

CH PRECISION SYSTEM THEORY

by Laurent Thorin

This young Swiss company has made a lot of noise in a very short time. The world of high-end audio has seen many such brilliant comets fly – and then fade. But the CH Precision team keeps its head firmly on its shoulders. And if the brand's ambitions seem limitless, it also cultivates a solid, common sense attitude that allows it to keep its feet firmly on the ground. This powerful duality is based on its holistic approach to the design and development of hi-fi equipment. It's significant that before developing their own products, CH Precision's designers worked for others, learning lessons and scrutinizing the best of existing techniques. It was that experience that persuaded them to start with a blank page, a particular systematic approach and the intention to create products with the highest possible performance, regardless of price. We don't recall ever encountering such a level of a priori reflection embodied in the functioning of an audio device. It's reflected too, in the fact that no CH Precision product has been discontinued: every product is upgradable to keep it current, or if that is physically impossible it can be exchanged for the new model with a factory guaranteed (and very attractive) trade-in.

The Swiss label is not always easy to wear. If it is often synonymous with exclusivity and excellence, it also rhymes with prices that are often stratospheric. However, it is thanks to cutting-edge research that brands can make significant leaps in performance. And in Switzerland, when it comes to peak performance, we get along just fine!

It is in this context, characterized by quality and rarity, that the young brand CH Precision evolves. Its reputation has been forged quickly, since the company was only created in May 2009 and its first product, the D1 CD/SACD player/transport, was re-

leased in December 2010. You might well observe that that rapid developmental arc is pretty unusual... But then, the history of CH Precision is far from conformist.

Florian Cossy graduated from the Polytechnic School of Lausanne and worked at Goldmund from 1995 to 1999. His friend Thierry Heeb also worked for the Geneva-based manufacturer. Quickly tiring of the restrictions on their creativity, they left Goldmund and created the Anagram design office, a sort of eminent technology-centric think tank, specialized in the sub-contract development of high-end

CH PRECISION



audio products for hi-fi equipment manufacturers such as Audio Aero, Audiomeca, Cambridge, Lindemann, Orpheus and others who wish to remain anonymous.

After 10 years of loyal service, a well established audio distributor in South East Asia asked them why they didn't manufacture their own products? And in doing so, he suggested that if they did, he could open the doors of the Japanese market. The gamble was big and so was the challenge, but clearly nothing insurmountable for Florian and Thierry, who unveil the D1 player after a few months. It was quickly adopted in Japan, Asia soon followed, then the United States, and finally Europe. As a chef might say, "the ingredients of the CH Precision mayonnaise were combining nicely."

The growth continues, and today the company has fifteen employees. Eleven are in Switzerland at the head office, including four in R&D and five in assembly. The international sales manager is in the United States. A regional sales manager is based in Hong Kong. And Louise Ford, head of marketing, is in France. To help ensure autonomy, CH purchased an anodizing plant in 2018. That may not sound like much, but ensuring perfect consistency of front panel colors in a multi-component system is a necessity, especially one with the potential for this many boxes and at these prices! In the same vein, the Swiss manufacturer acquired two fully automated, five-axis CNC milling machines the following year.



COMPUTING POWER AT THE SERVICE OF AUDIO

The really unique aspect of each CH Precision device comes from the power of its software architecture. First, it allows for extremely precise control of all its operating parameters to ensure optimal performance. CH pays close attention to signal-to-noise ratio, phase coherence and time coherence. The software allows the audio circuits to operate at their best. It monitors and controls their temperature, operating voltages, noise floor, absence of DC, and isolation from AC interference. Sophisticated digital circuitry monitors every aspect of the signal path in real time, ensuring absolutely stable operating conditions without any limitation in technical performance. All this technology and monitoring is there to preserve the fragile audio signal.

But moreover, these software control capabilities allow multiple user-operated options and access to all of the advanced configuration settings in each CH product. The first step is to connect the entire

system to the network. For this reason, there is an Ethernet port on each of the brand's components. The manufacturer recommends always using a dedicated network for music streaming and system control. Once your CH system is connected, all you have to do is download the CH-Control App (on an Android device), which gives you direct access to all aspects of setup and configuration of each CH component in the system. This could be the output topology of your amplifier, its overall feedback ratio or its gain, with the latter two independently adjustable for each channel. Similarly, you can adjust the preamp gain, select the EQ mode for each recording or change the disc layer in the D1.5 CD/SACD player. And of course, you can do all this from the comfort of your couch, which has the huge advantage of not only optimizing your system easily but keeping it that way.

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.

NEVER BE FOOLED BY APPEARANCES

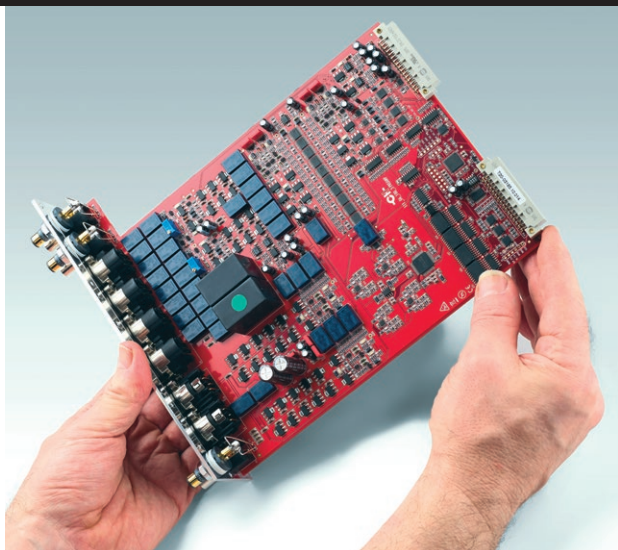
Like Naim Audio in its day, CH Precision has deliberately chosen to use the same enclosure for all its units, with the exception of the power amplifiers which require taller enclosures but retain the same footprint.

This is the physical and symbolic manifestation of one of the Swiss brand's founding philosophical elements: modularity.

Indeed, each CH Precision unit is built using the same modular structure that combines a «host» case with plug-in 'cards' that attach to the rear panel.

Regardless of the type of product involved, this construction topology allows the use of a maximum number of common elements and components.





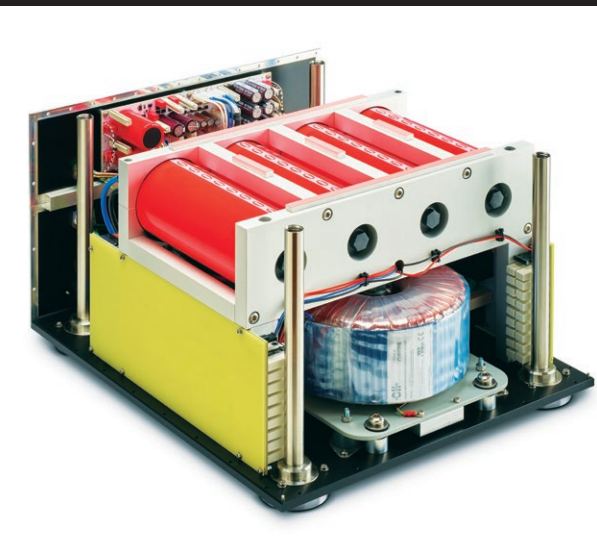
Thus, displays, control circuits and packaging can be shared across multiple platforms. This is how the desire for industrial rationalization of production is expressed in the first place. Not only does this method keep costs down, it also facilitates inventory, manufacturing, reliability and product longevity.

This «a la carte» construction technique allows the user to order a completely customized device. If you buy a C1 DAC/Controller, you can choose how many digital or analog inputs and outputs you need. If your system evolves, all you have to do is reconfigure your machine, not buy a new one. Of course, you have other upgrade options too. You can add an external X1 power supply or a T1 Time Reference 10MHz clock. Or you can transform your C1 into a true-monaural 3-box C1 Mono, all without losing anything. You will only have to pay the difference in price between the two devices purchased new.

The same goes for the L1 line stage and the P1 phono stage, both of which can be upgraded from a single box to a true 4-box dual mono configuration

with two external power supplies. Even the power amps are configurable and expandable. The M1.1 or A1.5 offer five modes of operation from direct stereo to high-power bridged mono - with cable-saving bi-amp options in between. They can even help accommodate different speakers and rooms, with software control of overall gain and damping factor.

In 12 years of business, the company has replaced only two products. When the original A1 amplifier was replaced by the new, larger and much more capable A1.5, all A1 owners were offered the option of a heavily subsidized upgrade. Similarly, the D1.5 CD/SACD player uses CH Precision's new, proprietary transport mechanism, which is so different to the one used by the D1 that it is impossible to adapt earlier machines. Once again, all owners of the original unit were offered the same, heavily subsidized upgrade option. Every other series upgrade has been fully compatible with existing units, meaning that every CH product ever sold can be upgraded to the latest specifications.



At the end of January, I discovered not just a magnificently appointed listening room, but the whole of the 1 Series on demonstration, under excellent conditions with every aspect of set up and system-tuning carefully considered. Even the speakers were Swiss, Stenheim's Alumine 5.

Following a very precise protocol, on the first day Louise led me through the possible system evolution of the analog units. We start by listening to a system composed of an L1 line-stage preamplifier and M1.1 power amplifier. The second step was to add a separate X1 power supply on the L1. Then we switched our attention to the operation of the amplifier. The latter can easily be configured to operate in stereophonic mode, or as a mono-bloc. In the latter

CH Precision is a company that takes both the scalable nature and longevity of its products very seriously. This modular design and construction not only delivers top-notch musical performance, it also protects your investment. Its products may seem expensive, but when you weigh their intrinsic performance against their upgradeability, it's a no-brainer.

FROM DISCOVERY TO DISCOVERY

The first contact between the Swiss brand and the VUmètre editorial team takes place at the end of 2021. At this stage, we have no history with the brand. Of course, as an audio professional, I was able to attend a number of demonstrations of their equipment at major international trade shows, especially in Munich. But none of the magazine's editorial staff has tested a CH Precision device or system under their own listening conditions. It was during a lunch with Louise Ford, the Head of Marketing, that the plan was hatched. It was agreed that I would visit her own listening room for a personalized introduction to the products.



mode, the user can choose between high current or high power depending on the requirements of the loudspeaker. Adding a second amplifier, bi-amplification is also a possibility, with the user able to choose between passive and active options. Thanks to CH Precision's sophisticated software control, the amp offers all these options via a selection on the proprietary application. And of course, each chosen solution changes the level of sound reproduction.

The second day is dedicated to sources. We start by listening to the D1.5 player alone. Then we add a separate power supply. The third step adds the C1 DAC (also connected to the second output on the X1 power supply), and in a fourth, the external clock T1 Time Reference to synchronize the DAC and the transport. At each stage the performance gain is im-

mediately noticeable, but moreover, important. In a system of this level, everything can be clearly heard, with a particular immediacy and intensity. There is no ambiguity: each evolution is major. And it is exactly the same with the phono preamp, when the separate power supply is added. The residual noise level is drastically reduced. In fact, we have never experienced such a quiet phono preamp before. Even with the volume knob turned all the way up, no noise is perceptible. It is disturbing!

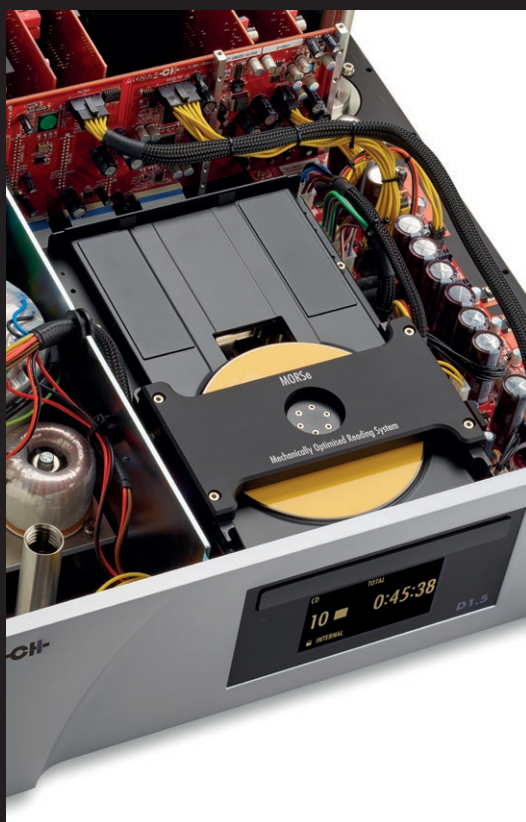
BACK TO THE FUTURE

After two days of in-depth comparative listening to seven CH Precision products in a dozen different configurations, it is very clear that the Swiss manufacturer has studied its scalability diagram very carefully. As CH Precision itself explains very well



in some of its advertisements, not without a sense of humor, the CH customer could very well evolve from a two-box system to a phenomenal 18-box, single source configuration. That is, if it is equipped with loudspeakers capable of handling the three-way amplification!

The brand's concept is particularly well developed, and makes us want to deepen our sensory experience of its universe. So we'll see you in a while for our first tests of these beautiful machines! ■



A LITTLE HISTORY

After studying at the Ecole Polytechnique de Lausanne, Florian Cossy got his first job at Goldmund, where he worked between 1995 and 1999. He was there at the same time as Thierry Heeb, with whom he had become friends during his studies. Florian is an electronics expert. Thierry excels in mathematics. In 2000, they created Anagram Technologies, a company specialized in the development of systems and algorithms for digital audio signal processing applications with clients in Europe, the United States and Asia.

Florian left Anagram in 2005 along with the portfolio of high-end audio manufacturers, including Audio Aero and Audioméca, which no longer interested the company's external investors. To meet their expectations, he founded ABC PCB, a company that still exists today under the name Engineered. He sold ABC PCB to his employees in 2009 to create CH Precision with Thierry. This duo is definitely as creative as their combined skill-set is complete.

