Chord's brand new QBD76 is a DAC with a difference, says David Price, and it's not just the wireless Bluetooth functionality...

Radio Active

There's not normally an awful lot to get excited about when reviewing a hi-fi digital to analogue convertor. Generally they have a proprietary chipset, bought off the shelf from the likes of Burr Brown or Wolfson, a selection of digital inputs on the back and maybe even switchable upsampling to make life especially interesting. You plug it in, it sounds good (or bad), and errm, that's it!

This is not the case with Chord's new QBD76. There's so much in here that I suspect this magazine will be talking about it long after the ink has dried on the September issue. The reason for this is two-fold. Firstly, it has a unique bespoke DAC chip; a development of the one used in Chord's own superb DAC64, of which we are huge fans. Secondly, it introduces a completely new concept (for hi-fi DACs) – that of wireless Bluetooth transmission from a mobile phone. [see TOOTH WISDOM].

The QBD76 is essentially a 'mark II' version of the DAC64, doing things that chip architecture didn't easily permit seven years ago at the time of the original Chord's introduction. Thanks to a new generation field programmable gate array (FPGA) device (the Xilinx Spartan 3) which has no less than 1.25 million gates, a massive amount of functionality can be 'imprinted' on a single chip. Custom coded by Chord, it handles the switching of S/PDIF inputs, all digital S/PDIF decoding, digital Phase Locked Loop, the RAM buffer controller, the Watts Transient Aligned filter and the fifth generation Pulse Array DAC. This forms the heart of the QBD76, and is its single most defining characteristic because it takes control of the sound quality away from OEM chip manufacturers and puts it in the hands of Chord.

The changes are myriad, but suffice to say the new 5th generation Pulse Array DAC has had a lot of work, particularly on the noise shaper architecture with the aim of reducing noise (it now has 8th order noise shaping, and 2608 times oversampling and digital filtering). A new digital Phase Locked Loop has been developed using a highly accurate 115MHz clock. Data-related jitter is completely removed from the source, says Chord, and you're left with just random master clock jitter of less than 3pS cycle to cycle [see MEASURED PERFORMANCE]. As before, it features a switchable RAM buffer, which was left on for this review.

The unit itself is about as exotic as it is possible to make a digital to analogue convertor look and feel. It retains the DAC64's 338x60x145mm dimensions and hewn-from-solid feel (and 7kg weight), but adds a few more flourishes. As before, the large glass aperture showcases the circuitry inside (which lights up in red), but there's a second, smaller 'looking glass' showing a simple alphanumeric red LED display. This works in conjunction with the buttons on the top to give source selection, RAM buffer (off, minimum and maximum) and phase. Round the back, along with the very obvious Bluetooth aerial are a pair of balanced audio outputs and a pair of RCA phono outs, plus two coaxial and optical digital inputs, an AES XLR in and a USB input.

SOUND QUALITY

In short, this is the very best DAC I've heard to date. As regular readers

will know, this is pretty much what we thought about its predecessor, the DAC64. But that doesn't mean that the QBD76 is simply a lightly 'reheated' version of the original, because it sounds superlative in a markedly *different* way...

Importantly, it loses the original's distinctively warm and romantic quality. This is mostly down to the fact that the former was a little rolled off in the treble, whereas the QBD76 is not. This is its greatest defining characteristic – a massively focused and natural sounding top end. To that, however, you can add the midband and bass – because this new DAC is like twiddling the lens of a manual SLR camera just a touch, and watching everything snap into dramatic focus. On top of this, all the lovely, unfettered, organic musicality is still there to behold.

Although you can dissect different aspects of the QBD76's performance and single them out for particular praise, it's the breath-taking combination of its many strengths that makes it remarkable. For example, Pet Shop Boys' 'Left to My Own Devices', a fairly flat and mechanical experience on CD (but not LP) became a totally engrossing listen through the new Chord, massive in scale and expressive like nothing else digital I've heard. The sheer speed of the song was stunning, the bassline strong and physical yet bouncing up and down like it was on rubber springs. Above this, I found a vast midband bubbling over with detail in front of me. For the first time with the CD, I could hear vocal overdubs, the rasp of the brass and a wondrously silky yet sharp hi-hat sound.

Even with relatively hard and unforgiving recordings, the new Chord just flies. 'There Is a Light That Never Goes Out' from The Smiths wasn't presented in as romantic a light as the old DAC64 did, taking me much closer to the sound of the mixing desk, but still the music flooded out. Morrissey's distinctive vocals achieved a striking, haunting quality – almost quite ethereal – whereas most DACs reduce them to a nasal whine. Every strand of the song was there for me to hear, practically on a plate, whereas I'm used to having to try harder to listen for those backing strings, for example.

Rhythmically it's a riot, shown perfectly by the strains of Herbie Hancock's 'I Have a Dream'; an acoustic jazz number with very subtle rhythms. Suddenly the song sounded alive and believable, more so than any other DAC I've heard. Aside from its brilliance at all the hi-fi stuff (i.e. dynamics, detail, image precision), this DAC simply doesn't let the side down rhythmically, unlike every other 16/44 digital source. It makes jazz truly listenable on CD, which is surely a first!

The same could be said for classical music, a Deutsche Grammophon disc of Vivaldi's 'Four Seasons' (The English Concert/Simon Standage) sounding vivid with detail but wonderfully natural too. The focus of the Chord was there in full effect, each instrument located in the vast, three-dimensional recorded acoustic like it was nailed down, and dripping with shimmering harmonics. There's still a slight residual upper midband hardness to CD, and this was apparent on violins, but it's about as natural as I think I'll ever hear 'legacy 16bit' get. Best of all, it detracted from the performance not one jot, the whole orchestra sounding breathtakingly powerful and animated – by contrast most other hi-fi DACs sound like they've been popping Mogadon.

CONCLUSION

There will be a lot more discussion of this new digital to analogue convertor in these pages in the months to come, as we've only just been able to scratch the surface. But, even on first acquaintance, it's obvious that Chord's new QBD76 is in a gang of one at the moment – so striking is its clear, focused and musically articulate sound. As for its Bluetooth functionality, laudable as this feature may be, right now it's something of a sideshow. Don't let it distract you from the fact that this is a landmark digital device.

"this is the very best DAC I've heard to date." HI-FI WORLD

TOOTH WISDOM

Advanced Audio Distribution Profile (A2DP) is a subset of Bluetooth, designed to send high quality stereo or mono audio from one device to another. Although designed ostensibly for streaming audio from a mobile phone to a wireless headset, Chord have harnessed it to work with their new QBD76 DAC and Chordette Gem Bluetooth music player. The system works well on the QBD76, locking on to a new Nokia A2DP-compatible phone and playing AAC files in a stable, fuss free way once the usual Bluetooth 'handshaking' has taken place (it initially requires you to enter a code before it recognises the Chord as a Bluetooth device). Of course, this isn't the primary function of Chord's new flagship DAC – but it's a handy one that adds a new dimension to an already highly versatile machine. And for those specifically interested in Bluetooth music playback, then they have the new Chordette Gem (£399), more of which next month. The Chords already support a very wide range of mobile phones, PDAs and personal computers a - three page long list of compatible phones is supplied, including most of the latest Nokias and Blackberrys - and I suspect this will grow in length dramatically over the coming months and years.

VERDICT

Dramatically musical yet devastatingly revealing sound makes this unique product the definitive digital to analogue convertor right now.

CHORD QBD76 £3,000
Chord Electronics
✆ +44(0)1622 721444
www.chordelectronics.co.uk

FOR
- stark focus
- infectious musicality
- unfettered dynamics
- design flair
- engineering, build

AGAINST
- Bluetooth appeal?

MEASURED PERFORMANCE

Frequency response measured ruler flat to 20kHz without visible filter influence. The clean and stable time domain pulse shape resulted in perfect analyser triggering, a side issue of the filters, but interesting. Switching our digital analyser to 48kHz sampling moved bandwidth out to 22kHz. The low end limit was 3Hz.

Distortion levels were low right through the dynamic range of CD, especially at -60dB, where a figure of 0.18%, seen in our analysis, was exceptional. All the same, because of harmonic distribution the EIAJ Dynamic Range value was normal enough at 110dB.

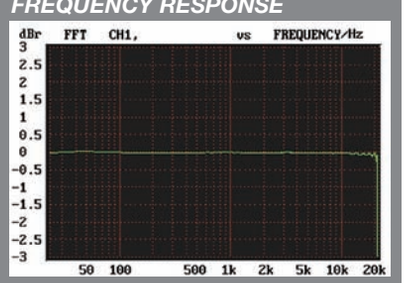
There was just about no measurable difference between balanced (XLR socket) and unbalanced (phono socket) outputs, except that the former gives double the output of the former, a massive 5.7V in all. The XLRs in particular are suitable for long lines.

The new QBD76 doesn't have its predecessor's high frequency roll off, but then it relies on far more advanced digital circuitry, Chord say. The point of the QBD, and the DAC64 before it, is to maintain time domain waveform shape through Watts Transient Aligned filters and this the QBD76 did, whilst showing far greater bandwidth than the venerable and much admired DAC64. NK

Distortion (%)	
0dB	0.0008
-6dB	0.0007
-60dB	0.18
-80dB	4.7
Separation (1kHz)	125dB
Noise (IEC A)	-123dB
Dynamic range	110dB
Output	2.86/5.7V

Frequency response (-1dB)	
CD	3Hz - 20.1kHz

FREQUENCY RESPONSE



DISTORTION