



MP-50 IMMERSIVE SURROUND SOUND PROCESSOR

White Paper

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MP-50

IMMERSIVE SURROUND SOUND PROCESSOR



TECHNOLOGY WITH A PURPOSE

The MP-50 surround sound processor offers perfect cinema-grade sound in all immersive formats, including Dolby® Atmos, DTS:X, and Auro-3D®. Equipped with game-changing room correction technology RoomPerfect™, the MP-50 is audio engineering at the top of its game.

Highlights from the MP-50's exhaustive specifications list include:

- HDMI stage with 4K video pass-through, HDCP 2.2, and individual output signals
- Support for Dolby® Atmos, DTS:X, and Auro-3D®
- State-of-the-art digital audio processing
- Proprietary RoomPerfect™ room correction technology
- 12 Channels native decoding with 16 channel speaker layout possible
- 16 balanced XLR outputs for optimal connection to power amplifiers
- A voicing tool to cater to personal preferences

ROOMPERFECT™ ROOM CORRECTION

The MP-50 ships complete with RoomPerfect™, providing the ultimate listening experience. The listening room has a huge impact on the final quality of audio replay. Once the audio system has transformed the electrical signal into audible sound waves, you are no longer in control, and the audio you hear is subject to the strict physical laws of acoustics. The size, shape, and furnishing of the room all affect the result, and throughout the years, numerous attempts have been made to compensate for

room interference. RoomPerfect™ represents one of the largest patent filings in audio history with over 50 claims of new technology. This fully automated system measures a minimum of two million reflections, creating a three-dimensional map of the listening environment.

With RoomPerfect™, the MP-50 delivers a perfect surround sound experience equally well to living rooms, media rooms, and home theaters. Without the need for extensive acoustic treatment, you get a surround system with optimal frequency response, seamless level alignment, and bass management that perfectly integrates the speakers and subwoofers, plus more freedom when choosing speakers and their placement.

LEVEL ALIGNMENT

In surround sound, level alignment is key to make sure that all speakers are adjusted to have the same perceived level at the listening position. But even identical speakers will, due to different placements, exhibit a big difference in frequency response. With RoomPerfect™, instead of having the perception of individual speakers playing, you experience seamless level alignment and a uniform sound stage.

BASS MANAGEMENT

If you do not have full-range loudspeakers all around, then you need bass management to make sure that the bass that cannot be reproduced by the speakers is routed to subwoofers. The problem is that those woofers and main speakers must have the same frequency response to interact and perform correctly. If the subwoofer has a higher output at the crossover point than the main speaker, then the combined response from the main speaker and woofer will be very uneven. With RoomPerfect™ engaged, the frequency response is corrected—thus the integration of the speakers and woofers is seamless.

Even though RoomPerfect™ is the most advanced calibration system available, it is very easy to set up and use. Everything you need for calibration is included with the processor, and you are guided through the entire process, from plugging in the microphone to taking the required measurements. After setup, the MP-50 will automatically calculate and apply the needed correction.

IMMERSIVE SURROUND SOUND

The decoding of the MP-50 is handled by a state-of-the-art chip-set from Analog Devices, which offers full support of Dolby® Atmos, DTS:X, and Auro-3D®, as well as legacy surround sound formats.

The processor features 16 balanced XLR outputs and can output 12 native channels as well as 4 channels created by the internal matrix switch. Alternatively, the remaining 4 outputs can be used for additional woofers or bi-amping.

Don't have the space for the immersive layer of speakers? With the MP-50, you can integrate Dolby® Atmos enabled speakers without problems.

VOICING TOOL TO CATER TO PERSONAL PREFERENCES

The MP-50's built-in voicing tool will allow you to customize 32 voicings, thus changing the overall tonality of the system to your preferences and dedicating voicings to each source of the processor. With a "source" configurator, you can now create different virtual "sources" like "Action Movie" and "News," using the same inputs, but with specific voicings or post processing options to optimize the experience. You can also create voicings to compensate for recordings or to change the overall tonality of your speaker system.

Each voicing can consist of up to 8 filters with adjustable gain and Q, all controlled through the browser interface, which shows the effect of each filter as well as the overall effect to tonality.

CONNECTIONS

A variety of inputs and outputs provide plenty of options to connect your audio and video sources, including 8 HDMI inputs and two HDMI outputs, 4 optical and 3 coaxial inputs, a USB input that supports audio up to 192kHz/24bit, and an AES/EBU input plus an XLR connector for the RoomPerfect™ calibration microphone.

There's also an HDBaseT™ output, a feature set that can transmit uncompressed full HD digital video and audio through a 100m/300ft LAN cable to your HDBaseT enabled projector or HDBaseT receiver.



DCI-COMPLIANT DIGITAL AUDIO INPUT

For movie aficionados, the MP-50 offers an optional upgrade with a DCI-compliant input for integration with digital cinema servers. The DCI (Digital Cinema Initiative) input is an interface based on the balanced digital AES/EBU format.

DEAD SILENT OPERATION

With the MP-50, you can enjoy everything from the faintest details to the loudest action effect with full dynamics and total realism. But what about the suspense of total silence in a movie or the subtle musical details of your favorite concert? Sometimes it is the lack of sound which creates impact, and for that, you must have a quiet room. This is where the digital approach has another benefit; the MP-50 is silent. Not just quiet, but actually *silent*, even when operating at full capacity. The MP-50 doesn't generate much heat, allowing for passive cooling with no need for noise-inducing fans or vents. With the MP-50, you will enjoy the extremely low background noise of the digital signal processing – and by that we mean, you will experience . . . silence.

MEDIA PLAYER

The MP-50 features a built-in media player of the highest quality, which connects to services like Spotify and Airplay as well as internet radio. Through a cabled network or the USB connector, you can access your library of music and enjoy it in stereo or up-mixed to a surround sound format.

STUNNING DESIGN

A salute to modern industrial design, the chassis is executed in the signature sleek design of Lyngdorf Audio. Finished in matte black aluminum and glass, the MP-50 radiates minimalistic Danish design on its own or paired with matching Lyngdorf Audio amplifiers.

FLEXIBILITY IN INSTALLATION

Multiple control options will allow you to integrate the MP-50 into your home with ease. The processor ships with an IP-control and radio frequency remote which offers direct control of all features. Integration with home automation systems is seamless via RS232 and IP protocol, IR sensors, and triggers. For remote support and service, the MP-50 has a web interface and supports remote monitoring services like ihiji to offer a professional installer total remote control and assurance of performance over time.



BUILT TO LAST

The MP-50 is, like all Lyngdorf Audio electronics, built to the highest standards. Everything is simply best-in-class—from the meticulous design based on 20 years of knowhow in digital signal processing, to selection of components, mechanical design, manufacturing, and 48 hours of burn-in before the final QA. Each step ensures that you will not only have ultimate performance but also a product with probably the highest reliability in the industry.

All digital inputs are based on an asynchronous design with full clock recovery, and the signal path and processing are optimized for best possible playback quality.

A total of 8 dedicated audio DSPs with low jitter oscillator clocks handle dedicated processing tasks, each operating with a speed of 400 MIPS. This gives a massive processing power of 3,200 MIPS without having to rely on inferior PC or video clocks.

The attention to detail includes our own power supply with active power factor correction and independent supplies for analog audio and processing sections. The design holds AntiPop relays on each analog output and an AC-loss detection for safe operation. This ensures that not only does the MP-50 safeguard your speakers from noise generated through the mains power, it is itself also a gentle load to your mains power and other connected equipment.

The MP-50 is designed and manufactured in Denmark by the same team responsible for all other Lyngdorf Audio products, dating back to the Millennium Amplifier (the world first true digital amplifier) as well as the award-winning audio systems from Steinway Lyngdorf.

With full in-house control of processing and programming, future tweaks and improvements can be distributed with new software, easily downloaded and installed directly from the MP-50 user interface.

FULL SPECIFICATIONS

Description	MP-50 Surround Sound Processor
Decoding of Immersive Formats	Dolby® Atmos AURO-3D® DTS:X (future software upgrade, when code is available)
Decoding of Legacy Formats	Dolby Digital Dolby Digital EX Dolby Digital Plus Dolby TrueHD DTS DTS ES Discrete 6.1 DTS ES Matrix 6.1 DTS 96/24 DTS-HD High Resolution Audio DTS-HD Master Audio
Post Processing Possible on All Audio Formats	Dolby Surround AURO-MATIC® Dolby Pro Logic II, IIx & IIz Dolby EX DTS Neo:6 DTS NEO:X (future sw upgrade, when code is available)
Asynch. Digital Audio Inputs	8 x HDMI™ (≤192kHz/24bit) 1 x AES/EBU S/P-DIF input (≤192kHz/24bit) 3 x S/P-DIF coaxial inputs (≤192kHz/24bit) 4 x S/P-DIF optical inputs (≤ 96kHz/24bit) 1 x USB audio input (≤192kHz/32bit)
Room Correction Interface	1 x XLR microphone input for RoomPerfect™ calibration
Audio Outputs	16 x XLR Balanced analog outputs (5.0 Vrms) 1 x SPDIF coax digital zone output (fixed 96kHz/24bit)
General Audio Specifications	Frequency response 20 to 20k Hz: ±0,5dB THD Max. from 20 to 20k Hz: 0.005% THD+N (1kHz @ 0dBFS, 80kHz filter): 0.00062% S/N ratio (1kHz @ 0dBFS): 120 dB
EQ	RoomPerfect™ on all native channels Subwoofer level assistant 32 adjustable voicings each holding up to 8 filters
Media Player	Internet radio (vTuner) Spotify connect DLNA Support on USB and Ethernet Airplay

Video Inputs	8 x HDMI™ (HDCP 2.2) Up to 4K 60 Hz with HDR or Dolby Vision Up to 4K 30 Hz with 12 bit deep color
Video Outputs	2 x HDMI™ (HDCP 2.2) 1 x HDBaseT™ (HDMI matrix switching on all connectors)
Video Scaling	Upscaling of all video formats to 4K ultra high definition No downscaling of 4K video
Zone Output	Digital stereo output fixed at 96kHz/24 bit Follows main setup or controllable through interfaces
Trigger Controls	Triggers can be configured individually in functionality, 5V or 12V, level or pulse.
Control Interfaces	1 x DB9 RS232 connector 2 x IR sensor inputs 1 x IR output (loop from one of the IR inputs) 1 x Trigger input 4 x Trigger outputs 1 x RJ45 Gigabit Ethernet connector 2 x USB connectors for backup 1 x SD card slot for software and settings backup 1 x RF and Infrared remote control with OSD control
Accessories Included	RoomPerfect™ microphone Microphone stand Microphone cable RF remote control Rack mounts Power cable
Optional Module	DCI-compliant AES/EBU input for movie servers
Software Upgrade	Through USB or on-line from unit
Backup	All settings and calibration on USB or SD Card
Placement Options	Rack mount or freestanding
Cooling	Passive cooling / Max heat output: 85W / 290 BTU/hr.
Mains Power Safety	Accepts mains power from 100 to 240 Volt AntiPop relays AC-Loss detection Active power factor correction
Dimensions (H x W X D)	147 x 450 x 370 mm / 5.8 x 17.7 x 14.6 inches
Net Weight	12 kgs / 26.5 lbs