

Audio Research REF CD9 SE

Less of a 'Special Edition' than a cosmetic refresh, six years of continuous production has still brought changes to bear in ARC's flagship digital offering. We investigate...

Review: **Ken Kessler Lab: Paul Miller**

At this stage in the decline of Compact Disc's popularity, is there still a demand for CD players like the Audio Research REF CD9 SE at a heady £14,500? Apparently so, as the original REF CD9 [HFN May '13] remains popular enough to warrant an update. The addition of the esteemed 'SE' suffix on this occasion, however, does not signal as radical a change as seen, for example, in the move from the REF 75 power amp to the REF 75SE. But what Audio Research has done makes it just different enough to warrant the new badge.

Brand Ambassador, and long-term employee, Dave Gordon reflected that 'the differences from the CD9 to the CD9 SE are fairly simple. We updated the front panel to the new cosmetics. We updated the USB card'. Er, that's it – but the two do matter if 1) you've come to the brand more recently and your preamp features the newer look and 2) if pushing hi-res files over USB is part of your audio lifestyle.

DIGITAL HUB

Dave is utterly candid: 'Aside from the new USB card, there is no change in performance [but see PM's Lab Report, p59]. When a manufacturer has a product – particularly a digital product – that does not undergo major revisions for some time, or is replaced by a new model, people tend to forget about it, or take it for granted.

'The Reference CD9 is a good example. But many people do not realise that the analogue section and power supply in the REF CD9 SE are lifted from the REF5 preamp [HFN Jan '10]. Same tube complement, same analogue section and same power supply with vacuum tube regulation – even our expensive gold capacitors.'

Let's deal with the appearance first. The change means the move from a display in a small black Plexiglas window on the left

RIGHT: One pair of 6H30 triodes are employed per channel in the analogue output stage [top right] with a 6550WE and 6H30 in the tube-regulated PSU [lower right]. The Philips PRO2R transport [lower left] is retained from the CD9

half of the original REF CD9's fascia, with the control buttons and LED indicators on the right against a metal section, to the new 'full width' look. This is wider than the corresponding black gloss sections on the REF 6 or LS28 [HFN Jan '17] preamps' front panels, but that's a minor point.

Truly, I have absolutely no preference for one fascia over the other, but I will acknowledge that the older style is more in keeping with ARC's traditional 'laboratory' appearance, which may matter to marque devotees, while the new style is certainly more modern. If, however, aesthetics do bother you, you will prefer whichever matches your preamp, especially should you be all 'REF'd-up' with either a '5 or a '6.

As for the USB input, the changes only really matter if you value the DAC capabilities of the CD9 and its replacement; in other words, do you see

this as a CD player or something closer to a disc-playing digital hub? Note, too, that the CD6 has undergone similar changes to attain SE status: both SE models now contain the latest v3.0 USB audio card, providing compatibility with Windows 10 and macOS, as well as Linux-based systems which support ALSA devices.

SMART CARD

For those of you who value streaming, this ensures superior compatibility with products such as Aurender's music servers or Roon's Nucleus [HFN May '18]. According to ARC, the new USB audio card 'offers a state-of-the-art FPGA design that re-clocks data and formats appropriately; firmware updates are not required'.

Digital inputs on the REF CD9 SE remain unchanged over the non-SE predecessor, so these include S/PDIF (on RCA and Toslink



optical), AES/EBU (XLR) and USB 2.0, with digital outputs for AES/EBU (XLR) and S/PDIF (BNC), and both RCA single-ended and XLR-balanced analogue outputs.

During the testing, editor PM raised a couple of other queries regarding the changes between the REF CD9 and its SE offspring. We asked Dave about support for DSD, which is still absent in the CD9 SE. He replied, 'Including DSD would require a major redesign, which would be more appropriate for an entirely new model. It would also be too expensive to offer an upgrade path for the earlier-generation CD9s'. As for production changes [see boxout, below], with Audio Research moving to a new factory last year, 'There is what we consider a running production change to a small, low-voltage transformer that allows the CD9 SE to run cooler.' Both PM and I noticed that the new model has a slight hum, even when powered off, but this may have been entirely coincidental.

I reviewed the unit in an all-REF system, feeding the REF 6 preamp and REF 75SE

power amp, driving Wilson Audio Sasha DAW speakers [HFN Mar '19]. All wiring was Transparent, balanced throughout because it sounds better to my ears...

PRODIGAL SON

At first – and I had to remind myself that I reviewed its predecessor with a different

'Talk Talk's
Spirit Of Eden
sent chills
down my spine'

system six years ago – it was a case of sonic *déjà vu*. Rare are the occasions when we get to audition what is essentially the same product twice, so I'm glad I kept notes. (Unlike my periodic returns to variants of the BBC LS3/5as: for those, I've kept a few representative pairs.) I even dug out the same CDs used for the review back in 2013 as an initial refresher.

Let's deal with the USB input first, because this, streaming and other modern methods of addressing digital audio still typically fail to float my boat. Seriously: I have enough LPs and CDs and tapes to open up a shop, all of which sound better than any feed I have ever heard via streaming, so I report on this only out of

ABOVE: Matching the look of clean modernity of the current Audio Research models, the REF CD9 SE's front panel features soft-touch transport and DAC function controls

duty and so PM doesn't berate me. All I will say on the matter is that the REF CD9 SE is about as good as I've heard when it comes to feeding it a signal from the Internet via my brand-new Mac computer... but my Sequerra FM tuner [HFN Apr '75] still manages to massacre the lot.

Rant over. I still prefer CD as my second-fave digital source after SACD (and I so wish Audio Research had an SACD player...) and the opening track, 'The Rainbow' from Talk Talk's *Spirit Of Eden* [Parlophone 5099962178723] sent chills up and down my spine. It was enough that the harmonica sounded utterly lifelike and in the room, but it was the sheer sense of space that floored me.

Not by nature one who listens to prog rock, New Age or anything else more concerned with creating soundscapes than communicating an emotion, I surprised even myself by letting the atmosphere suck me in. Who needs VR goggles? This wasn't merely transporting – it was transcendent. And it wasn't that far off the admittedly-superior LP – something that's attained 'audiophile' status amplified by the tragic passing this year of the band's resident genius, Mark Hollis.

BOLT UPRIGHT

As the entire set is rich with spatial exploration and unusual instruments, to a Pink Floydian level, the REF CD9 SE was facing a challenge. This is one area where digital nearly always has to bow its head to analogue. Side-by-side with the LP, there was so little in it that, with levels matched precisely, I was hard-pressed to tell them apart. Yes, the REF CD9 SE possesses that much air and warmth.

What also made me sit bolt upright was a percussion break – no, make that

SE... SLOW EVOLUTION?

When does a change warrant a new model name? I wrote in my last 'Off The Leash' column how, back in the old days, a product like the Quad II might have a lifespan of years, or even decades. What isn't generally revealed is what happens during those long runs. Pick up any owner's manual and, at the back, you'll read how the maker reserves the right to alter the product *without notification*. That's what happened to the AR turntable and many of Quad's original models, as I learned when working on the reissue of the former and researching the latter. Due to unforeseen circumstances, such as the loss of a supplier, manufacturers may be forced to change parts. It might be as minor as a new paint source for the AR's top plate, or the demise of a component type; the latter plagued both Falcon Acoustics and Rogers when reviving the LS3/5a [HFN Dec '18 and Jul '19]. Most of the time, nothing is said about this, and it affects vintage car purism, watch collecting and other manufactured treasures. For the REF CD9 SE, a major cosmetic change and the updating of the USB input fits somewhere in between. At the very least, the SE suffix openly identifies the changes.

LAB REPORT

AUDIO RESEARCH REF CD9 SE

Six years on from our review, and lab test, of the CD9 [HFN May '13], and despite Audio Research playing down any substantive changes inside its new 'SE' model, there are still *measurable* differences between the old and new units. Running production changes and a new manufacturing facility make it virtually impossible to maintain precisely the same spec. over this period.

Sure enough, the tube complement is unchanged, as is the Burr-Brown (now TI) PCM1792 DAC. The Fast and Slow (linear phase) digital filter options still offer the same ~122dB and 8dB stopband rejection(s) with -0.3dB/20kHz and -3.4dB/20kHz treble roll-offs, all traded against greater (Fast) and lesser (Slow) ringing in the time domain. And differences? Well, this latest SE version has a slightly lower 4.5V (vs. 4.8V) peak output although the 296ohm source impedance, increasing to 509ohm at 20Hz, is the same. And yet the A-wtd S/N ratio has been improved from ~106dB to ~108dB (via CD and all digital inputs), honing its low-level linearity from ±1dB closer to ±0.3dB with CD.

Switching between native [black trace, Graph 1] and 'Upsample' [green trace, Graph 1] modes reveals a similar, slight increase in distortion over the top 25dB of its dynamic range (0.015 to 0.025% at 1kHz) but the frequency responses are slightly flatter in the SE: -1.3dB and -5.0dB/45kHz vs. -2.0dB and -5.8dB/45kHz (96kHz files with Fast and Slow filters). The biggest difference lies in the jitter spectra – relatively unchanged at 150psec vs. 120psec with CD but increased from 25psec via USB to >900psec in the SE (S/PDIF and USB) thanks, largely, to an added PSU modulation. The effect? Typically, some added bloom and warmth to the bass. PM



ABOVE: Balanced (XLR) and single-ended (RCA) analogue outputs are joined by USB, optical and coaxial S/PDIF and one AES/EBU digital input. These accommodate up to 192kHz/24-bit (no DSD, and optical to 96kHz). Digital outs are offered on BNC/XLR

the percussion throughout – which enjoyed a sublime crispness, speed and overall attack that spoke of remarkable transient recovery. This was managed with precision, not aggression, and I am tempted to credit this in part to the superlative tube analogue stages, comprised of four 6H30 dual triodes, plus a 6550WE and a 6H30 in the power supply. For it is tubes, after all, that ensure this is of the ARC bloodline.

BODY AND SOUL

More than 30 years on from the first appearance of tubes in a CD player, I do realise that there are those still who find valves in a digital context something of an anathema, an anachronism and an affront. But thanks to the engineering efforts of early pioneers including Neil Sinclair and Mike Moffat, of California Audio Lab and Theta fame, this is a hybridisation that can now be said to have stood the test of time.

Before the history books are rewritten – as is this industry's wont – it was my blue-sky prodding of Neil at a long-forgotten CES in Chicago that led to the development of the first valve-utilising CD player. To

this day, the CAL Tempest II remains for me the player that changed the way the format comported itself in audiophile terms.

Valves or not, however, I had to acknowledge that magnificent recordings such as the Talk Talk title flatter the system.

LEFT: Partnering remote governs CD, USB and S/PDIF input selection, direct track access, digital filters and upsampling



I am not suggesting instead a test diet of vile recordings, as to uncover a different set of merits, but I have always maintained that something more akin to a normal release might be of more use out in the real world.

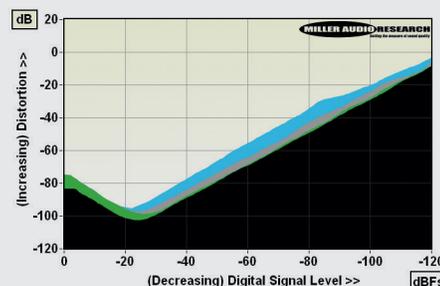
For this I turned to the soul classic, *The Baby Huey Story* [Curton/WEA Japan WPCR27720], prized for its performance over its sound quality. This 1971 release is regarded as a milestone in the development of rap and hip-hop. With hindsight, its compositions and reinterpretations are reminiscent of the epic, genius works of Isaac Hayes, as well as the Curton label founder, Curtis Mayfield.

A segue into an instrumental version of Sam & Dave's 'I Thank You' in 'Mama Get Yourself Together' caused my world to stop. Yeah, music still does that to me. What the REF CD9 SE brought to the table was a seamlessness, a coherence that made this transcend any minor limitations in the recording. Which is just what you want a system to do: make you forget about the medium, the format, the artifice and simply travel back in time and space... to a performance. And that is something the REF CD9 maintains in its second generation. Even if it is a top-loader. ☺

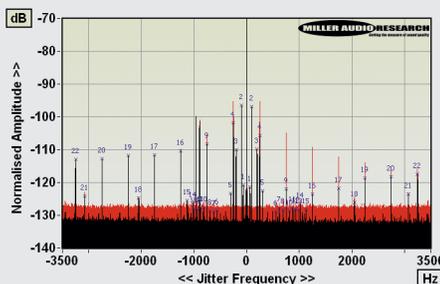
HI-FI NEWS VERDICT

Plus ça change: the REF CD 9SE remains as delicious a player as I recall, especially now that I have long-abandoned my dislike for top-loaders. Judging by my notes, it's slightly warmer-sounding, but also a tad more precise and categorically, even more 'analogue-sounding' than its parent. Ditch your older '9? Not necessary. But definitely add this to your shortlist if you still have faith in high-end CD playback.

Sound Quality: 85%



ABOVE: THD vs digital level at 1kHz (black = 24-bit/48kHz, Native; green, Upsample mode) vs CD (grey = 1kHz; blue = 20kHz, all in Upsample mode)



ABOVE: High resolution 48kHz/24-bit jitter spectrum, native (red) versus upsampled (black, with markers)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.53Vrms / 296-509ohm (XLR)
A-wtd S/N ratio (CD / USB in)	108.0dB / 108.5dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.012% / 0.00049%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.011% / 0.0039%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.3dB/-1.9dB/-4.5dB
Digital jitter (CD / S/PDIF in / USB in)	150psec / 950psec / 910psec
Resolution @ -100dB (CD / USB)	±0.3dB / ±0.2dB
Power consumption	109W
Dimensions (WHD) / Weight	480x134x390mm / 15kg