



## Lyngdorf TDAI-3400 Integrated Amplifier / Advanced Audio Processor

### TECHNOLOGY WITH A PURPOSE

The TDAI-3400 is the most powerful product from Lyngdorf Audio, and capable of handling the most difficult speakers on the market.

The TDAI-3400 is more than just another high-end amplifier - It is a completely unique audio processor. In fact, we believe it to be the most versatile processor and amplifier combination on the market today, a true state-of-the-art device that sets new standards for what's sonically possible to achieve in a real-life environment.

The TDAI-3400 accepts all your media interfaces and holds itself a Roon Ready media player. Equipped with our proprietary RoomPerfect™ room correction technology, the TDAI-3400 is a user-friendly product packing an excessive list of features - and that in a relatively small cabinet with the signature Lyngdorf Audio black styling.

Highlights from the TDAI-3400's exhaustive specifications list include:

- 2 x 400 watts of RMS power (4Ω) / Capable of continuously delivering a stunning 40A
- Accurate and versatile audio processing based on dedicated SHARC processors
- Voicing tool to cater to personal preferences on type of source or music
- Advanced Pre-Eq and Crossover section to optimize your speaker design
- RoomPerfect™ room-correction calibration to eliminate the negative influence of the listening room
- Inputs and outputs with excellent audio qualities
- HDMI 2.0a stage with 4K/12 bit video pass-through, HDCP 2.2,

### AUDIO QUALITY

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 without having to rely on inferior PC or video clocks. The advanced audio processing is made possible through two 4<sup>th</sup> generation SHARC DSP processors working in up to 40-bit floating-point formats.

Through the web interface you can perform all setup and operations from the menu system, and in addition you can create your own pre-eq filter to optimize your speaker performance as well as design a range of voicings to cater your wishes for individual music sources or genres.

The TDAI-3400 is a totally digital design with the output section based on the Equibit™ technology originally developed for the Lyngdorf Millennium amplifier. Without analog signal processing and with the volume control handled in our exclusive way of attenuating the power supplied to the output section instead of attenuating the signal level, this revolutionary design keeps the signal to noise ratio at maximum, resulting in an unequaled dynamic performance.

A key component is the power supply with power factor correction and independent supplies for analog audio and processing sections. The mains grid is decoupled by design, why no external power conditioner is needed. The design holds AntiPop relays on each analog output, a Limiter and an AC-loss detection for safe operation. All-in-All this ensures that not only does the TDAI-3400 safeguard your speakers from noise generated through



the mains power, it is itself also a gentle load to your mains power and it does not send noise to other products connected to the same mains power grid.

The TDAI-3400 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 TDAI-3400 web interface.

## **ROOMPERFECT™ ROOM CORRECTION**

The TDAI-3400 ships complete with RoomPerfect™, providing the ultimate listening experience. The listening room has a huge impact on the final quality of audio reproduction. 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 TDAI-3400 delivers a perfect musical experience in all living rooms. Without the need for extensive acoustic treatment, you get a sound 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.

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 amplifier, and you are guided through the entire process, from plugging in the microphone to taking the required measurements. After setup, the TDAI-3400 will automatically calculate and apply the needed correction.

## **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 phase seamlessly 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. This can be aligned with the bass management features of the TDAI-3400.

## **VOICING TOOL TO CATER TO PERSONAL PREFERENCES**

The TDAI-3400'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 input of the amplifier.

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 as well as your speaker setup. 7 Digital inputs including a balanced AES/EBU allows for optimal connection to your digital audio sources whereas USB inputs connects to music stored on external media.

2 analog inputs are available as standard for simple analog music sources. An optional module holds four high-end analog inputs based upon a dedicated AKM converter with gold-plated relays for adjustment of sensitivity. This module allows for lossless connection of highest quality analog sources through single-ended or balanced cables.

Adding a Lyngdorf SDA-2400 for bi-amping or integrating one or two subwoofers with your speakers is an easy job with both a coaxial digital output as well as balanced and single-ended analog line outputs.

The other optional module holds 3 HDMI inputs for connection to modern media players and a HDMI output for connection to your television – effectively transforming the Lyngdorf TDAI-3400 to an extreme audio processor.

## DEAD SILENT OPERATION

With the Lyngdorf TDAI-3400, you can enjoy everything from the faintest details to the loudest guitars 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 TDAI-3400 is silent. Not just completely quiet as in with no noise, but actually *silent*, even when operating at full capacity. The TDAI-3400 doesn't generate much heat, allowing for passive cooling with no need for noise-inducing fans or vents. With the TDAI-3400, 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 TDAI-3400 features a built-in media player with the highest playback quality, and through your local network or via the USB connectors, you can access your entire library of music through the DLNA/UPnP enabled player.

This media player also connects to streaming services like Roon, Spotify Connect and Airplay as well as internet radio.

Through the headphone output you can enjoy the full quality of the Lyngdorf audio processing in full privacy.

## 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 TDAI-3400 radiates minimalistic Danish design on its own or paired with matching Lyngdorf Audio amplifiers.



## BUILT TO LAST

The TDAI-3400 is, like all Lyngdorf Audio electronics, built to the highest standards. Everything is simply best-in-class—from the meticulous design based on 12 years of knowhow in digital signal processing, to selection of components, mechanical design, manufacturing, and 24 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. The output section is designed with extremely fast switching low-Rds MOSFETs for having the highest possible efficiency. This is not only enabling a very high peak current for difficult speaker loads, but ensures low heat emissions and thus higher reliability.

Having a RS232 interface and featuring full IP control you can integrate the TDAI-3400 in all types of control systems with all its features available. The entire setup and calibration data can be backed up to the SD card or to a USB pen drive. With this backup, you can always restore the software to a working setup

## CONCLUSION

**The TDAI-3400 is a product built for the demanding audiophile, who requires nothing less than the ultimate audio performance. The unique tools for optimizing the sound to the owner's preferences gives credit to our design focus:**

**Technology with a Purpose!**

**SPECIFICATIONS**

<b>MODEL</b>	TDAI-3400
<b>DESCRIPTION</b>	2-channel Integrated Amplifier, aka "Power DAC"
<b>POWER RATING</b>	2 x 400 W RMS @ 4Ohm / 2 x 200 W RMS @ 8Ohm
<b>STANDARD DIGITAL INPUTS (Asynchronous)</b>	1 x AES-EBU ( $\leq 192\text{kHz}/24\text{bit}$ ) 2 x Coaxial ( $\leq 192\text{kHz}/24\text{bit}$ ) 3 x Optical ( $\leq 96\text{ kHz}/24\text{bit}$ ) 1 x USB B ( $\leq 384\text{kHz}/32\text{bit}$ , $\leq \text{DSD128}$ , DXD)
<b>STANDARD ANALOG INPUTS</b>	2 x Analog Single Ended RCA (Max level: 4.0V = 0dBFS) 1 x Microphone input (XLR) for RoomPerfect™ calibration
<b>HDMI MODULE (OPTIONAL IN-/OUTPUT)</b>	1 HDMI Output / 3 HDMI Inputs (PCM $\leq 192\text{kHz}/24\text{bit}$ ) ARC (PCM $\leq 192\text{ kHz}/24\text{bit}$ ) CEC integration HDMI 2.0a support HDCP 2.2 Resolution up to YCbCr 4:2:2, 12bit, 600MHz
<b>HIGH-END A/D CONVERTER (OPTIONAL INPUT MODULE)</b>	3 x Single Ended RCA 1 x Balanced XLR
<b>STANDARD OUTPUTS</b>	1 x Stereo Analog RCA 1 x Stereo Analog XLR 1 x Stereo Digital Coax 1 x Headphone 3,5mm
<b>AUDIO SPECIFICATIONS</b>	Frequency Response: $\pm 0,5\text{dB}$ from 20 to 20,000 Hz Total Harmonic Distortion: 0.05% max from 20 to 20,000 Hz THD-N 1w/8ohm 0,04% / THD-N 1w/4ohm 0,04%
<b>MEDIAPLAYER</b>	Room Ready Spotify Connect



	<p>DLNA Support (uPnP)</p> <p>AirPlay</p> <p>Local file playback (USB)</p> <p>Internet Radio (vTuner)</p>
<b>WIRELESS CONNECTIONS</b>	<p>Bluetooth (4.2 BLE)</p> <p>Wi-Fi (802.11 n/ac)</p>
<b>TRIGGER (12V)</b>	<p>1 x Input, which can be related to audio inputs</p> <p>1 x Output</p> <p>3,5mm jack / Thresholds approx.: On: 2.4V Off: 1.6V</p>
<b>CONTROL INTERFACES</b>	<p>Web-interface</p> <p>IP Control</p> <p>1 x DB9 connector for RS232 control</p> <p>1 x RJ45 Ethernet LAN connector</p> <p>2 x USB connectors (Type A)</p> <p>1 x SD card slot (Backup of filters and settings)</p>
<b>ACCESSORIES INCLUDED</b>	<p>RoomPerfect™ Microphone</p> <p>Microphone stand, cable &amp; mini-jack connector</p> <p>Remote control (IR / BLE)</p>
<b>PLACEMENT OPTIONS</b>	<p>Optional Rack Mount or Freestanding</p>
<b>DIMENSIONS (H x W x D)</b>	<p>10,5 x 45 x 36 cm (including connectors)</p> <p>4.1 x 17.7 x 14.1 inches (including connectors)</p>
<b>WEIGHT</b>	<p>8 kg / 17.6 lb</p>
<b>FINISH</b>	<p>Matte Black</p>
<b>PRICE</b>	