



Altitude<sup>32</sup> + Altitude<sup>48 ext</sup>

ELEVATE  
YOUR  
SOUND\_





**ALTITUDE** 3D

**A new reference is born**

“

*We leverage our unique technologies acclaimed across the entire film industry, from studios to commercial theaters, as well as our leading position in 3D sound research since 2001, to propose the most advanced, innovative, powerful and scalable 3D AV Preamplifier ever manufactured.*

ARNAUD LABORIE, CEO



## Revolutionary hardware platform

At the heart of this new generation of processor is a new approach to Digital Signal Processing, based on a revolutionary hardware architecture, highly scalable and easy to upgrade. Rather than using multiple DSP implemented in a complex and rigid architecture, Trinnov Audio has developed a multi-purpose processing platform, based on a single multi-core Intel processor to provide unrivaled processing capacities.

Used everyday in demanding professional environments, this architecture meets the highest requirements in terms of reliability and performance. Despite its extreme sophistication, the Altitude<sup>32</sup> is easy to operate thanks to a unique user-friendly and self-explaining web-based user interface.

# REFERENCE IN 3D SOUND

The standard version of the Altitude<sup>32</sup> natively decodes Dolby Digital Plus®, Dolby TrueHD®, DTS Digital Surround® and DTS-HD Master Audio®.

With the 3D Audio optional package, you can experience a new world of immersive sound with Auro-3D®, Dolby Atmos® & DTS-X®, the Altitude<sup>32</sup> also includes Auro-Matic®, Dolby Surround Processing®, and DTS:Neural X® upmixers.

Thanks to Trinnov patented 3D spatial Remapping technology, the Altitude<sup>32</sup> is the only processor to provide universal and spatially accurate 3D sound playback. This technology ensures an unmatched spatial resolution for the most incredible immersive experience and represents the only sustainable solution to the inherent incompatibility issue of current and future 3D sound formats.



## AWARDS

### · EISA Award:

Best Product

### · HiFi & High-End Show Moscow (Russia):

Top High-End Product

### · Super AV Magazine (China)

Best AV Receiver/Processor

### · SIAV Award (China):

Best AV Product

### · Heimkino (Germany):

Referenz AV Processor

### · Home Cinema Choice (UK):

Reference Status

### · HIFI Grand Prix (Japan):

Silver Award

### · Residential Systems (US):

Best of Show



TRINNOV'S UNIQUE TECHNOLOGIES

# SOUND OVER MATTER\_

The loudspeaker/room Optimizer technology is at the heart of Trinnov's products for professional studios, movie theaters, high-end hi-fi and home theaters. With its modern approach to acoustic measurements, analysis, and processing, it solves the loudspeaker/room acoustic equation and goes so far beyond the more common "auto-EQ" technologies available from third parties.

SPATIAL ACCURACY

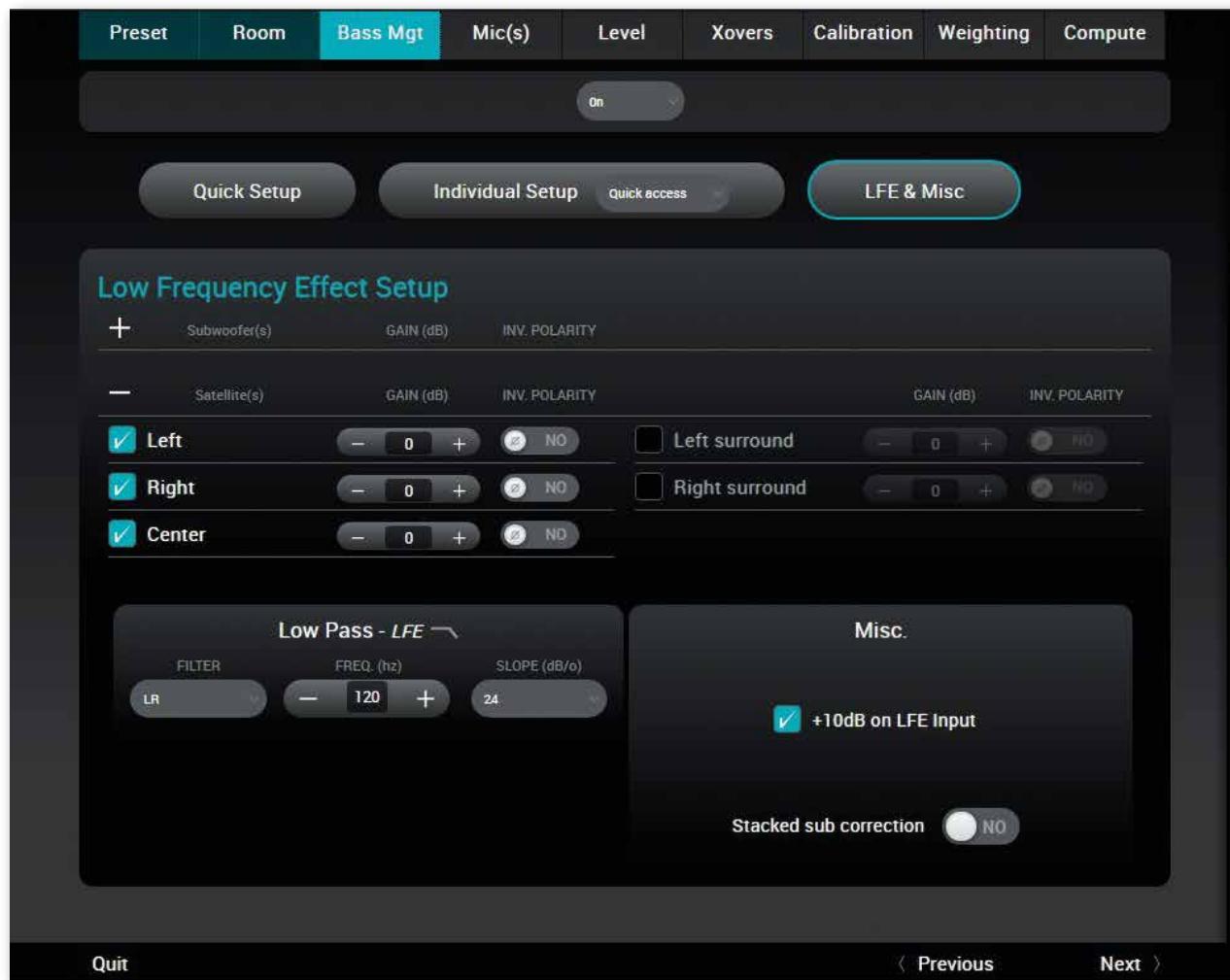
## REMAPPING\_

Thanks to the 3D measurement capabilities of our microphone, each speaker's actual placement can precisely be localized in the room regarding distance, azimuth, and elevation. Knowing the intended placement of various sounds within the soundtrack (since we decoded it), we can then "remap" the sound objects from the theory of the soundtrack to the reality of your particular room, using the closest two or three speakers to create a phantom image of the sound where it should be. While 2D remapping deals mainly with the horizontal plane, 3D remapping will manage both azimuths and elevations.



*I've never heard music sound better than it  
sounds through the Altitude<sup>32</sup>*

Doug Blackburn Widescreen Review (USA)



LOW END UNDER CONTROL

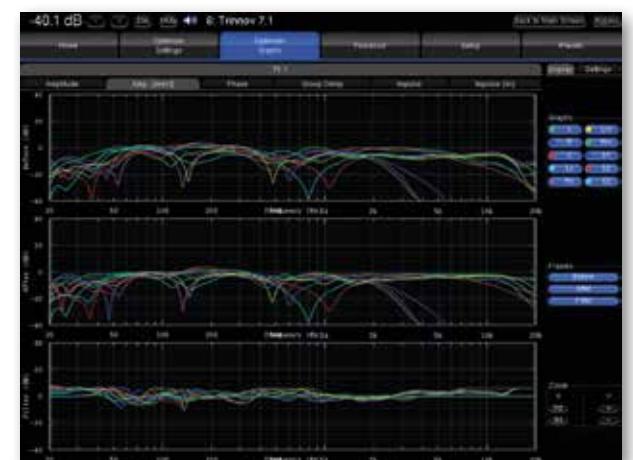
## BASS MANAGEMENT\_

Trinnov provides the most sophisticated solution on the market when it comes to managing low frequencies. With our intermediate bass management system you can, of course, specify how one or more subwoofers will reproduce the lower part of the spectrum for each channel. But it goes further: it even allows you to bass manage the low frequencies of a small speaker to the closest, more-capable speaker. It gives you complete control over crossover frequencies, filter type, slope, and even where the redirected bass

TRINNOV'S UNIQUE

## OPTIMIZER\_

The Optimizer is the only acoustic optimization technology that has been recognized by world-class sound engineers, movie theaters, and audiophiles. Other technologies paint with a broad brush, failing to recognize that there are actually many different problems that must be addressed with different, optimal solutions. The Optimizer analyzes and corrects these different sonic challenges individually, with precision. The result is a seamless three-dimensional soundstage



Next generation 32 channel AV Preamp

# SPECIFICATIONS

## MAIN FEATURES

- 32 channel Digital Audio Processor
- Universal Spatial-Accurate 3D
- Audio playback
- 118 Digital and Analog Inputs
- 80 Audio Outputs

### LINE-UP

- Altitude 32 - 8-8: 8 AES Inputs / 8 Analog Outputs
- Altitude 32 - 8-16: 8 AES Inputs / 16 Analog Outputs
- Altitude 32 - 16-24: 16 AES Inputs / 24 Analog Outputs
- Altitude 32 - 16-32: 16 AES Inputs / 32 Analog Outputs

### AUDIO FORMATS

- HDMI 2.0 compliant digital with 3D video pass-through (HDMI 2.0 upgrade supported)
- 3D Audio Codecs Dolby Atmos®, Auro-3D®, DTS:X®
- HD Audio Codecs Dolby True HD®, DTS-HD MA®
- LPCM Audio: 16-channels AES input compatible with Digital Cinema Servers
- UPnP/DNLA renderer: WAV, AIFF, OGG, FLAC up to 24 bits / 192 KHz

### SUBWOOFER MANAGEMENT

- Adjustable High Pass / Low Pass editable by group or for individual Satellite/Sub
- Support for 0 to 32 subwoofers
- Automatic level and delay alignment

### REMOTE MANAGEMENT

- VNC Remote Control through the network from any smartphone, tablet or laptop
- Automation via Telnet and RS232 protocols
- AMX®, Control4®, SAVANT®, RTI® modules
- Built-in WiFi
- Remote control included

## EXCLUSIVE TECHNOLOGIES

- Trinnov patented 2D/3D spatial remapping
- Trinnov Loudspeaker/Room Optimization
- Trinnov high-performance AD/DA converters, used daily by the most demanding mastering studios
- Next generation Hardware platform:
  - Revolutionary architecture, scalable processing platform
  - 64 bits floating point & 24 bits / 192 KHz native processing
  - Future-proof software-oriented upgrades provided over internet, no need for DSP upgrade
  - Robust design, inspired from our professional audio product line

### AUTOMATIC PROCESSING

- Multi-point acoustic measurement (3D measurement microphone)
- Time/Frequency acoustic analysis based on impulse response measurement
- Loudspeaker/Room optimization
- Target Curves

### MANUAL PROCESSING

- Several layers of 31 bands Graphic EQ, FIR EQ, gains polarities and delays available for every channel
- Comprehensive Processing latency control
- Total delay given in meters/milliseconds frames for the listening point
- Adjustable global delay for accurate Lip Sync

### POWER

- Dedicated linear power supply with toroidal transformer on the Analog audio circuit
- Dedicated Power supply unit on the digital audio circuit

### ANALOG INPUTS

- Stereo: 2 x XLR
- Stereo: 3 x RCA
- 7.1: 1 x RCA
- 1 x 3D microphone Input

### ANALOG OUTPUTS

- OUTPUT CHANNEL: XLR
  - Altitude 32 8-8: 8
  - Altitude 32 8-16: 16
  - Altitude 32 16-24: 16
  - Altitude 32 16-32: 16
- OUTPUT CHANNEL: DB25
  - Altitude 32 8-8: 8
  - Altitude 32 8-16: 16
  - Altitude 32 16-24: 24
  - Altitude 32 16-32: 32
- STEREO OUTPUT - RCA: 1 for all versions
- HEADPHONE OUTPUT - JACK 6.35 : 1 for all versions



## DIGITAL OUTPUTS

- OUTPUT CHANNEL: DB25
  - Altitude 32 8-8: 8
  - Altitude 32 8-16: 16
  - Altitude 32 16-24: 24
  - Altitude 32 16-32: 32

- PCM 7.1 SPDIF INPUTS (RCA OR TOSLINK): Yes for all versions

## DIGITAL INPUTS

- DCI COMPLIANT AES3: DB25
  - Altitude 32 8-8: 8-Ch (Upgradable to 16)
  - Altitude 32 8-16: 8-Ch (Upgradable to 16)
  - Altitude 32 16-24: 16-Ch
  - Altitude 32 16-32: 16-Ch

- AES3 STEREO INPUTS - XLR: 2 for all versions
- S/PDIF INPUTS - RCA: 4 for all versions
- S/PDIF INPUTS - TOSLINK: 4 for all versions
- UPNP/DLNA COMPLIANT AUDIO RENDERER: Yes for all versions

## HDMI BOARD

- 2 Outputs (Mirroring only)
  - 1: HDMI 1.4/ HDCP 1.4
  - 2: HDMI 2.0/ HDCP 2.0
- 7 Inputs (all inputs can be configured for HDMI 2.0/ HDCP2.2)
  - 1-3 HDMI 1.4 / HDCP 2.2
  - 4-7 HDMI 2.0 / HDCP 2.2

- Maximum Resolution 4K UHD on all inputs/outputs
- Maximum Bandwidth 18Gbps on all inputs
- Chroma Subsampling 4:2:0, 4:2:2, 4:4:4
- Colour Depth 8/10/12 bits
- Colour Space RGB, YCbCR709, BT2020
- Frame rate 24/25/30/50/60

## PHYSICAL CHARACTERISTICS

- Chassis: 19" RACKMOUNT 3.5 U
- Power supply: 240V AC / 50-60 Hz. Option: 130V AC
- Consumption: 90 W max.
- Weight: 14.5kg
- Environmental conditions:
  - Operating: 0°C – 40°C (32°F – 104°F)
  - Humidity: 20% – 80% relative humidity (without condensation)



TRINNOV'S UNIQUE EXPERTISE

# IN HOME CINEMA INSTALLATION\_

Trinnov has been collaborating for years with some of the most respected brands and integrators in the field, allowing us to work on some of the most ambitious home cinema projects of the past ten years. With the publication of our own recommended speaker positions guide, we are offering our expertise to all integrators on top of our recurrent CEDIA Lectures.

*There's probably no more flexible AV processor currently available for home cinema. Its ability to switch fleet-footed between sound formats is remarkable; its sound is precise, authoritative and balanced. Yes, it's expensive, but the best things often are.*

Home Cinema Choice (UK)

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*This is the benchmark that all other AV processors are measured against; it is the definitive reference of high-end home theatre processors.*

Guy Singleton IMAGINE THIS (UK)

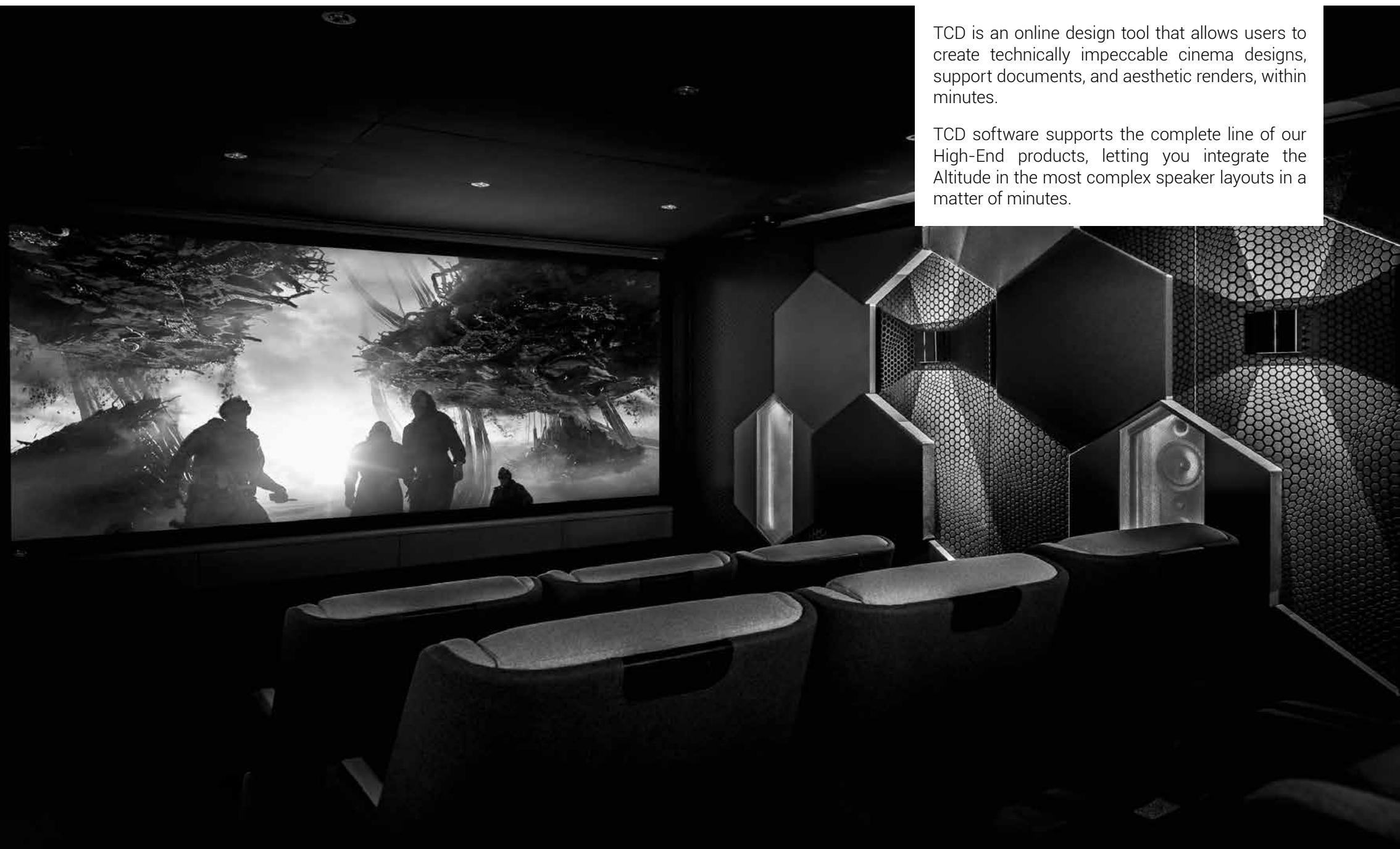
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## CINEMA DESIGNER\_



TCD is an online design tool that allows users to create technically impeccable cinema designs, support documents, and aesthetic renders, within minutes.

TCD software supports the complete line of our High-End products, letting you integrate the Altitude in the most complex speaker layouts in a matter of minutes.



# SPEAKER LAYOUTS\_

With its sixteen discrete outputs, the Altitude16 is the only platform in its price range to offer such variety of speaker layouts. By decoding all immersive codecs natively over 16 discrete channels we guarantee the most accurate sound reproduction and all up to 96k.

Additionally, Trinnov Audio dealers now have access to a comprehensive speaker placement recommendations design guide which details all combinations possible.

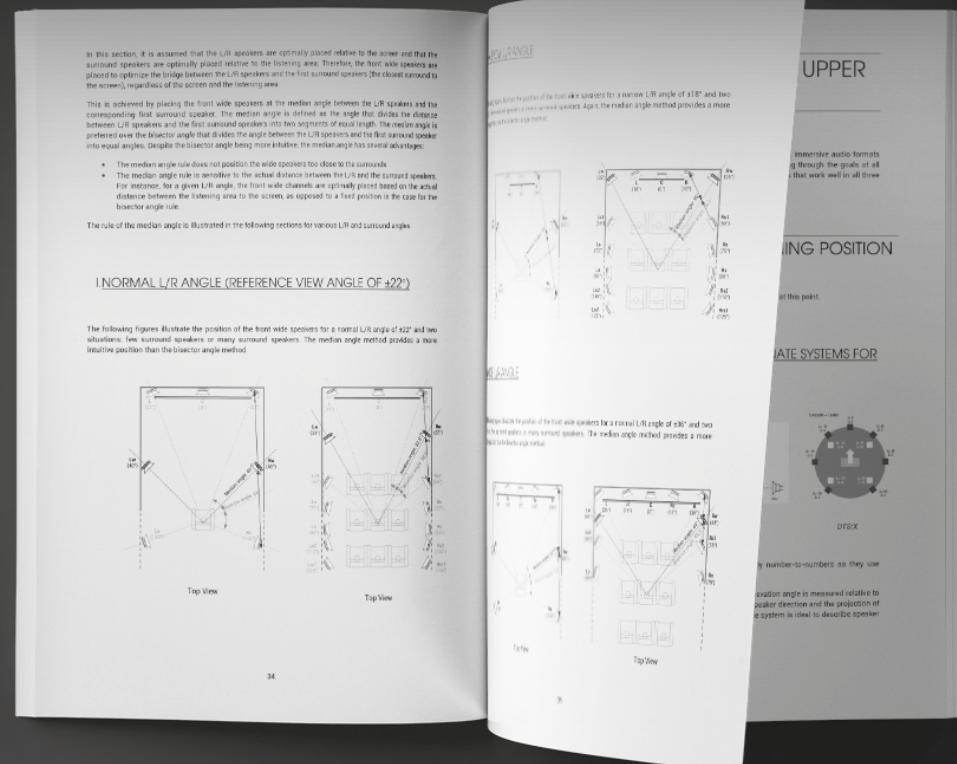
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*The Altitude<sup>32</sup> is simply best-in-class, and not just because nothing else is even in the same league. For a 3D Immersive Audio environment, there is no substitute.*

Adam Pelz REAL Audio Video (USA)

*The Trinnov Altitude<sup>32</sup> has changed our outlook on designing premium private cinemas. Having the ability to deliver up to 32 channels of either native or up-mixed audio using any of the current immersive audio formats is enabling us to deliver previously unavailable experiences to our clients.*

Peter Aylett, Archimedia (UK)





48 channel  
Extension

Designed with no limits in mind

# UP TO 48 CHANNELS\_

Thanks to Altitude<sup>32</sup>'s unique hardware conception, Trinnov's engineering has been able to find a solution to output even more discrete channels from the already state-of-the-art Altitude<sup>32</sup>, expanding the count to 48 real discrete channels by using its 32 analog outputs and its 16 AES outputs simultaneously.

It will allow – for the first time – users to experience the full Home Atmos experience with its 24.1.10 layout, while still allowing more possibilities in term of bass management or

multi-amping and remapping. However, that solution requires an AES multi-channel High-end DAC that could compete with Altitude's own renowned DAC: Trinnov's solution to that problem is Trinnov Altitude<sup>48ext</sup>.

Based on magnitude<sup>32</sup>, the Altitude<sup>48ext</sup> includes 16 channels of AES/EBU inputs and 32 channels of analog outputs using the same DAC used in the Altitude<sup>32</sup>, ensuring perfect coherence in the final rendering. But the Altitude<sup>48ext</sup> is not

just a DAC; it is a fully capable Trinnov unit with processing power to perform tasks such as calibrated crossovers, bass management, and both third-octave and FIR EQ.

Combined together, the Altitude<sup>32</sup> with the 48 channel option plus the Altitude<sup>48ext</sup> give you access to 48 discrete channels and no fewer than 64 independently processed channels, pushing even further the boundaries of what is achievable in a high-end Home Theater.

experiment with a 24.1.10 layout

# FULL DOLBY ATMOS HOME EXPERIENCE

## DIGITAL INPUTS

- DB25 (110 Ohms – Tascam Pinout)

## ANALOG INPUTS

- DB25 (20k Ohms – Tascam Pinout)
- XLR (20k Ohms) for the first 8 channels

## ANALOG OUTPUTS

- DB25 (100 Ohms – Tascam Pinout)
- XLR (100 Ohms) for the first 8 channels

## HIGH-PERFORMANCE AUDIO

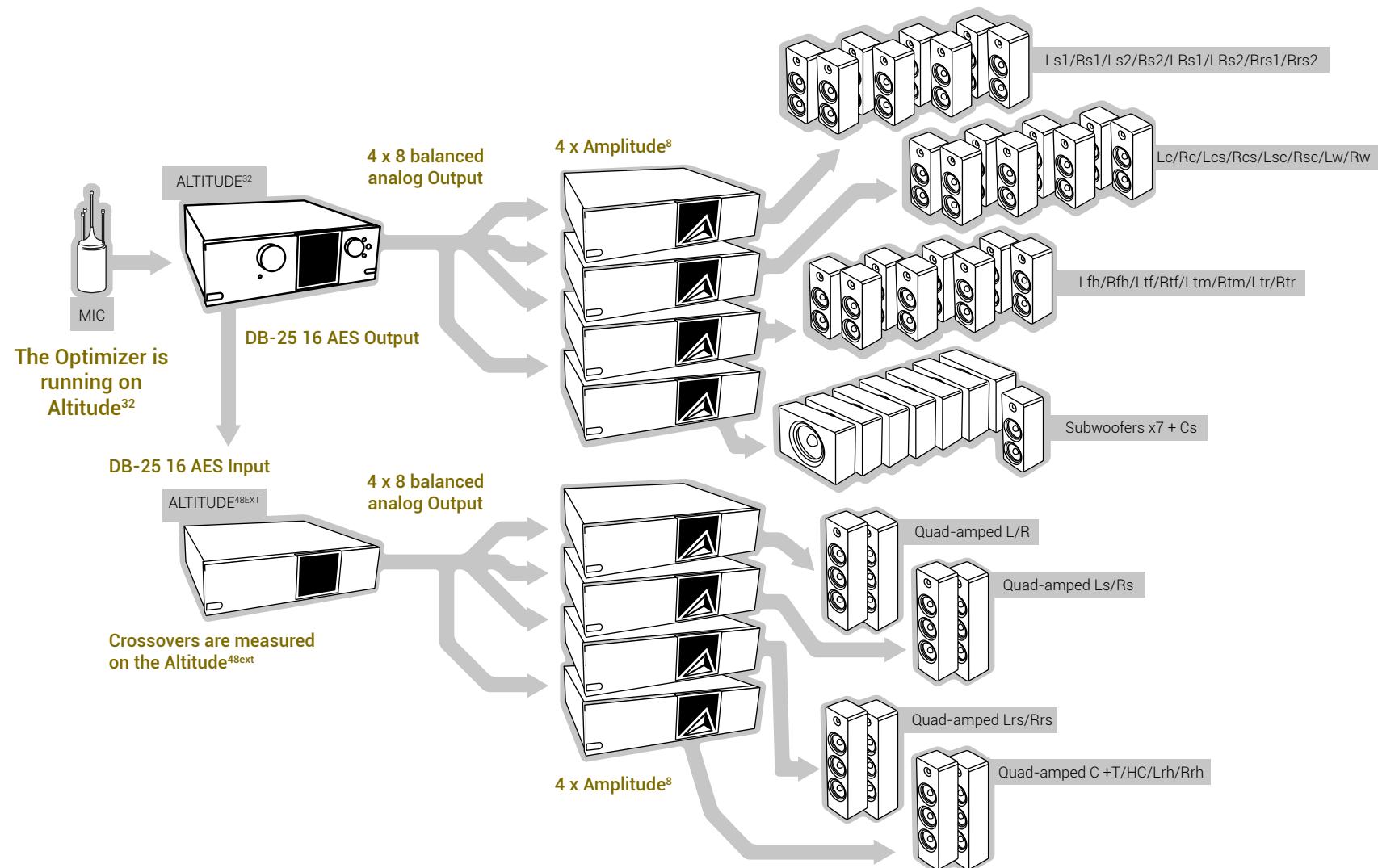
- Resolution / Sampling Rate: 24 bits/96 kHz
- A/D signal-to-noise ratio: 119 dB (A-Weighted)
- THD+N ADC: -103 dB
- D/A signal-to-noise ratio: 118 dB (A-Weighted)
- THD+N DAC: -98 dB
- Variations under 25ps are recovered, jitter attenuation superior to 50 dB is achieved above 100Hz
- AntiPop relays on each analog output
- Maximum Number Of Processing Channels: 32 channels at 96 kHz

## DESIGN AND ASSEMBLY

- All Audio boards designed and manufactured by Trinnov
- Processor: Intel i5 Quad-Core
- Cooling System: Custom heat sinks + additional slow fans

## PHYSICAL CHARACTERISTICS

- Wake on LAN capable
- Chassis: 2U
- Power supply: 240V AC / 50-60 Hz. Option: 130V AC
- Consumption: 90 W max.
- Weight: 10,2kg



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Inventing Digital Acoustics