1 SERIES

Exquisite
Design
Delivering
Exceptional
Performances

Welcome to CH Precision…
Welcome to a world of music

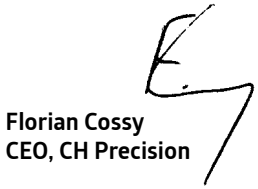
When I started CH Precision 10-years ago, it was with the goal of not just creating the highest performance audio circuitry, but leveraging it with the flexibility of powerful, software-driven control systems and modular design, construction and application. Now, 10 years on I can proudly say that while the CH Precision 1 Series is firmly established as one the benchmark brands in high-end audio, our new 10 Series has gone much, much further, widely recognised as defining the current state-of-the-art in audio amplification.

Stories like ours don't happen overnight. The products you will see represented in these pages have been designed and built, quite literally, from the ground up, the result of blue sky thinking and innovative concepts, years of incremental development, measurement, testing and of course, extensive listening – all with the single aim of extending the boundaries of musical reproduction. As well as innovative circuitry and proprietary technology, flexible topology and exacting engineering, we have also established a new user relationship with the audio system, from the use of graphic displays to indicate everything from unit status to operating temperature, the influence of cartridge loading to digital data and error rates, to making each and every aspect of system control accessible via the CH App. You can even pick the colour of the text used for the displays – and if one of the 7 standard options doesn't suit, you can mix your own RGB shade.

This flexible, intuitive interface, with its extraordinary degree of insight and control is indicative of our whole approach. There is no "one-size fits all" CH Precision system. Instead, our entire ethos is dedicated to making the system itself as flexible and configurable as the units themselves. The CH solution is a kit of parts, pieces that you can tailor precisely to your individual musical needs, that can grow with you and adapt to new situations and opportunities – without the expensive necessity of trading-in or swapping out the equipment you already own. We were determined to create a system that is as practical and cost effective as it is flexible – and I truly believe that we have succeeded.

But as impressive as we feel our products are, the thing that has really driven us for the last 10-years, is the desire to get closer to great performers and their greatest performances. Just as you need an excellent glass to appreciate a great wine, it takes a superb system to really reveal the depths and emotional power in great music.

At CH Precision, we've never forgotten that the glass might be elegant and beautifully crafted, but it's the wine – or the performance – that matters.



Florian Cossy
CEO, CH Precision

P1 Dual Monaural Phono-Stage

"CH Precision's P1 Phono preamplifier... is not going back to its manufacturer. The longer I used it, the more obvious it became that I couldn't part with it, even though I said I couldn't afford it."

MICHAEL FREMER, STEREOPHILE

Thirty years ago few people predicted that, not only would we still be listening to records in the 21st Century, we'd still be pressing them too. For many listeners, the vinyl record is more than just a viable source – it's the preeminent source of recorded music.

That reflects both the inherent qualities and character of analog sound, but also the fact that record replay has significantly upped its game in the face of ever-increasing competition from high-res digital sources. These days, serious record collectors and listeners wanting the best possible sound will seek out rare original pressings, appreciate the virtues of mono (as opposed to many stereo) releases and purchase their discs, new and used, from all over the world. Likewise, the once simple process of playing those discs can achieve levels of sophistication and record-by-record optimization we never dreamed of, back when the vinyl LP was the only high-quality format.

Today's record players and tonearms offer an unprecedented range of facilities and adjustability – all designed to extract the maximum possible performance from your cartridge and the record it's playing. But if the magic in that fragile phono signal is to be preserved rather than eroded by the rest of your system, you will need a phono-stage that is just as versatile and adaptable, that can be fine tuned to the same exacting degree. Meet the CH Precision P1, a phono stage that takes those demands seriously, offering an unmatched combination of musical performance and adjustability – versatility that ensures you hear ever last expressive and emotional nuance teased from the vinyl groove.

With multiple, independently configurable inputs and with all-important parameters individually adjustable from the CH control App, the P1 can handle up to three, permanently connected turntables or tonearms. With a combination of both current and voltage sensing inputs (along with a simple yet sophisticated set up protocol for the latter) it maximises the musical performance of any moving-coil or moving-iron cartridge, while the optional, switchable EQ facility means that collectors of early, original pressings can finally hear those discs in all their glory. Being part of the CH Precision, upgradeable/scaleable Eco-system means that the P1's already remarkable performance can be further enhanced with the external X1 power supply, or even taken all the way to the full dual-chassis, four-box configuration.

Whether you want to play a Sgt Pepper's mono pressing or a Decca SXL2000, the P1 will play it for you – and play it right. It's never been so easy to collect great records. The P1 exists to let you hear what makes those records great.

Moving Coil Current Inputs

- Two inputs specifically designed to deliver the best possible performance from low-output, low-resistance MC cartridges
- Gain adjustable in six discrete steps (with actual gain dependent on cartridge internal resistance)
- Current mode delivers the best signal to noise ratio possible from low output MC cartridges and eliminates the need to set individual load impedance
- Both single-ended (RCA) and balanced (XLR) inputs provided

Moving Magnet / Moving Coil Voltage Input

- Input designed for MM cartridges, MC cartridges or step-up transformers
- Ultra low noise FET-input stage
- Gain adjustable from 35dB to 70dB in 5dB steps
- Cartridge loading adjustable from 20 Ohms to 100k Ohms in over 500 steps
- Dedicated set-up record and internal loading 'wizard' shows optimum noise and loading performance on main screen
- Both single-ended (RCA) and balanced (XLR) inputs provided

Optional EQ Curves

- RIAA EQ curve factory fitted
- Optional add-on board provides EMI, Columbia,Decca and Teldec EQ curves for owners/collectors of older records or original pressings

Analog Signal Path

- All adjustable parameters and EQ curves selectable on unit or via
  CH control App
- Dual-mono circuitry with fully complementary output stage
- Ultra low noise, high bandwidth, high slew rate design
- Class A, discrete transistor based circuit topology
- Selectable 10 Hz 3rd order high-pass subsonic filter

Power Supply

- Ultra low noise, high accuracy, discretely regulated, linear power supplies
- Shunt regulation of each individual stage

Scalable And Upgradable

- Available in Dual Monaural (single chassis) or True Monaural (dual chassis with one channel per enclosure) form.
- Can be driven from the X1 external PSU (Dual Monaural) a dual output X1
  (True Monaural) or a pair of single X1s for the ultimate four-box solution.
- Additional audio chassis or PSU units can be added at any time.

Optional Hardware

- Additional EQ Board
- Four additional playback EQ curves.
- EMI, Columbia, Decca and Teldec EQ curves, realized using custom built,
- high-grade film capacitors and tight tolerance metal film resistors.

L1 Dual Monaural Line-Stage

"The L1 goes calmly about its business, the anchor to which the system's absolute spatial and temporal stability are tied, the root of its remarkably low noise floor and sudden dynamic response. In many ways it's the understated star turn that sums up the whole system."

ROY GREGORY, HI-FI PLUS MAGAZINE

"Nothing strengthens authority so much as silence."
Leonardo da Vinci

On the face of it, all a line-stage has to do is allow you to select between sources and set the system level. Sounds simple? Yet not only is the quality and performance of the line-stage an absolutely key factor in determining overall system performance, there are fewer contenders for state-of-the-art line-stage honors than in any other product category. Maybe designing the best possible line-stage isn't quite so simple after all...

Any great line-stage must possess transparency, ultra-low-noise performance and absolute stability. It must anchor the incoming signals and deliver them onwards, propelled from a firm footing that ensures dynamic and musical authority. It must pass the source signals in your system, without limitation or disturbance, leaving no trace of itself on their passage. Any great line-stage needs to be the next best thing to sonically and musically invisible, the hi-fi equivalent of effortlessly enacting its own audio super power.

Like all CH Precision products, the L1 uses fully discrete, balanced and complementary design, ultra-short signal paths and exactingly selected components. It is fed from heavily regulated and filtered, multi-stage power supplies, is wide-bandwidth, high slew-rate and DC coupled. But in this critical application, that's not enough. It's one thing to eliminate unnecessary components from the signal path and eliminate DC offset at the inputs, but the L1 takes things much, much further than that. Completely separate left and right channel circuit boards prevent crosstalk, while a super sophisticated, software driven R-2R network for each channel employs precision metal-film resistors and allows precise level control in 0.5dB steps with the minimum possible number of components. DC offset is monitoring and eliminating not just at the inputs but throughout the volume control ladder and at multiple points throughout the entire circuit. That makes the L1 not just one of the quietest line-stages ever built, it makes it one of the quietest in operation too.

For a company that is renowned for the flexibility and configurable nature of its products, it is ironic that one of our most musical vital components is also our least adaptable. Although the L1 line-stage has an inherently modular topology, it offers only line-level inputs and comes fully loaded as standard. But that doesn't mean that the L1 isn't scalable and upgradable, with the option to add a second chassis for true-monaural operation and one or two X1 external power supplies. Of course, the L1 is fully controllable via the CH Control App, its inputs can be labeled, you can set overall gain as well as individual input offsets and you can even select a DC blocking capacitor on any input if necessary. But at heart, in terms of signal transfer the L1 is as stripped down and purist as it can possibly be. You can hear that in its performance; you will hear it in any system that's built around an L1, whether in one, two, three or four-box form. As elegant in design as it is sophisticated in operation, as musically commanding as it is unobtrusive, the L1 brings a whole new sense to the motto, "We hide with pride!"

Modularity

- Dual Monaural (Left & Right channels in a single enclosure), 8 inputs
- True Monaural (one channel per enclosure), 8 or 16 inputs

Inputs and Outputs

- 8x line-level inputs (4x balanced XLR, 4x single-ended RCA)
- 4x pre-amplifier outputs (2prs balanced XLR, 1pr single-ended RCA,
  1pr single-ended 75 Ohm BNC)

Volume Control

- 20bits R-2R ladder network
- 118dB range in 0.5dB steps, from -100dB to +18dB
- Tight tolerance high-grade metal film resistors

Analog Signal Path

- Balanced XLR, single-ended RCA & BNC inputs and outputs
- Powerful discrete output buffer to drive long interconnects and/or multiple amplifiers
- Ultra-low-noise, high-bandwidth, high-slew-rate design
- Pure class A, fully-symmetrical topology
- Fully discrete, transistor based circuitry
- Switchable absolute phase and mono settings

Power Supply

- Dedicated discrete regulated linear power supplies
- Ultra low noise, high accuracy regulation
- Shunt regulators for critical stages
- Can be powered from the X1 External Power Supply

Optional Hardware

- L1 Enclosure – The addition of a second L1 enclosure transforms the L1into a True Monaural line pre-amplification system, with separate enclosures for each channel.
- Monaural Analog Preamplifier Board – In a True Monaural system (with two enclosures), each enclosure is able to receive an extra preamplifier board. This turns the L1 into a True Monaural Extended system, providing the preamplifier with 16 as opposed to 8 inputs, if required.

"This exceptional... line-level preamplifier is a contender for Best in Solid-State. A true reference-quality unit..."

THE ABSOLUTE SOUND, EDITOR'S CHOICE AWARDS 2017

X1 External Power Supply

"So yes, The CH Precision X1 does make a difference. A big one! Sadly once you try out X1 along with the P1, there is no going back"

MATEJ ISAK, MONO AND STEREO

When you listen to your audio system, you are quite literally listening to your AC supply. Just as the performance of a car depends on the type and quality of fuel you run it on, so your audio system's performance can be undermined by a poor quality electrical supply and, within your system, no components are more vulnerable to compromise than the digital and low-level units. This is one area of technology where size really matters – just not necessarily in the way that you might assume. The critical circuits in your audio system run on DC voltage. The level of that voltage needs to be precise and the level of residual noise it carries needs to be as low as possible. All CH Precision components contain sophisticated power supplies with extensive local DC regulation. But this is one field in which you can never put too much protection between the signal path and the noisy, RF polluted and mechanically intrusive AC supply...

The X1 External Power Supply is an ultra low noise, discrete and fully regulated linear power supply, delivering an ultra stable and super clean DC feed to other CH Precision products. It contains massive amounts of noise filtering as well as an additional stage of power supply regulation that works in conjunction with the on-board regulation built into the connected unit, in order to increase DC stability and further reduce noise to a vanishingly low level. Compatible with the D1.5 CD/SACD Transport, C1.2/C1.2 Mono DAC/Controllers, P1 Phono-Stage and L1 Line-Stage, the X1 External Power Supply will dramatically improve the already impressive performance of these products, reducing system noise floor, increasing dynamic range, resolution and speed of response, transparency, detail and above all, musicality. Adding X1s to your system will bring intimacy, presence, tonal color and an unmistakable sense of life to your recordings – and the more X1s you add, the better it will get.

Each X1 can be configured to run either one or (with a second, optional output card) two low-level products. But the X1 is also a crucial element in CH Precision's scalable system topology, so that as you move each product towards a true dual-mono signal chassis configuration, you can use one X1 output or a dedicated X1 for each unit, delivering ultimate channel separation and musical performance.

"Adding the X1 is, quite frankly, a no-brainer. Given the price of a P1 or L1 and the difference wrought to their performance by the X1, at its relatively modest cost, it should be an automatic add-on or urgent upgrade. The drop in the noise floor that results from its use has profound musical implications, both in dynamic and expressive terms. Performers have greater presence, their playing greater agility. The soundstage expands and snaps into focus and the instruments in the orchestra, or voices singing, are better separated, both spatially and tonally, the latter a function of a wider and better-differentiated tonal palette."

ROY GREGORY, THEAUDIOBEAT.COM

Outputs

- Up to two units can be connected to a single X1 (with the addition of a second regulation board)

Internal Topology

- Dedicated mains filter for each transformer primary.
- Cascades external power supply regulation stage with onboard regulation for superior noise rejection.
- Two oversized power transformers dedicated to the digital and analog power supply sections of the connected unit(s) respectively.
- Allows the connected unit's mains transformer and rectifier to be powered down, reducing electrical noise and spurious mechanical interference within the audio chassis.

Component Compatibility

- Can be used to further improve the performance of the D1.5 CD/SACD Transport, C1.2/C1.2 Mono DAC/Controllers, P1 Phono-Stage and L1 Line-Stage
- Housed in the same mechanically grounded enclosure as the rest of the 1 Series units, so that it fits in perfectly with your system.

Optional Hardware

- Second DC Output Board – Any X1 can have a second, identical, fully regulated DC output fitted, allowing it to run a second connected unit.
- The X1 External Power Supply is itself a vital optional component in the CH Precision scalable upgrade path. It can be used individually as a dedicated supply, to run two separate components, to run both sides of a dual-chassis component or even as a dedicated supply for a single channel, single chassis set up.

M1.1 Two-channel Power Amplifier

Traditionally, power amps have always been the simplest of audio components, at least on the outside: little more than a set of inputs, a set of outputs and a power switch. Until now...

The problem is that although power amps themselves might appear simple, their job is anything but straightforward. Caught in a sandwich between the output of a line-stage or DAC and the load requirements and sensitivity of any number of different loudspeakers, they must be able to accommodate the widest range of partnering equipment and interface parameters presented to any unit in the audio system. Achieving optimum results under such varied conditions demands a capable and versatile performer – yet as we've already established, most power amps offer a single, brute force solution to the problems they face, instead of adopting a more sophisticated response. It's time for a change – it's time to meet the CH Precision M1.1, a new-paradigm in power amplification.

What sets the M1.1 apart? It goes without saying that the M1.1's sonic and musical performance challenges the state-of- the-art, an incredibly short audio signal path executed with exacting component choices and construction, a massive power supply providing absolute stability and unfettered headroom, capable of meeting both the most delicate and most massive musical demands. But what makes the M1.1 really different is its software driven housekeeping capabilities, a non-intrusive support network that does more than just keep the amplifier unconditionally stable.

For a start, it's not just one amplifier: it's actually four amplifiers in one – at least in conceptual terms. The sophisticated software in the M1.1 allows the owner to configure the unit in one of four different ways. So an M1.1 is a conventional stereo amplifier but it is also a high-current mono-bloc in which the entire power supply is devoted to a single output channel, a high-power, bridged-mode mono-bloc and a bi-amp mode stereo unit in which a single input can be differently configured for the two output channels. Differently configured? Yes, because the M1.1 allows owners to select gain and percentage of global feedback for each channel independently – which means that the amplifier can be adjusted for overall system gain and noise performance, as well as configuring the low-frequency damping and gain to match system topology.

That means that the M1.1 is both configurable to specific speaker loads and inherently upgradeable – as well as adaptable to upgrades elsewhere in the system. Change your speakers or line-stage and the amplifier you already own will adapt to deliver the best possible performance. Start with a stereo amp and it can grow into a pair of mono-blocs or a bi-amped system, all without having to replace existing units or even changing your interconnect cables. For once, the best sounding amplifier is also the sensible choice, because there's finally an audio amplifier that's got both finesse and brute force – but without the ignorance...

"The M1.1 power amp is simply the most musically accomplished, high-powered solid-state piece it has been my pleasure to use. I love its configurable nature and I love the idea of adding additional amps along the way."

ROY GREGORY, THEAUDIOBEAT.COM

Physical And Conceptual Modularity

- Modular input boards to match system topology (one or two inputs as required)
- User configurable output stage can be adjusted using the user interface or control app
- Stereo and bi-amplification modes deliver 2x350W into 4Ω,
- High current mono delivers 1100W into 1Ω and bridged mode 700W into 8Ω

Analog Input Stage

- Pure class A, fully symmetrical circuit topology
- Fully discrete, ultra low noise, high slew rate design
- DC coupled with no series capacitors in the audio signal path

Analog Output Stage

- Pure class A ultra low noise driver and class AB pure follower power stage
- Patented ExactBias circuitry ensures constant bias, independent of room temperature. Constant monitoring of output power and temperature and amplifier loading.
- User configurable display will show amplifier status, power output etc
- Customized Argento internal wiring and loudspeaker binding posts (accept spades and banana plugs)
- Customized Argento internal wiring and loudspeaker binding posts (accept spades or banana plugs)

Power Supply

- 2200VA power transformer mounted on separate, mechanically isolated chassis bed to eliminate mechanical vibration
- Magnetically and electrostatically shielded transformers to reduce noise and EM interference
- Hyper fast, soft recovery diode bridge rectifiers meet dynamic demands without strain
- Total of 250,000uF custom-built, ultra low ESR reservoir and filtering capacitors

User Adjustable Global Feedback Ratio

- Ratio of Global to Local Feedback can be adjusted from 0% to 100%, in 10% steps via the user interface or control app
- Allows user optimization of amplifier/speaker interface, especially low-frequency damping relative to speaker/ room interaction
- Each channel can be adjusted individually to control specific drivers/ranges in bi-amplification modes

User Adjustable Input Gain

- Input gain can be user adjusted to accommodate input signal level and overall system gain. 24dB range in 0.5dB steps
- Optimizes system noise floor and dynamic range
- Accommodates variations in loudspeaker sensitivity and room size

Light Touch Protection

- No sonically-intrusive output relay: full short-circuit protection
- Non-invasive output stage voltage, current and temperature monitoring protects your amplifier – and your speakers.

Optional Hardware

- Monaural Analog Input Board – A second Monaural Analog Input Board is required for stereo and active operations: XLR, RCA and 75 Ohm BNC inputs: Balanced pass-through for daisy-chaining amplifiers in multi-amp systems.

A1.5 Two-channel Power Amplifier

"Looking at my listening notes now, I find the scrawled question, "Can I live without this amplifier?" It brought a whole new meaning to the phrase "music in the home."

DENNIS DAVIS, THEAUDIOBEAT.COM

Like its bigger brother, the M1.1 Reference power amplifier, there's a lot more to the A1.5 than meets the eye – just in a more compact and more affordable form...

Faced with exactly the same challenges as the M1.1, the A1.5 embodies the same sophisticated, modular and scalable approach. It might be (slightly) smaller than the M1.1 and around two-thirds of its weight, but it's still four amplifiers in one. It still offers the same adaptable, software controlled topology, adjustable input configuration and gain, user selectable global feedback ratio and cost-effective upgrade path. It offers exactly the same, incredibly short signal path, fully discrete, fully balanced and fully complementary circuit, built with the same carefully selected components to the same exacting standards. Even the casework, although it's shorter, has the same footprint, uses the same construction and includes the same mechanical grounding/stacking system. In fact, in every important way, the A1.5 is, quite literally, an M1.1 writ small – or, in Hollywood terms, "Honey, I shrank the amp..."

But in this case, loss of weight doesn't mean a loss of quality. The power transformer and reservoir capacitance are identical in type and design to those in the M1.1. The A1.5 inevitably delivers less power than our Reference amplifier, but with a conservatively rated output of 150 Watts/Channel, it's definitely no lightweight, performing with real dynamic range and authority – and it does it all at a considerable saving in cost. It might not match the awesome headroom capabilities of the M1.1 under the most demanding loads, or do it in the largest of large rooms, but in many systems and with many speakers you simple don't need or can't use that capacity. Combine the A1.5's impressive real-world performance and increased affordability with its adaptable, configurable topology and suddenly you have a serious slice of M1.1 performance – but in a much more manageable package.
With the same transparency, resolution and engaging, communicative musical qualities as the M1.1, the A1.5 is an incredibly capable and convincing performer, the perfect partner for a whole host of high-quality speakers. In any other range it would be the flagship model and it delivers performance to match. But what happens when the upgrade urge strikes, you can accommodate bigger speakers or you want more from your system? As impressive as a single A1.5 undoubtedly is, adding a second A1.5 to your system unleashes the monster within, because, just like the M1.1, the configurable input/output topology of the A1.5 makes it an amplifier that, once doubled up becomes considerably more than the sum of its parts. User configurable, via the front-panel buttons or the CH Control App, the A1.5 is not only a conventional stereo amplifier: it is a high-current mono-bloc; it is a high-power bridged mono-bloc and perhaps most important of all, it can be adapted for bi-amping, a single input being routed to both channels. That not only saves on the need for additional interconnects, the gain and global feedback ratio can be set independently for each channel, allowing further control over bass output and room matching. But most critically of all, vertical bi-amping maximizes dynamic range and system headroom, allowing the A1.5 to grow with your speakers' demands and your musical and system ambitions.

The A1.5 – the not so 'little' power amp that punches well above its weight!

Physical And Conceptual Modularity

- Modular input boards to match system topology (one or two inputs as required)
- User configurable output stage can be adjusted using the user interface or control app
- Stereo and bi-amplification modes deliver 2x 275W into 4Ω,
- High current mono delivers 700W into 1Ω and bridged mode 550W into 8Ω

Analog Input Stage

- Pure class A, fully symmetrical circuit topology
- Fully discrete, ultra low noise, high slew rate design
- DC coupled with no series capacitors in the audio signal path

Analog Output Stage

- Pure class A ultra low noise driver and class AB pure follower power stage
- ExactBias circuitry ensures constant bias, independent of room temperature
- Constant monitoring of output power and temperature
- User configurable display will show amplifier status, power output etc
- Customized Argento internal wiring and loudspeaker binding posts (accept spades and banana plugs)

Power Supply

- 1700VA power transformer mounted on separate, mechanically isolated chassis bed to eliminate mechanical vibration
- Magnetically and electrostatically shielded transformers to reduce noise and EMF interference
- Hyper fast, soft recovery diode bridge rectifiers meet dynamic demands without strain
- Twin 82,000uF custom-built, ultra low ESR reservoir and filtering capacitors

User Adjustable Global Feedback

- Ratio of Global to Local Feedback can be adjusted from 0% to 100%, in six steps (0, 10, 20, 40, 70, 100%) via the user interface or control app
- Allows user optimization of amplifier/speaker interface, especially low-frequency damping relative to speaker/ room interaction
- Each channel can be adjusted individually to control specific drivers/ranges in bi-amplification modes

User Adjustable Input Gain

- Input gain can be user adjusted to accommodate input signal level and overall system gain.
- Optimizes system noise floor and dynamic range. 24dB range in 0.5dB steps
- Accommodates variations in loudspeaker sensitivity and room size

Light Touch Protection

- No sonically-intrusive output relay: protection procedures in case of output short circuit or overheating
- Non-invasive output stage voltage, current and temperature monitoring protects your amplifier – and your speakers.

Optional Hardware Monaural Analog Input Board

- Monaural Analog Input Board - Option board needed for stereo and active applications (only buy the inputs you need): XLR, RCA and 75 Ohm BNC inputs: Balanced pass-through for daisy-chaining amplifiers in multi-amp systems.

Existing A1 amplifiers factory upgradable to full A1.5 specification.

D1.5 D1.5 CD/SACD Player/Transport

"Like a fine Swiss watch, CH Precision's D1.5 Player/ Transport gets the timing right."

JIM AUSTIN, EDITOR - STEREOPHILE

Despite advances in high-resolution file-replay, the optical disc remains the reference standard for digital music replay – and the heart of any disc player is the transport mechanism. But what do you do if current mechs simply aren't up to the job? If you are CH Precision, you build your own!

The critical mechanical parts of our proprietary Mechanically Optimized Reading System (MORSe) are built entirely in-house. The carefully selected optical pick-up and motor are precisely mounted on a massive brass sled that weighs almost 1kg (2.2lbs). This highmass lowers the mechanical resonance frequency of the module several orders of magnitude below that of most other transports, while ensuring an ideal counter-weight to the torque of the spinning disc. The complete module is isolated from the rest of the chassis using four alpha-gel isolators, fine-tuned to filter vibrations all the way down to AC mains frequencies. This prevents vibrations generated by the spinning of the disc from reaching sensitive electronic boards, as well as low frequency vibrations originating in the power supply or chassis disturbing the accurate tracking of the laser mechanism.

The chassis holding this crucial sub-system is an incredibly rigid, 2 kg (4.4lbs) aluminum structure, directly coupled to the heavy base of the D1.5. This creates an ideal mechanical ground reference for the rotating parts that, along with our updated mechanical grounding system effectively eliminates mechanical interference. Built around the massive MORSe mechanism, the D1.5 is a configurable CD/SACD Player/Transport, the card-cage output architecture allowing owners to optimize or adapt the output topology to suit their system requirements, whether they need a player or a transport. The digital output board (CH-Link HD, S/PDIF, AES/EBU and TosLink) is supplied as standard. The CH-Link HD connection allows digital output of high-definition material, including DSD direct to the C1.2 DAC or I1 Integrated Amplifier. In the case of MQA CD replay, the D1.5 allows users to choose between the raw MQA (44.1kHz/16bit) output and an MQB output (88.2kHz).

It is also possible to fit a pair of dedicated, mono DAC boards, utilizing our proprietary PEtER spline filter algorithm, to create a reference player capable of SACD, CD and MQA CD replay. The optional SYNC IO clock synchronization board allows the D1.5 player/transport to be slaved with either a DAC master clock or the T1 Time Reference clock for optimum performance. Finally, the D1.5 can be further upgraded with the use of an X1 external power supply.

All replay, output and user interface functionality is accessible via the CH concentric control on the front panel, or remotely, via the CH Control App. The large AMOLED screen can be color configured to reflect different source/output formats, while the color itself and brightness can be adjusted to offer a perfect match with other units in the system. This flexibility when it comes to configuration or application, along with its ease of operation, make the D1.5 not just the highest performance but also the most adaptable, upgradable and future proof optical disc replay solution available.

Optical Reading

- Proprietary Mechanically Optimized Reading System (MORSe) high-mass transport mechanism incorporating sophisticated isolation
- Massive, ultra rigid construction: complete transport mechanism weighs almost 3kg (6.5lbs)
- Advanced mechanical grounding of transport mechanism to the D1.5 chassis for minimal mechanical interference.

Supported Formats

- Stereo SACD
- CD, including finalized CD-R/RW
- MQA CD

Possible Configurations

- Optical disc transport, factory fitted with AES/EBU (XLR), S/PDIF (RCA) and Toslink digital outputs
- Proprietary CH-Link HD, ideal high-definition capable connection to the C1.2 Digital to Analog Controller or I1 Universal Integrated Amplifier
- Reference stereo player with dual-mono balanced XLR, and single-ended RCA and 75 Ohm BNC analog outputs.

Timing & Clocking

- Ultra low jitter DCXO master clock oscillator with dedicated power supplies
- Optional SYNC-IO clock synchronization board

Optional Analog Output

- Dual mono multi-bit Delta-Sigma converters
- PEtER spline filters
- Pure class A, fully symmetrical design
- Fully discrete, ultra low noise, high slew rate, DC coupled analog output stage
- Zero global feedback

Optional Hardware

- Monaural Analog Output Boards (XLR, RCA, BNC). Sold as a pair, for Left and Right channels. Turns the D1.5 Transport into a reference stereo player.
- Clock Synchronization Board - Allows the D1.5 to receive clock synchronization from an external clock like the T1 Time Reference, the C1.2 Digital to Analog Controller, I1 Integrated Amp, or to itself become the system master clock.

"... the sound it produces is so ineffably musical I can't help but be drawn into listening to the D1.5 every time I walk past it. I just wish we had the vocabulary that matches its sublime performance."

ALAN SIRCOM, EDITOR – HI-FIPLUS

C1.2 Digital to Analog Controller

"It's this ability to deliver both top-notch performance and unprecedented levels of versatility and user choice that absolutely sets CH Precision apart from its competitors."
LAURENT THORIN, EDITOR, VUmètre

Sometimes, what you want is exactly what you get. Take the C1.2 DAC/Controller as an example: You want a world-class DAC with leading edge digital design and cutting edge musical performance? You've got it. You want a control unit to switch multiple digital inputs and control level? You've got it. You want to accept and switch analog inputs? You can do that too. You want a product that's future proof in terms of price AND performance? The C1.2 ticks that box as well! In fact, the C1.2 is any or all of those things; you get to choose...

Normally, creating a world-class DAC could be considered a sufficient challenge on its own, but the use of modular component architecture and the power of sophisticated software control opens up opportunities as well as offering solutions: opportunities that transform the role, capabilities and versatility of the C1.2 – as well as allowing existing C1 units to be upgraded to full C1.2 standard.

Of course, it is digital conversion that lies at the heart of the C1.2. The perfect preservation of time and amplitude information is critical to reproducing musical signals stored in digital formats and we believe that the advances incorporated in the C1.2 build significantly on the solutions adopted in the C1, taking digital performance(s) to a whole new level.

Both noise and jitter are central to the design of any high-performance DAC. We have developed an entirely new MEMS-based, shunt regulated and thermally compensated clock for the C1.2, improving clock accuracy significantly (as well as providing highly developed clock-sync and external reference clock options). A four-fold increase in processing power has allowed us to further refine the proprietary CH-PEtER algorithms, introduce 32-bit fixed point processing and increase input compatibility to include all high-resolution digital formats, whether from optical or file replay sources. Our proprietary CH-Link HD interconnection allows the transfer of native DSD and MQA data in the digital domain, from the D1.5 transport to the C1.2. The AES/EBU and S/PDIF inputs accept PCM at up to 192kHz/24bit resolution, while the HD streaming input will accept PCM data at up to 768kHz/32 bit resolution (including DSD over PCM streams) and DSD512(8x). Local regulation of the DSP and FGPA along with sophisticated power management software significantly reduces system noise floor. The DAC itself employs no fewer than four converter chips per channel, in a fully differential, dual-mono topology. The vital analog output stage is discrete, fully differential, Class-A and DC coupled. The modular input architecture ensures that the C1.2 remains future proof, able to adapt to changing digital standards or system demands.

Having created the C1.2's digital decoding core, the next step was to construct the system architecture around it. As well as the established digital input standards (AES/EBU, S/PDIF and TosLink) the provision of separate Ethernet streaming and USB input cards allows users

to configure the C1.2 specifically to their system and replay requirements. Alongside the multiple digital input and clock-sync options, there is also a by-passable hybrid volume control, operating across both the analog and digital domains and an A-to-D facility, allowing the C1.2 to accept balanced or single-ended analog inputs, creating a genuine analog/digital domain control option, allowing the C1.2 to stand at the center of any system, irrespective of the source components in use.

With the vast array of user definable parameters on offer, from input offsets for both analog and digital connections, to balance, output level and absolute phase, a comprehensive, non-intrusive display is essential. This requirement led directly to the creation of our latest 800 x 480 pixel AMOLED screen, with its user-configurable content, brightness and power-down options. Users can even select a specific RGB color for the content! Although each and every setting in the C1.2 can be accessed and adjusted from the dual-concentric control on the front-panel, the CH App allows direct, remote access to every parameter from an Android tablet or smartphone, making this not only one of the most adjustable, configurable and adaptable DAC Controllers on the market – but also one of the easiest to use.

DSD Direct Stream Digital

MQA

DXD Digital eXtreme Definition

UPnP

roon ready

qobuz

TIDAL

Digital Architecture And Input Compatibility

Standard Inputs

- Factory fitted with CH-Link HD, AES/EBU, S/PDIF and Toslink digital inputs.
- The CH-Link HD interface allows for synchronized transfer of high definition audio content (up to 32bit/768kHz) and DSD512 (8x), offering the ideal interconnection to the D1.5 CD/SACD Transport or other CH-Link HD equipped units.
- Standard digital inputs accept PCM to 24bit/192kHz, DSD 1bit/2.822MHz (DSD over PCM or DoP-encoded).

Optional Digital Inputs

- The C1.2 can accept up to three HD digital input boards to allow multiple digital sources to be connected.
- Ethernet audio streaming HD input board (UPnP/DLNA compatible) allows connection to local audio servers (such as Roon or NAS drives running a UPnP server) or streaming services (such as Qobuz, Tidal or webradios).
  - PCM to 24bit/384kHz (768kHz for uncompressed formats)
  - DSD 1bit/2.8224MHz (DSD64), 5.6448MHz (DSD128), 11.2896 MHz (DSD256) or 22.5792MHz (DSD512)
  - Native DSD and DoP
  - WAV, AIFF, FLAC, ALAC, AAC and MP3 formats supported in PCM
  - DSF and DFF formats supported in DSD
- Asynchronous USB audio streaming input board – PCM to 24bit/384kHz, DSD 1bit/5.6448MHz (DSD128) in DoP Mode

Digital to Analog Conversion

- Four PCM-1704 R-2R converters per channel
- Fully complementary, dual mono symmetrical circuit topology
- Discrete, dedicated, fully regulated linear power supplies for low noise and maximum channel separation

Processing

- Four independent 2.4GFLOPS DSP engines for each channel
- Proprietary CH-PEtER 32-bit fixed point, synchronous data over-sampling processing
- Direct DSD to 705.6kHz, PCM conversion
- Resolution enhancement of audio material recorded at less than 24bits
- Full MQA decoder (unfolding and rendering) at 24bit/768kHz.

Timing & Clocking

- Ultra low jitter MEMS-based, thermally compensated Master Clock with dedicated, shunt regulated power supply
- Optional Master/Slave Clock-Sync board allows synchronization with T1 10MHz Time Reference clock or other 10MHz external clocks.
- Clock-Sync board also allows synchronization with the D1.5 transport.

Analog Input Options And Functionality

Volume Control

- By-passable 0.5dB step hybrid volume control, course steps using a relay/resistor ladder, with fine steps in the digital domain, to maximise system resolution and dynamics.
- Channel balance in 0.5dB steps
- Switchable for mono (input L + input R) output.
- Switchable absolute phase

Analog Input Board

- Discrete, fully differential analog input circuit
- Balanced XLR and single-ended RCA inputs
- 6V RMS maximum input level
- Input gain is user selectable
- Up to two Analog input boards can be fitted, providing a maximum of two balanced XLR and two single-ended RCA inputs.

Analog-to-Digital conversion

- DSD 1bit/5.6448MHz (DSD128) direct conversion

Analog Output Stage

- Pure class A, fully symmetrical circuit
- Fully discrete, ultra low noise, high slew rate design
- Zero global feedback
- One pair each - balanced XLR, single-ended RCA and BNC outputs
- DC coupled
- 5.4V maximum output (balanced XLR), 2.7V maximum output (single-ended RCA/BNC)

Display

- 800 x 480 pixel, 24bit RGB AMOLED
- 7 standard, user-selectable text colors
- User definable RGB option for text color

Remote Control Options

- Infrared Remote Control handset for basic functions
- Ethernet-based Android control App

Optional Hardware

- Digital Input Board – CH-Link HD, AES/EBU, S/PDIF and Toslink
- Ethernet Network Streaming HD Input Board
- Asynchronous USB Input Board
- Clock-Sync Board
- Analog Input Board – One pair balanced XLR, one pair single-ended RCA
- Fully compatible with X1 External Power Supply
- Compatible with T1 10MHz Time Reference external clock (with Clock-Sync board)


Roon Ready
C1.2
BNC 1
T1
X1
5 0:42:13
D1.5

C1.2 Mono Dual Monaural Digital to Analog Controller

Digital signals carry stereo information in a single data stream. That means that we cannot follow our normal approach to scalable system architecture, using independent C1.2 DAC Controllers for left and right channels, as we have to have a single input connection. Instead, to deliver improved performance we retain the C1.2 input architecture but then split the digital information into left and right channels for routing to dedicated external DACs, with a single chassis for each channel. This allows us to retain the exceptional functional flexibility of the C1.2 and the scalability of the system, while delivering a genuinely significant upgrade in performance.

Feeding the left and right channels to independent DACs allows us to provide dedicated, fully regulated power supplies for the digital processing, upsampling and decoding functions, electrically isolating these critical processes. By placing the DACs in completely separate chassis units, we achieve zero crosstalk between the two channels and prevent high-frequency contamination of the critical analog power supplies. The analog output from each DAC chassis retains the discrete, fully-complementary topology of the C1.2, but now with a dedicated power supply for each channel, further reducing noise and increasing stability. The improved performance of the output stage adds dynamic range and authority to the C1.2 Mono's musical performance, to match the added resolution and reduced error of its digital stages. The end result is the most musically natural and satisfying digital replay we have ever achieved.

Owners of existing C1.2 (C1 or C1 Mono) units wishing to upgrade them to dual-monaural, three chassis status can do so by having their existing DAC/Controller modified and adding the separate mono DACs – without any cost penalty. The price of the complete upgrade is the same as the difference in cost between the C1.2 and C1.2 Mono. The C1.2 Mono is also compatible with X1 external power supplies, so that owners who have matched an X1 to their C1.2 can add a second output board to their power supply and use it to drive both DACs. Or of course, you can simply add dedicated X1s to both the DACs and the C1.2 controller, creating a six-box true dual-monaural system. For ultimate performance, add a T1 10MHz time Reference with its GPS facility, while a D1.5/X1 and CH-Link will provide optimum replay of material from CD/SACD and MQA discs.

Every CH Precision product conforms to our model of modular construction and scalable upgradability – but none take that concept as far, or offer the potential performance benefits enjoyed by the C1.2 Mono. It is our digital masterpiece.


CH-LINK HD
C1.2 M
C1.2 L
C1.2 R

T1 10MHz Time Reference

"The T1 Time Reference let loose a barrage of detail beyond anything I've heard from digital source... But it was not a lopsided advance on the analytical front alone. It was balanced with enhanced timbre, full tone, and especially pace, rhythm and timing."

MARSHALL NACK, POSITIVE-FEEDBACK

When it comes to digital systems, time counts – literally. The precise placement of data, the individual samples that constitute the musical signal, is critical to the accurate reproduction of the original signal. Any drift or error in the spacing of the samples will quickly erode the integrity of the signal, which is why designers of digital systems go to such great lengths to ensure the accuracy of the master clocks that provide a time domain reference for reading data, its transfer and decoding. This reduction in jitter has become the holy grail of digital design.

The problem is, that as soon as you have more than one box (and one master clock) in the system – for instance, if you use a transport and DAC – then the errors can increase exponentially. The easiest solution is to synchronize the two clocks, designating one as the master and slaving the other to it. That's exactly the solution provided by the Clock-Sync cards available for the CH Precision D1.5, C1.2 and I1, while the sophisticated software control incorporated into each of the units allows owners to designate master and slave according to circumstances and system topology. But what's better than syncing two or more units to a single master clock? Syncing them all to a single, superior, external reference point – a reference like the T1 Time Reference external clock.

The T1 generates a super accurate, low-jitter signal that delivers measurably lower phase noise and more accurate transfer and conversion of digital signals. It is built around a high-frequency 10MHz oven controlled oscillator (OCXO), its core temperature and output further stabilized by encapsulation in a mechanically isolated billet aluminum block. Why not just use one of the popular and readily available Rubidium clock modules like everybody else? Because those Rubidium modules have a limited life span – generally between six and eight years – and they contain radioactive material. At CH Precision we expect our products to have a much longer working life than that, so incorporating components with a finite life is contrary to all our beliefs – especially if those components then present a serious disposal issue.

By paying attention to the physical engineering and temperature control of our OCXO circuit, providing it with multiple buffers and a sophisticated power supply, we can match or exceed the performance of Rubidium clocks – without their associated issues. And to ensure the absolute accuracy of the oscillator output, you can sync the T1 to the GPS network, its satellites controlled by Caesium atomic clocks, the most stable and accurate time source known to man. Their 1Hz sync signal prevents any drift in the T1's output, not just now but for years to come, ensuring that your digital signals are (and always will be) handled as accurately and carefully as humanly possible.

Outputs

- High-Frequency (10MHz), delivers superior accuracy
- Square wave: 1V or 500mV peak to peak, selectable
- Sine wave: 1V or 500mV peak to peak, selectable
- 6 outputs, 75Ω BNC coaxial
- Transformer-coupled outputs to further limit phase noise and error
- Independent control for each output

Inputs

- Optional GPS input further improves clock frequency precision to Caesium-clock level (well beyond that of Rubidium-clocks).
- 1 pulse per second (1 PPS) TTL signal for external synchronization
- Ethernet for remote control (CH Control App)
- USB for firmware upgrade

Power Supply

- Dedicated ultra low noise, three-stage, discrete regulated linear power supplies for each section
- Galvanically isolated power supplies for the OCXO, the OCXO buffer and the output buffers
- Magnetically and electrostatically shielded toroidal mains transformer

Physical Arrangements

- OCXO mounted inside a heavy aluminum block for even greater stability of critical core temperature
- Complete OCXO housing mounted on soft silicon gel for maximum damping and isolation from vibration
- Power transformer mechanically isolated to reduce internal vibration

Optional Hardware

- Unlike other CH Precision units, the T1 offers only one option – its unique GPS input.
- Instead, the T1 is itself the option, offering improved performance with all CH Precision digital components (the D1.5, C1.2 and I1 a vital part of their scalable, upgradeable topology).

I1 Universal Integrated Amplifier

DSD Direct Stream Digital · DXD Digital eXtreme Definition · UPnP · roon ready · qobuz · TIDAL

"A (very) few integrateds can match (the I1) in one area or another, but I know of nothing with a comparable combination of pedigree, versatility, footprint, expandability, upgradability, value, and world-class sonics."

ALAN TAFFEL, THE ABSOLUTE SOUND

The I1 integrated amplifier is possibly the most complex project that CH Precision has ever undertaken – and the most versatile product we have ever produced. Imagine the core qualities and capabilities of the C1.2 DAC Controller and A1.5 Amplifier combined in a single box. Now throw in the operational functionality of the L1 Line-stage and (optionally) the P1 Phono-stage, all combined in a single, standard CH chassis and you begin to get the picture.

The I1 is supplied in standard form equipped with four digital inputs (CH-Link HD, AES/EBU, S/PDIF and TosLink - although a second identical digital input board can be added in the spare chassis slot if you need the extra connections) one set of balanced and two pairs of single-ended analog inputs. The factory fitted Ethernet Control Board, which allows the unit to be remotely accessed, configured and controlled via the CH Control Android App, can be replaced with a full network streaming capable Ethernet input and a separate, asynchronous USB input card can be added to enable connection of computer sources for file replay. The discrete, fully-complementary analog input boards can be fitted with additional internal circuit blocks that allow owners to convert either or both of the RCA analog inputs into current sensing MC phono-inputs, complete with switchable replay EQ settings for RIAA, eRIAA, Decca, Columbia, EMI and Teldec (DGG) curves. Finally, a Clock-Sync board allows you to slave the I1 to external master clocks, or designate its internal clock as the system master. Dominating the interior of the I1 chassis, you'll find a massive 1000VA transformer, that's more than capable of supporting the 100 Watt/Channel into 8 Ohms rated output; in combination with the 100,000uF of reservoir capacitance it allows the output stage to handle awkward loudspeaker loads with ease.

How did we pack so much functionality into a single chassis? By leveraging the power of sophisticated software control, modular construction and advanced digital processing. The I1's volume control is a remarkable hybrid design, that uses an R-2R resistor ladder in the analog domain for setting course levels, with fine adjustment taking place in the digital domain, a combination that allows incredibly precise level control without eroding bit depth, resolution or dynamic range. Likewise, the I1's advanced analog-to-digital conversion stage allows us to set overall cartridge gain and replay EQ in the digital domain, providing unparalleled phono replay flexibility, accuracy and features in an integrated unit. You mean we turn the analog inputs into digital? Yes – but if you don't tell your friends they'll never know. Indeed, many listeners swear that the I1's phono-stage delivers some of the finest analog sound they've ever enjoyed! Which tells you that its digital replay is pretty impressive too...

Digital Architecture And Input Compatibility

Standard Digital Inputs

- Factory fitted with CH-Link HD, AES/EBU, S/PDIF and Toslink digital inputs.
- The CH-Link HD interface allows for synchronized transfer of high definition audio content (up to 32bit/768kHz) and DSD, offering the ideal interconnection to the D1.5 CD/SACD Transport or other CH-Link HD equipped units.
- Standard digital inputs accept PCM to 24bit/192kHz, DSD 1bit/2.822MHz
  (DSD over PCM or DoP encoded)
- Ethernet Control Board (replaced by the network streaming board if ordered or retro-fitted)

Optional Digital Inputs

- The I1 can accept two digital input boards, allowing multiple digital sources to be connected. The second board can be either another HD Digital Input Board or the USB Input Board.
- HD Ethernet audio streaming input board, UPnP/DLNA compatible, allows
  connection to Roon or NAS drives, audio servers or internet radio.
- PCM to 24bit/384kHz
- DSD 1bit/2.8224MHz (DSD64), 5.6448MHz (DSD128) or 11.2896 MHz (DSD256)
- Native DSD and DoP
- WAV, AIFF, FLAC, ALAC, AAC and MP3 formats supported in PCM
- DSF and DFF formats supported in DSD
- Asynchronous USB audio streaming input board – PCM to 24bit/192kHz, DSD 1bit/2.8224MHz (DSD64) in DoP Mode

Digital to Analog Conversion

- Individual Multi-bit Delta-Sigma converters for each channel
- Fully complementary, dual mono symmetrical circuit topology
- Discrete dedicated, shunt topology regulated linear power supplies for low noise and maximum channel separation

Processing And Clocking

- Proprietary CH-PEtER synchronous data over-sampling processing at DXD sample rate.
- Resolution enhancement of audio material recorded at less than 24bits
- Two ultra low jitter VCXO oscillators, one per time domain.
- Optional Master/Slave Clock-Sync board allows synchronization with external clocks or when used with the D1.5 CD/SACD transport.
- Clock-Sync board also allows use of the T1 10MHz Time Reference clock.

Display

- 800 x 480 pixel, 24bit RGB AMOLED
- 7 standard, user-selectable text colors
- User definable RGB option for text color

Remote Control Options

- Infrared Remote Control handset for basic functions
- Ethernet-based Android control APP

Analog Input Options And Functionality

Volume Control

- By-passable 0.5dB step hybrid volume control, coarse steps using an R-2R resistor ladder, with fine steps in the digital domain, to maximise system resolution.
- Post volume-control balanced XLR line-level analog outputs.

Standard Analog Inputs

- Discrete, fully differential analog input circuit
- Balanced XLR and single-ended RCA inputs
- 6V RMS maximum input level
- Input gain and balance user selectable

Analog-to-Digital conversion

- DXD 24bit/384kHz direct conversion

Optional Phono-Stage

- Current-sensing MC Input for optimum signal to noise performance
- No adjustment required for cartridge loading
- User adjustable gain
- One or both RCA analog inputs can be configured as MC phono-inputs
- Switchable replay EQ – RIAA, eRIAA, Decca, Columbia, EMI, Teldec (DGG)

Amplification Stage

- Pure Class A ultra low-noise driver and Class AB output stages
- Output 2x 175W into 4Ω
- Adjustable global feedback (0 to 100% in 20% steps)
- ExactBias circuitry maintains optimum performance parameters.
- No output relay in signal path
- Custom Argento binding posts for loudspeaker connection (accept both spades and banana plugs)

Power Supply

- Shielded 1000VA power transformer
- Hyper fast soft recovery diode bridge rectifiers
- Total of 100,000uF ultra low ESR reservoir and filtering capacitors

Optional Hardware

- Digital Input HD Board - Four stereo digital inputs – CH-Link HD, AES/EBU, S/PDIF and Toslink. Up to two Digital Input boards can be fitted in the I1.
- Phono Input Board - Current-sensing phono stereo inputs, dedicated to low-impedance MC cartridges.
- HD Ethernet Audio Input Board - Enables bit-exact, ultra low jitter playback of high-resolution files over an Ethernet network. Stream music from Roon or UPnP/DNLA networks, Tidal, Qobuz and internet radios. Browse music by using the CH Control app or third-party UPnP-compatible iOS or Android app.
- USB Audio Input Board - Enables bit-exact, ultra low jitter playback of high-resolution audio files directly from a computer or a music server.
- Clock Synchronization Board - Master/slave clock synchronization board. Allows the I1 to become the system clock master or to sync from an external clock generator such as the T1.

"(With the I1) CH Precision finds a middle way, one that keeps music as attractive as possible, yet also keeps it precise, detailed, and accurate. It's a bit of a high-wire act, and the CH Precision walks it perfectly."

ALAN SIRCOM, HI-FI PLUS MAGAZINE

"This integrated amp challenges the sound of high-quality separates, while at the same time condensing their essence into an unbelievably compact system...

It will drive most speakers comfortably... while offering ease of use combined with a positively mind-boggling array of functionality – most of which is actually useful!

...the (CH Precision) I1 is definitely as close to audio Nirvana as any compact audio system has transported me."

DENNIS DAVIS – THEAUDIOBEAT.COM

CH-Control Android App

The complex, configurable nature of CH components means that initial set up can be a daunting prospect, involving multiple stacked menus and myriad different parameters. With a little practice, it becomes second nature – but why practice when there's a simpler, more accessible and more intuitive alternative that actually promises both superior set up and easier operation?

Meet the CH-Control App – a control application that allows users direct access to every aspect of their CH system's set up and use via any Android portable device. The software control systems used to set and monitor the operational parameters of each and every CH component offer the perfect opportunity for remote operation via a portable App.

To use the CH-Control App, all you will need is an Android device and to connect your CH components to an Ethernet network. That can be done either through the Ethernet control board fitted as standard to all CH units, or through the network streaming board that can be installed in C1.2, C1.2 Mono or I1 units. We would always recommend using a dedicated tablet and network for your music streaming and system control requirements. But once your CH system is all hooked up, the App gives you touch screen access to every setting on every CH component, from the output topology of your amplifier to individual global feedback ratio and gain settings for each channel. Likewise, you can adjust gain in the P1, select EQ for each record or switch disc layers in the D1.5 CD/SACD player. But best of all, you can do it from the listening seat, which is of course convenient but is also a huge benefit when it comes to whole system set up or optimization for individual recordings. Either way, the CH-Control App allows you to make easier and more accurate judgements: Total control, quite literally at your fingertips.

For more information on the CH-Control App, a video is available on our Facebook page:
www.facebook.com/chprecision

CH-Control is available free from the Google Store.

"Extremely intuitive to use, (the CH-Control App) allows you direct access to volume, balance, gain settings, choice of inputs, choice of EQ curves, mute, phase polarity, mono/stereo button, feedback setting and several other less frequently used controls... the App was a boon when it came to setting things like global feedback and input gain, settings it allowed you to adjust from the listening seat. It was also a godsend for making changes to EQ settings on the fly."

DENNIS DAVIS, THEAUDIOBEAT.COM

The features of every CH product are accessible through the CH-Control App:-

- Built-in UPnP controller to stream dematerialized music, create playlists from your local server, audio streaming services or internet radio
- Set volume level, select sources, reverse phase, mute etc.
- Access to all the advanced set up parameters in every CH product.
- Works on a standard Ethernet network
- You can see the CH-Control App in action on our YouTube channel: **www.youtube.com/chprecision**

Technical Specifications

P1 Dual Monaural Phono-Stage

MC current-sensing input impedance
< 100mΩ, virtual ground
Equivalent Input Noise (EIN)
< -135dBu without X1 / <-138dBu with X1 / 1Ω termination, gain +70dB, 22kHz BW
MM/MC voltage input impedance
Variable from 100kΩ to 20Ω
Equivalent Input Noise (EIN)
< -130dBu without X1 / <-135dBu with X1 / 1Ω termination, gain +70dB, 22kHz BW
Playback EQ curves accuracy
+/- 0.1dB
High pass filter
Selectable - 3rd order (-18dB per octave) 10Hz, or by-pass
Max analog output level
8V RMS balanced
4V RMS single-ended
Frequency response
> 400kHz (RIAA equalization filter disconnected)
Total Harmonic Distortion + Noise
< 0.01%, 1kHz, output level 3V RMS, 22kHz BW
Dimensions/Weight
440 x 440 x 133mm (W x D x H) / 20kg

L1 Dual Monaural Line-Stage

Max analog input and output levels
16V RMS balanced
8V RMS single-ended
Input impedance
94kΩ or 600Ω balanced
47kΩ or 300Ω single-ended
Frequency response
DC - 1MHz
Total Harmonic Distortion + Noise
Output 3V RMS, 22kHz BW
< 0.001%, 1kHz, unity gain
Signal to Noise Ratio
Maximum output
> 136dB, unity gain
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 20kg

D1.5 CD/SACD Player/Transport

Frequency response
DC - 20kHz for CD
DC - 35kHz for SACD
Full scale analog outputs level
3.1V RMS balanced
1.55V RMS single-ended
Dynamic range
> 96dB for CD and > 120dB for SACD
Signal to Noise Ratio
> 126dB for both CD and SACD
Total Harmonic Distortion + Noise
< 0.002% for CD
< 0.0012% for SACD
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 22kg

C1.2 Mono Digital to Analog Controller
C1.2 Digital to Analog Controller

Conversion type
R-2R, 4x PCM1704 per channel
24 bit / 705.6kHz & 768kHz
DSP processing
CH-PEtER upsampler, synchronous, DSD to PCM conversion and resolution enhancer
Full scale analog outputs level
5.1V RMS balanced
2.55V RMS single-ended
Signal to Noise Ratio
> 126dB
Total Harmonic Distortion + Noise
< 0.001%, full scale, 22kHz BW
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 20kg per unit

X1 External Power Supply

Digital and analog power supplies monitoring
Over- & under-voltage
Over-current
DC outputs
One or two independent output boards as specified
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 22kg

I1 Universal Integrated Amplifier

Max analog input level
8V RMS balanced
4V RMS single-ended
Input impedance
94kΩ or 600Ω balanced, 47kΩ or 300Ω single-ended
A/D conversion
DXD 24 bit / 384kHz direct conversion
Phono MC current-sensing input impedance
< 100mΩ, virtual ground
Playback EQ curves accuracy
+/- 0.01dB (software implementation)
Post volume-control analog line outputs max level
4V RMS balanced
Loudspeaker outputs
2x 100W RMS/8Ω
2x 175W RMS/4Ω
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 33kg

M1.1 Two-channel Power Amplifier

Nominal input voltage
2.5V RMS balanced
1.25V RMS single-ended
Input impedance
94kΩ balanced
47kΩ or 300Ω single-ended
Output power
2x 200W / 8Ω, 2x 350W / 4Ω, 2x 600W / 2Ω in stereo and bi-amp modes
1x 350W / 4Ω, 1x 600W / 2Ω, 1x 1100W / 1Ω in monaural mode
1x 700W / 8Ω, 1x 1200W / 4Ω, 1x 1600W / 2Ω in bridge mode
Bandwidth
DC to 450kHz (-3dB) at 1W into an 8Ω resistive load
Signal to Noise Ratio
> 115dB in stereo and bi-amp modes
> 118dB in bridge mode
Total Harmonic Distortion + Noise
< 0.1% (0% global feedback)
< 0.01% (100% global feedback)
Max power consumption
2200W
Dimensions/Weight
440 x 440 x 266mm (W x D x H), 71kg

A1.5 Two-channel Power Amplifier

Nominal input voltage
2.2V RMS balanced
1.1V RMS single-ended
Input impedance
94kΩ balanced
47kΩ or 300Ω single-ended
Output power
2x 150W / 8Ω, 2x 275W / 4Ω, 2x 450W / 2Ω in stereo and bi-amp modes
1x 275W / 4Ω, 1x 450W / 2Ω, 1x 700W / 1Ω in monaural mode
1x 550W / 8Ω, 1x 800W / 4Ω, 1x 1200W / 2Ω in bridge mode
Bandwidth
DC to 450kHz (-3dB) at 1W into an 8Ω resistive load
Signal to Noise Ratio
> 115dB in stereo and bi-amp modes
> 118dB in bridge mode
Total Harmonic Distortion + Noise
< 0.1% (0% global feedback)
< 0.01% (100% global feedback)
Max power consumption
1800W
Dimensions/Weight
440 x 440 x 198mm (W x D x H), 47kg

T1 10MHz Time Reference

Nominal frequency
10MHz, +/- 20ppb, internal mode
10MHz, +/- 1ppb maximum, GPS option locked for 1 hour
Phase noise performances
< -105dBc/Hz @ 1Hz
< -125dBc/Hz @ 10Hz
< -145dBc/Hz @ 100Hz
< -155dBc/Hz @ 1kHz
< -165dBc/Hz @ 10kHz and above
Outputs level
500mV or 1V, peak to peak, loaded with 75Ω
Sine or Square wave
Six 75Ω BNC outputs
External reference input level
5V TTL
50Ω BNC input
Accepted reference input frequencies
1 PPS, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 100kHz, 176.4kHz, 192kHz,
Reference input frequency deviation maximum
+/- 0.1ppm
Dimensions/Weight
440 x 440 x 133mm (W x D x H), 20kg

SYNC-IO Board (for C1.2, C1.2 Mono, D1.5 and I1)

Clock input
BNC, 0.5Vpp to 5Vpp, 75Ω or Hi-Z
44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz, 384kHz, 22.5792MHz, 24.576MHz, 100kHz, 10MHz
Clock output
2x BNC, 2Vpp, 75Ω

General

Display
800x480 pixels, 24bits color, AMOLED
Mains operation
Selectable 100V, 115, 230V AC, 47-63Hz
Standby power consumption
< 1W
Remote control
IR Remote control, RC5 codes
CH-Control App

“Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it.”

SIR HENRY ROYCE, 1863-1933

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