



dCS

Debussy DAC

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Among audio companies, dCS has earned itself an enviable position amidst the elite, and for good reason. It is the company that has most contributed to the development of digital audio in recent decades. Created by a handful of engineers specializing in avionics and satellite communications, dCS is a British company who take their work very seriously. For example, it was dCS technology that allowed British fighter aircraft to detect hostile Iraqi threats much faster than U.S. fighters during the Gulf War. Substantial declines in military budgets prompted dCS to look to new markets and new products, to the great delight of audiophiles and the professional audio industry.

So it was in 1989 that dCS engineers began to turn their attention to the development of products devoted to the recording and playback of digital music. Building on the experience gained in avionics, the dCS team began by creating very high level digital to analog converters which rapidly earned the company a solid reputation amongst sound and mastering engineers who considered their analog to digital and digital to analog converters as the best in the industry. In this new digital age dCS was truly a pioneer. To them we owe the creation of the following devices: the first 24-bit analog to digital converter, the first 24-

bit/96 kHz analog to digital converter, the first 24 bit/192kHz analog to digital and digital to analog converter, the first commercial PCM to DSD converter and the first PCM to DSD converter equipped with a USB input, to name just a few.

Whilst the majority of high-end manufacturers are motivated by the quest for perfection, at dCS this quest is pursued with a zeal bordering on the religious. No compromise is acceptable, as evidenced in the prices of even the cheapest dCS products. Some trade-offs are inevitable however, otherwise product prices would reach stratospheric levels that not even the greatest in the recording industry could afford. dCS products always push the performance envelope to its maximum. When you consider that a full dCS CD playback system including transport, converter, and dCS clock costs about \$100,000, the level of sophistication is clear. The dCS approach is above all pragmatic; the engineering team ensures that the science behind each device is accurate and validated before venturing into the listening sessions. Everything is tested using equipment designed and built by the firm itself because no commercially available equipment could meet its requirements. Each dCS product is factory assembled in England and takes on ave-





rage more than a week to build, excluding the battery of tests that each unit undergoes.

THE DCS DIFFERENCE

DCS converters stand apart from other products on the market through the use of dCS in-house software rather than converters built by different manufacturers such as Burr Brown. A dCS ring DAC circuit can comprise up to 40 chips, none of which is a digital to analog converter. Rather, the circuit is designed around a series of Field Programmable Gate Array (FPGA) chips, flanked by Digital Signal Processing (DSP) chips and a micro controller. Further, all components are controlled and programmable via software. This design has been perfected over the last twenty years and continues to evolve. The reputation of dCS and unceasing praise and recognition from the trade press since 1997 confirm the excellence of the company's approach.

THE DEBUSSY DAC: REACHING OUT TO THE AUDIOPHILE

My involvement in Fidelio Music has allowed me over the past several years to work alongside dCS products during our recording and mastering sessions. There is no doubt that these are the most technologically advanced devices for this type of work. The 905 series of A/D converters and the Scarlatti clock have long been part of our arsenal.

Although very present in the music industry, dCS products were generally priced out of reach for the average audiophile and the aesthetics were, to put it politely, debatable. But dCS listens and now we have a series of surprising products from their stable. The first impression of the Debussy DAC is of a work of contemporary art that looks as though it is carved from a single block of aluminium, with discreet blue lights adorning the front panel. I love it! Its design makes it an ideal centre point for any digital playback system. On the technical side, the

Debussy marries the legendary dCS Ring DAC with USB asynchronous technology, ideal for getting the most from any digital source. All incoming data is oversampled to 5 bits at 2.822 or 3.07 MS/s.

On the rear panel, the Debussy is equipped with AES3 and dual AES - S/PDIF inputs and a USB 2.0 interface, the latter accepting 24-bit signals at sampling rates of 32, 44.1, 48, 88.2 or 96 kHz. Digital volume control allows direct connection to an amplifier. You can choose between a voltage output of two or six volts depending on the requirements of your amplifier and speakers. Two filters offer the listener the choice between a linear phase with pre-ringing or non-linear phase without pre-ringing.

Once connected to a computer, the Debussy DAC takes control of the computer's USB interface so that it operates in asynchronous USB mode, allowing the DAC to synchronize the audio signal by providing a feedback path to the computer. This has the effect of locking the computer to the much more accurate clock of the DAC and preventing the computer from injecting jitter into the DAC.

LISTENING

Installation takes only a few minutes. Simply plug the dCS Debussy in the power cord, connect the CD player to the DAC and the DAC directly to the amplifier or the preamplifier of your choice. For several years now I've used an external DAC connected to my CD player as I've found many advantages to this approach. Thus, the listening began with my CD player connected to the Debussy, as this would allow a comparison with an already exceptional source. The Debussy was immediately impressive, with an almost surgical definition of instruments on every record. To use a photographic analogy, the effect is similar to applying a sharpening filter in Photoshop, or using a Leica or Hasselblad camera rather than the cell-phone camera. There was a noticeable decrease in digital artifacts that brought out a much more natural sound. On the other hand, the sound was more forward than I'm accustomed to and a little less three-dimensional. This impression vanished, however, once the Debussy was connected directly to a power amplifier. All this was fairly predictable, but what interested me more was to hear what the Debussy could do when connected to a computer. Now we're playing in the major leagues! This is where the Debussy is lord and master. I first tested the device by connecting it to my HP notebook, using only WAV files. I was immediately surprised by the richness, detail and dynamic range of all recordings. Unfortunately I didn't have any high resolution files to experiment with, but with just the basic files I was still very pleasantly surprised at the result. I am a great fan of high-end CD players and transports and I did not think that computer audio would come so far so quickly. But here we are, at a price of course, but the results speak for themselves.

IN DETAIL MAÎNOUCHE SWING – MONTRÉAL JAZZ-UP / FIDELIO FACD030

This is the latest album from the Fidelio stable, recorded last April at St. Francis de Sales church in Laval, Quebec, using Neumann U-67 tube and TLM-170 microphones, paired with



tube preamplifiers connected directly to dCS 905 analog to digital converters with a resolution of 24-bit / 96kHz.

We now enter the world of dCS, with sound like an analogue recording from the 60s, very close to vinyl. The depth, the space are all there, but most impressive is the texture of each instrument and the analogue-like presentation, which bring to mind Dave Brubeck's *Live at Carnegie Hall* recorded in 1963. Each instrument is fully laid out. In the first track "Nica's Dream," Samuel Blais' saxophone digs deep effortlessly and delivers its highest notes with no sign of distortion. Lou Boustani's rhythm guitar timekeeping is impeccable and never lets up. Damien Levasseur's solo guitar work is delicately and perfectly placed between the two. Instruments occupy their respective places and only a slight turn of the head is required to see each one clearly. The sax on the left and Ivanhoe Jolicoeur on trumpet, the two guitars in between and Simon Pagé on bass just behind. And all this from a laptop computer! In the fourth part, "I Fall In Love Too Easily" by Miles Davis, you are transported right into the studio atmosphere of *Kind of Blue*.

FROM THE NEW WORLD – DVORAK-MARQUEZ-ESTACIO / FIDELIO FACD029

This album raises the resolution bar. Recorded using only two Schoeps M-222 tube microphones, connected to the same dCS 905 converter but with a DXD 352 kHz resolution, And of course the dCS Scarlatti clock.

It's unsettling to hear the entire Youth of the Americas Orchestra emerge with such brilliance and authority from a laptop computer. It's actually hard to believe. This confirms the role and importance of a high-quality DAC in a digital playback system and illustrates how much the technology has evolved over the past five years. On this record, it is simply amazing to hear how the two microphones were able to capture the orchestra's every nuance, from the magnitude of the percussion and the bass, the detail and harmonics of the piccolo, to the perfectly rendered timbre of the oboe. The Debussy's technical perfection does not come at the expense of emotion, as this disc makes amply clear. The Debussy clearly illustrates the effort invested by dCS over the last twenty years to transform digital signals to the point where you hear only music. That is the great and costly challenge.

CAPE TOWN REVISITED – ABDULLAH IBRAHIM

This record is merciless to devices that tend to exaggerate bass frequencies. The dCS puts things in order and in place, with a little something extra. The Debussy wonderfully recreates the atmosphere of the Spier Estate hall where the recording took place in December 1997. The miking is very close, so that the bass drum can be exaggerated, but the balance is there. The piano is authoritative and present. You are there...

DIFFERENT RESOLUTIONS

Obviously, the Debussy cannot completely compensate for a lack of information or resolution. That would be too easy. For the tests, I recorded the same tracks in each of three formats (AAC, AIFF, MP3). Differences between the digital formats were clearly highlighted and there were no surprises. The conclusion remains that the better the quality of the file, the better the reproduction. Source first!

DIFFERENT COMPUTERS

I also compared playback from a mini HP laptop and a Mac Pro. The differences were still significant. So the digital source, power supply, in short, everything, has an influence on the quality of reproduction.

CONCLUSION

The gap between digital and analog has become very, very narrow. This what dCS has been aiming at for over twenty years and in my view, they are there. I was sure that the day I would listen to music from a computer without frustration was far in the future. But here we are. It doesn't replace the charm of listening to vinyl, it's a different type of listening that offers its own set of practical virtues. The dCS Debussy is a superb device. This DAC represents, in my view, an essential component for any audiophile seeking a digital reproduction system that lives up to the highest expectations.

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Reviewer for Son & Image Magazine www.son-et-image.com

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