

Audio Research DAC9

Joining its preamp and phono stage siblings, Audio Research's DAC9 adds the digital capability that completes the Foundation series – a taste of 'REF' for mere mortals?
 Review: **Ken Kessler** Lab: **Paul Miller**

Can something as inherently modern as a DAC be 'old school'? If so, then Audio Research's DAC9 is a return to a time when a DAC was just a box of digital input types and – er – a DAC, rather than a gateway to and controller of (wireless or otherwise) Internet-based and other non-physical media. Admittedly, at £7500, you might be expecting Bluetooth or Wi-Fi connectivity and a mini-OLED monitor, its arms spread wide to integrate with smartphone or tablet. If so, look elsewhere.

ARC MEANS VALVES!

Is this a crippling indictment? Absolutely not. Home audio is dividing itself into assorted user types, such as those who simply want instant no-brainer gratification, with Sonos-type turnkey systems or the latest voice-activated gadget from Amazon and the like. Stepping up means DACs that directly accommodate smartphones, tablets and computers for accessing preferred streaming or external storage choices, as well as 'legacy' sources, such as CD players with digital outputs.

But some seasoned audiophiles, and I count myself among them, are bored with renewed format conflicts, half-baked, crowd-funded start-ups and other digressions. We're tired of the relentless plethora of 'solutions' – Tidal, MQA, Spotify, network streamers, AirPlay, *ad nauseam* – and are content with straightforward DACs like the DAC9 that, in terms of a bare bones description of features, could have appeared 15 or even 20 years ago. Until you listen to it.

Considering that the sonic variances between streaming sources are less marked (to these ears) than the differences between DACs, those prepared to do their homework can extract decent digital signals from computers or tablets. With this

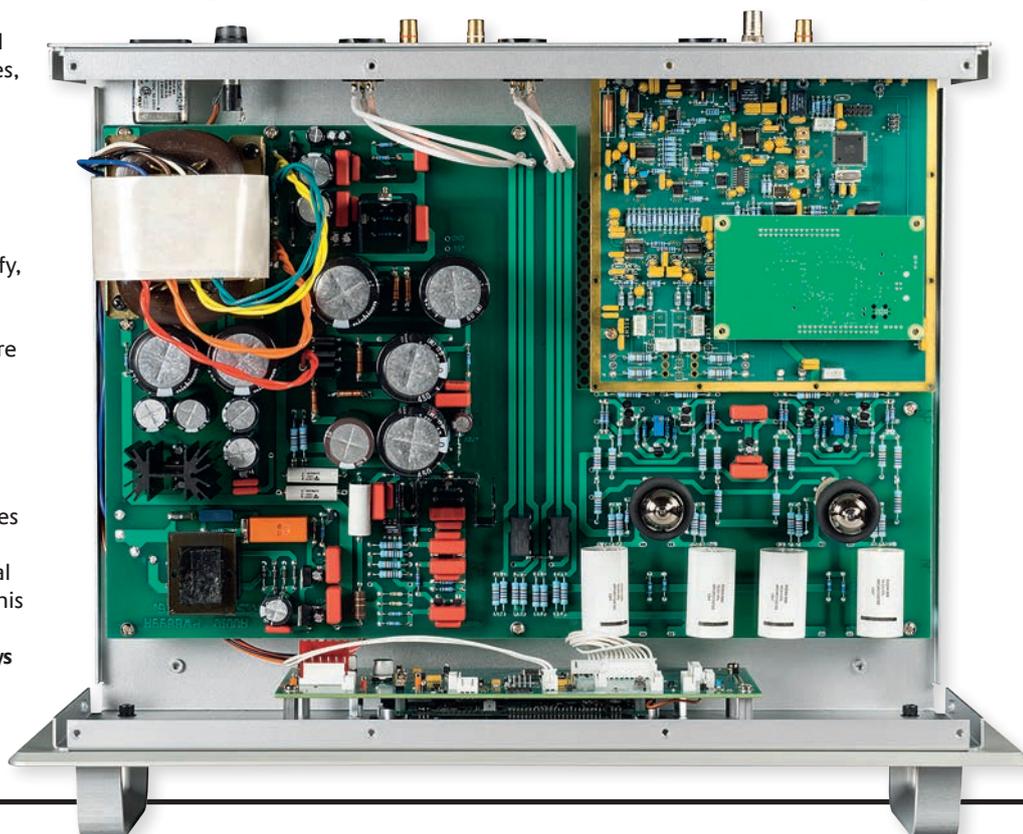
in mind, the game plan is obvious: simply buy a basic network player of your choice and feed its digital output into a superior DAC like the DAC9. Otherwise, just buy an Audio Research Reference DAC [*HFN* Jan '13] and ignore all of the above.

Audio Research means valves, so, yes, this is a tube-equipped DAC, with a pair of 6H30s in the analogue circuit. As I was party to the birth of be-valve'd digitalia – cooked up 30 years ago with Neil Sinclair, siring California Audio Labs and the world's first valve CD player – I experienced personal delight in hearing traces of that sound in the DAC9, the latest beneficiary of a development which made digital playback palatable for those who hated it.

Audio Research loves trickle-down evolution, so the DAC9 uses the same 192kHz/24-bit PCM1792 converters found in the REF CD9 [*HFN* May '13]. Housed in the same, sleek 480x137x348mm chassis as the matching Foundation models,

the DAC9 from a distance looks utterly identical, save for two rotaries on the preamplifier. The consistency in styling makes for a handsome stack. The initial impression is one of near-G Series luxury, thanks to a beautifully finished front panel, classy perforated top cage, tactile press buttons and a clean display. All is tasteful, no-nonsense with no air of sacrifice – a perfect blend of minimalism, functionality and elegance.

Probably the biggest indicator of this unit's return to an earlier era is the dearth of clutter on the back. You are offered five input types, including the one that didn't exist in digital's early days, but which is crucial for the DAC9 to serve in a contemporary system: USB. As for the rest, they include the mandatory S/PDIF on RCA, BNC and via Toslink optical with AES/EBU for balanced digital sources. Line outputs include balanced XLRs and single-ended RCAs, and while there are no digital



RIGHT: The vacuum tube audio stage employs two 6H30 triodes while the digital board [top right] features dual Burr-Brown PCM1792 DACs and an upsampling chip. All circuits are powered via a substantial linear PSU [left]



outputs there is an RS-232 connector for integration into a custom installation.

DISC DEPENDENCY

While I tested this with portable players, a Mac Air and a smartphone, I opted for CDs for the most intent listening. I used a Marantz CD12 and DV8300 as transports, while the rest of the system included the Audio Research REF6 preamp [*HFN* May '16] and REF75SE power amp, Wilson Alexia speakers [*HFN* Mar '13] and Crystal and Transparent cables.

With Red Book CDs, you can have fun with the comprehensive remote, which allows you to experiment with upsampling, filters [but see PM's Lab Report, p53], polarity inversion and other features. Of course, the all-metal handheld covers the basics of power on/off, source select and mute, but crucially for those who want to operate their DAC from the hot seat, the remote can access the rest of the menu-based system – adjustable power-off setting, input naming, display brightness, tube usage.

'I'd argue that first-generation CDs sound better than what followed'

While I played around with upsampling the CDs, I found the benefits to be unpredictable. In my experience it was completely disc-dependent, and I couldn't define any pattern after feeding it more than 20 CDs of varying lineage. Gold CDs, SHMs, SACDs, HDCD-encoded, CDRs – nothing emerged as an indicator of its usefulness or lack thereof. I found both early CDs that benefited or didn't, and

circa-2017 pressings that did... or didn't. The upshot is you should keep the remote by your side, because simply leaving it in one mode or the other isn't an ideal solution.

Considering that it just involves a press of a button, this is no hardship. But that begs a question: at the very least, are the differences marked, if not obviously better or worse? With every disc, you could certainly hear the changes when switching between the two, changes easily on a par with polarity inversion in terms of audibility.

But how to assess such a recidivist device? Clearly, I had to deal with it in

ABOVE: The same chassis/display design as the PH9 phono preamp, but the DAC9's buttons serve power, input and mute with upsample/filter modes via the menu and remote [p53]

contemporary terms, but I couldn't resist turning back the clock. Regardless of the origins of the recordings, the actual age of the CD pressings had to be considered, as pressing technology has evolved since 1986. (Wind-up moment: there are those who argue that first-generation CDs sound better than what followed because of more care in the manufacture.) To deal with this, I included discs from the days before fixes like upsampling were available. Equally, I enjoyed some newer than the DAC9 itself.

KEN GETS SERIOUS

Titles ranged from that 28-year-old masterpiece, Lou Rawls' *At Last* [Blue Note CDP 7 91937 2], to a 28-day-old CD, the new two-disc version of *Sgt Pepper's Lonely Hearts Club Band* [Apple/EMI 0602557455366], while intermediate years were covered by The Detroit Emeralds' 'Feel The Need' [*Greatest Hits*; Westbound CDSEWD 119 CD], The Wonders' 'That Thing You Do' [Play-Tone Records 664055 2; CD single] and The Turtles' *Happy Together* [Edsel EDSK7 119; 2017 pressing, mono/stereo]. Also arriving at the last minute was the insane double CD of remastered and unreleased *Wild Honey* sessions, The Beach Boys' *1967 – Sunshine Tomorrow* [Capitol/Brother 00602557528534].

Not auditioning the DAC9 from cold beyond checking that it was connected properly, all I can say about warm-up is that 15 minutes was more than adequate. Sitting down in 'serious reviewer' mode, anticipating that crucial first impression, I was at once delighted to hear the refreshing/rewarding lack of artifice that determines whether or not a digital device is riddled with irritants. There were none. ☺

FIRM FOUNDATION

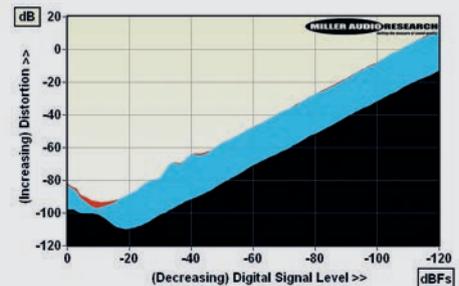
While the power amplifiers that complete the lineup are still pending – including the REF75-inspired VT80 to be reviewed next month – the arrival of the DAC9 completes the 'front end' of the Foundation series. Given that Audio Research's G Series has an all-in-one unit, that could work, too, for Foundation, but I don't wish to try to read minds in Minneapolis or Arcugnano. One cannot overstate the importance of the Foundation range because it now represents the company's entry level, coming in below the more luxurious G Series. With the no-compromise 'REF' models at the top, the company now has three clearly delineated families, save for one stray oddity, the integrated-amp-without-a-family: the underappreciated, killer-of-a-bargain VSi75. Audio Research's new look started in earnest with the G Series. The cleaner, more modern, conceived-in-Italy take on the traditional lab look addressed ARC's traditional design language such that the DAC9, the PH9 phono preamp [*HFN* Dec '16] and LS28 line preamp [*HFN* Jan '17] could not be mistaken for any other brand.

LAB REPORT

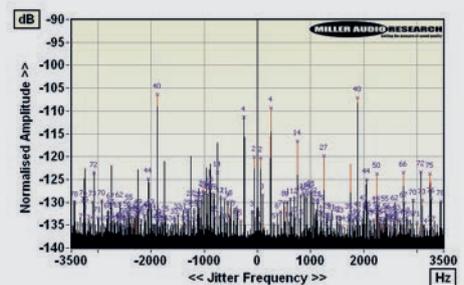
AUDIO RESEARCH DAC9

Tested without ARC's 'Upsampling' mode engaged (where 48kHz, 96kHz and 192kHz inputs are processed natively rather than upsampled to 384kHz, for example), the frequency responses are at their flattest. Natively, the response varies by just $\pm 0.05\text{dB}$ out to 20kHz, 45kHz and 90kHz with 48kHz, 96kHz and 192kHz digital inputs, respectively, with no change in this remarkable treble extension, time domain performance or stopband rejection regardless of whether the 'Slow' or 'Fast' filter is engaged. In 'Upsampling' mode the responses are $-0.04\text{dB}/20\text{kHz}$, $-0.55\text{dB}/45\text{kHz}$ and $-1.15\text{dB}/90\text{kHz}$, respectively, again with no change in either filter mode (which I suspect is yet to be enabled by a firmware update). Stopband rejection is 95dB in native mode and 55dB in Upsampling mode (26kHz re. 22kHz at 48kFs) and the filter behaviour has the appearance of a standard linear-phase FIR type with equivalent pre/post ringing on impulses.

Distortion at the maximum 3.69V (balanced) output is determined by the 6H30P double-triodes at 0.002-0.009% (20Hz-20kHz), reducing to a very low 0.0002% over the top 30dB of its dynamic range through bass and midrange but still higher (though not *high*) at $\sim 0.002\%$ over the same range at 20kHz. There is some very slight reduction in HF distortion in Upsampling mode [blue trace, Graph 1 versus native mode in red]. The 112dB A-wtd S/N ratio is impressive and the $\pm 0.4\text{dB}$ variation in resolution at -100dBFs good although digital jitter, while also not especially *high* at 355psec (native) and 285psec (Upsampling mode), is still very complex in nature with some 80 sidebands captured on the one high resolution spectrum [see Graph 2, below]. PM



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (1kHz, black; 20kHz, blue, upsampled to 384kHz and red, native 48kHz)



ABOVE: High resolution jitter spectra with 48kHz/24-bit data (black, upsampled; red with mkr, native)



ABOVE: A single set of RCA and (balanced) XLR analogue outs lie alongside optical, BNC and coax (S/PDIF) and XLR (AES/EBU) digital inputs. RS232 services automation

How much of the silkiness, the smoothness that embraced the orchestral elements of The Beatles' 'A Day In The Life' or the staggeringly lifelike keyboards on the *At Last* CD is due to the digital circuitry and how much to the valve output stage is impossible to say. Only with those rare DACs that offered a choice between valve and solid-state with the flick of a switch, like the Musical Fidelity KW DM25 [HFN Feb '06], can you isolate that. Regardless of the reason, the DAC9 was blissfully free of edgy irritants.

AUDIO IRONY

Let's dispense with the marriage of the DAC9 with streaming or feeds from high-end players, in my case, a couple of Astell&Kerns, a Pono and a Pioneer XDP-100R. My first reaction, having heard how all of these benefit from Chord's Mojo [HFN Jan '16] or Hugo, or AudioQuest's DragonFly [HFN Oct '16] when on the move, was how external DACs have come back from the dead by offering vastly superior performance rather than a multitude of inputs.

Of course, such sources are primarily used for headphone listening, but it did demonstrate that the original digital signal (all of my players were fed from the same MicroSD cards) is often compromised at a point beyond its control: the D/A conversion. Even rough archive material on YouTube – which I normally only observe on my computer or iPad – sounded better than one might expect, with richer lower octaves and less grain.

Listening to the older CDs, I was staggered to hear even more on the Lou Rawls release – and readers know I play it to the point of monomania – than I could have

expected. While detail retrieval turned up no surprises, the sense of air and the increase in openness and transparency suggested a quietness, a cleanness and a – how can I put this? A lack of any interference from the processing?

Looking back on 35 years of digital, I can count on one hand the moments that rank with hearing an LS3/5A or Decca Gold for the first time: the California Audio Labs Tempest II, the Marantz CD-12 and the like. The DAC9 struck me as of that calibre when I listened to a raw and raucous CD single that most serious listeners would decry as too unrefined to offer a window into a device's performance.

Be that as it may, 'That Thing You Do' enjoyed a vibrancy that performed the greatest service of all, for it made me forget I was listening to hi-fi. From the opening drum assault, with monumental slam and bass extension, to the screaming guitars to the deliberately-strained lead vocals over those gorgeous harmonies, it was a perfect instance of audio irony – a performance from the 1990s, made to sound like AM radio fodder from the mid-1960s, coming across like a 1950s Capitol Records masterpiece. Genius! ☺

HI-FI NEWS VERDICT

If you've overdosed on digital alphabet soup and just want the sweetest, most disarmingly competent, straightforward high-end DAC for the money, the DAC9's no-nonsense, sound-over-silliness mindset will come as a blessed relief. With streaming and physical media left to your sources, you can rest easy that the DAC9 deals only with the pure digital signal. And what you'll hear is... just the music. Hosanna!

Sound Quality: 88%



HI-FI NEWS SPECIFICATIONS

Max. output level /Imp. (Balanced)	3.69Vrms / 330-540ohm
A-wtd S/N ratio (S/PDIF / USB)	112.0dB / 112.1dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.0019% / 0.00020%
Dist. & Noise (20kHz, 0dBFS/-30dBFS)	0.0090% / 0.0025%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.04dB/-0.1dB/+0.1dB
Digital jitter (48kHz/Upsampled/96kHz)	355psec / 285psec / 400psec
Resolution @ -100dB (S/PDIF / USB)	$\pm 0.4\text{dB}$ / $\pm 0.3\text{dB}$
Power consumption	54W (4W standby)
Dimensions (WHD) / Weight	480x137x348mm / 6.3kg