

YPSILON ELECTRONICS CDT-100

TRANSPORT/CD PLAYER

Reviewer Edgar Kramer



As much as non-physical high-resolution formats are increasing their inroads into our music playback activities, the modest CD, with its more cumbersome physicality, seems to have plenty of life yet. Even if some major record companies are already planning to abandon CD production, the current level of new releases plus the substantial music libraries of audio enthusiasts will continue to provide a source of great pleasure.

And many would say the polycarbonate disc is of at least equal, if not superior, fidelity to the non-corporeal 'high-res' media played via computer-based playback environments and methodologies that have not yet reached full maturity.

IT'S ALL GREEK

Greek company Ypsilon Electronics (the name describes the 20th letter in the Greek alphabet and

is also known as Upsilon), purveyors of über high-end audio products, has released its take on the ultimate in CD playback with the CDT-100, which is labelled a 'Transport', but which is a stand-alone high-quality CD player, designed with a somewhat unusual in-built provision for an upgrade path to Ypsilon's no-holds-barred DAC-100 digital-to-analogue converter.

The elegant CDT-100 is a model of simplicity in terms of control buttonry — in fact entirely barren of apparent controls. Aside from the basic acrylic window display you've got zilch — nothing to describe there. And the back panel is almost as minimal — here we find an IEC socket with power switch, an S/PDIF out, a Neutrik 5-pin connector to the DAC-100 (current output) and RCA analogue outputs. That's it, finito.

Specifications-wise, the CDT-100 has a 2.5-volts RMS voltage output while its output impedance is 2.5-kohms. The unit measures 400 x 120 x 400mm (whd) and weighs a solid 20kg. Specifications *à la* Readers Digest.

The CDT-100 comes with a beautiful yet solidly brutish remote control milled from a billet of aluminium. Again simplicity; it features a standby button and the usual playback functions while direct track access is via multiple presses of the 'Skip' button. Given the lack of buttonry on the unit itself, if you lose the remote and you'll have no way to control the player.

Discs load into a 'well' machined into the solid aluminium and stainless-steel sandwich chassis which, by the way, features a beautifully-etched company logo and Ypsilon's trademark motif on its top panel — a machined groove that appears on all the products' fascias. The player uses the Ypsilon-modified and ultra-reliable Philips CD-PRO 2 top-loading laser mech which requires a magnetic puck — a neat little machined number is supplied. (Ypsilon has enough of these no-longer-in-production laser mechs to fit out all produced players many times over). Once the disc is placed and pucked, a heavy milled aluminium 'lid' covers the CD well. I would have preferred some form of hinge or lifting arm set-up to support this cover, even with the extra vertical space this would demand, as it would eliminate both the potential of dropping the heavy lid and the hassle of looking for somewhere to set it down.

The CDT-100's feet are terminated with small spikes for vibration control and Ypsilon provides neat machined two-section surface-protecting discs with small receptacle indents for the spikes. The upper section of the discs rotates to allow precise levelling of the player.

NOT DELTA SIGMA

Ypsilon, along with a number of high-end manufacturers of late, has chosen older non-oversampling multi-bit DAC chips as the preferred method of decoding zeros and ones, as opposed to the modern and almost omnipresent Delta Sigma variety.

I asked Ypsilon's Chief Designer Demetris Baklavas to expand on some of the concepts and design ideas behind the CDT-100.



△ MILLED FROM SOLID ALUMINIUM AND WEIGHTY ENOUGH TO DENT THE TOUGHEST OF CRANIUMS, THE REMOTE CONTROL IS THE FINAL FRONTIER BETWEEN MUSICAL JOY AND COMPLETE INOPERABILITY.

"The construction of the CDT-100 is an extension to the CD-PRO 2 mechanism," he told us. "The added mass with the sandwich assembly moves the vibration and resonance to the feet of the CDT-100 so attention must be paid to the rack the player will be installed on. The type of rack will alter the sound character. We believe the Minus-K product would be the perfect partner for the CDT-100.

"The maximum performance can be attained when the interface with the DAC is done with the I2s output of the CD mechanism. This is a discrete digital data connection, meaning that data bit, bit clock, L/R clock and master clock are not multiplexed in one signal as it is in an S/PDIF connection. S/PDIF receivers recover all four signals with PLL circuits. The S/PDIF frequency is very high — MHz — and even the slight filtering property of the S/PDIF cable induces jitter and affects the performance of the receiver. ASRCs [asynchronous sample rate converters] were developed to solve these problems. They use a local clock to re-clock the data at the receiver.

"The problem is that they up-sample through over-sampling in a higher frequency and then down-sample in the clock frequency. This looks good on paper but sounds terrible because it produces other problems. So we prefer I2s connection and the best would be to have the DAC chips right next to the mechanism with very short wires. The output of the DAC chips in current form is the ideal way to interface it with a serious analog stage. This we do by connecting the output of the DAC chips through the 5-pin

connectors with our DAC100. The output of the dac chips are connected to the analog stage of the DAC100 making a CD-player in two boxes, one digital box and one analog box."

We continued by asking what techniques Ypsilon had adopted when designing the CDT-100's power supply.

"The power supplies in the CDT-100 use a custom-made toroidal transformer operating in low flux. The power supply for the mechanism is optimised — any overkill there doesn't translate to improvements in sound quality. The power supply for the DAC chips uses Mundorf caps and only shunt regulation."

We asked why an older Burr Brown multi-bit DAC chip was chosen for the CDT-100.

"Our D-to-A conversion is done with no oversampling or up-sampling," said Baklavas. "There are no digital filters used. That's why the circuit is very simple. We feel that digital filters that are done by oversampling in a DAC, or decimation in A-to-D, are responsible for what we associate with "digital sound" in CD playback. Digital filters can be found in special chips or can be made with FPGAs or even high power DSP.

"Older DAC chips were ladder DACs (R2R). A high accuracy R2R DAC is expensive and difficult to make because it needs trimming of the internal resistors. In the quest to find a simpler and cost effective way to build DACs the industry started to produce 1-bit Delta Sigma modulator DACs. Even today's fancy 32-bit DAC chips are internally 1-bit. These have internal oversampling blocks. R2R DACs are no longer produced. The three best ladder DACs were the 16-bit TDA1541 from



SPECIFICATIONS

DIGITAL OUTPUT:
S/PDIF (75-ohms) RCA

ANALOGUE OUTPUT: RCA

ANALOGUE CURRENT OUTPUT:
Ypsilon 5-pin connector

OUTPUT VOLTAGE: 2.5 Vrms

OUTPUT IMPEDANCE:
2.5kohm

DAC CHIP: Burr Brown 24-bit non-oversampling

POWER CONSUMPTION:
Typically 20W

PRICE: \$29,990

DIMENSIONS:
400 × 120 × 400mm (WxHxD)

WEIGHT: 20kg

WARRANTY: Two years parts and labour

DISTRIBUTOR: Telos
Distribution on 0419 830 587,
www.telosaudio.com.au

Philips, AD1865 from Analog Devices and 24-bit PCM1704 from Burr Brown. We use PCM1704 in non-oversampling mode meaning that it's a 24-bit DAC that accepts the 16-bit signal in the CDT-100. A walk in the park for the DAC — the sound produced by a non-oversampling high quality multi-bit DAC chip cannot be matched in its 'analogue like' character by an oversampling DAC."

ALPHA YPSILON

Even if the CDT-100 is also a player, with what is effectively a diminutive chassis for its circuitry, a cynic might preconceive that a "Transport" that "for ultimate performance" should be mated to the DAC-100 would perform well, but not outstandingly. How wrong such a cynic would be. The CDT-100 impressed from the moment 'play' was pressed. First impressions were that this was one of the most musically satisfying players I've had the pleasure of reviewing. Subsequent extended listening only served to confirm and reinforce the same glowing impression.

So what makes this so? Well, for starters whatever Ypsilon is doing in terms of the interplay between DAC, power supply and electrical stages is reaping sonic benefits in tonality and timbre. The tonal palette is... well, quite profound. And the music has an 'ease and flow' that will remind many of top-flight analogue rigs. There is zero, yes zero, digititis here, something that can't be said about almost all disc players — our reference included (in its case, however, at vanishingly low levels). Baklavas wasn't boogieing the marketing spin shuffle when he brought out the old analogue exemplar. A great CD to

illustrate timbral accuracy is Renaud Garcia-Fons' *Méditerranées* where the brilliant acoustic bass player uses a variety of plucking techniques and inter-string extraneous object insertions to wring textures and sounds you would not normally associate with the instrument. Further complexities are introduced by a number of Middle Eastern percussive instruments and sounds. The CDT-100 pulls the low level micro-detail and resolves information from the CD in a way that sounds thoroughly natural and intensely satisfying. Yes, *natural* is the best descriptor of this player. And all this beauty does not limit, nor hinder, the dynamic contrast or transient attack throughout the entire frequency span — something that can sometimes be a by-product of such a tonality.

Male and female vocals project into the room while enveloped in stunning ambience and are accurately placed within large soundscapes. But the CDT-100 isn't forward-sounding in any way. In fact, its front to back spread is one of its most developed attributes. The player simply paints a realistic and *natural* sonic image. That word again.

And in case all this talk of ethereal refinement and delicacy paints a picture of an all-too-sophisticated presentation, well, let's just say that cojones are not lacking here either. The CDT-100 is as dynamic and balls-to-the-wall powerful as the best of them. It just manages to pin you to the wall — if the recording music and demand — while still maintaining composure, unforced detail and effortless attack.

A good example is the brilliantly recorded track "Whipping Boy" from Ben Harper's *Welcome to the Cruel World*. The deceptively mellow bluesy guitar intro leads into a stunning drum, bass and vocal attack that the CDT-100 did not stunt or diminish in any way. Given our reference system's powerful amplification and the ultra-dynamic Wilson Audio Alexia, this track was quite thrilling.

CONCLUSION

Look at the CDT-100 and you'll see an understated yet beautiful piece of industrial design. Examine the way it has been built and you'll appreciate its flawless assembly and uncomplicated yet skilful circuit engineering. Listen to the CDT-100 in an appropriate system of similar standing and you'll be drawn into the music the way that few select digital disc systems can achieve.

Where the DAC-100 would take it, I can only imagine. Taken independently, however, the Ypsilon CDT-100 player is profoundly natural, powerful, tonally textured and organically resolving. It takes the CD medium, yes still, to its uttermost glorious heights. ⚡

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