LAWO

PERFORMANCE PURE AND SIMPLE



COMPACT FLEXIBLE VERSATILE

PERFORMANCE, PURE AND SIMPLE



PERFORMANCE, PURE AND SIMPLE

mc^256xT PERFORMANCE PLUS



A PERFORMANCE CONSOLE JUST GOT EVEN BIGGER

Compact, flexible, versatile. With a resourceful engine under the hood, there's plenty of power to handle any situation. It is easy to understand, and intuitive to operate. This is the mc²56. The console delivers performance that combines the proven quality of Lawo consoles with new features, improved functions and clever innovations. And the mc²56xT pushes the envelope even further by doubling the fader count on the same footprint. Our conclusion in a single sentence: the mc² 56 xT gives the highest fader density and flexibility ever. For maximum performance - pure and simple.

mc²56 CONSOLE DESIGN

FROM EXTRA SMALL TO EXTRA LARGE





FIVE FRAME SIZES IN TWO FLAVORS

The size of the task determines the size of the tool, and not vice versa. Therefore, the mc^256 is available in five different frame sizes: for example, 16 faders for smaller outside broadcast vehicles or 80 faders for more complex challenges. And for even more control on the same footprint, the XT models provide 48 to 144 faders in a high-density dual fader layout. Further expansion can be achieved with 16 or 32 fader stand-alone extenders. With the mc^256 and mc^256 xT, you can get the mixing console to meet your exact requirements, tailor-made.



- 5 single fader versions with 16, 32, 48, 64 or 80 faders
- 4 dual fader XT versions with 48, 80, 112 or 144 faders
- Subsequent expansion: a 16 or 32 fader stand-alone extender may be added at any time
- Perfect for outside broadcast vehicle dimensions: 64/112 faders fit across most standard installations



mc²56

BRINGING TOGETHER WHAT BELONGS TOGETHER



ETHERNET

NOVA73



MADI



SYSTEM COMPONENTS

A system is only ever as good as its individual parts, and the mc²56 comprises three proven components: the mc²56 mixing console surface, the Nova73 core with integrated control system and the DALLIS I/O interfaces. The Nova73 and Nova73 compact cores in particular are extremely high-performance machines. They are used in all of our mc² mixing consoles to provide maximum flexibility for I/O interfaces and DSP resources.

RAVENNA







CONSOLE CORES WITH NATIVE RAVENNA/AES67 SUPPORT

The Nova73 core is the heart of the mc² 56, where all audio and control data converge. A mono-channel matrix capacity of 8192 x 8192 and up to 888 fully configured DSP channels provide enough horse-power for even the largest productions. The mc² console cores provide extensive interfacing via MADI, ATM, AES and future-proof RAVENNA/AES67 Audio-over-IP technology, allowing you to connect stage boxes to the console core via standard layer 3 IP networks. But Lawo's Nova73 HD and Nova73 compact core are not just about connectivity — they're also about providing maximum reliability. The cores have redundant power-supplies, redundant controllers and fully redundant connections to the stage boxes. The benefit of so much redundancy? Optimum reliability that you can trust absolutely, even in critical situations.

THE MAJOR HIGHLIGHTS OF THE NOVA73

- DSP cards with 48 or 96 channels each
- A maximum of 888 fully configured DSP channels in broadcast mode
- 96 kHz operation
- Up to 144 summing buses
- RAVENNA/AES67, MADI, ATM or AES interfacing direct to the Core
- All standard analog, digital I/Os and control interfaces via DALLIS I/O
- Flexible DALLIS I/O connection using CAT or fiber-optic cable (SFPs for multi-mode, single-mode or CWDM)
- Optimal quality transformer-balanced microphone cards for concert sound
- 8192 x 8192 mono-channel matrix capacity

FROM CUSTOM METERING TO REVEAL FADERS



TOUCH-SCREEN OVERBRIDGE WITH USER PANELS

The mc²56's overbridge with super-bright 21.5" HD touchscreens provides an excellent overview of all aspects of the console, and allows immediate operation via touch-optimized dialog windows. Tasks such as input patching, VCA allocation, bus or aux assignments and mix-minus configurations are superintuitive. The console can be adapted to your requirements by adjusting the channel display accordingly – just choose and display those parameters that are important and hide any unnecessary or distracting elements. The metering shows all fader levels permanently on the HD display. In addition, multirow metering allows for permanent metering of the XT version's second fader row as well as signals from other layers or banks. For further customization of your mixing console the overbridge is designed to integrate added-value functions such as a user panel or RTW goniometer directly into the overbridge.

- Perfect console geometry
- Overbridge with innovative, functional aesthetics
- User panel can be integrated directly into the overbridge
- Numerous overbridge options, such as:
 - 40-key user panel
 - Reveal Fader panel
 - RTW TM9/TM7 goniometer
- Multi Row Metering
- Talkback via XLR connector and USB port as standard

mc²56 CONSOLE DESIGN

FORM FOLLOWS FUNCTION

THE CENTRAL CONTROL SECTION

This Lawo console goes beyond outstanding audio quality and reliability to provide operational excellence as well. With its clearly structured central control section, it delivers an optimal workflow, so that you never lose your overview, even in the most hectic situations. Thanks to many carefully thought-out details and innovative features, the console is easy to understand and very intuitive to operate. Easy-to-reach individually assignable user-buttons provide direct access to key parameters, and with its large trackball buttons, smart-looking illuminated rotary knobs and HD-resolution touchscreen operation, anyone who encounters the mc² 56 can get started immediately.





- Permanent metering of all 16 central faders
- Many directly accessible parameters (including all 6 dynamic parameters)
- 9 individually assignable user buttonsIlluminated rotary knobs overview at-a-glance
- Large trackball buttons
- Improved snapshot operation with directly accessible buttons
- Integrated RTW goniometer or user panel in the overbridge









mc²56

FORM STILL FOLLOWS FUNCTION

THE DECENTRALIZED CONTROL OPTIONS

The decentralized control capability is a proven winner. The sensible layout of control elements, combined with a wealth of practical features, guarantee maximum efficiency for demanding productions.

The mc² 56 makes use of touch-screen operation to enable goal-orientated workflows. You can now assign buses or configure mix-minus directly on the touch screen. And thanks to our button-glow, the color-coding of individual channel strips is immediately recognizable at any time, even in low light conditions. As another example of the efficiency of the mc² 56, the console can be used for real two-man operation. The simple press of a button enables two engineers to access all audio parameters independently of one another, adding even more operational versatility and workflow options to your console.













- Button-glow for color-coding the channel strips and enhanced user guidance even in low light conditions
- Real 2-man operation with fully decentralized control of all parameters including bank and layer selection, EQ, dynamics and bus assignment
- Expanded, simplified touch control for operations such as VCA allocation, bus assignment, meter pickup/mode select and mix-minus configuration
- User buttons in the channel strips can be changed as required, so that up to 12 parameters can be triggered using the 4 fader user buttons

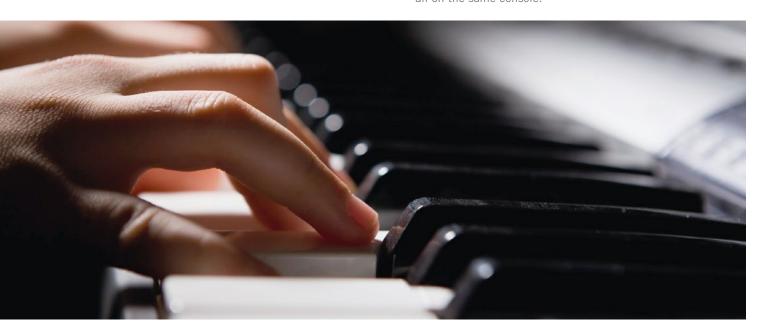
BECAUSE SOUND IS THE HEART OF YOUR MIXING CONSOLE

HIGH-QUALITY DIGITAL SIGNAL PROCESSING

Audio processing occurs on the DSP cards within the console's core and can be operated at 44.1/48 or 88.2/96 kHz. 40 bit floating point signal processing provides internal dynamics of 1000 dB. A further advantage is the mc² 56's operating redundancy. You can always rely on your Lawo console, even at the most critical moments. In the event of the failure of any DSP card, within a few milliseconds a redundant DSP card takes over all crosspoints and DSP parameters.

UP TO 96 CHANNELS PER DSP CARD

A mixing console which gives you double the number of channels with the push of a button – now that's clever, innovative and very flexible. Choose between two production modes: recording mode with 48 channels or broadcasting mode with 96 channels per DSP card and a maximum capacity of 888 channels. What does this mean for you? Thanks to different console configurations, you can produce symphonic orchestral recordings as well as major TV or international sporting events – all on the same console.



THE MAJOR INTERFACES - RIGHT AT THE SURFACE

Where monitoring or metering, headphones or talkback are required, connect your vital third-party devices directly to the console. The mc²56's mixing console surface also features local I/Os, providing connectivity for analog and AES signals, GPIOs and headphones. The local I/Os are connected with the console's core either via MADI or future-proof RAVENNA Audio-over-IP technology.

THE LOCAL I/O INTERFACES IN DETAIL

- 16x Line IN/OUT
- 8x AES/EBU IN/OUT
- 2x Headphones
- 8x GPIO
- Connection to core via MADI or RAVENNA

HIGHLIGHTS

SOUND ALL AROUND

INTEGRATED SURROUND SOUND TOOLS

A fascinating listening experience and a wide range of design options are offered as standard. The mc² 56 is a clear winner thanks to clever functions which make surround-sound productions even easier. Besides Hyperpanning and Reveal faders, which enable the break-out of surround channels, the highly acclaimed AMBIT upmix function is a unique highlight of the Lawo console.



THE MAIN HIGHLIGHTS

- Surround channel with hyperpanning
- 5.1 on a single fader with reveal and metering
- Optional Reveal Fader panel with break-out function
- AMBIT upmix, 100% downmix-compatible
- Innovative front-processing including auto centering for a wide range of source material
- Upmix freely adjustable for inputs, groups or summing

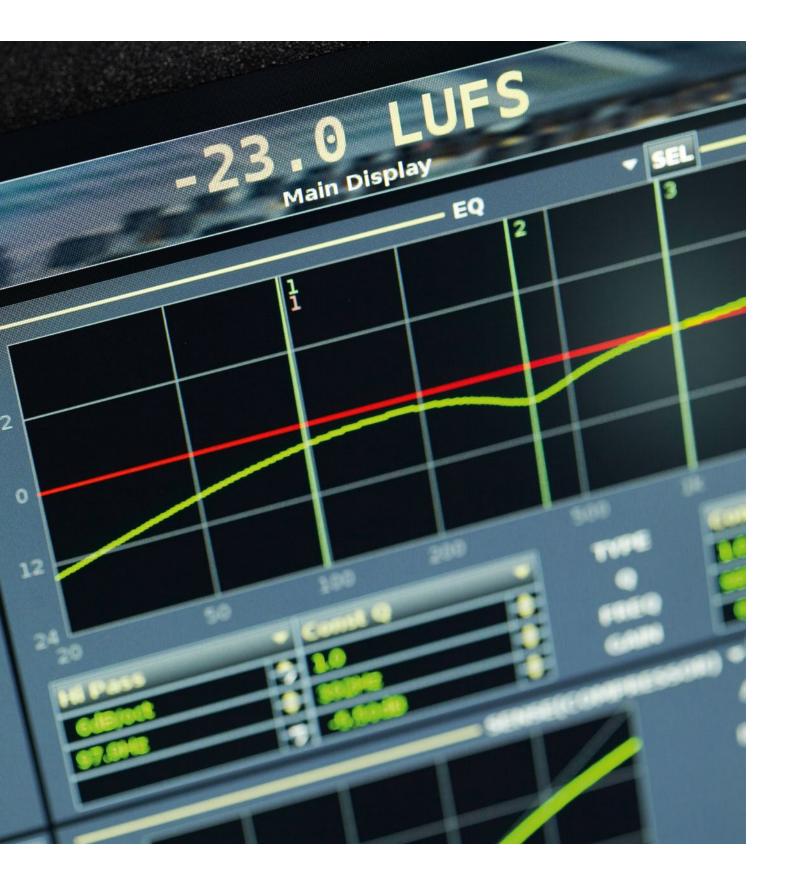
AMBIT is a DSP module which guarantees the perfect conversion of stereo signals into surround sound. The AMBIT Upmix is ideal for modern surround productions, as it enables the creation of amazingly authentic spaces using very few parameters. Thanks to innovative parameters, such as front channel auto centering, the upmix algorithms adjust automatically to a wide range of source material and provide a stable image which is true to the original, every time. And when you still enjoy all the advantages of traditional Lawo quality – from extremely low latency through to the usual DSP redundancy – there is nothing to stop you from generating amazing surround productions.

PERFORMANCE, PURE AND SIMPLE

mc² 56 _{16+16C+16} with integrated RTW Goniometer







FOR A HOMOGENEOUS ACOUSTIC PATTERN

INTEGRATED LOUDNESS METERING

When TV viewers are annoyed by varying sound volumes and have to become sound technicians by using their remote controls, they have become casualties of the "War on Loudness". This war is almost over, however: thanks to the EBU/R128 and ATSC/A85 standards, and thanks to Lawo.

Based on these standards, Lawo has developed a loudness-metering system, which is included on the mc²56. Loudness-metering can be combined with a true peak display and enables either momentary or short-term loudness measurement on each channel while each sum can integrate loudness over time. In addition, loudness metering can be displayed over the entire production in the GUI header, and preset-functions enable direct access to the standards EBU/R128 or ATSC/A85. 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.

- Consistent audio levels without annoying loudness jumps
- Full loudness control in accordance with standard ITU 1770 (EBU/R128 or ATSC/A85)
- Momentary or short metering for individual channels
- Perfect control thanks to permanent GUI display
- Peak and loudness metering either separately or in combination

mc²56



mxGUI GRAPHICAL INTERFACE

Every mc² 56 comes equipped with an mxGUI, a sure-fire winner with its many innovative features. You can prepare your mixing console offline – lay out your console, configure the matrix in list or X/Y view, set mic pre-amp gain and then generate snapshot and production data for your mc² 56. In addition, you can change the layout of your user buttons at any time, and assign new tasks from an extensive function list. A further plus is the possibility of remote operation, which enables you to access your mixing console via a normal laptop – for remote operation, servicing or configuration and maintenance.

DYNAMIC AUTOMATION WITH EDITING

The fully-featured dynamic automation system developed by Lawo has already won over many users with its extensive catalog of features. These include Timecode cut, which enables the editing of automation data using simple commands (Copy/Paste, Cut, Insert, Shift, etc.) and thus allows rapid, precise execution of any workflow.

AUDIO-FOLLOW-VIDEO

Smooth transitions and the perfect coupling of image and sound – all of this is provided by the mc²56's Audio-follow-Video function. Each camera tally is assigned to an event, which can be selected in one or more channels, with a total of 128 available events. The Rise-Time, On-Time, Hold-Time, Max-Time and Fall-Time parameters can be used to set the process envelope, thus guaranteeing particularly smooth and natural sounding transitions from camera to camera.

GPC WITH CAMERA MIC

The mc^256 offers you the possibility to control the microphone of individual cameras using the mixing console's general-purpose channels. You can adjust the camera microphone settings on the mc^256 and save all of the parameters in a snapshot.





AUTOMIX

The 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.

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.

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.



START ON ONE, FINISH ON ANOTHER

SIMPLE DATA TRANSFER FOR EVEN GREATER FLEXIBILITY

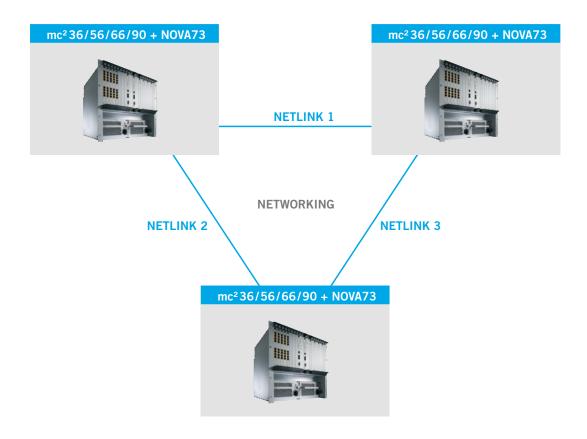
Moving data from one place to another and always working from the spot where it is most efficient – this portability is another plus point of the mc² 56. All production data and snapshots are fully transferable, regardless of the number of faders, the matrix size or the DSP capacity. You can thus prepare an existing production in your normal studio environment and then upload the data to an mc² 56 in an outside broadcast vehicle. And what if your transmission needs to be completed using an mc² 66 console? This is also not a problem – the same mix parameters can be used to finish at any time on another Lawo mc² console.

- Full portability for all data including automation mixes
- Portability for all snapshots, regardless of the number of faders, the size of the matrix and DSP capacity
- Snapshot compatibility across all mc² consoles



mc²56 AUDIO NETWORKING

FOR COMPLEX CHALLENGES



BUILDING NETWORKED SYSTEMS

A major advantage of Lawo's mc² series is that all of our mixing consoles are designed not only as stand-alone solutions, but for networked interconnection into complex production infrastructures.

The optional networking facilities of the mc² 56 provide you with the opportunity to deploy up to 14 Lawo mc² consoles and Nova audio routers and distribute I/O resources wherever they are needed within a facility, or even over distance to remote venues. Lawo mixing consoles offer industry leading flexibility when it comes to creating the perfect workflow with matrixed interconnectivity via MADI, ATM, AES, analog audio and RAVENNA all on the same platform.

- Complex networked systems appear as a single matrix during operation
- Any consoles can access all parameters (such as mic preamp, bass cut, SRC, etc.), regardless of whether these are local or networked sources and destinations
- Integrated user rights management for sources and destinations

IP INTERCONNECTION IS A REALITY

START USING A FUTURE-PROOF TECHNOLOGY NOW

Introducing real innovation, which is bringing about a paradigm change in the audio industry: the possibility to distribute signals in real time over IP-based networks. RAVENNA technology is natively integrated into all of our mc² consoles.

A NEW FORMAT WITH NUMEROUS ADVANTAGES

RAVENNA is an open standard for real-time audio networking in IP-based environments. Developed by ALC NetworX together with well-known partners, RAVENNA is fully compliant with the AES67 standard. The RAVENNA Audio-over-IP technology brings concrete advantages that you can utilise today with your mc²56. Audio connection via RAVENNA provides twice as many channels as well as double the package density of a standard MADI connection. External devices can be connected with a bandwidth of 256 channels per port, and also – thanks to exchangeable SFP modules – using almost any imaginable cabling combination. Cost-effective CAT cables can be used in the same way as single or multi-mode fiber optic cables.

LOWER COSTS, GREATER EFFICIENCY

RAVENNA brings efficiency to your everyday production activities. And RAVENNA provides potential savings not only in terms of cabling, but also in terms of spatial use. For example, audio-over-IP provides new possibilities for optimization, as increased package densities lead to fewer stage boxes.

MAXIMUM FUTURE-PROOFING

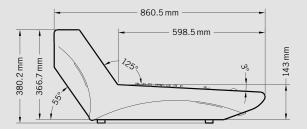
In addition to these practical benefits, the integration of RAVENNA delivers future-proof innovation. Recognizing that AoIP will, in the next few years, become the dominant transport technology in the broadcasting industry, Lawo has already integrated RAVENNA into all mc² 56 consoles – with only two slot-in cards allowing the construction of a consistently reliable audio network.

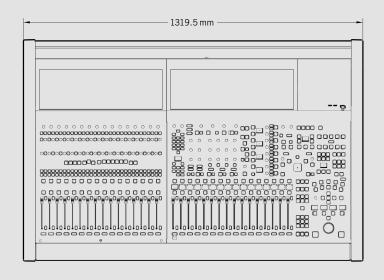
- Connection via two slot-in cards: the I/O card for the Core and the Master card to connect the DALLIS
- DALLIS with 128 channels and doubled package density, both at 48 kHz and 96 kHz
- 256 channels per HD Core port
- Multiple possible cabling variations and distances using CAT5 cabling, single or multi-mode fiber
- Fully AES67 compliant



mc²56 SPECIFICATIONS

mc^256





Per 16 fader extension plus 510 mm width

| mc²56 | STUDIO VERSION | MOBILE VERSION | |
|-------------------------|--|---|---|
| 16C | Width: 809 mm/31.85"Weight: 32.4 kg/71.4 lbs | Width: 731 mm/28.78"Weight: 32.4 kg/71.4 lbs | |
| 16+16C | Width: 1319 mm/51.93"Weight: 47.3 kg/104.3 lbs | Width: 1241mm/48.86"Weight: 47.3 kg/104.3 lbs | |
| 16+16C+16 | Width: 1829 mm/72"Weight: 62.6 kg/138 lbs | Width: 1751mm/68.93"Weight: 62.6 kg/138 lbs | |
| 32+16C+16 | Width: 2339 mm/92.1"Weight: 80.6 kg/177.7 lbs | Width: 2261mm/89 "Weight: 80.6 kg/177.7 lbs | |
| 32+16C+32 | Width: 2849 mm/112.17"Weight: 96.3 kg/212.3 lbs | Width: 2771mm/109.1 "Weight: 96.3 kg/212.3 lbs | |
| 16 Fader Stand Alone | Width: 601 mm; 23.66 "Weight: 23.1 kg/50.9 lbs | Width: 523mm/20.6 "Weight: 23.1 kg/50.9 lbs | TO DESCRIPTION OF THE PARTY OF |

mc²56xT

| mc ² 56 хт | STUDIO VERSION | MOBILE VERSION | |
|-----------------------|--|-----------------------------|------------------------------------|
| | | | |
| | | | |
| | | | |
| 32+16C | • Width: 1319 mm/51.93" | Width: 1241mm/48.86" | |
| | • Weight: 48.5 kg/106.9 lbs | • Weight: 48.5 kg/106.9 lbs | |
| 32+16C+32 | ■ Width: 1829 mm/72" | ■ Width: 1751mm/68.93" | |
| | • Weight: 65.0 kg/143.3 lbs | • Weight: 65.0 kg/143.3 lbs | |
| 64+16C+32 | ■ Width: 2339 mm/92.1" | ■ Width: 2261mm/89" | |
| | • Weight: 84.2 kg/185.6 lbs | • Weight: 84.2 kg/185.6 lbs | |
| 64+16C+64 | ■ Width: 2849 mm/112.17 " | Width: 2771mm/109.1 " | ogrania ogrania i gogrania ogrania |
| | • Weight: 100.1 kg/220.7 lbs | • Weight: 100.1kg/220.7lbs | |
| 32 Fader | Width: 601 mm/23.66 " | Width: 523mm/20.6" | |
| Stand Alone | Weight: 24.3 kg/53.6 lbs | • Weight: 24.3 kg/53.6 lbs | |

mc²56 SPECIFICATIONS

CONTROL PANEL

- Frames from 16 to 144 faders
- Remote stand-alone frames of 16/32 faders
- 6 banks each with 2 layers
- mc² 56: 100 mm fader + 2 freely adjustable rotary knobs + Input-Gain controller + channel display for each fader with sense-triggered change of module display
- mc² 56xτ: 100 mm fader + 60 mm fader + Input-Gain controller + channel display for each fader with sensetriggered change of module display
- 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
- 9 user buttons
- Optional: one integrated user panel (automation, 40 buttons, Reveal fader surround, talkback), RTW goniometer integration, script tray

SIGNAL PROCESSING

- 888 channels and 144 summing buses, 40-bit floating point
- Up to 760 inputs with A/B input, up to 64 sub-groups,
 32 aux sends, up to 96 track buses, up to 48 main sums
- Rapid switching of channel and bus to mono/stereo/surround
- Up to 96 surround channels, 128 VCA groups with metering,
 256 GP 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
- 2 AFL: 1 surround 8-channel, 1 stereo
- 2 PFL stereo
- Audio-follow-Video with 128 events, control via Remote MNOPL,
 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
- 8 automix groups available for mono/stereo/surround channels with unlimited contributing channels each
- Inline configuration with send/return switching per channel or global
- Fully-equipped surround channel with coupling of all channel parameters and hyperpanning

ROUTING MATRIX

- Up to 8192 crosspoints, non-blocking
- 96 kHz, 24-bit
- Fully redundant signal path
- 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
- 1016 internal loop-backs
- Full networking of up to 14 Nova73 Cores, share and import of sources and destinations, studio intervention
- Full snapshot and production portability independent of matrix and DSP size

INTERFACES

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

SYNCHRONIZATION

2 redundant inputs with automatic Blackburst, Wordclock, AES 3, MADI detection

REDUNDANCY

- PSUs, DSP board, router board
- Fully redundant signal path
- Redundant control system, exchangeable during run time, full data redundancy

CONTROL UNIT

- Bay Iso with separate layer and bank switching, plus second PFL/AFL bus
- 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 Nova73 components
- External matrix controllers: VSM, Evertz, Ross Overdrive, Quartz, BFE, Pharos, and others

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