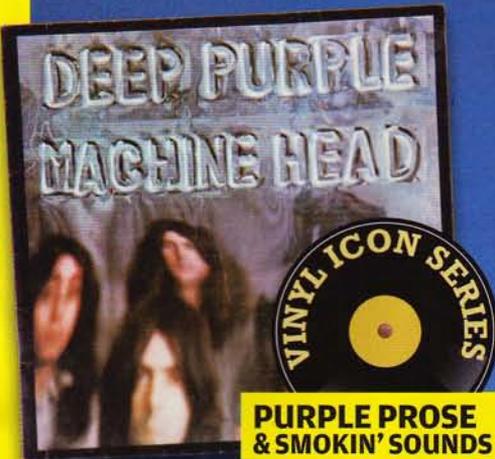


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& Record Review



A STEREO SURPRISE...

ARC unveils its first solid-state integrated!



'Leak Stereo 20, still rocking in 2010'

Vintage review, p118

Roksan Radius 5.2

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Audio Research DSi200 (£5106)

Valve specialist ARC unveils its first solid-state integrated amplifier, and like the SP-7 preamp, it's an all-tranny product that may inspire die-hards to forgo the glow
 Review: **Ken Kessler** Lab: **Paul Miller**

Audio Research Corporation's image as a maker of valve electronics is so all-encompassing that many audiophiles are unaware that the company has been producing solid-state gear for over 30 years. Transistor products arrived in ARC's catalogue long before CD, custom installation and multichannel almost forced their presence. But valves have always dominated, so it's important to understand *why* the doyen of post-modern tube amps would even bother with transistors if one is to approach the DSi200 – the company's first-ever solid-state integrated amplifier – with an open mind.

No mystery here: Audio Research has *always* preferred tubes over transistors, and that hasn't changed. But the company is commercially savvy and pragmatic: why alienate the largest part of the market? Transistor amp sales are logarithmically greater than those of valve amps, yet the original inspiration for entry into the solid-state market was far more poignant: in the early 1970s, there was a distinct feeling that supplies of tubes might simply dry up.

With hindsight, we know that valves did survive, but back in 1974, when planning his company's future, Bill Johnson decided to add solid-state models to the range, beginning with the D-100 100W/ch stereo power amp, introduced in August 1976, followed by the 350W/ch D-350 in October 1977, and the 50W/ch D-52 in August 1978. Sales were brisk until the first reviews appeared, the audio magazines taking a 'horrified' purist stance.

Simply put, the hidebound hacks of the day attacked the units as much on principle as on actual performance. ARC's founder Bill Johnson described them to journalist Robert Harley, in an interview in *Stereophile* in 1994, as feeling 'betrayed by our sojourn into solid-state'. Audio Research eventually threw in the towel,

RIGHT: Not quite as repellent as the 'green monstrosity' on the Ref 5, the DSi200's panel seems slightly easier on the eyes. Note the polarity inversion and mono front panel buttons

re-focusing on tubes. Thirty years on, ARC manufactures all-valve, all-transistor and hybrid products without fear of reprisals.

ALL YOU COULD WANT

With the DSi200, ARC has a near-perfect package that balances all that a true audiophile wants in an integrated, with enough flash-bang-wallop to seduce those who can't deal with hair-shirt minimalism. Amusingly, the DSi200 *looks* like an exercise in audiophilic self-abnegation, due to a front panel bearing only two knobs for input and level (actually bi-directional twist-twist rather than conventionally rotating) and only four press buttons.

And they don't even address 'normal' functions. In addition to power on/off and mute, the other two buttons offer functions far less in demand nowadays: mono and polarity inversion. How important these are to you, instead of a more common tape monitor selector or perhaps a USB input, depends on your purism factor. Me? I test polarity inversion whenever a control unit allows me to, and at least a third of the

time, the disc requires its use. And mono? That depends on whether or not you listen to a lot of mono recordings, and whether or not you trust the source and the playback mechanism to be 'true' mono.

This product's simplicity and user-friendliness extends to every part of set-up. Compact but chunky, it's still a one-person job. And the clarity at the back is self-explanatory: mirror-image halves with two pairs of XLR balanced inputs, three pairs of single-ended RCA line level inputs and superb, no-nonsense binding posts for the speakers. Also fitted is the normal IEC mains input and a fuse holder.

Self-explanatory, too, is the remote which operates all functions on the front panel, as well as balance control and the welcomed display dimmer. I cannot reiterate enough how horrible ARC's displays are, despite the injection of Italian blood into the management. You'd have thought that a few Cornelian-clad execs would have looked at it in horror and ordered an OLED offering from Sony. Hell, at £5106, there's no need to scrimp on a





screen that's only an inch or so longer than my 45x110mm Nokia 6500!

During my time with the DSi200, I only experienced one quirk, discovered when switching inputs: the remote's source select buttons also change tracks on the Musical Fidelity CD player. This is merely an unfortunate coincidence. But owners of kW DM25s may need a re-think if the DSi200 appeals to them.

We're still at a point where Class A operation is regarded as the pinnacle of amplifier operation and Class D is a modern freak. But, with increasing regularity, Class D designs are blowing such discrimination, conditioning and prejudice out of the window. There is one overpowering facet of the DSi200's being that will – as this article's sub-heading come-on suggests – rattle not just the cages of Class A fans, it will shake religious fervour for valves. No, not enough, perhaps, to create apostates. But it made me less of an anti-transistor snob.

That first burst is always the most telling, provided you'd let the system warm up before the initial session. I do that as a matter of habit, switching on and then leaving the room for a cup of Newby's Earl Grey. And I'm glad I did, because later sessions showed that the DSi200 warms up to optimal sonic merit after a half-hour.

ARC GOES GREEN

Representing the polar opposite of inefficient valve amplifier topologies, ARC is headlining the 'green' credentials of its DSi200 – the first Audio Research amp to earn itself an Energy Star rating. Not just solid-state but green-blooded analogue Class D amplification is the name of the game here, even if ARC has coupled this to a conventional 'purist' linear power supply instead of going the whole hog and employing a lightweight switchmode supply. This is not ARC's first foray into Class D (or PWM amplification), its earlier 150M power amp incorporated up to seven of Tripath's 'Class T' modules in one chassis. Nevertheless, the DSi200 is its first home-grown Class D design, employing MOSFET power devices in the final, high speed output stage and achieving a full 83% efficiency at its rated 200W/8ohm output [see Lab Report]. PM

At least, that's how it sounded to my ears, during a freakishly cold December, in a room with a thermometer monitoring my exposure to the ARC. So, as long as your dealer has it switched on before you get to the shop, you can assume that what you'll hear is what you're gonna get.

NEVER FALTERS

How to characterise the sound? It's impossible to talk about the actual power, because ratings no longer mean anything, when there are 60W amplifiers that seem subjectively more robust than amps rated at double that. But whatever the numbers, the DSi200 dispatched the Wilson Sophias with ease, worked miraculously well with the MartinLogan Summit X, and even managed to squeeze the tush of the LS3/5A. At no point, from listening to the overly gentle new Carly Simon title, *Never Been Gone*, to live-and-raucous Black Crowes to Rick Derringer or ZZ Top at air-guitar-inspiring levels, did the amp falter.

So set aside entirely the power debate with this baby, though it has been pointed out that the speaker's impedance can

ABOVE: Nearly faultless, the front panel offers ideal ergonomics and a modern look, while remaining inimitably a recipient of 40 years' worth of ARC's signature aesthetics

effect its sonic nature. After trying three wildly differing speakers, however, it was possible to make observations that transcend component-to-component synergy. Not least is that this amp will – while casting doubts on your allegiance to valves – convince many that there's no need to court a separate preamp and power amp.

'This amp is fast, widely dynamic, punchy and macho when needed'

This amp is fast, widely dynamic, punchy and macho when needed. On the Move's remastered 'California Man', the roiling, churning guitars manifested

themselves as powerfully as HM axework some 40 years younger, augmented by demented sax playing from one Roy Wood. Under the mix, the piano kept its shape, the soundstage spread across the room. Involving? It begged one serious question: why didn't the British appreciate this most stellar, polished, inventive and – indeed – *rocking* of bands?

On to 'Brontosaurus', a bass-heavy exercise that sounded like it was recorded at 45rpm and played back at 33.3rpm. If ever a tune lived up to its Jurassic name, the Move's track had it covered, and the DSi200 reached down deep to create a ponderous, but rock-solid foundation. And yet it kept the fluidity and grunginess that on occasion can be heard as sounding too tight. So detailed was the reproduction that I delighted in playing it against the vinyl original, the DSi200 showing that the CD's engineers narrowed the gap here.

Inevitably, that led to the Beatles remasters, which I am now savouring off ↪

INTEGRATED AMPLIFIER

AUDIO RESEARCH DSi200 (£5106)



ABOVE: Three unbalanced (RCA) and two balanced (XLR) inputs are joined by single sets of speaker binding posts (the 4mm sockets are sealed). Full remote control over inputs, options and volume is included

a 24-bit USB stick. I can't remember the last time I took my computer into my sound room, but, hey, it's unavoidable. Suffice it to say, the ARC integrated is so clean and open that confirming Ivor Tiefenbrun's promise that the 24-bit edition handily bested the CDs was a no-brainer. The DSi200 is exceptionally grain-free, transparent and super-quick, a perfect showcase for those who like to highlight Ringo Starr's prowess behind the drum kit.

RATING RINGO

Whether fed the boozy, drawling, almost bizarre percussion on 'Rain', with its massive cymbal crashes, the crisp slaps on 'Eight Days A Week', the gentle tambourine buried deep in the mix of 'We Can Work It Out' behind the harmonium, or – most majestically – the whole of *Abbey Road*, the DSi200 doesn't need to flatter his handiwork. As more than one musician attested during a recent BBC retrospective, ample evidence posits that Ringo Starr is the greatest drummer in rock history. With the new remasters and a high-resolution system through which to hear them, you'll need no more convincing.

Then you've got that sleek McCartney vocal, the liquid guitar leads of George Harrison. Sensation after sensation – the sweep of the vocals opening 'Nowhere Man', followed by the jingle-jangle guitar recalling the Byrds, the punctuation he provides for the elegiac 'In My Life'. And then there's the best-ever Buddy Holly homage, a twangy take of 'Words of Love' that would have left Holly spellbound.

It only occurred to me after hearing a dozen or so albums that I hadn't even thought to consider

three-dimensionality and soundstage. As a rule, I obsess over those. But it also occurred to me that the reason why I didn't think about them: because the DSi200 was doing such a sterling job of recreating a sense of space. It was not as cavernous, as *How-the-West-Was-Won* cinematic as its dearer siblings in the all-valve, cost-no-object Reference series; I spent some time in front of a friend's Ref 5/Ref 600/Wilson Grand SLAMM during my period with the DSi200, to provide a proper sense of proportion. But neither was it congested, never a case of 'Honey, I shrunk the soundstage'.

One other thing Bill Johnson said to Harley, back in '94, was 'Frankly, whether we like it or not, the tube is simply a better device for audio'. Far be it for me to argue with one of my heroes, especially when I agree completely and live by the tube. But as with Krell's, Ayre's or Levinson's finest moments, only a schmuck would say no to a glass of Solaia, just because he worships Lafite. ☺

HI-FI NEWS VERDICT

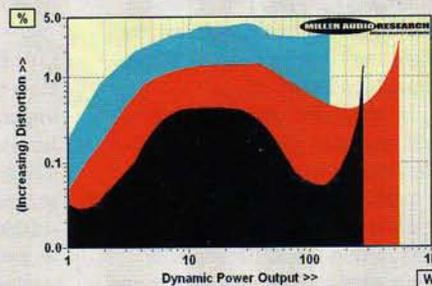
My maths cannot conjure up the number of pre/power combinations available under £5k. Neither would I discount the psychological need some have for separates over integrateds, nor would I deny my own lust for tubes. Brush away such distractions, though, and regard the DSi200 on its own terms, for what exactly it is, and you will be staggered by the satisfaction it can deliver on all levels.

Sound Quality: 86%

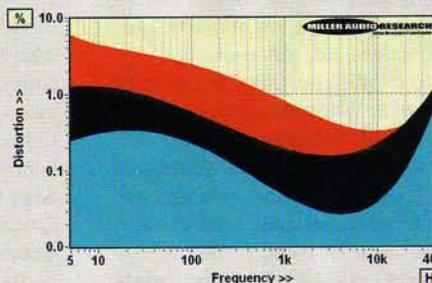


ARC's specification for the DSi200 is as interesting for what it does not contain as for what it does. Sure enough, the 200W/8ohm output is readily achieved at 2x230W/8ohm and a full 2x410W/4ohm with 270W/8ohm (<1% THD) and 450W/550W/4ohm (1%/2% THD) possible under dynamic conditions [see Graph 1, below]. Power output into lower impedances is compromised by high levels of distortion (from 3% at 10W/2ohm to 6.5% at 150W/2ohm). Claims for Class D efficiency are borne out with the DSi200 sustaining a 2x200W/8ohm output with just 480W drawn from the mains. As with some other Class D designs, the DSi200's frequency response varies with load impedance, rolling off to -0.2dB at 20Hz in the bass (-1.5dB at 5Hz) and -3dB at 58kHz following a broad ultrasonic treble peak reaching +2dB at 30kHz (all at 1W/8ohm). Into 4ohm, the response rolls directly away to -0.7dB/20kHz and into 2ohm falls to -4.0dB/20kHz. The tougher the load, the less 'brilliant' it will sound.

The real key to the DSi200's character lies in its unusual trend of distortion versus power output and frequency [see Graphs]. We can see that distortion is at a minimum in the upper midrange/treble from 1kHz to 10kHz but increases at lower frequencies, reaching 0.3% at 20Hz/1W [blue trace, Graph 2], 1% at 20Hz/100W [black trace] and a full 3.8% at 20Hz at an intermediate 10W [red trace]. This same increase in distortion at 5-50W output is also clearly illustrated by the dynamic output plots [Graph 1]. The effect? The DSi200 will doubtless sound 'different' depending on speaker sensitivity and load impedance, the volume played and spectral content of the musical genre! PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red) and 2ohm (blue)



ABOVE: Distortion versus extended frequency from 5Hz to 40kHz (blue trace = 1W/8ohm; red trace = 10W/8ohm; black trace = 100W/8ohm)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	230W / 410W
Dynamic power (<1% THD, 8/4ohm)	270W / 550W (<2% THD)
Output impedance (20Hz–20kHz)	0.012–3.1ohm
Frequency response (20Hz–100kHz)	-0.2dB to -14.6dB
Input sensitivity (for 0dBW/200W)	65mV / 942mV (balanced in)
A-wtd S/N ratio (re. 0dBW/200W)	76.2dB / 99.1dB
Distortion (20Hz–20kHz, 1W/10W)	0.025–0.33% / 0.32–3.7%
Power consumption (Idle/Rated o/p)	35W/480W
Dimensions (WHD)	480x133x362mm