, integrated DSP micro-core with an internal 512x512 port audio matrix. It is super-compact and optimized for low power consumption using inaudible, low-spinning fans for cooling. This is especially important in environments such as concert halls, where fan noise is obtrusive.

To provide maximum reliability, the mc²36 is not only equipped with redundant power-supplies but also redundant DSP cards – unprecedented at this price point. The DSP resources are fully flexible and can be allocated according to application. Depending on the selected DSP mode, the processing capacity ranges from 48 DSP channels (Recording Mode, providing 96kHz/48kHz with DSP redundancy) to 192 DSP channels (Broadcast Mode, at 48kHz without DSP redundancy). Independent from the selected DSP mode, the engines provide completely independent algorithms at all time, with no compromise in quality even when all channels are in use. With internal headroom of >1000dB and Lawo algorithms, the audio quality of further processing is guaranteed throughout the signal chain.

As a result, the DSP flexibility and internal audio quality make the console truly universal: set it up to record a symphonic orchestra one day, and run a TV production the next.

mc²36

UNBELIEVABLE SOUND

SIGNAL PROCESSING

Maintaining its claim to uncompromised audio precision, Lawo has equipped the mc²36 with the same signal processing algorithms as its larger siblings. As on any mc² console, users can easily re-arrange the order of all DSP modules without restriction, giving creative freedom and broadening the console's versatility.

1 INMIX

The Inmix module controls the pre-amplification for analog and digital sources, including Gain, Balance, Low-cut Filter, M/S Decoder etc.

2 DELAY

Lawo's Delay module provides click-less delays of up to 1.8 seconds, allowing inaudible delay adjustments even during live productions. Application specific setting allows delays to be switched between meters (for delay compensation for live P.A. systems) and milliseconds and frames (for broadcast).

3 DIGIAMP

The DIGIAMP is an additional module to change the amplification within the channel.

4 DYNAMICS

The mc²36 offers four independent dynamic modules: Gate, Expander, Compressor and Limiter. These can be placed independently of each other anywhere in a channel's signal chain. All dynamic modules are extremely precise and do not add unwanted coloration to the sound. The adjustable "look-ahead" function retains the source's sound characteristics even with large dynamic changes. The limiter can be used as a high-quality brick-wall limiter.

5 EQ

The console also provides three independent EQ modules: EQ, Filter and Side-chain Filter. The EQ is 4-band, fully parametric. The 2-band Filter module can be placed independently from the EQ anywhere in the signal chain, for example before the direct outs. Additionally, a 2-band side-chain filter can be applied to the gate or compressor.
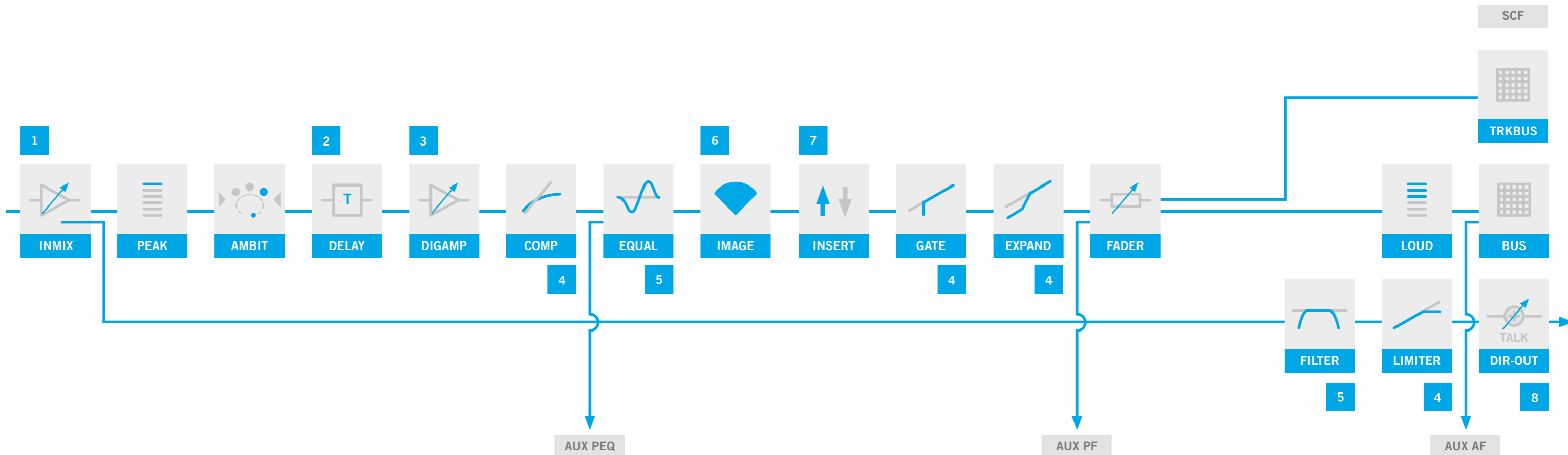
6 IMAGE

The Image function allows precise adjustment of the stereo image and direction. It can be used on ambience microphones to widen the panorama or to position and combine multiple stereo sources in the same mix without losing the stereo effect.

7 INSERT

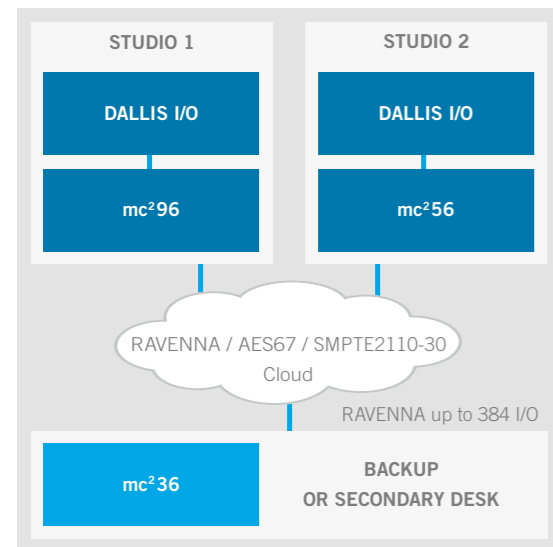The Insert can be activated anytime without affecting the channel delay.

8 DIRECT OUT

The Direct Out module includes mute and adjustable output. All modules can be assigned freely – e.g. a limiter and a 2-band filter can be assigned to the direct out bus for recordings, without affecting the main mix.
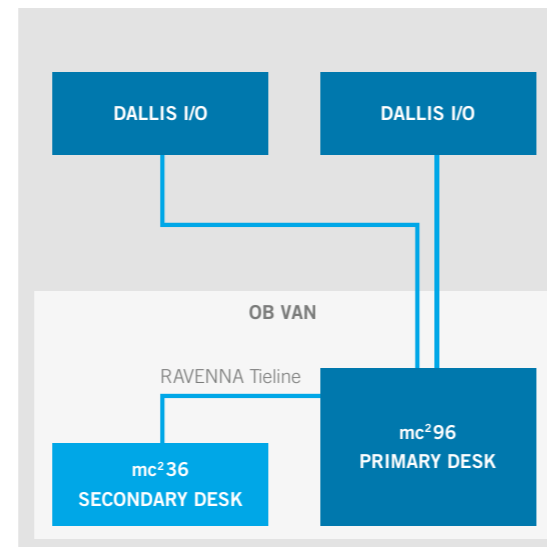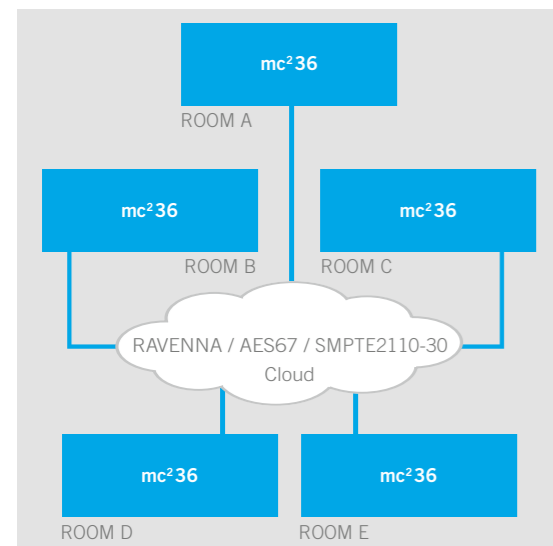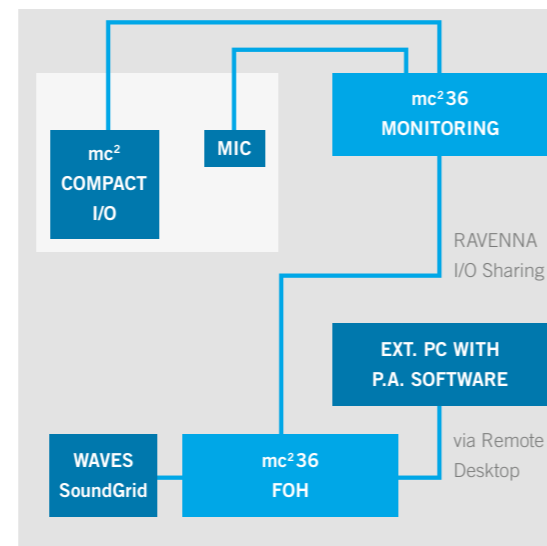
mc²36

APPLICATIONS

APPLICATIONS

BROADCAST 1

STUDIO 1
- DALLIS I/O
- mc²96

STUDIO 2
- DALLIS I/O
- mc²56

RAVENNA / AES67 / SMPTE2110-30 Cloud

RAVENNA up to 384 I/O

mc²36 — BACKUP OR SECONDARY DESK

BROADCAST 2

- DALLIS I/O
- DALLIS I/O

OB VAN

RAVENNA Tieline

mc²96 PRIMARY DESK

mc²36 SECONDARY DESK

INSTALL

mc²36 — ROOM A

mc²36 — ROOM B

mc²36 — ROOM C

RAVENNA / AES67 / SMPTE2110-30 Cloud

mc²36 — ROOM D

mc²36 — ROOM E

STAGE

mc²36 MONITORING

mc² COMPACT I/O

MIC

RAVENNA I/O Sharing

EXT. PC WITH P.A. SOFTWARE

via Remote Desktop

WAVES SoundGrid

mc²36 FOH

Nova 37

PLUG & PLAY AUDIO ROUTER

Nova 37

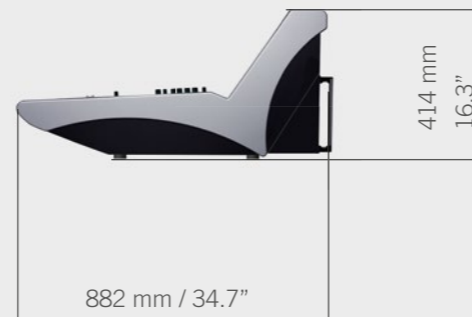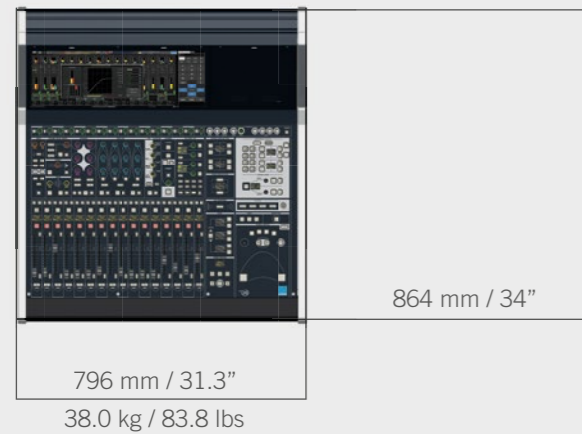## PLUG & PLAY AUDIO ROUTER

KEY FEATURES

- 8x RAVENNA / AES67 / ST2110-30 / -31 ports (RJ45 or optical via SFP)
- 8x MADI ports (optical via SFP)
- Standardized configuration for easy networking of mc² compact I/Os and mc²36 consoles
- Lawo One-touch Rights Management
- Optional: Customized configuration via AdminHD software analog to Lawo Nova73 routers
- Redundant PSUs
- Silent Cooling

Hybrid RAVENNA / MADI Plug & Play Audio Router
Nova37 is a compact 3RU audio router, with a fixed RAVENNA / AES67 / ST2110-30 / -31 and MADI I/O configuration. It is perfectly suited to instant set-up of small-sized audio networks with a maximum of 1,536x1,536 crosspoints. In combination with mc²36 audio consoles and mc² Compact I/O stageboxes, the new Nova 37 router becomes a very smart package for live performance, installed sound and houses of worship: It is just plug & play – you connect your consoles and I/O systems via RAVENNA / AES67 / ST2110-30 / -31 or MADI, and the audio network is up and running, providing immediate access to all sources. Network user rights are easily managed directly from the console's touchscreen, using Lawo's intuitive one-touch rights management system. As an option in addition to its standard presets, the Nova 37 configuration is fully customizable to specific customer needs. As Nova 37 uses inaudible fans, it can be placed anywhere in a setup.
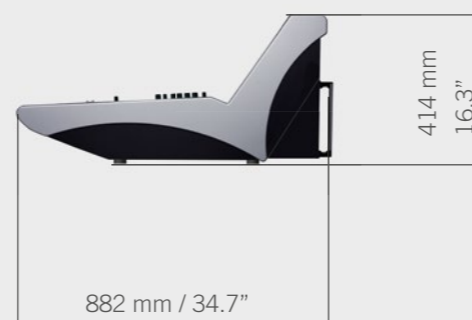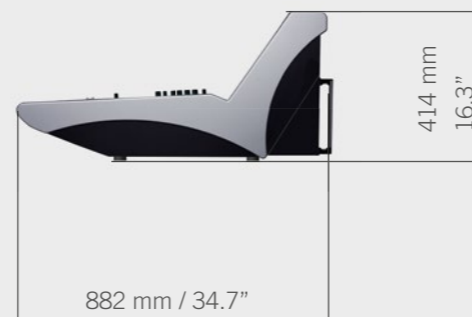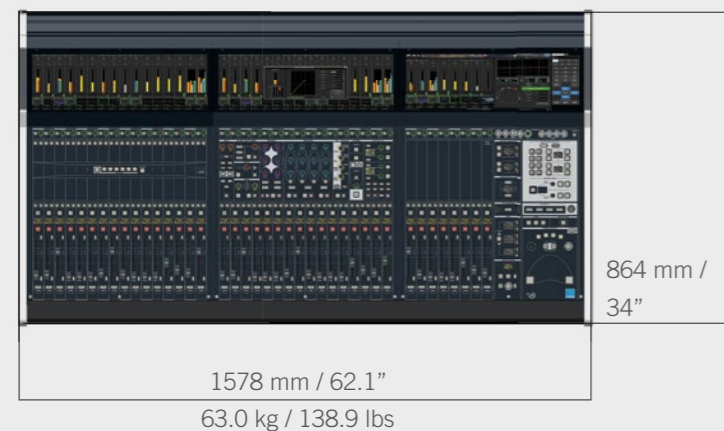
mc²36

SPECIFICATIONS

SPECIFICATIONS

16-fader model

864 mm / 34"

796 mm / 31.3"

38.0 kg / 83.8 lbs

24-fader model

864 mm / 34"

1068 mm / 42"

48.0 kg / 105.8 lbs

40-fader model

864 mm / 34"

1578 mm / 62.1"

63.0 kg / 138.9 lbs

414 mm 16.3"

882 mm / 34.7"

Power Consumption: max. 370 W

414 mm 16.3"

882 mm / 34.7"

Power Consumption: max. 440 W

414 mm 16.3"

882 mm / 34.7"

Power Consumption: max. 520 W

mc² Compact I/O

Height: 5RU / 220 mm / 8.7"
Width: 483 mm / 19"
Weight: 7.5 kg / 16.5 lbs

Nova 37

Height: 3RU / 133 mm / 5.2"
Width: 483 mm / 19" x 456 mm / 18"
Weight: 12.2 kg / 26.9 lbs

CONTROL PANEL

- Frames with 16, 24 and 40 faders
- Six banks each with 2 layers
- 100 mm fader + 1 freely assignable rotary knob + channel display for each fader with sense-triggered pop-up displays for modules
- TFT metering: mono, stereo or up to 7.1 including bus assignment, gain reduction for dynamics, AfV status, VCA assignment, mix-minus
- GUI page output, e.g. metering, on an external monitor
- Eight central user buttons

SIGNAL PROCESSING

- 40-bit floating point
- Up to 184 inputs with A/B input, up to 32 sub-groups, 32 aux sends, up to 32 track buses, up to 16 main sums
- Rapid switching of channel and bus to mono/stereo/surround
- Up to 24 surround channels, 128 VCA groups with metering, 256 GPC channels
- Surround formats: DTS/Dolby® Digital 5.1, Dolby® Pro Logic 4.0, DTS ES/Dolby® EX 6.1, SDDS 7.1, DTS-HD 7.1, diverse panning characteristics, surround aux bus
- Two AFL: 1 surround 8-channel, 1 stereo
- Two PFL stereo
- Audio-follow-Video with 128 events, control via Remote MNOPL, Ember+, GPI or matrix connection, envelope up to 10s fade time
- Solo In Place
- Permanent input meter beside fader, adjustable INPUT, PF, AF, DIROUT meter point in channel display
- Loudness Metering according to EBU R128 and ATSC A/85, momentary or short term in every channel, integrated measurement on sum channels with display of integrated LUFS value in headline.
- Modules: INMIX with MS decoder, digital amp, 2-band fully parametric filter, 4-band fully parametric EQ, 2-band fully parametric side-chain filter, insert, delay up to 1800 ms – switchable units: meters, milliseconds, frames, 4 independent dynamic modules: expander, gate, compressor, limiter, image, meter, direct out
- AMBIT Upmix, available on every 5.1 channel, fully Downmix compatible
- Inline configuration with send/return switching – per channel or global
- Fully-equipped surround channel with coupling of all channel parameters and hyperpanning

mc²36

SPECIFICATIONS

ROUTING MATRIX
- 512x512 matrix, non-blocking
- Up to 96 kHz, 24-bit
- Level adjustment for all inputs and outputs
- Downsizing from surround (up to 7.1) to stereo
- Integrated monitoring devices for remote locations, e.g. director's room
- Networking with up to 14 Nova73 cores, share and import of sources and destinations, studio intervention

WAVES SOUNDGRID® INTEGRATION
- Waves SoundGrid® integration with storage of plug-in parameters in snapshot and production data

INTERFACES
- Mic/Line, Line Out, AES, SDI, HD-SDI,MADI, ATM, GPIO, Serial, MIDI, ADAT®, RAVENNA/AES67/ST2110-30/-31 Audio-over-IP; for details see DALLIS and mc² Compact I/O product information
- Stereo and surround monitoring systems

SYNCHRONIZATION
- Input with automatic Blackburst and Wordclock detection

REDUNDANCY
- Redundant PSUs
- Redundant DSP boards

CONTROL UNIT
- Global A/B input switching
- Enhanced mix-minus control with independent off-air conference
- Fader control of all level parameters
- Diverse tally and fader start modes
- Program switch
- Machine control
- Audio-follow-Video, up to 128 camera tallies, Ethernet or GPI controlled
- Camera mic remote via GPI or voltage control

REMOTE MAINTENANCE
- Connection via Internet remote software
- Software updates, error diagnostics, remote assistance

EXTERNAL CONTROL SYSTEMS
- Remote control of all routing parameters via network
- Ember+ control protocol integrated
- Remote control of integrated matrix monitoring units
- Online configuration with AdminHD, graphical configuration of signal list and I/O box components
- mxGUI: remote control via laptop/tablet PC
- External matrix controllers: Lawo VSM, Evertz Magnum, GV Ignite, Ross Overdrive, Vizrt Viz Mosart, Imagine Magellan, BFE KSC, Pharos, and others

COMPARISON mc²36 / mc²56

FEATURES	mc²36	mc²56
Redundant PSU	Yes	Yes
Redundant DSP	Yes	Yes
Redundant Control system	No	Yes
Number of routing capacity	496	min. 5,120
All metall frame	Yes	Yes
Customization via Custom Functions	Yes	Yes
User panels (RTW, Surround Reveal etc.)	No	Yes
Sequence Automation	Yes	Yes
TC Automation	No	Yes

mc²36

ALL-IN-ONE PRODUCTION CONSOLE

HEADQUARTERS

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

INTERNATIONAL OFFICES

BENELUX	+ 31 6 54 26 39 78
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

www.lawo.com

LAWO