VUMETRE #56
MAGAZINE HI-FI INDEPENDANT

Atoll IN400 Evolution
approche stratégique

Ultra High End
CH Precision L1 & A1.5
Suite analogique épisode 1

L'Esprit par Esprit
Le bonheur est dans la liaison

Solen CV40
Le retour de l'EL84

NOVEMBRE-DECEMBRE 2024 **10 €** WWW.VUMETRE.COM

ANALOGUE SUITE

CH PRECISION L1 & A1.5

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VU METRE REMARKABLE!

Methodical in its development and design, the Swiss manufacturer is also methodical when it comes to being a driving force behind the tests we carry out. Having explored the full range of digital sources, then the phono preamp and finally the I1 single-chassis combo, we now turn our attention to amplification in separate elements. As always with CH, scalability is the order of the day, and even if we start the tests with two cabinets, we'll end up with four. So it's a tale of two episodes that we're going to tell you in this issue 56 and the next.

TECHNICAL SHEET

L1

ORIGIN
Switzerland

PRICE
€ 34 500

DIMENSIONS
440 x 440 x 133 mm

WEIGHT
20 kg

MAXIMUM ANALOGUE INPUT AND OUTPUT LEVELS
16V RMS balanced
8V RMS pure

INPUT IMPEDANCE
94 kΩ or 600 Ω balanced
47 kΩ or 300 Ω unbalanced

OUTPUT IMPEDANCE
BNC connectors: 50 Ω
RCA connectors: 75 Ω
XLR connectors: 2 x 30 Ω

FREQUENCY RESPONSE
DC - 1MHz

TOTAL HARMONIC DISTORTION + NOISE
Output 3V RMS, 22 kHz BW
< 0.001%, 1 kHz, unity gain

SIGNAL-TO-NOISE RATIO
> 136 dB, unity gain

TECHNICAL LEVEL

A1.5

ORIGIN
Switzerland

PRICE
€ 39 500

DIMENSIONS
440 x 440 x 198 mm

WEIGHT
47 kg

NOMINAL INPUT VOLTAGE
2.2 V RMS balanced
1.1 V RMS unbalanced

INPUT IMPEDANCE
94 kΩ balanced
47 kΩ or 300 Ω unbalanced

OUTPUT POWER
2x 150 W / 8Ω, 2x 275 W / 4Ω,
2x 450 W / 2Ω in stereo and bi-amp modes.
1x 275 W / 4Ω, 1x 450 W / 2Ω,
1x 700 W / 1Ω in monaural mode
1x 550 W / 8Ω, 1x 800 W / 4Ω,
1x 1200 W / 2Ω in bridged mode

BANDWIDTH
DC to 450 kHz (-3 dB) at 1W into an 8Ω resistive load

SIGNAL-TO-NOISE RATIO
> 115 dB in stereo and bi-amplified mode
> 118 dB in bridged mode

TOTAL HARMONIC DISTORTION + NOISE
< 0.1% (0% overall feedback)
< 0.01% (100% global feedbac)

Founded in 2009, CH Precision builds only electronics with the aim of sublimating the music contained in your media, whether analogue or digital. With this in mind, the brand strives to achieve the highest performance without compromise. Its research and development department is the nerve center of the brand. To achieve its goals, this department carries out extremely sophisticated modelling to obtain the highest performance in terms of signal-to-noise ratio, phase coherence and temporal coherence. Many expensive software packages are used, including a design aid model and a manufacturing aid model. Once the project has been successfully completed, the judge of peace remains the ear because, whatever people may say today, the human body may not be the most precise measuring instrument in the world, but it is on the other hand the most subtle.

THE L1 PREAMPLIFIER

On the face of it, there's nothing more basic than a preamplifier. After all, it's just a device for adjusting the volume level and selecting one of the sources connected to it. But that's just the tip of the iceberg. Beneath its very simple exterior, the preamplifier conceals a complex structure whose mission is to preserve the very fragile audio signals emanating from the various sources and to apply a sufficient level of gain to them, without any alteration, so that they can be exploited in the best possible conditions by the power amplifier. To do this, it needs to offer a wide bandwidth, high slew rate and optimum DC coupling. In short, it must bring out the very essence of a signal while protecting it

from all sources of electrical pollution and induced noise. Add to this the fact that the preamplifier is at the very centre of the system, and is therefore subject to the benefits, as well as the pollution, of all the other devices, and you have the makings of a Chinese puzzle.

To achieve its objective, CH leaves absolutely nothing in the dark. All the components of the device adopt the best technologies and are optimized by a large number of completely original innovations. The L1, for example, has a fully symmetrical and complementary structure, the shortest possible signal path, only rigorously selected discrete components and a whole series of highly regulated and filtered power supplies.

To take fine-tuning even further, the user has control over a number of parameters. This is a common procedure at CH and on all its devices. But for all that, it's an exception in the world of high-end audio. This is also why it is vital that the system is installed by someone qualified or trained by the brand. You can't just improvise the installation of such a system. DC offset is controlled and eliminated throughout the volume control scale and at multiple points in the circuit. In fact, it is measured and corrected at four points of each signal path, for a total of 16 points. It can be calibrated individually for each input or blocked completely for that input.

To facilitate the fine-tuning procedure, the L1 is fully controllable via the CH-Control application. You can adjust the overall gain and you can even select a blocking capacitor on any input if required. In addition, and this is purely practical and cosmetic, the inputs can be completely renamed.

If you delve a little deeper into the bowels of the L1, you'll find that the left and right channel PCBs are entirely separate to prevent crosstalk. And what you probably don't realise when fiddling with the creamy front-panel volume control is that this is no ordinary analogue potentiometer, but a super-sophisticated R2R-type network that uses precision metal film resistors and allows precise level control with a minimum number of components in the signal path. Of course, for optimum synchronization, everything is software-controlled for each channel. The adjustment range extends from -100 to +18 dB in 0.5 dB steps.

To house all the electronics, CH has stuck to its tried-and-tested modular construction. But unlike the internal structure of the C1.2 and I1, the L1 adopts that of the P1. As these two machines are purely analogue, the logic is similar L1 and P1 use the same base, chassis and power supply. In the L1, all the inputs of a channel, whether right or left, are mounted on a single card that slides horizontally into the rear of the chassis. An entire card can be removed and moved into a separate chassis for dual mono operation, or both cards in a chassis can be designated for a single channel if you need additional inputs. It's also worth pointing out that unused inputs can be simply disabled to avoid any additional noise. In this case, it's as if they were non-existent and no longer even appear in the active circuit.

What seems vital to us is that if you want to upgrade your equipment, the most expensive parts of each device - the cabinet and the power supply - are guaranteed to have a long life, ensuring that your investment lasts.

What is CH's famous modular construction? Quite simply, it means offering consumers the possibility of upgrading their machine, not only in the case of upgrades proposed by the manufacturer, but also as part of an ongoing upgrade program involving the addition of further machines. For example, to significantly increase performance levels, a single-chassis L1 can be upgraded to a dual-chassis L1. An L1 can also be fitted with an external X1 power supply. And in the case of a dual-chassis L1, you can add a second X1. Of course, at each stage, the level of performance increases significantly. As far as our tests on adding an X1 are concerned, everything will be covered in episode 2.

THE A1.5 POWER AMPLIFIER

The A1.5 is the latest addition to the Swiss manufacturer's amplifier range. It has the same footprint as its big brother the M1.1 and all the other CHs for that matter. And like them, it can claim Swiss Army Knife status. Indeed, it is through this prodigious functional plasticity that the machines from this non-conformist manufacturer stand out in a production that always tends to offer the same pedigree. While the A1.5 is undoubtedly a power amp, its 'genre' is not totally defined. Indeed, on paper, it's a stereophonic model. But it's also a monophonic model that can operate in bridged mode. And of course, it can remain stereophonic and provide any type of passive or active multi-amplification. All this can be done simply by tapping on the menu on the front panel, or even more easily using the proprietary application. If that's not enough, the A1.5 can take you right to the heart of the reactor by adjusting much more decisive technical parameters.

To give every user this ultimate level of flexibility, CH Precision has developed control circuitry and software that allows you to choose the feedback characteristics (local or global). This ensures that you can control the damping factor, a key factor when it comes to matching speakers to the room, and the system's response to the acoustic environment. In addition, in the case of bi- or even tri-amplification, each channel can be individually adjusted, so that differential damping can be applied to different frequency ranges or even between left and right channels, to help compensate for or control room gain, asymmetry or non-linearity. The global/local feedback ratio is adjustable from 100% local to 100% global. Adjustments are made in 10% increments.

As you can see, the A1.5 is not your average amp, but a power unit capable of adapting to any context. The extreme Swiss adaptability continues! Behind this adaptable topology, the A1.5, like its brothers,

is an amplifier whose signal path has been reduced to its simplest expression, equipped with an entirely discrete, symmetrical and complementary circuit, designed and built without the slightest compromise. The pure Class A biased input stage operates with very low noise and high slew rate. It is DC-coupled, with no capacitors in series in the signal path. The gain is adjustable up to 24dB in 0.5dB steps.

Only the very low noise output stage operates in class AB. This is combined with the ExactBias circuit, which guarantees constant polarization regardless of ambient temperature and amplifier load. It also constantly monitors output power and temperature.
The power supply on such a machine is simply gargantuan. It is centered around a 1700 VA transformer mounted on a separate chassis and mechanically isolated to eliminate mechanical vibrations. Not only are the transformers magnetically shielded, they are also electrostatically shielded to reduce noise and electromagnetic interference.

The rectifiers use high-speed diode bridges. Based on two custom-built very low ESR capacitors, the total capacitance is 82,000uF.

INSTALLATION

Your chances of winning a car race are pretty slim if your vehicle hasn't been meticulously tuned. For a hi-fi system like this, it's the same thing, and we spent several hours setting up the system. The manufacturer specifies that it is always best to install each appliance on a separate furniture shelf. Nevertheless, the system for stacking appliances on top of each other works perfectly well, as long as you don't put too many of them on top of each other. Sets of two or three devices stacked on top of each other will work in excellent conditions. Nevertheless, for the purposes of the test, we installed each link on a Centaure L.

As with all the brand's products, the chassis can be placed in a completely floating position thanks to the improved four-point mechanical earthing and levelling system. Decoupling rods are screwed into stainless steel tubes at each corner of the unit. Once the spikes are out, the cabinet is literally suspended and perfectly level.

Throughout the system, we had access to the new POM rods, of which only the ends are made of hardened aluminum, unlike the previous generation, which was made entirely of metal. The engineers noted that too much metal could lead to discoloration, which disappears completely when a composite material is used. In the meantime, the 10 series has been introduced, equipped with titanium tips. These are even more effective. It is therefore possible for Series 1 users to purchase Series 10 tips as an option.

L1 and A1.5 use the same mechanical earthing system as their brothers. Based on four adjustable spikes running vertically through each corner of the machine, they allow users to mechanically ground, level or even stack their CH units. The furniture used must itself be rigid and level. The support shelf should ideally be designed to dissipate vibration energy rather than store it. Composite materials, plywood and glulam shelves all give excellent results. We suggest you avoid glass or hard surfaces such as marble or granite.

Remove the top caps of each appliance using the suction cup provided. Insert the earthing spikes one after the other, first coating the threads with a non-stick product. Once the spikes are installed, turn each one until it engages in the thread at the bottom of the rod, then position the appliance on its shelf. Use the screwdriver to screw in each spike until it makes contact with the support surface. Then turn one full turn to lift the appliance from the shelf. At this point, all you need to do is fine-tune the appliance so that it is perfectly horizontal. To do this, use a spirit level or digital level.

Levelling appliances is important for two reasons. Firstly, the mechanical earthing system works completely efficiently if all four spikes are level and equally charged. But also, because transformers rely on a suspension system that works much more efficiently if it is perfectly level. If it is not, the transmission of vibration disturbances to the rest of the circuit increases.

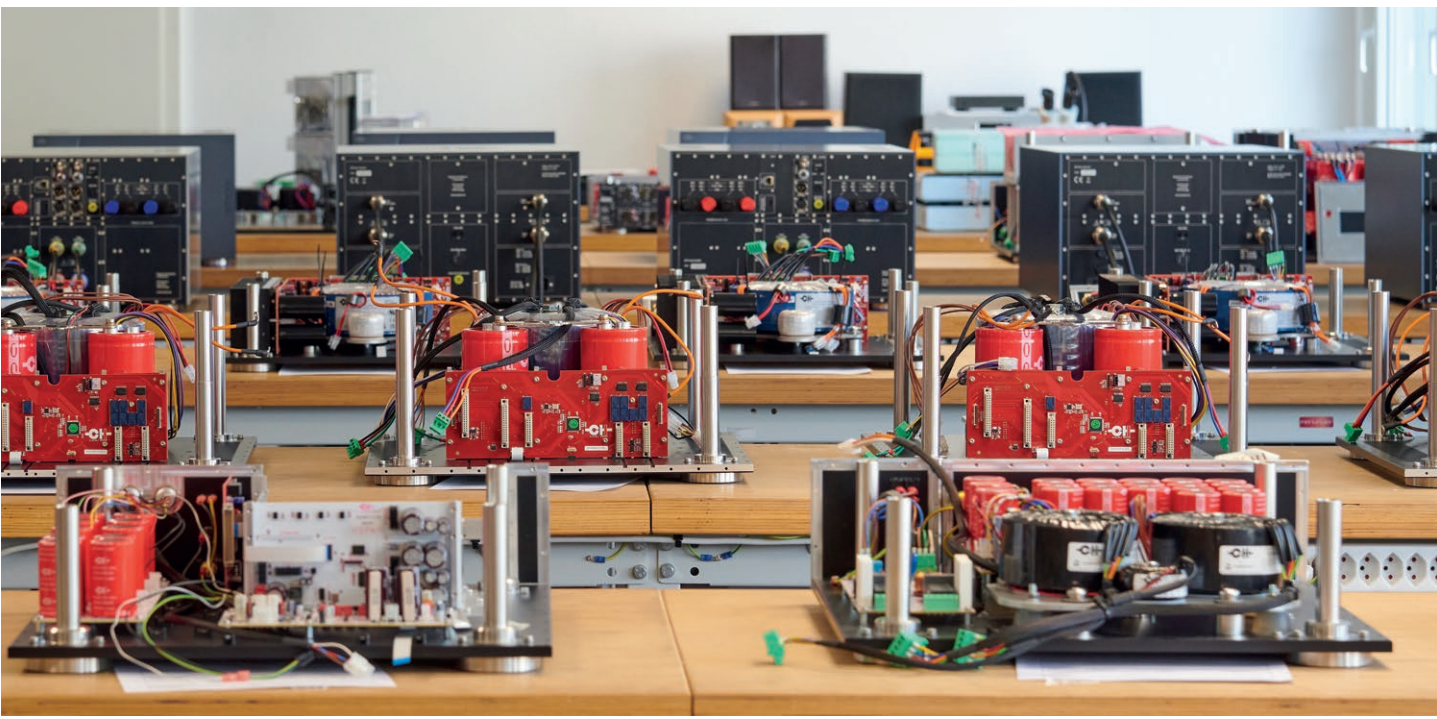
On the rear of each of the two units, separate banana jumpers allow you to combine or separate the signal and chassis grounds - so you can maintain star grounding of the signal while individually grounding each chassis on an external ground purifier such as a Nordost Qkore, among others.

Once the 'mechanical' installation is complete, all you need to do is make the connections. L1 and A1.5 are equipped with high-quality connectors such as Furutech RCAs or Argento HP terminals, for example, all built to specifications. We used the complete line from French manufacturer Esprit L'Esprit with remarkable results. But the manufacturer has no set religion when it comes to choosing cables and considers that its electronics are designed specifically to work with any competently designed cable. That's not to say that cables don't matter, or that any cable will do. For best results, we've found considerable musical advantages in using the same brand of cable throughout the system. When it came to loudspeakers, we did most of our testing with two models, the Living Voice Auditorium IBX RW4, and especially the T&T Nel Extreme Evo.

THE SOUND

It's not easy to begin an exhaustive description of such exclusive amplification. Our brains are full of sensations. So where should we start? Perhaps what impressed us most at the time: the power of resolution. We were totally astounded by the amount of information we were able to detect in records we thought we knew perfectly well. This was more surprising given that we were testing a preamp/amp unit, not a source! This is the most obvious proof that electronics have a huge responsibility in transcribing the finest details. And that's exactly what we're talking about here.

The L1 & A1.5 set gives us an 'inside' view. You almost feel as if you're listening to the music as a privileged guest behind the mastering engineer's console. The feeling of proximity is really



enhanced. There's much less distance between the signal and your ears. The sound is very direct and at the same time very smooth. Very direct, because the amplification is totally responsive. There's no inertia, no dead time. Loudspeakers of any kind react extremely quickly. The amplifier's energy reserve far exceeds the advertised power values. Subjectively, you might think the A1.5 is more powerful than it claims to be. This is obviously thanks to its prodigious power supply. This omnipresent control does a lot in terms of presence and ability to trigger an extraordinary emotional experience. But we should also mention the smoothness, which is quite astonishing at this level of power and sound volume, because with the L1 & A1.5, you quickly realize that you can let yourself listen much louder than usual, as the level of distortion is reduced to its simplest expression. This gentleness is obviously the result of a particularly eloquent power of resolution, which sheds a different light on records that have been around for ages. We realize that we've never before perceived the bass with such density and texture. The bass chords reason with exceptional weight and tension. It's quite difficult to be precise and nuanced in the bass and extreme bass. Often the analysis becomes a bit monomaniacal. Here, it's precisely the variety of all the low notes that changes our point of view on the records. What's more, this acuity has very interesting repercussions on the intelligibility of the soundstage.

In fact, it's because the backgrounds are perfectly identifiable that the sensation of depth is so well rendered and that you have the impression of penetrating into the arcana of sound recording and tasting the panorama in width, height and depth with extreme precision.

OUR CONCLUSION

When it comes to making an assessment, it's fair to ask which of the two machines should be credited with which quality. If you think about it, it seems quite obvious that it's the complementary nature of the two that does the trick. Even more so as the manufacturer has been able to apply its know-how perfectly throughout the amplification line. However, it's quite logical to think that the incredible sensation of resolution is linked to the excellent precision of the L1 preamplifier and that this amazing ability to drive speakers is the strength of the A1.5. As for the rest, it's obviously the exquisite combination of the two talents that gives us such a result. What's most striking is that these two prodigious devices don't sound at all like big amplifiers, but like a machine of remarkable subtlety. Of course, you'd expect a burst of energy from a combo like this, and it goes without saying that it's there. But it's in the finesse and sheer beauty that this ensemble makes the difference. Finally, and this is something that has never been done before in the industry, there is an unprecedented level of interaction with the machine, which simply allows you to optimize the operation of the equipment to the maximum, depending on your system and your room. We've never been able to achieve this level of adaptability in the memory of a journalist. ■