

mc²36 xp



SMALL FOOTPRINT
WELL CONNECTED



NIFTY
NATIVE
NETWORKED

mc²36 xp

SMALL FOOTPRINT – WELL CONNECTED



mc²36 xp

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The Lawo mc²36 xp desk is a welcome addition to Lawo's top-of-the-line audio production console range. Physically identical to the mc²36 MkII, but without on-board processing, the mc²36 xp 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 mc²36 xp 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 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 mc²36 xp comes equipped with the same pro-grade controls and touchscreens as its bigger brothers, 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 mc²36 xp 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.

* Release scheduled for Q2/2023

mc²36xp

OVERVIEW

AT A GLANCE

- Built-in I/O incl. Lawo-grade mic pre-amps
- Frames with 16, 32 and 48 faders
- 256 DSP channels
- 48 & 96 kHz operation
- HOME native: IP setup as simple as analog
- Designed for IP-based infrastructures with native support for all relevant IP standards: SMPTE ST2110, AES67, RAVENNA, Ember+, NMOS*

THE POWER OF DENSITY

It's the most compact mc² console ever built, but the new mc²36xp doesn't compromise on any of its family's renowned qualities. It pairs outstanding audio quality with Lawo's highly acclaimed reliability and ease of use – at a footprint small enough for even the narrowest niche. Starting with a width of only 765 mm for the 16-fader OB Truck version, this console is the perfect fit for any installation that demands high performance in a limited space. Even the OB Truck 48-fader model is only 1275 mm wide, thanks to a dual-fader panel on the left.

HIGH PERFORMANCE FADERS

The mc²36xp features the same dust-proof long-life performance faders as the mc² 56, providing smooth and precise fades for a lifetime.

CONSISTENT COLOR CODING

In addition to Button-Glow and colored touch-sensitive encoders, new color-TFTs allow for an even more obvious color-coding of the channel strips, resulting in enhanced visibility and faster access even in low light conditions.

mc²36xp

INTERACTION

A PERFECT SYMPHONY OF HARDWARE & SOFTWARE CONTROLS

The mc²36xp's unique design combines large screens with a low overbridge height to provide a more ergonomic profile without compromising an engineer's view. The console's super-precise 21.5" full HD touch-screens work hand-in-hand with the touch-sensitive color-illuminated rotary encoders. An 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.

SUPER-PRECISE HD TOUCHSCREENS

The new mc²36xp features state-of-the-art capacity sensing 21.5" full HD touch-screens, providing mechanical robustness and super-precise control.

TOUCH-SENSITIVE COLOR-CODED ENCODERS

INPUT METERING

COLOR CODING

CUSTOMIZABLE FADER USER BUTTONS

LiveView™ VIDEO LABELS

In addition to standard channel labeling using channel numbers, individual text labels and static pictures or icons, the mc²36xp inherited the mc²96's LiveView™ video thumbnails for even more intuitive channel identification. Simply touch a fader and the LiveView™ thumbnail changes to full-screen mode, providing a more detailed view of that channel's video source such as a camera or a replay machine.

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OVERBRIDGE



REMOTE DESKTOP

Lawo's built-in Remote Desktop function allows to seamlessly integrate multiple external PCs and Macs running third-party solutions into the console's user interface. With the switch of a button, the external PC and its software applications are displayed on the console's screen, with the console's keyboard, touchpad and touchscreen providing control. The seamless integration of external recording systems, effects engines, or other user interfaces, means less equipment – and the engineer has control over the complete set-up, conveniently from a single, central position.



INTEGRATED LOUDNESS METERING

Originally requested for broadcast applications, Lawo has developed built-in loudness metering into a tool that is useful also 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 for fast and convenient “visual” mixing of sources like background singers, or multiple-microphone setups for brass sections, strings and choirs.

CUSTOMIZABLE OVERBRIDGE VIEWS

The console's overbridge can be adapted to your requirements by adjusting the channel display accordingly – just choose and display the parameters that are important and hide any unnecessary or distracting elements. The metering shows all fader levels permanently on the HD display. In addition, multi-row metering allows for permanent metering of signals from other layers or banks.

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CONNECTIVITY

HOME

Being an IP-native device, the mc²36 xp includes Lawo's HOME functionality which makes any IP setup as simple as analog. The console automatically detects devices and makes them available at the push of a button. Device management includes all required security features such as access control and quarantining of unknown devices. HOME is a management platform for IP-based media infrastructures designed to connect, manage, secure and process all aspects and instances of live production environments.

LOW-NOISE DESIGN

The console is optimized for low power consumption, which allows the use of low-spinning fans for cooling. This is especially important in environments such as quiet control rooms, where fan noise is obtrusive.

ABOUT RAVENNA

RAVENNA is a technology for the 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.

It features low latency, full signal transparency, and high reliability. While primarily targeting the professional broadcast market, RAVENNA is also suitable for other pro audio applications like live sound, install and recording: 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. RAVENNA is an open technology standard and fully compliant with the AES67/ SMPTE2110-30 standards.

COMPREHENSIVE ONBOARD I/O

The mc²36 xp's comprehensive local I/O features 16 Lawo-grade Mic/Line inputs, 16 Line outputs, 8 AES3 inputs and outputs, 8 GPIOs plus a local MADI port based on SFP.



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mc²36xp – 16-fader Version

mc²36xp – 32-fader Version



mc²36xp – 48-fader Version
The compact 32-fader chassis with 16 additional 60mm faders in a dual-fader arrangement.

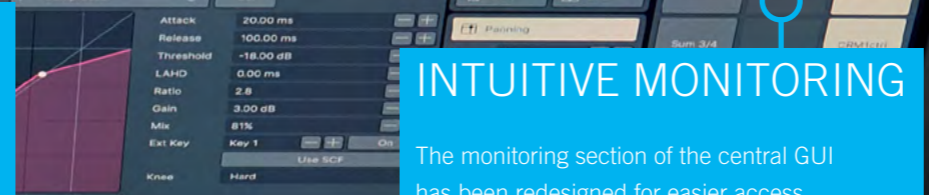
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CENTRAL CONTROL SECTION



PARALLEL COMPRESSION

Parallel compression, also known as New York compression, is a dynamic range compression technique achieved by blending a dry signal with a compressed version of the same signal. Rather than bringing down the highest peaks for the purpose of dynamic range reduction, it reduces the dynamic range by bringing up the softest sounds, which results in adding audible detail. Parallel compression can be applied in every channel, Group, AUX and Sum of the mc²36xp.

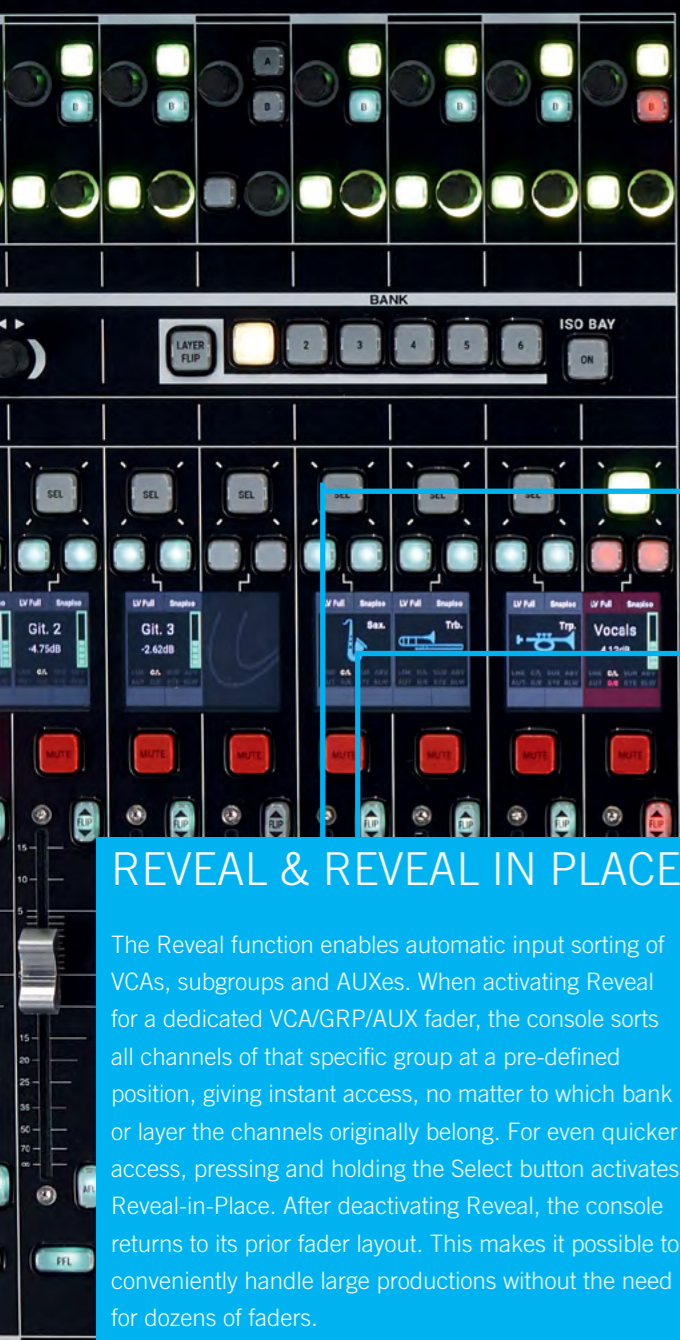


INTUITIVE MONITORING

The monitoring section of the central GUI has been redesigned for easier access, enhanced flexibility and easy adaptation to user requirements.

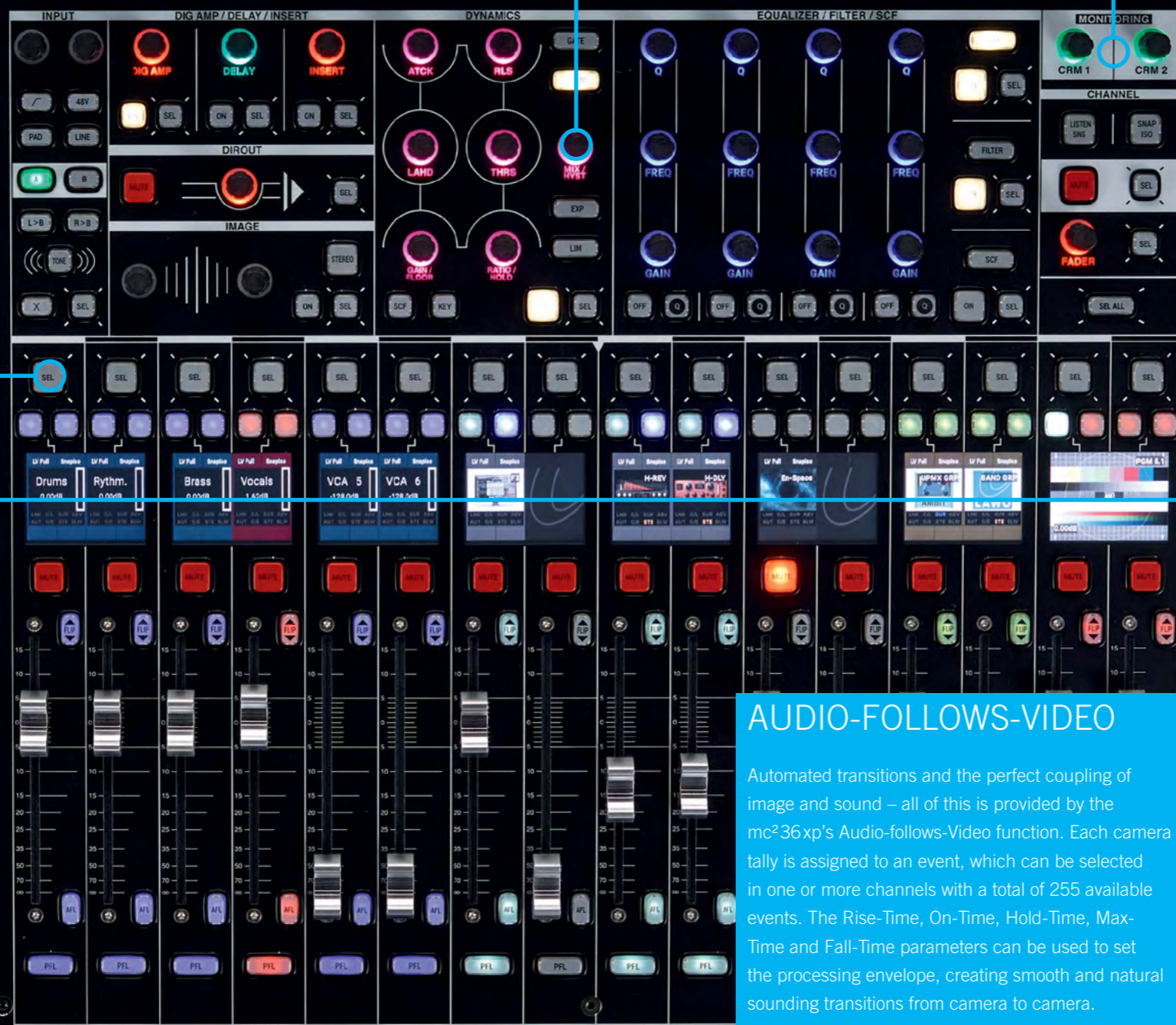
IMMERSIVE BY NATURE

The mc²36xp provides not only superb tools for immersive audio mixing, but also a dedicated elevation controller as standard. This makes the mc²36xp a future-proof choice for next generation audio formats such as MPEG-H and Dolby Atmos[®] as well as for immersive mixing in live sound applications.



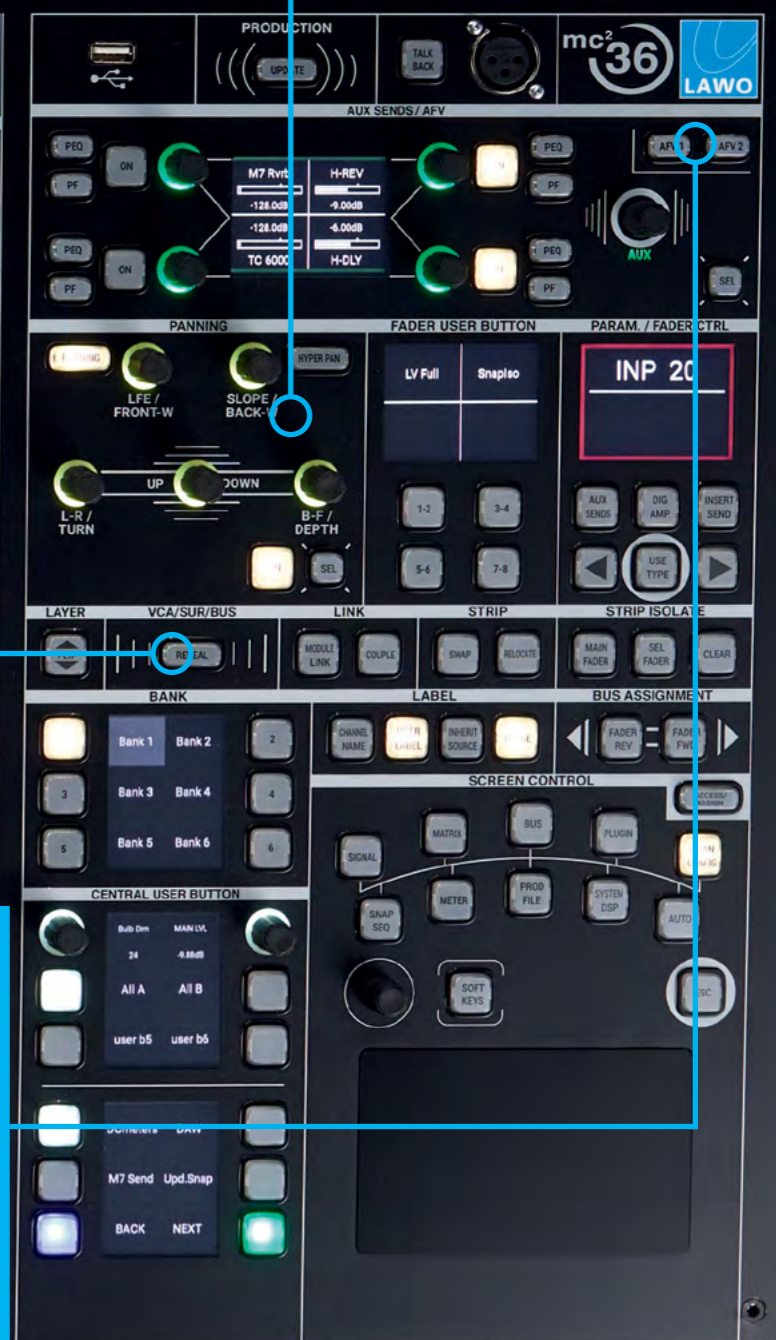
REVEAL & REVEAL IN PLACE

The Reveal function enables automatic input sorting of VCAs, subgroups and AUXes. When activating Reveal for a dedicated VCA/GRP/AUX fader, the console sorts all channels of that specific group at a pre-defined position, giving instant access, no matter to which bank or layer the channels originally belong. For even quicker access, pressing and holding the Select button activates Reveal-in-Place. 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.



AUDIO-FOLLOWS-VIDEO

Automated transitions and the perfect coupling of image and sound – all of this is provided by the mc²36xp's Audio-follows-Video function. Each camera tally is assigned to an event, which can be selected in one or more channels with a total of 255 available events. The Rise-Time, On-Time, Hold-Time, Max-Time and Fall-Time parameters can be used to set the processing envelope, creating smooth and natural sounding transitions from camera to camera.



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FEATURES

AUTOMATED MIXING ASSISTANTS

The mc²36xp's automated mixing capabilities include an Automix function that can automatically adjust the levels of active and inactive microphones, while maintaining a constant, natural sounding ambient level. This feature provides unique functionality especially in live productions with multiple presenters or performers. Automix can be used for any signals, from mono and stereo to multiple surround channels to minimize background noise and crosstalk with reduced sound coloration. Truncated sentences and late fade-ins are things of the past, enabling the sound engineer to focus on overall balance and sound quality. The console also features a Downmix function and Lawo's highly acclaimed AMBIT Downmix function, which guarantees perfect conversion of stereo signals into amazingly authentic surround sound using very few parameters. Last but not least, the mc²36xp is set for KICK 2.0, Lawo's automated close-ball mixing solution for sports such as soccer or hockey.

LISTEN SENSE

Lawo's unique Listen Sense function allows offline modifications 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 push 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.

WAVES® PLUGIN INTEGRATION

The Lawo mc²36xp offers best-in-class integration with Waves SuperRack SoundGrid®, providing a solution for extensive real-time signal processing in addition to the A__UHD Core's 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 stored and recalled with the console's Snapshot and production files.

POWERED BY LAWO'S MIGHTY A__UHD CORE

Unlike other consoles, the mc²36xp's external processing engine, called A__UHD Core, provides completely independent algorithms at all time, with no compromise in quality even when all channels are in use. Lawo provides Snapshot compatibility across all consoles, allowing to swap production files between mc²36 xp, mc²36 MkII, mc²56 and even mc²96 consoles.

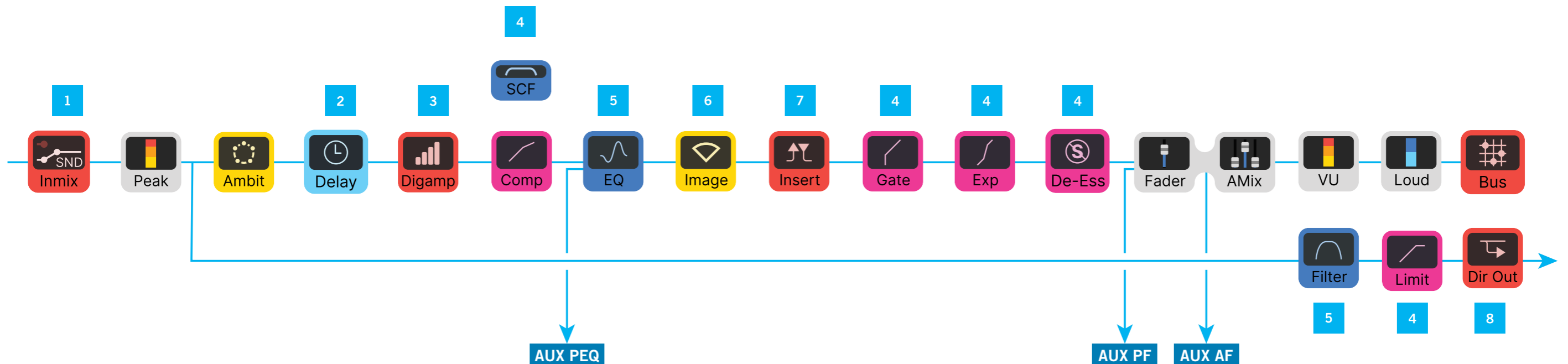
As on any mc² console, users can easily re-arrange the order of all DSP modules without restriction, giving creative freedom and broadening the console's versatility.

With an optional Pooling8 license, it is possible to connect up to eight mc²-series consoles (like the mc²36 xp) and headless mixers to one A__UHD Core.

- 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**
There are five independent dynamic modules: Gate, Expander, Compressor, De-esser 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**
Each 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.



HIGHLIGHTS FOR BROADCAST

- IP-based infrastructure with native support for all relevant IP standards: ST2110, AES67 and RAVENNA
- Advanced mix assist systems (AutoMix, UpMix, DownMix, prepared for KICK)
- Processing capacity with 256 DSP channels, 96 summing buses and 96 AUX buses
- 48kHz & 96kHz operation
- Comprehensive Audio-follows-Video functionality
- LiveView™ video thumbnails
- Integrated 3D/Immersive mixing tools
- Parallel compression
- Integrated loudness metering
- Enhanced signal management functions for large productions (including swap and relocate)

HIGHLIGHTS FOR RECORDING & STREAMING

- Lawo-grade microphone preamps and processing algorithms
- Machine/DAW remote control
- Merging OASIS Integration
- Fully customizable signal chain with four independent dynamics modules
- Clickless-delay adjustments
- Parallel compression
- Ultra low-noise console design

HIGHLIGHTS FOR PERFORMING ARTS

- Selective Recall
- Oversnaps (relative trim sets)
- Comprehensive theater automation cue list including multiple triggers (MIDI, GPIO, LTC, ...)
- Waves® Plugin Integration
- Workflow-specific customization of functionality and features
- Clickless-delay adjustments
- A/B/C input switch
- Cascaded/nested VCAs
- Integrated loudness metering for “visual” mixing

HIGH-QUALITY IP AUDIO I/O NODES

A__stage64 – WAN-capable Audio-to-IP Stagebox



- 19”/4RU frame
- 32x Mic/Line In; 16x Line Out; 8x AES3 In/Out; 1x MADI; 8x GPIO; WordClock
- 2x 1 GbE IP streaming ports (ST2022-7 Class C port and network redundancy)
- PTP <-> Wordclock conversion
- ST2110, AES67, RAVENNA
- On-board WAN capability

A__mic8 – High-quality Analog-to-IP Node



- 19”/1RU frame
- 8x Mic/Line In; 4x Line Out; 8x GPIO; WordClock
- 2x 1 GbE IP streaming ports (ST2022-7 Class C port and network redundancy)
- PTP <-> Wordclock conversion
- ST2110, AES67, RAVENNA

A__digital64 – AES3 Digital-to-IP Node



- 19”/3RU frame
- 32x AES3 In with SCR; 32x AES3 Out 1x MADI; 8x GPIO; WordClock
- 2x 1 GbE IP streaming ports (ST2022-7 Class C port and network redundancy)
- PTP <-> Wordclock conversion
- ST2110, AES67, RAVENNA

A__madi6 – MADI-to-IP Node



- 19”/1RU frame
- 3x independent MADI/IP bridges: 6x MADI; 6x 1 GbE IP streaming ports (ST2022-7 Class C port and network redundancy); WordClock
- PTP <-> Wordclock conversion
- ST2110, AES67, RAVENNA

Power Core^{Gateway} – Modular IP Audio I/O Node



- 19”/1RU frame
- 64 I/O channels via modular I/O cards: Mic/Line In, Line Out, AES3 In/Out, Dante, MADI, GPIO, Studio
- 64 MADI I/O channels
- 2x 1 GbE IP streaming ports (ST2022-7 Class C)
- ST2110, AES67, RAVENNA
- On-board WAN capability

AUDIO/VIDEO PROCESSING (SDI)

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



- 19”/2RU frame
- High-density IP conversion for SDI equipment
- Up to 192 SDI inputs and outputs with MADI* capability
- Flexible Shuffling, De-embedding and Embedding from/to SD, HD and UHD
- On-board WAN capability

V__pro8 – 8-Channel Video Processing Toolkit



- 19”/1RU frame
- Redundant power-supplies
- 8 SDI in, 8 SDI out, 2 MADI, 1GbE
- Embedder/De-Embedder, Frame sync, Audio & video delays, Dolby® E auto aligner, Dolby® E encoding and decoding, LiveView Thumbnails, Sync generator, Timecode generator, AV sync measurement.

* Release scheduled for Q4/2023

mc²36xp

SPECIFICATIONS

mc²36xp



765^{+1.5} (OB Truck version)
833^{+1.5} (Studio/Live version)

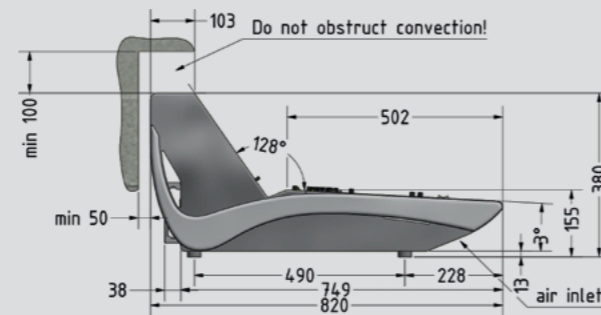
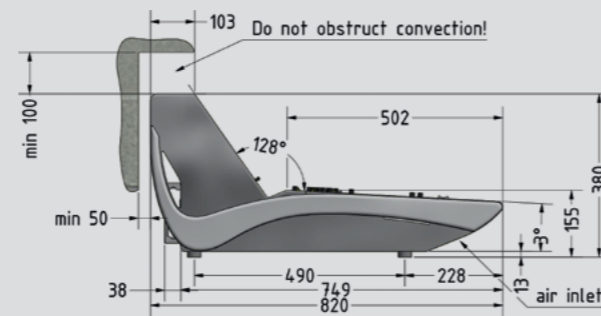


1275^{+1.5} (OB Truck version)
1343^{+1.5} (Studio/Live version)



1275^{+1.5} (OB Truck version)
1343^{+1.5} (Studio/Live version)

STUDIO/LIVE VERSION



16 FADER STUDIO/LIVE VERSION

- Dimensions: 833x820x380 mm / 32.8" x 32.3" x 15.0"
- Weight: 38 kg / 83.4 lbs

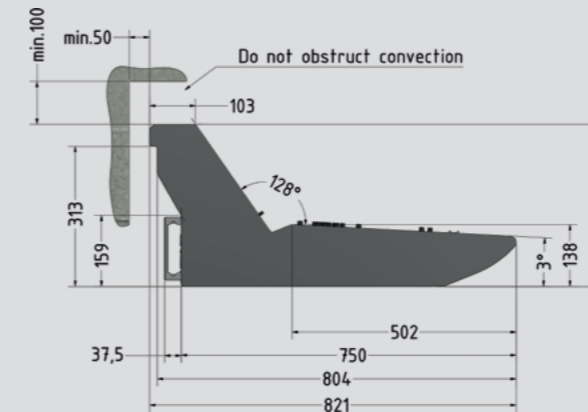
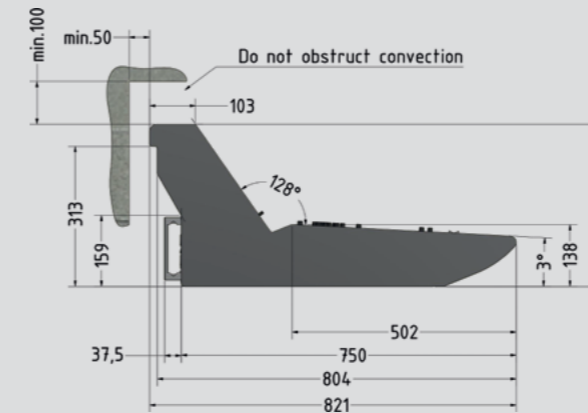
32 FADER STUDIO/LIVE VERSION

- Dimensions: 1343x820x380 mm / 52.9" x 32.3" x 15.0"
- Weight: 54 kg / 119.1 lbs

48 FADER STUDIO/LIVE VERSION

- Dimensions: 1343x820x380 mm / 52.9" x 32.3" x 15.0"
- Weight: 56 kg / 123.5 lbs

OB TRUCK VERSION



16 FADER OB TRUCK VERSION

- Dimensions: 765x821x362 mm / 30.1" x 32.3" x 14.3"
- Weight: 37 kg / 81.6 lbs

32 FADER OB TRUCK VERSION

- Dimensions: 1275x821x362 mm / 50.2" x 32.3" x 14.3"
- Weight: 53 kg / 116.9 lbs

48 FADER OB TRUCK VERSION

- Dimensions: 1275x821x362 mm / 50.2" x 32.3" x 14.3"
- Weight: 55 kg / 121.3 lbs

CONTROL PANEL

- Frames with 16, 32 and 48 faders
- 6 banks each with 2 layers
- 100mm fader + 1 assignable rotary knob + channel display for each channel with sense-triggered change of module display (48-fader version: 32x as above; 16x 60mm faders, Input Gain encoder, channel display; in upper left half)
- TFT metering: Mono, stereo or immersive, including bus assignment, gain reduction for dynamics, Afv status, VCA assignment, Mix-Minus, Signal Patching, Meter selection, Automix state
- GUI page output, e.g. metering, on an external monitor
- 10 Central user buttons, 2 Central user encoders, 1 talkback button and 2 fader user buttons with 8 functions each
- Optional: Script Tray, Dynamic TC Automation

SIGNAL PROCESSING

- 40-bit floating point
- 256 DSP channels (number of inputs and buses depends on A_UHD Core and configuration); immersive audio support up to 9.1.6
- Up to 240 inputs with A/B 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
- 3D multichannel downmixing for all supported immersive channel counts
- Rapid switching of channel and bus to mono/stereo/surround
- 2 AFL: 1 immersive 24-channel, 1 stereo
- 2 PFL stereo
- Audio-follows-Video with 255 events, control via Ember+, GPI or matrix connection, envelope up to 10s fade time
- Solo In Place
- 5 independent dynamics modules: expander, gate, compressor (incl. parallel compression), limiter, de-esser; image, meter, direct out; multi-channel processing
- Adjustable INPUT, PF, AF, DIROUT, TRACK 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 1800ms – switchable units: meters, milliseconds, frames

mc²36xp

SPECIFICATIONS

AUDIO HANDLING

- HOME – Routing with dynamic support of network resources
- Internal matrix for RX and TX audio
- Up to 512 RX & TX streams
- Stream sizes from 1 up to 128 audio channels
- Up to 96kHz, 24-bit
- Downmixing from immersive audio to stereo
- Integrated monitoring devices for remote locations, e.g. director's room
- 1,016 internal loop-backs
- Full Snapshot and production portability independent of matrix and DSP size

WAVES® PLUGIN INTEGRATION

- Waves SuperRack SoundGrid® integration with storage of plug-in parameters in snapshot and production data

INTERFACES

- Mic/Line In, Line Out, AES3, MADI, ST2110-30/-31/AES67/RAVENNA, GPI/O, MIDI
- Headphones

SYNCHRONIZATION

- Blackburst*, Wordclock, PTP Slave and Grandmaster modes

REDUNDANCY

- PSUs, Network Interfaces (SMPTE ST2022-7 Class C)

CONTROL UNIT

- Global A/B/C 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
- DAW Machine control
- Audio-follows-Video, up to 128 camera tallies, Ethernet or GPI controlled
- Camera mic remote via GPI or voltage control

REMOTE MAINTENANCE

- Connection via mxGUI remote software
- Software updates, error diagnostics, remote assistance

EXTERNAL CONTROL SYSTEMS

- Remote control of all routing, matrix monitoring units and channel parameters via Ember+ control protocol
- mxGUI: remote control via Windows®/Android or macOS/iOS laptops and tablets
- External matrix controllers: Lawo VSM, EVS Cerebrum, Broadcast Solutions Hi, GV Ignite, Ross Overdrive & Acuity, Vizrt Viz Mosart, and others

mc² FAMILY COMPARISON CHART

Features	mc ² 36 MkII	mc ² 36 xp	mc ² 56	mc ² 96
Maximum Fader Count	16, 32, 48		16 - 144*	24 - 200*
Faders	Lawo high-performance			Lawo high-quality
Maximum DSP Channels	256		1024	
Number of Channel Displays	Up to 2		Up to 4	More than 2
Console Core	Internal A__UHD technology		A__UHD Core (external)	
Use external A__UHD Core	No		Yes	
VMixer Slice	No		Yes	
Touchscreens	HD with PCT precision capacity sensing technology			
Free Controls per Strip	1**		4	6
Multi-user Operation	No		Yes	
– No. of rotaries per fader bay	32		80	112
– Local safe & recall	Yes		No	Yes
LiveView™			Yes	
Local I/O			Yes	
– Local I/O connectors	XLR		Sub-D	XLR
– ST2022-7 local I/O redundancy	Internal	Non-redundant	Redundant	
Number of User Panels	n/a		2 (w/o RTW), 1 (with RTW TM7), 0 (with RTW TM9)	2 + RTW TM9
Native 3D Audio Controls			Yes	
Parallel Compression			Yes	
Sequence Automation (Cue List)			Yes	
Dynamic TC Automation	Optional license		Yes	
Supports User Panels/Stand	No		Yes	
Supports MCX Redundancy	No		Yes	
Supports DSP Redundancy	No	Yes		

* Blackburst supported by future hardware revisions.

* with dual-fader option **only mc²36xp-32 and mc²36MkII-32

mc² 36 XP

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