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The flagship touchscreen preamp



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Audio Research REF10

In an indecently short time after the Anniversary finished its run, Audio Research has again re-defined the modern preamplifier. Valves will never seem the same again.
 Review: Ken Kessler Lab Paul Miller

Having reviewed Audio Research's Reference Anniversary preamplifier [HFN Apr 11], and had my REF5 updated to SE status, I thought I'd savoured all there was to desire from an all-valve control unit. How wrong I was: the sorcerers at Audio Research have improved on their best in such an embarrassingly short time that I cannot even muster a suitable analogy. Not from F1, not from computing, *nada*. The evidence is immediate, and disturbing.

To salve the sensitivities of those who purchased an Anniversary, who might be feeling that horrible sensation associated with being an early adopter, note that the price of the new Reference 10 line-stage preamplifier is £4000 more than an Anniversary (and more than double that of a '5SE). To ensure that there's no bitterness against Audio Research for those who feel they 'should have waited' the Anniversary has: 1) unimpeachable collector's status due to inherent rarity that the REF10 will never possess; and 2) is 'old school' in that it features physical controls.

TOUCHY FEELY

It's the latter which might have Anniversary owners sighing with relief. Comparing the overhead shots of their innards reveals more similarities than differences. It even seems as if the REF10's touchscreen panel is its *raison d'être*. So let me get this out of the way, rather than let it taint what might be my most effusive review in 25 years: gimme two knobs and a row of buttons every time, but don't let the panel put you off the move from Anniversary to REF10.

A two-chassis line stage, the REF10 owes much to its limited edition predecessor but it has been refined rather than radically overhauled. Beyond the touchscreen interface, it presents no surprises to ARC fans. The rear-panel layout, the warm-up period, the basic styling – all familiar stuff.

RIGHT: Tidy internals, with centre filled by eight 6H30 valves – four per channel. Both units come with a see-through perforated acrylic lid, so all of this is visible to the curious

Because the Anniversary was a roaring success – double the company's original projections – and was the first two-chassis Audio Research preamp in some years, the company realised that demand for a preamp with outboard power supply existed from a vocal slice of the market. Audio Research, however, remembered those who invested in the Anniversary and its limited edition status, stating that continuing to produce it 'would not have been fair to original owners'. Instead, a new model that respected the Anniversary's unique status was needed.

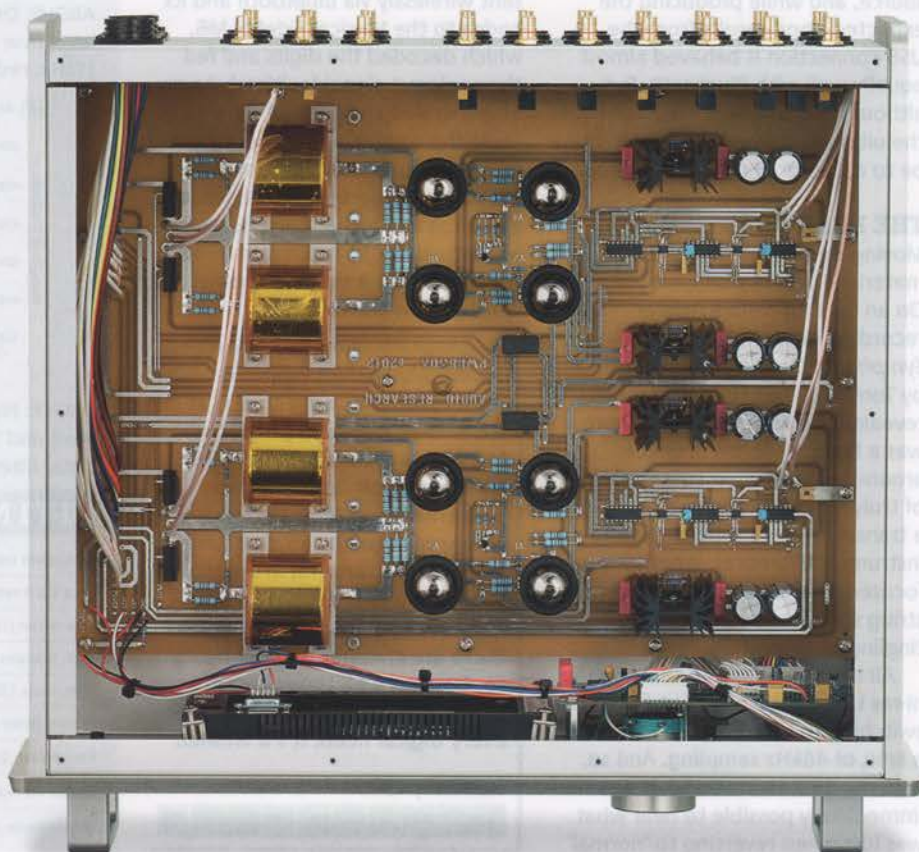
In keeping with the company's preferred methodology, the REF10 employs a fully discrete signal path, zero feedback and Class-A circuit. The refinements reflect what the company has discovered in the two-and-a-half years since the Anniversary

entered production: new wiring, connectors, critically-selected components, and a new generation of proprietary custom-made capacitors.

STICKING TO ITS GUNS

While the massive display is a culture shock – I will, to the grave, picture rotaries, buttons and handles when I hear the words 'audio' and 'research' in tandem – the REF10 retains the Anniversary's layout and design, and a trainspotter perspective is needed to isolate the detail changes in the aesthetics. Display or not, you will immediately recognise the manufacturer of the REF10, the company sticking to its guns about not alienating existing owners, from (product) generation to generation.

Aside from the large volume rotary, which works with left-right jerk motions





rather than rotating fully, and buttons for on/off and mute, all controls are handled by a remote and the aforementioned touch panel. The remote commands the usual operations including source selection, levels, balanced or single-ended inputs and other basic needs. Everything the remote does can be selected from the touch panel, along with a host of customising options and access to a valve usage counter. This keeps track of the total time

'The display is a tangible indicator of the way ARC sees the future'

the unit has been in operation, indicating what life your tubes may have left. It can be reset after valves are replaced.

Audio Research's literature states that, 'Our logo is above the knob on the right, making this the first asymmetrical Audio Research preamplifier ever' That, in my non-asymmetrical world view, is hardly a virtue. I won't even wear watches with asymmetrical dials. But I feel compelled to point it out, because ARC did.

ABOVE: The preamp's fascia is dominated by the touchscreen panel, on/off is via a small button while the second button is the mute. The power supply (bottom) has no controls at all

There's an upside, though: you don't even need to look at the owner's manual to discover all the display can do, if you've ever used a phone, camera, computer or even microwave oven with a touchscreen. The literature is not exaggerating when it describes the operation as 'intuitive' and 'straightforward'. Just about every main function is displayed, and you simply touch the screen to change something.

DRIVEN BY A PC...

That multicoloured 7in TFT display is no mere decorative item but an interactive touchscreen controller sourced from Comfile Technology – a 'panel PC'. This particular module sports an ARM9 32bit/266MHz processor with 64MB flash memory, running a Windows CE Pro 5.0 operating system. The screen supports 260 thousand colours and offers an 800x480 pixel resolution, so there's plenty of mileage here for ARC to provide a kaleidoscopic menu should it choose to do so in the future. The rear of the panel PC sports Type A and B USB connections, unused here, together with two RS232 ports and it's one of these that provides the interface with ARC's on-board volume control and navigation buttons. The chunky IR controller also communicates with the PC through the same interface. Frankly, with such interactive technology now so readily available, the only surprise is that so few companies have jumped on board. PM

PANOPLY OF OPTIONS

Where it gets modern and clever is in the panoply of options via the settings menu. You can name every input, and even change the colours of the typeface and the background. Each input can be adjusted to provide volume matching regardless of the sources, something I found useful when switching from the output of my Mac to a Sony Blu-ray player – the difference being levels that blast you unawares. The REF10 took care of that discrepancy with ease.

This display is not a gimmick, but a tangible indicator of the way Audio Research sees the future. CEO Terry Dorn



ABOVE: True dual-mono power supply features valve regulation, one 6H30 and one 6550WE per channel, with a couple of spares in the box. Two-channel topology extends to two connecting cables

told *HFN* that 'with the recent expansion of our engineering staff, Audio Research is actively exploring new interface technologies for future products. The touchscreen display used in the new REF10 is simply one approach that will likely find its way into other future products.

'Not every model in our range calls for a touch-capable interface, but we are ready to implement this technology wherever appropriate. We are also actively exploring alternative display devices and control interfaces that can make our products more flexible or feature-rich for the owner while remaining simple to use. The latter remains very important to Dorn, who regards it as one of Audio Research's core strengths.

BREATH-TAKING VELOCITY
 Inserted in place of my REF5SE, between the astonishing Marantz SA-11S3 SACD player and the REF75 stereo power amplifier, driving Wilson Sophia 3s, the REF10 taught me a lesson with the impact of a slap in the face. As amazing as I found the SA-11S3 when reviewed with the Marantz PM-11S3 [*HFN* Feb 12], I had no idea quite how superior a disc spinner it is. Running the system in completely balanced mode, with YTER and Transparent cables,

it was a short, sharp demonstration of the value of monumental dynamic contrasts.

It didn't take much: slipped the Bee Gees' magnificent 'You Win Again' from the CD *Mythology* [Reprise 8122 79718-1 and the impact of the track's rhythm-setting percussion exhibited weight and mass, underneath those ethereal vocals. It brought to mind seemingly impossible

'Like a Tequila Sunrise, colours were striated with exactitude'

concoctions like a Tequila Sunrise, its colours striated with geometric exactitude.

Followed immediately by the scratchy percussion and funk guitar of 'Jive Talkin'" the REF10

flaunted the sort of attack that used to be the metaphorical club with which the solid-state brigade beat on tube aficionados. Crisp? Precise? Think of one of those almost-effete wafers beloved of haute cuisine chefs, adorning some artistic appetiser: it hovers, it's ephemeral, yet it has 'snap' Fast notes speed by with breath-taking velocity. There's definable decay, but only when it's in the recording.

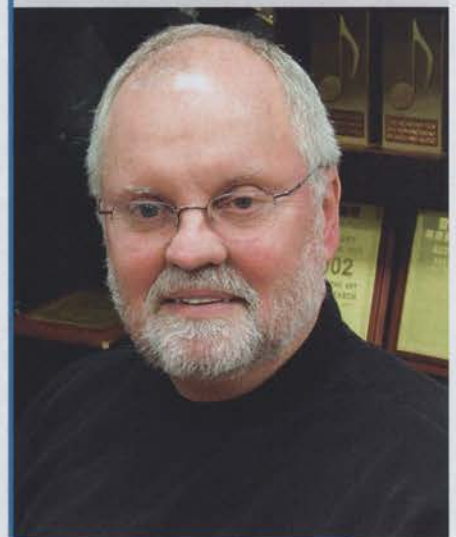
Inspired by the strings on 'To Love Somebody' I turned to the magnificently restrained violins on Julie London's heart-stopping rendition of 'Bewitched' [*The Ultimate Collection*, EMI 0946 3 67270 2 8]. I was after silkiness, texture, a hint of richness – nothing so demanding as the

A ROSY FUTURE

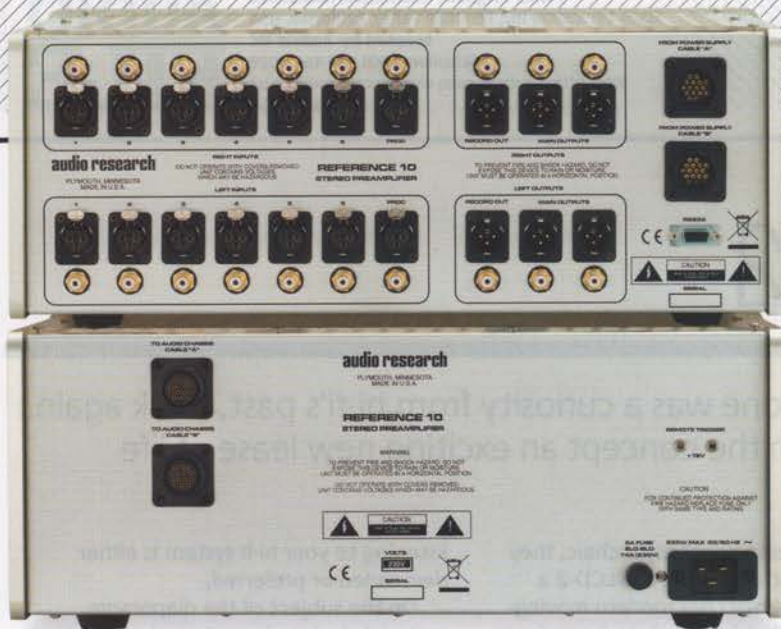
It's been a tumultuous few years for Audio Research: the passing of founder Bill Johnson, a change of ownership and dealing with the continued onslaught of a digital future. CEO Terry Dorn explained how this has affected the brand, especially in determining its future.

Fine Sounds' acquisition of Audio Research in January 2008 was the beginning of a renovation of the brand from the inside. They provided insight and direction in terms of internal organisation, manufacturing and back office processes, company policies and procedures. We have spent considerable effort streamlining company operations with the aid of a completely integrated software platform combining purchasing, manufacturing, technical services and accounting.'

Fine Sounds' direction includes concern for the company's future health and security, already demonstrated by the group's earlier purchase of Sonus faber, which has gone from strength to strength. Says Terry, 'That is happening with products that combine advanced digital technology with our core analogue roots, like the DSPre and the REF DAC. Fine Sounds has not directed our hand in terms of product development – their instructions have been to continue to evolve the legacy "DNA" that is Audio Research, to best serve existing customers while appealing to first-time Audio Research buyers. They've given us complete freedom.'



AUDIO RESEARCH REF10



ABOVE: Utter clarity: every input and output offered with single-ended or balanced connectivity, the upper row for the right channel and the lower for the left. Note twin multi-pin connectors for the external power supply's umbilical cords

stop/start of transients. It was a test of 'valveness' amidst the modernity. Lest you think that the mock-transistor authority of this unit's dynamic speed and control implies a hardening of the sound, fear not. The REF10's comportment is so warm I wanted to name it after one of our cats.

LOST IN SPACE

Ms London followed 'Bewitched' with a take of 'I Left My Heart In San Francisco' that almost makes you forget Tony Bennett's definitive version. London, it must be said, could make 'Shaddap You Face' sound sexy... With the REF10 it was sonic choreography, a dance between her voice and the instruments. Given the golden-era Capitol origins, the real arbiter of excellence would be the spatial recreation. With 'I Got It Bad (And That Ain't Good)', we have a wall-to-wall facsimile of a 1960s bachelor pad. Suddenly, your toes are lost in the deepest pile carpet ever woven.

It was space and atmosphere in the dimensional sense – true depth, width and height – and with the sounds layered so convincingly that you wish 5.1 systems were as successful. Lazy guitar, sounding like Les Paul on Quaaludes, floats out of the left speaker, so real, so liquid that you go a bit woozy. It's two glasses of Amarone in quick succession. There's no impression of flat images arrayed like old-style 3D movies. London is in front of you, the instruments around her, never crowding. I thought my walls

had moved outward. But who am I kidding? I had a miracle of an SACD player in the system.

In goes Rory Block's *Last Fair Deal* [Telarc SACD63593]. The guitar work picked up a new dimension, a tingle that is part and parcel of the bottleneck experience. It played out against a background of black silences, yet there was no aridity, no sense of that overly-hygienic stripping away of the very clues that define authenticity.

Simply put, the music was rich with the textures and nuances that are often lost through an audio chain. There was a complete lack of artifice. The outlay will buy an entry-level tourbillon, a decent 4x4, two cases of 1985 Sassicaia, *ad infinitum*. Whether someone with £27,900 wishes, instead, to spend it on a REF10 depends on but one thing: an unbridled lust for music. ☺

HI-FI NEWS VERDICT

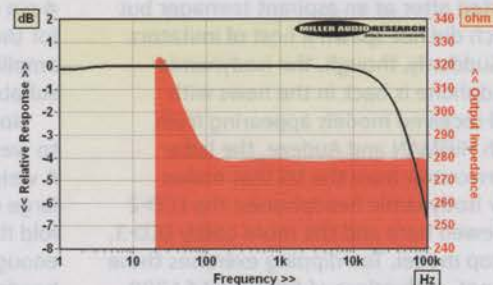
No pussyfooting: this is the best-sounding valve preamp I have ever heard, topping even the Anniversary – which I thought was part of God's own sound system. No, I don't enjoy touch panels, as I am an unrepentant traditionalist/Luddite/ARC purist who prefers knobs and buttons. But that is my problem. If you can get past its tube-preamp-violated-by-an-iPad mien, you will love this as Hepburn loved Tracy.

Sound Quality: 90%

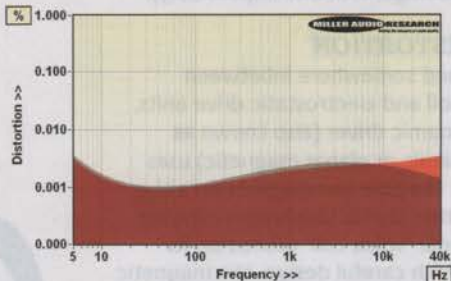


ARC's 104-step digitally-regulated volume control operates in fine ~0.5dB steps offering about 60dB of attenuation from '103' (max) down to '3' (closer to 57dB in practice). If you need to reduce volume very quickly, the IR mute button is the best option. In fully balanced mode (XLR in/out), the REF10 provides +12.5dB of gain, double that in single-ended mode (RCA in/out), although both present a 280ohm source impedance. The four 6H30P double-triodes per side promise huge headroom (the maximum input level is >20V) and output levels (>30V) while, under more typical conditions, distortion is extremely well managed. At 1V output, THD is consistently between 0.001-0.002% from 20Hz-20kHz [see Graph 2], rising to 0.004-0.006% at 2V and 0.01-0.05% at 10V output – this controlled 'character' irrespective of frequency is impressive, particularly as THD is inherently low. The 97dB A-wtd S/N ratio (re. 0dBV) is also very impressive as is the minuscule –100dBV hum. Basically, the REF10 is silent. The rated –3dB/200kHz response was not achieved at 0dB gain, however, our sample rolling gently – and quite sensibly – away to –0.6dB/20kHz and –6.7dB/100kHz [see Graph 1, below].

If there is a very small fly struggling to escape this technical triumph, it's in the form of a 12.8kHz tone (–111dB below 1V output) that spawns a series of higher-level harmonics at 25.6kHz (–99dB), 38.4kHz (–92dB), 51.2kHz (–95dB), 64kHz (–100dB) and so on. Switching the display off has no effect but the tone (surely a switching or polling artefact) is likely to originate with the panel PC in this ARC chassis [see boxout, p55]. Readers are invited to view a comprehensive QC Suite test report for ARC's REF10 preamplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Extended frequency response (1Hz-100kHz, black) versus output impedance (20Hz-100kHz, red)



ABOVE: Distortion versus extended frequency from 5Hz-40kHz at 0dBV (left, black; right, red)

HI-FI NEWS SPECIFICATIONS

| | |
|----------------------------------|------------------------------|
| Maximum output (<1% THD, 47kohm) | >30Vrms (Balanced) |
| Maximum input level (<1% THD) | >20Vrms (Balanced) |
| Output impedance (20Hz–20kHz) | 320-279ohm (Balanced) |
| Frequency response (20Hz–100kHz) | +0.01dB to –6.7dB |
| Input sensitivity | 238mV |
| A-wtd S/N ratio (re. 0dBV) | 97.1dB |
| Distortion (20Hz-20kHz re. 0dBV) | 0.0010–0.0028% |
| Power consumption | 200W |
| Dimensions (WHD) | 480x178x394mm (each chassis) |