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WELCOME...

HI-FI CHOICE MAY 2010 ISSUE 332

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For those of you who braved the wind, this year's Bristol show was one of the better ones. Inside, Malcolm Steward reports on what has turned out to be one of the biggest 'Bristols' ever and picks out some of the most exciting new products seen nestling in the hotel suites. *Hi-Fi Choice* was out in force and it was great to meet so many of you at our stand and get

the chance to answer your questions.

It's easily said, but this month we really do have something for everyone. From Pro-Ject's £190 Genie 3 turntable, 'universal' speaker stands and CD-improving gadgets, up to real-world CD and amp systems from Micromega to our £4,000 coverstar the Copland CDA-825. Whatever your preference, we've got something to suit your budget.

Dan
Dan George Editor

WHY WE ARE NO.1 FOR HI-FI...

- Since 1975, *Hi-Fi Choice* has delivered the world's most thorough, most reliable no-nonsense guide to buying high-performance hi-fi.
- Every issue contains a potent mix of the latest hi-fi news, views, music, reviews and in-depth tests, brought to you by a prestigious team of expert writers who are the best audio journalists in the UK.
- Our test regime is the most rigorous in the business and we are the only hi-fi magazine to offer 'blind' listening sessions, along with user-friendly laboratory tests in our six-way *Ultimate Group Test*.
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THE MOST RESPECTED NAMES IN HI-FI JOURNALISM...



PAUL MESSENGER

A former *Hi-Fi Choice* editor, Paul has been writing about his beloved hi-fi hobby for more than 30 years. In that time he has become one of the world's most respected scribes, and he is undoubtedly the UK's foremost loudspeaker reviewer



JIMMY HUGHES

With more than 40 years as an enthusiast under his belt, Jimmy is one of the country's best-known hi-fi experts. His knowledge of system-matching, hi-fi-tweaking and record-collecting is unmatched in the industry



RICHARD BLACK

Richard is a professional musician and recording engineer and a highly knowledgeable hi-fi analyst to boot. He has a knack for writing about complicated subjects in a readable way – and he only writes for *Hi-Fi Choice*.



MALCOLM STEWARD

Former editor of *Hi-Fi Review* magazine, Malcolm was one of the best-known and most outspoken reviewers of the 1980s and 1990s. He currently edits hi-fi industry bible *The British Audio Journal* and also writes exclusively for *Hi-Fi Choice*



ALVIN GOLD

Alvin has been writing about his obsession for more than 25 years. In that time he has contributed his encyclopedic knowledge to almost every hi-fi periodical you can think of (and several more besides). He is widely regarded as one of Britain's finest hi-fi reviewers.



JASON KENNEDY

Jason Kennedy was a former editor of *Hi-Fi Choice* and spent an incredible 17 years on the title. Now he's back as a freelance writer and using his considerable hi-fi expertise to contribute to the UK's best hi-fi title.



ED SELLEY

A highly knowledgeable audio expert, Ed has worked for a number of prestigious manufacturers including Cambridge Audio and Yamaha. Specialising in product support and development, he brings a wealth of professional and enthusiast knowledge to the pages of *Hi-Fi Choice*

To ensure you get the best information, opinion and advice, *Hi-Fi Choice* employs the most knowledgeable and experienced hi-fi writers in the business.



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HI-FI WORLD

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Ultimate guide to high-performance hi-fi, gathering together all our favourite products for you. Updated monthly...

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And receive a QED Reference Audio Evolution interconnect worth £85

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MORDAUNT-SHORT PERFORMANCE 2 LOUDSPEAKER

This stylish standmount is packed with high-tech design

⊕ If you've been forced to admire Mordaunt-Short's Performance 5 and 6 floorstanders from afar because of a lack of space, your lust for their curvaceous cabinets and unique tweeters may now be required. In the diminutive Performance 2, the company has combined its distinctive moulded cabinet, Aspirated Tweeter Technology and aluminium Continuous Profile Cone mid/bass drivers in an enclosure just 24 centimetres tall.

Cast resin cabinets may not be new – Celestion produced the Kingston in 1995, with its AlphaCrystal mineral-loaded polymer enclosures – but the P2, like the more expensive alternatives from Vivid of South Africa, is an altogether more advanced incarnation of this concept. It seeks to optimise rigidity and minimise standing waves like the Kingston, but its manufacturing process is considerably more complex. According to the company, the way it's able to vary the density of the resin means the outside of the enclosure is very hard, while the inner section offers high acoustic damping and low levels of energy storage. The aesthetic result is genuinely innovative and can be brought in Midnight black, Granite grey and silver, along with optional £495 matching stands.

Another genuinely eye-catching feature of the Performance 2 is its tweeter. Despite looking

superficially similar to the tweeter fitted to Bower and Wilkins' radical Nautilus snail-shell speaker and its offspring, it operates in a very different manner. The former uses a tapered line behind its metal-dome tweeter, whereas Mordaunt-Short has employed its Aspirated Tweeter Technology, the rear radiation from the driver exiting into the room to give its presentation a greater sense of space.

The Continuous Profile Cone mid/bass drivers operating beneath the tweeters benefit from more than the obvious cone profiling and subtle-added bracing around the cones' periphery, to improve its rigidity and its behaviour at the upper roll-off point. In a bid to reduce moving mass and improve dynamic response without compromising heat dissipation, the voice coils are made of titanium, wound with copper-coated aluminium. Careful modelling of the magnetic circuit has apparently yielded reduced levels of third-harmonic distortion and extended bandwidth, with the variable-thickness surround helping too.

Alongside British and German resistors are polypropylene capacitors, paralleled up for best sound in a manner familiar to many DIY speaker builders.

Price: £2,495 **Due:** now ☎ 020 7940 2200

🌐 www.mordauntshort.com

LOGARITHMIC SPIRAL ENHANCEMENT

Decoupled from the rest of the cabinet in its own enclosure, the tweeter's aluminium dome is rear-loaded by a metal rod with a logarithmic spiral of pipes, each tuned to different frequencies. Its aim is to create a very even acoustic impedance for the dome to operate against, reducing resonances and improving piston motion.





NEWS

QUAD II CLASSIC

The circuitry within the small Quad II Classic chassis integrated amplifier contains more than a nod to the past, seeing as Quad founder and hi-fi legend Peter Walker was responsible for the original Classic II pre and power monobloc. Though Walker is not responsible for this new amp, designer Tim de Paravicini has remained faithful to Walker's preferred cathode loading of the KT66s in the output stage, replacing the low-noise EF86 pentodes with dual-triodes. Power output is said to have increased to 25 watts over the original's 12 watts, yet despite this and the raised HT, the valves are run more conservatively thanks to decreased screen grid voltage. Upstream of the power section is a preamp equipped with three line inputs, full tape monitoring and an MM/MC phono stage.

Price: £4,500 **Due:** now ☎ 01480 447700 🌐 www.quad-hifi.co.uk



SPENDOR A9

Mixing a claimed sensitivity of 90 decibels with the ability to handle up to 250 watts, Spendor's A9 combines tradition and new technology. Traditional for the company is the relatively thin-walled enclosure and its panel resonances controlled by small, low-mass constrained polymer dampers at key points. Also new is the 15-centimetre midrange unit, which runs from 500Hz all the way up to 5kHz, thereby avoiding placement of the crossover point in the critical vocal range.

Spendor has integrated the midrange unit with a 29-millimetre wide-surround tweeter and two 18-centimetre kevlar woofers through a phase-aligned crossover, offering a predominantly resistive load to amps. As this sort of impedance is an easy load, it should make the A9 a prime candidate for use with valve amps.

Price: £3,995 **Due:** now

☎ 01323 843474 🌐 www.spendoraudio.com



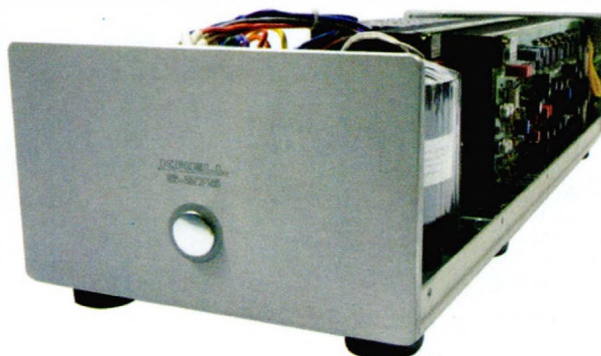
KRELL S-275

Krell Industries is known for creating massive amplifiers, but the diminutive S-275 and S-150 represent almost a volte-face. Where the company's monster Evolution 600 monoblocs weigh 68kgs each and stand almost a 30 centimetres tall, the two-channel S-275 occupies a mere half-the-width of a standard hi-fi component. Despite its space-saving dimensions, the S-275 yields 275 watts per channel and 550 watts, when used in mono mode.

Slimmer still is the S-150M monobloc. Housed within a case only seven centimetres wide is circuitry producing 150 watts (eight ohms), as well as the classic Krell trick of doubling its output as load-impedance halves.

Price: £6,280 **Due:** now ☎ 020 8971 3909

🌐 www.absolute-sounds.com



CREEK EVOLUTION 5350

Respected for his musical, involving integrations, Mike Creek has decided to up the ante when it comes to power with the slim-line Evolution 5350. Like the NAD C375BEE (reviewed in *HFC* 325), the Evolution is capable of delivering 200 watts into four ohms (and 120 watts into eight). In this completely fresh design, each power amp section is built as a module, using a high proportion of surface-mount components on a double-sided PCB. Fronting the power amps is a digitally managed analogue volume control and OPA604 op amps for the five inputs.

For the Evolution 5350, a linear power supply with a large toroidal transformer was chosen over a switching PSU, though Mike confirmed to us that he's working on a switching power supply, modified to meet audiophile standards, for future full-width Creek equipment.

Joining the 5350 is the new 80-preset £650 Destiny AM/FM tuner.

Unusual in being DAB-free, its circuitry again includes SMD components alongside leaded, with no fewer than three mains transformers supplying power separately to digital, analogue and standby sections.

Price: £1,075 **Due:** now

☎ 01442 260146 🌐 www.creekaudio.com



NAIM UNITISERVE

Naim's prototype UnitiServe ripper/server allows CDs to be ripped to its 1.5 terabyte hard drive. It's also capable of handling 24-bit/96kHz files, with control provided from either an iPhone app or a laptop.

As any content on the single internal HDD can be transferred to a Network Attached Storage drive, presumably the vital backing-up of valuable music is done on an external drive (though this may change as the prototype matures towards its anticipated release date of the middle of this year).

Price: £tba **Due:** summer 2010 ☎ 01722 426600

🌐 www.naim-audio.com

GRADO IGI AND GR8

Grado has just unveiled its iGi and GR8 models. While the firm's flagship PS1000 is a heavy circumaural type, the new cans represent a departure for Grado in that they're both in-ear designs, built around proprietary drive units.

Given the small diameter of their barrels, the £88 iGi and £295 GR8 are designed, according to Grado, to sit well within the ear canal. This method offers an effective air seal, says Grado, resulting in the wearer experiencing a noticeable improvement in bass response and reduction in background noise.

Price: £88 (iGi); £295 (GR8) **Due:** now ☎ 01279 501111

🌐 www.armorhome.co.uk

SUGDEN MASTERCLASS HA-4

Silver soldered to the gold-plated PCBs of Sugden's HA-4 headphone amp are hand-picked components intended to drive even tough headphone loads. The front-end of the HA-4 consists of a variation on Sugden's own VCV preamp with its current-feedback topology, while the output stage is built around MOS-FETs operating in class A, with zero negative feedback.

For use with balanced sources, one of the HA-4's set of input sockets is XLR, the other single-ended RCA. There are also two outputs including headphone and a pair of RCAs.

Price: £1,395

Due: now

☎ 01924 404088

🌐 www.sugdenaudio.com





ISOTEK SYNCRO

Most audiophiles will be very familiar with the idea of filtering RFI and other noise from the mains, but may be less aware of the detrimental impact of DC on their electrical supply. IsoTek's new Syncro mains cable uses high-voltage capacitors housed in an aluminium cylinder to block this DC, which can be caused by switching power supplies, heavy inductive loads (such as high-horsepower electric motors on industrial estates) or power amps with very large banks of reservoir capacitance.

One of the commoner symptoms of mains DC is transformer hum. Toroidal transformers are particularly badly affected, as their ungapped cores saturate more quickly than the lossier cores of EI frame transformers. IsoTek claims the Syncro, with its Extreme power cable and deep cryogenically treated copper plug pins and IEC contacts, improves timing, bass depth and dynamics.

Price: £875 **Due:** now ☎ 01276 501392
www.isoteksystems.com

FM SCRAPPAGE: DISCOUNT ON DAB RADIO PURCHASES

The UK radio industry is considering an analogue radio scrappage scheme. Given the fact that only about 20 per cent of radio listening is currently done on DAB sets, it's difficult to see how a discount on pricey, power-hungry sets will get FM listeners flocking to DAB.

The predicament in which DAB now finds itself is similar to that of Sony's Mini-Disc format, which was superseded by a better technology which offers more choice and relatively little outlay – internet radio.



ITUNES CLOCKS UP 10 BILLION DOWNLOADS

Eddy Cue, Apple's vice president of Internet Services, said of the company's achievement, "We're proud that iTunes has become the number one music retailer in the world and selling 10 billion songs is truly staggering."

On the other hand, veteran audiophiles who recall the golden era of hi-fi may be less thrilled by the ever increasing dominance of music retailing by compressed formats and the inevitable demise of CD. The 10-billionth download was *Guess Things Happen That Way* by Johnny Cash, which sums it up really.

10,000,000,000

10 billion songs downloaded from iTunes. And counting.

WE HEAR...

Mike Creek has confirmed he's working on a digital preamp with 35-bit processing resolution, which includes digital volume and tone controls as well as time-alignment for the drivers in the Epos Encore 50 loudspeaker (see review in next month's issue). There are plans for a non-CD-based transport and DAC too, though these are likely to be some way away.

Digital news from **Arcam** as well, where work is under way on an affordable DAC. With its USB, coaxial and optical inputs, the small converter is expected to sell for around £300 later this year.



Soundbites



AKG, renowned manufacturer of headphones and mics since 1949, has received a rare and prestigious Technical Grammy for the positive, long-term impact its products have had on the film and recording industries. It's in elevated company, as this year's other winner, very posthumously, was Thomas Edison.

www.akg.com

ATC fans will be heartened by the company's announcement of a 200-watt class D module which can be fitted to the IB15-A three-way and SB100-A subwoofer to make them active, particularly as the modification takes only a few minutes.

www.pmc-speakers.com

THE CHORD COMPANY'S Crimson interconnect has been lifted to Plus status thanks to a number of changes to its structure. As well as the addition of a braid and foil shield, a softer layer of PVC is situated beneath the hard PVC protective outer covering. Connection is via RCA or the Naim-orientated DIN.

www.chord.co.uk

NAIM has just released an update for its Uniti one-box system manufactured before February this year. Naim dealers can install the support for 24-bit/96kHz (and 24/88.2) playback of wav and FLAC files, as well as other improvements, in about 30 minutes.

www.naim-audio.com

ROTH AUDIO'S new wi-fi dock and speaker system for iPods has been christened CHARLIE. CHARLIE features a pair of 15-watt powered full-range speakers and the aforementioned dock for £199, while 2.1 adds an active subwoofer, an extra 10 watts to the main speakers and £100 to the price.

www.rothaudio.com

BOWERS AND WILKINS' Society of Sound downloads wing has extended its library of high-resolution 24-bit downloads with new recordings in FLAC lossless, one of which is Peter Gabriel's latest album, *Scratch My Back*.

www.bowers-wilkins.com

ERRATUM

Last month, we incorrectly listed JBL's UK distributor as Harman Audio. The correct contact details are: CSE Custom at www.csecustom.com. ☎ 01423 359054

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HI-FI NEWS

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HI-FI CHOICE

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HI-FI WORLD

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"The whole auditioning process took about 30 seconds. Play a piece of music on GII Mini Sub. Play it again on Aquarius and wonder why you were so attached to the GII Mini Sub." "Very highly recommended"

HI-FI PLUS. ISSUE 68.



SIRIUS



ACCESSORIES



ORION



VISION



SIGMAS



TITAN

Bristol Show 2010

Malcolm Steward finds plenty of new and innovative kit at this year's Sound and Vision event

Without doubt, the Bristol Sound and Vision show is the most important audio event on the UK calendar. Despite the well-known problems associated with hotel room acoustics, Bristol is still the best

place for side-by-side audio demonstrations and the opportunity to see the biggest names in hi-fi all under one roof. Some of the trends this year included servers and streaming amplifiers, with both old and new names showing innovative

new products in the high end. Yet, at the opposite end of format scale, analogue was still strong with brands such as Audio Note and Tom Evans flying the flag for valves 'n' vinyl. Here are some of the highlights from the weekend...

1 Olive's 4HD UPnP-enabled audio server was the first item to catch my eye and I will be reviewing it in these pages very soon. If it sounds anywhere near as attractive as it looks, I will almost certainly need to smash the piggy bank. The company also makes a complementary player, the Melody 2.

2 Arcam has brought its Solo all-in-one into the internet era with the new streaming Solo Neo. We also sneaked a photo of a prototype Arcam DAC, which boasts an asynchronous USB connection – something that is rarely found on current DACs. About the size of a paperback novel, it is expected to cost around £300 when it goes on sale in the summer.

3 So if you want a UPnP renderer and internet-streaming amplifier, Naim Audio introduced the £1,350 UnitiQute, which is fundamentally a half-sized Uniti all-in-one player without any CD mechanism. However, if you need a CD drive – for ripping to network or its 1.5 Terabyte of internal storage – in a 'Qute' enclosure, you might prefer the UnitiServe, which is expected to be in production this summer.

1. The extremely funky Olive 4HD server



4. A collection of colourful Chord Electronics casework



4 Chord Electronics brought a welcome splash of colour to hi-fi with the launch of its compact Cyan Click wireless-enabled amplifiers and established Chordette models. It would make sense for other manufacturers to follow Chord's lead here so that busy journalists could always quickly identify the new products in the room. "If it's green, it's been seen, but if it's blue it is new..." perhaps?

3a. The far more interesting rear view



2. Arcam's prototype of its £300 DAC



3. Not much of interest on the front of the UnitiServe





5. The tidy-sounding NEAT Motive SE2

5 One can always rely upon **Neat Acoustics** to deliver a pleasingly musical demonstration and the company did not disappoint this year. It was showing its forthcoming compact Motive SE2 floorstander, which sounded imperturbably cool and composed, even when playing dub reggae at an appreciable volume level. They are expected to retail for about £1,350.

6 Those who crave mental quantities of beautifully controlled bass for their hi-fi or home cinema, should investigate the **Paradigm** Signature SUB 2 subwoofer. Weighing in at about 15 stone, it uses six ten-inch drivers – two stacked on each of three radially arranged baffles. Response is claimed to extend to 7Hz and 112 decibels at 10Hz, thanks to its three-kilowatt amplifier.

7 **Pro-Ject** always aims to deliver high-end sound quality at low-end prices and its latest attempt certainly looks an adventurous move. The company has introduced the Essential turntable, that comes complete with a uni-pivot tonearm and an Ortofon cartridge at



6. Killer bass – literally – from the SUB2



7. The £150 Pro-Ject Essential and uni-pivot arm



8. The suave Musical Life Jazz II Reference turntable

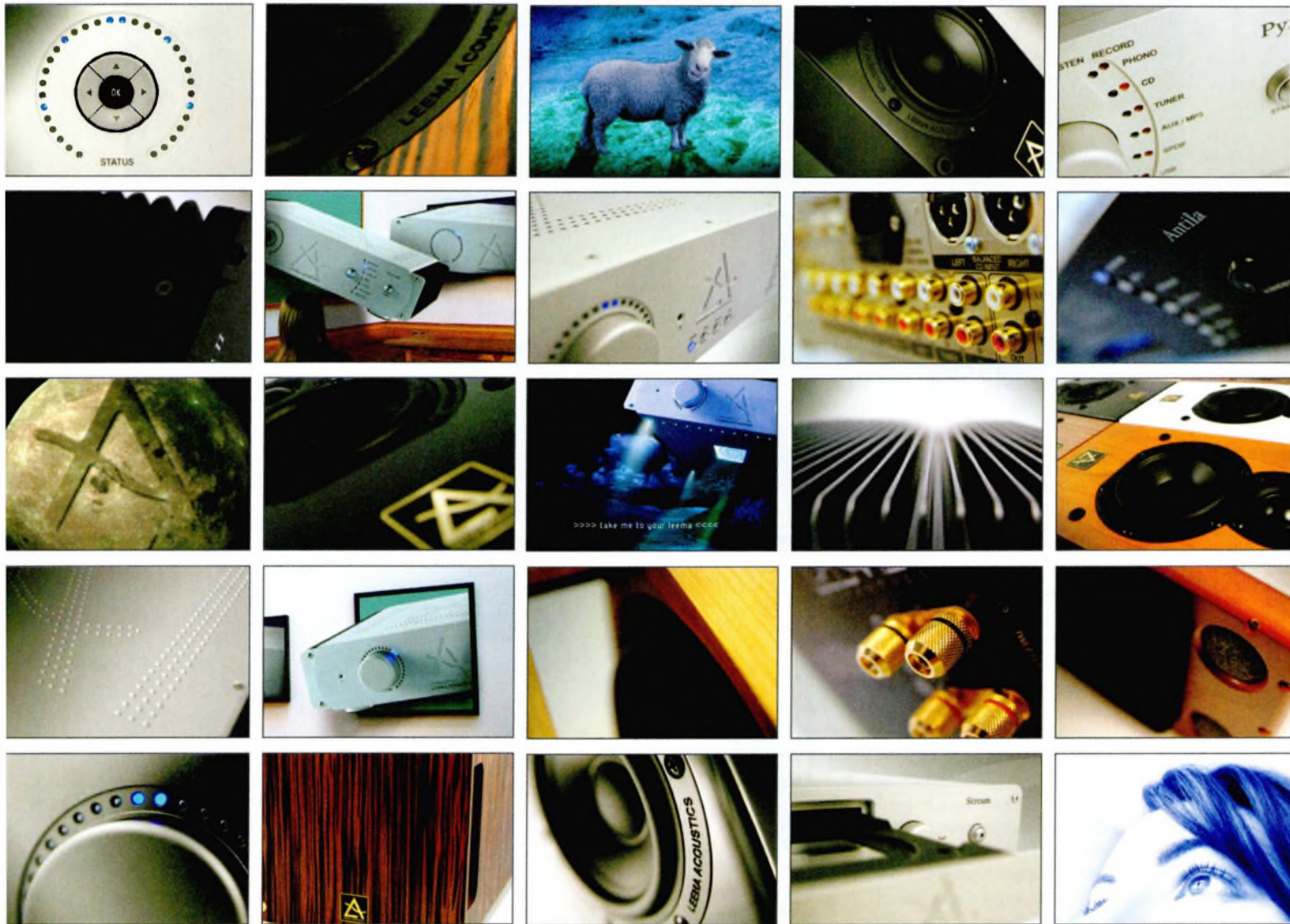
the bargain basement price of just £150 for the complete package.

8 Many German high-end turntables resemble hideous, chromium-plated, sausage trees, but the **Musical Life** Jazz II Reference, imported by

Ikon Audio Consultants, breaks the mould by looking almost as distinguished as the finest English (or, more accurately, Scottish) examples of the breed. Ikon also had an interesting range of French electronics from Isem on show, including the Elixis integrated 24/192kHz DAC and preamp. ▶



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9. NO HOME CINEMA; that is a fact

9a. Plenty of dBs from the eight-watt Meishu



10. The Cabasse BC13 co-axial driver.



9 **Audio Note** had a sign pinned to its door warning potential visitors that they were in for a strictly audio only experience within the room. The Zero transport /DAC2, Meishu eight-watt integrated and Type E loudspeakers were making entrancing sounds with some astonishingly heavy rock when I visited.

10 **Cabasse** was demonstrating a fascinating system consisting of Belles amplification with the Oracle CD2500 and the Cabasse Bora loudspeaker, which looks like a standard two-

way but is really a three-way, thanks to the discreet BC13 co-axial midrange and tweeter. It sounded gloriously detailed, yet coherent playing some hi-res rips from a laptop source.

11 The same was true in **Tom Evans'** room, which was running an all-Evans system, including the loudspeakers, fronted by a latest-generation Townshend Rock turntable. Ben Harper was sounding suitably 'herbalicious' and was thoroughly entertaining several listeners to whom the song's lyrics seemed to be a complete mystery. ▶

11. Burning one down, Tom Evans' style



12. The Chord Company Solstice interconnect



12 The Chord Company was proudly displaying its £1,500 per metre Solstice interconnect, which was also being used by several other manufacturers, along with the new £40 per metre Crimson – updated with a screen and new sheathing. Surprisingly, given the impoverished state of our nation, Chord cannot manufacture enough Solstice to keep up with the exceptionally excessive customer demand.

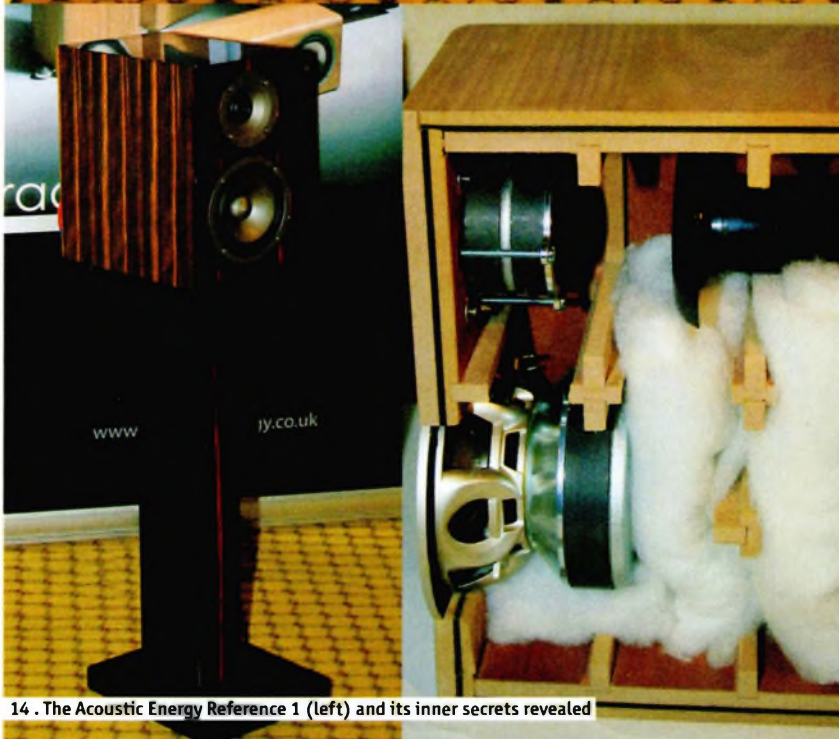
13 Former Acoustic Energy engineer, Steve Philips has set up **SP Acoustics** to produce the delightfully retro, but not in the least retro-sounding, SP1 loudspeaker. Two versions are available: the bespoke finished, domestic SP1 at £14,950 and the less exotically attired SP1M professional model at £11,950. Steve builds to order so virtually any finish can be had.

14 My last call just happened to be the **Acoustic Energy** room, where the beautifully finished and sharp-sounding Reference 1 and 2 were playing. These impressive-sounding loudspeakers are almost a homage to the legendary AE1 and AE2, that set the company on the road to success back in the 1990s.

Bristol 2010 provided a fascinating, albeit brief glimpse into the current state of play in hi-fi. The majority of rooms were demonstrating music systems and easily outnumbered home cinema displays. There were more computer-audio style devices on show than ever before, yet there was also a considerable amount of vinyl to be seen and heard.

Moreover, while there was quite a few elderly fans about, there was a greater number of younger guys and girls in attendance. That has to be encouraging news for an industry that needs to attract new buyers to keep pace with changing times.

13. Retro looks, but modern performance from SP Acoustics' SPM1 loudspeaker



14. The Acoustic Energy Reference 1 (left) and its inner secrets revealed



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For the PMC IB21



Richard Black

Richard Black is a professional musician, recording engineer and a highly knowledgeable hi-fi analyst to boot. He writes about hi-fi exclusively for HFC

Technology

Do switching amps using 'Class D' offer anything of value?

Class D used to be used only for applications like public address, where light weight and power efficiency are everything. It's rapidly spreading to hi-fi, though, thanks to trail-blazers such as Bang and Olufsen's 'ICE-Power' modules. Now even the high end is catching on. Audio Research and Mark Levinson currently both have switching amps in their range, the latter costing tens of thousands of dollars.

Not all of these are strictly Class D, but let's not worry about semantics: they are switching amplifiers in complete contrast to the linear amps we're familiar with and they all offer enhanced electrical efficiency compared with linear amps.

I'm all in favour of saving natural resources and ditto of innovation in home electronics, but there are some question marks here. First, since we're in hi-fi-land, is the sound quality decent, and can these amps match linear models? Actually, I don't really see why not – in principle. I was there when we tested an Onkyo switching amp as part of an *Ultimate Group Test (HFC 278)* a couple of years ago and it did stonkingly well in the blind listening.

Mark Levinson's line is that its No.53, which uses a proprietary kind of switching technology (not Class D), sounds better than conventional linear amps and shows the way for more affordable amps in future: I haven't heard it, but industry gossip suggests this isn't necessarily empty boasting.

What's more, switching amps should require less heatsinking and less case volume, and heatsinks and cases are expensive. Save on those aspects and you can spend more optimising the circuit, so in terms of sound per pound, switchers may end up with some advantage.

What interested me, though, as I considered this topic, was just how much power a Class D amp can potentially save. The usual efficiency figures quoted for different classes are 50 per cent for Class A, 77 per cent for Class B and around 90 per cent for Class D, which sounds conclusive. At low outputs the efficiencies of all are much worse. So I created a simulation of a classic Class B linear amp and fed in a few pieces of real music at different playback levels. Sure enough, efficiency was terrible, typically around 10 - 40 per cent.

But even with dynamically 'flat' pop music, a 100-watt amp only has an average output of 10 watts or so, when playing at maximum volume. As a result, its heat output is in the region of 30 watts per channel. Since audiophiles don't often listen to highly-compressed music, most of us are probably 'wasting' an average of perhaps 25 watts during a listening session, plus whatever excess is due to the Class AB operation, perhaps another 10-15 watts. Then there are power supply losses, but Class D has those too – and as I said above, it's not 100 per cent efficient in itself.

There are lots of ramifications and other considerations (for example, a 200-watt linear amp playing to 100-watt peak output wastes nearly twice as much power as a hard-driven 100-watter). The average audiophile is probably 'wasting' a few tens of units of electricity a year by not using a Class D amp. That's the energy equivalent of driving three or four miles a week.

So if a switching-output amp sounds good, buy it. Don't, however, be blackmailed by rhetoric, however well-meaning, about it saving the planet. **HFC**



Onkyo's A-933 amplifier fared really well in the HFC listening test

"The average audiophile is probably 'wasting' a few tens of units of electricity a year by not using a Class D amp."

Somehow Coventry didn't seem such a bad place after all



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Dominic Todd

Dominic Todd began his hi-fi career in the retail business and has been a freelance hi-fi reviewer and columnist since 1993

Is time up for DAB+?

New technology is being threatened by the rise of Internet radio

"For audiophiles like us, the great advantage Internet radio has is not the countless stations, but the promise of decent sound quality."

When I developed a keen interest in hi-fi in the eighties, I recall a school of thought which suggested that all you needed for audio Nirvana was a decent amp and speakers, a quality tuner tuned to Radio 3 and a massive, roof-mounted aerial; no other media was required. They had a point. Having heard a Naim NATO1, served by a substantial 10-element aerial, playing through Quad components I was seduced. Only a wider interest in music than Radio 3 could offer at the time and a desire to build a personal collection of records and CDs prevented me from sticking with FM for good.

Still, from that day onwards I always treated FM with great respect. Something which, I'm afraid, I've never been able to say about DAB. The launch in 1995 was impressive enough and the fact that hi-fi stalwarts, Arcam, were firmly behind the technology was good news. Some years after this, I even remember the first ever separate DAB tuner (the Alpha 10) sounding quite good. Then again it did cost £800 and had been intensively developed. This was also in the days before the government decided on channel choice over higher bit-rate. Interestingly, others did not follow *en masse*. Sure there was a handful of Cambridge Audios, Denons, Pures and Sonys, but nothing from those bastions of FM, Naim. Tellingly, if you choose to buy a separate tuner from that company today, then it will still be FM only.

The Achilles heel with DAB has always been the antique codec, MPEG-2. Trying to get sound approaching 'spacious' and 'dynamic' is a thankless task from such a blunt compressor. Recently we've seen DAB+. Using the far superior AAC+ codec (as used in the iPod) this could be the saviour of DAB.

However, as with uncompressed MiniDisc, I fear this is too little, too late. For a start we're only just starting to see the first tuners with DAB+ built-in. Secondly, the BBC has yet to even transmit in this country.

What increasingly looks like killing DAB+ off before it even gets a hold, is Internet radio. It's been around in the UK for about the same time as DAB (Virgin radio first 'webcasted' in March 1996) but has recently been gaining momentum. For audiophiles like us, the great advantage internet radio has is not the countless stations but the promise of decent sound quality.

Although we're still waiting for a separate internet radio tuner that resembles a full-size separate, the technology is now widely available, such as with the Naim Uniti, while other manufactures are in the final stages of developing hi-fi that involves internet radio/streaming accessibility. Of course, accessing quality internet radio has never been especially easy. The interface is certainly more complex than the traditional dial or button tuner with the bit-rate quality not even displayed in some cases.

The radio stations are showing promise, too. Although many still webcast using MP3, the bit-rate used is occasionally as high as 192kbps and up to 160kbps with popular stations such as KISS and Magic. This compares favourably to the reduced 160kbps mostly used by Radio 3 on DAB – and that's using the even older codec MPEG-2, don't forget. Better still, a vast range of radio stations from Absolute to XFM use the superior AAC+ and Ogg Vorbis codecs. In effect, many radio stations are already using the compression technology that's still to go live in the form of DAB+.

Only an extreme optimist would hold out any hope for the long term future of DAB+. To misquote Churchill, I see a difficulty in every opportunity for DAB+ and not an opportunity in every difficulty. **HFC**

The recently launched Cambridge Audio 650T showcases DAB+ but where are the stations?



Roksan

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Effective 1st November 2009, all Roksan electronics and turntables supplied via authorised dealers are to be covered by a 5 year parts and labour warranty.* As a gesture to existing customers, this will also be extended to all current owners of K2 products.

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* terms available upon request



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Richard *Black*

Richard Black is a professional musician, recording engineer and a highly knowledgeable hi-fi analyst to boot. He writes about hi-fi exclusively for HFC

"If there's one thing I've learned in 20 years of reviewing hi-fi, it's that 'sound quality is everything' is hogwash."

Hot topic

Does the current fashion for external DACs make all digital sources equivalent?

DACs are back. Indeed in high-end circles they never really went away (think dCS and Chord for instance). But whereas once upon a time they served just one purpose - making old CD players sound better - they now have a multitude of sources to deal with, from Internet radio to CD to high-res downloads.

They've also given new life and importance to an old question: does it matter what digital source you use to feed a DAC? Once this referred to the difference between CD players and transports, but now it includes computers and servers of all kinds, not to mention DVD players, Blu-ray... In fact, anything with a digital output. Can a cheap netbook computer, or an elderly budget CD player, match a £5,000 dedicated CD transport for data integrity?

The fact is that it can. I can feel the dissension heading my way even as I type this, but I've tested these things and got bit-perfect data, time after time, off all sorts of cheap and crummy devices. The expensive ones do that too, but they don't actually improve on it - often they don't even read dirty or damaged discs any better.

Yes, I've heard of jitter. I've seen it in my measurements and I've heard it in my listening tests. I've also seen it banished beyond the thresholds of measurement and audibility by well-behaved DACs, and those are the ones that are going to make all digital sources sound the same. (Yes, I've also heard of conducted interference, but I'm a little sceptical of its relevance in most instances of this scenario.)

Recovering jitter-free timing from the incoming data in an S/PDIF data stream is not trivial

and doing it from a USB stream is downright tricky, but it can be done. By strict engineering standards, any DAC that doesn't do it is broken, unless the jitter is really, really bad.

All the same, how do you know if a particular DAC has good jitter rejection? It's hard to tell by listening because you don't know how much jitter your various sources are putting out, so really all I can honestly say is 'trust us'.

Anyway, doesn't this put manufacturers of expensive CD transports in a slightly dodgy situation? Not only them indeed, but CD player manufacturers, whose products may not necessarily sound any better than a £230 Cambridge Audio DacMagic (or your favourite budget DAC)? Are they all selling pricey turkeys?

No. For a start, given what I just said about not knowing what the jitter situation is like (and what I wrote a couple of issues ago about not always knowing when a computer is resampling or otherwise altering data), you at least get some peace of mind. But beyond that...

If there's one thing I've learned in 20 years of reviewing hi-fi, it's that 'sound quality is everything' is hogwash. If the analoguous logic doesn't apply to cars or wristwatches or clothes or etc. etc., why on earth should it apply to audio? We spend money on luxury goods, sure we want them to work: but more than that, we want them to look great, feel great and give us thrill when we use them. A £200 netbook just gives you a brief gloat for being a clever cheapskate, followed by the annoyance at its small, plasticky fiddliness.

I'm not quite in the mood to suggest that you therefore buy that £5,000 transport. Rather, I've a serious question for manufacturers of such things: why are the functions no better than those on my 1986, £200, Marantz? Yes, the buttons are smarter but they do the same and I want better search features, at least. Come on, people, is this really the best you can do? **HFC**

The highly popular DAC favourite; the Cambridge Audio DACMagic



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Ken Kessler, Hi-Fi News (November 2009)

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Alan Sircom, Hi-Fi+ (Issue 66)

*'The Summit X is just too addictive to live without. I'm putting
my money where my mouth is and buying the review pair as
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Howard Knefler, SoundStage! (September 2009)

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Jimmy Hughes

Jimmy Hughes is one of the country's best known hi-fi experts. His knowledge of tweaking and his record collection know no bounds

Fortress around your art

Once-mighty, classical record labels are in Dire Straits

"Sting's thin reedy voice is plain wrong for this music. Nor is his vocal technique equal to the music's demands."

It really pains me to visit Deutsche Grammophon's web site <http://www2.deutschegrammophon.com/> and see Sting's *If On a Winter's Night* in Pole Position. I mean – WTF is Sting doing on the world's premier classical record label?

Sting's previous DG release *Songs from the Labyrinth* (of music by the 17th century British composer John Dowland) is quite possibly the worst disc I have ever heard. I can't begin to explain how awful and misconceived it is. But let me try...

First off, the recording is horrible. Sting's dry, close-miked vocal line is 'superimposed' over a lute accompaniment that sounds pre-recorded in a more spacious acoustic. The songs are Delivered and Dispatched rather than Performed.

Sting's thin reedy voice is plain wrong for this music. Nor is his vocal technique equal to the music's demands. It's not idiomatic and sounds pretty ludicrous – as might an album of Police songs sung by countertenor Andreas Scholl.

Why do successful specialist performers want to Crossover? It's like comedians yearning to play Hamlet or Lear – the lure of showing people you can do something completely out of character is just too tempting to resist.

Sometimes it works – like Lenny Henry's recent *Otello*. But usually it doesn't. It's as inept as those albums by classical singers who decide to release a record of jazz or pop songs. When classical singers attempt jazz or pop, their strict disciplined training almost invariably results in stiff unidiomatic performances that sound embarrassingly self-conscious. Few succeed in pulling it off.

Perhaps, only Elvis Costello has done Crossover with any sort of consistency. His collaborations have been very diverse – Burt Bacharach; Anne Sofie von Otter; the Brodsky quartet – but always interesting and challenging, musically.

Costello himself released an album of sad, intimate love songs on DG back in 2004. Called *North*, it's actually an extremely good disc and I like it very much. But again, what is it doing on a classical label? Costello's *The Juliet Letters* I could see on DG, but not *North*. Perhaps, *North* was Quid Pro Quo for DG's 2004 recording of Costello's derivative and not very interesting ballet *Il Sogno*, sales of the former offsetting (lack of) sales from the latter.

Speaking as a record buyer, I don't want Elvis Costello or Sting on Deutsche Grammophon. It's not musical snobbery; I wouldn't like to see Horowitz or Herbert von Karajan making records for Stiff, either. Labels should specialise.

A record label's identity is created by the music and artists it records. It intentionally discriminates. It's like religion; God might be One, but the paths to Him are distinct. Sting on DG is like having Moneychangers in the Temple.

For decades now, there's been this insistence on breaking down musical barriers. Music is just Music, we're told. Categories are meaningless – all that matters is that the music is good. Sorry, I disagree. I like steak and custard – but not together, thanks.

I'm not saying don't innovate or think outside the box - artists should not be type cast. Apparently, legendary Decca producer John Culshaw wanted to record Bizet's *Carmen* with Edith Piaf in the title role. Now that would have been fascinating! But DG releasing records by Sting and Elvis Costello just smacks of commercialism – an eye for a quick buck – rather than artistic vision. Alas, this great label is looking more and more like the expertly embalmed corpse of a once noble and beautiful creature. The life-force – like Elvis – has long-since left the building. **HFC**

STING
SONGS FROM THE LABYRINTH
MUSIC BY JOHN DOWLAND • PERFORMED BY STING AND EDIS KARAMAZOV



Deutsche Grammophon releasing Sting recordings! Has the world gone completely mad?



TRIODE CORPORATION TRV-CD4SE CD PLAYER | TRIODE CORPORATION TRV-88SE INTEGRATED AMPLIFIER |
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Retro feel

Jimmy Hughes gets all nostalgic about a hi-fi trio with retro appeal

This month's *Beautiful System* conveys a distinct retro look. The musical presentation is 'retro' too – displaying an acute sensitivity to differences between recordings that echoed the way many 1960s/70s hi-fi systems behaved.

My recollection of '70s hi-fi systems is that many were very pernickety – totally dependant on the quality of individual recordings. Today's hi-fi systems tend to be much more even-tempered. Most will play a wide range of recordings, which is good; as it means you can concentrate on the music without 'sound quality' getting in the way.

This Triode/Triangle system sounds great because the loudspeakers have an exceptionally capable tweeter. Dynamically, the Trio doesn't hold back – it sounds uncompromisingly immediate. Alas, this is a double-edged sword, making it picky about recording quality and partnering equipment.

WELL HARD

With the TRV-88SE amplifier, retro is about more than just tubes and styling. Unlike most modern amplifiers, this one is actually hard-wired. Rather than signals running through tracks on a printed circuit board, all components are linked together by wires. Forty or fifty years ago, every amplifier was made like this. But not now.

From the late '60s onwards, as transistors replaced valves, more and more amplifiers featured components mounted on circuit boards. Nowadays, even some of the most expensive American tube amps are made like this – only a small handful of modern amplifiers are hard-wired the old-fashioned way.

So what? I hear you say. Who cares? Well, I care. Hard-wiring produces superior sound quality and delivers big improvements in clarity and transparency – everything sounds cleaner and more 'real'. But that begs the question – if hard-wiring really is better, why don't more manufacturers make use of it?

It all boils down to – time. Hard-wiring is a very labour-intensive process that does not lend itself to mass production. Effectively, every hard-wired amplifier is hand-made and takes maybe three or four times longer to build. The risk of assembly-errors is increased, so the person building the amp has to be more knowledgeable.

The TRV-88SE's build quality is reassuringly solid. It's a surprisingly heavy little amplifier and during extended use it gets fairly warm. Fortunately, the seven tubes are protected by a removable cover. The amplifier has low residual noise (hiss and hum) – useful, as the Triangle speakers are highly revealing of noise.

FAUX-PAS

The Triode CD4SE CD player features a tube output stage – using a Russian 6922EH (ECC-88). But here the circuits are laid out on a printed circuit board – not hard-wired. Both amp and CD player each have what might be called a design/styling faux-pas. With the amp it's those phono sockets sticking out the front.

Now it's no bad thing having connection sockets on the front, especially for reviewers – it saves us having to grope around the back of the amp when you only want to connect something quickly/temporarily. I just wish the sockets had been flush-mounting types – having them stick-out spoils the clean/clear lines of the front panel.

The CD player's faux-pas is having the on/off switch where you'd expect to find the disc load/eject button. But, never mind, it's the sound that counts. With a tube-based CD player and hard-wired, all-tube amplifier, you'd expect the sound to be clean, luxuriously smooth and treaclyrich – and it is (sort of).

However, the Triangle Genese Trio loudspeakers added an unexpected twist. The use of a horn-loaded tweeter creates amazing presence and immediacy. The music sounds very crisp and articulate, allowing lashings of detail to be heard. Alas, there's a downside. The Triangle



Triode Corporation
TRV-CD4SE CD player
£1,895

24bit/192kHz upsampling hybrid tube/solid-state CD player, featuring a 6922EH tube and BurrBrown PCM-1792 DAC. Unbalanced and balanced analogue outputs, plus digital output for an external DAC.



Triode Corporation
TRV-88SE integrated amplifier
£1,895

Hard-wired all-tube design featuring four EL-34 output valves, plus two ECC-83s (12AX7s) and one ECC-82 (12AU7). Three unbalanced line level inputs, plus headphone socket and outputs for six or eight ohms with bandwidth quoted at 10Hz to 100kHz. Distortion, <0.1 per cent at 1kHz. S/N ratio 90 decibels.



Triangle
Electroacoustique
Genese Trio
loudspeakers
£1,400

Compact, two-way ported design with tapered cabinet featuring a horn-loaded high-frequency driver T22500. 90-decibel sensitivity, frequency range 45Hz to 20kHz +/- three decibels. 18-ohm nominal impedance – 4.4 ohms minimum.



▣ Trio is more revealing than Lady GaGa's red dress.

BACK TO THE FUTURE

Back in the '70s, many hi-fi systems could sound mightily impressive given the best-quality recordings. But play something recorded in the 1950s (especially mono) and the experience could be painful – the sound would seem rough, boxy and hopelessly dated.

The Triode/Triangle system is a bit like that. On clearly recorded, well-balanced material the sound would wow-you with a combination of presence, immediacy and super fine detail. The music sounded 'alive' and very involving, seeming to jump out of the speaker boxes, while effortlessly filling the room with music.

The tonal balance produced by the Triangle Trio speakers is quite bright. In some ways, they remind me of electrostatic headphones. There's a similar crispness, immediacy and outstanding transparency – plus the same tendency to highlight faults.

Stereo is impressively wide and (on the right recording), soundstaging can be amazingly holographic. For such a small enclosure, bass depth is reasonably full. At 20Hz there's quite a bit of doubling, but by 50Hz the bottom-end sounds full

and clear. However, bass depth is only part of the story.

TRICK OR TREAT

On well-recorded material, the sound is quite fabulous. But, on technically less-immaculate recordings, the results are mixed. These speakers highlight faults (noise, distortion, bad microphone placement) with frightening exactitude, and the sound easily becomes aggressive and edgy. It's Trick or Treat every time.

Leonard Bernstein's 1970 CBS recording of Verdi's *Requiem* (Sony) illustrated the problem. I had the original CBS LPs forty or so years back and listening was always something of a white-knuckle ride. Deja-Vu on CD, via the Triode/Triangle.

The engineering shortcomings of this old set were ruthlessly exposed – big time. Although newly remixed for CD, the production really showed its age; excessively wide stereo separation, obvious multi-miking of the four soloists, a harsh thin-toned choir and dry close-perspectives despite the ample Royal Albert Hall acoustic.

Of course, the faults described are down to poor engineering. But the seriousness of the various problems, subjectively and their ability to spoil your enjoyment of the music and performance

was greater than it might have been. The immediacy of the treble emphasised faults that most other speakers would have treated more kindly.

Such a tweeter poses problems. Something frisky like this is always going to be tricky to integrate. The Trio exacerbates matters because it's small and has a bass/mid driver that lacks comparable sonic immediacy. As a result, the upper frequencies dominate because they're not offset by an equally capable bass/mid performance.

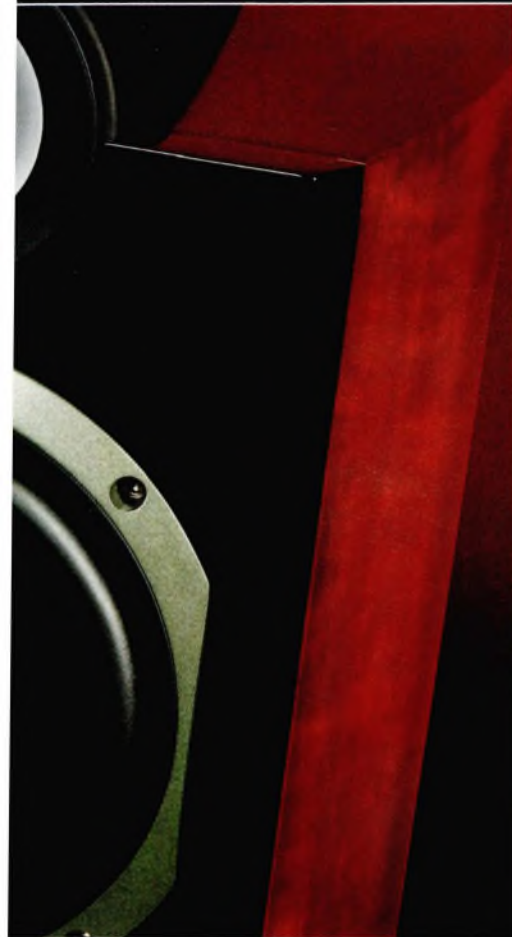
You're bound to get this sort of result when a tweeter that's so extraordinarily hot is paired with a bass/mid that's perfectly good, but just normal. My guess is, Triangle wanted to offer this phenomenal drive unit in a less costly loudspeaker for those unable (or unwilling) to afford one of their bigger models.

VELVET REVOLUTION

Using the Triode CD player and amplifier with my own Impulse H1 speakers, I was impressed with the velvety warmth and smooth refinement produced by these items. In particular, the TRV-88SE amplifier strikes me as being exceptionally good – solid, clean and very focused, with outstanding transparency and clarity.

The amplifier's musical presentation is crisp and immediate, yet brilliance is not





sacrificed on the altar of refinement. The sound is delicate and silky-smooth, with outstanding finesse. There's a liquid clarity, ensuring voices and instruments retain their individual qualities – both in terms of timbre and dynamics.

The Triode CD4SE CD player is good too. Dynamically, it's a tad understated and slightly lacks the breadth and separation of the amplifier. But the sound struck me as very smooth and clean, with good detail and dynamics. I was sometimes bothered by (what sounds like) saturation distortion during heavy complex passages.

With more time to experiment, I would have tried replacing the player's 6922EH tube. Unfortunately, there wasn't time to procure one. Curiously, the 'fault' isn't always there. But when it is, it sounds like analogue tape saturation – a combination of dynamic compression and congestion.

I felt both Triode components partnered the Triangle Trio speakers very well, exploiting the latter's strengths, while preventing the sound from becoming excessively bright and harsh. I briefly tried my own Musical Fidelity tube/transistor hybrid amp and was far more aware of that bright exposed top end.

The Tri TRV-88SE sounds far smoother and more homogenous. The tonal

balance remained bright, but the top-end did not become too overbearing on most recordings. While you do, in time, get used to this brightness, I find there are too many older, technically less-good recordings that are not easy to enjoy with this system.

Many mono recordings from the 1950s have a rather peaky 'forward' sort of tonal balance and the Triangles really emphasised this. I often play even older recordings that have been transferred to CD from shellac 78s and the Triangle Trios were not sympathetic.

This is how things were with many hi-fi systems in the '70s. However, back then, most systems sounded harsh or aggressive because connections weren't clean or tight, or poor-quality cables were used. Often, the sound wasn't especially revealing in musical terms either – the equipment was just hyper-sensitive to faults.

A system like this is quite different. It sometimes loses the plot because it doesn't hold back. If a recording is a bit peaky or brash, it gives you what's there without softening the edges. True, there is a degree of high-frequency exaggeration with these speakers, but essentially it gives you what's there.

While brightness is certainly a concern with the Triode/Triangle system, I still

like it very much. I'd kill for a set of those TZ2500 horn tweeters to use in my H1s! Given that my H1s have horn-loaded bass and mid drivers with an ordinary tweeter, they'd be perfect.

MELLIFLUOUS MEDIOCRITY

Most modern hi-fi systems do mediocrity and average so well, you're almost convinced you're hearing something good. This system doesn't do 'average'. Sonically, it's like a brilliant shooting star that lights up the dark sky, illuminating all around it. Sometimes, your fingers get burnt – but that's how it is.

Depending on the recording, the sound can be amazingly crisp and focused, hugely involving and exciting, or else brash, aggressive and totally over the top. It's not always a comfortable system to listen to and you can't always predict which recordings it will favour. But one thing's for sure – it's never bland or boring.

The smooth refined Triode electronics provide a perfect foil for the Triangle speakers, keeping them (relatively) sweet and clean, without suffocating dynamics or immediacy. On the right recording, the sound is awesome – you just won't believe the big holographic sound emanating from two tiny enclosures. **HFC**





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REVIEWS

Welcome to the HFC hardware reviews section – the only place for definitive tests of the latest hi-fi components. Our unique combination of extensive listening, unsighted comparisons and scientific lab reports, conducted by the UK's most experienced set of reviewers, ensures you're holding the most comprehensive and reliable guide to high-performance hi-fi in the world.



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OUR RATINGS EXPLAINED

Star ratings for various different criteria, like sound quality and value for money

Our overall conclusion

...nor an... we liked... point here is... to the job of... recommend you... uate bins with... raramatz's e800 player, the... 17 MkII M, which has excellent build and... e a very good impression in HFC 243. At... ame price there's also the Cyrus 7, a... ng all-rounder in a compact case... ter trying the Heart with the standard... s we switched over to the Siemens... grade, a comparison somewhat muddled by... e fact that it was a cold for hot swap – the... after a livelier... w tubes shone... hrough The Siemens-equipped player has an... n snappier sound with better timing that... es with dense material with remarkable... idence and ease. It even seems to be

You can find... lvised players for the... money. But few combine dynamics with fine... timing skills as effectively as this. **HFC**
Jason Kennedy

VERDICT

SOUND

★★★★★

FEATURES

★★★★★

BUILD

★★★★★

VALUE

★★★★★

OVERALL SCORE

★★★★★

HI-FI CHOICE

★★★★★

OVERALL SCORE

★★★★★

The things we like most about the product

The things we think could be better

The product's final score. All criteria are taken into account, but the emphasis is on performance. Components scoring four or more stars may qualify for an HFC Award Badge

OUR AWARD BADGES EXPLAINED



Best Buy

A component receiving the coveted Hi-Fi Choice Best Buy Badge has been judged to deliver excellent performance at its price point, thereby offering outstanding value for money.



Editor's Choice

This Badge is awarded only to those components that are judged to deliver reference-standard performance, regardless of cost. These products may be considered among the very best of their kind.

Turn the page for the most rigorous tests of serious hi-fi in the business...

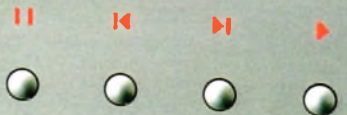
EDITOR'S CHOICE

HI-FI CHOICE
magazine



COPLAND

12 49 42



Classic reinvention

Is Copland's new CD player as good as its predecessor? Jason Kennedy makes the comparison

PRODUCT Copland CDA 825

TYPE CD player

PRICE £3,985

KEY FEATURES Size (WxHxD): 43x10x40cm

⊙ Weight: 8.5kg ⊙ DAC: 4x Wolfson WM8741

⊙ Digital apodising filter ⊙ Buffer circuitry

⊙ Transport mechanism: CD-Pro2LF ⊙ Resonance control casework

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For its CDA 825 CD player, Copland has gone back to the drawing board and come up with a totally fresh machine, one that is top-loading and incorporates a new type of filter utilising psycho-acoustic findings as the basis for its operation. Its styling is classic Scandinavian cool with absolutely no clutter nor inscriptions, save for the laser-cut lettering. This, combined with the circular top cover, makes it the best bit of design I've seen in ages.

But then Copland has a reputation for making high-quality, competitively priced audio electronics that often use valves alongside transistors. So when it brings a new CD player like the 825 to the market, we're always interested. Unfortunately, that doesn't happen very often: the last time was five years ago and it cost less than half as much as its replacement. That model, the *Hi-Fi Choice* award winning CDA 823, was a dynamic and involving machine and a tough act to follow.

REMAKE, REMODEL

Copland has not just put the building blocks of the CDA 823 into a more contemporary case, it has totally redesigned the player from the ground up. There are some similarities however. One is the use of buffering in between the output of the transport and the

DACs. Most players stream direct from the disc drive to the converter, but Copland has isolated these elements with a two-second buffer, the purpose being to eliminate timing errors or jitter in the bitstream. By using a solid state buffer and re-clocking the data as it is sent out, the DAC is fed a signal that has no timing errors.

The top-loading transport was selected because in Copland managing director Olé Möller's words "I find top-loading CD players to be the most sexy-looking CD-playing machinery." Conveniently the Philips CD-Pro2LF mechanism he chose for the player was

"It's a thrilling experience to find out just how beautiful, powerful and enthralling your music collection is."

developed with this type of operation in mind: it sits under a large round lid that opens sideways on a chunky brass bearing and needs to be removed in transit. The transport mechanism itself is suspended on springs which rest on brass bearings. It doesn't move a great deal when you press it, but there is clearly some compliance there and must help keep resonance at bay.

The chassis itself has been optimised to isolate the player from the low-frequency vibrations produced by loudspeakers. Tap the top and it doesn't seem all that solid, but this is because the damping system isn't designed for high-frequency resonance and doesn't use rubber or plastic. Instead, it has carefully placed fixings – you can see all six top-plate bolts – which tune out the sort of resonances it has to deal with in real life.

One surprise on the CDA 825's spec list is the suggestion that a lot of players don't use


full error correction because they aren't always implemented by chip manufacturers. Möller explains more about this in our interview (see page 36), but apparently cost considerations lead to decoder chip sets being used that do not include some key elements of error correction required for red-book CD replay.

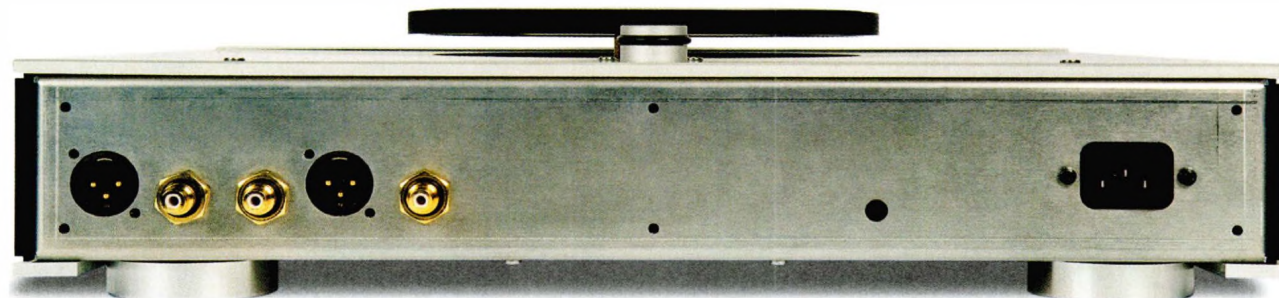
On the digital to analogue conversion front, Copland has used Wolfson's well-regarded WM8741 24-bit/192kHz converter chips with two in each channel. This dual-differential approach produces a balanced output that is designed to eliminate noise. It's a tried and tested route in high-end digital sources that

offers a benefit, whether you use the single-ended or balanced outputs. The analogue output stage is devoid of op-amps, employing instead a total of nearly 300 components in a discrete dual-differential construction – unlike some of Copland's amplifiers, there are no valves in this player.

Going against the growing trend for offering digital inputs like USB on modern players, Copland has produced a dedicated CD spinner with only outputs, analogue and digital. It is therefore as committed to its task as the clarity of casework design would suggest and you have to wonder whether those into PC audio would be in the market for a player at this price.

CUTTING EDGE

Our CDA 825 is a pre-production example and therefore not entirely representative. That said only the back panel doesn't look like the 



Q&A

We spoke to Copland's MD Olé Möller about his latest CD player.



HFC: You say that "the power supplies in the CDA 825 are designed to eliminate reverse modulation towards the transformers". What benefit does this bring to performance?

OM: The power supply regulators of the CDA 825 have been designed in such a manner that the current draw, the load, as seen by the transformers is constant. A consequence of this design concept is that the individual power supply regulators don't 'see' each other through the primary feeds of the transformers. The main advantage of this scheme is that the individual power supplies experience optimal working conditions; there is no modulation and very low noise present in the feeds to the regulator stages. You mention that certain error correction systems are not always used for cost reasons. Was this the case with the 823? I cannot provide exact information as to the degree of error correction implemented in the CDA823. Nevertheless, there has been a historical evolution in the chipsets for decoding of CD. The early chipsets did not implement all aspects of the error correction scheme because of manufacturing limitations. Around the second and third generation, the full error correcting capabilities were implemented giving top notch error correction. Around this time the quality of discs became so good that many chipset manufacturers decided that full implementation was no longer needed, consequently it was cut out (for cost reasons). The decoder in the CDA 825 has the full error correction capability required for red book CD.

How did the apodising filter affect the sound of the prototype?

The filter has a positive impact on the sound quality. It constitutes a part of the non-artificial, organic feel of the CDA 825.

Why doesn't it have a coaxial or USB input for use with other digital sources?

The design is optimised for CD playback and we did not want to introduce potentially performance degrading circuits. The CDA 825 is kept strictly to optimise playback of CD only – all different internal circuits are designed with this in mind.

finished article. It's cutting edge in terms of industrial design, the way that the silver top and bottom plates sandwich black side panels is a very nice touch and I'd challenge anyone to come up with a cleaner bit of fascia design. The way that the button functions are described by backlit symbols is extremely well executed. The slight lack of solidity in the top panel may be down to the non-production nature of this sample, but it's not all that encouraging despite the logic of its approach when it comes to resonance control – you want a product that feels as good as it looks at this price.

The circular lid is very neatly executed and the swing action rather sexy and I like the way that in order to prepare it for transit you need to remove the knob at the rear so that the lid swings round 180 degrees and then lifts out. The gap between lid and case on our sample seemed a little high, apparently it will be two millimetres in production which would look better. The remote handset is also very nicely designed and executed, it looks generic but that could be because ours isn't yet badged. It has an alloy front with a rubberised back and is ergonomic and tactile, something that's surprisingly rare with more expensive handsets.

In value terms there is some pretty stiff competition on the build front, Esoteric is one of the strongest in this department and its X-05 feels like a rather more expensive machine and one that also plays SACD for that matter. Naim's CDX2 CD player is a little less expensive (£3,325), but offers the company's high-build quality and enviable residual value.

MAKING AN UNDERSTATEMENT

Understated in appearance and sound, this is a remarkably neutral and undemonstrative machine. Yet it becomes apparent after a few tracks that it has a hard to define appeal that stops you from pressing the next track button, let alone stop or pause. A few more tracks and I realise that the appeal lies in what is absent rather than present, namely that this CD player doesn't exhibit grain or glare, something that the vast majority of digital sources produce when you play piano or female vocals. This is some revelation and I can't help thinking that it has something to do with the apodising filter that set out to

eliminate a flaw in digital systems that has not been tackled before. Whatever it is, it works like a dream and I stop thinking why doesn't this player sound super transparent and turn my attention to how I can get the system to be more revealing. One question is why did PMC have to take back its FACT 8 speakers? Their incredible openness would have revelled in the calmness of presentation from the Copland.

The transparency is, to an extent, a factor of warm-up: two or three hours are not enough and a weekend later there is no shortage of resolution on offer. The player doesn't have a bright, super clean sound but it reveals an awful lot of harmonic detail right across the band – it's more of an analogue balance in fact. Not warm or in any way smoothed off in the mid or treble but devoid of digital crispness, in practice this means that small bells have a pure, shiny ring to them and bass drums have weight and power while the midband lets you hear right into the mix.

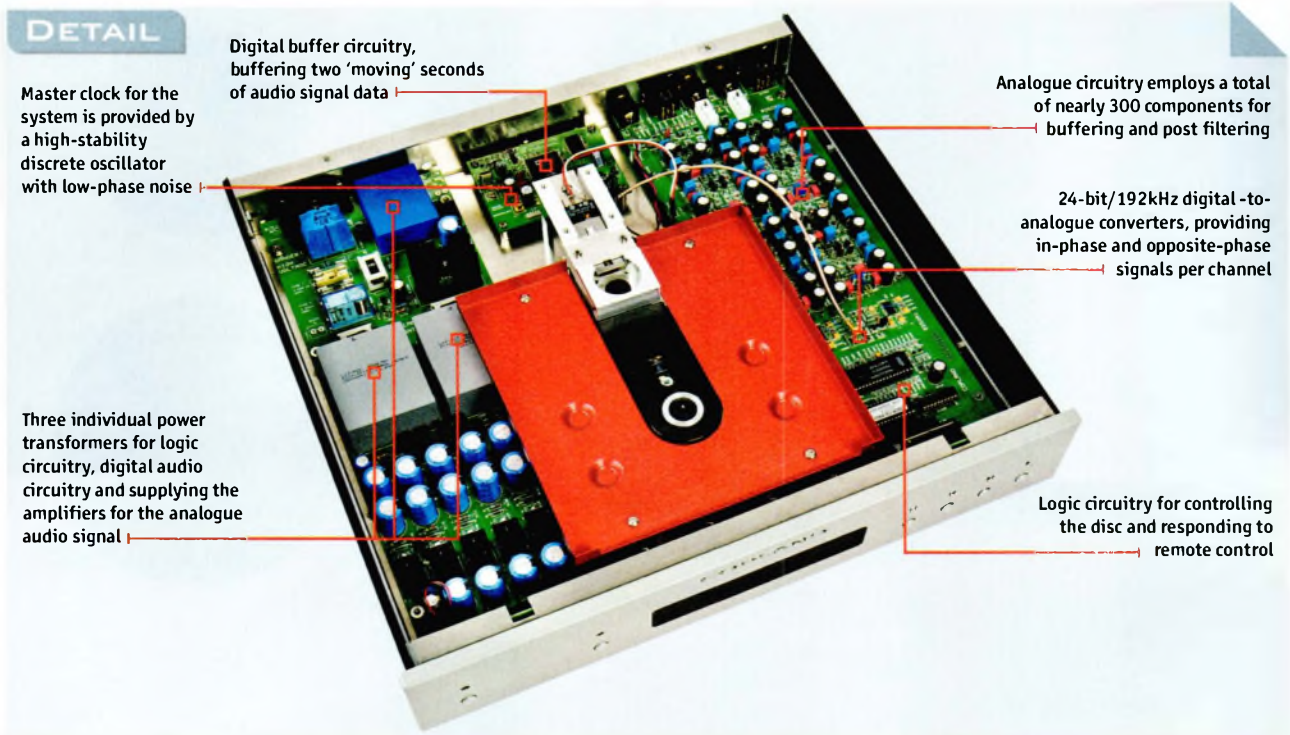
With a great recording such as Tord Gustavsen's *The Ground*, this means that the speakers disappear and let the musicians

BUILDING A SYSTEM

I asked Absolute Sounds' Ricardo Franassovici for his recommendations on building a system around the Copland CDA 825. He selected the CTA 405 integrated hybrid amplifier (£3,063), which uses a pair of KT88 valves per channel to produce 50 watts a side from a power supply and output transformers that are rated to deliver twice that. Equally as important is the fact that it shares the pared down aesthetic of the CDA 825 and both can be run from the same remote handset.

For loudspeakers, the distributor selected the Sonus Faber Liuto Tower (£3,371 per pair). This is a three-way design in a vented cabinet with a 220-millimetre alloy cone woofer, 150-millimetre midrange and 25-millimetre soft dome tweeter, which combine to produce a speaker with adequate sensitivity and finesse to match the amplifier. Two cabling options are suggested for audition, Crystal Cable Piccolo or Micro interconnect and speaker cable, or Transparent MusicLink Plus interconnects and Transparent MusicWave Plus speaker cable.





DETAIL

Master clock for the system is provided by a high-stability discrete oscillator with low-phase noise

Digital buffer circuitry, buffering two 'moving' seconds of audio signal data

Analogue circuitry employs a total of nearly 300 components for buffering and post filtering

24-bit/192kHz digital-to-analogue converters, providing in-phase and opposite-phase signals per channel

Three individual power transformers for logic circuitry, digital audio circuitry and supplying the amplifiers for the analogue audio signal

Logic circuitry for controlling the disc and responding to remote control

or their sound inhabit the room in a very solid fashion. It brings out the shimmer of the cymbals, the woody resonance of the double bass and the body and mass of the piano to spectacular effect. In fact, I don't recall hearing this sound being so evocative of the live event. If only more discs were recorded this well.

ONE LOUDER

Conveniently, even the less spectacular discs don't disappoint, they may not offer the same

TALKING POINT: APODISING FILTERS

Apodising filters were originally developed by Peter Craven, in order to combat time smear produced by pre-ringing in the brickwall filters used for CD's 44.1kHz sample rate. Brickwall filters create a 'ringing' on transients (the signal impulse) and this ringing is symmetrical around each impulse, which means that equal amounts of energy is distributed before and after the transient.

Human hearing has been proven to be much more sensitive to pre-ringing than post-ringing because in the time domain the latter is effectively masked by the transient. This is one reason why higher sampling rates sound better - it's not that we can hear the higher frequencies that are present, but that time smear is reduced by the increased bandwidth.

What an apodising filter does is to shape the impulse response in order to re-distribute this ringing, so that the majority is post-ringing. In other words, it comes after the impulse and is thus masked.

degree of realism but they have more going on in the mix than is usually apparent. Thanks to the aforementioned lack of grain you can play louder too, so the quality of musicianship is even more entrancing.

Inevitably, the Copland is unable to filter out distortion in the recording and this comes through with the music. A CD-R of the Portico Quartet's *Isla* just doesn't cut-it - the real thing must be acquired. Keith Jarrett's recent *Testament* disc is considerably more gratifying, the solidity of the piano and the stage it's sitting on is palpable thanks to the Copland's extraordinary control and speed in the bass.

It doesn't seem like a fast player in the manner of a Rega or Naim but the bass is extremely well defined, yet delivered in a totally effortless fashion. There's no undue emphasis of leading edges, which is not something you often encounter in audio sources of any persuasion.

It's not as open, nor as tonally rich as the AMR CD-777 (reviewed on page 56), but it does have a more even balance and is more revealing at low levels. In the long term these qualities will make it a more engaging and exciting player to use, because you can hear more of the music and less of the hardware. It's not as revealing as Moon's 750D (at twice the price), but has a slightly greater ability to engage your heart, mind and gut, especially if the latter enjoys killer bass. Even at sensible levels the bass has a weight and solidity that is thrilling. You may not be a bass head now, but once you discover what's lurking on your favourite discs I guarantee that you will be in future.

A THRILLING EXPERIENCE

The CDA 825 continues Copland's line of fine CD players. It's expensive, compared with its predecessor, but its sound and design are entirely in line with that price. In character it's not unlike an SME turntable: it doesn't seem particularly transparent, yet you can hear nearly everything about the recordings it plays.

At the same time as informing your head, this Copland lets the music play with your heart and it's a thrilling experience. The last time I encountered that sensation was with an £18,000 two-box EMM Labs, which puts things in context. Don't buy this expecting an instant hit that will fade over time, buy it to find out just how beautiful, powerful and enthralling your music collection is. You don't need a better reason than that **HFC**

VERDICT

SOUND
★★★★★

PRO
Uncanny lack of grain combined with great subtlety and resolution, this CD player could easily turn you into a bass junkie.

FEATURES
★★★★

BUILD
★★★★★

CON
Not as lavishly built as some and that two second lag is a little odd, but these are minor quibbles.

VALUE
★★★★★

CONCLUSION
This is a sophisticated and highly revealing player that avoids the usual pitfalls of its kind in order to deliver music in a remarkably realistic and engaging form. It also looks great too.

HI-FI CHOICE OVERALL SCORE ★★★★★

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Asparational

Elegant quarter-wave newcomer is a hit with acoustic material says Paul Messenger

PRODUCT Aspara HL6

TYPE Floorstanding loudspeaker

PRICE £4,300 per pair

KEY FEATURES Size (WxHxD): 18.5x93x34.5cm

○ Weight: 21.6kg ○ Drivers: 28mm soft dome tweeter, 160mm paper cone main driver ○ Staggered large rear/floor port ○ Quarter-wave loaded main driver ○ Solid oak front baffle ○ Treble level adjustment ○ Deflex pad panel damping

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steadily deeper and the back panel not only takes on a tilt to match, but also has a shaped cut-out that extends a little way up the back. This is part of the quarter-wave 'mouth', along with a carefully controlled slot between the rear part of the enclosure and the plinth,

The internal partition needed to create the folded quarter-wave line further serves to stiffen the enclosure sides.

The closer one examines this speaker, the more its innate class, quality and elegance impresses. It looks a rather pricey proposition ▶

“...the Aspara HL6 features quarter-wave loading, a technique that goes towards horn-loading, in a more compact form.”

Many enthusiasts love horn-loaded speakers, with their inherently high sensitivity, good control and vigorous dynamic expression. They originate from the mono era, when only one speaker was needed and valve amps had very low power, as well as the fact that full-size horns are simply too large for modern lounges.

Aspara's principals are both enthusiastic horn loudspeaker fans. Both were closely involved in the cult Impulse horns during the '70s and '80s, but recognise that most people find full-range horns altogether too bulky.

Which is why the Aspara HL6 – effectively a successor to the earlier, obsolete but still highly regarded Impulse H6 design – features quarter-wave loading, a technique that goes some way towards horn-loading, albeit in a more compact form. The end result is not unlike a transmission line, the main difference being that the quarter-wave line expands towards its exit and is relatively lightly damped, whereas the transmission line usually narrows towards its exit and has rather more damping.

STAGGERED TUNING

This is a simple two-way speaker, mounting a nominal 160-millimetre bass/mid drive unit with doped-paper cone in a necessarily complex, but very elegantly finished enclosure.

Most floorstanders tend to look depressingly monolithic, largely one suspects because joining four planks together and adding a top and a base is the easiest and least costly solution. However, it may not be the best way to add quarter-wave loading and this Aspara incorporates some interesting details to enhance both performance and appearance.

These are best seen from the rear, with most of the back panel being vertical, but about 22 centimetres above the floor the sides start to widen progressively, the enclosure becomes

creating an effective exponential exit. By these techniques, the length of the quarter-wave horn or pipe is subtly 'staggered' in order to 'spread' the tuning of its resonance across a wider frequency range than a straightforward quarter-wave pipe. Internal damping seems to be confined to Deflex pads – a visco-elastic polymer with a corrugated surface – strategically placed internally on some panels.

The main driver has a lightweight 115-millimetre doped-paper cone and a PA heritage, which means a powerful motor well suited to quarter-wave loading. It's substantially modified by Aspara, by removal of the 'whizzer' cone to improve upper range integration with the 28-millimetre soft-dome tweeter.

After extended listening tests, including working with electronic musical instruments, the design was finalised with Dulan silver cable feeding the main driver and cryogenically treated copper cable for the tweeter. The crossover network has a second order roll-off on the main driver, using Claritycap and Mundorf components, while a solitary top-of-the-line Claritycap feeds the tweeter.

Signal is applied to a single pair of high-quality terminals and physical stability is ensured by considerable depth and well-founded spikes fitted to the separate plinth. Last, but by no means least, a screw head in the middle of the terminal/crossover block allows the tweeter's relative level to be easily adjusted.

HEARTS OF OAK

The slim front view shows an attractively figured oak plank – not the best material for a front panel perhaps, but it's mostly there for decoration. It covers a carcass built from tougher and much less acoustically transparent 18-millimetre birch plywood and this is the surface onto which the drivers are mounted.

CUTTING-EDGE

The HL6 has a high sensitivity of around 90 decibels, alongside an easy amplifier load which stays comfortably above six ohms throughout. So far so good, but one consequence is a pretty rapid bass roll-off below 45Hz, largely because the quarter wave line here is tuned to a relatively high 60Hz.

The basic in-room far-field averaged frequency response is decidedly uneven, requiring +/- seven decibel limits to cover the whole audio band. The most significant problem area is around the crossover region, with a significant loss of lower treble energy, 3-7kHz. Pair matching is very good, however.



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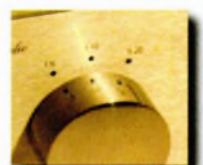
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at £4,300, considering the relatively simple basic ingredients, but the fine detail shows a number of neat touches. No grille is provided, but the two drive units are neatly rebated to keep the front flush and an attractive silver trim ring, embossed with the Aspara name, around the main driver frame. It's also nice to see the way the edges of the plinth have been chamfered and shaped, to avoid sharp corners and edges. These blend in with the base of the enclosure and increase the footprint.

Much of the remaining value is hidden, but detail ingredients like ClarityCap and Mundorf components, as well as Deflex damping panels are all highly regarded and don't come cheap, especially when production volumes are modest.

LAID BACK, BUT LIVELY!

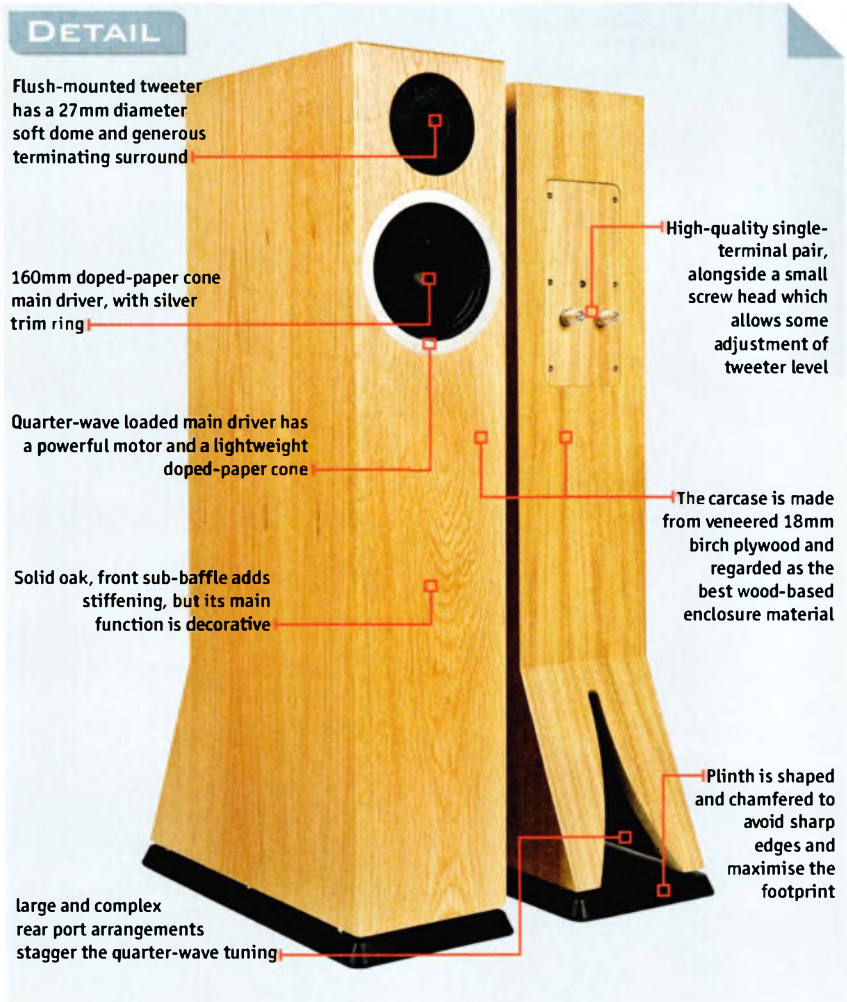
This loudspeaker is something of a sonic paradox. Although the underlying character of its quarter-wave-loaded main driver is unquestionably lively through most of the bass and midrange, there's also significant lack of output in the upper presence and lower treble. As a result, vocal sibilants and consonants are somewhat suppressed, to the degree that speech sounds distinctly laid back. Some might even describe it as 'shut in' or even 'muffled' and certainly it's necessary to increase volume somewhat higher than one might expect in order to maintain good intelligibility.

While that is a significant criticism from the point of view of absolute neutrality and doesn't really suit this particular listener's preferences, I suspect that some may well like this degree of presence restraint. One advantage, for example, is that the volume can be turned up high without causing the sound to become in any way aggressive or edgy. Another bonus – particularly enjoyed with classical material – is the fine stereo image airiness and spaciousness that this very restrained tonal balance seems to bring to the party

HORNS AND QUARTER-WAVE LOADING

The problem with conventional loudspeaker drive units is that although the diaphragm might appear to be quite light, it's considerably heavier than the air molecules that it's trying to excite. The problem is that it makes the transfer of energy from diaphragm to air quite inefficient. The analogy is trying to hit a ping pong ball with a cricket bat – a much lighter table tennis bat is far more effective.

With a horn (or to a lesser extent a quarter wave column), the air therein acts as an 'acoustic transformer' helping improve the energy transfer, while also serving to damp the diaphragm directly.



This isn't a smooth speaker, nor an even one, and it doesn't do deep bass either, but that seems to go with the quarter-wave territory. Happily, another characteristic of the breed is crisp clarity and a freedom from thickening through the bass region, which many will regard as more than fair compensation.

This agility and lack of overhang through the bass region seems to distinguish the quarter-wave approach from other bass loading techniques. And if it means such speakers lose out somewhat in terms of absolute weight and welly, the rewards are clearly audible in the natural realism heard when playing choral or other essentially acoustic material. Percussion too has a delightful dexterity and lightness of touch. The effect of the treble control is easily heard. It only operates above the presence zone, so doesn't dramatically alter the speaker's character. While the mod-point seemed about right, the best settings ought to be determined according to individual system and room characteristics.

CONTROVERSIAL

It took quite a while to adjust to this speaker's very restrained presence, but the effort ultimately paid off, because in other respects the HL6 has an inherent liveliness and a

freedom from overhang and thickening that's particularly persuasive with acoustic material. The sound of orchestral instruments such as violins has the genuinely realistic texture that is often glossed over by more conventional speakers.

This is an unusual and somewhat idiosyncratic loudspeaker that tries to hide its presence under a bushel, but ultimately wins through with its crisp dynamics elsewhere. It has its limitations, for sure, but also strengths that will easily win friends. **HFC**

VERDICT

SOUND ★★★★☆	PRO Lively character that's free from overhang; good sensitivity and an easy load.
EASE OF DRIVE ★★★★☆	It's also attractively designed with performance levels, as well as aesthetics in mind.
BUILD ★★★★★	CON There's limited bass extension and some lack of presence. Treble energy could also be better and does affect performance.
VALUE ★★★★☆	

CONCLUSION
Laid back but lively with it, this speaker is something of a paradox, but a very elegant one. Acoustic material sounds great and there are plenty of strengths in both its design and performance to heighten its overall appeal.

HI-FI CHOICE OVERALL SCORE ★★★★★

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www.scvlondon.co.uk

Distributed by SCV London: benchmark@scvlondon.co.uk

Record-setter

The Genie 3 takes on the turntable hierarchy and Dominic Todd keeps score

PRODUCT Pro-Ject RPM-1 Genie 3

TYPE Turntable

PRICE £190, (Gloss black, red or white £205)

CONTACT ☎ 01235 511166

🌐 www.project-audio.com

The Pro-Ject Genie 3 is built exactly how a budget turntable should be; solidly and precisely constructed with no clumsy mechanical or complex electronic devices to spoil the sound. It's also from a company whose Debut and Genie ranges have not only brought new blood into the vinyl market, but tempted back the more mature audiophile with basic, but well-engineered decks. Decks that are perfect for playing a favourite disc from a prized record collection.

MAGIC LAMP

The Genie 3 is typically evolutionary of Pro-Ject, yet features some pretty impressive technology at this price point. The decoupled motor unit stands out-effectively preventing noise and vibration from the motor interfering with the sensitive pick-up. A two-step pulley allows for the playback of both 33 and 45s by manual belt change, while the brand new 8.6 tonearm (like the famous Rega RBs) is now a one-piece, aluminium design for improved rigidity.

Internal wiring is silver-plated, high-purity copper and, as before, the counterweight is under-slung, lowering the centre of gravity and, hopefully, improving the tracking ability. Anti-skating is now adjustable via a thread and weight system, while the plinth thickness is up

from 24 millimetres to 30 millimetres for improved mass and rigidity and sits on three, fixed, plastic cones. Included with the Genie 3 is an Ortofon OM3e MM cartridge which, on its own, is worth about £40. Not included, however, is any form of lid or soft plastic cover.

For the money the Genie 3 is exceptionally well made. The motor unit is weighty and features a non-slip, damping pad. Its MDF

“Debut and Genie ranges have not only brought new blood into the vinyl market, but tempted back the more mature audiophile.”

platter is thick, but let down by the thinnest felt mat I've ever seen! The re-profiled MDF chassis is neatly finished with glossy, evenly applied paint and no nasty sharp edges; black and white finishes are also available. The tonearm is terminated by gold-plated phono sockets that allow a choice of leads.

IN-GENIE-OUS

Given its price, the Genie 3 sounds exceptionally good. Listening first with The Black Eyed Peas, I found the performance instantly involving with a cohesive, well-balanced sound quality. Vocals are naturally portrayed and cleanly separated from the rest of the mix, while the soundstaging is good enough to compete with turntables from a class above. Although the bass is on the rich side and certainly not as incisive as more expensive turntables, the timing is fine and the depth of sound trounces similarly priced digital

sources. The treble response is surprisingly well detailed although frequency extremes, such as high female vocals do expose some rough edges. Classical music shows a realistic instrumental timbre and good layering of the orchestra. By the way, the Genie 3 is well able to withstand cartridge upgrades, so try an Ortofon 2M Blue for added refinement and bass precision.

In terms of sound and build quality it's difficult to fault the Genie 3. A lid and a thicker mat would be worthy additions, but these complaints seem churlish next to the thoughtful spec and excellent construction. Equally, the sound is slightly compromised at frequency extremes, but overall offers a cohesive and seamless balance. A class leader. **HFC**

VERDICT

SOUND



FEATURES



BUILD



VALUE



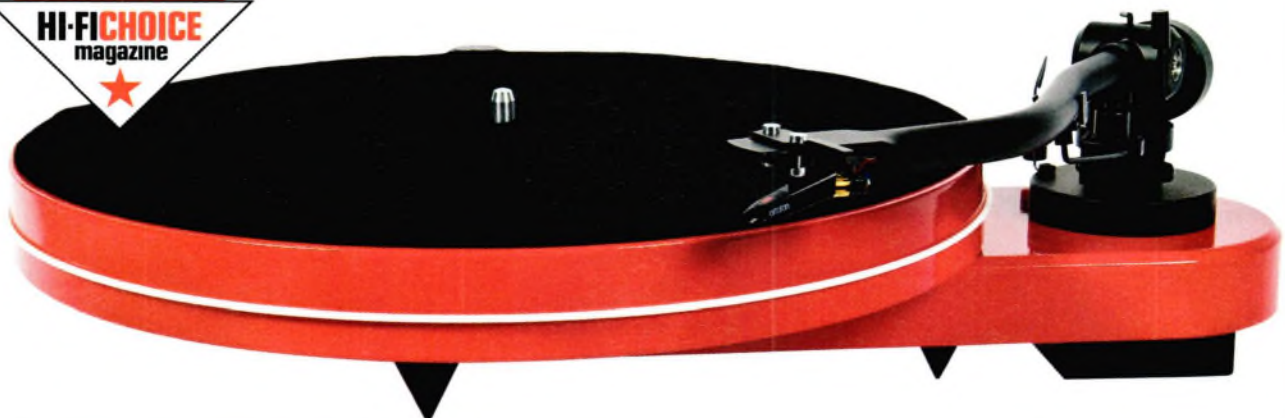
CONCLUSION

Involving sound, thoughtful design and value. The Genie is that rare thing of a product with good looks, fine build and excellent sound. For the money there's no better.

HI-FI CHOICE OVERALL SCORE



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Dual delight

Words like 'bold' and 'dynamic' spring to Alvin Gold's mind when he auditions this magic combo

PRODUCT Micromega CD-20 and IA-100

TYPE CD player and integrated amplifier

PRICE £1,249 (CD-20); £1,125 (IA-100)

KEY FEATURES (CD-20) Size (WxHxD): 43x6.9x26cm
 ● Weight: 4.5kg ● Outputs: 1x digital, 1x analogue
 ● Digital-to-analogue converter IC ● (IA-100) Size (WxHxD): 43x6.9x29cm ● Weight: 7.0kg ● Inputs: 5x line level, MM phono ● Outputs: Headphone ● Rated power: 100 watts (four ohms)

CONTACT ☎ 020 8971 3909

🌐 www.micromega-hifi.com

A CD player and integrated amplifier combo that supports a wide range of music sources and performs in a vivid and dynamic fashion might easily cause ripples among the competition. But coupled with their compact dimensions, reasonable pricing and Gallic charms, Micromega's CD-20 and IA-100 do just that... and more.

Curiously, at first sight, both appear to be relatively straightforward in design and operation and, unusually with this class of product, both are built entirely in France, rather than in the Far East. They also include some intriguing internal tweaks that definitely distinguish them from the crowd.

EASY ON THE EYE

The first thing you will notice when you decant them from their boxes is how long and slender they both are – slimline if you prefer. Yet despite this they're no lightweights. The amplifier case is made from galvanised steel, though the fascia is aluminium. The case structure of the CD-20 is mainly anodised aluminium. But, take a look through the perforated lid of the amplifier

and you'll see a massive heatsink extrusion to keep the output devices street legal. A system handset is supplied (with the IA-100 amplifier), but a dedicated CD player remote is available as an optional extra.

The main control's principal role is volume, using a digital rotary encoder calibrated by a micro-controller, but it can also be used to

“...the CD-20 and IA-100 are able to mould themselves to the contours of various types of music without underplaying...”

set channel balance and headphone volume independently of the main power setting. The rear panel socketry is fully insulated from the case structure, preventing ground loops, while the power is supplied from a detachable IEC lead, which can be replaced for one that auditions better.

PERFECT DISPLAY

The IA100 amplifier is equipped with a 10-digit, blue dot-matrix display, as well as six control keys to access the gold-plated inputs. These include five line level inputs, one of which is labelled iPod/iDok (sic) and an MM phono input. In addition, the amplifier has a tape monitor loop and a processor loop, where the volume level is controlled by an external processor. There is even a subwoofer input and usefully the amplifier can be used to power a 2.1-channel speaker system, with separate control over the subwoofer.

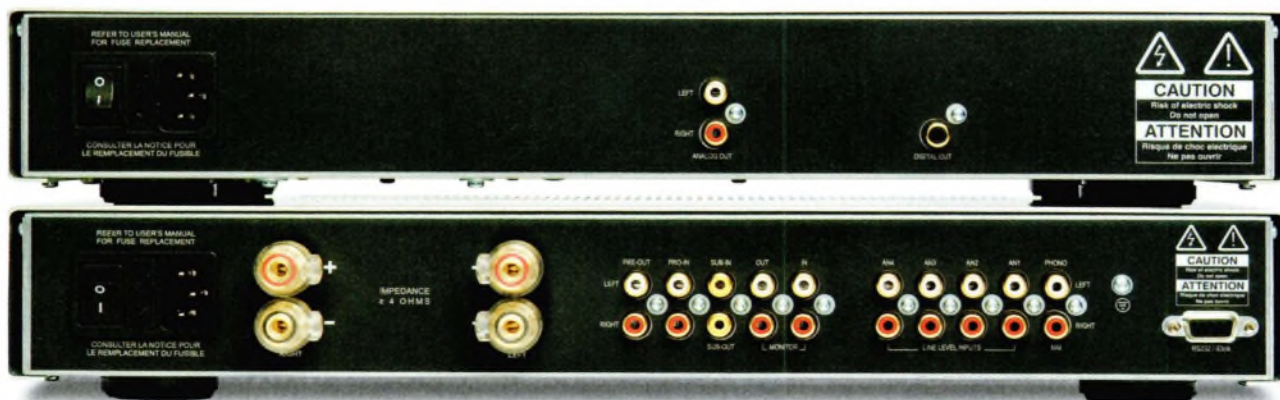
The CD player also has a 10-digit display with a control system that allows the drawer

speed to be specified and the display to be switched off. The player is also CD Text-enabled, but the display can be defeated, and so can the digital output. The player comes with a system remote control, but its ergonomics are messy and it is excessively button-bound. It would be good to see this improved in due course – or sooner.

These two components are one step up from Micromega's CD-10 CD player (reviewed in *HFC* 328) and its IA-60 amplifier. Enhancements in the CD player being the ACTS power supply, which has been optimised on the premise that the electromagnetic environment that CD players have to live in is increasingly adverse. An example of this Micromega points to the use of switch-mode PSUs in computers, televisions, DVD players and satellite receivers, all of which can generate a lot of noise.

The CD player works at a maximum output of 2V RMS, which means that a 16-bit design is required to operate down to the 30 microvolt level – a very tiny signal level, which is all too readily disturbed by externally applied interference.

The player's mechanism is teamed with a Philips SAA78247 controller and Micromega proprietary firmware and error correction. The D/A converter is an Analogue Devices AD1583 Delta Sigma design, operated in ▶



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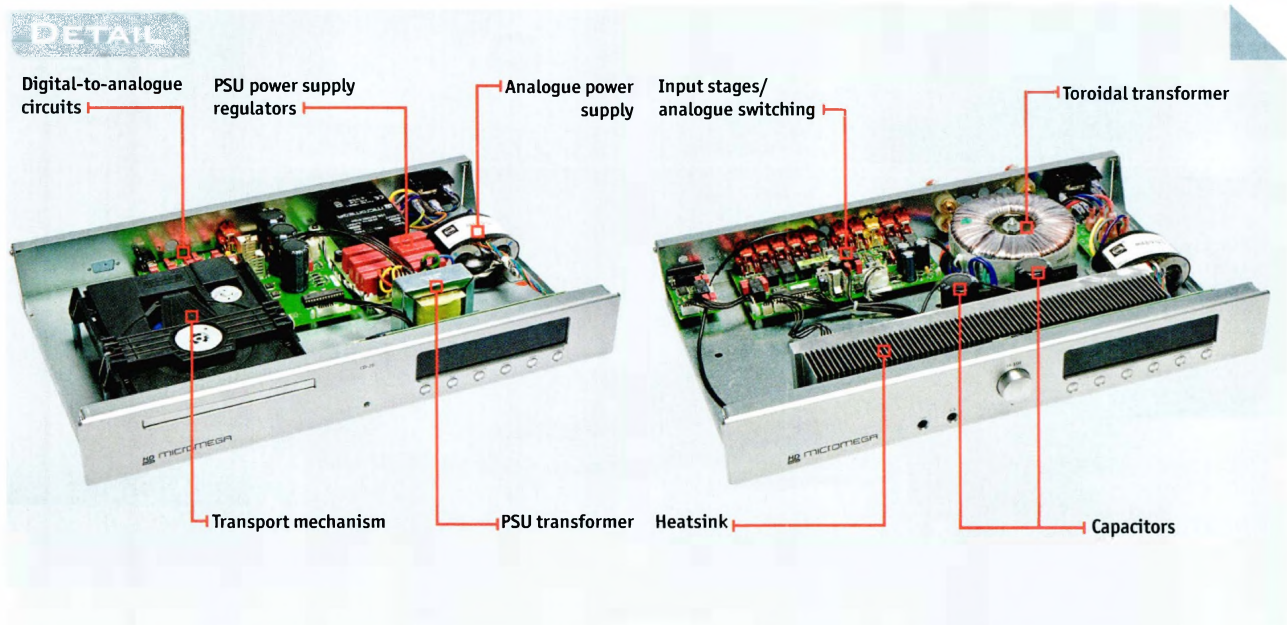
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□ differential mode with strong rejection of common-mode noise – a similar idea is used in the IA-100's amplifier power supply. The converter includes eight times oversampling of the 44.1kHz input signal, with a gentle third order Bessel low pass filter on the output.

The drive specified for the CD20 uses DVD mechanisms from either Sony or Sanyo, because, as the maker points out, they are readily available, of very high-quality and totally reliable. This is also by virtue of the fact that they are mass produced and, for this reason, under strict quality control.

R-CORE DESIGN

Technically, easily the most striking feature of the IA-100 amplifier is its use of two transformers. A relatively massive toroid for the power section was chosen because it is inherently quiet and can deliver a lot of power from compact dimensions. An R-Core transformer is specified for the preamp.

For those who are unfamiliar with such things, the R-Core transformers were popularised by Panasonic's Technics division. They have a much narrower operating bandwidth than toroids, which is exploited here to inhibit interactions between different areas of the circuit. Similar optimisation went into other elements of the power supply, including the bridge rectifier (which is rated at 25 amps continuous and 200 amps peak) and the detailed design of the phono input.

The main transformer in the CD player is an R-core design, chosen for a similar reason an R-core is used in the preamp section of the IA-100. Again, it has a relatively narrow operating bandwidth, which makes it easier to isolate the power supply from the servo and decode circuits.

WARMTH AND GRACE

At first sight, the CD-20 CD player appears to be quite similar to the CD-10. There is a comparable warmth and grace as well as a perceptibly and attractively lightweight quality to the sound (that I had already experienced from its junior sibling) but at the same time the player sounds well defined and disciplined. What I don't like about the CD-20 –and again this is a reprise of the CD-10 story – is that it is not an SACD player.

While I realise that this will be of no particular importance to some readers there are many like myself with a strong interest in acoustic material which benefits disproportionately from high-res coding. So no SACD facility is a real loss.

On the other hand, the amplifier's performance exceeds its price tag. In fact, it works surprisingly well driving loudspeakers like the Mordaunt Short Performance 6LE, a product that's not especially power-hungry, but is qualitatively demanding. On a play-through of the Red Book layer of Mahler's Ninth, performed by the Bamberg Symphony under Jonathon Nott, both Micromegas acquitted themselves extremely well, in particular in the electric Rondo Burlesque (3rd movement). Similarly, the combination sounds open and dynamic in the Beethoven string quartet No 10 Opus 74 from the Tokyo Quartet and the warm and cosy elegance of Madeline Peyroux's voice in *I'm all right* from *Half the Perfect World* album.

The impression given by these two Micromega components is bold, dynamic and confident, each offering a performance with clean, open textures. Both the CD-20 and the IA-100 are able to mould themselves to the contours of various types of music without underplaying the passions and tensions of each. In many ways the

amplifier gives the impression of being the better half of the two. It generally sounds more than routinely comfortable in its own skin, but notwithstanding any limitations, the CD player is also an elegantly impressive performer.

Having previously heard these products briefly at a Paris hi-fi dealership, I was already aware of just how good they were and by the end of this review period I really didn't want to relinquish them.

But if I was to choose, the amplifier is the one I would probably go for, partly because the CD player lacks that all-important (to me at least) SACD facility. At the end of the day, it's the amplifier that sounds more grown up, complete and expressive. **HFC**

VERDICT - CD-20

SOUND



FEATURES



BUILD



VALUE



CONCLUSION

Well made and purposeful, articulate and civilised sound. No SACD, unfortunately, just CD replay only. But, without doubt one of the better mainstream players.

HI-FI CHOICE
OVERALL SCORE



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VERDICT - IA-100

SOUND



FEATURES



BUILD



VALUE



CONCLUSION

Bold, yet civilised sound with real stature. Poorly designed remote control. Fast and fluid performer brings a touch of panache to its role.

HI-FI CHOICE
OVERALL SCORE



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Bevel-headed

Jason Kennedy finds a CD lathe that promises to improve every disc

PRODUCT Audio Desk Systeme

TYPE CD Sound Improver

PRICE £385

CONTACT ☎ 01252 737374

📧 www.audiodesksysteme.de

German company Audio Desk Systeme has come up with a machine that cuts a bevel into the edge of CDs (DVDs, BDs etc) and is designed to combat light scatter when playing an optical disc. It sounds bizarre but even more odd is how well it works.

MAKING THE CUT

The CD Sound Improver is a simple lathe that's built specifically to cut a bevel on the playing side of a 12-centimetre disc. It has a belt-driven turntable onto which you clamp the disc and a specially mounted cutting tool. This tool also makes the disc totally concentric, thus reducing any potential vibration that an off-centre disc will induce in the disc transport. A surprising number of the discs I bevelled were not truly concentric.

It's a little unnerving to start slicing the edge off your favourite CDs, so my initial investigations were done with a pair of identical CD-Rs, in order to have something to compare results with. The process is pretty straightforward once you steal yourself to get going and it's very fast to do, twenty seconds is enough. You then need to mark the edge with the supplied permanent pen.

BUILT TO LAST

As one would hope with small-scale German engineering, build quality is very good, while the lathe and cutter are remarkably good value. You won't find many accessories that offer this sort of quality/price ratio. There's a port at the back for connecting a vacuum

“Discs that have been ‘improved’ clearly have wider dynamic range, thanks to a lowered noise floor that lets more detail through.”

cleaner hose to extract the swarf which builds up quickly, and the cutting tool, or burin as it's called, is said to be good for

2,000 discs and can then be replaced. The knob on the front adjusts speed: run it fast for cutting and slow for marking with a permanent marker afterwards. In practice, turning it by hand makes this second process a little easier.

HOW IT MAKES A DIFFERENCE

The effect is not mind-blowing, but it's certainly worthwhile. Discs that have been 'improved' clearly have wider dynamic range, thanks to a lowered noise floor that naturally lets more detail through. Nothing changes tonally and imaging remains the same, but you can hear further into the mix and the nature of sounds is easier to distinguish. There is a general cleaning-up of the sound across

the board, so bass is better defined and more punchy, while the treble has more air – cymbals, for instance, sound more realistic.

On one album of percussion and drums it was not possible to hear exactly how some of the sounds were being made prior to beveling and marking, but after machining the extra resolve gave me enough insight to be able to visualise the instruments (if not actually name them!).

The improvements wrought by this device are clearly worthwhile if you want to hear more of what's on your discs. And you'd have to spend a lot more on cables or hardware to get the same effect, this combined with the fine build quality make the CD Improver something of a bargain. **HFC**



VERDICT

SOUND



FEATURES



BUILD



VALUE



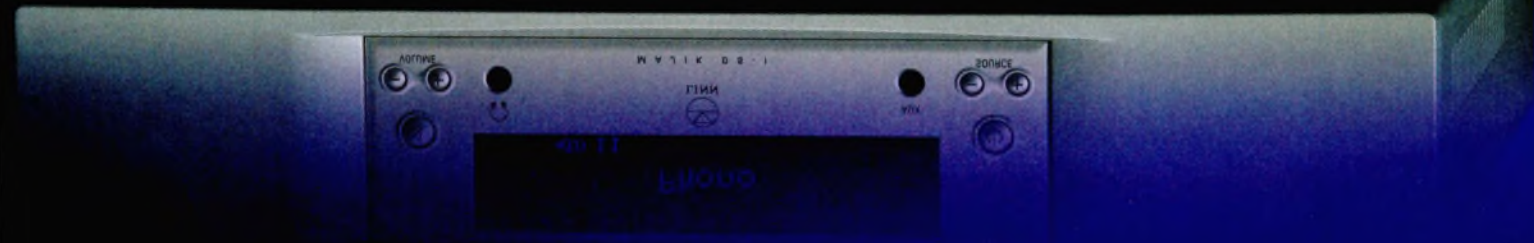
CONCLUSION

Lets you hear more music and less distortion from all of your discs. But a little messy for the listening room, unless you have a vacuum cleaner to hand.

HI-FI CHOICE OVERALL SCORE



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Full stream ahead

A DS player and amplifier in a single case is a one-box wonder says *Malcolm Steward*

PRODUCT Linn Majik DS-I

TYPE Digital streaming amplifier

PRICE £2,550

KEY FEATURES Size (WxHxD): 38x8x3.5cm
 ◉ Weight: 4.9 kg ◉ Outputs: 6x line, RCA phono
 ◉ Supported file types FLAC, ALAC, WAV, AIFF, AAC, MP3 ◉ Compatible with UPnP™ media servers ◉ Power output: 90 watts RMS (four ohms)

CONTACT ☎ 0141 307 7777 🌐 www.linn.co.uk

Now here's an opportunity to make your CD collection sound even better than ever – without the aid of a CD player! And it's all thanks to the future-proof Linn Majik DS-I digital streaming amplifier, making its debut in the wake of Linn's vision of a future in which CDs are stored on networked hard disks and replayed by digital streamers.

Alternatively, the dedicated music fan can dispense with physical storage media entirely and download their albums (preferably at above-CD resolution) from internet sites that provide better-than-MP3-format files – one of which is Linn itself.

Once downloaded, storage can be taken care of on the optional RipNAS combined CD-ripper/Network Attached Storage unit, with a hard-disk capacity of one terabyte (£894). I found, however, that when I compared it with my Netgear Storage Area Network, the rips weren't as satisfactory, so I regularly fed the DS-I with this alternative source. You could just as easily use a PC with UPnP delivery software, or a NAS unit if you preferred.

A KIND OF MAGIC

The Majik DS-I is fundamentally a DS digital streamer combined with an analogue/digital preamplifier, as well as the Chakra 90 watts per channel power amp, all of which are powered by Linn's fifth-generation Switched Mode Power Supply, the Dynamik (the name

Majik actually signifying Linn's bronze-level product, the other been silver-level, Akurate and the gold-level, Klimax models).

The Majik DS-I can be controlled by software on a PC or a handheld device such as the iPod Touch. I used the open-source Kinsky Desktop software on a laptop. In truth, it isn't wonderful, but show me a player/server/streamer software today that is. Kinsky Desktop

“The DS-1 seems to be an absolute resolution junkie. It has an especially convincing way with classical music...”

is no worse than any other front-end although my reaction to it is wholly personal and subjective.

The preamplifier section of the DS-I offers both analogue and digital inputs for system expansion and there are both pre- and line outs for use with external amplifiers or analogue recorders, with S/PDIF and Toslink connections providing digital outputs. Analogue input is configurable: it comes as a moving magnet phono input, but can be dealer-converted to moving coil or line-level. The power amplifier stage is a 90 watts per channel Linn Chakra design that had no problems whatsoever, driving either the Linn Majik 109 speakers or the NEAT Petite SX compacts – the latter I used throughout the review period simply because I know them well and preferred their performance.

SOCIAL NETWORKING

The network side of the install is where things can become a little tricky. Linn supplied the review sample with its recommended third-party network components, which is a methodology that reduces the variables and so decreases the likelihood of incompatibility problems for its installers. It likes to see the DS-I attached to its own sub-net rather than

simply integrated with an existing network. Indeed, this is probably the best way to do things in most situations, but it wasn't ideal with my set-up where my network storage (a SAN (Storage Area Network) box) and the server to which it is attached were on a different network segment. For a typical home network this should not be a problem. I am not so certain, though, about Linn's

BUILDING A SYSTEM

All the DS-I needs to become a complete system is a pair of loudspeakers and a network connection. I opted for the NEAT Petite SX on Partington Dreadnought stands with The Chord Company Epic cables. Linn had supplied a set of Majik 109 speakers but I felt the NEATs worked well with the Linn amplification and provided a more musically enjoyable, substantial and natural presentation. The Linn installers fitted all the networking equipment onto my system racking with a regular extension mains block. I straightaway dug out some longer Cat5 patch leads and relegated all that clobber to another room because, apart from the garbage being radiated by those cheap-as-chips switched mode power supplies that come with networking gear, I do not like Wi-Fi access points being close to hi-fi equipment and cabling. I would insist that your installer does the same and think very seriously about using something like a Russ Andrews Silencer Block to replace the regular mains distribution block and isolate all that networking equipment.



Q&A

HFC spoke to Ian Wilson, Linn's principal hardware engineer, about various aspects of the Majik DS-I



HFC: Does the Majik DS-I handle music from the internet?

IW: You can listen to internet radio through any Linn DS player. In addition, streaming services such as Spotify, Napster and suchlike, can be streamed to a Linn DS player via any computer.

Why is there no USB connection?

USB offers limited quality comparable to that of a CD engine or S/PDIF output. In essence USB, CD and S/PDIF data streams are transported (pushed) at the rate determined by the clock within the sending product and have to be re-clocked by the receiving product before they reach its DAC. This process of re-clocking inevitably introduces "jitter", which in turn causes audible distortion.

In contrast, the unique way that Linn DS pulls the digital stream from the network means we are completely in control of the data rate. The rate at which the data is pulled is determined by the Linn's own low-jitter, high accuracy master clock, resulting in lower distortion through the DAC and a pure, clean signal, which reproduces the music far more accurately.

An additional limitation of USB is that it is point-to-point; we have designed Linn DS to allow our customers to easily build a multiroom music system step-by-step, running on a standard home network.

And why the absence of a CD drive?

One of the key benefits for leaving out the mechanism for loading and reading discs is that you take away the inherent vibration, noise and electromagnetic interference, so the performance of the player is further improved. Plus, Linn DS offers you an even better way to play your CD collection – even without a CD drive. By ripping your discs you're guaranteed accurate data at the input of the DAC and Linn's clocking process means you get exceptionally low-jitter and low resulting distortion which is not possible with a CD player.

What's more, Linn DS is format-independent, unlike CD players that only ever play CDs, so lets you experience new, even higher resolution formats such as 24-bit Studio Master downloads.

insistence on including a dedicated Ethernet switch, a discrete router and a separate wireless access point (the Wi-Fi is only for control purposes: all the music travels on Cat5 cable).

According to Linn; this is better than using an all-in-one device, because each has its own processor dedicated to one task and that provides greater performance. That, I would argue, might be true but it is hardly relevant when all you are doing is sending one music stream over a length of Ethernet. I linked my own network to the Linn sub-network through a truly ancient, dusty, 10-megabyte hub and did not detect any glitches or degradation in the musical performance of the system while material streaming from my server.

SMOOTH AND ROUNDED

I like the clean lines and styling of the DS-I and I had absolutely no reservations about its construction. It is a sturdy, weighty unit and its casework is beautifully engineered. There is not a sharp edge on it anywhere. Every edge with which your hands will come in contact is as smooth and rounded as Beyonce's bum.

It is important with such 'computerised' hi-fi that it not only functions as a piece of hi-fi, but that it integrates successfully with the host network. In my domain-based system it was none too happy being removed from the Linn-installed sub-net. A few times, everything with a network address and a couple of items without, demanded to be power-cycled and left alone to meditate for five minutes before anything would converse with its neighbours.

I began to see the logic in Linn's belt and braces approach to networking, although I would be interested to discover which element, process or combination thereof causes this flakiness. However, Linn is definitely not alone in this respect. The integration and user interface aspects of equipment in this relatively new discipline seem to be dragging their heels way behind the audio performance. The DS-I is not hugely expensive, but it costs more than the Naim Uniti, which also features additional facilities such as a CD drive, DAB and FM tuners and isn't quite as fussy about network connections. The Uniti also gets by with just a remote handset and a simple fascia-mounted display.

SPARKLING AND SPELLBINDING

The DS-I performs well, though, in hi-fi terms and is particularly noteworthy in a couple

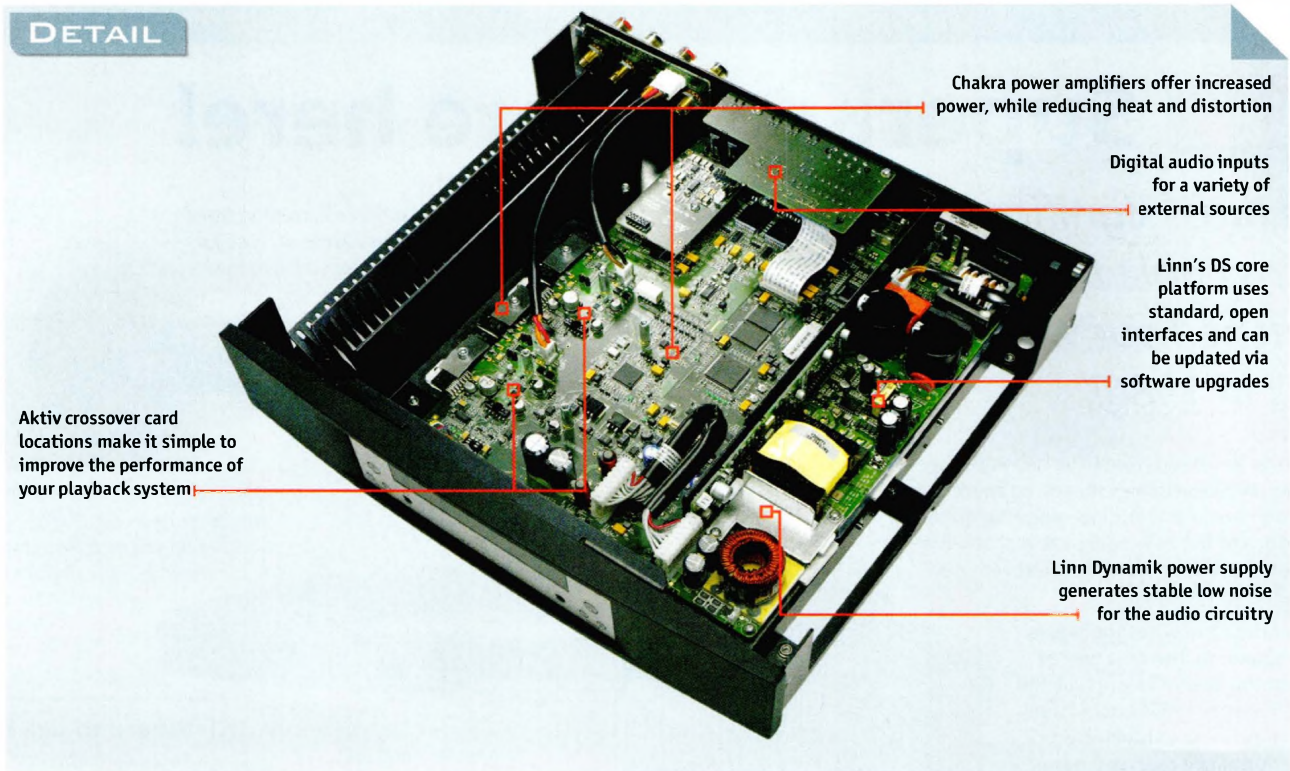
HOW IT COMPARES

The obvious comparison for me was with the Naim Uniti streaming amplifier that lives in my office. In terms of the way music is presented this is clearly a different beast to the Majik DS-I, and I think the choice between the two comes down primarily to what you most value in music reproduction. Both are eminently respectable products and each has distinct strengths. The Linn is outstandingly open and clean sounding. It creates the impression that you are hearing everything, every detail on a recording. I felt, though, that this could occasionally make its presentation seem a touch cold and impersonal. The Naim is less overtly detailed, but it emphasises the human elements of a recording to a greater extent; the boogie factor and those get-up-and-go nuances. On some rips, though, it surprised me by also presenting a deeper, better-defined soundstage. Ultimately, I suspect many contemporary music fans will gravitate towards the Naim, while classical lovers will favour the Linn.

of respects: It is a ferocious scavenger of information and its sound is so clean it sparkles. Hi-res downloads from the Linn Records site demonstrated this graphically: the 24-bit/192kHz recording of William Carter playing the music of Fernando Sor came across beautifully. Carter's playing was spell-binding and the sound was impeccably realistic and alive, creating the feeling that he was sitting only a few feet in front of me exposing those rich veins of tonal colour and expression from his gut-strung replica baroque guitar. The dynamic gradation evident was incredible and it was easy to hear one string being quietly plucked while another was being sounded more vigorously. Listening to his double-stopping and his use of harmonics during the air *O cara armonia* from Mozart's *Il Flauto Magico* Op 9, was little short of sublime – both the playing and the hi-fi aspects of the portrayal.

The Majik also managed to turn me on to a new, contemporary Canadian singer, Dawn Langstroth, whose vocal style and backing band on *Highwire* put me strongly in mind of Aimee Mann, a real favourite of mine. It conveyed Langstroth's similarly economical approach to singing and the powerful lyricism of her song writing, succinctly contrasting her often





DETAIL

Chakra power amplifiers offer increased power, while reducing heat and distortion

Digital audio inputs for a variety of external sources

Linn's DS core platform uses standard, open interfaces and can be updated via software upgrades

Aktiv crossover card locations make it simple to improve the performance of your playback system

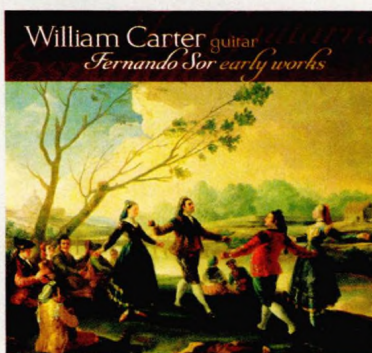
Linn Dynamik power supply generates stable low noise for the audio circuitry

MAJIKAL MUSIC

Having acquired your high-resolution capable Majik DS-I, you will probably want to stock up with a few appropriate recordings. These, conveniently, are also available from Linn, being downloadable from www.linnrecords.com.

Depending upon your preferences, if you want to show off your new streamer, then why not start with the album *Highwire* by singer/songwriter Dawn Langstroth. Musically it is superb, being full of considered, tastefully arranged compositions and performances. The 24-bit/96kHz Studio Master FLAC recording enables you to enjoy all the nuance and subtlety in her and her band's magnificent singing and playing.

If classical music is more to your taste, then I would suggest William Carter's superb collection of music for the baroque guitar, *Fernando Sor Early Works*. This 24-bit/192 kHz recording is so gloriously detailed that the recording draws you almost hypnotically into the music. It is little short of spellbinding.



delicate voice with the robust dynamism of her band. The portrayal of the piano and electric guitar stood out as being especially notable: the piano for its pitch stability and full-bodied tonality on *You Don't Want Me* and the guitar for its wholly credible leading edge attack on *It's All Good*.

COMPARE AND CONTRAST

Eventually, curiosity got the better of me and I tinkered with the networking set-up and managed to resurrect the infamous Linn/Naim Axis of the 1980s: I persuaded the Linn DS-I to stream tracks from my Naim HDX. Older readers might appreciate the irony in that rôle reversal. This, however, afforded me the opportunity to compare the quality of rips made by the HDX and those produced by Exact Audio Copy on my PC, to those of the less expensive RipNAS.

The Majik DS-I is an analytical machine and seems readily to discriminate between good and inferior rips. Not surprisingly, I preferred the first two to the latter. If one were not listening critically then the RipNAS might seem acceptable, although a highly discerning colleague and I both felt that its rips did not appear as involving or exciting: they were just about on a par with those you'd hear through a Mac laptop and an inexpensive DAC, a combination that is fine... for casual listening only.

A prime example of this was *Academia* from the Sia albums. The timing on this track seemed lethargic on the RipNAS rip, while her delivery sounded half-hearted and uninspired. Her phrasing is particularly dextrous on this number, her vocal weaving sinuously around

the band's playing to great effect, but this nuance seemed to escape the RipNAS. I also did not particularly enjoy the way it presented the timbre and tonality of her voice, occasionally making it sound nasal and hard.

The revealing Majik DS-I deserves a more transparent storage device and is hard to fault in isolation. And if you crave detail above all else, then this might well be the answer to all your dreams. I greatly preferred its performance with hi-res material to that with CD-resolution rips, unless they were sourced from one of my preferred ripping set-ups. The DS-I seems to be an absolute resolution junkie. It has an especially convincing way with classical music that absolutely delighted me, but with rock music, I think it perhaps needs to let its hair down a little, loosen up and have some fun. **HFC**

VERDICT

SOUND



PRO

The sound is alluring with hi-res recordings, especially with classical music. It is also excellent at picking out the highs and lows of ripped music downloads.

FEATURES



BUILD



VALUE



CON

The networking set-up is probably too complex for the average user and there are some competitors that offer a better performance.

CONCLUSION

Storing your music on a NAS drive, hard disk server or computer and playing it through a streamer is definitely the way to go for low-fuss, high performance hi-fi. Overall, the Majik will provide most of what you'll need.

HI-FI CHOICE OVERALL SCORE



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High-end aspirations

Paul Messenger finds a loudspeaker with the performance to match its appearance

PRODUCT Amphion Helium 510

TYPE Standmount loudspeaker

PRICE £750 per pair

CONTACT ☎ 01623 517000 # www.amphion.fi

This ice-cold, sharp-edged, black-on-white two-way standmount loudspeaker sounds smooth, evenhanded and essentially neutral. The baby brother of the larger Amphion Helium 520 floorstanding loudspeaker (HFC 314), the 510 also includes the best bits of its elder sibling, the key component being the 'waveguide' surrounding the tweeter. A variation on the horn theme, with a truncated throat and a very wide flare, it loads the tweeter and has several benefits.

One is that it allows the crossover point to be an octave lower than usual (at around 1.6kHz), which moves it below the most critical part of the audio band. It also helps match the acoustic sizes of the mid/bass and the treble drivers, which should benefit the crossover transition. Also, lining up the voice coil of the recessed tweeter with that of the cone drive unit should improve time alignment.

WHOLE LOTTA LOVE

Certainly, there can be no complaints about the high standard of presentation here.

The 135-millimetre mid/bass unit deploys a 110-millimetre flared paper cone and a cast alloy basket, and the drivers appear to be good quality. The relatively modest sensitivity does indicate a rather small magnet, however. The 25-millimetre titanium dome tweeter, on the other hand, is sensibly protected by the depth of the waveguide and a mesh cover.

At £750 per pair, it does seem on the pricey side, especially as good-quality stands will also be required, partly because of the gulf that's grown between European and Chinese production costs. In a European context, this loudspeaker represents respectable value.

“...an attractively presented and sonically well-judged package that will slip discreetly into the listening room.”

The 510 is available in black or white – with black or white grilles and waveguides – or in a choice of birch, cherry or walnut real wood veneers. The latter is fitted with black grilles and waveguides and carries a price premium.

VERSATILE PERFORMER

Even mounted well clear of walls, the bass end sounds a trifle heavy with some material.

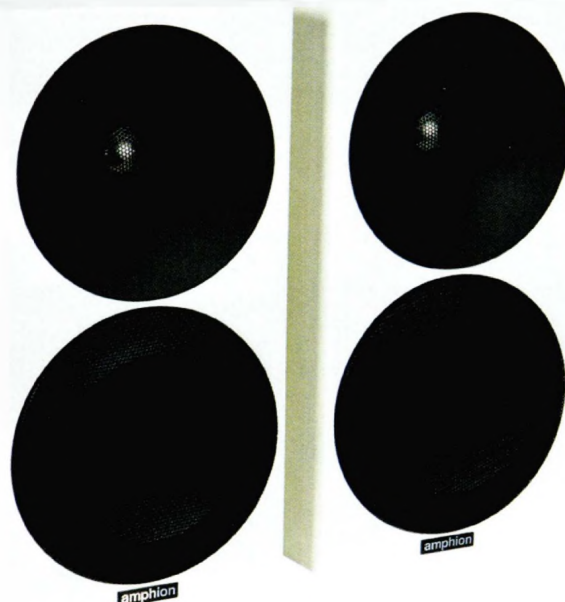
In fact, the best results are found with the supplied bungs in place and the speakers quite close to a wall.

Connected onto the end of a top-quality audiophile system, this Amphion seems lacking in dynamic expression. Stereo focus is good and the sound is notably free from any boxiness, but instrumental textures tend to be glossed over. There's a lack of tautness and tension, while the sound can get congested with complex and bass-rich material.

Used with more modest 'budget' components, however, the 510 actually works rather well. It might not aspire to high-end standards, but it

doesn't exaggerate the differences between components or emphasise any limitations – good news in the context of a sensible market. The budget Cambridge Audio CD player and amplifier I used admittedly have obvious limitations compared with my usual upmarket components, but to give it its due, the Helium 510 doesn't emphasise these deficiencies. Results are a little bland and boxier, but the sound remains tidy and smooth. You'll need a little extra volume is required to make speech intelligible, however.

This little speaker might not set any records for either audiophile dynamics or ultimate value for money, but it is an attractively present and sonically well-judged package, nonetheless. Impressively, it also discreetly slips into the listening room and won't embarrass the type of components to which it is likely to be coupled. **HFC**



VERDICT

SOUND

★★★★☆

EASE OF DRIVE

★★★★☆

BUILD

★★★★☆

VALUE

★★★★☆

CONCLUSION

Attractively neutral and versatile in positioning, it works well with modest systems, but ultimately lacks some dynamic expression and vigour, as well as bass weight.

HI-FI CHOICE OVERALL SCORE

★★★★☆

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EDITOR'S CHOICE

HI-FI CHOICE
magazine



New old style

Combining old and new CD technologies with remarkable effect leaves Jason Kennedy impressed.

PRODUCT AMR CD-777

TYPE CD processor

PRICE £3,195

KEY FEATURES Size (WxHxD): 45x12x37cm
 Ⓞ Weight: 11.5kg Ⓞ Digital inputs: coaxial S/PDIF, USB Ⓞ Digital outputs: coaxial S/PDIF Ⓞ Analogue outputs: RCA phono, XLR Ⓞ Sampling options: Non-OS, 2x, 4x, 96kHz, 192kHz Ⓞ DAC: Philips UDA1305AT multi-bit

CONTACT ☎ 01900 813064 # www.amr-audio.co.uk

The CD-777 not only uses old school valves, it also employs a technology that became obsolete back in the nineties – genuine multi-bit DACs. It's also AMR's most affordable disc spinner yet and comes from a brand that has quickly established itself as the most interesting new player on the hybrid electronics scene.

A spawn of the CD-77, that we reviewed in *The Collection* (2007), it even looks very similar, if not more compact. For example, it has the same fabulous finish and top-loading transport and it earns its processor credentials thanks to USB and S/PDIF inputs for external digital sources.

THE UNUSUAL SUSPECTS

AMR's decision to discard contemporary upsampling DACs and use NOS (new old stock) Philips multi-bit devices in their place is rather unusual. The CD-77 has a valve output stage built around NOS 6H1 n-EV tubes and offers two variants of non-oversampled output among its array of processing options.

At the digital heart of the CD-777 is a Philips multi-bit chipset (UDA1305AT), that AMR refers to as 'Son of TDA1541A', its favourite converter. AMR also claim that it's never been used in a CD player before.

The CD-777 lets you choose from six Optisample filter settings with the remote control, the first two being non-oversampled purist settings called Digital Master I and II. The latter is the default filter and adds an analogue filter to balance the slight treble roll-off produced by the totally unfiltered Digital Master I setting. These settings are clearly AMR's favourites and you are encouraged to use them according to taste. There are four over/upsampled filters offering 2x, 4x, 96kHz and 192kHz, but the manual suggests that all of these are a

“The combination of superb tonal rendering with fine timing allows music to float free of the mechanics of reproduction.”

compromise that introduce one form of coloration or another to the result.

AMR has equipped the CD-777 with a USB input, as is the fashion in these days of PC audio, and it's keen to point out that this is not just something that's been tacked on at the last moment. In its favour, I recall seeing such a socket on the CD-77 three years ago, so there may be something in OptiUSB as it's dubbed. OptiUSB's angle is that jitter is kept to a minimum by the associated circuitry, something that usefully also applies to the coaxial S/PDIF input.

Among the cherry-picked components inside the casework are hand-made transformers in the power supply and NOS valves called 6H1 n-EV in the analogue stage. Even the transport is custom built, using a high-torque motor, Sony K-Series laser pick-up and a Philips CD-18 servo system.

The supplied remote is a touch screen variety of the old school, insofar as there is only one screen set. It seems to be reasonably sensitive, but the player itself is not very responsive, unless you make a point of aiming the handset. I also had a couple of occasions where the unit seemed to seize and required a reboot to get it going, it's clearly a lives a little closer to the edge than most.

The back panel is not too cluttered, the analogue outputs are on either side of the chassis and come in balanced and single-

ended flavours. Slightly confusing is the red/white colour coding of the coaxial digital in/out sockets, these impersonate traditional analogue outputs well enough to fool the casual installer/reviewer!

OUT OF THIS WORLD

By using aircraft-grade aluminium to build the CD-777 casework, AMR has produced a stunning piece of kit. It's enhanced by windows that let you see the electronics within (including the glow of the valves), while letting the heat out. The player emits an orangey blue glow which gives it a slightly otherworldly appearance and this and the heat output does rather discourage leaving it powered up at all times. The door that slides over the disc drive is manually operated and allows a change of disc without pressing stop. You'll need the puck of course, but it's not as if you're likely to forget it. ▶



Q&A

HFC asked Thorsten Loesch of AMR about the CD-777



HFC: Why use a DAC that has never been used in a CD player before?

OM: We had been looking for a DAC to allow us to bring to the market a more mainstream model than the TDA1541-equipped CD-77 for some time. In our search we came across the UDA1305, a highly obscure DAC from the Philips 'industrial' range. It was probably the last true multi-bit chip made by Philips and its performance comes closer to the TDA1541 than any others.

You don't seem to be very keen on the over/up sample options in the filter set, so why provide them?

While we find that in many cases avoiding over/up-sampling sounds 'best', there are CDs where the subjective sound is better with one of these options.

How does the output stage differ from that in the CD-777?

The CD-777 has one valve per channel. As these are double triodes, one half amplifies and the other half buffers. In the CD-77, one valve is used as gain stage and another as buffer. Instead of valve rectification the CD-777 uses low-noise, solid-state diodes with additional noise filtering.

TALKING POINT

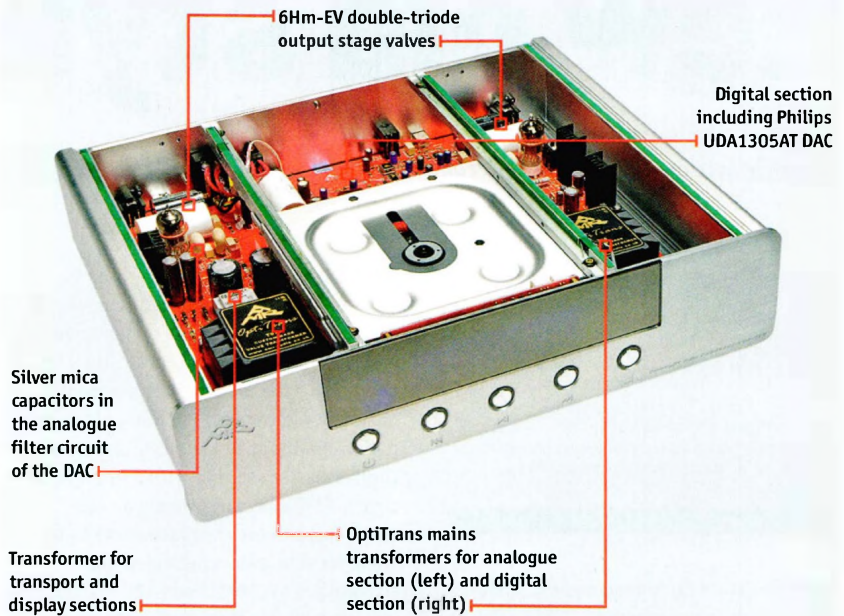
The multi-bit DAC was the first type of digital to analogue converter built and all first generation players used them, they only started to fall from favour when Sony introduced one-bit DACs in the early nineties. Ironically one-bit was designed to be cheaper to make, but because it measured well and offered the potential for upsampling slowly began to take over. Today there are no multi-bit DAC chipsets in production.

The appeal of multi-bit to designers like AMR's Thorsten Loesch, is that the chips only convert digital to analogue, they don't do any filtering, either digital or analogue. Modern DAC chips incorporate as many features and operations as possible onboard and this, according to AMR, compromises performance due to the size constraints of the chips themselves. By using more straightforward multi-bit DACs, AMR can offer non-oversampled operation and there is far greater scope to include filter options that designer Thorsten Loesch wants so that he can tailor the sound more precisely.

TEARS OF JOY

This is one of the most natural-sounding digital sources I have heard in ages, it is tonally delightful and that's not something you often read about a CD player. You get so

DETAIL



used to the dry and tight sound of digital sources that there's a tendency to assume it will always be that way, but this AMR shows things in a whole new light. It could be the valves – in fact it almost certainly is – but I've had glass-powered players before and they've never sounded quite like this. Usually there's an obvious softening of frequency extremes and an increase in tonal warmth and here there are bits of the latter – the midband is a little cosy but it's only apparent by comparison. On its own terms it's easy to accept the CD-777's presentation as realistic. Especially when an acoustic instrument comes along and reveals its timbre. I've not known the cello on Antonio Forcione's *Tears of Joy* to be so real and woody before, nor Keith Jarrett's piano to have such depth.

Up against the Leema Antila II (HFC 323), there is a loss of solidity and depth of image and the solid state player has a lower noise floor with greater bass definition. But, there's no doubt that the AMR has a strong sense of timing, as well as the fact that tonal beauty is just as appealing, if not more so, than image scale and depth. Audiophiles traditionally crave deeper bass and more physical soundstaging, but these are not necessarily the qualities that make music alluring outside of the demo room.

Having read the spiel, I had to hear what the digital inputs could do and started with the coaxial S/PDIF. With a DVD-A player connected I achieved superb results, cleaner and more real than could be achieved with CD thanks to remarkable integrity of sound. Plugging a laptop into the USB input yielded a positive, detailed result as well. Not one that could compete with the onboard

transport, but inspiring enough to look into ways of getting a better signal out of the PC.

HEARTS AND MINDS

Like the Rega Isis (HFC 329), this is a CD player for the heart more than the head, it isn't as bone crunching nor spatially capable as its rivals, but it does get to the parts that other players so often miss. The combination of superb tonal rendering with fine timing allows music to float free of the mechanics of reproduction. You need to be reasonably careful with ancillary amplification, speakers and even cables – van den Hul's carbon interconnects are just too soft for instance. But give it a revealing window to play through and you will forget about the hi-fi and be carried away by the artistry and emotions of the musicians on the disc. That is what living is all about, don't let anyone tell you otherwise. **HFC**

VERDICT

SOUND



PRO

Extremely natural and engaging sound that brings analogue to the digital world. It combines superb tonal rendering with excellent timing

FEATURES



BUILD



CON

Lacks the power and three dimensionality of the competition and it pays to give ancillaries careful consideration.

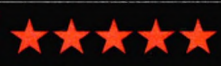
VALUE



CONCLUSION

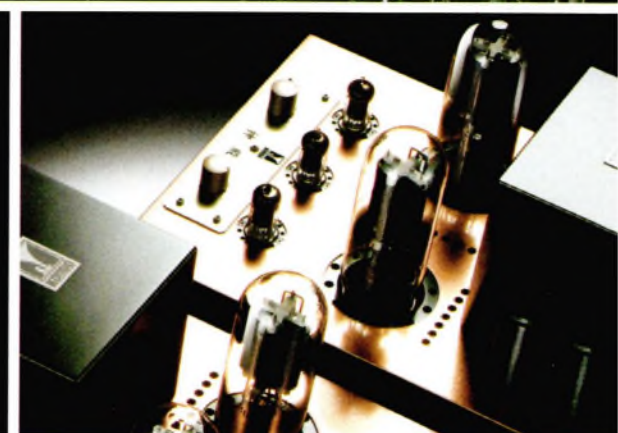
If you want to be beguiled by your music collection rather than impressed by its trouser-flapping potential, then this attractive player takes you right to the heart of the matter with an impressive overall performance standard.

HI-FI CHOICE
OVERALL SCORE



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HI-FI CHOICE
magazine



Rockin' with Rio

This small speaker punches well above its size. Paul Messenger ducks and weaves...

PRODUCT Green Mountain Rio

TYPE Standmount loudspeaker

PRICE £2,000

KEY FEATURES Size (WxHxD): 20.8x40.6x34.9cm
 ○ Weight: 19kg ○ Drivers: 25mm voice-coil, 115mm paper/carbon fibre mid/bass ○ Power handling: 100 watts (8 ohms) ○ Q-stone marble moulded enclosure
 ○ Multi-layer internal fibreglass absorbent

CONTACT ☎ 01494 858471

🌐 www.greenmountainaudio.com

The Rio loudspeaker combines time-coherent technology and a proprietary 'Balanced-Phase' crossover circuit to bring an impeccable musicality to medium-size and small rooms. So much so, that this discreet little standmount turned out to be one of the most exciting speakers to come my way in years. It might look small and unassuming, but clever design gives it a marvellous freedom from time-smear, which makes it musically very communicative with vivid dynamic expression.

Indeed, the only regret is that the Rio, being GMA's smallest loudspeaker, did have some inevitable limitations in terms of bottom end weight, scale and sheer welly.

MASSIVE MARBLE

A closer inspection reveals numerous examples of the considerable and painstaking care that has gone into selecting every one of its ingredients. Take its weight, for example. Most standmounts of this size weigh around five to eight kilograms, so it's simple enough to pick one up and pop it onto a stand. The Rio tops the scales at 19 kilograms, more like that of a typical floorstander and that's because the cunningly shaped enclosure has been moulded from Q-stone – a marble/polyester resin mix.

A lot of mathematical calculation went into designing the dimensions of this very complex multi-faceted enclosure – essentially eight faces, as it's larger in the middle than the top or base. This is partly in order to minimise the focusing of internal reflections and standing waves, assisted by 15 carefully positioned layers of low-density, fibreglass wadding.

SMALL-TO-MEDIUM

Because the Rio is primarily expected to be used in small-to-medium size rooms (between

100 and 600 square feet), the designer has tried to limit the dispersion from the two drivers. This is achieved by the shape of the enclosure and, in particular, the way the baffle is inset behind a proud edge, while the tweeter is surrounded by absorbers. All this is meant to to minimise reflections from nearby walls.

“...the Green Mountain Rio bring excellent communication skills and considerable musical pleasure to listeners.”

Another feature of the enclosure is a 'tilted back' front panel, one crucial reason being that this helps ensure that the listener-to-voice-coil distance is the same for both drive units, in order to maintain accurate phase-coherence across the band, especially through the crossover region. To this end, Green Mountain Audio provides recommendations for the optimum stand height for any given seated ear-height and listening distance. Relatively low (e.g 500-millimetre) stands are suggested.

Similar care has clearly gone into selecting the other ingredients. The bass/mid driver has an 'under-hung' voice-coil, operating in a large field generated by neodymium magnets. The lightweight (damped, pressed steel) 153-millimetre frame accommodates a 115-millimetre diameter cone made from a mix of paper and carbon fibre. The tweeter has a 25-millimetre doped fabric dome diaphragm with a relatively wide (two-millimetre) surround.

Internal wiring consists of Audio Magic Teflon-insulated 14 gauge (1.6-millimetre) silver-plated OFC feeding the bass/mid driver and Jena Labs polyethylene insulated, cryogenically treated 22 gauge (0.64-millimetre) OFC. The crossover also uses high-quality components and is essentially a simple first order (six-decibel/octave) affair, albeit modified by a Zobel network. The objective is to minimise phase shift right across the band, and a very impressive ± 2 degrees, 200Hz-8.5kHz is claimed.

TEXTURE-KOTING

The cast Q-stone marble composite enclosure gives massive weight and rigidity, as well as

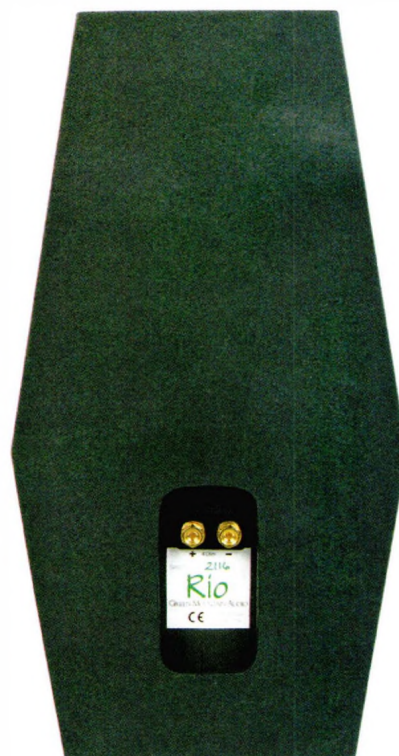
an interesting and clearly effective shape. It can be difficult to achieve an acceptable surface finish with such material, but the black Texture-Kote preparation used here gives a sort of suede look and feel that is very acceptable.

Enclosure detailing also looks very good, above and below the thin acoustic foam

grille, which may be left in place without influencing the sound in any way. A single pair of Vampire Wire socket/binder terminals are fitted, fashioned from solid brass and then silver- and gold-plated.

STATE-OF-THE-ART

The Rio might seem rather costly for a compact standmount, but the bottom line must always be to question whether a component actually delivers sound quality ▶



MOUNTAIN RANGE

Founded as recently as 1988, Green Mountain Audio is a relative newcomer on the scene, especially here in the UK. The Rio is its smallest, least costly and most recent member of the portfolio, and is probably the most domestically acceptable too.

As one moves up the range, models like the Eos and Calypso HD (both available in the UK) look increasingly strange, as they feature external drivers with adjustable time-alignment. A dealer I spoke to said he liked the sound very much, but felt the extreme styling might put customers off. Happily such a criticism won't apply to this Rio, which is small, discreet and very self-effacing.

commensurate with its price. In this case there's absolutely no doubting the exceptional overall sound of the little Rios. Naturally the small size will limit the bass weight and warmth to a significant degree, but over the rest of the audio band it delivers splendid sound-quality. The top-end might, perhaps, have been a little sweeter, but the midband expression and coherence truly approaches the state-of-the-art. This exceptional performer is way ahead of its peers in delivering a vivid and engrossing musical experience, so value for money is, therefore, unquestionably very high.

VIVID EXCITEMENT

Once set up, the impressive strengths of these compact speakers quickly becomes obvious. They do show some limitations: the small size and high-sensitivity inevitably restricts the amount of bass weight and warmth, but experimenting with positioning does result in modest changes. However, these are less than expected, so the best advice has to be to experiment in situ to achieve the best results, even though smooth,

CUTTING EDGE

The far-field, in-room averaged response traces show a very healthy sensitivity that comfortably matches the specified 90 decibels in the midband. This might be a four-ohm load, but it's not one that's likely to be difficult to drive, since it stays above four ohms throughout, with some gentle transitions. The overall response trend stays within +/- five decibels across the band, from 40Hz to 15kHz. These quite wide limits are needed to accommodate some rather obvious trends. Unfortunately, the 53Hz-tuned port output coincides with a major mode in our listening room, so output is strong 45-70Hz. Upper bass (80-250Hz) is rather lean, while 500Hz-2kHz is a little too strong, especially around 1.5kHz.

DETAIL

Multi-face cast marble enclosure is massive and very stiff. Its irregular shape resembles a large crystal and spreads internal reflections

Single pair of high-quality silver- and gold-plated brass socket/binder terminals

Front baffle is tilted backwards and recessed for time-alignment and dispersion control

Bass/mid driver has 115mm carbon-fibre cone and 25mm voice-coil driven from powerful neodymium magnets

Large 50mm front port, tuned to 53Hz, provides bass reinforcement

deep bass seems unlikely to be on the agenda here. Furthermore, there's also some upper midband forwardness that some listeners (depending on the source) might find a little uncomfortable, but which I found easy enough to get used to.

In every other respect this loudspeaker is rather wonderful. Best of all is its exceptional speed and minimal time-smear, which brings a brilliant immediacy and tight, solid focus to the reproduction of instruments and voices, creating vivid dynamic expression and an unusual degree of realism. It's all very realistic, as is that most difficult of tests – single speaker mono.

This freedom from timesmear in loudspeakers is very important, because it does much to break down the barrier between 'real' and 'reproduced'. The closer you get to 'real', the less hard the brain has to work to interpret what the ears hear and the more relaxing the listening experience becomes.

The advanced enclosure seems very effective, both in banishing any box coloration and in providing a measure of control over dispersion. The latter probably contributes to the relative consistency of the Rio's sound, irrespective of positioning, as well as its fine stereo focus and general image consistency.

TIME IS TIGHT

Loudspeakers as phase-accurate as these are very rare, but some listeners (not all!) will

find them quite irresistible. The tight time-focus of the Rios reminds me a little of the Rehdekos, which I keep as a reference, though the Rios are smoother and less extreme, which will probably make them rather more generally acceptable.

There's no denying the criticisms of a lack of smoothness and weight at the bass end of things and the upper mid forwardness. But if those limitations are considered acceptable, the Green Mountain Rio will bring excellent communication skills to the party and considerable musical pleasure to listeners. **HFC**

VERDICT

SOUND



EASE OF DRIVE



BUILD



VALUE



PRO

Brilliant timing with vivid dynamic expression and superior phase coherence, this small speaker boasts a very impressive performance level.

CON

Bass lacks weight and smoothness and upper midband is rather forward and exposed, so in-room positioning is important.

CONCLUSION

Fabulously tight timing and coherence makes for a very expressive and musically literate performer. Enclosure and ingredient selection show considerable care, while value for money is unquestionably very high.

HI-FI CHOICE ★★★★★
OVERALL SCORE

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ON TEST



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£1,740



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£1,450



Unison Research Unico Secondo
£1,860

No component has stood as firm in the face of advancing technology as the amplifier. The amp of today bears a great deal of resemblance to that of yesteryear. So clearly it would be nonsense for me to recommend that you upgrade your amp.

Actually, however, it's quite a good idea, if only for commercial reasons: the China factor. Although only one of the amps in this group is made in China, it's a fair bet that plenty of the components inside the others are produced there. The fact that so many of the competitors manufacture in the Far East has spurred local companies to investigate value-for-money design as a matter of urgency.

The results of that may be most apparent in the budget sector, but these amps, which I suppose most audiophiles would regard as occupying the middle ground, still show signs of careful thought about features and performance per pound.

For one thing, many manufacturers now use surface-mounted components. These are smaller and although they don't necessarily cost any less than 'old-style' components with wire leads, their use means that amps can be built in less space, or with more features in the same space. In fact, space is an expensive commodity in electronic equipment, since the casework is usually the most expensive component – often by a large margin.

Electronic control of volume and input selection have also largely taken over from mechanical controls and again this can save money. The desire to incorporate remote control operation may have driven the switch in the first place, but a decent mechanical volume control costs money and an electronic one can often work out cheaper and is arguably better

The jury's still out to some extent on that score, but my own experiments a few years ago were enough to convince me that electronic controls can certainly, at least, equal mechanical ones.

So to some extent I take back what I said: amps have changed internally in some significant ways. Add in the gradual evolution in audio circuits and you may find that now is indeed a very good time to upgrade an ageing amplifier. **HFC**

EQUIPMENT USED

- ▶ ATC SCM20 loudspeakers
- ▶ Bowers & Wilkins 803S loudspeakers
- ▶ Samsung NC10 netbook computer (as digital source)
- ▶ Cambridge Audio Azur 640C CD player
- ▶ Cambridge Audio DacMagic DAC
- ▶ Pink Triangle PT Export turntable/SME309 arm/Highphonic MC-A3 cartridge
- ▶ Cables by Wireworld, QED, Kimber and Furukawa

MUSIC USED

- ▶ Michael Jackson *Thriller*
- ▶ Miles Davis *Kind of Blue*
- ▶ Benedetto Pallavicino *Madrigals*
- ▶ José Guzmán *Ambrosio*
- ▶ Joseph Haydn *Symphony 99*

EARS USED

It wouldn't be a *Hi-Fi Choice Ultimate Group Test*, if we didn't have the services of experienced listeners from within the industry who give up your time to listen 'blind' to the amplifiers, under carefully level-matched conditions. Our thanks this month to:

Ian Galloway (ICG Consultancy)
Phil Hansen (Red Sleep PR)
Martin Pipe (freelance technical journalist)
Thanks guys!



LISTENING TESTS

In classic *HFC* fashion, the centrepiece of the listening was a blind listening test, an attempt to remain free of prejudices and preconceptions. Listening levels were accurately matched and the same programme of music was played through each amp with minimal distractions. In addition, each amp was auditioned on its own more informally, to get the fullest picture of the character of each.

LAB TESTS

Each amplifier was measured with a variety of equipment, including a Hameg distortion measuring set and also items of audio equipment (ADCs and DACs) adapted to lab duty and reporting data for analysis to Cool Edit and Mathcad on a PC. This approach enabled us to build up a picture of the amps' performance under different conditions of frequency, level and load. This allows a truly accurate assessment of published amplifier specifications and precisely determines each amplifier's characteristics under real-world conditions.

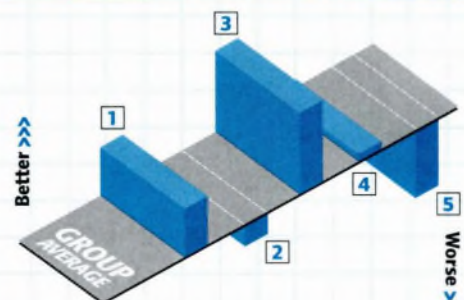
No other magazine offers an equivalent test and listening programme for comparative tests.

LAB REPORTS: THE BAR GRAPH

Our 3D bar graphs are a simple way of showing how the products compare across five technical parameters. In each case, a percentage is given that falls above or below the group average: higher percentage means better performance (e.g. lower distortion, lower noise, flatter response). In this case, the parameters are:

- 1) Dynamic power:** This reflects an aggregate of continuous and peak (instantaneous) power, giving an indication of power available under realistic conditions.
- 2) Frequency response:** This is a measure of precisely how smooth and linear the frequency response is within (and a little beyond) the audio band.
- 3) Dynamic range:** An indication of the background hiss level of the amplifier, as compared to its maximum power output.
- 4) Distortion:** An aggregate figure of measurements at different frequencies and levels.
- 5) Output impedance:** A measurement of how tight a grip the amplifier has upon the loudspeaker cones.

OUR BAR GRAPHS: AN EXAMPLE



ELECTROCOM



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ARCAM A38

Comprehensive features list makes this amp a star performer

£1,480 ☎ 01223 203200 🌐 www.arcam.co.uk

Not much has changed with Arcam's amps in recent years, at least superficially. That's absolutely fine by this observer, who thought they were nicely thought-out when they first appeared and hasn't found any reason to change opinion since. The A38 is the top model of three integrateds in the current range and it does many of the same things as most modern integrateds. For instance, it has fully electronic switching and volume control: but you still get a unique push button for each input and a decent size volume knob that is, at least, reasonably solid and generally nice to the touch.

The display is a cut above most, too, with a numerical or bar-graph display of volume settings in a pleasant shade of green (dimable), while added-value features include input level trimming, balance control and selectable volume step size, all accessible via a simple menu structure. This stuff seems trivial, but it strikes me that if you're spending over a grand on an amp it's not unreasonable to expect a little cossetting on the user interface front. A phono stage is optional.

Inside the amp, the circuitry looks familiar from previous incarnations of Arcam upper-range integrated models, but there are some changes. One that's mentioned in the literature is the elimination of thermal modulation – see our *Lab Report*. There's substantial use of mechanical damping, in the form of soft plastic on the input relays, output inductors and other microphonic parts, plus a ferrite interference absorber on the volume control chip. Maybe it doesn't make much difference, but it's nice that Arcam has taken the trouble. Inputs are all buffered (using the venerable 5532 op-amp chip) and while passive component quality is good, circuit board build is excellent and the large internal heatsink is almost completely non-resonant.

SOUND QUALITY

Although our listening panels have, on the odd occasion, found Arcam's amps a little 'safe' sounding, this model made a very good impression and suggests that the apparently small design changes from its predecessors have been distinctly beneficial. Above all, it seems to be the most exciting, lively and generally involving amp that Arcam has produced to date and our listeners agreed that it got their feet tapping, at least as well as any of the others.

At the same time, it has very good resolution and analytical properties. It shows up clearly the differences between the various subgroups and individual instruments in complex music, and allows one to follow with ease the interplay between parts. Stereo separation is excellent and very stable, while the tone of each instrument is consistently realistic. The tonal qualities were particularly apparent in our Miles Davis track, which was described by one listener as 'immediate, yet still dreamy'.

Only in our choral track was a slight reservation expressed about a small degree of harshness in the sound. This is common in recordings of multiple voices, but it didn't detract from the 'liveness' of the recording and, significantly, didn't seem to affect the larger vocal forces in our opera track.

Of course, with its greater reserves of power on hand, this amp is capable of slightly louder music replay than the others in the group. It's interesting, though, that even when the actual playback level is very closely matched to the rest it still sounds particularly dynamic and determined. It seems to have no particular favourites among music styles and is as happy with the slow movement of a string quartet as it is with rock'n'roll power chords. Dynamic pacing is terrific and, all things considered, this makes some of the best sounds we've heard. **HFC**

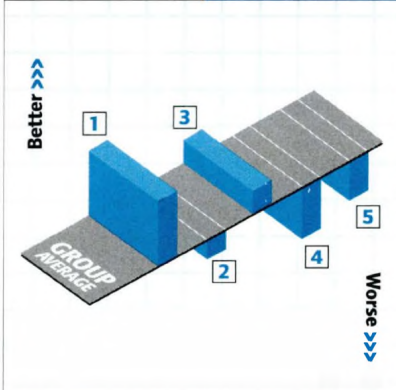


LAB REPORT

In common with previous Arcam models, the A38 has a traditional solid-state class AB output stage. This manages to outperform Arcam's own specs (which, if our experiences are anything to go by, tend to be on the conservative side). The output stage features thermal management, said to be capable of 'eliminating the thermal modulation of audio signals', thereby giving more consistent and stable results over a range of operating temperatures (in other words, the sound shouldn't change as the amp warms up).

We measured the A38, after several hours of continuous operation and discovered that the second set of results we obtained were – to all intents and purposes – identical to measurements taken earlier that day. So maybe there's something in Arcam's attention to such detail. Distortion is kept low at any frequency and output power and, in general, the measured results are very good.

HOW IT COMPARES



- 1] Dynamic Power >>> +40%
- 2] Frequency Response >>> -10%
- 3] Dynamic Range >>> +10%
- 4] Distortion >>> +25%
- 5] Output Impedance >>> -20%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	100W	112W
Total harmonic distortion	0.005%	0.008%
Signal to-noise ratio	-dB	±0.3dB

VERDICT

SOUND ★★★★★	With consistently high achievement across the gamut of sonic criteria, this amp offers involving and impassioned music-making from any decent recording, plus an appealing selection of features. What's not to like?
FEATURES ★★★★★	
BUILD ★★★★★	
VALUE ★★★★★	
HI-FI CHOICE OVERALL SCORE ★★★★★	



ASTIN TREW AT2000PLUS

Impressive sound and connectivity lead the way on this amp

£1,740 ☎ 01491 629629 🌐 www.astintrew.co.uk

Designed in Britain', says the literature – though construction is actually Chinese. Wherever it was put together, though, this amp offers some impressive material value for money. Indeed, it seems to tick an unusually large number of boxes. Valves, multiroom capability, front-panel MP3 input, balanced input and output, high-grade coupling capacitors (along with some fancy cable, contributing to the 'plus' bit of the model name). If Astin Trew wants this to look like the amp for everyone, its doing well so far.

As always, the big question hanging over such a product is whether sound has been sacrificed to the features count. The listening is the crucial test, but just casting an eye over the internal appointments suggests that AT has not scrimped in any obvious ways on sound-related parts. The valves may be the 'big news' but there is only one per channel and it's certainly not handling the output – that's done by a pair of MOSFET devices, a complementary pair of a type designed specifically for audio applications. They are fixed directly to the side panels of the amp, which thus act as both structure and heatsink.

Inputs are switched by relays, while balanced inputs and outputs (including the multiroom outputs, which use Ethernet-style connectors suitable for 'CAT5' cable) are treated with good-quality dedicated balanced line drivers and receivers. Assembly is neat and tidy, but the circuit boards are awfully cramped in places. Luckily the valves are clearly running at quite low current, so there's not a huge amount of heat coming off them.

The electronic volume control is configured with one decibel steps across most of the range, though the top few decibels are in 0.5-decibel steps – pointless, really, since most of us will never use this part of the range.

SOUND QUALITY

The valves may show some character in the measurements, but as far as sound is concerned it seems the AT2000plus does lots of good things, without standing out in any particularly remarkable way – and if that sounds like damning with faint praise, do bear in mind that standing out too much can be a distinctly double-edged sword!

If there is one respect in which this amp is clearly differentiated from the rest, it's the way in which it combines a slightly warm, smooth balance with really sparkling treble when needed. This is a bit of a paradox, for sure, but not one you'll want to complain about: think of it as an unusual degree of lack of harshness and it may seem less perplexing. As usual with modern amps, the frequency response is not part of this (seeing as it's as flat as the proverbial), but whatever the cause the treble is sweet, almost to the point of recession, but still with enough 'zing' to handle intrinsically bright sounds like cymbals very naturally.

At the other extreme of the spectrum, the bass is solid and well-defined, causing our listeners to be very impressed with the special effects at the start of the Michael Jackson track (spooky footsteps etc.). The same quality does very well by piano, which sounds big and believable. Just occasionally, especially in the opera track, it seemed that the bass was a little less detailed than some, while orchestral cellos and basses could use a little more precision.

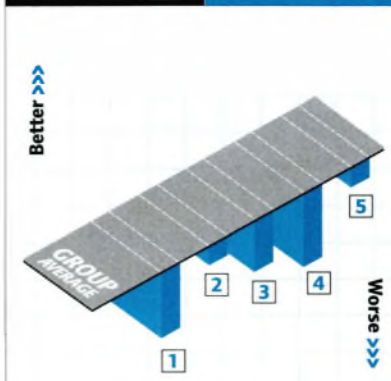
Stereo imaging is good and the sound has plenty of pace to it across the board. A confident dynamic spread makes for equally assured handling of forces large and small. The balanced input (assessed after the main 'blind' listening test) is, if anything, a shade more transparent than the unbalanced ones, but the basic sound is largely the same. **HFC**

LAB REPORT

This amp fails to meet its rated power output by a noticeable margin. Interestingly, it clips very asymmetrically, on one half of a waveform before the other, which will lead to a slight 'thud' quality under conditions of slight overload. That can sound quite exciting sometimes, but it's not likely to have been a feature of the blind listening test as this was conducted at a level well within the AT2000's unclipped output envelope.

Distortion is considerably higher than with most amps these days, almost certainly due to the valve stage: the distortion spectrum shows the typical low-harmonic behaviour of valves and also illustrates how distortion drops off with level, ensuring that the all-important first watt is much purer at about 0.05 per cent distortion. There's a little hum in the output, enough to be borderline audible through sensitive speakers.

HOW IT COMPARES



- 1] Dynamic Power >> -40%
- 2] Frequency Response >> -10%
- 3] Dynamic Range >> -30%
- 4] Distortion >> -50%
- 5] Output Impedance >> -10%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	70W	48W
Total harmonic distortion	0.1%	0.5%
Signal to noise ratio	±0.5dB	±0.3dB

VERDICT

SOUND ★★★★★	Scoring highly for connectivity and smartly turned out with it, this amp also offers some very pleasing sound with good rhythm and sweet treble. Very slight bass congestion is the only downside.
FEATURES ★★★★★	
BUILD ★★★★★	
VALUE ★★★★★	
HI-FI CHOICE OVERALL SCORE ★★★★★	



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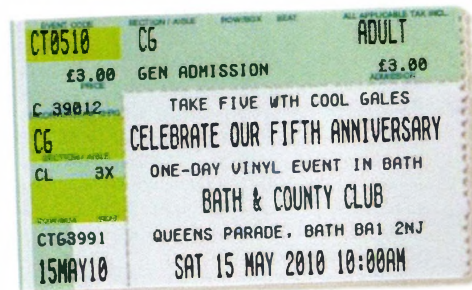
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The Brennan also records from vinyl and cassette so you can enjoy your entire music collection but keep it out of the way in another room or retire it to the attic. You can use the JB7 in two ways. You can use it with

loudspeakers or you can play it through your existing HiFi. The Brennan gives names to tracks and albums from a database of 2.6 million CDs as you load each CD. It takes a few minutes to load a CD.

The Brennan has a unique text search facility that shows a reducing number of matches as you press successive letters on the remote control. Once you get the hang of it you can find one track or album out of your entire music collection in a few seconds. So to find "Nessun Dorma" you would press letters "NES" or "DOR" and scroll through the shortlist of matches.

The face behind Brennan



Martin Brennan

Martin is a physicist and computer engineer. He has around twenty silicon chips to his name, written over a million lines of computer code and co-designed the world's first 64 bit games computer.

"I always liked the promise of CDs. It wasn't so much the quality but the quick access to a given track. After vinyl and cassette that was a real plus. My first CD player was a five CD multi changer. My second was a ten CD changer for the car. I liked the idea of quick access to more than one CD and music that didn't repeat after 40 minutes. These players were fine but a bit clunky - there were several seconds of silence between CDs and in the car I could

never find the right CD. A few years ago I had a go at loading my cassette collection onto a PC. Cassettes were obsolete but I owned around 100 and the music on them reflected an important period in my life. I recorded all of the cassettes on to the PC over a period of several weeks.

The thing is I never listened to the music on the PC. Somehow using the computer to listen to music never worked out. Maybe the computer was in the wrong place but I think it lacked the immediacy of a physical play button. In the end the computer got a virus and the music files were lost - I still had the cassettes thankfully. The JB7 is really my personal ideal music player".



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Superb amp that tries to cover too many bases

£1,550 ☎ 01480 435577 🌐 www.cyrusaudio.com

Possibly the hardest-working component in hi-fi, the Cyrus case moulding has done some impressive things in its time, but surely few are quite as surprising as hosting six-analogue and five-digital inputs, plus twin pre-out, Zone 2 out (usable as a record output), MC-Bus in/out, headphone socket, PSX-R power supply socket and bi-wire loudspeaker outputs, all on a rear panel one hand-span wide. You do end up needing slim fingers to plug and unplug, but that's hardly a big deal when kit like this is unlikely to sell to full-on system-tweakers.

The digital input provision is particularly appealing. Five inputs (including one USB) is more than you get on any sensibly priced DAC and makes this amp a perfect choice for modern systems with assorted analogue and digital sources. It also features sensitivity trim for each input, again something you won't find on most standalone DACs and while, in principle, this shouldn't be relevant for digital inputs it can be handy when one of them is from a dynamically compressed source such as TV or radio, which will otherwise sound much louder than full dynamic-range sources like CD.

The mains transformer is a generous sized toroidal lump, so intelligent use of electronic switching components and surface-mount parts for almost everything else has made the circuitry quite compact. Cyrus mentions the use of extensive power supply regulation, something that can be taken further by using the PSX-R which replaces the internal transformer for most functions except the main output.

Operation is pleasant, with the graphic display showing useful information. You have to scroll through the inputs, which can be renamed to suit your use.

SOUND QUALITY

There are many good things in this amp's sound, but it would be dishonest not to report that there were also some misgivings by our blind listeners. Most serious among these is that there is some shrillness in the sound, which accentuates any brightness present in a recording and can make it cross the line between enjoyable and annoying.

On the other hand, there is a flip side to that coin: the sound is very 'fast' and, with the right sort of music, exciting. As so often, this comes down, at least, in part to a question of taste. If you like that kind of sound and/or music, this is a good amp to investigate. In addition, there's the question of system matching, especially speakers. We used Bowers and Wilkins speakers for the main listening test, which aren't markedly one thing or another – obviously useful for reviewing purposes. If you have laid-back speakers, though, this amp will be unusually successful in bringing them to life, ditto if you have a rather lazy-sounding source.

Tonally, the 8 XP d's qualities are dominated by that shrillness, which often makes the bass seem by contrast rather recessed. Detail is not bad, but if one's attention is directed towards the treble one might not notice that the midband is actually very informative. Dynamics are not the widest in the group and seems a little 'lumpy', progressing in discrete stages rather than a gradual ramp from loud to soft and back.

It's a shame that such a well-specified product, with many practical things going for it, is hampered in this way. Even more frustratingly, the DAC is very good, giving excellent results via the preamp outputs. Maybe Cyrus has just tried to make it do too much? **HFC**

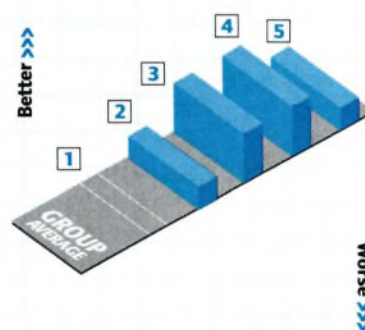


LAB REPORT

Our power output measurements comfortably exceeded the conservative Cyrus spec, which suggests that the manufacturer's twin-transformer power supply is doing a good job. The main (350VA) transformer powers the amplifier proper, while a smaller one is dedicated exclusively to the microprocessor-based control system. This approach is good for sonics and, as an additional benefit, keeps standby power-consumption low (less than a watt).

Frequency response, THD and signal-to-noise ratio measurements are also very good – distortion is, in fact, the lowest in the group, by a small margin, and it stays low at high frequencies. Despite the close proximity of the circuits to the large mains transformer, hum is very low in level, suggesting that the circuit's layout has been carefully optimised.

HOW IT COMPARES



- 1] Dynamic Power >>> 0%
- 2] Frequency Response >>> +10%
- 3] Dynamic Range >>> +30%
- 4] Distortion >>> +30%
- 5] Output Impedance >>> +10%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	70W	75W
Total harmonic distortion	0.02%	0.006%
Signal-to-noise ratio	±0.3dB	±0.1dB

VERDICT

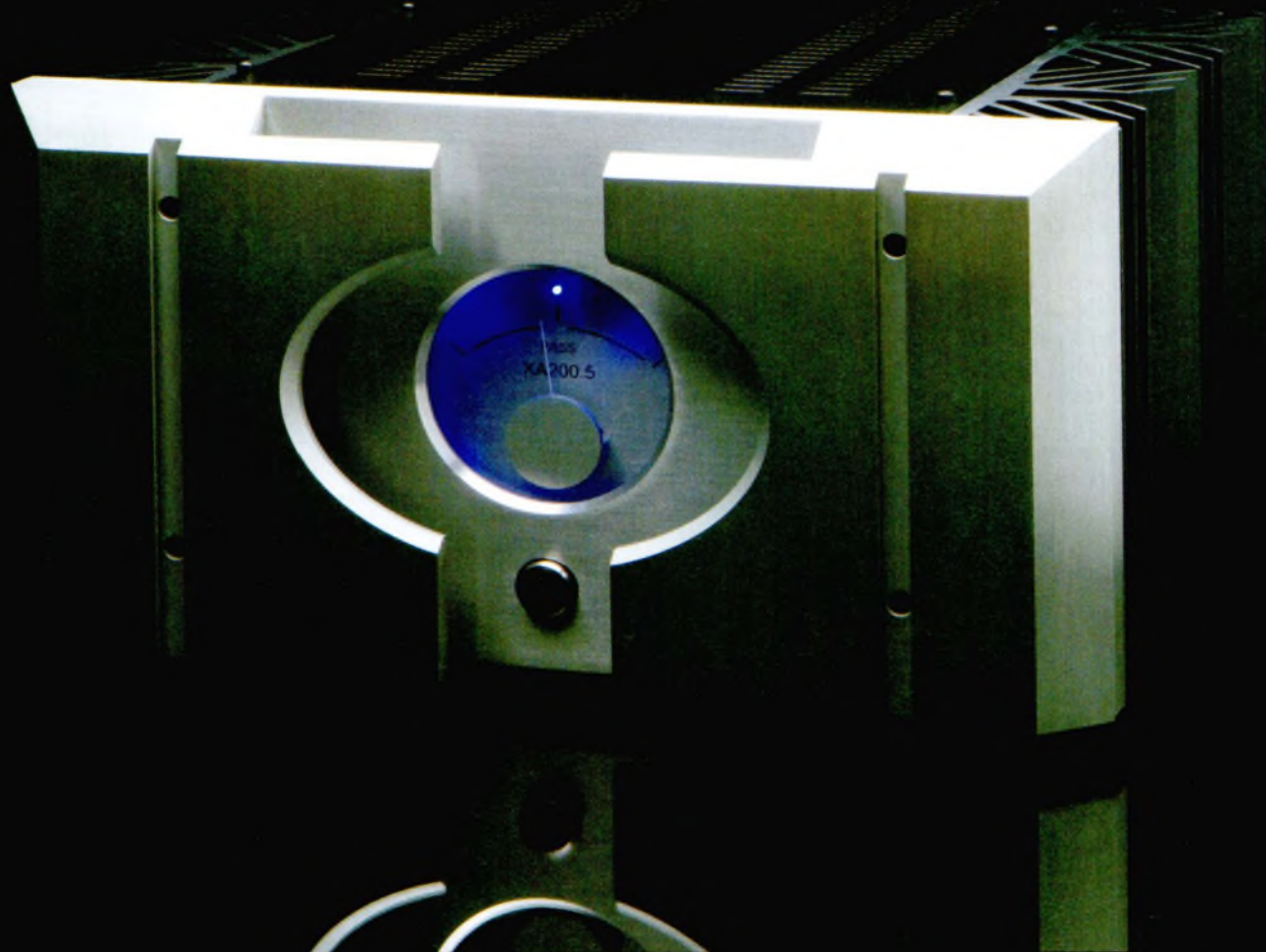
SOUND	★★★★☆	Sound is fast, lively and pretty well detailed, but is let down by some shrillness which can quickly grate on the ear and which distracts from the good midrange and bass. Excellent features count, but at a sonic price.
FEATURES	★★★★★	
BUILD	★★★★★	
VALUE	★★★★☆	
HI-FI CHOICE OVERALL SCORE		★★★★★

pass

Pass Labs *by the numbers:*

125 reviews
76 awards
47 products
43 articles/projects
35 countries
18 years
7 patents
1 Nelson Pass

.....and counting





ELECTROCOMPANIET ECI-3

An amp with big potential, but a little too bright for some

£1,750 ☎ 020 8893 5835 🌐 www.electrocompaniet.com

Electrocompaniet has been around for a long time and while this amp certainly doesn't date from the company's earliest days, it's hardly a spring chicken. Still, if they got it right first time round and all that... It's a notably large beast, wide and deep, which is only partly accounted for by the use of through-hole components which take up a lot more room than the surface-mount ones used for instance by Arcam and Cyrus. But Astin Trew, likewise, uses through-hole, plus valves and more features than the ECI-3. In fact it's easy to see ways in which this amp could have been made several inches shallower, so the size is clearly a design decision.

The mains transformer almost disappears in such space, but it's chunky and assisted by unusually generous amounts of smoothing capacitance. Across the case, meanwhile, sits the heatsink, on which are mounted the output transistors and small-signal stages sit in the middle. Input selection is done with relays and there's a traditional volume control, but it's not connected to a knob. Instead the up/down buttons on the characteristic diamond array (or the remote, of course) operate the volume via a motor. This can be a pain and it's certainly slower than a single-turn knob, but Electrocompaniet has got it just about right and it's easy to 'nudge' the volume up and down in very small increments. Setting is shown by a blue LED, which is visible through the front panel, tracking the volume control's setting mechanically.

Apart from one pair of op-amps, the circuit uses only discrete transistors and not a particularly large number of them either. Inputs run to six, one of which is balanced, while twin recording outputs are joined by preamp outputs, the latter balanced and unbalanced.

SOUND QUALITY

Although there was more praise than blame for this amp, it divided opinion to some extent among our listening panellists. The main reason for this was clearly a very small degree of brightness compared with most of the models in the group. In a perfect demonstration of why no one product will suit all listeners all of the time, one listener found this made the sound exciting, while another felt it simply spoiled the whole presentation. The third listener noticed the brightness but it didn't seem to bother him profoundly one way or the other.

So if we discount the comments of the individual for whom this amp was a bit of a trial, it seems there is plenty of detail and insight to enjoy from the ECI-3. There's also good bass, possibly not the most extended and certainly not the most indulgent, but precise, crisp and rhythmically driving.

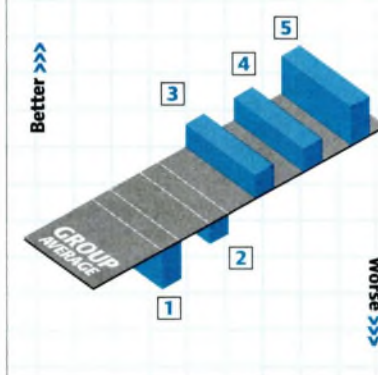
Imaging is intriguing, excellent laterally with a very high degree of precision but a little compressed in terms of depth – I felt the same when listening sighted to the amp. Images come forward slightly compared with the group average, but this isn't particularly distracting and, if anything, adds to the excitement that the amp is capable of generating.

Perhaps, more than any others in this group, though, this amp seems to make its best impression slowly, something that one can't very well establish in a quick-fire comparative test. Most likely, this is simply down to the fact that with a couple of hour's listening, one becomes familiar with the brightness and this dominant characteristic is perceived to be very beguiling and persuasive with detail. It makes sense then, to listen for a long period to really appreciate whether the brightness gets more or less apparent, before judging this amp! **HFC**

LAB REPORT

With its 550VA toroidal mains transformer – the biggest of the group – and 40,000 microfarads of reservoir capacitance, the venerable but revered ECI-3 has serious potential reserves of mains-derived DC power on tap. To this should be added Electrocompaniet's own contribution to the field of power supply design 'Floating Transformer Technology'. This should, in theory, stand the ECI-3 in good stead as regards transients and orchestral climaxes. Despite that, our power measurement suggests that the 70-watt continuous rating is a little optimistic. Distortion at high-output level seems a little higher than quoted by the manufacturer, but drops off rapidly with level, meaning that at low output power (i.e. quite a lot of the time in real music) there is less distortion than from most of the other amps in this group. A contribution, perhaps, to the amp's excellent long-term listenability?

HOW IT COMPARES



- 1] Dynamic Power >> -20%
- 2] Frequency Response >> -10%
- 3] Dynamic Range >> +10%
- 4] Distortion >> +10%
- 5] Output Impedance >> +20%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	70W	60W
Total harmonic distortion	0.006%	0.015%
Signal-to-noise ratio	-dB	+0.3dB

VERDICT

SOUND ★★★★★	Sound is a little on the bright side. If this doesn't completely alienate you, there is a lot to enjoy in the rest of the ECI-3's character, especially the way it deals with detail. Precise, but not clinical, sums it up.
FEATURES ★★★★★	
BUILD ★★★★★	
VALUE ★★★★★	
HI-CHOICE OVERALL SCORE ★★★★★	



iChoose quality?

Are widely accepted music formats undermining the quality of the music we listen to on a daily basis?

The Music Chain

Much is written about music and the musicians who entertain us, and we rightly exalt great musicians. But there is an interlinked chain of participants, two of which are I believe are crucial to our music scene in today's world. For centuries the music chain was a very short one – composers or songwriters, musicians and listeners, and the judgement on quality was immediate. Recording technologies have changed all this exponentially.

Today, we listen to most of our music from a recording and this gives recording engineers the opportunity to avoid poor acoustics, duff notes and off days. This, of course, means the chain has grown to include the recording engineers, the music distribution system (retailers or downloads), hi-fi manufacturers, hi-fi sellers and the hi-fi purchasers, the latter being the listeners. I should start by saying that hi-fi has become an adulterated term that no longer has its original meaning because it's applied to much equipment that certainly should not be termed high-fidelity.

It's said that a chain is only as strong as its weakest link. However, I believe there are two particularly strong links that, if removed from the chain, would seriously damage the quality of recorded music. These are the audiophile, or hi-fi connoisseur, and the specialist hi-fi retailer, the latter in nearly all cases also being the former because it's their interest that has driven them into their particular business. These are the people who most appreciate how exciting and involving music can be and how it can deliver an emotional experience.

Hi-Fi Connoisseurs

So why is the hi-fi connoisseur so important to the music industry? By their nature, audiophiles are generally avid music lovers who enhance their enjoyment through listening to music at its very best quality level, which means playing great recordings through hi-end hi-fi to achieve the most outstanding results. Without the audiophile, the main driver for quality would probably be removed from the chain. Let's be honest, over recent years the majority of music listeners now settle for MP3 convenience and, therefore, mediocre sound quality. If the pendulum ever swings so far that all but a few listen to highly compressed formats such as MP3, music producers will not waste their resources on producing high quality recordings because it would be commercially unnecessary, even if their recording engineers wanted to achieve the best they could. After all, an MP3 or AAC file, the iTunes default format, downloaded at 128 kbps (the most popular download speed), is about one-eleventh the size of a full resolution CD track, 1411 kbps, so the quality is inevitably far inferior. Information is irretrievably lost and the full dynamic range is lacking. Using an iPod while jogging does not really raise a quality issue but playing low-resolution tracks through an iPod docking station that feeds into a decent hi-fi system, is a disaster area. It's rubbish quality made louder. Fortunately, there is still significant demand from audiophiles committed to sound quality to sustain the production of high quality recordings, but it would be a tragedy if there weren't. For example, most classical recordings downloaded as an MP3 or AAC file are a complete waste of time because there is so much information missing that they are reduced to just the essence of a tune.

Specialist Hi-Fi Retailers

Just as essential a link in the chain as the hi-fi connoisseur is the specialist hi-fi retailer and the two are rightly dependent on each other. Without the specialist retailer the hi-end hi-fi manufacturer would have to rely on the internet and hi-fi magazine reviewers to try and assess the relative merits of different brands for their potential customers – a notoriously unreliable decision making process. Specialist hi-fi retailers are constantly being offered new products for assessment and potential stocking and, as it is also their hobby as well as their livelihood, they are greatly interested in achieving the best performance and seeking out the most outstanding combinations. More than that though is their relationship with audiophiles for, if they are to stay in business, they must satisfy the most discerning customers in the industry. The reality is that audiophiles and specialist hi-fi retailers are essential to each other.

LISTED BELOW IS OUR SELECTION OF THE BEST HI-FI DEALERS IN THE UK.

They have been selected because they are known to do an excellent job in guiding customers towards hi-fi that will give years of musical enjoyment and total satisfaction.

Future of Recorded Music

What are the future prospects of maintaining high quality music recordings? We must hope that audiophiles, or hi-fi connoisseurs, or perhaps most accurately described, music lovers, will continue to drive the demand for quality. But another important reason for hope within the mass-market is that there is no longer any over-riding reason for MP3 and AAC to have such a following. These formats were designed to overcome very slow download speeds pre-broadband and small, expensive memory capacity but the trade-off has been quantity at the expense of quality. Download speeds and memory capacity are not significant factors for most people now and will be increasingly irrelevant with time. Full resolution, CD quality, downloads are already available and should become the norm as long as the general public can be made aware of the tremendous quality benefit. This has happened with HD TV so we know this awareness can grow rapidly. In the meantime, we must highly value hi-fi connoisseurs and specialist hi-fi retailers, of which the ones listed on this page represent the UK's finest. Specialist dealers know how to choose the products that combine as a superb system and how to get the best out of it by expert installation in the home. If there's a price premium over an internet purchase, it's probably a small one, but it's unquestionably worth the difference.

STAR QUALITIES

VALUE FOR MONEY



SERVICE



FACILITIES



VERDICT



OUR TOP 20 UK HI-FI DEALERS

SOUTH

Ashford, Kent
SOUNDCRAFT HI-FI
40 High Street.
01233 624441

Chelmsford
RAYLEIGH HI-FI
216 Moulsham Street.
01245 265245

Colchester
RAYLEIGH HI-FI
33 Sir Isaac's Walk.
01206 577682

East Grinstead
AUDIO DESIGNS
26 High Street.
01342 328065

Kingston-upon-Thames
INFIDELITY
9 High Street,
Hampton Wick.
020 8943 3530

Maidenhead
AUDIO VENUE
36 Queen Street.
01628 633995

Rayleigh, Essex
RAYLEIGH HI-FI
44a High Street.
01268 779762

Southend-on-Sea

RAYLEIGH HI-FI
132/4 London Road.
01702 435255

Southampton
PHASE 3 HI-FI
37 Bedford Place.
023 8022 8434

LONDON

Ealing
AUDIO VENUE
27 Bond Street.
020 8567 8703

N1
GRAHAMS HI-FI
190a New North Road.
020 7226 5500

SW11
ORANGES & LEMONS
61/63 Webbs Road.
020 7924 2043

SOUTH WEST

Bath
AUDIENCE
14 Broad Street.
01225 333310

Exeter
GULLIFORD HI-FI
97 Sidwell Street.
01392 491194

MIDLANDS

Banbury
OVERTURE
3 Church Lane.
01295 272158

Birmingham
MUSIC MATTERS
363 Hagley Road,
Edgbaston.
0121 429 2811

Coventry
FRANK HARVEY
163 Spon Street.
024 7652 5200

Leicester
CYMBIOSIS
6 Hotel Street.
0116 262 3754

Nottingham
CASTLE SOUND &
VISION
48/50 Maid Marian
Way.
0115 9584404

NORTH

Cheadle
THE AUDIO WORKS
14 Stockport Road.
0161 428 7887

Chester
ACOUSTICA
17 Hoole Road.
01244 344227

Gateshead

LINTONE AUDIO
7-11 Park Lane,
Gateshead.
0191 477 4167

Sheffield
MOORGATE ACOUSTICS
184 Fitzwilliam Street.
0114 275 6048

York

SOUND ORGANISATION
2 Gillygate.
01904 627108

SCOTLAND

Aberdeen
HOLBURN HI-FI
441 Holburn Street.
01224 585713/572729

Edinburgh
LOUD & CLEAR
Bonnington Mill,
72 Newhaven Road.
0131 555 3963

Glasgow

LOUD & CLEAR
520 St Vincent St,
Finnieston.
0141 221 0221

Glasgow

GLASGOW AUDIO
135 Great Western Road.
0141 332 2200/4707



MOON I.1

Some technical flaws can't dampen this amp's spirit

£1,450 ☎ 0131 555 3922 🌐 www.simaudio.com

While a £1,500 integrated is pretty upmarket for Arcam and Cyrus, it's the very start of the range for Simaudio, whose Moon products extend to distinctly high-end territory with such products as the vast and powerful Titan power amp. But then the Moon i-1 is not exactly a shrinking violet, even though its 50-watt rating is fairly modest by current standards and the unit is not at all daunting to behold. It's certainly neat and practical, though, as we shall see.

In fact, it's every inch a classic no-frills integrated. By far the dominant part inside the case is the mains transformer, which feeds the usual rectifier and capacitors and then the main amplifier board. This uses a mixture of through-hole and surface-mount components, with electronic switching of inputs (by integrated circuits, not relays), but a mechanical volume control accessed from the front via a good old-fashioned single-turn knob. If all this suggests anything about the design approach, it is that it's thoughtful and not dogmatic, which must be a good thing.

Unusually in an amp of this rating, Moon does without a heatsink. Instead, the output transistors are mounted on the base panel, which is made of quite thick aluminium and functions adequately as a heatsink without any assistance – Rega does the same in some of its models. In principle you might be able to overheat the amp with specific test tones, but in everyday use I can't see how that could ever happen.

Inputs run to six, one being a front-mounted 'MP' socket, a mini-jack. There's a preamp output, but no recording output and provision is made for wired, as well as wireless remote control. And that's about it! It's really all about the sound here, so let's listen..

SOUND QUALITY

After that build-up, I'm glad to be able to report that this amp was, overall, another success in this group. Our listeners pointed to several admirable virtues, including excellent bass and a good sense of drama. There was the odd, slightly less-positive comment, though, including a slightly harsh presentation of vocals at times, especially female vocals. That bothered one listener much more than the others, but in the same sentence where he pointed it out, he also conceded that the Moon's presentation of the music was quite gripping and that this may be a very small trade-off for many listeners.

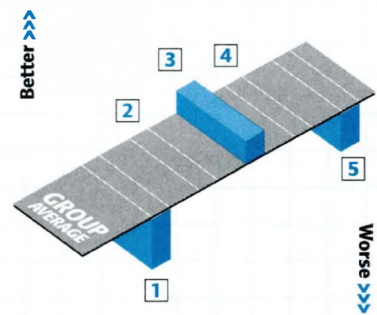
But it seems to be the bass that made the strongest impression. It's not only extended, it has detail, precision and a very good sense of pitch, a combination that's hard to find outside the high end. It benefits all kinds of music, putting the upright bass and piano in a well-defined relationship in the Miles Davis track and giving full reign to the sound effects at the start of Michael Jackson's. Even in the unaccompanied choral track, which certainly has the least overt bass of any in the blind presentation, the sense of a real church acoustic benefitted noticeably from the low-frequency confidence of this amp.

Midrange detail is good too but, perhaps, not quite the best of the group. This quality is closely allied to stereo imaging and all the listeners felt that this was good, but with slightly restricted scale in both dimensions. The 'presence' region (upper midrange/lower treble) is, perhaps, just a touch enhanced subjectively, although the bottom line is that one can very easily get lost in a piece of music played through this amp and whatever minor technical flaws it may have it is never less than a musical performer. **HFC**

LAB REPORT

Output slightly exceeds the rated fifty watts, while most of our other measurements also tally well with those of the manufacturer. Distortion is a little unusual: while its level is not particularly remarkable, it contains rather more harmonics than is usually the case, suggesting that there is a small, but relatively sharp 'kink' in the amplifier's transfer function – possibly a symptom of mild crossover distortion. Distortion doesn't drop off with level quite as fast as one might like – in fact it stays roughly constant down to about one-watt output. It hardly rises with frequency, though, which is always a good thing. Noise is low and the frequency response is kept very accurately flat. The fact that it is only average for the group merely reflects an excellent group average!

HOW IT COMPARES



- 1] Dynamic Power >> -30%
- 2] Frequency Response >> 0%
- 3] Dynamic Range >> +10%
- 4] Distortion >> 0%
- 5] Output Impedance >> -20%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	50W	55W
Total harmonic distortion	0.2%	0.025%
Signal-to-noise ratio	±0.3dB	±0.2dB

VERDICT

SOUND ★★★★☆	A hint of harshness can on occasion affect vocals and bright-sounding melody instruments, but the bass is fabulous, detail is good, and the lasting impression is of convincing music-making.
FEATURES ★★★★☆	
BUILD ★★★★☆	
VALUE ★★★★☆	
HIFI CHOICE OVERALL SCORE ★★★★★	





UNISON RESEARCH UNICO SECONDO

An exciting, energetic music-maker with a handy phono stage option

£1,860 ☎ 01753 652669 🌐 www.unisonresearch.com

A large and imposing amp, this one is also pretty bare-bones, though unlike most it has the option of a phono stage. One of those was provided for review (the price given includes it, a very reasonable £125 on top of the basic model).

All kinds of amplifying devices are found inside the case, as the circuit uses bipolar transistors, FETs and valves. There's very little use of surface-mount parts and most of the amplifying is done with discrete components, though there are a few op-amps dotted around and also some integrated circuits with part numbers intriguingly obliterated.

A substantial mains transformer is used and there is plenty of smoothing capacitance, plus quite extensive regulation of supply voltages for small-signal stages.

Uniquely in this group, input switching is done by a mechanical switch, mounted at the rear and operated by a long rod from the front panel – volume control also uses a regular mechanical potentiometer. The latter is motorised, but input selection is not remote controllable. That means you'll have less cause to use the rather gorgeous remote, made of solid wood with a metal top plate – but also less cause to lament the ugly cheesehead screws which hold it together from the top. Please change to countersunk screws, at least!

Apart from the phono stage, input provision is basic and there are no modern frills like mini-jack sockets for portable players etc. There is a preamp output, which is also applicable to bi-amping and a record output marked 'Monitor'. The phono stage handles MM and MC cartridges, though you have to get inside and fiddle with jumpers to change settings.

SOUND QUALITY

This turns out to be another amplifier that's good at exciting, energetic music-making, though our listening panel did feel at times that it's, perhaps, a bit too much of a good thing on the excitement front and could do with relaxing a bit. Specifically, it has a touch of brightness that affects voices, particularly the consonants and doesn't always have quite a bass reach of the best in this group.

On the other hand, energetic rock and suchlike is great. Our Michael Jackson track went down well, helped by a big presentation and plenty of power and drive in the bass. The same qualities helped to some extent in our operatic excerpt, but in that case the excitement built at the start of one particularly long crescendo was rather undermined by the way the sound lost focus as more and more instruments and voices joined in.

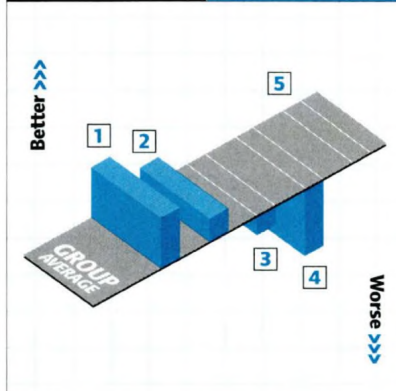
Detail is better in less thickly textured music, but even in the unaccompanied choral track, which has only half a dozen or so voices, there was some lack of information about the acoustic of the recording venue, information that our listeners had heard through other amps. The voices themselves were very successful in this case, though, the rather more ambient recording making the Unico Secondo's sibilance much less of an issue.

As the lone phono-compatible amp in this group it was hardly possible to make comparisons, but by the prevailing standards of decent integrated amps this one does a good job with LP sources, especially from moving magnet cartridges: moving coil is a little less clear. Bass is very clean and treble has a nice sense of cohesion to it. **HFC**

LAB REPORT

Much has been written about the supposed relationship between 'valve sound' and specific patterns of harmonic distortion. There's almost certainly something in this, but the distortion spectrum of this amplifier contains higher levels of high harmonics than any of the others here, with odd-order harmonics up to, at least, the 15th clearly visible at high outputs – very 'un-valve-like'. Somewhere around two watts output, however most of these harmonics vanish into noise. Frequency response is pretty much exemplary, at least via line inputs: the phono stage shows some sign of tailoring with a roll-off of about 0.7decibels at 20kHz, just about enough to be audible as a very slight sweetening of the sound. Our measurements suggest a continuous output a shade short of 100 watts, while output into low-impedance loads holds up unusually well.

HOW IT COMPARES



- 1] Dynamic Power >> +30%
- 2] Frequency Response >> +10%
- 3] Dynamic Range >> -10%
- 4] Distortion >> -40%
- 5] Output Impedance >> 0%

SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	100W	95W
Total harmonic distortion	-.%	0.4%
Signal-to-noise ratio	+0.1dB	+0.1dB

VERDICT

SOUND ★★★★★	A good phono stage adds value, but the sound could use a little more precision and less brightness. Good energy and lively, if not astoundingly extended, bass, while high treble has a pleasing sweetness too.
FEATURES ★★★★★	
BUILD ★★★★★	
VALUE ★★★★★	
HI-FI CHOICE OVERALL SCORE ★★★★★	



CONCLUSIONS

We've put the amps through their paces, now is the time to analyse the results...

We don't necessarily regard these *Ultimate Group Tests* as a 'shoot-out', since such a crude approach can easily overlook the success of different products in different ways. Nevertheless, the unusually close price-matching among the six contenders this month makes it hard to resist some direct comparisons. Sure, there's some variety of features (including power rating), but even there things are not as sharply differentiated as can happen.

The Electrocompaniet is, by a small margin, the least well-

featured, but it offers a decent number of inputs and full remote control, while the Unison Research has a versatile phono stage but no remote control of input selection.

As for sound, it does seem that one amp simply trumps the others on overall performance. The Arcam A38 is everything an upmarket integrated amp should be. It's also one of the best-specified, with a little more output power than the others, plenty of inputs, a nice selection of features and the option of adding a phono stage. Oh, and for what it's worth, it's the second-cheapest.

We were also taken by the approach demonstrated by the Astin Trew AT2000plus, which offers some very attractive treble, even if it doesn't always quite sort out the bass.

There's no reason for the other manufacturers to despair, though. Even if we did end up scoring the Moon i-1 rather low (and there's no denying the criticism that was made of a slight harshness to the sound) its bass is really rather special and will endear it to many. Or the Cyrus, which ended up with the lowest overall score – but has an astounding array of inputs and

finds a home in all-Cyrus systems. It's also one very lively performer.

The Electrocompaniet and Unison Research models came in for rather similar criticism, one of brightness, but their specific strengths are rather different. The former has a lovely way with detail and – as we've found in the past with the company's products – is a real 'grower', making friends slowly but surely. The Unico Secondo, by contrast, is a lively and agile-sounding amp which puts more stress on the musical essentials and, perhaps, rather less on the fine detail. **HFC**

TRY THEM WITH THESE

CD PLAYERS

CAMBRIDGE AUDIO 840C £750

Not much to look at, but superbly detailed and full of musical insights

LEEMA STREAM £1,170

A lively, dynamic player that offers some very convincing imaging

LOUDSPEAKERS

ATC SCM19 £1,534

A large standmount speaker with uncommon resolution and a very even-handed approach

PMC OB11 £3,600

Bass seems to go down forever, but integrates well with the higher frequencies

HINTS AND TIPS

▶▶ Valve amps obviously need a little while to warm up, but all-solid-state ones also benefit from a few minutes idling before a demanding listening session

▶▶ Remember to leave adequate room for ventilation. Overheating is bad for reliability.

▶▶ If you have the choice of balanced or unbalanced connection to an amp, try both. It's not automatic that one will sound better than the other

▶▶ When auditioning amps, be sure to listen quietly as well as loud. Very often this is where differences show up most.

INTEGRATED AMPLIFIERS AT A GLANCE



MAKE MODEL	Arcam A38	Astin Trew AT2000plus	Cyrus 8 xp d	Electrocompaniet ECI-3	Moon i-1	Unison Research Unico Secondo
PRICE	£1,480	£1,740	£1,550	£1,750	£1,450	£1,860
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
FEATURES	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
OVERALL	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
CONCLUSION	Consistently high achievement across the board, involving and impassioned, plus an appealing selection of features	Good connectivity and smartly turned out. Fine rhythm and notably sweet treble. Very slight bass congestion is the only downside.	Sound is fast, lively and pretty well detailed, but is let down by some shrillness which can quickly grate on the ear.	A little on the bright side, but much to enjoy, especially the way it deals with detail. Precise, but not clinical, sums it up.	A hint of harshness on occasion, but the bass is fabulous, detail is good and the lasting impression is of convincing music-making	Phono stage adds value, but sound could use a little more precision and less brightness. Good energy and lively bass.
KEY FEATURES						
LINE INPUTS	7	6	6	6	6	5
RECORDING OUTPUTS	2	1	1	2	0	1
PHONO INPUT	Option	No	No	No	No	Option
SIZE (WXHXD)	43x11x37cm	43x11x39.5cm	21.5x7.5x36.5cm	48.5x11.5x41cm	43x7.5x32.5cm	43.5x13x43cm
WEIGHT	9.3kg	10.5kg	5.9kg	12kg	10kg	15kg
REMOTE CONTROL	Yes	Yes	Yes	Yes	Yes	Yes
BALANCED INPUTS	No	Yes	No	Yes	No	Yes
HEADPHONE OUTPUT	Yes	Yes	Yes	No	Yes	No
LAB CONCLUSIONS E = EXCELLENT • G = GOOD • A = AVERAGE • P = POOR						
CLIP POINT	30V G	19.5V A	24.5V A	22V A	21V A	27.5V G
FREQUENCY RESPONSE	±0.3dB G	±0.3dB G	±0.1dB E	±0.3dB G	±0.2dB E	±0.1dB E
DYNAMIC RANGE	103dB G	98dB A	105dB E	103dB G	103dB G	101dB G
OUTPUT IMPEDANCE	0.15ohm A	0.14ohm A	0.1ohm G	0.09ohm G	0.15ohm A	0.12ohm A

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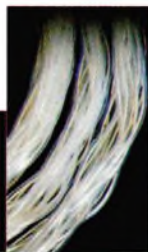
At long last the XV-Ultra Reference digital has arrived. If you thought the XV2 was the best now you are in for a treat. SPDIF 75 ohm digital use for audio and visual and superb as a clocking cable and at only **£229.00** it is an absolute no brainer.



Announcement

Signal Collection, LLC (TSC), a specialty distributor of fine audio equipment and manufacturer of highly regarded audiophile cables, announces today that it will no longer be using the "STEREOVOX" moniker due to issues surrounding that trademark, and has adopted use of the name Stereolab™ in its place. Available now is the XV-Ultra Reference digital, the Draco RX RCA and XLR interconnects and Diablo LS loudspeaker cable

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Round-up

Keep your LPs clean and they'll last a lifetime... and here's how!

Costing between £2 and £10,000 per pair, interconnect cables are an essential part of every separates audio system. There are hundreds to choose from and, as far as I can tell, no two sound quite

the same, but in the 'upmarket but sensible' bracket (a few tenners up to £250) there is plenty of quality on offer and the improvements often compare favourably with moving up a model between amps or CD players.

Kimber Tonik

TYPE Interconnect cable

PRICE £75 (one-metre pair)

CONTACT ☎ 0845 345 1550 🌐 www.kimber.com

Kimber has one of the widest cable ranges around and this is the starter model. It features a classic Kimber construction, with three conductors, two of which are assigned to the 'hot' side and one to 'earth', connected up the same at each end. The conductors are plaited along the cable's length and the close proximity that results goes a long way to make up for the lack of screening: in fact in typical line-level applications (between CD player and amplifier) it's near-impossible to persuade the cable to pick up audible hum even if it is wound around a mains cable. Each conductor contains copper strands of varying thickness (VariStrand construction) and they are fitted at each end with 'Ultratike' phono plugs, simple but good-quality plugs which lack a strain-relief sleeve – avoid repeated flexing. XLR plugs are an option for fully balanced systems.

I've enjoyed using practically all the Kimber cables I've tried, though I don't always find the interconnects offer the same sonic characteristics as the speaker cables. The latter are particularly good in the bass, which is typically extended but agile: Tonik seemed rather less assured down low, both in terms of extension and detail.

With a couple of good piano recordings it almost seems a touch sluggish. On the other hand, its midrange and treble are so clear that it's easy to forgive a small transgression like that. There's a lovely liquid quality to well-recorded upper frequencies, which makes the cable easy to recommend for lovers of unemphatic detail and good imaging. But for better bass, move up the range a little. **HFC**



VERDICT

A slight lack of bass seems a small price to pay for such insight in the midrange and treble. Tonally neutral and highly compatible.

HI-FI CHOICE



Ixos XHA716

TYPE Interconnect cable

PRICE £100 (one-metre pair)

CONTACT ☎ 01844 219000 🌐 www.ixos.co.uk

The big idea that has kept Ixos cables distinctive for some years is Gamma Geometry, a way of interlacing two conductors with an insulating thread which is claimed to combine the good qualities of parallel and twisted pairs, without the drawbacks of either. It's a perfectly decent way of doing things, though I've never managed to work out just what the drawbacks are of twisted pair. Still, Gamma Geometry does give a slightly lower capacitance than normal twisted pair, a feature helped by the use of foamed polythene insulation. There's a screen too and the whole assembly is sheathed in soft PVC, with a nylon braid over the top, making it a rather bulky affair (about nine millimetres in diameter) but still quite flexible. The nicely made phono plugs are very securely fitted and give a firm, but not ridiculous grip on standard sockets.

Somehow the tonal balance never seems absolutely natural through this cable. There's a slight prominence to the upper bass which can slightly warm up a bass-light small loudspeaker – no bad thing in itself – but which also subtly impairs the precision of that frequency range. Low bass is rather impressive, though, with plenty of extension

and good control too, making for an overall result that has plenty of impact and bite. Midrange is good above the 'bump' frequency and treble is well extended, though perhaps just a shade shut in at times. This may not be quite the cable for everyone – I found it a little frustrating with classical music – but it is great for rock and other high-energy, rhythm-heavy musical styles. **HFC**



VERDICT

Bass is arguably better than treble and the slightly subjective lift in the upper bass isn't to the benefit of all music.

HI-FI CHOICE



QED Signature Audio S

TYPE Interconnect cable

PRICE £190 (one-metre pair)

CONTACT ☎ 01279 501111 # www.qed.co.uk

A new model from QED, this is described as a 'quasi-balanced' design, a term normally used to denote cables which have the screen connected at one end only, using symmetrical conductors for the actual audio current-carrying job (truly balanced cables are simply not possible with phono connectors fitted). It actually has six conductors, three per side, laid up parallel along the length. In principle, twisting cores together gives better rejection of magnetic hum pickup than laying them straight, but when there are this many it doesn't make much difference and I couldn't detect any signs that hum was any worse than the other cables in the group – which is to say, absolutely not a problem. Material quality is very good indeed, with silver-plated copper conductors, dual-layer screen, foamed polythene insulation and rhodium-plated plugs, and it's very robustly assembled.

Sonically, this cable does seem to justify its price premium over the others in this group. Apart from anything else, its tonal balance is about as close to dead neutral as it is possible to gauge in the absence of a perfect reference. It has particularly clear and detailed

bass, that is extended without any hint of congestion or exaggeration, and allows both rhythm and deep-lying melodic lines to come through with entirely lifelike precision and passion. At the same time, high treble is effortlessly open, extended without any hint of sibilance or overhang and the midrange is full of detail and vigour. **HFC**

VERDICT

Just about everything a cable should be: an unhindered path for the music. Copious detail and beautifully neutral balance



BEST BUY

HI-FI CHOICE
magazine



Merlin Chopin

TYPE Interconnect cable

PRICE £80 (one-metre pair)

CONTACT ☎ 0118 948 1535 # www.merlincables.com

By a small margin, the bulkiest cable in this group (about 10 millimetres in diameter), the Chopin clearly offers quite a lot of materials for the money. It even includes what appears to be a ferrite noise-absorber (Merlin is cagey about this), which ought to improve rejection of interference. Ferrites are sniffed at in some quarters and while they certainly don't fix every kind of interference problem I've never been able to persuade myself, theoretically or subjectively, that they have any bad effects on audio. Beneath that, the cable is apparently made up of six conductors twisted together to give good rejection of lower-frequency interference, including hum. There's a foil shield as well and the outer casing is a dense fabric braid. The phono plugs are decent quality, if not amazing and on the review sample, at least, were not locking types, despite claims on the Merlin website to the contrary.

It's all too easy to put a fat cable into a system and expect to hear a fat bass, but in fact the character seems, if anything, to be the other way – fast and agile but with a slightly bass-light quality. Don't stop reading just yet, though, for at the same time the bass is exceptionally well detailed and actually very tuneful too, it just doesn't have quite the reach of some. As a result, low frequencies are

very communicative. That trend is continued up the band (through both midrange and treble) and although this probably isn't the most analytical cable in the top few octaves, it does have a very persuasive way with almost any kind of music. **HFC**

Richard Black

VERDICT

A rather unusual combination of characteristics, but none the less attractive for that. The main plus is the notably good communicative quality



Although the differences between interconnects may not often be vast or profound, they do seem to have their own character, as this group amply demonstrates. Very often it's hard to be dogmatic about right and wrong, though of course with parameters like detail one can't really have too much – the Kimber and QED cables

seem particularly good on that score. Tonal differences are much more a question of taste and though the QED is arguably the most neutral here it won't necessarily always trump the slight bass lift of the Ixos, or the leanness of the Merlin, depending on the system, the music and your preferences.

Guildford Audio



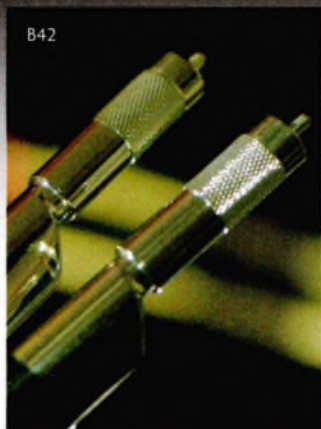
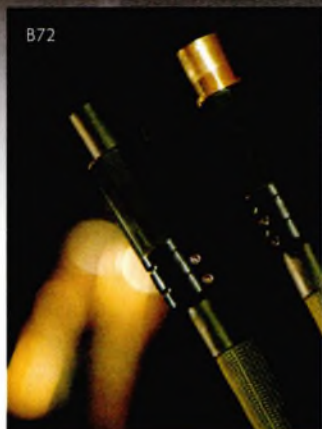
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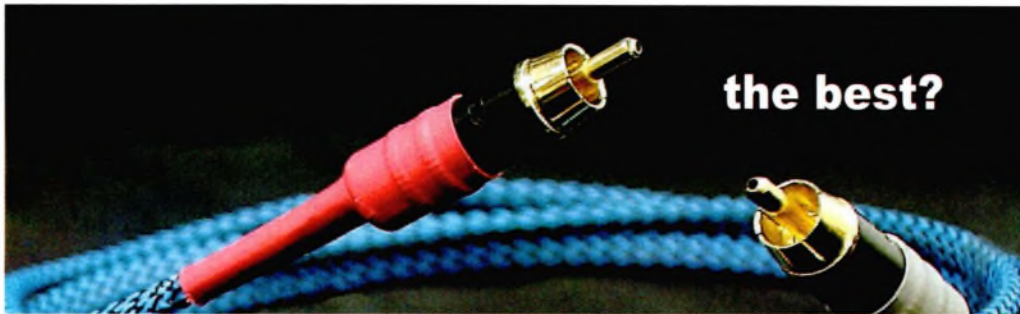
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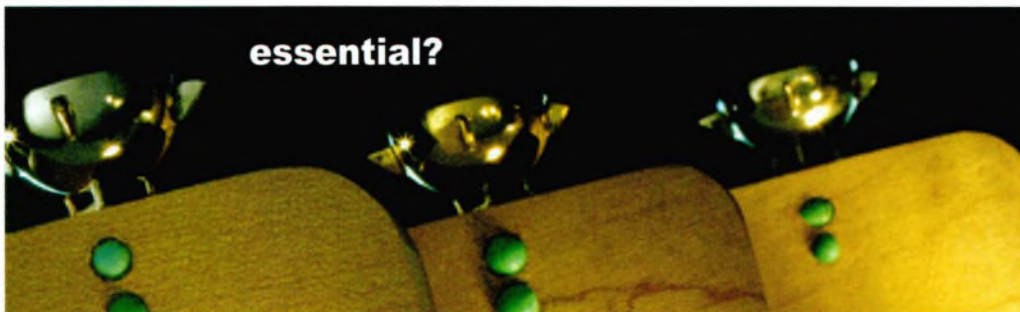
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ChoiceCuts

New music reviewed and rated by our experts

Reviews by Alvin Gold, Jason Kennedy, Dave Oliver, Mark Prendergast, Phil Strongman and Nigel Williamson



MICHAEL JACKSON
Thriller
Sony

"The album was completed in November, but at the playback for the record company, Michael burst into tears."

Words by **Dave Oliver**

Classic Album

One of the world's most popular artists will never be forgotten, thanks to this phenomenal best-selling album

It's still the biggest selling album of all time. Bar none. But it could all have been so different. One of the most polished sounding records ever, it came to be through a mix of luck, judgement, inspiration and the sheer bloody-mindedness of its two main protagonists, both of whom were quite simply determined to make the best album they possibly could.

It was never going to be an obscure release. Michael Jackson's solo star was still rising post-*Off The Wall*, when he entered LA's Westlake Recording Studios in 1982 to record his sixth solo album. He had a production budget of \$750,000 – a tidy sum even in the days when record companies had money to burn – and Quincy Jones was back on board as producer.

But his breakthrough solo album had been in 1979, and people were beginning to wonder if he could really live up to his early promise. And there were problems from the start. The pair had spent too much time putting together a storybook album for the then biggest movie of all time, *E.T.: The Extra-Terrestrial* and only left themselves a couple of months to complete the album in time for Christmas.

They had sifted through around 300 songs by a huge variety of writers for the album with a working title of *Starlight*, but they were already four weeks into the project when Michael decided that four tracks just weren't good enough (no small tweak on what would be a nine-track album) and he replaced them with four of his own: *Beat It*, *PYT (Pretty Young Thing)*, *The Lady in My Life* and *Human Nature*.

The album was completed in November, but at the playback for the record company, Michael burst into tears. Jones said: "The record company guys were there with their champagne, but when they said, 'This is it,' we had to say, 'No, this is not it.'"

Both felt that the mix sounded too cramped when played on vinyl, so they went back into the studio with the intention of completely

reworking the album and remixed every track, spending around a week on each. Still there were disagreements, Jones didn't think *Billie Jean* was a strong enough single – Michael insisted on keeping it. Jones said he didn't think *Thriller* (as it was now called) could be as big as *Off The Wall*, and at one point Michael threatened to cancel the album altogether.

One thing they did agree on though, was that the album should appeal to as many people as possible. To that end they were determined to include rock elements that would move Michael away from his last, disco-dominated album. Jones said he wanted "something like *My Sharona*", a recent pop rock monster for one-hit-wonders The Knack and so they spent weeks looking for a suitable guitarist to rock up *Beat It*. Eddie Van Halen fitted the bill, though only after hanging up on Jones three times, convinced it was a prank call. Vincent Price was a last-minute addition to add gravitas to the spooky title track – Jones' wife knew him, apparently, and the song's English writer Rod Temperton says he wrote the spoken lyrics in a taxi on the way to the recording studio.

The ballad *The Girl Is Mine* was released as a single in October 1982, before the rest of the album had even been completed and did little to set the world alight. But when *Billie Jean* finally appeared in January 1983, the game changed forever. Of the album's seven singles, the title track was the last and it didn't come out until January 1984, after a full year in which the album had topped charts around the world.

Nearly 30 years on, *Thriller* is still the biggest selling album of all time, with estimated sales of between 57-110 million (depending on whose figures you believe) worldwide. As record sales continue to decline, it will probably never be beaten. **HFC**



PAVEMENT

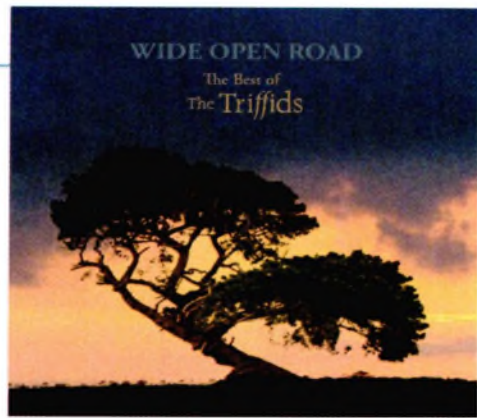
Quarantine The Past: The Best of Pavement

Domino

www.dominorecordco.com

Music: Pavement's maverick mix of off-kilter beats, winding melodicism and enthralling adventure arguably made them the most influential American band of the post-grunge nineties. Long talked about and now finally here, this collection of 23 tracks drawn from their ten-year career readily illustrates why they were the band Blur most wanted to be once they'd grown out of Britpop.

Sound: The evolution of the Pavement sound, from the endearing scratchiness of the early low-fi vinyl releases to the multi-layered richness of their final recordings, required sensitive remastering if a career-long retrospective was going to sound dynamically coherent. This collection gets it, delivering crystalline clarity without losing the band's trademark fuzzy warmth. **NW**



THE TRIFFIDS

Wide Open Road: The Best of The Triffids

Domino

www.dominorecordco.com

Music: Every one of the late David McComb's 18 vivid, poetic and restless songs included here confirms the Triffids as, perhaps, Australia's finest post-punk alt-rock band. Forget AC/DC and even the small-scale beauty of the Go-Betweens, there's a widescreen ambition about this down-under band that at its best rivals the grandeur of U2. If you want more, there's also an eight-disc deluxe box set.

Sound: For a band that made all of its music in the tainted 1980s, the Triffids today sound surprisingly undated. That's in large part down to McComb's subtlety and nuance, even when at his most bombastic – but it's also a credit to the way the masters have been delicately tweaked for 21st century ears. **NW**



LOVE

Love Lost

Sundazed

www.sundazed.com

Music: In 1971 with a sturdy rock band of Craig Tarwater (guitar), Frank Fayad (bass) and drummer Don Poncher from Delaney & Bonnie, Love's mercurial front man Arthur Lee recorded this lost album for Columbia which has remained unreleased until now. Of the fourteen tracks, five are lithe acoustic demos which show Lee had lost none of his old panache, while the band material veers from subtle to two final out and out homages to Cream and Hendrix.

Sound: The sound is of a consistently high-standard with more definition than the muddy sounds Lee achieved on such post-*Forever Changes* fare as *Out Here* and *False Start*. Even on ensemble tracks like *Everybody's Gotta Live*, the instrumental separation is superb. **MP**



SHOSTAKOVICH SYMPHONIES 5 AND 9

Vasily Petrenko (conductor), Royal Liverpool Philharmonic

Naxos

www.naxos.com

Music: To those unfamiliar with mid-period Shostakovich, the music may seem dour and uncommunicative, but all of it repays repeated listening. The 5th Symphony, the highlight of this issue, was his response to officially sponsored criticism from the Soviet state and is arguably the most popular and successful of all his symphonic works.

Sound: Conductor Vasily Petrenko is credited by many with revitalising the Royal Liverpool Philharmonic Orchestra and, although on a budget label, this is an excellent recording, which in every sense lives up to the quality of the performances on this disc, which was recorded in the Liverpool Philharmonic Hall. **AG**





DIANE BIRCH

Bible Belt

Virgin

www.virginrecords.com

Music: She's only in her twenties, but Diane Birch's muse is fixed very firmly in the seventies, when the spirits of Carly Simon, Laura Nyro and Rumours-era Fleetwood Mac roamed free and untamed, and there was no more beautiful sound than a Fender Rhodes piano. Her take on the era is no mere pastiche, however, with a clutch of original, hook-laden tunes delivered in a voice that can be soaring, sultry, soulful and intimate by turns.

Sound: The production is almost Steely Dan smooth, with note-perfect delivery and what sounds like a tightly drilled set of session musos. This ain't the place for grit, but if you like any of Birch's influences you'll find plenty to admire here. **DO**



DAVID BOWIE

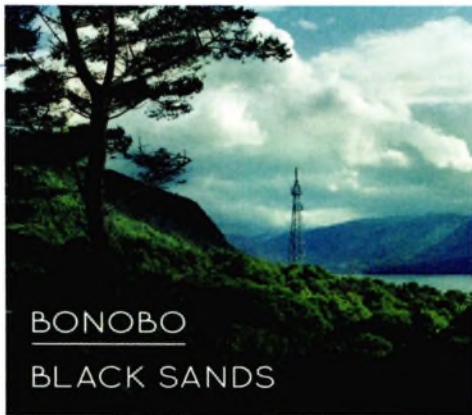
A Reality Tour

ISO

www.davidbowie.com

Music: If the title seems just a tiny bit familiar, it's because the latest Bowie CD is essentially the soundtrack lifted from his last live DVD. Recorded in Dublin in 2003, rock's greatest chameleon tears through a 33-song set-list that hits the highs of his multi-decade career (and let's face it, there are loads of them) with a few oddities (*Sister Midnight*, *Battle For Britain*) thrown in for good measure.

Sound: His long-time band is super-tight and that's reflected in the disc's crisp, clear sound. Earl Slick's searing guitar is right to the fore, while Gail Ann Dorsey's bass positively pops from the speakers. While not essential, this is an exceptionally well-recorded document of latter day Bowie. Fans should lap it up. **SL**



BONOBO

Black Sands

Ninja Tune

www.ninjatune.net

Music: Simon Green's been kicking around the outer reaches of electronica for over a decade, delivering clever, nuanced slices of ambient tuncage that works fine as background chillout, but also reward attentive listening. With *Black Sands* he's done it again, with a record that switches effortlessly between the epic *Kiara* and the heart-achingly melancholic waltz of the title track, with beautifully judged nods to acid jazz, dubstep and rock in-between.

Sound: It's an expansive sound, packed with bone-dry drumbeats, sweeping string arrangements and gently emotive vocals. A solid test for a system – the sub-bass frequencies contrasting with Andrey Triana's interweaving guest vocals is a case in point. **DO**



NAZARETH

Loud 'N' Proud

Salvo

www.nazarethdirect.co.uk

Music: Veteran Scottish rockers Nazareth's fourth album gets a proper overhaul as part of the band's recent series of reissues (this is part of the second batch of three). *Loud 'N' Proud* probably still stands as arguably their finest album and the package has been lovingly put together, given hefty sleeve notes, fine packaging and a quartet of bonus tracks.

Sound: The remastering job is stellar, the songs sounding more vital than they did upon its initial release. The band's thunderous cover of Joni Mitchell's *This Flight Tonight* will give your woofers a run for their money, while the BBC session tracks are further proof that the Beeb's engineers really knew what they were doing. **SL**





CANNED HEAT AND JOHN LEE HOOKER

Music Sound ★★★★★

Hooker 'n' Heat

Liberty/Pure Pleasure

180g vinyl

www.purepleasurerecords.com

Music: This 1971 collaboration brought blues acolytes Heat together with one of their gurus. The result is a mix of solo and group work, but whatever the line-up there's no doubt who's in charge. It's a powerful combination that brings out the best in Hooker who delivers some of the finest electric blues on record.

Sound: The recording has a raw, live feel that's positively electric with atmosphere. Hooker's voice in one channel and his guitar in the other is a little odd but the band stokes up a furnace of funk. *JK*



EDDIE BOYD WITH FLEETWOOD MAC

Music Sound ★★★★★

7936 South Rhodes

Blue Horizon/Pure Pleasure

180g vinyl

www.purepleasurerecords.com

Music: This alliance from 1968 finds pianist Eddie Boyd teamed up with Fleetwood Mac. All 12 numbers are ensemble pieces with Boyd singing and Green providing some very fine guitar work. The vibe is light and the playing top notch, but the band really seems to hit its groove on the slower numbers.

Music: A live stereo recording, this album was produced by Mike Vernon who made Hendrix's *Are You Experienced* the year before. It's a vital sounding cut that really benefits from Ray Staff's superb remastering. *JK*

HIGH-QUALITY AUDIO

KING CRIMSON

Lizard

DGM/Panegyric

DVD-A/CD

www.dgmlive.com

Music: King Crimson went through a variety of stylistic approaches in its sixties albums and this, the band's third attempt, is distinguished from the rest by trying to combine an overall folk sound with Crimson's customary prog density. As Fripp points out it has not been a huge commercial success over the years, yet it undoubtedly has its moments for those with an open disposition.

Sound: This release contains a remixed CD with three bonus tracks alongside a DVD-A with MLP Lossless and DTS surround mixes as well as MLP and PCM stereo versions of the original and remixed versions. The remix opens things up well and beefs up the bottom end to good effect and it's well worth it for the DVD-A content. *JK*

Music Sound ★★★★★



MAHLER SYMPHONY NO9

Jonathan Nott (cond), Bamberg Symphoniker

Tudor

SACD (stereo/multichannel hybrid disc)

www.tudor.ch

Music: As well as being his final completed work (the Tenth was completed post mortem by others including Deryck Cooke), Mahler's 9th is a kind of summation of the great man's life's work, that reprises ideas and themes from some of his earlier symphonies (including *Song Of The Earth*), while anticipating some of the atonal excursions of the Second Viennese school and the explosion of modern music.

Sound: A thoroughly idiomatic performance, this recording is much better when experienced in its SACD iteration: the CD layer by contrast is merely good. In both cases, however, this is a well conceived version, the *Rondo Burlesque*, for example, displaying a suitably rhythmic and dynamic pulse. *AG*

Music Sound ★★★★★



BEETHOVEN STRING QUARTETS NO 10 OP 74 AND NO 11 OPUS 95

Tokyo String Quartet

Harmonia Mundi

SACD (stereo/multichannel hybrid disc)

www.harmonia-mundi.com

Music: The general observation is that the quartets and the piano sonatas are the very finest music that Beethoven wrote (which is saying quite a lot), and that these quartets sit on the cusp between what could be described as his workmanlike early output, and the towering achievements of his late period.

Sound: This recording reveals a new maturity and accord that is practically telepathic. The works are played with passion and a true unanimity, as though by a single instrument (albeit one with eight hands and 16 strings). The CD version is very good, but the SACD layer is in a different league altogether. *AG*

Music Sound ★★★★★



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HI-FI SEPARATES

CYRUS



CD Xt SE+ DAC X+ PSX-R
CD8 SE DAC XP+ 8XPd
CD6 SE 6PX/8XP X POWER

Cyrus' award-winning CD Xt SE and DAC X have been upgraded with a + suffix. In a recent review, this combination when used with 2 x PSX-R power supplies, received the prestigious 'Editor's Choice' award by Hi-Fi Choice magazine.

The XP amplifiers are based on the circuitry of the top of the range DAC XP+. The entry-level 6XP includes 6 line level inputs along with a

zone 2 feature while the 8XP d combines the XP series pre-amplifier with a newly revised power amp, and contains an onboard DAC for digital sources.



MICHELL

GYRO SE

Based entirely on the GyroDec, but without the costly acrylic plinth and dustcover, the Gyro SE brings the same qualities in a more affordable and compact package. A Gyro SE can always be converted into a GyroDec by purchasing a plinth and dustcover.



PROJECT

GENIE MKIII

The Denie MKIII includes a new motor, more stable motor base and a new tone arm with traditional anti-skate. Supplied with an OM3e Ortofon cartridge fitted, the Genie MKIII is available in a range of finishes.



ARCAM

FMJ

Combining sleek design, flexible connectivity and a level of reproduction far beyond that of budget separates



CD17 A28
CD37 A38
A18 P38

ROKSAN

KANDY K2

Roksan replaces its hugely successful Kandy series with the Kandy K2 amplifier and matching CD player.



CASPIAN M SERIES
K2 SPEAKERS

ROTEL

O6 SE SERIES

Rotel's O6 Series includes four new components and updated versions of the classic CD player and three stereo amplifiers.



RCD-06SE
RA-05SE
RA-06SE

MARANTZ

CD6003

PM6003

The PM6003 amplifier and CD6003 CD player, come housed in Marantz's stylish 'M1' casing. The CD player features a front mounted USB socket allowing improved performance from devices

such as an iPod or MP3 player while the amplifier has five line-level inputs along with a MM phono stage and two sets of speaker terminals for ease of bi-wiring.



SA-KI PEARL PM-KI PEARL

LEEMA

ANTILA II

TUCANA II

With stunning sound quality the new Antila II CD player features unique MD2 active differential multi-DAC converter technology to provide breathtaking realism.

The dual mono designed Tucana II amplifier uses three heavy-duty toroidal transformers and is capable of swinging over forty five amps of current, ensuring a vice like grip and precise control of the speakers.

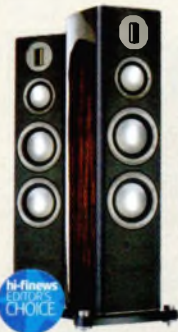


STREAM II PULSE

HI-FI SPEAKERS

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B&W CM SERIES

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KEF XQ SERIES

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WHARFEDALE DIAMOND 10.1

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DALI LEKTOR

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B&W

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PANASONIC

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DENON

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PIONEER

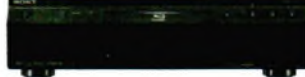
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BDP-320 BDP-LX52

SONY

Sony's range of Blu-ray players includes Product of the Year - BDP-S760 and Best Buy - BDP-S360.



BDP-S760 BDP-S5000ES

HOME CINEMA AMPLIFIERS AND RECEIVERS

DENON

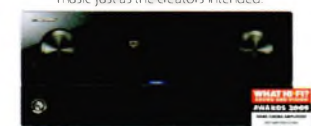
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PIONEER

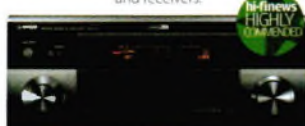
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Disc-onsolate

I am a faithful reader of *Hi-Fi Choice* and having read Alvin Gold's article *Disc-tress* (HFC 329), I feel that I agree with Linn that CD players are no longer necessary.

I have stopped buying CDs and even listening to FM radio since I bridged old with new, linking my valve amp and Tannoy speakers with internet radio via a dedicated netbook and USB DAC. Although my DAC is of the adaptive type and sadly powered through the USB hub, the sound from my beloved BBC3 is actually very good (this is mostly what I listen to). The result is that my cherished FM tuner is gathering dust and my CD player has moved to my country house.

I believe that things are set to stay like this, due to the good-quality sound I get through the web and for reasons of convenience. If this has happened to an Athenian middle-aged eye surgeon and hi-fi buff, imagine what is happening with the young!

In the future, CD collections, broadcast radio and TV, newspapers and books will vanish and the reign of the web will be absolute, while the sound from it will improve to impeccable standards. Finally, music collections will be boxed in huge memory media players.

Dr. Michael Tzakos, Athens

HFC Is the CD player doomed to dwindle to



extinction over the next five to ten years? Almost certainly, as we fully expect media players and streamers to take over from the small silver disc. There's no reason really for large collections to linger, when they can be losslessly ripped and stored on large hard drives or solid-state drives (another area where technology is moving remorselessly forwards and driving prices down).

A word of warning, though: just as science-fiction authors tend to conjure up dystopias

rather than utopias, the future might not be unalloyed sweetness and light. Digital Rights Management to prevent copyright infringement and reliance on internet-based cloud storage rather than collections persisting on local hard drives could lead to a situation where buyers rent content rather than owning it outright in the form of a physical disc.

Last year, for example, Amazon secretly deleted paid-for copies of George Orwell's

LETTER OF THE MONTH

Impeding progress

I'd like to find out the damping factors for amplifiers like the Bryston 2B SST2 and Plinius 9100. I want an amp which has real control over the bass units of my Monitor Audio loudspeakers.

critiquer via email

HFC Obviously, you need to avoid the sort of high-output impedance found in zero-feedback, single-ended valve amplifiers if you want a speaker-invariant frequency response from an amplifier. That said, there's more to bass control than a just high damping factor.

Kenwood's old Sigma Drive amplifiers, which extended their feedback loops all the way to the loudspeaker's own binding posts, had very high quoted damping factors, but not all had great bass grip and control. A power supply with plenty of current on tap can play a very audible role in cone control.

In valve amps, component quality counts as well. We've heard valve amps with outstandingly punchy, focused bass, thanks to the calibre of the output transformers used in addition to the circuit topology and type of output valve.

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novels from owners' Kindle ebook readers after it turned out that the company which had sold the copies did not have the rights to use Orwell's work. Suffice to say, affected customers were not happy.

Another consideration which doesn't always seem to occur to owners of media players is backing up. So often, PC users assume their hard drives will either last forever, or never fall victim to viruses and end up learning the hard way that their failure to make regular back-ups can have either costly or disastrous consequences. The same goes for music data – back it up, or risk losing the lot. If you've sold off your entire CD collection, this appalling scenario should bring you out in a cold sweat...

Narrowing the odds

I realise that the accepted way to judge the sound of a system is to listen to music you're familiar with, but is there a way to listen to just the bass, or just the treble in a given song? I know this is an unusual idea, but surely it would make assessing equipment easier?

frankinsense via email

HFC You might be surprised by how much more difficult it is to gauge quality based on a particular part of the frequency spectrum, rather than listening to full-bandwidth music. If you find component comparisons difficult (and many audiophiles do, especially at the start of their critical listening lives), practice makes subjectively perfect (or at least more experienced).

Dealers aren't always happy to have customers visit regularly solely for the purpose of honing their listening skills, so you might have to develop a taste for used gear. Pick the right makes and models and you can sell them on for not much less than you paid, as well as learn a great deal about hi-fi criticism in the process.



Skipping ropey

My cherished Audiolab 8000CD has recently started playing up, so that it jumps two or three times on the first track of any CD, but plays OK after that. I realise the player

Dear George - Editor
 HiFi Choice Magazine,
 Future Publishing Ltd.
 2 Balcombe Street,
 London
 NW1 6NW

Dear Mr George,

During a recent meeting of the Tankerton Bridge club, a rather curious and disturbing piece of information was brought to my attention by a fellow member.

During my associate's recent visit to the West end of London, he happened to photograph a collection of pigeons that were feasting upon the remains of a discarded fast food meal. Upon closer examination of the photograph on his high definition plasmatic display he noted a figure that had paused for a short while on the pavement opposite. Using the 'zoom tool' it became apparent that this figure was Mr Jason Kennedy, a preeminent veteran of your reviewing panel. It is of some concern to me that there is a visual discrepancy between the image of Mr Kennedy displayed on the Panasonic 103 inch display and that which appears within the opening pages of current issue of HiFi Choice Magazine. The superb crystal clear pixel technology brought to us by the Japanese manufacturing giant clearly reveals that Mr Kennedy is sporting facial hair.

The source of my concern centres on your magazines ability to report current events within the HiFi World. If I cannot trust your publication to accurately represent the simple visual appearance of your writing staff it will obviously bring into question your magazines ability to accurately report the subtleties of the world's finest audio equipment. (E.g. Arcam Mini Solos or any uni-pivot arm and cartridge combination)

I hope you take this as a warning, as this obvious lack of detail will undermine the very foundations that your title has been built upon and lead to disenfranchising of your current loyal readership.

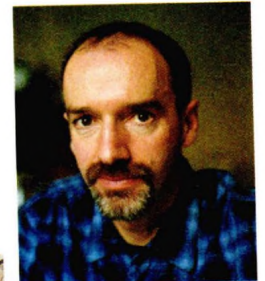
I look forward to your reply

Yours sincerely
Giles H H Heron
 Giles H H Heron

HFC - Like any hugely experienced and knowledgeable professional, Jason is as subject to the pressures of the demanding freelance lifestyle as anyone. I'm sure you will be as heartened as we were to hear that he is due to be treated by international medical legend Dr Loof Lirpa at the very start of April and that the picture which graces our pages will once more become an accurate representation of his demeanour. What month is it again? (-Ed) 28th January 2010



Sunshine



Overcast

is old, but I dearly love its sound as part of my cherished Audiolab system.

travisperk via email

HFC The usual suspects as far as skipping CDs go would have to be a dirty lens and hardened grease on the laser carriage slide rails (assuming it's not a swing-arm variant). The former is easy to rectify; all you need is a lens cleaner with fluid. Some audiophiles prefer to take the lid off the player and do the cleaning manually and with great care, though you should obviously unplug the player first and any cleaning you do this way would be at your own risk.

The grease which lubricates the slide rails in the transport almost always hardens over time. Where it builds up at either end of the rails, it can cause tracking problems. If you're not confident you can open the player safely to clean and relube the rails yourself, then it's a repair for a professional.

Less often, worn or dirty slide rails can cause skipping, as can a disc platter which has moved slightly too far down the motor spindle. Tired lasers, or maladjusted laser output, can also make disc-reading harder for the player.



Ask Us

Got a burning hi-fi question? Find the answer here...

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JON MARKS

An audiophile for 20 years, and contributor to *HFC* for over four, Jon has over a decade of reviewing experience and a passion for classic Japanese gear.



JIMMY HUGHES

With more than 40 years as an enthusiast under his belt, Jimmy is one of the country's best-known hi-fi experts. He's also *HFC*'s 'Mr Tweaker'.



RICHARD BLACK

Richard is a professional musician and recording engineer, and a highly knowledgeable hi-fi analyst to boot. If your question is technical, he's your man.



PAUL MESSENGER

Former *Hi-Fi Choice* editor Paul is regarded as the UK's foremost expert on a wide variety of loudspeakers and is on hand to answer your speaker questions.



ALVIN GOLD

Alvin has been writing about his obsession for more than 25 years. He has expertise across all product types and despite the photo is 'happy to be of service'.



JASON KENNEDY

Jason Kennedy was a former editor of *Hi-Fi Choice* and spent an incredible 17 years on the title. Now he's back on the magazine as a freelance writer and hi-fi expert.

A study in small systems

I run a system in my tiny study which is made up of a laptop or my iPod and some cheapo powered speakers. Unsurprisingly, the sound's pretty ropey. Until a week or so ago, I'd been thinking about getting some better PC speakers, but then the lightbulb over my head lit up, and I decided to go for separates instead. I heard the Tannoy F1 Custom for a bargain price at my local Richer Sounds and fell in love with them. I now need an amp.

chipluvva via email

HFC Julian Richer's stalwart chain of outlets Richer Sounds sells the Cambridge Audio A1 Version 3 for for a measly £70 and it's a capable integrated at the price. That said, the iconoclasts here at the *HFC* office were also muttering about affordable Tripath amps for sale on a well known auction site, amps which can sometimes be had for less than the cost of a large packet of bespoke peanuts. Not only would said devices be very small, their relatively low power output (10-20 watts) would pose no obstacles to sound quality as your listening room is so small.

The only inconvenience would be the fact that many have only a single line-level input and swapping cables between laptop and iPod could become a chore.



Hot lugs

I just wanted to ask your advice on the components for my next upgrade. Is the following equipment a good selection: Naim CD5i MkII, Graham Slee Novo headphone amp and Sennheiser HD650 headphones? Or could you suggest anything better for a budget of £1,700? I listen only to classical music and I do not require loudspeakers.

PS. Great magazine!

Roy Davis Lancashire

HFC The trio you've drawn up would indeed work well together, with the combination of the musicality of the Naim (*HFC* 307), the beguiling musicality of the Novo (*HFC* 314) and the clarity and neutrality of the Sennheiser (*HFC* 312) all gelling nicely, despite the bulk of the budget going on the source. On the other hand, if you listen predominantly to large-scale classical works, you might want to consider the Heed Can Amp, which produces a consistently dynamic and spacious presentation.

Another, more expensive option which might stretch your budget slightly, would be to stick with the Naim and partner it again with the HD650, but swap the Novo for a Lehmann Audio

headphone amp. Both the Rhineland at £400 and the Black Cube Linear at £665 are very good indeed.

Olden and golden?

I've long been interested in Naim gear and lust after its amps, but at the moment I can't afford to buy a new one. So, I was wondering how does the older gear compare to the newer stuff and which Naims should I be considering to get a clear upgrade over my current Creek/Arcam set-up? For example, would the NAC 152XS be clearly better than the 122x, and would that in turn be better than a NAC 72? My Creek passive pre is very revealing, so would I get less transparency and detail with an older pre? The same goes for the power amps – would a brand new NAP15XS or a NAP200 outperform a NAP250?

My system already has good soundstaging, detail and tonal colour, but I'm after a punchier, more dynamic presentation, something that will make my favourite rock and acoustic music more life-like.

NAPster via email

HFC As a rough rule of thumb, at a specific price point, the newer gear generally outperforms the older stuff. In *HFC* 324, Ed Selley found that the soundstaging in particular of the NAC 152 XS was better than similarly priced predecessors. Detail and tonality were both rather fine as well, perhaps because this pre and the matching NAP 155 XS power amp both employ Naim's bayonet mounting system for their PCBs. Another advantage of the newer equipment is the fact that its connectivity isn't limited to DIN plugs.

If you want to dip your toe into the water with Salisbury's finest, perhaps the best way to go (after a demo, of course) would be to start off with a mid-range used system and upgrade from there as funds allow. Don't forget that bi-amping can bring precisely the changes you want too.



Thinking outside the box

I have a pair of medium-size cabinets with refurbished Tannoy 12-inch dual-concentric drivers from the 1970s and am looking for a one-box system to drive them. Are there any out there for no more than about £800, or am I better off selling the Tannoys and starting from scratch with a fairly compact modern system instead? I listen almost exclusively to classical and jazz.

D Proctor Surrey

HFC Presumably, as an owner of a pair of vintage Tannoys, who's gone to the expense and effort of having them refurbished, you're a keen listener



attempting to downsize. You don't mention which equipment you used to have driving the Tannoys, but we assume it wasn't budget. You may find a modern all-in-one system slightly disappointing if you're accustomed to more expensive separates, but there's a number of contenders out there which make strong cases for themselves when assessed on their own merits. One of them, Arcam's Solo Mini, impressed in *HFC* 320's group test with its musicality, clarity and detail. The 30-watt output should also certainly be enough to drive your Tannoys given their sensitivity.

It's well worth having a look at affordable Tripath amps when power requirements are low and space is tight, too. Add an affordable pre and sources, and you may be pleasantly surprised by the quality of the results which can be achieved on a limited budget.

If your loudspeakers have bi-wire terminals, it might be worth experimenting with this approach, though it would remain to be seen how the Creek would work with Y interconnects splitting the signal into a pair of power amps.



Socks appeal

At the moment, my system consists of a pair of Bowers and Wilkins 684 speakers with an old Pioneer receiver and CD player. I know I could upgrade my B&Ws with a Yamaha AS-1000 or one of Rotel's newer amps, but I'd like to try something else, as I'm not a big fan of the B&W sound. Complicating matters are domestic considerations, which mean I can only position the speakers about a foot from the rear wall, which doesn't do the bass any favours. I prefer floorstanders as they're more stable with children around, though I realise they're going to be hard to accommodate in my small room.

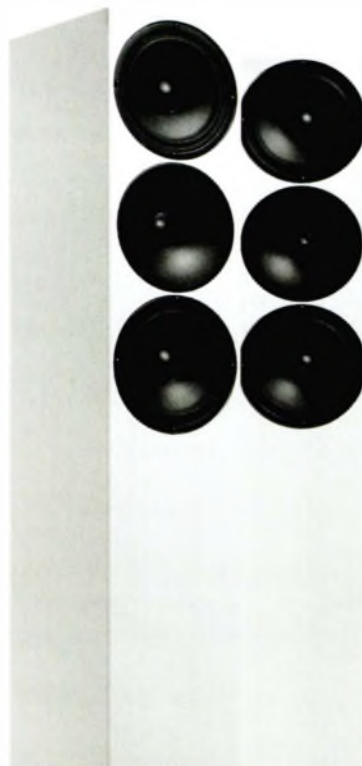
Basically, I'm thinking of £3,000 to get a CD player, amp and speakers. What would your advice be?

Rchantry via email

HFC One approach always worth a try is blocking the port of a reflex speaker simply to see what impact this has. Foam works well, or you could just try shoving some rolled up socks in there (making sure not to push them all the way in, of course). As it's such a cheap tweak, you lose nothing by

trying it. If socks and crossed fingers don't tame the in-room low-frequency response of the 684 (*HFC* 315), then an upgrade is indeed required.

Your next best move might be to shortlist amps and CD players first and arrange a



home demo of a couple of these to see what sort of changes they bring in the 684 – you might find they go a long way towards solving your bass difficulties. If you draw a blank, you'll need to audition ported floorstanders with a tight, dry bass, or infinite-baffle designs, given the limits on where they can be positioned.

One potential candidate is Amphion's Helium 520 (*HFC* 314), a very capable performer, supplied with port bungs. Then there's Mission's 796 (*HFC* 321), which is slim, good-looking and lean in its tonal balance. It also has a smoother midrange and treble than the 684 and can be placed so that the side-firing woofers face each other on the inner sides of the cabinets, though a foot of space behind them will still be mandatory. Natural partners would be Cyrus's own 6 XP integrated and 6 SE CD player, but there's a risk of the system's final character being slightly too dry and forward. Leema's Stream is one alternative as a source and Marantz's PM8003 as an amp, and Creek electronics would fit the bill, too.

Direct action

I know that Technics' SL-1200 direct-drive turntable isn't to everyone's taste, but I managed to buy a second-hand one in excellent condition for £100, and I've got no complaints at all for the money. I get the impression there's more to be had from this turntable, so I've set aside £100 for improvements. As it has a cheap, worn audio-technica moving magnet on it, and it's running into an old integrated with a mediocre phono stage, what would you spend the money on?

Avatarar via email

HFC As your cartridge is worn, you're definitely going to have to replace it as a matter of urgency, ideally as part of an ongoing improvement process. Ortofon's 2M Red will set you back £80 and offers a clear upgrade path. When funds next allow, an outboard phono stage would be a wise buy; Cambridge Audio's 640P is still very good value at £100, though it was even better at its original £60. As outboard phono stages are often better than those fitted to integrated amps at relevant price points, the Cambridge – with its MM/MC compatibility – should stand you in good stead for quite some time.

While cash is accumulating, you could put together a shelf or other platform for the SL-1200, as it's vaguely compliant feet don't do a great job of keeping out vibration. They may be better than those on many DD decks with sprung rubber feet, but a sand-filled wooden box/tray with an inner tube beneath it should provide useful gains, if you don't mind the looks. Turntable mats are worth some experimentation as well (see *HFC* [▶](#))

323 for a range of suggestions). In addition, there are numerous outboard power supplies for the Technics, as well as motor control circuit modifications, which you may want to invest in when the time comes.



Planar sailing

I've just purchased a pair of Magneplanar MG12s (I'm smitten by that lovely Magneplanar sound), but need a more powerful amplifier to drive them. My current valve amp only has 35 watts, which I can hear really isn't enough, as the sound is sluggish and not very open. Would the Myryad MX12150 work well with the Maggies, or the Quad 99 monoblocs or 909 stereo?

panelbeater via email

HFC All three of the amps you mention should work well with the MG12. Our own Jon Marks is a happy owner of MG12QRs, and has had very good results with power amps from Chord and Bryston as well as some homebrew



valve and transistor efforts.

Magneplanar's loudspeakers generally demonstrate their strengths of speed, transparency and musicality best with well balanced, crisp but not excessively lean solid-state amplification. Headed up with relatively neutral valve pre-amplification, such a system can punch well above its weight at its price point.

As Magneplanar's panels without crossovers have an almost flat four-ohm impedance, they respond very happily to active operation, though this would take DIY tweaking undertaken at your own risk.

It is possible to match Maggies with valves, but the amps in question need to be able to hit 100 watts and maintain it without undue strain. Again, Jon Marks has used cathode-coupled EL34 monoblocs with high-quality output transformers and enjoyed superb sound.

Speaker's corner

My Primare CD31 CD player and I30 amp are looking for new speakers after my previous pair suffered at the hands of an inquisitive youngster. I can spend up to £2,500 to fill a large room with sound. I like what I've heard from Bowers and Wilkins, ProAc and PMC at this sort of price, but what other brands should I be auditioning?

jthomassen via email

HFC You don't mention what sort of sound you prefer, or what your previous loudspeakers were, so we've put together a selection. If it's neutrality, detail and all-round honesty you seek, ATC's SCM40 is going to be a very tough act to beat. As you know you already have an affinity for Bowers and Wilkins, so put the CDM9 on your list as well, though it's not as uncoloured as the ATC. For a sweeter, addictively musical sound, ProAc's Response D18 floorstander represents a real bargain and comes in well below your budgetary limit. Of course, PMC's FB1i should never be ruled out, as it's another very engaging performer.



Hotel Babylon

Trying to weave your way down a corridor full of audiophiles toting bags of brochures and their favourite tunes might not be everyone's idea of a fun weekend (girlfriends, wives and offspring, we're thinking of your suffering when we say that), but hi-fi shows are indisputably still the best way to stay right at the cutting edge of developments.

In the UK, shows like Whittlebury, Bristol and Heathrow tend to split opinions amongst listeners. Some complain of travel times (London to Bristol is hardly a quick burn up the motorway), others that it's too crowded to get any decent listening done in the rooms of their favourite manufacturers. It also has to be said that your average hotel room is often not the best acoustic for setting up a carefully honed system either, as many distributors struggle with 'live' rooms which are largely unfurnished concrete boxes, or in older buildings, blighted by sagging suspended floors and dated wiring.

It takes perseverance if you're after some proper time spent listening critically in front of components you may be considering buying, but the shows are still a great place to get a feel for the next wave of new components coming through, and spot any emerging trends (perhaps a newly favoured transmitter triode in single-ended valve amplifiers, or breakthroughs in all-digital amplification and feedback). Don't forget that designers often attend too and many are more than happy to talk about their *modi operandi*.

If there's one global show to rule them all, it's CES in Las Vegas. Held in early January each year, the event is well attended by British distributors looking for the best of American talent fit for the trip across the pond, or to make the difficult breakthrough with British gear into the US market.

At the opposite end of the spectrum, away from the scale and razzmatazz and mammoth stands, are the small UK outfits exhibiting here. While there are occasional show-stoppers from the majors, such as the launch of a new format or entire ranges of high-end equipment, a lot of interesting design happens in small firms (Devialet of France being one fine example), or in the brains of long-term enthusiasts turned manufacturers.

Like the rest of the industry, shows have been hit by the excesses of the financial sector and consequently attendances have been lower than usual over the last few years. Still, shows remain a vital part of the audio ecosystem and for all their crowds and acoustic problems, they should still form part of every audiophile's calendar. See page 14 for news from the Bristol Show.



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SRM turntables are not only designed to perform impeccably, they look stunning too. A fact that didn't escape 'Wired' magazine which recently featured the Arezzo in its 'Objects of Desire' photo shoot. As one owner said 'Both sonically and visually, the Arezzo is a work of art.' We couldn't have put it better ourselves.

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Pick of the bunch

In the last of the series, *Jon Marks* defines the best hi-fi to emerge from the east



Only the MAX-237 and MA-505 MkIII tonearms supplied with the staggering SZ-1 lacked air bearings

One way to sum up a trawl through Japan's contribution to the golden era of high-fidelity might be, 'So many gems, so few pages'. Much of the cutting-edge equipment designed and built in Japan was exclusively sold there, or in a select few markets around the world, as it was the complete antithesis of budget gear. Back in the 1980s, turntables costing close to five-figure sums didn't have much of an audience outside the Far East. For this reason, many fascinating items passed well below the British radar. This was kit that perfectly showcased the abilities of Japanese designers and manufacturers to push engineering to its limits, to innovate and to produce equipment which sounded superb.

MICRO SEIKI SZ-1

Produced only between 1983-1984, this behemoth was Micro's unequivocal statement of its mastery over the conception and execution of a no-holds-barred turntable. The two-part 28 kilogram platter relied on an air-bearing, which was extended to support the whole of the platter. This sits on the cushion of air flowing out of the bearing, between the underside of

the platter and the plate-glass surface of the 60 kilogram cast-zinc plinth. The record is clamped to the platter by a continuous vacuum,

'Much of the cutting-edge equipment designed and built in Japan was exclusively sold there, or in a select few markets...'

which also holds together the top and bottom sections. Micro claimed the combination of the air-bearing outboard motor (rotating at 750rpm) and heavy platter endowed the resulting system with a moment of inertia equivalent to a 26-ton platter spinning at 33.3rpm.

The most expensive component Micro ever produced (and that's saying something), the SZ-1 sold in predictably tiny numbers. If any of our readers know of an example we could audition, do please let us know...

TOSHIBA ST-910

A very different product, the ST-910 was Toshiba's science fiction tuner from the mid-

1970s. Winner of a number of design awards on its home turf in 1975, the FM-only ST-910 was a contemporary of the Harrison S200 amplifier, the two leading the way in the use of LEDs, integrated circuits and soft-touch logic controls. Toshiba explained the stylistic *raison d'être* of the ST-910 thus: 'Elegant, but with a hint of purely functional severity in its clean and uncluttered lines, the design is revolutionary: no knobs, no visible function or control switches, and no tuning dial.' It's easy now, 35 years later, to forget what a sea-change the look of such components represented to the hi-fi which had gone before.

NAKAMICHI TX-1000

Better known and certainly more common (relatively at least!) than the SZ-1, Nakamichi's version of the *ne plus ultra* turntable is still a rare and highly desirable component, as well as a technical *tour de force* in terms of the goals it set itself. This deck's main aim was to eliminate one of the perennial flaws in vinyl replay. If wow and flutter in the platter's rotation were to be reduced at all costs, why allow a record to sit off-centre

The ST-910's main PCB with its daughter boards





The TX-1000's platter is aluminium, with an anti-resonance honeycomb pattern cast in its underside

on the platter, thereby exacerbating wow and causing a number of attendant problems?

Cracking the nut of ensuring concentricity was never going to be easy, even in the early 1980s with advances in micro-electronics and the TX-1000 is a fiendishly complex machine. The centre-sensing arm fitted under the cover to the left of the platter detects eccentricity in the LP on the platter, while the electronics in the turntable drive two motors built into the underside of the cast aluminium platter to reposition the centre spindle and shift the record into its corrected position.

Unlike some fancy features, this centring mechanism does work effectively – there's an added feeling of speed stability with every disc, almost CD-like, above and beyond what a heavy platter and a well-regulated drive system can achieve. The flip-side is a sword of Damocles hanging over every TX-1000: if the main function-control IC, a proprietary unit from Sony, goes belly up, the turntable becomes just a very large and expensive doorstop, as there are no substitutes available.

PIONEER EXCLUSIVE C7

One of the advantages held by large Japanese corporations over smaller, more cottage-industry audio companies, is the sheer amount

of money they can sink into a project. Research and Development is a costly pursuit, often with no guarantee of a profitable product at the end of it, particularly if it carries a massive price-tag and sells in minuscule quantities.

Barely known or sold outside Japan, Pioneer's Exclusive C7 preamp was a masterclass in engineering. Pioneer's R and D attempted to get as close as possible to complete symmetry inside the amp. This went beyond dual-mono construction and into finite-element analysis of vibrational modes in the chassis, the use of infrared imaging to ensure thermal symmetry, as well as computer modelling of magnetic fields in and around the circuitry. Even the impact of pigmentation in the insulation of signal and power cable was considered.

Naturally, the electronic domain received a great deal of attention. It had three separate transformers, one for each channel and another for control circuitry. Input and volume selectors were motor-controlled from the front panel and mounted as close as possible to the sockets on the rear of the amp to shorten the signal paths. It also had aluminium plates on which the buffer, line and phono amps' PCB substrate and tracks were laid.

The result of all these refinements was a superlative line and MM preamp, which sold



Pioneer's C7: superb design from the ground up

for around £7,500 without taking into account almost 20 years of inflation.

KYOCERA DA-910

Released in 1984, the Kyocera was a late arrival to the first generation of CD players, but one with unashamedly audiophile aspirations. While the laser was Hitachi and the DACs Philips (the TDA-1540D), the rest was all made by Kyocera's Optics division. Constructed atop a complex casting of Kyocera's own vibration-suppressing compound (similar to Technics' TNRC), this heavyweight player's innards included discrete analogue stages reminiscent of Marantz's HDAM. The transport was and remains, a cut well above the vintage average, though the lasers don't last forever.

SONY TA-ER1

Like the Exclusive C7, Sony's TA-ER1 preamp was another masterpiece, ranked by many Japanese reviewers, who had a real respect for high-end products from the US and other countries, above almost all others. It was a two-box design priced just below the C7, the Sony took an atypical approach by adopting a high input impedance. The use of balanced circuitry was hardly radical in high-end equipment, but the inclusion of FET input devices to provide a four megohm impedance was less typical. Sony's express intent was

FULL-ON FEEDBACK

An interesting technique, if one which was difficult to incorporate into a circuit, was Kenwood's Sigma Drive. Amps like the L-02A integrated and L-08M monoblocs were fitted with an extra pair of speaker terminals, to allow a separate run of cable to be connected between amp and speaker. This cable meant that, instead of the amp's feedback loop stretching only as far as the output stage on the main PCB, it got as far as the loudspeaker terminals themselves. The upshot was a very high damping factor, though in practice, the difference with Sigma Drive on and off was subtle and many owners left it unused and experimented with standard speaker cables when looking for an improvement in sound quality.



The Kyocera DA-910: one of the first audiophile CD players



The outboard power supply of the TA-ER1 features a hefty toroidal transformer and large reservoir capacitors

to reduce the load on the output stage of the source to as low a level as possible, thereby minimising distortion and signal loss caused by problems like contact resistance.

As in the C7, ground lines are switched at the same time as signal lines, to prevent noise and unwanted voltage fluctuations entering the Sony via that route. The volume control was made in-house, with a claimed attenuation range of 130 decibels, with very close channel matching. Other nice touches include the OFC tracks on the PCBs and OFC internal wiring.

SETTON RCS-X100

One of a number of suggestions for inclusion in this article from vintage hi-fi guru Axel Dahl was Setton's iconoclastic RCS-X100 receiver. Though an American firm, Setton had its extremely stylish receivers manufactured in Japan, which just about qualifies them for inclusion here.

Rare pretty much to the nth degree, this receiver was beautifully built and cost an absolute fortune back at the tail-end of the 1970s: 10,000DM was, in those days, an arm and both legs. For the outlay, the owner was able to enjoy digital display of tuner frequency and tone control correction levels, two-box design with security key (yes, we're looking at you, Thorens) and lovely independent left and right volume controls in a *Thunderbirds*-style.

In a word, a feast for the senses of sight and touch as well as hearing

TECHNICS RS-1500U

After a string of rarities, the Technics might appear rather plebeian, but this in no way detracts from the fact that it's an outstanding piece of engineering. The RS-1500U and its variants weren't merely a Japanese corporation's standard take on reel-to-reel with direct-drive motors; they featured the innovative and measurably effective Isoloop transport. This distinctive and intelligent creation matched a single capstan to a pair of



Technics' RS-1500U has a superb transport

pinch rollers, positioned on opposite sides of said capstan. Not only does Isoloop provide excellent speed stability (wow and flutter of 0.03 per cent at 7.5IPS), it reduces tape tension, modulation noise and the set-up and tape path problems which occur with some of the fussier traditional dual-capstan transports.

Constructed in 26 kilograms of bomb-proof manner, the RS-1500U remains popular among quarter-inch aficionados and it's not uncommon to find it 'brought up to date' with the original audio electronics replaced by valve circuitry, lifting its performance to truly beguiling levels.

VICTOR JM-S7

The Japan Victor Corporation might not spring immediately to mind as a high-end manufacturer of the same cut as Sony and



The JVC featured matched pairs of reservoir caps

Pioneer, but it remains a fact that JVC produced some very good equipment indeed

The JM-S7 power amp is one of the rare types to use that rarest of devices and the only one designed specifically for audio use: the V-FET. Two matched pairs endow the JM-S7 with an output of 100 watts of clear, smooth, but revealing and weighty power per channel into eight ohms. It was almost a snip at 230,000 Yen in 1975 (less than a quarter of the cost of Sony's TA-ER1!). The JVC benefited from a 450VA toroidal mains transformer, its secondary winding consisting of a flat copper ribbon coil, capable of three per cent regulation under sustained full output. Reservoir capacitors matched to within five per cent were the icing on the cake.

TEAC Z-7000

Is Nakamichi the undisputed king of the cassette? Perhaps not, according to a number of owners who have sold their Dragons, CR-7Es and ZX-9s to finance the purchase of a Z-7000. In a manner similar to Revox's top cassette decks, the foundation of the Z-7000 was a large, rigid zinc casting. Bolted to it were three direct-drive motors, including those constituting the capstans. The three heads may not have been the absolute best in the business, but the resulting sound was smooth, extremely stable and enjoyable over even long listening sessions.

What the equipment above shows is a cross-section of the thoughtful, perceptive engineering which went into creating some of the best Japanese hi-fi over three decades. Where one set of engineers has opted for painstaking research and construction along traditional lines, another has decided to try something very different. Part of the fun of tracking down these classics is the thrill of the hunt, with time spent scouring websites across the globe, though we can all dream of finding an SZ-1 for a fiver at a car boot sale one wet and windy Sunday morning. **HFC**



TEAC's Z-7000 could well be a Dragon-beater



Buck Rogers? The Setton RCS-X100 was much more futuristic

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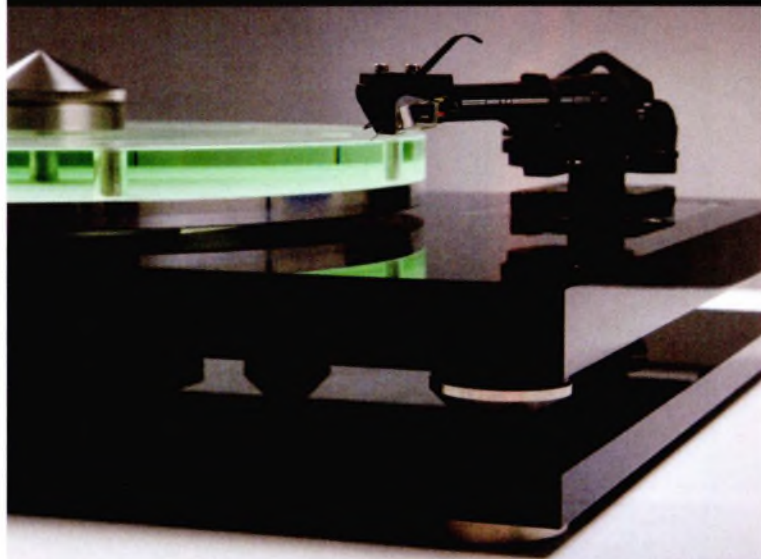


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Welcome to the *Hi-Fi Choice Buyer's Guide* – the ultimate directory to the very best high-performance hi-fi gear that you can buy. Here, you'll find our favourite current products listed under easy-to-use categories, with up-to-date pricing and trustworthy verdicts.

Reviews you can trust

Hi-Fi Choice test results are the most reliable in the business. We employ the UK's most respected hi-fi journalists and use the most stringent techniques to ensure our ratings are the ones you can trust. All the equipment we rate most highly is contained within these pages, from CD and vinyl to the latest disc players, amplifiers, tuners and loudspeakers.

Reviews online

We've also included *techradar* listings where our reviews appear online with our sister site *techradar.com*. To access selected *Hi-Fi Choice* reviews online, simply type: *techradar.com/* into your browser (remembering the forward slash), followed by the six-digit number printed in the first column of our *Buyer's Guide*.

How to use this guide

The *Hi-Fi Choice Buyer's Guide* is the best way to make a shortlist of components to audition. Pick the ones that best suit your taste and budget, then use our *Dealer Classified* section to find specialist outlets where you can try them with your favourite music and test discs.

**THIS MONTH'S
HI-FI HIGHLIGHT**

We just can't stop going on about Pure's new portable radio, the Sensia. As we said in last month's issue (HFC 331), it's 'one of the smartest and cleverest' table radio's around and it's a bargain at only £250!



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BEST BUY EDITOR'S CHOICE

CD PLAYERS

Any one of these fine players will make sweet music for years to come

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS										ISSUE NUMBER
				WWW.TECH24.COM	SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	CD-RW COMPATIBLE	CD TEXT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT		
UP TO £1,000														
	Arcam CD17	700	Civilised sound, with a positively deluxe treble. Bass is clear, if not the weightiest ever		●	●	●	●	●					315
	Audio Analogue Crescendo	599	Simple player that's clear and communicative with the appropriate partnering equipment		●	●	●	●	●		●			329
	Cambridge Audio Azur 840C	700	Superbly capable with a resolution and tonal evenness that's well worth hearing (silver finish)		●	●	●	●	●					315
	Cyrus CD6 SE	900	A combination of detail and sheer musical energy with a hint of high end to the performance			●	●	●	●					318
	Harman/Kardon HD990	550	Highly detailed with excellent extension at both extremes and impressive resolution	/594818	●	●	●	●	●	●				323
	Marantz SA7003	600	Highly civilised sound may not be to all tastes, but there's plenty of detail to be heard		●	●	●	●	●		●			323
	Marantz SA8003	830	Classic Marantz sound in a classy and attractive package. Our favourite sub-£1,000 player	/456022	●	●	●	●	●					315
	Micromega CD-10	799	The cheapest in the range, the CD-10 has been fine-tuned to please the audiophile		●		●							328
	Moon CD.5	999	Admirably energetic music-making from this very well-built player		●	●	●							323
	NAD C545BEE	350	Apart from slight lack of bass control, sound is very fine indeed – treble is beautifully detailed				●		●					322
	Naim CD5i	895	It's competent musical performance comfortably exceeds the expectations of an entry-level player					●						307
	Pioneer PD-D9	850	A mostly well-balanced player that's arguably at its best with classical music	/636734	●	●	●	●	●					326
	Roksan Kandy K2	895	State-of-the-art technology and precision-engineering produces a fine CD performance	/483697	●	●	●	●	●					315
	Rotel RCD-1520	695	Lacks optical digital output, but feature-count is fine and sound quality is expressive and open	/608305	●	●	●	●	●					323
ABOVE £1,000														
	Arcam CD37	1,300	Excellent detail and imaging, neutral tonality and above-average bass resolution	/395096	●	●	●	●	●					318
	Audio Research CD5	5,055	Audibly better than most CD players on the market – assertive and very dynamic	/455309		●	●				●			312
	Cairn Fog 3	2,200	Ergonomically challenged, high-energy player with Gallic charm and digital preamp on board			●	●				●		●	302
	Consonance Droplet CDP3.1	1,995	A CD player which gets to the nub of what music is about. Engages the listener every time			●		●						322
	Creek Destiny	1,400	This player presents the music and nothing but the music and is thoroughly recommended			●	●	●						328
	Cyrus Audio CD 8 SE	1,200	A highly civilised player which can, nevertheless, deal convincingly with raw music	/399370	●	●	●	●						323
	Denon DCD-2010AE	1,700	Well equipped, finely detailed and with good support for compressed audio and iPod		●	●	●	●						328
	EMM Labs XDS1	18,995	Very high-performance two channel only player with the option of a standalone D/A converter		●	●	●	●	●	●				327
	Esoteric X-05	3,995	Superb resolve of fine detail with a perfectly judged balance and an ability to draw you in	/478365	●	●	●	●	●					314
	Leema Stream	1,170	The most timely disc player at its price point has tactile imaging and good dynamics			●		●						306
	Leema Antila II	2,735	Great build and multiple DACs give this a fast, revealing and totally engaging sound	/612396		●	●				●			323
	Meridian G08	2,400	Advanced digital processing with special apodising filter that gives a very clean sound	/455040		●	●			●	●			312
	Mimetism 20.1	5,107	An impressive player that produces a very convincing and musical sound			●	●							330
	Moon CD3.3	2,200	With clear, detailed and energetic sound, this player also offers a digital output	/594609		●		●						328
	Moon 750D	7,950	Very few CD players can extract as much information off the disc as the 750D			●	●	●						331
	Rega Isis	5,998	A magnificently musical CD player at a realistic price. USB input is a useful addition			●	●	●						329
	Roksan Caspian M Series-1	1,450	An exceptionally fine CD player that provides a high-end and musically rewarding performance			●	●							307
	Shanling CD-T1000SE	1,700	This player's valve/direct option gives a choice in terms of performance			●	●							328
	Sony SCD-XA5400ES	1,199	Elegant, refined control system and very strong CD/SACD performance	/465933	●	●	●	●	●	●	●			313
	Unison Research CDE	2,495	Valve CD player with interchangeable DACs that doubles as a standalone DAC that oozes musicality	/483759		●		●			●			318

SPECS KEY **SACD COMPATIBLE** Plays high-resolution SACD discs in two-channel mode. **ELEC DIGITAL OUTPUT** Electrical coaxial output for digital connection to a DAC or digital recorder. **OPT DIGITAL OUTPUT** Optical Toslink output for digital connection to a DAC or digital recorder. **CD-RW COMPATIBLE** Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs. **CD TEXT** Will display album and track titles from inserted disc. **BAL ANALOGUE OUT** Balanced XLR output connections for similarly equipped amplifiers. **HEADPHONE SOCKET** Quarter inch (6.3mm) headphone jack fitted to the CD player. **VARIABLE OUTPUT** Player features both fixed level and variable, volume adjustable outputs.



After 5 years in production, the Dino is still one of the most popular phono stages around. Highly versatile with accessible switches on the baseplate to facilitate a wide range cartridges.

'Never Connected' power supply technology virtually removes all incoming mains noise allowing only the music to be heard.

Visit our website to learn more about this exciting product and the high performance Diablo phono stage.

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Dino Phono Amplifier



BEST BUY


















HI-FI CHOICE magazine



 BEST BUY  EDITOR'S CHOICE









TURNTABLES

The best record players you can buy

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				WWW.TECH-RECORD.COM	SPEEDS	SUSP SUBCHASSIS	SWITCHABLE SPEED CHANGE	SUPPLIED WITH ARM	SUPPLIED WITH CART
	Clearaudio Emotion	1,185	Beautifully built with open and clean sound emphasising mid and top, but delivering nice timely bass		33/45				309
	Clearaudio Performance	2,300	Ceramic-magnetic bearing spells a surprisingly uncoloured performance		33/45				295
	Continuum Calibum	125,000	Luxury turntable with state-of-the-art design includes Cobra tonearm and Castellon stand	/587169	33/45/78				320
	The Funk Firm Funk V2	1,390	Not only as beguiling as those that preceded it, this turntable is also more substantial to boot		33/45				324
	The Funk Firm Saffire	2,450	Individual design and a sound that's refined and neutral with strong timing and dynamics		33/45		opt	opt	309
	Hanss Acoustics T-30	3,600	The only multi-armbase deck in its price range, it boasts image stability and precise bass		33/45		opt	opt	331
	Lumley Heliosphere	2,495	A distinctive-looking turntable with a unique sound and a performance that reflects your vinyl!	/560765	33/45			opt	319
	Michell Technodec	608	Needs careful partnering but can deliver a very sophisticated result for the money		33/45			opt	309
	Michell Gyro SE/RB250	1,565	A marriage of shot-putter-strength, build quality and robust audio (including arm substitute)		33/45				324
	Pro-Ject RPM 5	550	Great looks plus engaging sound puts it in the serious league, but needs good isolation for best results		33/45				279
	Pro-Ject RPM 6.1	750	With its huge platter this is a steady design that's capable of fine results with a decent cartridge		33/45/78				294
	Pro-Ject X-Pack	1,000	Combines some very strong elements (Ortofon Rondo Red) into a killer package with top sound and value		33/45				309
	Rega P3-24	390	Very competent, uncoloured and musical, much improved by £148 onboard electronic power supply		33/45		opt		298
	Roksan Radius S/Nima	1,375	Sophisticated design with accomplished sound quality, excellent imagery and good isolation		33/45				248
	SRM Arezzo	699	The Arezzo is an excellent source component for those wanting a superb turntable for vinyl replay	/625025	33/45				325
	Townshend Rock 7	1,720	Has the ability to pull detail out of a vinyl groove, making it the most resolute turntable at its price		33/45				324
	Townshend Rock V/Excalibur II	7,000	If you want to hear everything that's on a record then there's no better machine for the job		33/45				307






PHONO CARTRIDGES

MM and MC recommendations

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS				
				WWW.TECH-RECORD.COM	MM	MC	REPLACEABLE STYLUS	SCIF NUMBER
	Dynavector DV-10X5	295	A high-output MC with superb dynamics and fine timing that's difficult to mount, but well worth the effort					307
	Goldring Legacy	595	An MC cartridge better suited to the smoother-sounding turntable, it unearth's a mountain of detail					328
	Grado Prestige Gold	149	Produces rich, open and expansive music with the minimum of fuss					235
	Ortofon Cadenza Red	750	There's much to admire in this cartridge's fine detail and unfussy presentation					330
	Ortofon Rondo Red	385	Delivers detail, power and resolution and makes a good case for its price					307
	Sumiko Blue Point Spec Evo II	239	High-output MC with refinement at high frequencies and a nimble, articulate and revealing sound					270
	van den Hul MC10	1,050	A very civilised cartridge which is at its best with music of acoustic, rather than electronic origin					330
	van den Hul Condor XCM	2,400	A stunning cartridge with stereo imaging, dynamics and resolution to die for					265

PHONO STAGES

Get the best performance from your turntable

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				WWW.TECH-RECORD.COM	MM PHONO INPUTS	MC PHONO INPUTS	AOL GAIN	AOL IMPEDANCE	ISCF NUMBER
	Cambridge Audio 640P	100	An outrageously good bargain that suits budget systems, but can confidently survive upgrades						305
	Creek OBH15	240	Practical and highly compatible unit offering fine detail and a pleasing, mellow balance						305
	SoundSmith Strain Gauge	6,100	Revolutionary kit assembly that rewrites the rules about vinyl playback	/618387					324
	Tom Evans Microgroove	480	For dynamics and real bass extension with good tonal colour this is the one to beat						234
	Trichord Dino/Dino+	563	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility						234

SPECS KEY **SPEEDS** Speeds offered in rpm. **SUSP SUBCHASSIS** Turntables with a sprung or suspended support for the platter and arm. **SWITCHABLE SPEED CHANGE** Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. **SUPPLIED WITH ARM** Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you. **SUPPLIED WITH CARTRIDGE** Some decks are supplied with a starter cartridge and this is included in the price shown. **MM** Moving magnet cartridge – see amp and phono stage features to match this type. **MC** Moving coil cartridge – see amp and phono stage features to match this type. **REPLACEABLE STYLUS** Some cartridges have separate styli for ease of replacement, but it compromises sound quality.



Cambridge Audio 640P £100
If you need a low-cost way to get your turntable talking to your amplifier, this is by far the best option



Dynavector DV-10X5 £295
Fiddly to set up, but dynamics are superb from this high-output MC cartridge, making it a firm HFC favourite



Townshend Rock 7 £1,720
A great turntable for those upgrading from an entry-level deck. Sound engineering at a bargain price



David Price Hi Fi World

"The Orbit...a brilliant sounding £65 Mains Cable ..over any other £100 + mains cable"

Janine Elliot HI FI News - The Missing Link Family of Cables.... -

"The most beautiful looking and extremely musical cables money can buy"



HI FI World 'World Standards' Award June 2009

The Link Cryo Reference Interconnect

"Our favourite affordable high-end interconnect -
out performing designs at three times its cost"

'Wired For Sound' - Adam Smith HI FI World - The Link Interconnect

"distinctly out of the ordinary offering a very detailed and crisp sonic picture -
leading edges of notes were beautifully precise and forthright with no sense of
hesitancy or blur...the bass end of the spectrum was lithe, tight and focused



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BEST BUY EDITOR'S CHOICE

RADIO TUNERS

Surf the waves with these carefully selected tuners

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS						
				WWW.TECHRADIO.COM	WAVEBANDS	PRESETS	RDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT. TUNING KNOB
FM TUNERS										
	Creek Audio Evolution	350	Sound is detailed, cohesive and extended both tonally and spatially – very classy		FM, M	80				308
	Rega Radio 3	390	Strong bass, clear treble and a high enjoyment factor makes this an appealing FM performer		FM, M	20				283
	T+A T1210R	1,200	High-end looks are matched by the sound, which is detailed and sophisticated		FM	100				283
DAB/FM TUNERS										
	Arcam FMJ T32	600	A highly cost-effective way of optimising the airwaves. iPod functionality is definitely a bonus	/559242	DAB, FM	100				319
	Onkyo T-4555DAB	400	Admirably free of grain or obvious tonal blemishes, this tuner achieves a high standard		DAB	40				298
DAB/FM PORTABLES										
	Monitor Audio Airstream 10	225	The range of features on this DAB/FM/Internet radio is certainly impressive	/636713	DAB, FM, Web	4				326
	Pure Move	80	A feature-packed, beautifully built DAB/FM radio that is a pleasure to use	/608367	DAB, FM	20				323
	Pure Evoke-2S (portable)	170	Attractive and well thought-out. Many useful features and very enjoyable with classical music	/516285	DAB, FM	100				318
	Pure Sensia	250	One of the cleverest and smartest table radios around, offering wireless computer-sourced music		DAB, FM, Web	40				331
	Pure Avant: Flow	280	One of the best standalone solutions for internet radio with a tonality that's good for voices		DAB, FM, Web	40				322
	Vita Audio R2i	300	Very smartly built with a sound that's full-bodied, neutral and detailed	/611865	DAB, FM	30				323

SPECS KEY **WAVEBANDS** Which bands are supported: FM, M – medium wave, L – long wave, DAB – digital audio broadcasting. **PRESETS** How many stations can be stored in memory. **RDS** Radio Data System – station names and program titles can be displayed among other facilities (FM only, DAB has more comprehensive display potential). **REMOTE CONTROL** For the couch potato. **SIGNAL STRENGTH METER** Useful for setting up an aerial. **ROTARY TUNING KNOB** An ergonomic alternative to buttons.

HEADPHONES

Audiophile solutions for home and travel use

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS							
				WWW.TECHRADIO.COM	ELECTROSTATIC	SUPRA-AURAL	CIRCUM-AURAL	OPEN BACK	CLOSED BACK	WEIGHT (g)	3.5MM JACK ADAPTOR
	ACS T2	500	Ear-canal earphones display an impressive midband intelligibility and a knack for digging out the detail	/479584					28		315
	Audio Technica ATH-CK10	279	In-ear headphones offer unforced detail, natural dynamics and excellent clarity						15		319
	Beyerdynamic DT880	276	Combines musical involvement with a high degree of analytical virtues. Also very comfortable						205		312
	Beyerdynamic T1	880	A characterful, enjoyable music-maker with a detailed, weighty sound								331
	Denon AH-D7000	900	One of the best closed-back designs, bearing comparison with the finest open-back models	/478417					295		314
	Etymotic ER-4P	195	Fiddle with in-ear earpieces and angles of approach and you'll be repaid with super-detailed sound						20		319
	Grado SR60i	100	A strong contender with out-of-class sound in most areas: a brilliant budget all-rounder	/603478					210		322
	Grado GS1000i	1,100	A superb transducer, capable of astonishingly high performance standards	/624782							325
	Grado PS1000	1,795	Offer excellent detail and effortless dynamics, but they can be heavy to wear after a while						500		329
	Sennheiser IE8	260	With its combination of neutral midrange and treble, this is arguably the best for in-ear, all-round sound						20		319
	Sennheiser HD380	140	Clear and detailed, with very natural tonality through bass and midrange with just a little coloration								327
	Sennheiser HD800	1,000	These headphones will convert loudspeaker listeners to the delights of personal stereo performance	/619269					350		324

SPECS KEY **ELECTROSTATIC** Uses electrostatic film instead of more common cone or dome dynamics. **SUPRA-AURAL** Earpads sit on ear rather than around it. **CIRCUM-AURAL** Earpads rest on the head around the ears. **OPEN BACK** Vented capsules let sound in and out. **CLOSED BACK** Sealed capsules. **WEIGHT** In grams. **3.5MM JACK ADAPTOR** Allows connection to personal stereos, computers etc.



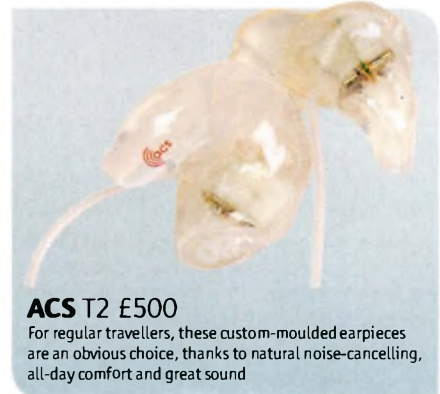
T+A T1210R £1,200

There aren't many similarly priced rivals to the Magnum Dynalab MD 90T for FM fans, but Germany's T+A has really hit the spot with the T1210R



Sennheiser HD380 £140

An easy recommendation – Sennheiser's HD380 should really cost more than this – it's simply fabulous and is a genuine bargain in the world of hi-fi



ACS T2 £500

For regular travellers, these custom-moulded earpieces are an obvious choice, thanks to natural noise-cancelling, all-day comfort and great sound

PLATINUM

S E R I E S

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Hand-built by a small team of specialists, our gloriously technical and arrestingly beautiful new Platinum PL200 speakers will give you a deeper emotional contact with every performance.

Platinum PL200

'Unashamedly luxurious with a high price to match, the PL200 nevertheless represents fine value given the immaculate finish and attention to detail...it delivers explicit, full-range sound in abundance and thus comes heartily commended.'

Hi-Fi News December 2009























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EDITOR'S
CHOICE



 BEST BUY  EDITOR'S CHOICE














INTEGRATED AMPLIFIERS

Our pick of the best one-box amps

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				WWW.TECHPAGE.COM	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)
UP TO £1,000									
	Audio Analogue Crescendo	599	In a room of appropriate dimensions, this amplifier has real musical presence		5			50	329
	Cambridge Audio 840A v2	700	A chunky powerhouse with features aplenty, this amp offers detail and delicacy (silver finish)		8			120	327
	Marantz PM8003	750	Detail isn't the utmost, but great vitality makes this amplifier quite thrilling		5	MM		70	327
	Moon 1.5	999	A likeable amp in many ways, with admirable bass, treble and imaging		5			60	321
	NAD C3226BEE	320	Unusually confident into awkward loads and very assured especially in bass. Treble a touch recessed	/603281	7			50	322
	Puresound A10	685	A superbly involving and musical valve amp at a very competitive price and capable of genuinely excellent results		2			10	331
	Roksan Kandy K2	895	Superior design and high-performance credentials makes this amplifier a must-have bargain	/483722	5	MM		125	315
ABOVE £1,000									
	Arcam A38	1,450	A winning combination of sonic virtues including highly developed detail and musicality		7	opt		100	321
	Astin Trew AT2000	1,349	If you prefer the timbral and timing qualities of music to its bone-crunching potential, then this is a serious contender	/498574	4			65	317
	Audio Analogue Pucconi Settanta	1,450	Detailed and lively, particularly in the upper octaves, but lacks a little bass extension		5	MC		160	320
	Copland CTA4C5	2,998	A musical and involving amplifier, which also has incredible insight and is user-friendly by valve amp standards		5			50	305
	Cyrus 8 XP d	1,500	High on features with a revealing upbeat sound and impressive five input onboard DAC	/608669	6			70	323
	Denon PMA-2010AE	1,700	High-class, well-equipped integrated, with a performance that is muscular, refined and detailed		6	MM/MC		80	328
	Electrocompaniet PI-2	1,600	A superb all-rounder, with insight on one hand and effortless musical flow on the other		6			100	327
	Electrocompaniet ECI-3	1,650	This is an impressively resolute and powerful integrated amplifier for the money	/618304	5			70	324
	Gryphon Atilla	6,995	With exceptional subtlety and definition, it has more than enough power to cope with just about anything musical		5			100	328
	Harman/Kardon HK 990	1,000	Very clever, with built-in DSP room correction and more – but most importantly a powerful and revealing amplifier	/594820	7	MC		160	321
	Leema Pulse	1,270	Admirable bass which combines extension, tautness and clarity. Higher frequencies are highly detailed and revealing		5	MM/MC		70	327
	Leema Tucana II	3,425	Highly featured, well-built and not short of power, this is a highly resolute and organic amp	/612396	7			148	323
	Lyngdorf Millennium Mk IV	10,995	State-of-the-art digital amplifier successfully transcends virtually all the problems that afflicts others of its type	/603231	5			150	322
	Mimetism 15.2	5,415	A powerful amplifier with great dynamics and high resolution that's rare even at this price		6			180	330
	MSB Platinum M200	13,656	This amplifier's devastatingly good all-round sound quality sets a benchmark that few will approach	/603452					322
	Myriad MX12080	1,200	Sound is more assured at the top of the frequency range than the bottom, though bass is melodious and detailed		8			80	327
	NAD 375BEE	1,000	A good, solid amplifier that is fundamentally musical and gives a great bang for your buck	/625323	7			150	325
	Naim Audio NAIT XS	1,250	Its spellbinding, refined musical performance is a challenge to all integrated amplifiers	/498536	6			60	317
	Rega Osiris	5,998	Very solid all-round performer has massive power reserves and splendid stereo imaging		6			162	329
	Unison Res. Unico Primo	1,395	Line input can be converted to phono (at extra cost), plus an excellent mix of valve and solid-state virtues	/499279	5			85	317

PRE/POWER AMPS

Separate boxes can bring clear advantages

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS						
				WWW.TECHPAGE.COM	PRE-AMPLIFIER	POWER AMPLIFIER	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	POWER OUTPUT (W)
UP TO £2,000										
	Cambridge Audio Azur 840E/840W	2,000	Enterprising technology delivers a pre/power combo that always sounds detailed and controlled				8	opt	200	309
	NAD C165BEE/C245BEE	1,190	An alternative to the usual integrated route and one that offers flexibility and fine sound				6		35	331
ABOVE £2,000										
	Arcam C31/P38	2,450	Very civilised sound in the best possible way. Well featured and smartly built				7	opt	100	308
	Border Patrol Control Unit	3,995	Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around				5	opt		277
	Bryston BP16/ 2B SST ²	5,700	Preamp and power amp combo offers superb sound quality	/608649			6	opt	100	323
	Bryston BP26	3,670	Cracking preamp brings detailed results				8	opt		308
	Classé CP-700/CA-M400	9,200	Pre plus mono power combo with superb build, huge power and enormous flexibility.				6	opt	400	293
	Cyrus DAC XP (preamp/DAC)	2,275	A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz				2			266
	Digital Do Main Ba-1	6,495	By recreating the V-FET, DDM has built one of the most thrilling amplifiers on the market				4		300	327
	Hovland HP-100/RADIA	18,900	Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers				9	opt	125	250
	Naim NAC 152 XS/NAP 155 XS	1,920	Preamp and power amp duo offers excellent performance and classic Naim virtues				6		60	324
	Roksan Caspian M Series-1	2,800	A powerful and enjoyable-sounding amplifier combo that brings out the strengths of its CD player				5		85	307
	Trilogy 909/990	10,390	Extremely musical valve-based pairing with hybrid power and beautiful finish	/625226			6		100	325

SPECS KEY **LINE INPUTS** Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. **PHONO INPUT** Input sockets and on-board phono stage for a cartridge. Either MM (moving magnet) or MC (moving coil), occasionally both. **REMOTE CONTROL** A remote control is supplied with the amplifier. **HEADPHONE SOCKET** To drive your cans with. **POWER OUTPUT** Manufacturer's rated output in watts per channel.



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BEST BUY EDITOR'S CHOICE

CABLES

Cables really can make a difference, especially our top recommendations

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS				ISSUE NUMBER
				STRANDED	SOLID CORE	COPPER	SILVER	
ANALOGUE INTERCONNECTS								
	Audioquest Sidewinder	45	A detailed cable, with fine tonality and excellent rhythm – slight upper-bass warmth does little to detract					297
	Black Rhodium Prelude	90	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit					293
	Black Rhodium Coda	150	Superb bass with neutral and detailed midrange, treble generally sweet with occasional slight constriction					299
	Black Rhodium Polar Illusion	250	A good all-rounder, with clear and purposeful bass and particularly fine treble					321
	Cambridge Azur Reference	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble with no trace of dryness					296
	Chord Co. Indigo Plus	995	Costly, and high-class cable needs running in, but this is a finely detailed design overall	/608313				323
	Clearer Audio Silver-line	283	Complex, well-screened cable which offers good sound all round with exceptional bass					279
	CrystalCable Piccolo	348	Thin, but tougher than it looks, Piccolo has some qualities of a solid-core type – notably resolution, focus and articulation					294
	Kimber Timbre	145	A very neutral cable that will complement even very upmarket systems					312
	Monster M350i	45	Few cables at this price reveal so much about the recording space.					281
	Monster M1000i	230	Very capable, with only a hint of bass dryness to set against excellent results elsewhere					284
	Nordost Wyrewizard Dream	110	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass					303
	Oehlbach NF214	63	The bass is a matter of taste, but suits many smaller speakers with good mid and treble					281
	QED Signature Audio S	190	Mellifluous and rounded, this cable is a great choice for lovers of the human voice					321
	Supra EFF-IX	77	Lively sounding cable which maintains a high level of detail and neutrality, musically, a great all-rounder					306
	Townshend Isolada DCT100	99	Sound has a particularly enjoyable cohesion and naturalness that makes for great listener involvement					312
	van den Hul The Wave	125	Generally neutral, with a hint of upper-bass richness: images seem to reside slightly further away than most					312
DIGITAL INTERCONNECTS								
	Kimber DV-30	98	A superb performer that lacks very little, even when compared to Kimber's high-end models					E 317
	Merlin Scorpion Digital	130	Reduces distortion, making sound clear with unusually revealing low frequencies					E 317
	Supra AnCo	30	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context					E 304
SPEAKER CABLES (PRICE PER METRE)								
	Atlas Hyper 1.5	12.5	Don't look to this cable to beef up the bass, but its performance at higher frequencies is revelatory at the price					299
	Atlas Ascent 2.0	60	A highly analytical cable, with more bass extension than at first appears and very fine detail across the board					294
	Chord Co. Silver Screen	6	Screened speaker cable with excellent treble, but just a little light in the bass at times					310
	CrystalCable Piccolo	1,395	A chip off the old block, this speaker cable has a similarly fast, fluid and subtle sound (price reflects 3 metre pair)					302
	Kimber 4VS	155	In the right system, this cable is a good choice (price reflects 2.5 metre terminated pair)					329
	Monster MCX-1s	5	Notable for its bass, which is perhaps a touch overdone at times but could be a good foil to small speakers					280
	Nordost Heimdall	185	Alternative to Valhalla, silver-plated, micro-monofilament construction, suitable for exacting systems					278
	QED X-Tube XT300	12.5	A natural and controlled-sounding cable that's cost-effective for mid-priced systems					310
	QED Revelation	15	Sensibly priced, this cable offers a performance which is a step-up from budget types					318
	Townshend Isolada DCT	50	Cryogenically treated 'impedance-matched' cable with stabilising components added					241
	van den Hul The Wind	50	Separate conductors provide plenty of room for experimentation and the conductor quantity keeps resistance low					318
	Wireworld Solstice 5 ³	25	Rather bulky and awkward, but performance amply justifies it with superb bass solidity					310
	Wireworld Oasis 6	40	Excellent bass with tunefulness and extension all first-rate. Awkward to handle, though	/617560				324

SPECS KEY **STRANDED** Cable has a number of (usually) twisted strands to conduct the signal. **SOLID CORE** Cable has one or more individually insulated strands to conduct the signal. **COPPER** Material used to form the conducting element of the cable. **SILVER** Alternative material used to form the conducting element of the cable. **DIGITAL CABLE TYPE** E – electrical, O – optical. Cables are one metre length unless otherwise stated.



BEST BUY EDITOR'S CHOICE

STEREO SPEAKERS

Perhaps the most influential link in the chain

BADGE	PRODUCT	£	COMMENTS	WWW.TECHNOLOGY.COM	SIZE (WxD) (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (H/Z)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER	
UP TO £1,000												
	Acoustic Energy Aegis Neo 3	363	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight		20,90,5,24	●	A	24	●		294	
	Acoustic Energy Radiance 1	600	Limited bass, power handling and dynamics, but exceptional mid-to-treble voicing		18,5,32,25		A	33	●		325	
	Amphion Ion L	900	Sharp styling, fine mid/treble coherence and a sweet treble, but less happy bass alignment in test room		16,2,36,26,5		A	40	●		310	
	ATC SCM11	867	A very fine little speaker that's at its best with natural recordings where it adds little and reveals much		21,38,25		A-	55	●		293	
	AudioPro Avanti A.10	350	A tough and effective little speaker – overall balance is quite smooth and even		19,29,26		A+	38	●		319	
	Bowers and Wilkins CM1	488	Luxury miniature has laid-back sound, with low coloration and fine imaging, but weak dynamics		16,5,28,28		A-	40	●		279	
	Bowers and Wilkins 684	699	A fine all-rounder at a realistic price, this floorstander has a smooth, even and nicely open balance	/483503	20,91,30	●		22	●		315	
	Bowers and Wilkins 683	879	High-class drivers and a great price makes for a warmly recommended speaker		20,99,34	●		20	●		304	
	DALI Ikon 6	999	Needs care with setup, but rewards you with impressively transparent and obsessively detailed sound		19,100,33	●	A	37	●		271	
	Dynaudio DM 2/10	880	Unfashionably bulky standmount has fine dynamics, grip, bass and headroom and is well mannered		27,5,45,35		A	22	●		299	
	Focal Chorus 706V	389	Advanced drivers deliver an even, overall balance with healthy dynamic expression and tension		22,39,25		A	27	●		319	
	Focal Chorus 726V	950	Compact and realistically priced, the Chorus 726V is a good all-round performer		22,99,37,5	●	A	25	●		325	
	JBL Studio L880	700	Good value floorstander with neutrality, massive headroom and plenty of punch		22,99,37	●	A	25	●		275	
	KEF iQ50	599	Looks cute and very discreet, with spacious imaging, good balance and a sweet treble	/483527	17,5,81,5,26	●	A	23	●		315	
	Monitor Audio BR2	230	Good-looking standmount has a muscular sound with superior coherence		18,5,35,25		A-	30	●		294	
	Monitor Audio BR5	450	Not the best dressed in its class, but detailed, bold-sounding and good value		17,85,25	●	A-	36	●		293	
	Monitor Audio Silver RS8	850	Bold, dynamic sound marks it out from the crowd and it's an easy load that works well in larger rooms		90,18,27	●	A	33	●		276	
	Monitor Audio GS10	900	More neutral tonally than some recent MAs, the GS10 is a high-quality stereo design which is easy to drive		20,36,27		A-	40	●		284	
	PMC DB1i	895	Could be more neutral, but a very effective musical communicator with fine warmth and sweet treble		15,5,29,23,4		A+	30	●		310	
	ProAc Tablette Ref Eight	704	Stunning standmount with electrostatic-like imagery. Its brother costs £200 more and is even better!		15,27,23		A+	40	●		267	
	Q Acoustics 1010	110	Neatly styled miniature has limited bass and power handling, but fine midband voicing for the price		15,21,5,19,5		A	48	●		286	
	Q Acoustics 1020i	140	Outstanding value, the smooth, well-balanced and lively sound makes for a fine communicator	/516273	17,5,25,26,5		A+	60	●		318	
	Rega RS1	390	Clever close-to-wall speaker has a fine coherence and good communication skills		15,32,23,6		A	23	●		319	
	Russ Andrews SP-1	352	This tweaked Focal 705V RA has a sound that is immediate, engaging and, most importantly, great fun		19,2,31,5,24,8		A+	65	●		309	
	Spendor S3/5R	750	Lacks dynamic muscle and loudness potential, but lovely smooth neutrality and good bass extension		16,5,30,5,190			25	●		310	
	Tannoy Revolution DC4T	599	Ultra-compact floorstander that lacks bass weight and dynamic tension, but sounds open and coherent	/488857	15,85,16	●		40	●		316	
	Tannoy Revolution DC6	900	Pretty compact standmount likes wall loading, delivering a lively bass and smooth, coherent midband		23,36,5,23		A	40	●		307	
	Wharfedale Diamond 9.1	150	Superior shape and finish at an exceptionally sharp price. Sound is laid back, but free from boxiness		19,5,30,28		A-	45	●		307	
	Wharfedale Diamond 10.5	480	Despite the low price, the 10.5 ticks many of the boxes, with superior voice band coherence	/636778	22,88,30	●	A-	50	●		326	
ABOVE £1,000												
	Adam Audio Tensor Delta	8,400	This active loudspeaker brings a powerful range of capabilities to its performance		33,56,34		A	50	●		329	
	AE Energy Radiance 3	1,500	This speaker's very effective enclosure ensures a wide dynamic range and a very clean sound	/587236	23,92,29,7	●	A	27	●		320	
	Amphion Argon2 Anniversary	1,200	Notably superior coherence and focus, fine neutrality and dynamic range with low coloration		19,38,31		A-	24	●		317	
	Amphion Helium 520	1,000	Sharp styling and fine value for money with excellent voice-band coherence		16,104,22	●		28	●		314	
	Amphion Argon 3L	2,300	Very solid build ensures an impressively clean sound with loads of bass and fine neutrality		19,92,5,30,5	●		26	●		322	
	ALR Jordan Classic 5	1,550	Slim, laid-back floorstander has sweet sound with fine coherence, imaging and dynamic range		17,99,26	●	A	28	●		275	
	ATC SCM16A	2,376	Makes a great case for the active speaker. Includes built-in amps and is good value		27,45,33		ACT	42	●		300	
	Audioplan Kontrapunkt IVB	2,898	Boasts exceptional stereo imaging and mid-through-treble coherence		16,35,26	●	A	45	●		329	
	Audiovector S3 Super	2,600	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging		19,103,31	●	A	50	●		328	
	Arousal VS	1,650	The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes	/479149	21,5,107,5,26,8			20	●		314	
	AVI ADM9	1,125	Active mini-monitors that are exceptionally accurate and dynamic sounding		20,30,26		ACT	60	●		301	
	Bowers and Wilkins CM9	1,760	Tall, elegant, expressive midband and expansive, but well-controlled bass	/597244	20,102,5,32	●	A	60	●		321	
	Cabasse MC40 Java	1,360	This large and handsome speaker has a notably smooth and evenhanded neutrality		25,110,35	●	A	20	●		325	
	Cabasse Bora	2,200	A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics	/618354	33,27,50		A	52	●		324	
	Dynaudio Focus 220	2,630	Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble		20,5,98,29,5	●	A-	20	●		281	
	Focal Chorus 816 V	1,099	Fine, warm balance, superior dynamics and a sweet top end, but could be smoother		28,100,37,5	●	A+	20	●		288	
	Focal Chorus 826 V	1,349	Times nicely, goes loud with ease and will produce precise imaging if appropriately set up		28,104,37,5	●	A	45	●		287	
	Focal Chorus 816WSE	1,499	The W cone makes some of the qualities associated with Focal's high-end models more competitive		99,8,28,2,37,5	●	A+	39	●		308	
	Focal Chorus 826W LE	1,879	Focal has turbo charged the 826 resulting in lots of energy, excitement and fine detail		28,2,103,8,37,5	●	A		●		330	
	Focal Electra 1027 Be	4,399	Outstanding mid and top with fine delicacy and low coloration, but lacks some bass grip and drive		26,5,111,35	●	A-	25	●		276	
	Free FS1	3,500	An elegant design for anyone after the minimum of wiring. Wireless with Sonos or Airport Express		16,87,27	●	ACT	35	●		301	
	Gamut Phi5	3,040	Lovely and discreet floorstander has excellent sound and several very clever engineering touches		17,100,24	●		20	●		305	

BEST BUY EDITOR'S CHOICE

STEREO SPEAKERS *continued*

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS						
				TECHNOLOGY.COM	SIZE W,H,D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL
ABOVE £1,000										
	Guru QM10	1,595	A very clever close-to-wall standmount with fine imaging, that sounds a lot bigger than it looks	/465869	30,25,2,23,2		A	26		317
	Jamo R 907	6,600	Arguably the more 'chummy' of Jamo's dipole flagships, it offers a powerful bass and open midrange	/498515	44,118,9,7		A	30		317
	JBL Everest DD66000	44,000	An awesome performer in the true meaning of the word, with exceptional musical communication		111,96,5,47		A	50		331
	Kudos Cardea C2	1,950	This floorstander is a fine all-round performer with fine voicing and neutrality		20,92,5,27			23		322
	Kudos Cardea C30	5,250	An absolute honey that fully justifies its hefty pricetag, lacking only a little dynamic tension	/394973	20,112,27			22		310
	Magico V2	18,000	High pricing derives from this speaker's superb, painstaking engineering and impressive performance	/624700	25,5,115,30		A	32		325
	Magneplan Magneplanar 1 6	2,500	Great with acoustic and classical material, this dipole panel speaker has superb sound quality		48,165,5		A	43		329
	Mission 796	1,300	Clean, open and detailed, this smooth, relaxed loudspeaker does exactly what it says on the box	/594834	20,6,99,8,31,8		A	25		321
	Monopulse 42A	1,995	Oddball styling, fine bass-to-mid balance and dynamics and superb voice coherence		26,110,25		A	25		302
	Monitor Audio PL200	4,750	A costly, but beautifully presented loudspeaker with outstanding voicing and character		25,5,100,28,5		A			330
	Mordaunt-Short Perf 6 LE	4,799	Striking moulded enclosure minimises coloration, while overall balance is smooth, neutral and open		24,115,43		A	22		308
	Neat Momentum 3i	1,790	Sounds a lot bigger than it looks, with good coherence and an impressively wide dynamic range		22,38,27		A-	23		302
	Opera Callas	3,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	/429144	23,37,5,34			32		311
	Opera Seconda	1,995	Fine styling and finish, plus very superior voicing, if a shade lacking in warmth		24,102,5,31,5		A	20		314
	Pioneer S-2EX-W	5,200	This speaker offers superb midband neutrality and exceptional clarity	/587272	29,1,56,5,42,5		A	37		320
	PMC FB1i	2,100	A floorstander that boasts impressive bass extension and a smooth sweet top end	/429594	20,100,30		A	20		329
	PMC OB1i	3,600	This floorstander delivers a smooth overall balance with wide bandwidth and dynamic range	/429697	20,102,5,32,5		A	20		311
	PMC fact. 8	4,600	Beautiful styling, alongside a superb all-round sound quality with a notable wide dynamic range		15,5,105,38		A	55		327
	PMC IB2i	8,900	Delivers a top-class sound quality, fine imaging and exceptional dynamic grip	/617595	33,74,46,5		A	25		324
	PSB Synchrony One	3,500	Slim and discreet floorstander that delivers superb sound quality and flexible bass	/516267	22,109,32,5		A	45		318
	Revel F32	3,200	Meticulously balanced, tonally neutral design makes for a taut, well disciplined sound		22,105,39		A	20		256
	Revolver Screen 3	2,799	Visually dramatic and very successful in delivering genuine high-quality hi-fi sound		50,140,11			35		329
	Roksan Caspian FR-5	2,475	Sharp-looking speaker sounds exceptionally open and lively without aggression		20,100,25		A	22		290
	Ruark Talisman III	1,499	No bass demon, but a sophisticated and agile speaker epitomising Ruark's design ideals		22,84,31		A	22		259
	Sonus faber Luito Monitor	1,690	A subtly designed, elegant-sounding package that's hard to beat, especially with good recordings	/603221	18,5,35,33,5		A-	55		322
	Sonus faber Minima Vintage	2,490	Easy, graceful-sounding compact is a natural for acoustic material at moderate volume levels	/455417	20,33,27,5		A-	55		312
	Sonus faber Cremona Audit	3,350	Open, exciting and with surprisingly good bass... this is 'The Little Speaker That Could'		20,35,37		A	50		305
	Spendor SP3/1R2	1,600	Conservative styling, superb neutrality and coherence with unusually low coloration		22,40,28		A	37		317
	Tannoy Definition DC10T	5,000	Classy speaker has massive base, high sensitivity and precise image focus	/608326	34,112,5,32		A+	35		323
	Totem Model 1 Signature	1,975	Expensive, but very seductive miniature delivers a beautifully smooth and balanced midband		17,31,23		A	35		277
	Triangle Genese Quartet	2,775	Great material value and a solid all-round sonic performance with great loudness potential		23,117,37		A	25		302
	Triangle Magellan Concerto	16,250	New 'sw2' version is less immediate than its predecessor, but it remains highly entertaining		60,160,45		A-	32		290
	Usher Compass CP-6381	2,500	Lots of speaker for your money, with plenty of deep bass, unusual styling and massive build		35,127,65		A	20		270
	Vivid Audio K1	14,495	With a subtle, fast and wide bandwidth, this speaker is one of the finest on the planet	/625361	28,130,45		A	35		325
	Wilson Benesch Curve	5,383	Much (but not all) of the ACT's performance in a much more compact and affordable package		23,91,37		A	28		254
	Wharfedale Opus	1,500	Great material value and a solid, if bright and forward sound. Has great loudness potential		26,100,5,41		A	23		314
	Yamaha Soavo 2	1,200	Cunningly crafted standmount with a beautiful balance that always sounds lively, open and involving		22,38,35		A	28		296
	Zu Essence	3,750	Sheer realism and fine communication skills are more than fair compensation for balance shortcomings		30,5,125,30,5		A	25		327

SPECS KEY **SIZE W,H,D (CM)** Width, height and depth of one cabinet in centimetres. **FLOORSTANDER** Speakers that don't require stands. **EASE OF DRIVE** How much power the amplifier needs (approximately) to drive the loudspeaker effectively. **A+** 25 watts plus **A** 50 watts plus **A-** 100 watts plus **ACT** Active – the speaker has its own in-built amplifier. **BASS FROM** How low the speaker goes – the smaller the number the deeper the bass. **FREE SPACE** The speakers work best away from wall(s). **CLOSE TO WALL** The speakers will work best when up against a wall (but avoid corners).



Amphion Ion L £900

A great-looking loudspeaker that also boasts a superb mid/treble coherence and a super-sweet treble, some experimentation with positioning will reap rewards



Opera Seconda £1,995

Classy, sealed-box, two-and-a-half-way Italian floorstander with a very fine fit and finish and a superior voice band



Audioplan Kontrapunkt IVB £2,898

It's small, it's expensive but this German floorstander contains the finest ingredients and delivers a smooth sound with some of the best imaging around.

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BEST BUY EDITOR'S CHOICE

EQUIPMENT SUPPORTS

Hi-fi equipment supports come in all shapes and sizes

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				HEIGHT (CM)	TOP PLATE SIZE (CM)	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
	Atacama Equinox	409	Stable, modular design with style and excellent bass transients	81	50,50	●	4	Glass	217
	Audiophile Base Std Supp't	1,200	Expensive and quite bulky, but sound is unusually detailed and resonance-free	57	46,35		3	MDF	302
	Aurios Classic Bearing feet	230	A widely versatile set of three isolation feet for most hi-fi kit, except suspended turntables					Metal	302
	Custom Design Inert Matt	70	Isolation platform can improve the sound of hi-fi components, but is a bit small for most kit		40x25			Metal	311
	Custom Design XL4	380	Simple construction pays off in smart looks. Sound contribution is minimal		60,42		4	Glass	293
	Custom Design Milan	509	Good-looking stand with nothing more to complain of than slight muddying of detail	57	48,39		4	Glass	302
	Hi-Fi Racks Podium	500	A keenly priced piece of high-class furniture that also happens to sound great		59.5			Wood	320
	Isonoe Isolation feet	98	A set of four isolation feet that are ideally suited to microphonic kit like turntables					Alloy	327
	Partington Minim	470	Adds its own character to rock, but to the detriment of acoustic sounds	78	45,37	●	5	Glass	302
	Quadraspire QX25 Support	25	Beautifully simple design, cheap and easy to use. Excellent with CD players					Acrylic	327
	RussAndrews Torlyte Platform	146	This unassuming platform can be a godsend, cleaning away mid/treble muddle from the sound	8	48,36		1	Torlyte	302
	Russ Andrews Torlyte Rack	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54,49		4	Torlyte	240
	Townshend VSSS	1,380	This attractive Seismic Sink retains the same excellent vibration-killing sound quality	76	35,50		4	Glass	273

SPEAKER STANDS

Not all stands are made equal – try one of our top buys

BADGE	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				HEIGHT (CM)	TOP PLATE SIZE (CM)	FILLABLE	WELDED	NUMBER OF LEGS	ISSUE NUMBER
	Anvil Sound Display Stand	229	A variety of smart looks available – sound is clear and precise	50	20,17	●		1	293
	Custom Design RS300	110	An attractive stand whose lack of coloration suits it to high-resolution systems	56	16,5,18	●		1	281
	Custom Design SQ404	220	Robust four-pillar design gives very low coloration and maximises performance	61	18,16,3	●		4	283
	Partington Ansa 60	119	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	●		4	232
	Partington Dreadnought BS	299	Sound is better defined in almost all areas than cheaper, slimmer stands can offer	62	17,23	●		5	309
	Partington Heavi II	499	Robust to the nth degree, this stand helps produce very precise bass and upper frequencies	53	31,22	●		6	287

SPECS KEY **HEIGHT (CM)** Height of equipment support and speaker stand (not including spikes) in centimetres. **TOP PLATE SIZE (CM)** Width by depth of the supporting platform(s). Single figures indicate a square platform (Speakers generally overhang top plates). **FILLABLE** The stand can be mass-loaded with sand and/or lead to stop ringing. **WELDED** As opposed to bolt-together construction. **NUMBER OF SHELVES** To put your kit on (different configurations are often available). **NUMBER OF LEGS** That support the stand. **SHELF TYPE** Material that shelves are made of.



Equipment Racks

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Analogue

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Bass 2200 Signature, Vector 4, Clamp c DBk new
Bent Micro Gilder, excellent low hours
Clearaudio Master Solution c/w Unily tonearm
Gamard 401, good cosmetics, full working order
Graham Phantom, ex demo, excellent boxed
Linn LP12, Ekos 2 in black ash
Linn LP12, Ittok, Lingo excellent
Linn Ekos 2, excellent boxed
Linn Axis, c/w Basik Plus arm
Michell Orbe SE, excellent boxed in silver
Michell Hydraulic Reference, SME 3009, new lid
Michell Electronic Reference (no arm, SME cut)
Michell GC Power supply
NAD 533 Turntable (Planar 2), RB250, Goldring Elektra
NAIM Stagline S, excellent
Pnk Triangle PT Too, Linn cut armboard, excellent
Project Experience, excellent boxed, due in
Project Expression 2, nr mint boxed
Rega P3, in green
Rega Planar 2 c/w RB250 and Super Bias, excellent
Rega RB300 Upgraded wiring etc
Roksan TMS1 & DSU superb boxed, recent TM service
Roksan Xerxes 20/XPS7 as new, used
SME 3009/2, excellent
Systemdek IIX, c/w Systemdek arm, vgc
Thorens TD150HD with TP250, ex demo bargain
Naim Stagem 5, excellent
Tom Evans The Groove, excellent
Tom Evans Microgroove plus (upgraded ISO), as new
Trichord Dino, black front excellent boxed
Trichord Dino, and Dino + PSU
Wilson Benesch Act 1 Tonearm, nr mint superb

Radio/Recorders

Arcam DT81, excellent boxed
Meridian 504, excellent
Musical Fidelity ASDAB, excellent boxed
Nakamichi Dragon, due in
Nakamichi ZX100DL, due in
Quad FM4, excellent later grey version, boxed
Quad FM4, excellent
Rotel Michi RHT10, excellent boxed

Digital

Arcam CD7, excellent boxed
Arcam CD17, nr mint boxed
Audiolab 8000CD original version black
Audio Research CD3, excellent in silver
AVI Lib Series CD player, as new boxed
Bryston BCD1, nr mint boxed
Choral DAC64, excellent boxed to clear
Consonance CD2.2 24bit, excellent boxed
Creek Classic CD, black
Cyrus DACX, excellent black boxed
Cyrus CD8SE, excellent black boxed
Cyrus CD6SE, excellent silver boxed
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Esoteric SA50 SACD player, 14k srp, SAVE £1500!
Marantz SA1, boxed recent new laser
Marantz SA15, excellent boxed
Marantz CD17K1, excellent boxed
Meridian 506 16 bit, excellent boxed, factory serviced
Meridian 566 24bit DAC, excellent
Meridian 598, excellent boxed
Musical Fidelity Tubalot! Rare as.
NAIM CD3, excellent
NAIM CDS2/CDPS, new laser in 2009, reduced to clear
NAIM CDS2/CDPS, nr mint boxed
NAIM CDSi, excellent boxed
Pathos Digit, superb boxed
Pioneer DVD747, excellent boxed
Roksan Caspian M series in Silver boxed
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Shanling Omega Drive, vgc fight casad, serviced
Stello CD200/DP200 Transport and DAC Preamp mint
Sugden CD21SE, as new one owner boxed
Tag McLaren CD20R, excellent boxed
TEAC P700/D700 excellent boxed 1/2 size pair
Unison Research Unico CDP, excellent boxed

AV/Accessories/Cables

Chord Signature Speaker cables, factory terminated pair
isotek and LAT extension blocks
Meridian G68 Pre/Processor, excellent boxed with MSR
Musical Fidelity XPSiV3 and X10v3
Onkyo 607 AV Receiver, as new ex demo boxed

Amplifiers

Air Tight ATM-1s, excellent boxed
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Audiolab 8000Q, excellent in black
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Definitive Technology Mythos 2, pair, bargain!
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Focal JMLab 1007Be, nr mint boxed
Focal Sibs Cinema pack XXL fronts, XL centre and rears
Griffin, any products by this company wanted!
Kef Reference 103.3, due in
Kudos C10, early bi-wire pair in Rosenut
Magneplanar MG16, ex review
Martin Logan Purty, ex demo, for details
MJ Acoustics Ref 150 Subwoofer, excellent
Monitor Audio Studio 60 Piano black excellent boxed
Monitor Audio GSW12 Gold series Subwoofer, excellent
Monitor Audio MA1800 Gold, large floorstander, bargain
Monitor Audio GS20, Cherry boxed
Naim IBL, excellent, black ash
Penaudio Rebel 2 and Chara subs in cherry
PMC DB11, excellent boxed
PMC DB11, excellent boxed
PMC FB11, excellent boxed
PMC DB1 Centre, excellent
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Proac Studio 130, in Cherry, boxed
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Second-hand guide

In the concluding part of our feature, we highlight high-end decks

Our first combination is the Origin Live Resolution turntable with Illustrious tonearm. And, as is sometimes the case with turntables, it's actually the arm that is the star performer. That's not to say the Resolution is a bad deck, far from it, in fact, but the tonearm is exceptional and arguably the best in its class. Costing £1,770 new, and now in Mk3 phase, the Illustrious tonearm is a favourite with reviewers and regularly beats even the hallowed SME V (available from £2,200) during tests.

This is a superb tonearm in any guise, but it's well worth finding an Mk2 or Mk3. The Mk2 has a noticeably better arm tube and is spotted by a dowel pin near the headshell. The Mk3 models received a dual pivot bearing and can be easily identified – there should be around one millimetre of play in the vertical plane.

The Resolution turntable was launched in 2002 and recently upgraded to Mk2 status. Mk2 models have the belt attached directly to the platter for improved torque and faster start-up times. They also feature a thicker spindle and improved bearing. Large front feet, with dual silver ring inserts, identify the Mk2 version and our advice would be to spend the extra on a newer tonearm.

Going from a Mk1 to a Mk2 has a greater affect with the Illustrious than the Resolution. The original guarantee is not transferable, although reliability and servicing are not an issue. Origin Live also do a tempting range of upgrades. We found an Mk1 Resolution and Mk1 Illustrious with Reson Aciore cartridge (£650) from a dealer for just £2,300. At under half its new price, that's an excellent buy with a tonearm upgrade to Mk2 at just £300 making it even more desirable.

The Michell Orbe is now in its sixteenth year, although the greatest change came about in 2000, when the Orbe switched from an AC motor to a DC one. As AC motor versions aren't

easily upgraded, they really should be avoided unless priced appropriately. In 2003/4, we saw the introduction of the 'Never Connected' power supply circuitry. This isolated the mains, effectively giving the Orbe the same benefits as if it were powered by batteries.

Recently, a new Generation 2 NC circuit has been introduced, which refines the isolation process still further. Being an Orbe and not Orbe SE, this deck comes with a full acrylic plinth and lid. It looks more impressive than the Orbe SE although, truth be told, it also sounds a little different. One slight problem with the Orbe is that its lid can work loose so that it won't close. Otherwise, the Orbe is a precision turntable with even the oldest models proving trouble-free. Having said that, as with nearly every turntable, regular bearing lubrication is important. Michell's five-year guarantee is not transferable but they will consider it if customers contact them directly.

The default matching tonearms are usually the SME IV or V although the Origin Live and



The Michell Orbe turntable is now in its 16th year and comes complete with a full acrylic plinth and lid

only suit the TNT physically but complete its dark, dynamic sound stage. Although American, VPI decks are well supported by a good number of UK dealers so servicing shouldn't be a problem. Our budget should be enough for an Mk2 Jr with a 10.5i arm.

Finally, we have the Clearaudio Master Solution. Launched in 2000, it was initially available with a clear or black acrylic chassis. AMG upgrades came in 2001 and consisted of aluminium slabs top and bottom for a crisper transient attack. In 2002, the AMG wood

“The Illustrious tonearm is a favourite with reviewers and regularly beats even the hallowed SME V during tests.”

high-end Regas also make good partners. For our £2,500, we'd expect to find a 'Never Connected' version from after 2004, with an SME IV and decent cartridge.

If you think the Orbe is an imposing turntable, wait until you see a VPI TNT Jr. Actually, the term, 'Junior' is somewhat misleading, as this deck stands some 63.5 centimetres across – too big for many racks! The Jr misses the stainless steel legs and air suspension of the TNT 6, but its comparative simplicity makes it easy to keep 'tuned' in the long run. It's also very solidly built with even the first versions made in 1993 showing few signs of problems. The Mk2 version came out in 2000, with a significant upgrade occurring in 2004. This entailed an acrylic platter and inverted bearing that is well worth paying more for.

As ever, a decent matching tonearm is equally important. Both the VPI JMW 9 (around £765 new) and JMW 9 Signature (£1,140) are nice enough, but the real stars are the 10.5i (£2,000ish) and 12.7i (£2.5k+) versions. At 10-inch and 12-inch respectively, they not

version was produced with bulletproof plywood replacing the acrylic. This may sound a rather extreme material for a turntable yet, like other hard materials such as titanium, it can improve the sound when used in certain installations.

Perhaps the most significant upgrade came with the fitment of the CMB (Ceramic Magnetic Bearing). This uses frictionless magnet repulsion within a ceramic bearing shaft. All upgrades can be retro-fitted through UK distributor, Audio Reference. You need to check that the bearing hasn't run dry and on the condition of the belt, but nothing else. The other good news for second-hand purchasers is that the five-year guarantee is transferable.

Although you can partner one with a Clearaudio Satisfy or Unify arm, one of the linear trackers, such as the Tangent, is more appropriate on this £4,000 turntable. Second-hand we found an armless AMG for just £1,800 leaving plenty in the kitty for a decent arm.

So there you have it, four superb turntables, one torturous choice! **HFC**

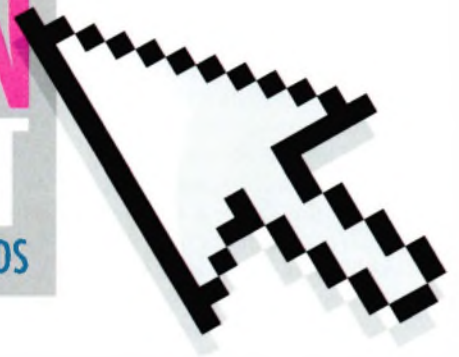
Dominic Todd



The impressively proportioned Resolution Mk1 turntable has since achieved Mk 2 status



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VITA AUDIO R4 CD DAB, FM radio with USB, iPod dock, remote, 80-watt amp (piano black) nine months old, boxed (£600) £395. 01634 255168 (Kent)

GAMUT D200Mk3 power amp, 200 watts (eight ohms), boxed with manual. As new £2,500. 7803 969706 (Scotland)

QUAD 24-valve preamp, 2x Quad 11 40-valve monoblocs. Superb condition, boxed with instruction books. £2,995. 01202 481386 (Dorset).

PRO-JECT record deck and Pro-Ject phono amp, Music Fidelity XA-1 preamp, Arcam Alpha 9 CD Player, Arcam P60 power amp, Rogers Studio 5 speakers. Includes all power cords (Russ Andrews) and cables/speaker stands and equipment stand (£3,700): £2,000. 00353 87 637 6623 (Ireland).

STANDS UNIQUE Sound Tower in natural ash. Five shelves, plus base plate and isolation platform (£500) £175. Can e-mail photos. 07738 467556 (West Yorkshire)

NAIM CD3.5 CD player £495, Naim NAC102/522 preamp £550, Naim 90.3 power amp £250, Naim flatcap x2, £200 each, Sennheiser HD570 headphones £60. All mint and boxed. 07738 761299 or mike_jeffers@btinternet.com (Lancs).

ROTEL RCD-06 CD player (£350) £175, boxed and mint in black (See pics at hifi-forsale.co.uk). 01384 412234 or 07984576531 (West Midlands).

MARANTZ CD 63 KI Signature. Excellent condition, remote, original box, instruction book and KI Certificate £200 01772 717492 or 07887687343 (Lancs).

QED Qonduit MDH2 two-way mains conditioner (£150) £75, QED Qunex 3 interconnect one-metre (£50) £25, QED Performance digital cable, one-metre (£30) £15. Free postage! All boxed as new. 01384 412234 (West Midlands)

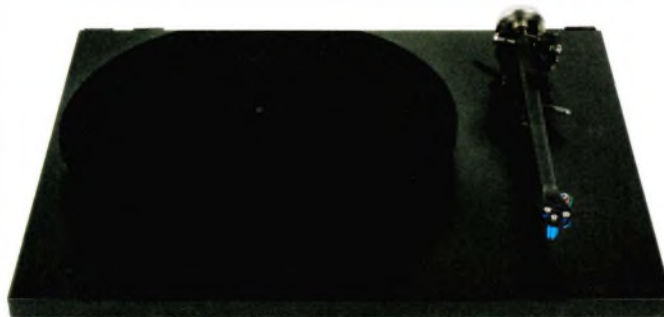
PIONEER CD player PD7700, complete with remote and instructions £50, Tuner/amplifier SX5560, with instructions £30. 01189 732777 or ian@ikyle.freeseve.co.uk (Berkshire).

ROTEL RA-04 amp and Rotel RCD-06 CD player (£600) £300. Both one year, seven months old, boxed and in perfect condition. 01384 412234 or leet2009@hotmail.co.uk (West Midlands)

KIMBER four pair speaker cables, 2x three metres £25, Atacama speaker stands 16-inch high (black) £30, Apollo speaker stands 24-inch high, bronze £25. 024 76 711668 (Coventry).

RUARK CL20 floorstanders, in very good condition, five-star reviewed. Approx seven years old. Six-ohms/87 decibel sensitivity. (£1,650) £525. 07896 206056 (Sussex)

THE CHORD COMPANY Chameleon Silver Plus, one-metre £60, Nordost Super Flatline Gold Mk 2, two metres, bi-amp/bi-wire £90, Kimber Silver Streak 0.5-metre £90.



Above: Rega P3 turntable

All boxed, 01482 887409 (East Yorkshire).

SONY MDR-CD 1700 headphone. Musical sound is outstanding. Excellent condition. (£200) £120. 01707 657801 (Herts).

TOTEM Floorstanding loudspeakers in cherry. Includes standard and custom-made granite plinths. Still under warranty. Excellent condition. (£1,695) £795. 07725 072878 or jason-watson@sky.com (Leicestershire).

PURE Evoke 1XT in cherry wood, DAB radio, boxed, £40. Marantz CD63 Mk11 KI Signature CD player, boxed, £150. Both perfect working order. Monitor Audio Monitor

3 speakers, £80 (slight damage). Ecosse MS2.3 speaker cable, £60. 07939 588777 (East Yorkshire).

NAKAMICHI CR-7E cassette deck. Stored from new, never used and in original box. £995, IsoTek Titan power conditioner (silver) with six-way Titan Multilink, professionally hardwired with 1.25-metre Acrolink 6N power cord, £1,500, IsoTek Orion four-way mains filter (silver), as new, £250. (Day) 01252 620644 or (eve) 01962 711800 (Hampshire).

AUDIOLAB original British Q & P, F&D Serials. No remote. Local drop off or collection offered. £625. 07900 603525 (Leeds). ▶

BUYING TIPS

- Buying second-hand can be a great way to pick up a bargain. A formerly expensive second-hand component might well prove a better long-term bet than a brand-new product if the price is right.
- Do some research on which brands have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a dealer, you're unlikely to get any warranty, so it's up to you to ensure the fitness of any gear that you buy.
- Usually, speakers should be less prone to breakdown than amps, and amps should be more reliable than CD players. But any abused component could be trouble – have a proper demo and judge the seller as well as the goods!

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RUSS ANDREWS Silencer, three for £100, Super purifier with Hubble port attachment, £220. 01902 884694 (Dudley).

AVID Volvere turntable (black), fitted with SME IV arm and Dynavector DV20 MC cart and EAR 834p phono stage. All boxed, as new, £3,200. 07850 979375 (Norfolk)

BOWERS AND WILKINS loudspeakers in black ash: 2x 600 floorstanders, 1x CC6 centre channel, 2x DS6 dipole surrounds, 1x ASW 1000 subwoofer. £300. 01255 553774 (Essex)

CYRUS 6VS2 amplifier, Cyrus CD6S CD players. Both one year old, in quartz silver. Boxed, in perfect condition, (£1,350) £700. 01384 412234 or leet2009@hotmail.co.uk (West Midlands).

NAIM CDX, VGC, light use. Includes remote, manuals

and packaging. £750. 01276 503994 or andyuk777@yahoo.co.uk (Surrey).

CEC Dain, state-of-the-art 15-kilogram high-end DAC, separate word, bit, master clock and audio data input and Toslink inputs. Balanced and unbalanced outs. www.cec-international.de. Seven months old, boxed, as new, (£2,800) £1,749. 07777 628426 (Bristol)

MICHELL Gyrodec, AC motor, clear lid, black acrylic base. Rega arm plate including de-coupling upgrade. Great condition, £650. 0121 704 1188 or boballen@sky.com (Solihull).

SUGDEN A21al class A series two-line amplifier and series 2 CD21, plus audio controls, hand built, titanium finished, matched pair. Boxed, excellent, as new. £1,900 01527 876514 or b2bc@btinternet.com (Worcestershire).

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ATACAMA loudspeaker stand, (black). 30 centimetres high. Spikes included. £30. 01245 264248 (Essex).

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ROTEL RAO6 stereo amp, Marantz CD6002 CD player, Musical Fidelity loudspeakers (£1,475) £775. Will separate, boxed as new. 01684 295781 (Gloucestershire).

KENWOOD KA550 amp £30, Naim Audio tuner £30, Rotel RP1000 deck £30. 01795 473934 (Kent)

PATHOS Classic One Mk 3 hybrid amp, 12 months old. Mint condition. Boxed with remote and manual. Upgrade forces sale £1,650. 01656 782523 (Wales)

MARANTZ SA11-S2 SACD player with warranty and boxes £2,300, Shunyata Hydra 2 £275, Diamondback power cables £100 each. 07810 434589 (Hants)

AUDIOLAB 8000A amp £85, Cyrus CD 8x CD player, mint, unused £495, Rega turntable and arm (25 years old) £75. 01986 894424 (Suffolk).

SONY TA-E1 preamp and Denon PRA-51 preamp, 07903 169080 (Harrow).

MICHELL Argo preamp, boxed £200, Miller and Kriesel V125 active 12-inch sub £200, Exposure Super 8 power amp £200, MS 25i speakers (beech) £35, NAD 3020 preamp £20. 01722 334694 (Wiltshire)

MARANTZ 6000K1 Signature CD player. Marantz 6010 K1 Signature amp, Wharfedale 8.1 speakers. Good condition with leads and interconnects. Offers 01722 503303 (Wiltshire)

CHORD CO. Carnival Silver Screen bi-wired and terminated speakers cables, mint (£90) £45. 07729 600847 (West Sussex).

PIONEER PL1000 record deck £450, Kenwood DM3090 mini-disc £60, Technics SLP 770 CD £65, Pro-Ject Debut II speed box phono 78, adaptor £120. 01708 457691 (Essex)

RUARK CL20 floorstanders, approx seven years old. Six ohms/87dB sensitivity. (£1,650) £575. 07896 206056 (Sussex)

SUGDEN Masterclass integrated amplifier, Graphite fascia. Just four months old, boxed, mint (£3,675) £1,800. 07899721899 or email: yatestherapy@googlemail.com. (London).

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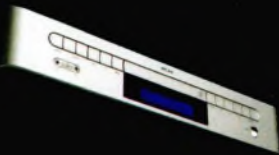
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BBC Music, December 2009

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"The Diamond 10.1's take Wharfedale back to the forefront of budget speakers. Truly excellent..."
Diamond 10.1 Review – WHF? Sound and Vision, September 2009

WHAT HI-FI? SOUND AND VISION
GROUP TEST WINNER

"The budget speaker arena has been revitalised by the latest incarnation of a model that first saw the light of day in the '80s"
Diamond 10.1 Group Test – WHF? Sound and Vision, October 2009

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magazine

"Loudspeaker gem really sparkles"
Diamond 10.5 Review – Hi-Fi Choice Awards 2009

WHAT HI-FI? SOUND AND VISION
AWARDS 2009
PRODUCT OF THE YEAR
STEREO SPEAKERS & SUBWOOFERS
WHARFEDALE DIAMOND 10.1

"It's the tenth generation of Wharfedale's budget speaker, and arguably the best yet"
Diamond 10.1 Product of the Year, Stereo Speakers WHF? Sound and Vision Awards 2009

HI-FI WORLD

"The Diamond 10.3 has an extraordinarily accomplished design that offers superb balance and a great raft of strengths as modern floorstanders go. At the price, it is a svelte bargain."
Diamond 10.3 Review – Hi-Fi World, January 2010