TRINNOV AUDIO

PRO AUDIO RANGE

www.trinnov.com

TRINNOV | PRO•AUDIO

LINE-UP_

ST2 PRO

All stereo applications from the music and mastering studio to broadcast stereo monitoring.

A solution adopted by world's most renowned studio engineers.

D-MON

The D-MON is a unique and complete solution to optimize your listening environment, seamlessly integrated within your workflow.

Take control over your monitoring chain, from the music studio to any post-production facility and immersive formats.

MC PRO

Design your custom setup to optimize the sound of any mixing stage from 5.1 basic applications to immersive audio for enhanced film and post-production facilities.

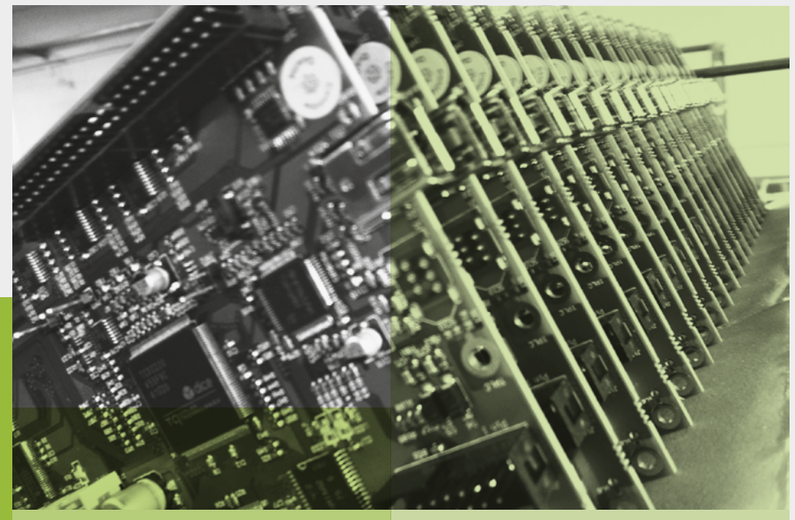
This modular system can drive the most complex speaker layouts.

MC HCC

Optimize High Channel Count systems up to 64 processing channels for the most demanding configurations.

It has been adopted by major networks and research labs around the world.

TRINNOV'S PRODUCT LINE_



COMMON SPECS

HARDWARE PLATFORM

• Intel multi-threaded processors for massive computing power and no-compromise audio quality

• 64 bit floating point processing, no sampling rate conversion

• Low noise profile achieved with slow fans to accommodate requirements of a control room

• Industrial grade flash drive storage for longevity and reliability

• Antipop relays on each analog output

HIGH-PERFORMANCE AUDIO

• All audio boards designed and manufactured in France by Trinnov

• A/D signal-to-noise ratio: 119 dB (A-Weighted)

• D/A signal-to-noise ratio: 118 dB (A-Weighted)

• 24 bit / 96k ADC - 24 bit / 192k DAC

• Independent power supplies for audio and processing sections

• Clock Recovery: jitter attenuation better than 50 dB above 100Hz

FLEXIBLE REMOTE CONTROL

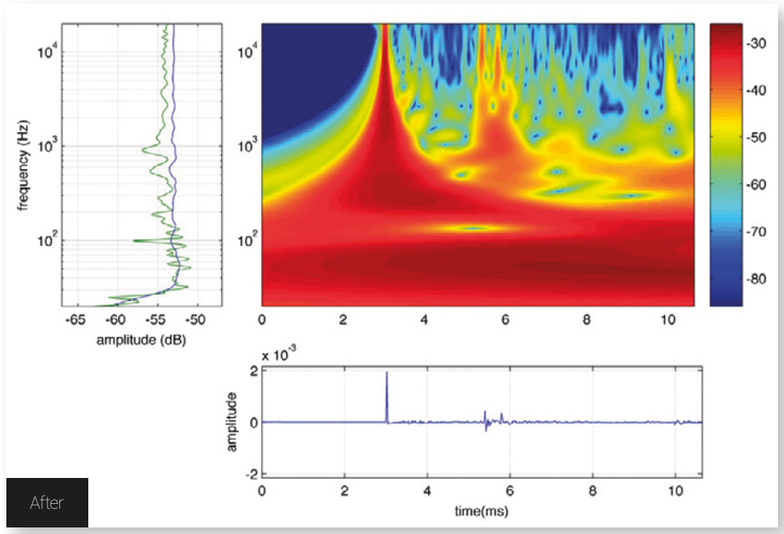
Remote capabilities can be achieved using RS-232, Ethernet IP protocols, optional GPIO boards, optional VGA/ DVI touchscreens, and from any PC, Mac, tablet, SmartPhone

MECHANICAL CHARACTERISTICS

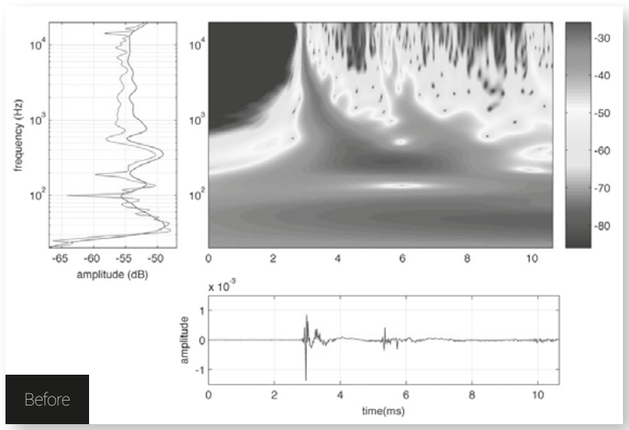
• WIDTH 444 mm
• HEIGHT 88,5 mm
• DEPTH 405 mm
• WEIGHT ca. 11 kg
• 2U CHASSIS

Product	ST2 PRO	D-MON	MC PRO	MC HCC
Application	Small facilities, music mixing rooms, mastering studios, broadcast stereo monitoring...	Music, post-production facilities from stereo, up to 3D audio configuration requiring integration and/or monitoring features...	Medium to large facilities, auditoriums, cinema mixing rooms, OB Vans, custom I/O...	R&D labs, large listening rooms, immersive audio mixing stages...
Number of processed channels	4	4 to 12	modular, up to 32	up to 64
Monitoring features - advanced sources management, dedicated low latency side mixer, talkbacks circuits...		X		
Multiple speaker sets		X		
Listening simulation - dynamic range compression, downmixes...	X	X	X	X
Active Cross-Overs	X		X	X
Inputs/Outputs	AES/Analog, up to 96kHz	AES/Analog, up to 96kHz, optional Audio over IP (AES67)	AES/Analog, up to 192kHz	MADI, AES67 /Ravenna and Dante, up to 192kHz
Integration	Optional GPIO, RS232 / IP telnet protocol	GPIO, Midi, Digidesign ICON protocol, EUCON, standard JSON/REST network API, RS232 / IP telnet protocol	Optional GPIO, RS232 / IP elnet protocol	RS232 / IP telnet protocol

Trinnov's unique Optimizer_



After



Before

TAKE CONTROL OF THE ULTIMATE SOUND PARADIGM

The Optimizer technology is at the heart of Trinnov's products for professional studios, movie theaters, High-End Hi-Fi and Home Theaters. With it's modern approach to acoustic measurements, analysis, and processing, it solves the Loudspeaker/Room acoustic equation.

With it's modern approach to acoustic measurements, it solves the Loudspeaker/Room acoustic equation.

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 unlike any other.

For almost 15 years, Trinnov has provided prestigious customers with room correction solutions within the professional audio industry.

The Optimizer is today's most advanced, comprehensive and flexible room correction system available on the market.

POWERFUL TARGET CURVE

The Optimizer automatically defines the filters that will achieve the required frequency response specified by your target curve. This is particularly useful in post-production studios to comply with SMPTE standards (X-Curve). Phase and group delay targets can also be defined, making the Optimizer a unique tool for sound system designers.

IMPROVED PHASE RESPONSE

The Optimizer takes your monitoring system to a whole new level of accuracy by improving the frequency response of the loudspeakers, both in amplitude and phase. It corrects the tonal balance to obtain a neutral timbre for every speaker, working in the time domain to achieve a high-resolution stereophonic image with well-focused phantom sources.

OPTIMIZE MULTIPLE POSITIONS

Trinnov's sophisticated multipoint algorithm can take into account the measurements of different positions to perform the optimization. With its weighting system, you can instantly create recallable listening positions and tailor the sound to the audience you have in the room.

INTELLIGENT CROSSOVER ALIGNMENT

Individual driver and system measurements are acquired and analyzed, including the impulse response, delays, and gains. Trinnov's unique crossover calibration engine computes the ideal filters, finding the best compromise to improve flatness, directivity, and attack in the overlapping frequency region.

4 EASY STEPS_

1 Place the specific 3D microphone at the desired listening position.

(you can even choose multiple points for a larger sweet spot or tune for different situations).

2 Run the calibration process through an easy step by step process that will precisely identify the position and frequency response of your speakers as well as your room.

3 Discover for the first time the optimized sound of your listening environment and finally hear the intended sonics and proper soundstage of any audio material.

4 Use our unique set of tools to adjust the sound of your listening environment to your needs.

We offer you the most genuine response but also the most advanced tools to adjust it to your taste, from our target and excursion curves to our FIR advanced settings.

ST2 PRO

ROOM CORRECTION FOR YOUR STUDIO_

It features Trinnov's loudspeaker/room optimization technology, with its four simultaneous processing channels. The ST2 Pro supports any stereo speaker setup with 1 or 2 subwoofers or bi-amp system.

« Even if you have an unlimited budget for speakers and room treatment, there are specific phase issues you can't get rid of, and for me, the Trinnov fixes those. So even if your room and speakers are state of the art, I believe you would see some serious improvement using a Trinnov. »

Hank Linderman (Sound Engineer)
(The Eagles, Chicago, Diana Krall, America)

MEET YOUR LOUDSPEAKERS CHARACTERISTICS

The Optimizer provides you with a unique set of data and comprehensive toolbox to get the absolute best from your speakers in any given room.

With a single measurement, the Optimizer gives you both the direct response and the global acoustic response of your speakers in the room. You can then define the target curve that will best meet your loudspeakers characteristics whilst optimizing its global acoustic response.

The Optimizer automatically defines the filters that will achieve the required frequency response specified by your target curve. This is particularly useful in post production studios to comply with SMPTE standards (X-Curve).

WELL-FOCUSED PHANTOM SOURCES

The Optimizer automatically time aligns your speakers with more precision than a human could achieve with a tape measure. Time alignment alone makes a huge difference in terms of stereophonic image, but by working in the time domain and improving both the amplitude and phase response of the loudspeakers, the Optimizer achieves high-resolution stereophonic image and well-focused phantom sources simply not achievable otherwise.

SOUND TAILORED TO YOUR AUDIENCE

Trinnov's sophisticated multipoint algorithm can take into account the measurements of different positions to perform the optimization. A higher weighting may be assigned to the most critical listening position(s), and lower weighting to the remaining points. Therefore you can create instantly recallable listening positions letting you listen at the sweetest spot wherever you or the producer may sit in the room, therefore making sure the production team hears the exact same content as you do.

SPECS_

The ST2 Pro is powered by an Intel dual core processor and can provide up to 4 simultaneous processing channels. 24 bit/192 kHz* audio is supported.

ANALOG I/O

- *4 channel input via 4 XLR (20kΩ)*
- *4 channel output via 4 XLR (100 Ω)*

AES I/O

- *4 channel input via 2 XLR (110 Ω)*
- *4 channel output via 2 XLR (110 Ω)*
- *WORD CLOCK: 1 in / 1 out (BNC)*

** Analog inputs are limited to 96 kHz*

OPTIONS_

HARDWARE OPTION

- *8 in / 4out GPIO REMOTE OPTION Permits presets status & recall from any external devices equipped with GPIO commands (DB25 connector).*

D-MON

OPTIMIZE YOUR WORKFLOW_

A unique combination of professional features:

• Both Analog and Digital professional inputs and outputs, providing the most pristine sound quality over a modular set of I/O.

• Integrates easily through standard protocols into the most complex audio ecosystems from midi and GPIO to Avid and EUCON protocols, free D-MON app (macOS).

• A zero latency Switching Matrix to route all signals easily and make any patch set in seconds.

• An Internal Mixer which can create various sums of stems, mains or aux mixes, from discrete inputs to any talkback/listen back feed.

• Trinnov's Optimizer to perfectly tune any speaker set to the actual acoustics of the control room.

« The most important thing is that my Trinnov saves me a lot of time, by letting me listen at a much lower volume it preserves my ears and lowers my ear fatigue, I now find myself getting more work done over shorter working days: truly a life saver. I don't think there's another product out there right now that offers that level of simplicity but yet also allows you to do what you want and not let it drive you to do what it wants. »

Steve Kaplan (Score Mixer)

(God of War, Star Wars: Battlefront II, The Walking Dead...)

TAKE CONTROL OF YOUR LISTENING ENVIRONMENT_

Any console or controller can also be assigned from EUCON to any standard protocol like Midi or HTTP/REST. Headphones output, Talk-Back input and surface control link are wired, allowing a simple drop-in replacement for your X-Mon®. It can also interact seamlessly with your Avid® S6®.

FULLY FLEXIBLE SOFTWARE INTEGRATION

The D-MON will fit exactly into your studio configuration. Whatever your speaker sets may be, whether your mixes are in stereo, 5.1, 7.1 or even 7.1.4 and all their possible combinations. The Control Panel will display only what you use, including the multiple sets of speakers that you declared. Once the Optimizer has calibrated all the loudspeakers, you are ready to go.

ENHANCED SUMMING & ROUTING

No session is like another and sound engineers always have to make the special routing of the day when it comes to recording or mixing a program. Convert an analog feed, plug the producer's smartphone who wants to get you to listen to his latest hit or insert that special valve 'RevCompEq' mandatory for the singer's headphones. That's what the D-MON is good at even when no rec/mix software is running, It keeps you ready to route anything to anywhere, instantly.

Now that you also have an internal mixer, you can easily mix several sources to make a rich listen-back feed that you can attach as a Cue in your list, to recall instantly. This dubbing vocal foldback can now be stemmed and recalled on the fly, all without sacrificing another aux send in your DAW.

Should you be short of converting I/Os for your DAW, you can return any mix or input signal down to the session, along with the digital outputs. Of course all of these different setups can be saved and restored as Session Profiles making painful session recalls a thing of the past.

ADAPT TO YOUR DAILY WORKFLOW

No session is like any other one, so you'll be setting the D-MON Processor to carry exactly what you need. Just declare whether your Main Mix is made out of a stereo or a surround feed and choose which inputs make your Alternate 1 and 2 which can also be in various formats.

D-MON OPTIONS_

SMARTMETER

The loudness measurement automatically starts and pauses following the playback system, continuously providing consistent values, whether the operator jogs, shuttles or rewinds through the project.

This Time Code synchronization opens the possibility to trigger real time alerts and update them as the mix is adjusted.

EBU R128
Compliant

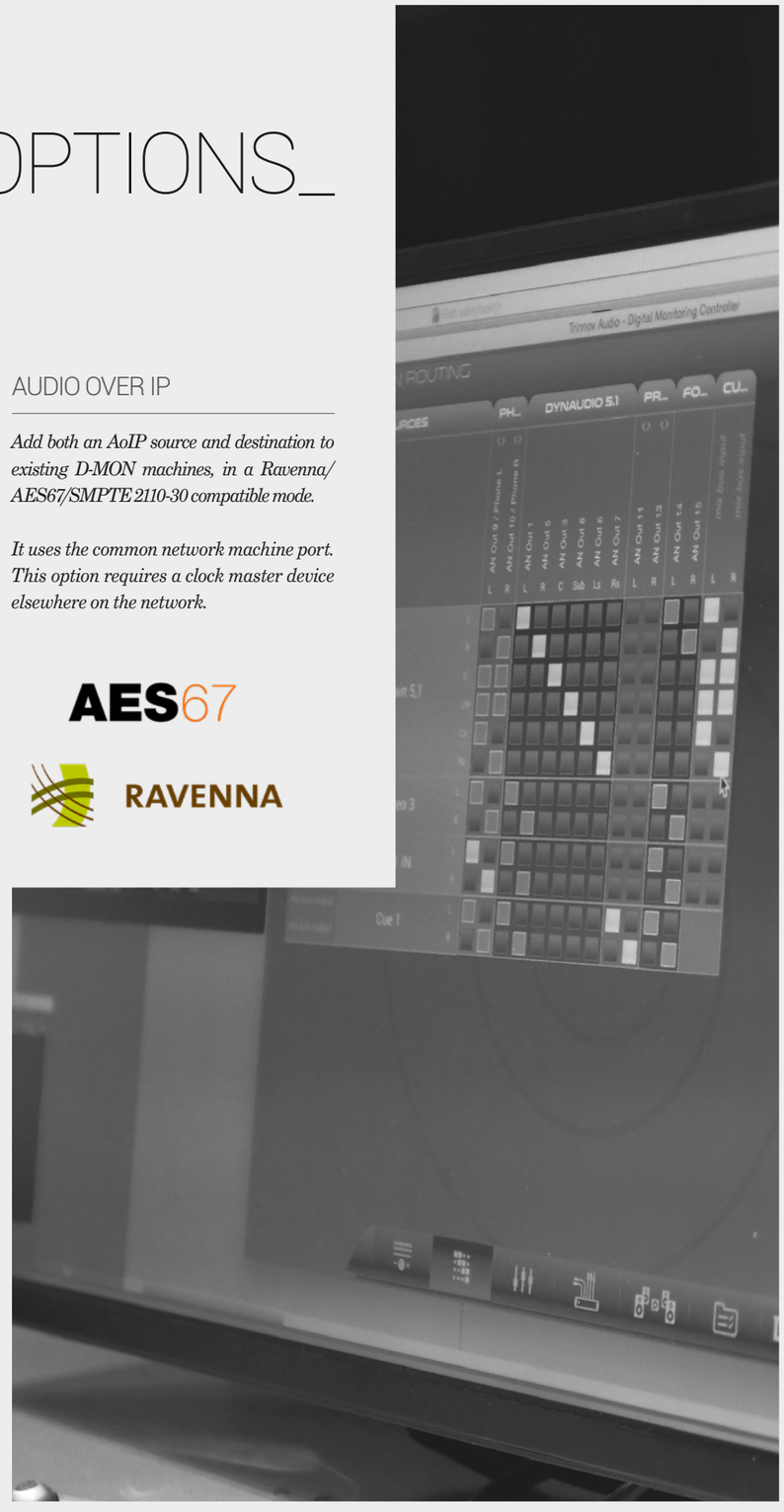
AUDIO OVER IP

Add both an AoIP source and destination to existing D-MON machines, in a Ravenna/ AES67/SMPTE 2110-30 compatible mode.

It uses the common network machine port. This option requires a clock master device elsewhere on the network.

AES67

RAVENNA



Line-up		D-MON | 4 Stereo Mixing or Mastering studios	D-MON | 6 5.1 rooms for Post-Production	D-MON | 8 7.1 / surround sound mixing suites	D-MON | 12 3D mixing rooms (7.1.4)
DIGITAL IN (D-SUB - 25)		8 (4 AES)	8 (4 AES)	16 (2 x 4 AES)	16 (2 x 4 AES)
DIGITAL OUT (D-SUB - 25)		8 (4 AES)	8 (4 AES)	16 (2 x 4 AES)	16 (2 x 4 AES)
DIGITAL INSERTS (IO)		8 (4 AES)	8 (4 AES)	8 (4 AES)	8 (4 AES)
ANA IN (D-SUB - 25)		4 line level	8 line level	8 line level	8 line level
ANA OUT	D-SUB - 25	4 line level	4 line level	8 line level	8 line level
	XLR	8 line level	8 line level	8 line level	8 line level
OPTIMIZER (DIGITAL ACOUSTIC TUNING)		4 Channel ie. 2 x stereo pairs or LCR + Lfe...	6 Channel ie. 5.1 speaker set or 3 x stereo pairs, LCRS + 1 x St...	8 Channel ie. 5.1 + 1 x St. pair or 1 x 7.1 system, LCRS + 2 x St...	12 Channel ie. 7.1.4 or 2 x 5.1 System...
		FULLY ASSIGNABLE INTERCOM 2 x Talk-Back + 2 x Listen-Back lines. 36V Phantom power on analog Inputs in MPIO connector			
WORD CLOCK		BNC Input & Output			
CONTROL PROTOCOL		EUCON (Avid, MC5, S6, S5, S3) - Icon D-Command & D-Control (X-Mon 5P Cable) - Midi other proprietary protocols under development* * Each controler or protocol version may require specific add-ons			
GPIOs		Fully assignable 2 In / 1 Out (footswitch, remote commands)			
REMOTE & LOCAL PARAMETERS					
LEVEL		Level / Mute / DIM / Lvl. Recall...			
SOURCE SELECTION		Fully customisable, ie. 4 Cues / TB / LB	Fully customisable, ie. 6 Cues / TB / LB	Fully customisable, ie. 8 Cues / TB / LB	Fully customisable, ie. 8 Cues / TB / LB
MONITOR SELECTION		Upon programmable presets & profiles			
SWITCHING MATRIX		Any physical Input, mix bus or Optimizer Output to any physical Output			
SUMMING MATRIX		12 In / 8 busses	16 In / 12 busses	18 In / 16 busses	18 In / 16 busses
OPTIMIZER SETTINGS		Full control over Network and / or from the Processor itself (VGA / HDMI screen & USB mouse / keyboard)			

MC PRO

OPTIMIZE THE MOST COMPLEX SPEAKER LAYOUTS_

From 5.1 Applications to full-blown Immersive Audio, we offer cutting edge advanced monitoring solutions for the most demanding post production facilities.

ALL-IN-ONE

Trinnov Audio's Integrated Monitoring Solutions gather in a single processor all the required tools for accurate audio monitoring over the most complex speaker layouts

PRECISE MONITORING

Monitoring relies on both consistent measuring and best possible listening conditions.

The industry is guided by many monitoring standards such as EBU R-128 for loudness or SMPTE / ITU / AES for sound systems, and that's where Trinnov brings a new level of expertise.

MODULAR PLATFORM

The Trinnov MC Processor is an expandable hardware platform that can handle any multichannel format and any loudspeaker layout from 2.0 to 22.2. MC Processors are designed to host optional software modules such as the Optimizer and/or the SmartMeter.

EVOLUTIVE ARCHITECTURE

Both AES8 and Analog8 standard configurations allow for 8 simultaneous I/O and 8 processing channels.

Optional AES8 and/or ADA4 boards can be added to provide up to 16 simultaneous I/O channels.

Alternatively, AES inputs can be configured for input source switching of 3 groups of 8 inputs (3xAES8).

COMPREHENSIVE PROCESSING

Comprehensive 64 bit floating point processing tools are included on each processor platform: routing and mixing matrices, manual FIR filters, parametric EQs, graphic EQs, gains, trims, peak and RMS meters, manual delays, bass management, 4-way active crossovers, inputs formats, noise generators, polarity control, editable Submix matrices, monitor controller, dynamic range controller.

CUSTOMIZABLE PROFILES

Trinnov combines automatic processes with flexible fine-tuning tools that allow the sound system designer and the engineer to reach the best results while making the whole process easier and faster.

8 Customizable Profiles allow to mix different parameters independently from any of the 29 existing users presets.

UP TO 4 WAY INTELLIGENT CROSSOVER ALIGNMENT

Individual driver and system measurements are acquired and analyzed, including the impulse response, delays, and gains. Trinnov's unique crossover calibration engine computes the ideal filters, finding the best compromise to improve flatness, directivity, and attack in the overlapping frequency region.

« With the Trinnov, I am finally able to hear what is really going on in my room. You hear it flatter - truer than it ever was before, which is good, but it does not necessarily mean you absolutely need a flat sounding room. The target curve feature allows me to tailor the sound to have an accurate but also a pleasant place for my clients. »

Simon Heyworth (Mastering Engineer)

(Simple Minds, George Harrison, Brian Eno, Nick Cave)

MC CONFIGURATIONS & OPTIONS_

AVAILABLE CONFIGURATIONS

MC-ANA8:

• 8 analog I/O processor platform.
Can be expanded to 16 analog I/O and 16 AES I/O.

MC-ANA16-2U:

• 16 analog I/O processor platform.
Can be expanded with 16 AES I/O

MC-AES8-2U:

• 8 AES I/O processor platform.
Can be expanded to 16 AES I/O and 16 analog I/O.

MC-AES16-2U:

• 16 AES I/O processor platform.
Can be upgraded with 16 analog I/O.

LEADING THE WAY IN IMMERSIVE SOUND WITH NETWORK AUDIO

On top of the standard AES-EBU / Analog combinations, the MC Processor is also available in 3 other flavors to support high-channel count installations. The MC-HCC range includes MADI, AES67 and Dante variants.

Based on the common market standard, our compatibility scheme provides network audio capabilities to our MC users offering compatibility with all standards.

MC-HCC LINE-UP

MC-HCC-MADI*

• High Channel Count 64 channels IN / OUT via MADI.
• MADI optical or MADI coaxial (BNC).

MC-HCC-AES 67*

• High Channel Count 64 channels IN / OUT on network
• Ravenna based, fully AES67 / SMPTE 2110-30 compatible (also with Dante in its AES67 compatible mode). Two dedicated network ports with redundancy.

MC-HCC-Dante*

• High Channel Count 64 channels IN /OUT on network
• Audinate Dante based, with AES67 compatibility mode.
• Two dedicated network ports with redundancy.

** no analog, no AES-EBU inputs/outputs*

AVAILABLE HARDWARE OPTIONS

Trinnov Audio Core (TAC)

The TAC supervises all the incoming and outgoing audio signals, output relays, Clock settings, Routing and Mixing Matrices.
A maximum of 2 TACs can be installed on a single processor.

ADA4 Expansion Boards

One ADA4 Expansion Board adds 4 Analog I/O Channels of pristine AD / DA Conversion.
A total of 4ADA4 Expansion Boards can be installed on a single processor.

AES8 Expansion Boards

One AES8 Expansion Board adds 8 AES I/O Channels. Alternatively, AES inputs can be configured for input source switching of 3 groups of 8 inputs (non simultaneous AES input channels). A maximum of 2 AES8 Expansion Boards can be installed on a single processor.

GPIO8i4o Remote Option

Permits Profiles status & recall from any external devices equipped with GPIO hardware.

AVAILABLE SOFTWARE OPTION

SmartMeter

Most typical loudness real-time loudness meters require to measure a project from beginning to end without rollbacks or time jumps to obtain its Integrated Loudness level. Even if pausing is possible with most instruments, this method is not ideal.

Trinnov's unique time code-aware SmartMeter takes loudness metering to a new dimension. The measurement automatically starts and pauses following the playback system, continuously providing consistent values, whether the operator jogs, shuttles or rewinds through the project.

This Time Code synchronization opens the possibility to trigger real time alerts and update them as the mix is adjusted. Alerts thresholds can be configured to meet requirements of many organizations and companies.

Having Loudness and Peak values stored and time-stamped also makes session recall easy. Projects can be paused, shared over a network and resumed in other studios in the very same condition.

REFERENCES_

Dan Pinder (Music Editor)

(Thor: Ragnarok, X-Men, The Dark Knight, Pirates of the Caribbean)

"For me, the most impressive thing using the Trinnov was the phase correction of the room and how it affected the image. The vocals, snares, and dialogue snapped into the middle of this vague dimension they previously occupied. All the low-end I knew was there had returned, this time with a vengeance! The mid-range got smoothed out and became pleasant to listen to. Total balance. I was falling in love with sound all over again."

Bruno Tarrière (Sound Mixer)

(Léon: The Professional, The Fifth Element, Joan of Arc)

"The Trinnov is a compelling piece of hardware, which not only simplifies and saves time for the sound alignment procedure but also provides results of excellent quality."

David Hachour (Mastering Engineer)

(Mark Ronson, David Guetta, Kanye West, Avicii)

"This processor finally allowed us to work professionally. It has solved our frequency response problem and provided us with the sound we had in mind and even beyond since the correction also compensated the phase response. On a daily basis, the Trinnov processor gives us confidence in our work since we know our monitoring system is perfectly aligned and reliable."

Don Setaro (Prairie Sun Recording Studio)

(Tom Waits, Van Morrison, Primus, Faith No More)

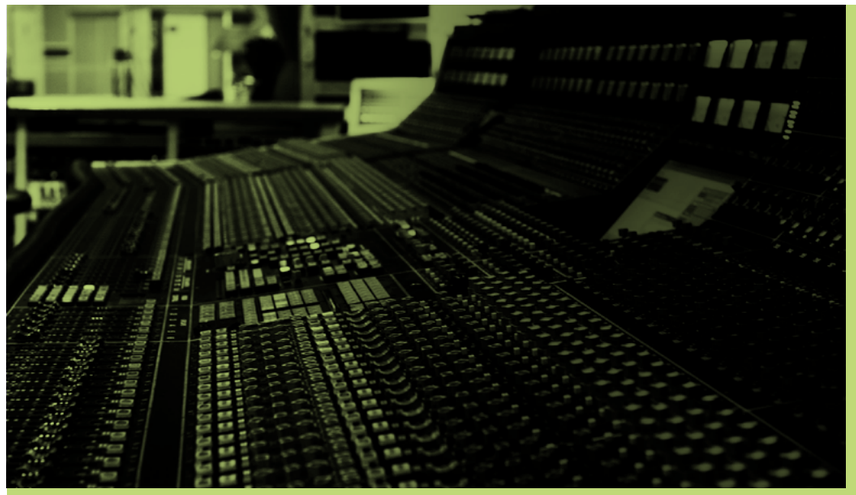
"The first and foremost benefit of the Trinnov Processor was taking care of the disappearing low end at the mixing position. The surprise benefit of the system is an increased sense of space both left to right and also back to front. My mixes now have more apparent depth. The high end is more pronounced and detailed. Reverb and effects returns are more defined."

Mike Aiton (re-recording mixer)

(Resolution Magazine, June 2018)

"I played the reference recordings without the Trinnov, and the difference was night and day. To say three jaws were hitting the floor is no exaggeration. The timing of bass and kick drums was brought sharply into focus and lost any vagueness and approximation. Gone was any bass bloat and bloom. The imaging dramatically improved, with a very firm focused phantom center image, the tonality of good mixes sounded even better and more equal. Reverbs and delays were sharper and more apparent. The dynamics and timing, in general, were much tighter.

A Trinnov should be the norm and not the exception and is arguably now probably the new modern-day pro studio essential."



ABOUT TRINNOV AUDIO_

With its origins in the most advanced French audio research programs, Trinnov has always been focused on high spatial resolution audio and loudspeaker/ room optimization.

Trinnov's extensive research resulted in multiple international patents and scientific papers considered world-class contributions by many renowned experts.

IMPROVING SOUND QUALITY THROUGHOUT THE ENTIRE PRODUCTION CHAIN

For almost 15 years, Trinnov has provided prestigious customers with loudspeaker/ room optimization solutions within the professional audio industry from award-winning music engineers and post-production facilities to national broadcasters and the most advanced research labs.

GUARANTEEING SOUND INTEGRITY TO THE END LISTENER

Now a team of over 35 passionate people and growing, we leverage our expertise to extend that same audio quality to the end listener. Our Optimizer technology is used in a wide range of applications and many different acoustic environments.

Our processors can be found in thousands of commercial theaters, awarded luxury home cinemas and in the most exclusive hifi systems all over the world. This presence all along the audio production and distribution path has nourished our expertise from day one and resulted in many successful partnerships with major companies in the field such as a global strategic partnership with Harman Corporation for their JBL Synthesis immersive audio processor.

UNIQUE PRODUCTS AND TECHNOLOGIES

All our processors are designed in-house around our own open and upgradable hardware which only can host Trinnov's exclusive technologies. Our platforms are software-oriented and also enables us to implement third party technologies such as Auro-3D, DTS-X or Dolby Atmos by ourselves.

Free from hardware and software limitations, we can aim for no-compromise, long-standing innovations for our users, so they can benefit from new technologies before they become industry standards, may they be new immersive formats or ground-breaking acoustic optimization algorithms.

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