SPECIAL SHOW REPORT ISSUE

NEW YORK & MUNICH

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»Chord's Blu/DAC64 digital combination

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Chord
Choral Blu & DAC64
CD TRANSPORT & DIGITAL AUDIO CONVERTER

Wes Phillips

CHORAL BLU Digital transport with upsampling. Digital outputs: 1 coaxial BNC, 1 Dual Data 176.4kHz twin coaxial BNC, 1 optical TosLink, 2 AES/EBU XLR or 1 Dual Data AES twin XLR. Wordclock input: 1 coaxial BNC, 44.1kHz. Dithers: 16 or 24 bits. Sampling frequencies: 44.1kHz, 88.2kHz, Dual Data 176.4kHz.
DIMENSIONS 13.1" (335mm) W by 4.1" (105mm) H by 6.6" (170mm) D. Weight: 15.4 lbs (7kg).
SERIAL NUMBER OF UNIT REVIEWED 9933.
PRICE $10,400.

CHORAL DAC64 Multi-input digital-to-analog converter with 64-bit filter. DAC chips: Chord-specified Gate Arrays. Inputs: 2 AES/EBU, 2 BNC, 1 TosLink. Outputs: balanced (XLR), single-ended (RCA).
DIMENSIONS 13.1" (335mm) W by 4.1" (105mm) H by 6.6" (170mm) D. Weight: 15.4 lbs (7kg).
SERIAL NUMBER OF UNIT REVIEWED 9934.
PRICE $5000.

CHORAL 2HIGH Rack for both above.
PRICE $2100.
ALL THREE
Approximate number of dealers: 10.
FINISHES Aluminum, anodized black; add 15% for anodized polished black.
MANUFACTURER Chord Electronics Ltd., The Pumphouse, Farleigh Bridge, Farleigh Lane, East Farleigh, Kent ME16 9NB, UK. Web: www.chordelectronics.co.uk. US distributor: Bluebird Music Limited, 620 Wilson Avenue, Toronto, Ontario M3K 1Z3, Canada. Tel: (416) 638-8207. Fax: (416) 638-8115. Web: www.bluebirdmusic.com.

I was stumbling through the Denver Convention Center at CEDIA 2006 when I spotted John Franks, of Chord Electronics, and Jay Rein, of Chord's US importer, Bluebird Music, stranded in the basement purgatory for "niche" products. I couldn't resist asking, "What sin relegated you guys to this little hell?"

"Practicing two-channel without a license," riposted Rein, before going on to describe Chord's new 6TB Media Engine music server (see http://blog.stereophile.com/cedia2006/091606chord/). "But we didn't bring it. We brought—*this*."

He'd been blocking my view of Chord's table. Now he moved aside and made a flourish toward the Blu, the DAC64, and the 2HIGH, all gleaming there seductively.

My eyes widened. My nostrils flared. I did everything short of snort, paw the ground, and run my trembling hands along these products' well-formed flanks. Gosh, what sexy beasts.

"How . . . how . . . how . . . ," I stammered.

"How *much*?" Jay asked. "All three components total $17,500."

"No—I mean, how . . . how . . . how . . . " I felt like a teenager asking for the keys to dad's Healy Sprite.

"How do you get to audition one? All you have to do is ask."

What the heck did he think I was trying to do?

I've heard there was a secret chord

The Choral Blu and DAC64 are a wee bit different from other transport-DAC combinations. As part of Chord's Choral series of components, each is a lozenge milled from a solid billet of aluminum and measuring a compact 13.1" W by 4.1" H by 6.6" D. My audition samples came anodized in a deep, lustrous black (15% upcharge).

The top-loading Choral Blu ($10,400) has a large, spring-loaded clamshell disc cover dominating its right third, and an illuminated display set above 25 buttons to its left. Mirroring the Blu's look, the Choral DAC64 ($5000) has a "porthole" lens over one of its circuit boards. To the porthole's left, two arcs of six holes each are bored into the chassis like open parentheses. The Choral 2HIGH rack ($2100) holds the Blu and DAC64 stacked, um, two high—and canted at a 30° angle.

As striking as all this is, it's what's inside that's really fancy. The transport is a Philips CD2 powered by a switch-mode power supply that has its own AC filter. The Blu can upsample digital signals to 88.2kHz or 176.4kHz before sending them to a Watts Transient Aligned (WTA) filter. Chord says it has taken them 20 years to develop the WTA filter—and to figure out why higher sampling rates sound better. "It's *not* ultrasonic information," said John Franks. "If it was that, then 768kHz recordings could not sound better than 384kHz recordings—there's no information above 200kHz that could even be captured by our recording equipment."

There's a problem with upsampling to 176kHz, however: the S/PDIF pipeline can't accommodate a datastream that dense. Chord solves this by outputting each channel on its own BNC-terminated S/PDIF link. There are also AES/EBU and optical outputs. You can set dither to 16 or 24 bits, and there is a word-clock option, should you happen to have one in your system. (I don't either, but Chord sells a lot of gear to recording studios, so it's there if they need it.) The DAC64 can accept digital signals at 44.1kHz, 88.2kHz, or 176.4kHz. (JA reviewed an earlier version of the DAC64 in July 2002.)

ERIC SWANSON

So what *are* the benefit of high sample rates?

"What we're hearing is better resolution of transient information, which is something that human beings have evolved to being *very* good at detecting," said Franks. "A sampling rate of 1MHz would be ideal for capturing this, but it *can* be done at 44.1kHz with digital filtering—as long as you have sufficiently long tap lengths."

Beg pardon?

"Reconstruction filters generally have short tap lengths—the longest manufactured is only about 256 taps. We've constructed field-programmable gate-arrays (FPGA) that are 1024 taps long, which suggested that infinite tap length would produce 'indistinguishably perfect' sound quality. More practically, we developed a WTA filter with a 64-bit DSP core."

But wait, isn't there a WTA filter in the Blu, too? Yup—they built it, they're gonna use it. The DAC64 then sends the signal to a pulse-array DAC, which applies 64-bit seventh-order noise shaping and 2048x oversampling with "improved pulse-width modulation elements."

I was reeling at all the information I was downloading from Franks—my mind needs a bigger buffer.

"We'll get to the buffer, but first I need to expand upon that 64-bit DAC environment," Franks said. "A 16-bit input multiplied by a 16-bit coefficient gives you a 32-bit output. By using a 64-bit filter and architecture we avoid having to throw away information by truncating the output—something that becomes important if a digital volume control is used.

"Now we get to that buffer. Because we use all-digital data extraction, we can employ a RAM buffer to sequentially accept all the data, re-time it, and then output it. It gives us a jitter-free local clock, without requiring us to send a clock signal back to the source device. All of this takes place in Xilinx Spartan FPGAs, which offer 200,000 gates per device."

I must have looked puzzled. Franks had delivered all of this before my second cup of coffee of the day.

MEASUREMENTS

Chord's Choral Blu offers a surprisingly large number of output options for a CD transport. To examine what it did, I connected its data output to the digital input of the RME soundcard fitted to my PC and looked at the data in the digital domain using Adobe Audition and RME's DIGICheck program (see www.stereophile.com/computeraudio/299/index4.html). Fig.1 shows the statistics of the Blu's output data while it was set to upsample those data to 88.2kHz and increase the word length to 24 bits. The test signal was 16-bit "digital black" on a test CD. DIGICheck indicates that bits 1–16 are indeed permanent zero, shown by the "0" on a blue background for each bit. But bits 17–24 are active and changing, indicated by the asterisk on a green background for each bit, with an RMS level of –98.1dB. The sample rate is indicated as "88.2kHz." Fig.2, derived by digital-domain FFT analysis of a 10-second sample using Adobe Audition, indicates that the spectrum of the signal in those eight LSBs is random noise, extending up to 44.1kHz, half the new sample rate, and with a slight rise in level at very low frequencies. I am confident in saying that this noise will not be audible, though it is possible that the downstream DAC might behave in a more linear manner with these bits active.

The upsampling and increase in bit depth don't add information to the signal, as is shown in figs. 3 and 4. Fig.3 is a digital-domain spectral analysis of the 1kHz, 0dBFS test tone on the *CBS Test CD*. Some spurious tones can be seen; these are encoded on the disc but are all at or below –120dBFS. Fig.4 shows the spectrum of the same signal after it has been upsampled to 88.2kHz and 24 bits by the Choral Blu. Careful inspection reveals that, other than the introduction of the wideband random dither noted earlier, the spectrum is identical to that of fig.3.

The Blu's error correction was excellent, if not quite to the standard set by players that use DVD transport mechanisms. It offered slight glitches at the starts of tracks 31 and 32 on the Pierre Verany test CD, which respectively feature 1mm and 1.25mm gaps in the data spiral, but didn't mute momentarily on every revolution of the disc until the missing data reached 2mm in length. Unusually, the error flag in the output data word was not triggered when the player couldn't correct or conceal the missing data.

Turning to the Chord Choral DAC64, I reviewed two samples of an earlier version of this processor, serial numbers USD013 and USD015, in the July 2002 *Stereophile*, and my measurements reviewed some problems, particularly with the first sample (see www.stereophile.com/digitalprocessors/624/index6.html). But as you will read, this new sample, serial number 9934, performed very much better, and in some ways approached the state of the art.

From its unbalanced jacks, the Choral DAC64's maximum output level at 1kHz was 3.086V, 3.8dB above the CD standard's 2V RMS. This doubled as expected from the balanced jacks. Both sets of outputs inverted absolute polarity, suggesting that the XLRs are wired with pin 3 hot rather than the usual pin 2. The DAC64's source impedance was 131 ohms balanced and 66.5 ohms unbalanced at low and midrange frequencies, these figures rising inconsequentially to 216 and 105 ohms, respectively.

The DAC64's frequency response rolled off very slightly at the top of the passband with both 44.1kHz and 96kHz data (fig.5, top pairs of traces). With pre-emphasized data

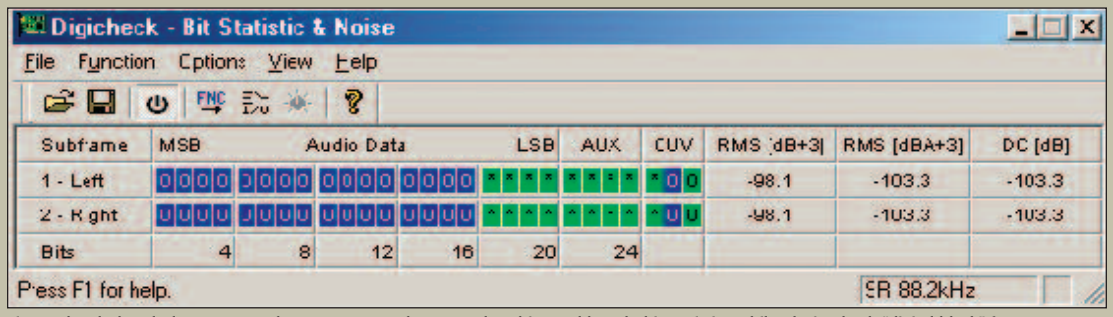

Fig.1 Chord Choral Blu, set to 88.2kHz output sample rate and 24-bit word length, bit statistics while playing back "digital black" from CD.

"That means we can change the entire design simply by updating the EPROM. It's state-of-the-art now, but if it ever isn't, we have the technology to fix it."

Franks is British. He *couldn't* have been teasing me by quoting the opening to *The Six Million Dollar Man*.

It goes like this: the fourth, the fifth

Setting up the Choral Blu-DAC64 combo isn't exactly rocket science, but you do have to take care of a few housekeeping matters—once, and then they're done with. The 2HIGH rack comes in three pieces, which are secured to one another with six bolts. The slots that the Blu and DAC64 slide into are lined with felt; the fit is snug, but there's no metal-to-metal contact.

Because I wanted to use the 176.4kHz link from the transport, I set the Blu's three-position clock switch to the proper setting (down) and connected the transport to the DAC64 with two Van den Hul-supplied BNC-terminated S/PDIF cables. I set the DAC64 to receive data from its S/PDIF inputs and set the buffer to maximum (4–5 seconds). I did try the minimum setting (2–3 seconds) and Off buffering settings, but felt the small improvement in solidity and three-dimensionality offered by the maximum buffer was worthwhile—so I went for it.

A note about the jet-black finish: It's gorgeous, but forget about reading the text engraved on all those tiny buttons. Fortunately, everything is recapitulated on the Blu's hefty remote, but even after weeks of use, I found it impossible to remember which button controlled what, other than Play, Stop, Forward, and Back.

I also never cottoned to the "disc interface," at least when it came to removing discs from the well. Putting discs on the spindle was pretty straightforward, but removing them required pressing down on the upmost part of the disc, which tilted it, allowing you to get a finger under its forward lip. It felt awkward, even if it wasn't—and it punctured any fantasy about being pampered by the luxurious

sourced from the Blu transport, the response suffered a 0.9dB negative error in the mid treble, which will make those rare pre-emphasized CDs sound a little laidback (fig.5, bottom traces). The original DAC64 did not behave in this manner. Channel separation (not shown) was superb in the L–R direction, at >120dB below 4kHz, but 20dB or so worse in the other direction. This is still excellent, however.

The 2002 samples of the DAC64 appeared to truncate 24-bit data when the RAM buffer was engaged, which to some extent rendered moot the enhanced resolution. But as revealed by fig.6, which shows ⅓-octave spectral analyses of the DAC64's output while it decoded 16-bit data representing a dithered 1kHz tone at –90dBFS and 24-bit data representing dithered 1kHz tones at –90dBFS and –120dBFS, with the RAM buffer set to its long setting, the increase in bit depth results in an 18dB lowering of the noise floor, suggesting a true resolution of close to 19 bits, which is excellent DAC performance. These traces are free

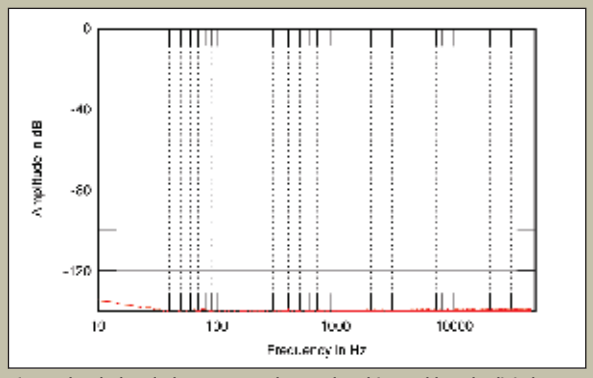

Fig.2 Chord Choral Blu, set to 88.2kHz and 24-bit word length, digital-domain spectrum, 10Hz–45kHz, of output data while playing back "digital black" (left channel blue, right channel red, 20dB/vertical div.).

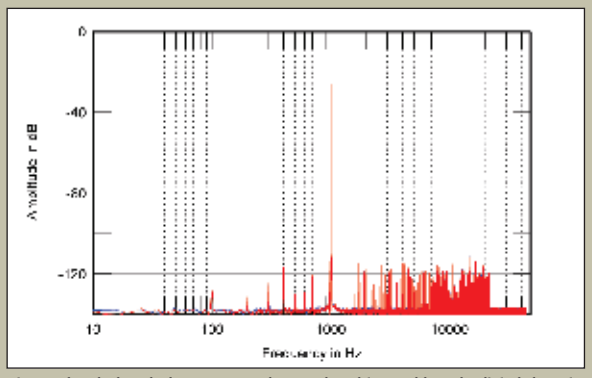

Fig.4 Chord Choral Blu, set to 88.2kHz and 24-bit word length, digital-domain spectrum, 10Hz–45kHz, of output data while playing back 1kHz at 0dBFS from the CBS Test CD (left channel blue, right channel red, 20dB/vertical div.).

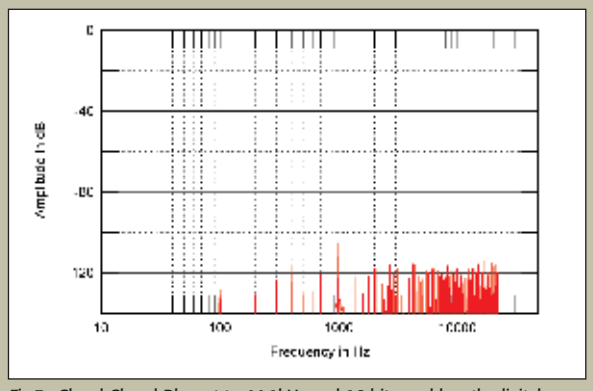

Fig.3 Chord Choral Blu, set to 44.1kHz and 16-bit word length, digital-domain spectrum, 10Hz–45kHz, of output data while playing back 1kHz at 0dBFS from the CBS Test CD (left channel blue, right channel red, 20dB/vertical div.).

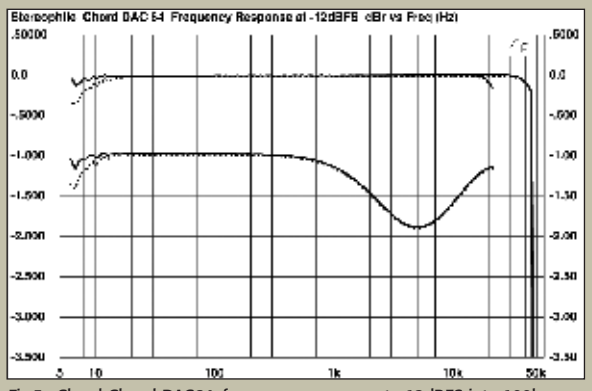

Fig.5 Chord Choral DAC64, frequency response at –12dBFS into 100k ohms at 44.1kHz without pre-emphasis (middle), with preemphasis at 44.1kHz (bottom), and at 96kHz (top) sample rates (right channel dashed, 0.5dB/vertical div.).

Chord kit. In other words, it felt like work.

I wasn't wild about the disc-removal process with the Oppo DV-970 I reviewed in May either, but at $159 I expected an ergonomic glitch or two. Strangely enough, I'm less forgiving at $15k.

0Your faith was strong but you needed proof

Attention Screen's *Live at Merkin Hall* (CD, Stereophile STPH018-2) got a major workout on the Choral system. John Atkinson was mastering it when I first received the Chord combo, and he sent several generations of that my way, as well as the final-production CD as the review period drew to a close. Attention Screen's use of dynamics and tonal shading made it excellent audition material, but two elements kept me coming back for more: the phenomenal sense of space the Chord extracted from the discs, and the rock-solid physicality of the sounds of the instruments.

"Blizzard Limbs" is perhaps the track most filled with silence on *Live at Merkin Hall*—there's lots of "white space" between the notes—and the song illustrated one of the Chord's best qualities. Musical tones don't have a physical component, of course, but tones don't exist by themselves, except on recordings. In the real world, tones aren't just notes; they're shaped by the vibrational qualities of the instruments that produce them and the spaces in which they're produced. You're not hearing that guitar string, or that snare-drum head, or that piano; what you're hearing are those things amplified by the drum body, or amplifier cabinet, or sounding board *as well as* the hall they were played in. So while the vibrations themselves don't have a body, they're so influenced by the physical elements that produced and contained them that they do have the presence of something solid.

The Chords got this better than just about any other "Red Book" player I've heard. "Blizzard Limbs" begins with drummer Mark Flynn's rock-solid beat, joined by Don Fiorino's crunchy guitar chords, and finally joined by Chris Jones's Martian fretless bass guitar—

from spuriae at power-supply–related frequencies, even with 24-bit data, but a trace of second-harmonic distortion can be seen on the hi-rez analyses, this unmasked by the reduction of the noise. Extending the measurement bandwidth to 20kHz and feeding the DAC64 16-bit data representing a –1LSB DC offset (not shown) revealed a gentle rise in the noise above the audioband, with slight but still very-low-level peaks at 44.1kHz and 88.2kHz in the left channel. Again, and very commendably, no power-supply noise could be seen, and the noise floor overall is around 5dB lower than that of the 2002 samples.

Other than the tone at 1kHz, the top traces in fig.6 really show only the contribution of the recorded 16-bit dither noise. Similarly with fig.7, the actual DAC linearity error is less than the contribution of the dither. Repeating this test with 24-bit data resulted in negligible linearity error down to the –120dBFS limit of the analysis. As a result of the superb linearity and very low noise, the DAC64's reproduction of undithered 16-bit data (fig.8) and 24-bit data (fig.9) representing a 1kHz tone at exactly –90.31dBFS were essentially perfect. In particular, the Gibbs Phenomenon "ringing" with the lower-rez data (fig.9) is clearly defined, as are the three DC voltage levels.

The DAC64 had very low levels of harmonic (fig.10) and intermodulation (fig.11) distortion, even into low impedances (both graphs were taken with 24-bit data). However, the output clipped at full scale into the admittedly punishing 600 ohm load.

Finally, I examined the DAC64's rejection of word-clock jitter using the Miller Audio Research Analyzer. Even without the RAM buffer engaged, the jitter level was both very low, and lower than the better-performing second sample I measured in 2002 (see www.stereophile.com/digitalprocessors/624/index7.html). Fed a 16-bit version of the analytic signal[1] from my PC via a TosLink connection, without the RAM buffer in-circuit, the jitter level of the 2007 sample was 326 picoseconds peak–peak compared with 587ps p–p for the second 2002 sample. And while there

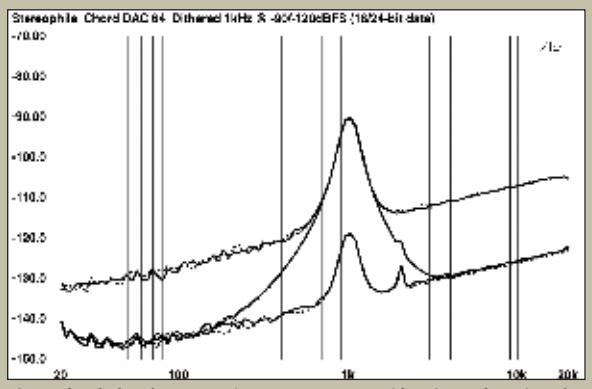

Fig.6 Chord Choral DAC64, 1/3-octave spectrum with noise and spuriae of dithered 1kHz tone at –90dBFS, 16-bit data (top), 24-bit data (middle), and of dithered 1kHz tone at –120dBFS (bottom). (Right channel dashed.)

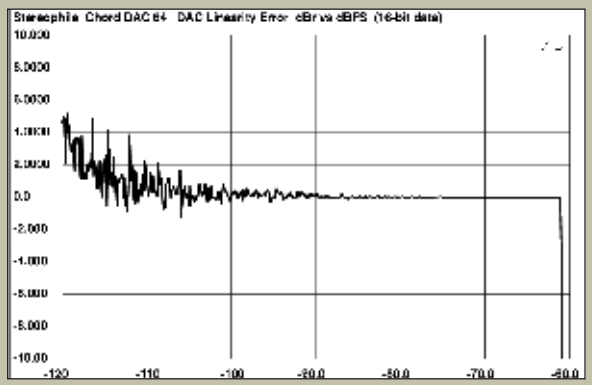

Fig.7 Chord Choral DAC64, right-channel departure from linearity, 16-bit data (2dB/vertical div.).

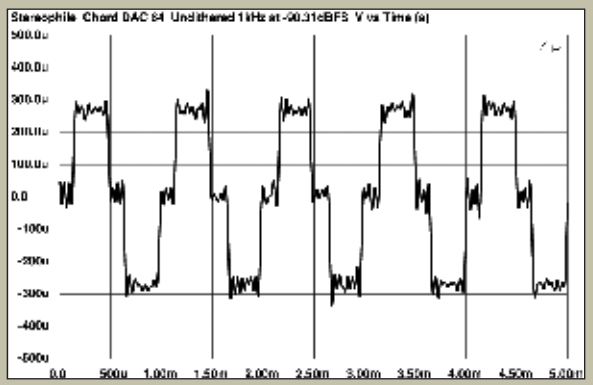

Fig.8 Chord Choral DAC64, waveform of undithered 1kHz sinewave at –90.31dBFS, 16-bit data.

1 A high-level tone at 11.025kHz, with the LSB toggled on and off at 229.6875Hz. Because both signal frequencies are exact integer fractions of the sample rate, the signal is free from quantizing distortion, and any spuriae appearing in the analog output of the device under test will be due to the latter's behavior.—**John Atkinson**

all weaving in and out of the Merkin acoustic like threads passing over and under one another in a loom. Bob Reina's piano begins by adding just a little emphasis to phrase endings, before working its way through the warp and weft.

It wasn't reconstruction, however, it was re-*creation*. It was sonically convincing, not just in timbre and texture, but in its *presence*.

Oh yeah—and it flat-out rocked.

The title track of *Ojos Negros*, by Dino Saluzzi and Anja Lechner (CD, ECM 1991), like *Live at Merkin Hall*, carves long swathes of melody out of silence, but here the dynamic range is less extreme. The notes are not so starkly drawn against the acoustic, but remain very close to its baseline. Many CD players seem to have more trouble delineating such minute dynamic shadings, but not the Blu-DAC64 combo. While clearly delivering the timbral similarities of Saluzzi's bandoneón and Lechner's cello, it did an even better job of celebrating their differences. Because the two musicians delight in mimicking one another's tone and completing each other's phrases, this was especially welcome.

Welcome? No, *vital* was more like it. And the Chord combo's ability to deliver that life essence made a huge difference between my liking the music and my surrendering completely to its passion.

….yes and how he kissed me under the Moorish wall and I thought well as well him as another and then I asked him with my eyes to ask again yes and then he asked me would I yes to say yes my mountain flower and first I put my arms around him yes and drew him down to me so he could feel my breasts all perfume yes and his heart was going like mad and yes I said yes I will Yes.

I think I need a cigarette.

Tierney Sutton's "Sometimes I'm Happy," from her *On the Other Side* (SACD, Telarc 63650), is far more closely miked than either of the other discs, but engineer Robert Friedrich still captures tons of room detail under Sutton's sexily slurred vocals and Trey Henry's power bass. It's Ray Brinker's crisply moving drums that really grabbed me, how-

was still a rise in random jitter on either side of the spectral peak representing the high-level tone at one quarter the sample rate (fig.12, grayed-out trace), this rise is significantly lower than with the earlier sample.

Still using the PC-TosLink source, switching in the DAC64's RAM buffer set to its shorter size reduced the jitter to a superbly low 147ps. Peculiarly, the longer RAM buffer setting increased this slightly, to a still negligible 154ps. Changing to the Blu transport as a source, the TosLink connection without upsampling or word-length enhancement but with the long RAM buffer engaged gave 184ps of word-clock jitter, while going for broke by upsampling to 176.4kHz and using a dual S/PDIF connection gave just 156ps of jitter. The spectrum of the DAC64's analog output in the final condition is shown as the black trace in fig.12. With the exception of the sideband pair at ±229.69Hz (red "3"), the data-related sidebands (red numeric markers) are close to the test signal's residual level, and the rise in random low-frequency jitter has been completely eliminated. This is about as good as it gets, using my current test gear.

Unlike the 2002 samples of the DAC64, and putting to one side the deemphasis error, which will not affect many CDs, this sample offered superb performance in every aspect of performance. Wow! —*John Atkinson*

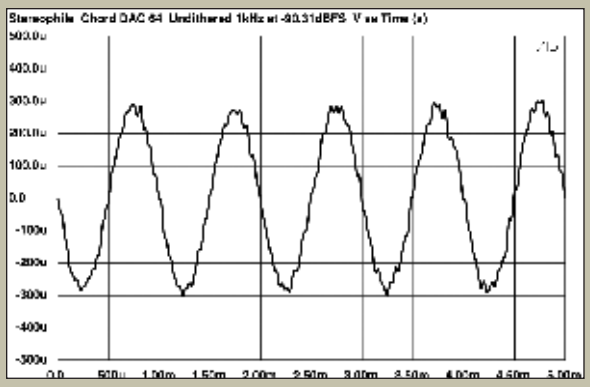

Fig.9 Chord Choral DAC64, waveform of undithered 1kHz sinewave at –90.31dBFS, 24-bit data.

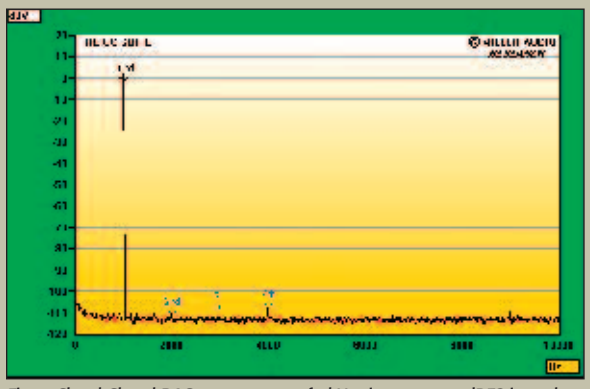

Fig.10 Chord Choral DAC64, spectrum of 1kHz sinewave at 0dBFS into 8k ohms, unbalanced (linear frequency scale).

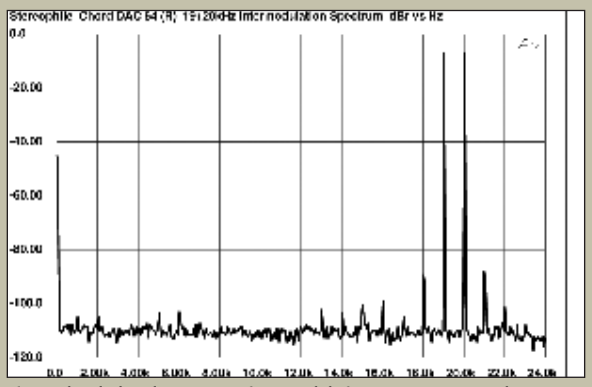

Fig.11 Chord Choral DAC64, HF intermodulation spectrum, 19+20kHz at 0dBFS peak into 100k ohms, balanced (linear frequency scale).

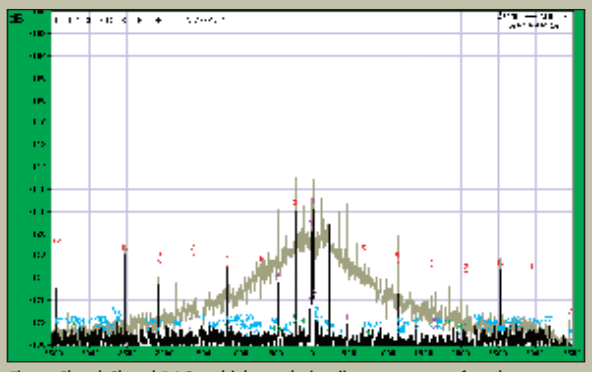

Fig.12 Chord Choral DAC64, high-resolution jitter spectrum of analog output signal (11.025kHz at –6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz), 16-bit CD data, upsampled to 176.4kHz and 24-bit word length, with long RAM buffer. Grayed-out trace is the same data at 44.1kHz and 16 bits, without any RAM buffering. Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

ever. Such speed, such palpability, such U-R-there-itude! Once again, it wasn't so much about sound, but about sound's body.

But now you never show it to me, do you?

In the May *Stereophile* I reviewed the Nagra CDP ($15,000), which impressed me as one of the best pure "Red Book" CD players I have ever heard. In both price and intent, it seemed the perfect, um, analog to the Chord Blu-DAC64. Both offer impeccable fit'n'finish; both aspire to the state of the art.

I connected the Nagra and the Chord Choral combo to both my Ayre K-1xe preamplifier and the HeadRoom Max Balanced headphone amp with Shunyata Altair Helix balanced cables. I use AKG's balanced K 701 headphones for headphone comparison. Once again, I praise the Nagra's flexibility: Being able to choose its high-gain option for use with the Ayre and its lower-gain output for the HeadRoom Max Balanced made meaningful comparisons easier.

On Tierney Sutton's "Sometimes I'm Happy," the Nagra CDP revealed a bit more snap in Ray Brinker's brushwork. There was a bit more *rat-a-tat-tat* and sparkle, although the Chord gave more heft to Trey Henry's loping bass lines. Each player captured one or two things better than the other, but I wouldn't say either convinced me that the other got much wrong.

On "Ojos Negros," however, I felt the Chords better delineated the line between being and nothingness. The sounds of Saluzzi's and Lechner's instruments emerged from the room acoustic more fully formed, more rounded, more three-dimensional.

My listening notes refer consistently to "breath." It was only while attempting to reconcile the idea of "breath" with my impression of sonic palpability that I realized that breath may be only air, but it *implies* that there's a body somewhere doing the breathing. Holograms don't breathe; bodies do. So did the Chords.

That sense of bulk, heft, presence, or palpability captivated me with the Attention Screen disc as well. The Nagra left nothing out, but the Chord combo simply put more muscle on the skeleton—without sacrificing any suppleness.

The more I listened to the Blu and DAC64, the more they reminded me of something. While pondering *On the Other Side* and *Live at Merkin Hall*, I realized what it was: the sound of high-resolution digital, such as the Sutton SACD or the Attention Screen 24-bit/96kHz raw DVD mixes JA had burned for me. So I listened to those discs on my Ayre C-5xe. It might not be a completely fair comparison, but I did wonder how the higher-rez stuff would compare to the full Chord press.

It was impressively close. Through the Ayre, the Sutton disc *might* have had a shade more liquidity, fewer sharp edges—or maybe not. The SACD and CD were more alike than different. The Ayre pulled a few more dB of subjective dynamic range out of the Attention Screen DVD than the Chord extracted from the production CD. Maybe it was just 0.5dB—the swings seemed wider, but just a bit.

Does this mean that the Chord combo's upsampling, oversampling, reconstructive filtering, buffering, and gate-arraying turned "Red Book" into something better? I can't say—it's possible that the "Red Book" spec really is as close to theoretically perfect as, all those years ago, it was pitched to us as being. If that's the case, I haven't heard anyone get as close to that potential as Chord has in the Choral Blu and DAC64.

Or perhaps with all that shaping, shifting, and prodding, Chord has happened on precisely the right combination of euphonic colorations to compensate for *my* perceptual deviations from perfect. It strikes me as unlikely—but then it would, wouldn't it? No one thinks of himself as a bad listener any more than anyone thinks of himself as a bad lover.

But it does suggest that the Chords might constitute the universal player so many audiophiles have been waiting for. No, the Choral duo doesn't do SACD or high-sample-rate DVD, but let's face it, not all *that* many such discs are available to us, whereas we have a quarter century's worth of "Red Book" discs that the Chord components can make sound awfully darned good.

And every breath we drew was Hallelujah!

At $15,400 ($17,500 with stand), the Chord Choral Blu transport and Choral DAC64 digital processor don't comprise the most expensive digital rig I've reviewed, but the price does make me gulp a bit. The fact that I can't afford the Blu-DAC64, however, doesn't make me think them unreasonably expensive. To see these components—and to discuss with John Franks the details of their construction—is to immediately understand that they are handmade to an exactingly high standard.

You know if you're one of those who can afford to buy the Chorals. The question is, should you? Only if you've been looking for a CD player that can justify the last two decades of recording technology. To my mind, the Choral Blu and DAC64 are, together, the CD player we music lovers have long prayed for.

Hallelujah!

ASSOCIATED EQUIPMENT

DIGITAL SOURCES Ayre C-5xe universal player, Nagra CDP CD player, Slim Devices Transporter network player.
PREAMPLIFIERS Ayre K-1xe, Krell Evolution 202.
POWER AMPLIFIERS Ayre MX-R and Krell Evolution 600 monoblocks, HeadRoom Max Balanced headphone amplifier.
LOUDSPEAKERS Dynaudio Confidence C4, AKG K 701 headphones.
CABLES Interconnect: Kimber KCAG, Krell CAST, Shunyata Research Altair Helix, Aries & Antares. Speaker: Shunyata Research Lyra, HeadRoom balanced headphone cable.
ACCESSORIES Ayre L-5xe line filter; Furutech eTP-609 distribution box, FP-20A(R) duplex outlets, RDP panels; OSAR Selway/Magruder equipment racks; Ayre Myrtle Wood Blocks. *—Wes Phillips*