



The renewal of the top level products of *Unico* series begun with the new *Unico100* integrated amplifier now reaches another major stage with the introduction of the *Unico CDE*.

Once again *Unison Research* is firmly resolute to offer a device that deserve to be part of such a blazoned family, able to transmit tradition and bring innovation, able to change only to get better, with a look at the aesthetics but without forgetting the substance.

Introduction

The new *UnicoCDE* is the natural *Evolution* of the famous *UnicoCD*, the world wide know CD player manufactured by *Unison Research*.

As introduced with the *Unico secondo* the *Unico CDE* too wears the black hairlined aluminium chassis. The extrusion sections as part of the project, designed by the *Unison Research* technical staff keeping in mind both aesthetic and functional features: rounded corners, housings for the fixing screws, the precise manufacture and assembly.

The front panel clearly reveals how the new *Unico CDE* belongs to the top level range of *Unico* series, leaded by the *Unico200* and recently enriched by the *Unico100*. All the traditional features are preserved: the well known and beloved sandblasted and anodized aluminium front panel that defines the "*Unico-style*", the wooden logo inlay, the wide graphical display (an *unique* feature, almost exclusive for *Unison Research* players) and that simple and user-friendly but complete interface.

Once the top cover is removed the new *UnicoCDE* shows lots of novelties. You cannot have a look at the audio output stage, easily identifiable thanks to the presence of the tubes, doubles if compared to the predecessor. Marshalled in a single row, symbolically splitting the "digital world" (the DAC converter) from the "analogue world" (the output connector and from there all the audio system till he user's ears) there you can see four 12AX7/ECC83 double triodes. But as we'll see further the valve character of the new device is in the circuit design more than in the number of components.

Other interesting features will be discussed in details in the following lines.

Details

The brief introduction just seen offers only an overview of the device, let's go in deep with the analysis of the new *UnicoCDE*.

For the ones who know the *Unico* series products it will be easy to realize that a new aesthetics has been designed: the new *UnicoCDE* shows a new aluminium chassis. The choice of unusing this new design instead of the old painted iron chassis derives mostly from the will to take part of (and not to follow) the actual aesthetic trend, making easier to put our devices in a system using also other brands products.

The front panel reveals the belonging of the new born CD player to the top level line of *Unico* series: heavy and sturdy, thick aluminium double panel, the same impeccable finishing by beadblasting (not sandblasting).

Beadblasting is a surface finishing that consists in a surface cold hammering using a high pressure air flow bringing small ceramic bead, this gives to the surface an homogeneous, opaque look; the following anodization cause a film of aluminium oxide to grow on the surface giving more hardness and protection.

The user interface is developed around a wide graphical display with 128x64 dot resolution where the software shows in a dynamic way all the information of the status on the disk. As in the *UnicoCD* there's an automatic brightness control that matches at any time the brightness of the display with the ambient light in order to censure the best view; in the *UnicoCDE* the user can switch off the back light of the LCD using the remote control, this will make the presence of the device much less intrusive during quite listening hours. All of the main functions can be accessed via the four push buttons on the front panel. The usage is now even easier thanks to a new developed software.

A complete set of output connectors both XLR and RCA allows the user to connect the *UnicoCDE* to any other device, another pair of RCA connector are dedicated to a digital input/output interface. On the rear panel you'll find a couple of micro switch that enable the digital source selection (internal, i.e. the CD drive, or external, according to the standard specified) and the gain of the audio stage (as we'll see further).

All of these news can be for someone enough to set on the shells a new device but as regards *Unison Research* this is only the beginning.

The internal layout is clear and neat, an iron screen shields both electromagnetic and mechanical noise and hides the mains connections and voltage

settings, the power transformer, the CD drive and most of the connecting cables.

The power transformer is a toroidal custom designed by **Unison Research**, low noise and over-sized (it can deliver up to 100VA, most of the time this is the power of an integrated amplifier transformer!).

The CD drive has been selected among a lot of models of audio, general purpose, CD, DVD and CD burner; the keys of selection have been low-noise, reliability, ease of use and ease of service even in the future.

The circuits of the **UnicoCDE** have been developed according to a modular structure: every PCB is dedicated to its function and every function has its own PCB. This way a minor cross-talk between power supply, control and audio stages can be achieved.

The power supplies design inherits all the benefits tested in the preceding devices, here we have a series of 8, of independent voltage regulator circuits. The use of independent heatsinks guarantees better performances and high reliability.

All of the functions of the device are controlled by a microprocessor which runs a firmware developed in our laboratories.

The S/PDIF signal sourced by the drive is fed to a CRYSTAL CS8420 SCR circuit that performs an oversampling to 96kHz, jitter reduction and audio data control; the newly encoded digital data now goes to a CRYSTAL CS4392 digital-to-analogue converter that can process 24bit resolution data with a sampling frequency up to 192kHz.

The design is intended to be fully and easily upgradeable, a still to come optional DAC board will be easy to install (just plug it). The dedicated software will allow the user to switch between the onboard DAC and the new one without switching off or opening the device, with the standard remote handset it will be very intuitive to navigate through an interactive menu and change the device settings.

The audio stages are on a separated PCB away from the other circuits, this leaves open all the possibilities for future upgrade and prevents the noise coming from other circuits from entering the audio stages.

As seen before the new **UnicoCDE** has a completely new output audio stage; in all the other sources belonging to the **Unico** series the audio stage used to have the same structure: a tube gain stage (simpler in the **UnicoCDP**, and more complex in **UnicoCD** and **UnicoR**) followed by a solid state transistor class A buffer. The design staff of Unison Research was sure that emphasizing the tube character of the device would better sound result could be obtained so they bravely left the well tested solution for a brand new design. Since four different signals were needed (due to the balanced outputs) and a quite low output impedance was desired (in order to ensure correct performance with very other line amplifiers in the chain) the output stage got to use not less than 8 triodes.

Lots of listening tests have shown that the hazardous choice was a winning choice, giving the **UnicoCDE** an improved tone enhanced by the use of 12AX7/ECC83 tubes instead of ECC82.

Since the tube circuit is arranged as a parallel cathode follower there's no voltage gain, so a preceding level booster has been added. It uses a low noise audio operational amplifier to increase the level of the signal at the output of the DA converter (leaving untouched the tube output stage and with it its distinctive sound performance), however this gain stage can be bypassed at any time via a rear push button. Combining the gain selection and the different output connectors different four levels can be obtained and the **UnicoCDE** can source the desired signal to any other component allowing the user to tune at the best of its system.

The care **Unison Research** puts in the design and production of its devices goes side-by-side with the attention dedicated to that element only at a first glance negligible.

The remote handset is a fine piece of artwork, with its wooden body covered by an aluminium plate, good looking and functional.

The package ensures high grade protection to the device thanks to the anti-scratch fabric bag, the "stratocell" (a shock proof polyethylene foam much more reliable than other common materials) shells and the double cardboard box.

As seen in these few lines getting in contact with a **Unison Research** product is a very complex experience that goes further on than simply using an electronic device. Every piece manufactured by the Italian brand brings a fund of passion, refinement, care and experience that can be felt since the first moment, noticeable with the sight, touch and hearing.

With the new **UnicoCDE** the **Unison Research** wants to offer to all the good music lovers the chance to experience any time pleasant moments.

Technical Characteristics

Transport:	TEAC CD5010A
Digital Interface:	CRYSTAL CS8420 <ul style="list-style-type: none">- reduced clock jitter- audio data correction
D/A Converter:	CRYSTAL CS4392
Conversion:	24bit/96kHz
Digital Input (Ext):	44.1kHz
Digital Output:	96kHz
Standard:	AES3, IEC60958 (S/PDIF) and EIAJ CP-1201
Output stage:	Double Triode Parallel Cathode Follower
Valve complement:	4 x ECC83/12AX7
Gain Stage:	Low Noise Audio Amplifier
Gain:	+0dB (Lo) / +9dB (Hi)
Line outputs:	1 RCA stereo 1 XLR stereo
Power consumption:	100W max
Dimensions:	17.1in x 17in x 5.1in
Weight:	25lb