

For those who know



Amphion Helium 510

- "... an unprecedented degree of upper midrange/ treble refinement ..."
- "... this speaker's resolution and linearity exceed what's common in this price class..."
- "I simply wonder whether the average €900/pr speaker punter will recognize -- and fully appreciate -- just what this Amphion offers..."

Srajan Ebaen www.6moons.com

www.amphion.fi | info@amphion.fi



Amphion's Hifi Choice Best Buy Awards



Prio 520

January 2008 "particularly inviting for long term listening" *



lon L

September 2008
"Rare and very welcome combination of open voicing that's free from any unwanted aggressive tendencies"



Helium 520

December 2008
"Sound is warm, neutral,
lively and essentially neutral,
with superior musical
communication skills"



Argon² Anniversary

March 2009
"Does precisely what a good standmount should."



Argon3L

August 2009 "Smooth, clean, neutral and very well controlled, with a wide dynamic range"

WELCOME...

HI-FICHOICE APRIL 2010 ISSUE 331

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The thing that drives us the most is the knowledge that however good a system is, it can always be improved. The process is slow, gradual and sometimes costly, but the path is always enjoyable and usually exciting. I witnessed some of this excitement recently when I caught up with HFCs Jimmy

Hughes, Paul Messenger and Jason Kennedy.

Paul's passion for our coverstar, the JBL DD6600, was on fire: "It could be the one..." he enthused. Meanwhile, Jimmy was still raving about last issue's Gamut Beautiful System, which he said imaged like nothing he'd heard, beating even his big MF amps. I sensed both reviewers (who already have great systems) didn't want to say goodbye.

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

- Since 1975, Hi-Fi Choice has delivered the world's most thorough, most reliable no-nonsense quide 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*.
- That's why Hi-Fi Choice is...
 The Essential Guide To Audio Excellence In The Home









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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Digital Nirvana

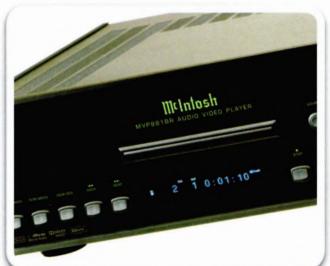
Our favourite Manufacturers continue to take CD performance to new heights - further than one could ever have imagined...

images shown: top left (Accustic Arts C■ mk3) top middle (Marantz SA-KI Pearl) top right (Audio Note UK CDT Three/Dac Five) | bottom left (Musical Fidelity AMSC■) bettern midale (Sugden MasterClass PDT-4) | bottom right (McIntosh MVP-881)

The latest generation of CD Players at Jordan Acoustics are nothing short of amazing. These manufactures continue to optimise and finetune their players to ring out the maximum performance from silver disk. A properly setup CD Player from us never fails to impress.

McIntosh MVP-881 Universal Player (NEW)

Unlike cheaper universal players on the market, the NEW McIntosh MVP-881 has been painstakingly designed and optimised to retrieve the best performance from every disc format you play on it and the results are nothing short of astonishing. Make no mistake, it is truly a unique box of sonic fireworks that never stops impressing! If you want the best - this is arguably the player for you!



*subject to condition



marantz'







From ex-Luxman valve supremo Taku Hyodo comes Leben

Ranked as one of the best eight tube audio design engineers in Japan, Taku Hyodo is a designer of impressive stature and the creator of the exquisite Leben brand.

Leben products bring the most natural and palpable realism possible. Each is handmade and beautifully finished in Japan ensuring owners can expect long life, high reliability, highly rewarding performance and true pride of ownership.

"Like classic British valve amps from the early 1960s, the amp fills a room elegantly, making music that bit more listenable and approachable by making it a fraction richer, in a thoroughly 'good' way. If you like listening for hours at a stretch, it's hard not to love the Leben."

Leben CS-300XS Review Hi-Fi+ Awards 2009 Issue



ammun

(STREET, STREET, STREE Winner









Where Studio and Domestic converge...

A completely new concept lies at the heart of the Tensor High-End-Series. Numerous new approaches and technical developments let this loudspeaker deliver an unfettered performance: the precision and harmony of all frequency bands guarantee an unparalleled experience of music reproduction.

Available in active or semi-active (i.e. only the bass section is being driven by internal amplifiers) the Gamma Tensor Delta pulls no punches in it's pursuit to deliver your music in it's full glory.

"The TD manages to straddle two often mutually incompatible worlds, that of the domestic hi-fi speaker and that of professional studio monitors. But, unlike some in its class, which could be described as taking a stab at all the bases, while being master of none, this speaker actually lives up to most of the stereotypes. It has the refinement and finesse of a good home loudspeaker, but one with all the panache and guts of its studio equivalent."

Alvin Gold, Adam Audio Tensor Delta Review Hi-Fi Choice Feb 10 Issue





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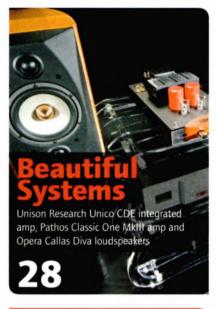
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Sennheiser HD 408 headphones worth £40

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CASTLE KNIGHT LOUDSPEAKERS .::

Castle harnesses the might of Chinese manufacturing in a bid to win fans for its new Knight series

Castle hopes its new Knight series loudspeaker range will seduce our ears and eyes with a combination of the latest technology, top notch craftsmanship, and keen pricing.

The basic model is the Knight 1, coming in at just £300. This two-way standmount is fitted with the same soft-dome tweeter, developed from the ground up, which appears in all the Knights. Castle told us it very deliberately chose soft-dome tweeters over metal, claiming its new aluminium-core voice coil gives all the latter's frequency extension with none of its associated problems, and maintains the easy-going refinement, which has always characterised Castle's loudspeakers.

At a premium of £100 is the Knight 2. Like its smaller sibling, its mid-bass unit is built around a mixed-fibre cone, albeit a 150 millimetre diameter type rather than a 130 millimetre version. The clean roll-off at the top and bottom end of both drivers means that simple second-order crossovers are used across the range.

Most affordable of the three floorstanders is the £600 Knight 3. Like the 4 (£800) and 5 (£1,000) with their twin mid-bass drivers, this model favours Castle's traditional twin-pipe, quarter-wave loading over reflex ports. As this Twin Pipe Technology exits through the base of the cabinet, Castle claims it doesn't drive room modes. This should make positioning simple, as the TPT loading used in the original Harlech, for instance, had impressive reach in the lower octaves.

It might seem strange that IAG should have three other speaker brands in its portfolio – after all, it owns Mission, Quad and Wharfedale as well. That said, the group is well aware of the distinctive heritage of each of its brands and has stated its intention to continue in the footsteps of the Azima brothers (Mission), Peter Walker (Quad) and Gilbert Briggs (Wharfedale), rather than homogenising the sound of the firms they founded.

Price: £300 to £1,000 **Due:** now **2** 01480 447700 **3** www.castle.uk.com



CONES THAT REDUCE RESONANCE

According to Peter Comeau, IAG's Director of Acoustic Design, who voiced the new speakers, the random orientation of the fibres in the Knight's heat and pressure-formed cones greatly reduces the ringing and resonances, which can plague metal-cone drivers, even carefully doped variants of SEAS' high-end Excel series.



audiofile

NEWS

DEVIALET D-PREMIER ***

Devialet of France has produced an innovative synthesis of class A analogue and class D switching amplification in its D-Premier integrated. A cutting-edge DAC (built around Burr-Brown PCM 1792 ICs operating in current-output mode) the D-Premier is mated to a power amp where each channel contains a low-power analogue amplifier working in tandem with four class D switching modules. Devialet say the class A amp provides the voltage swing, while the class D modules provide the current, in a manner somewhat reminiscent of Quad's current-dumping circuitry.

Conceived originally by Pierre Emanuel Calmel in 2004, the D-Premier was then brought to life in conjunction with a team of specialists in technology, design and marketing. The D-Premier arrived in late 2009 after 18 months' research and development, with a claimed output of 240 watts per channel into loudspeakers of impedances between two and eight ohms. This allows the amp to be squeezed into a case which measures 40 centimetres on a side, but only 4.5 centimetres high.



COPLAND CDA825

Copland's new flagship CD player contains not just the electronic and mechanical engineering the company's known for, but a dash of psycho-acoustic engineering as well.

The apodising digital filter in the CDA825 has been optimised for the greatest reduction in pre-ringing in its impulse response, to exploit the fact that the human ear is less sensitive to noise immediately after an impulse than before. Copland claim this gives a truly silent background from which clean, crisp transients emerge.

Also playing a role in the player's presentation is the Philips CD-Pro 2, transport which sends its signal to a reclocking buffer to minimise jitter ahead of the DACs. These are Wolfson WM8741 parts running in dual-differential mono mode, offering 24-bit/192kHz processing synchronised by a low-jitter master clock, its outputs delivered to the XLR and RCA sockets courtesy of discrete analogue circuitry. All of the player's various sub-sections are underpinned by discrete regulators whose low output impedances ensure minimal noise on power supply rails.

Price: £3,985 **Due:** now **2** 020 89713909 **⊕** www.copland.dk





ICON AUDIO MB150 ...

Icon Audio's MB150, is fresh from the drawing board and like its siblings, the 23-kilogram MB150 monoblocs are hand-made and wired with teflon-coated silver wiring. In this case, the 6SN7 class A front end (inspired by Leak's classic TL series) is linked to four KT90 tetrodes in the output. Switchable between triode and ultra-linear modes, the amp will deliver either 100 watts or 150 watts respectively.

Price: £2,599 **Due:** now **2** 0116 244 0593 **⊕** www.iconaudio.com

EPOS ENCORE 50%

Epos is hoping to hit a new high with its Encore 50 floorstander. Three years spent scrutinising cabinet, crossovers, drivers and final voicing have yielded fruit in a 50-kilogram upgradable speaker.

Beneath the book-matched real wood veneer lies a heavily braced enclosure of laminated birch plywood and MDF, home to four drivers: an anodised aluminium tweeter, a 158-millimetre midrange and two 220-millimetre woofers, all three with mixed-fibre cones. The tweeter and midrange unit share an enclosure, leaving the reflex-loaded woofers and adjustable crossover to their own separate sections. Future-proofing comes courtesy of an outboard DAC with programmable digital active crossover, which will be offered as an extra to owners once its design has been finalised.

M ULTRASONE



ULTRASONE EDITION 8 RUTHENIUM

For audiophiles who like a feast for the eyes as well as ears, Ultrasone has created the Edition 8
Ruthenium. Aesthetically, the earcups of this special edition of the Edition 8 gain precious-metal plating, as well as embossment with ceramic inlays. The technology beneath the good looks shares Ultrasone's S-Logic system, designed to give natural surround sound without the need for external electronics: instead of directing the output from the 30-ohm titanium-plated diaphragms directly into the inner ear, with S-Logic the signals are reflected first off the surface of the outer ear in different directions.

Price: £1,100 **Due:** now **2** 01494 511 711 **⊕** www.ultrasoneuk.com

LUXMAN D-38U

Announcing the D-38u, a CD player which is designed to match Luxman's long-running 38 series of valve integrateds. The heart of the player is a Burr-Brown PCM1754 DAC, allied to user-selectable solid-state and valve (ECC82) output stages.

With a rather higher output than the current SQ-38u valve integrated, the L-507u is a class A/B integrated, capable of sustaining up to 200 watts into four ohms thanks to its low-impedance output stage.

Finally, the P-200 is a class A headphone amplifier, its parallel push-pull output stage managing 500mW per channel into 32-ohm loads.

Price: £2,395 (D-38u), £4,595 (L-507u), £995 (P-200) **Due:** now

2 01900 813 064 **⊕** www.selectaudio.co.uk



As part of its 25th anniversary celebrations, Danish firm Gryphon has just unveiled the Scorpio CD player. Inside the stylish casework is a transport specially constructed for low-noise operation and effective vibration damping. The precisely calibrated mechanism feeds its signal to a 32-bit / 192kHz upsampling DAC, while two independent, temperature-compensated clocks minimise jitter. A CD-only machine might seem like an unusual move when other companies are dropping the format, but Gryphon founder and CEO Flemming E. Rasmussen explained it as, "another instance of Gryphon's willingness to pursue our own path when we perceive it to be the most direct path to better music in the home." Price: £6,950 Due: now ② 01413 339 700 www.gryphon-audio.dk

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A **30-day money-back guarantee** on most products (details on our website), including the jaw-dropping WhestTWO phono stage, at £749 "easily among the best sonic values available" (*Stereophile*).

A huge selection of hi-fi components with style, like the gorgeous new Scheu Diamond Wood turntable, with Makassar ebony or cherrywood base, RB250 tonearm and Benz Micro MC Silver cartridge, a steal at £2650.



Cool Gales, hi-fi made easy. Give us a click. Give us a call.

The Victoria School House ≈ Henrietta Road ≈ Bath BA2 6LU

SMOKE WITHOUT THE MIRRORS

In the search for the perfect device for recording sound, engineer David Schwartz (one of the pivotal contributors to the development of audio compression in the 1980s) has produced a rather unusual microphone.

At a basic level, the Particulate Flow Detection Microphone consists of a column of smoke, a laser and a photo-diode. Fans draws a smooth, stable column of smoke through a detection chamber, shining through a slit in which is a laser, positioned opposite a photo-detector. The theory is that the photo-detector will register perturbations in the smoke in the chamber, caused by the sound entering it and convert these into an electrical signal. As smoke particles have vastly lower mass than the



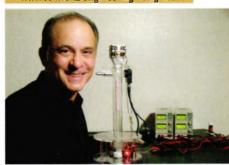
3D BLU-RAY BRINGS VALVE SOUND TO DIGITAL AUDIO

On a revealing visit to Panasonic's R&D labs in Japan, Steve May, HFC's Editor-in-Chief, discovered how Panasonic's new signal processing for its 3D Blu-ray players could bring valve sound to digital audio.

diaphragms of traditional microphones, the system should offer excellent fidelity.

At the moment, the PFD microphone is at a very basic prototype level of development, and sounds distinctly low-fi. Schwartz is hoping, however, that research will lead to rapid improvements.

www.schwartz-engineering-design.com/



The company's latest player, the DMP-BDT350, not only sports a wealth of high-performance components, but buried in the menus is an innovative feature which really excites. At the heart of the BDT350 is an enlarged version of the Panasonic Unipher LSI. While the bulk of the new, extra processing power is there to accommodate 3D visuals and picture processing, taking advantage of excess silicon brawn is a new feature called Tube Sound. The result of a desire to bring the warmth and tonality of valve amplifiers to today's digital audio kit, Tube Sound is the culmination of years of work for Panasonic's Chief Engineer, Masahiro Yamasaki (left).

Yamasaki insists that the mode is not a gimmick: "We have carried out a detailed examination of the sonic characteristics of tube amplifiers and I believe we have faithfully programmed these into the Unipher chip. The key was replicating the second and third harmonic distortions responsible for that characteristic 'tube' sound.""

* www.panasonic.co.uk

Soundbites

ARCAM has added wi-fi to its Solo all-inone music system. Dubbed the

Solo Neo, the new model now sports an aerial and an RJ45 ethernet connection on its rear panel and will sell for £1,325.

mww.arcam.co.uk

OPERA AUDIO

has just announced the third iteration of its Consonance

Reference CD2.2 CD player. The MkIII now features a digital input, which can be used with the company's Wireless Digital Box and can receive music files via wi-fi from a PC and feed them into an audio system.

2 01273 608332

MBL is offering a classy new white finish on its

high-end audio components in the Reference, Noble and Classic series, including



speakers. According to the company, demand for the colour has never been higher, though it's yet to overtake black and silver as the buyer's favourite.

www.mbl-germany.de

BPI'S latest analysis of music piracy claims that, although the growth in illegal peer-to-peer filesharing has levelled off, the use of other forms of illegal downloading has increased significantly. These include overseas



MP3 pay sites, newsgroups, blogs and forums linking to cyberlockers.

@ www.bpi.co.uk

MONITOR AUDIO has teamed up with 33
Records to help promote a vast array of fresh musical talent. One of the developments is Monitor Music, a brand new database which includes new singer's like Zoe Galant. Her album Long Time Coming is one of the first available to purchase online. The site also includes a range of lossless audio files that can be downloaded for free.

www.monitoraudio.co.uk/music

ERRATUM

Hi-fi gremlins crept into our review of PMC's FB1i loudspeaker in HFC 329 and tinkered with the overall score. For the record, the FB1i is a five star and Best Buy badge winner.

DAVID WIENER COLLECTION >

Chosen by Ferrari to turn the firm's audio aspirations into reality, designer David Wiener has created a range of components focusing on active loudspeakers and wireless connection.

Constituting the front end are two iDocks. The £1,299 Art.Suono is a fusion of carbon fibre and aluminium, compatible with an iPhone or iPod Touch, or any other line-level player input via its Aux socket. For those on a tighter budget, the Art.Station offers the same inputs in a more conventional enclosure, without wireless capability.

Loudspeakers come in the form of the Art.Studio towers. Machined from aircraft-grade 6061 aluminium, the slim cabinets hide class D power amps driving a single tweeter, two midranges and eight small woofers. Connection is via RCA unbalanced, with wireless an option.

Price: E5,990 (Art.Studio), £1,300 (Art.Suono), £495 (Art.

Station) Due: now 2 0208 462 1379 @ www.dwcollection.com



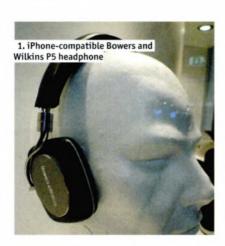
audiofile SHOW REPORT

ISE Europe 2010

HFC's roving reporter Ed Selley drops by Europe's largest custom install show...

ince 2004, the ISE show has grown steadily and now comfortably fills the RAI exhibition centre in the south of Amsterdam. As the title suggests, ISE has a broader portfolio than most shows we feature. Many of the brands that attended would be entirely familiar to a UK show regular, but equally a huge number of home control, professional audio and display companies will not be.

The most immediate impression any first time visitor will have of the show is the truly bewildering variety of exhibitors that attend Generally, something new and interesting will break cover in almost all of the categories that ISE covers. Attendees are generally from the trade and industry rather than the general public and this is reflected in many of the displays being more about static product on view than up and running in demonstrations. There were, however, some impressive technology demonstrations, including 3D television and some innovative audio distribution systems. Hi-fi is not a large part of ISE, but there were nevertheless some interesting products on show.



Bowers and Wilkins had a large stand with several display areas. As well as its full range of custom install and pro loudspeakers, it also demonstrated its P5 headphone – the first offering in this area. Offering full iPhone capability with microphone, they are designed with comfort as a priority and sounded very promising indeed, isolating the noise of the show well.



Elsewhere on **Bowers and Wilkins** stand, the MM1 Media speaker is the company's first product in the desktop and PC speaker area. A full range, active speaker using technology from both the Zeppelin iPod docks and the 800 series, the MM1 also uses its internal DSP to offer a higher quality headphone output than is usually the case with a PC or Mac.

For those seeking something a little larger, the **Velodyne** DD 1812, might fit the bill. A truly enormous two-way design that uses a 12 inch driver for 'upper' bass work and an 18 inch one for foundation destruction. The 1812 includes a setup microphone and EQ software to make the most of its 6000-watt power output.

Waterfall displayed their rather more elegant product line, including the Niagara floorstander,



Hurricane on wall 'LCR' system and diminutive new S'erio satellite. Available in a variety of finishes. the design uses a single, full-range driver and can be stood, wall or shelf mounted, with a view to either custom install or AV use with a subwoofer.





Designed primarily for custom install use, the **ReQuest** F2 gives more of a nod to hi-fi performance than many of its competitors. Music ripped to its terabyte internal drive is done so in both WAV and MP3 formats. Music played over wired connections is lossless, while the MP3 copy can be streamed to other locations over the internet.

Also offering very high performance from a custom install brief were the **James** 808BE in-wall loudspeakers. Using aircraft grade aluminium, no less than four Beryllium tweeters and weighing a mere 20 kilograms each, they were demonstrated in enclosures at the show and their performance was certainly on a par with some quite serious conventional box speakers.

A more discreet in-wall solution was on offer from **Stealth Acoustics**. The FX8 is a conventional driver loudspeaker that is designed to be completely walled in, leaving no evidence the speaker is there. Despite this unusual design facility, the performance in the demonstration was impressive and offers some interesting possibilities for hidden surround speakers.

Canton had another method of avoiding excessive additional cabling. The WA 100 wireless system allows for lossless wireless transmission to a small, remote controlled amplifier. Offering 50 watts, it seemed able to drive a variety of speakers on the Canton stand to levels that defeated the very high ambient levels of noise around it without perceptible interference.



8. Canton goes wireless

WIRELESS SOLUTION WA 100

- HIGH PERFORMANCE STEREO AMP
- WIRELESS SIGNAL TRANSMISSION
- DIGITAL SOUND PROCESSOR
- REMOTE CONTROLLER



Is Wek

The power to deliver 'clean' power



Aquarius replaced the companies GII Mini Sub and is the latest product in IsoTek's unique range of multi-award winning power conditioners that are designed and hand made in England using the finest materials and built to the highest of standards.

Formed in July 2001 IsoTek's vision has been to create high-quality mains power conditioners that stretch beyond current conventions. Through careful market analysis and extensive research, IsoTek has been able to launch products that dramatically improve the performance of all components used within an audio or visual environment, a fact that has been proved by countless international reviews and over 25 audio awards.

"IsoTek is the leader in mains conditioning products" HI-FI NEWS

"IsoTek is the UK's biggest name in mains filtration" HI-FI CHOICE

"Not all mains conditioners are created equal... IsoTek has built itself a reputation as a purveyor of mains conditioners that actually improve (as opposed to just alter) the sound" HI-FI WORLD

For more information and to obtain your free IsoTek brochure please call:

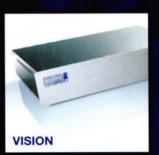
01276 501 392

"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,















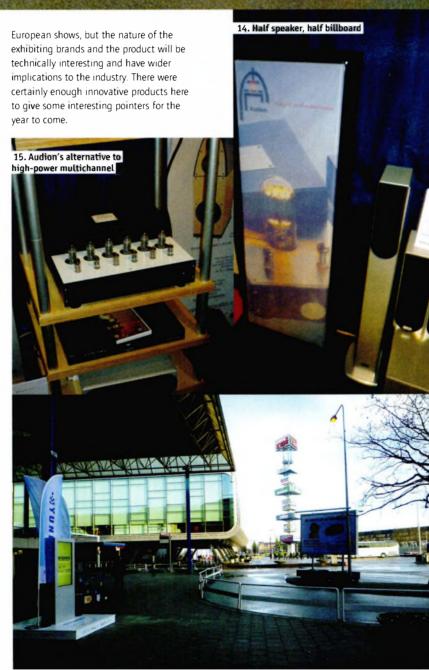


In many ways as innovative, if not quite so attractive was the RDG-1520 from **Rotel**. As well as offering the usual DAB and FM services, the RDG-1520 can access internet radio services via Ethernet and wireless as well as hard-drive music systems with IPod support thrown in for good measure. A variant with on-board amp and CD player is also available.

British speaker brand,
Revolver was displaying
its innovative Screen
loudspeakers. With their slim construction,
options for wall mounting and offering the
ability to have their front panels painted or
decorated, they offer a credible hi-fi solution
to the business of discreet and concealed
loudspeakers, even if advertising the amplifier
brand Audion on them might not be the
average buyer's first choice.

It fell to **Audion** to make the only demonstration involving valves. A three-channel version of the single-ended EL34 Sterling amplifier was on show. Able to operate on its own or with a stereo version, it offers a low-powered, but extremely charming sounding multichannel option and provided an interesting diversion to the more usual amplifier types on display elsewhere.

With attendance rising to over 26,000 and the excellent venue meeting the challenge, ISE looks set to become more and more important to the hi-fi brands which feel that their business crosses over into the field of custom installation. The wide focus at the show will mean that for the hi-fi enthusiast, it may not hold the same appeal as some other



SETYOUR MUSIC FREE

MARTINIOGAN

'Seduces the listener with realism and a sense of scale... The Summit X will own your heart from its first notes' Ken Kessler, Hi-Fi News (November 2009)

'Reference-grade performance that you'd struggle to match at double the price

Alan Sircom, Hi-Fi+ (Issue 66)

Howard Kneller, SoundStage! (September 2009)

othing brings music to life like MartinLogan speakers. Unique technologies, seamlessly fused to create a sound so spacious, so open, it makes ordinary speakers seem hopelessly constrained.

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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

Technology

Why we shouldn't rage against the machines



Using a computer as a source may be heresy to some audiophiles but much of the criticism doesn't add up

his month, for the first time, the principal source for the Ultimate Group Test was a computer, a basic, general purpose, 'netbook' (small laptop PC). I've no doubt the odd reader will view this as the ultimate sell-out to the dark side and possibly a few more will raise an eyebrow. It seems appropriate, then, to have a quick look at some of the the things that make computers different from other audio sources.

In essence, once you've converted audio to digital format, you can store the digits on any medium – optical disc, magnetic (hard) disc, solid-state storage etc – and as long as it can feed them out to the DAC fast enough, replay shouldn't depend on the storage medium. But in practice, it often does. Anecdotal evidence suggests different CD transports sound different (feeding the same DAC from the same CD), hard drives sound different again – hey, even two copies of the same CD can sound different if one is treated with a 'CD pen' or stick-on treatment.

It's only fair to accept some 'differences' as being down to subconscious wishful thinking. To take a rather extreme example, £10,000 worth of beautifully-machined CD transport will put you in a better frame of mind than a plastic CD player of 1995 vintage. Even if the electrical output of the DAC to which they are both connected is identical to within a part per million, the former is likely to 'sound' better. But I, and plenty of others, have measured genuine differences in a DAC's output due to changes in the digital source.

One possible change, often brought up, is digital errors. Everyone knows that errors occur but, of course, they are supposedly dealt with by 'error correction'. The problem, with CD players at least, is that you don't actually know when error correction stops

and error concealment (ie approximation) begins. Take it from me, though, with most CDs the latter is very rare unless the discs are badly marked. As for hard disc and solid-state storage – devices originally meant for computer use – error correction is more robust because a whole operating system can be felled by faulty data.

Jitter is another possible source of error, and in my experience the commonest. Most CD transports/players have pretty low jitter on their digital output, but computers have rather more, especially via USB, which requires very special means to make it suitable for audio use. However, good DACs can cope with this and provide a low-jitter analogue output: this is actually part of a DAC's 'job description' and a legitimate thing to test.

The big trap with computers is that they have a lot of processing power, enough to do unexpected things with the audio data. This includes altering the volume (usually not dithered, which means that low-level resolution can be significantly worsened), altering the sampling rate, which can have all sorts of side-effects depending on how it's done, and worst of all, converting all audio files to compressed formats, usually MP3 or AAC/MP4.

If you're going to use a computer as a source, check the options to make sure all CDs are 'ripped' as WAV, AIFF or lossless formats. The easiest way is to look at file sizes which should be at least 10MB per minute for uncompressed or 4-5MB/min for lossless. Then ensure volume controls are set to maximum. However, ultimately a bit-perfect check is the way to go: but it's tricky. In a future Technology I'll try to suggest simple ways to do it. **HFC**

"I've no doubt there will be the odd reader who views this as the ultimate sell-out to the dark side and possibly a few more will raise an eyebrow."



If music <u>really</u> matters...



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Malcolm Steward

Malcolm Steward was one of the country's best-known hi-fi reviewers in the 1980s and 1990s. His intolerance to less than gripping sound systems is legendary

High-def downloads

Lossless downloads may not replace MP3s but complement them

"The world of hard disk players, media servers and digital streamers offers convenience and listening ease."

am currently sorting out my downloads and Cat 5 patch lead collections in readiness for the start of *Hi-Fi Choice*'s coverage of 'computerised' audio hardware and downloaded music. It is an exciting undertaking and I hope we can demonstrate that, while hard disk players, media servers and digital streamers offer unprecedented convenience and listening ease, they can also deliver truly jaw-dropping audiophile performance... even though getting great sound from this new-fangled machinery often requires more than a little effort. It is not entirely 'plug 'n' play' or 'fit and forget' just yet. Your system will likely still benefit from some fine-tuning and fettling just as it did in the vinyl and CD eras.

Nonetheless, obtaining optimal performance from this gear is well worth the effort. The primary source in my music room nowadays is a Naim hard disk player, and all the music in my office comes from a NaimUniti all-in-one system that delivers internet radio and streams ripped music from my network. It is a highly rewarding and satisfying way to enjoy music, despite the inherent risk of becoming a complete couch potato.

My primary concern, though, has been sourcing suitable, high-res music to download. Currently, sites from which such material can be obtained are limited to those of a few specialist labels and an increasing number of hi-fi companies that are joining the 24-bit crew, including the alreadyestablished Linn Records, the Naim Label, and B&W's Society of Sound. Monitor Audio has recently joined the club, too. However, at this moment, the Chesky brothers' HDtracks.com probably offers the most diverse selection of hi-res repertoire. Nowadays, there seems to be an everwidening choice of music to appeal to everyone, although jazz and classical titles still predominate. However, I have to say that, having listened to some of Linn's classical recordings in glorious 24/192, there is a real danger I might start enjoying some of the genre

I asked three hi-fi companies if they were planning to provide high quality downloads for discerning listeners in the future and whether they saw it as viable. Simon Drake, at the Naim Label said: "The industry myth is that a certain percentage of any small label's annual sales will be digital but since we launched our hi-def download store, nine months ago, we have already exceeded that quota. Arguably, the added value of selling our own hi-definition downloads has counteracted any decline in the sales of compact discs we may have faced. I believe the same is true for our competitors."

Jim Collinson at Linn Records was equally positive and confident: "Hi-definition recordings have proved an extraordinary success for Linn. The demand from customers for more material, and from labels and artists who want to have their music released as hi-def Studio Master FLACSs (Free Lossless Audio Codec) in partnership with us, has been overwhelming. As a result, we have more new material, and new genres of music, that will become available over the next few months. We are even introducing fans of electronic artists, such as William Orbit, to higher resolution sound."

Shaun Marin of B&W agreed and added: "The development of reliable lossless audio codecs such as 24-bit FLAC means that we can now deliver music with confidence. I also think there is more demand. High-res downloads are probably never going to replace MP3, but for a very important discerning market this is possibly the future of music delivery."

I am looking forward to this new era at HFC as the magazine embraces this encouraging movement. Nonetheless, I approach this second digital age with some caution. CD did not 'kill' vinyl as many predicted all those years ago. So, having kept and cared for my LPs for many years, rest assured that I will be doing much the same for my CD collection.... Just in case. HFC



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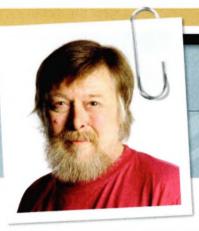




First reviewed in issue 327 December 2009



For the PMC IB2



Paul Messenger

Paul Messenger is a former editor of Hi-Fi Choice and has been writing about his favourite hobby for more than 30 years

Rebuilding the castles

IAG purchased Castle Acoustics back in 2007, and is now relaunching the brand in the UK with an all new Knight range

"The really good news is the pricing, which demonstrates all too clearly the cost advantages of Chinese manufacture."

was particularly impressed by Castle Acoustics' Winchester and Chester models in my early days of regular loudspeaker reviewing, 20 odd years ago. These were very unusual in using quarter-wave loading, a technique which delivered a bass delivery that was dry but impressively 'fast' and free from overhang. The Chester, and subsequently the Harlech, took up permanent residence in my smaller lounge (designated 'drawing room' on the plans), which has always been a 'difficult' room bass-wise. The Castles proved an excellent match, so I was particularly sorry when the company went into receivership towards the end of 2006.

A few months later the brand was acquired by Chinese hi-fi conglomerate IAG. Since it was being added to a portfolio that already included Quad, Wharfedale, Mission, Uncle Tom Cobley etc, I wondered whether Castle would survive, never mind retain its identity. For quite a while nothing much seemed to be happening, though I did see a rather desultory static display at the Munich hi-fi show a couple of years back, so the brand was still active, if perhaps on life support.

Then the news came through that a brand new Castle range of five Knight-series models was due to make its debut at the 2010 Bristol hi-fi show in February. At the time of writing I've neither seen nor heard the actual product itself, but the information I've received does give cause for optimism that much of the essential character of the brand is being retained, despite the change of ownership and the shifting of production from Skipton in the Yorkshire Dales to Shenzhen in Southern China.

While the Knights 1 and 2 are regular reflexloaded stand-mounts, it does look as though the three floorstanding Knights (designated 3, 4 and 5) do indeed have some variation on the quarterwave loading theme, which Castle now calls TPT. I wrote to Peter Comeau, IAG's Director of Acoustics, who explained: "In essence TPT loading is a meld of quarter wave and reflex loading, achieving what is essentially a mass loaded quarter wave reflex pipe. The 'Twin Pipe' refers to the internal layout where the drive unit is positioned part way down a folded, tapered column. This exits through the base of the cabinet and is mass loaded by the air trapped between this 'port' and the plinth. The tuning of the system can be altered by adjusting this air mass for optimum bass extension and control."

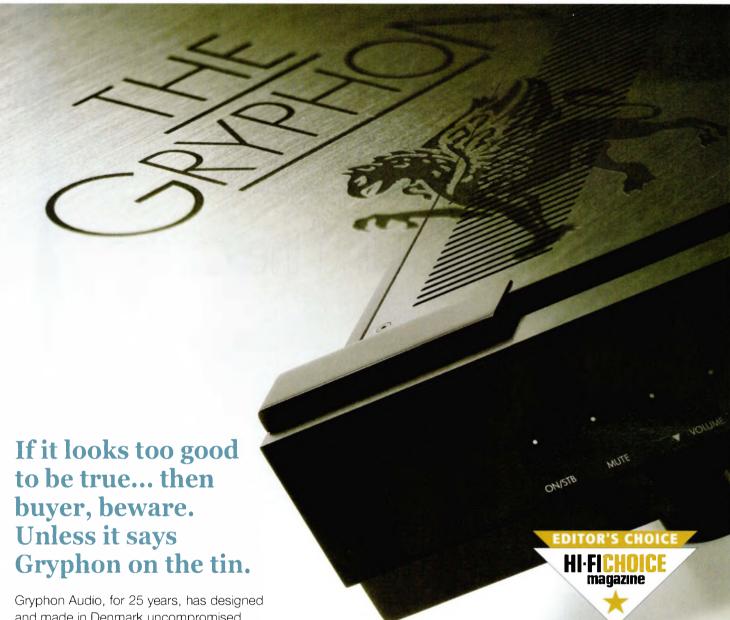
Although neither the Knight 4 or 5 have the upward-firing second main driver that was another unusual feature of Castle's Harlech and Howard models, they do appear to have the generous range of high class real wood veneers that was another Castle trademark. Eight options are now listed. (Indeed, before the 2006 shutdown, Castle's cabinet division used to make wood veneered enclosures on behalf of several other UK brands.)

The really good news is the pricing, which demonstrates all too clearly the cost advantages of Chinese manufacture. Although it's not a direct replacement, the new Knight 5 costs £1,000/pair, whereas its Howard S3 equivalent cost £1,350 back in 2002. Likewise the Knight 4 is priced at £800 – the price of its Harlech equivalent way back in 1996.

There are obvious differences between the new and the old, aside from positioning both drivers on the front. The bass/mid drivers of the new Knights have mixed paper/pulp cones rather than the synthetic materials used before – a more costly option which may well benefit the sound quality. So although I might miss the semi-omni character of those earlier Castles, it looks as though the new Knight series is likely to have a great deal going for it – especially for those seeking to reproduce decent quality bass in a 'difficult' room. HFC



The relaunched Knights still come in the shining armour of eight real wood veneers



Gryphon Audio, for 25 years, has designed and made in Denmark uncompromised components and systems which outperform all rivals by an audible margin. Atilla, their $\mathfrak{L}6,950$ amplifier thrashes the competition at price multiples, so imagine what the Mirage/ Colosseum can do. Trouble is, you can't...

Demonstrating Gryphon's entry point amplifier filled our dem room with music that caused my customers to ask the obvious question. Why buy more costly separates when this does more for less ... and for longer?

Its good looks caused magazine editors worldwide to select the Atilla as their cover image. Here's what the reviewers have said on the birth of the new "baby."

"Even this entry-level 100 watt Gryphon amplifier is serious competition to respected pre and power combinations from manufacturers such as McIntosh, Audio Research, Krell, MBL, Pass and Levinson."

- Hi-Fi Muzyka | Poland, December 2009

"At its best, when used with sympathetically chosen partner, the Atilla has an unusual poise and exceptional subtlety and definition. It has more than enough power and grunt to cope with just about anything musical. Five Stars."

- Alvin Gold | Hi-Fi Choice, UK, March 2010

"Excitingly styled, great sounding amplifier."
- Holger Barske | hifi magazine. Germany

"I find that with many amplifiers it's a case of 'seeing through a glass darkly' so that no matter how transparent it may be, there is always a mist over the glass. Listening to the Atilla, it was as if someone had cleaned the glass and then buffed it to such a level of perfection that not only was it invisible, but there was not even the slightest hint that it might be there ... Operationally, I couldn't fault the Atilla."

- Greg Borrowman Australian hi-fi, Nov/ Dec 2009







EdSelley

Ed Selley worked in retail before joining some of the biggest names in the hi-fi industry. He is highly experienced in creating and supporting all manner of audio products

Universal theory

Blu-ray goes universal but is it the right direction to be moving in?

"Where I am less convinced is whether a universal player supporting these formats is actually that universal anymore."

fter a brief but lively format war, some excitement with various profiles and access to online content, Blu-ray players have moved into the universal category. Players from Denon, Marantz, Oppo and Cambridge Audio will now spin SACD and DVD-Audio discs in addition to Blu-ray, DVD and CD media. The specifications of the larger Denon and Marantz players in particular are fearsomely impressive with serious digital horsepower being applied to their (balanced) audio stages and careful attention paid to their power supplies and chassis layouts. They are also – as befits all Japanese high-end products – built in the full 'Copper plated outhouse' style.

I do not believe for a second that these players will be anything other than excellent. I will also happily consider them to be 'hi-fi' product, worthy of discussion in a hi-fi magazine. Where I am less convinced is whether a 'universal' player supporting these formats is actually that universal any more and whether it represents the correct blend of abilities that we might be looking for in a product that is trying to bridge the awkward gap between the twin disciplines of Home Cinema and hi-fi. I am in part worried that the industry is making a product because 'it worked that way last time' rather than 'it is an accurate representation of what the consumer needs.'

One area of concern is formats. The first Universal player was a response to consumer uncertainty over the future of DVD-Audio and SACD, and played both. The ensuing seven or so years has taught me that neither format is likely to suddenly awaken from its torpor and become a serious sales phenomenon. I know enough classical music fans to believe that SACD has probably found its place in audio, but I suspect that DVD-Audio has been all it ever will be. As such, these new universals are supporting one fringe and one legacy format. Thus I cannot help but think that huge DVD-Audio fans (and I'd be disappointed not to get at least an angry letter

from one for writing off the format) may have already selected their legacy player from the last generation of battleship-sized universals. At the same time, the largest source of high-end digital music – the high resolution download – does not seem to be something that any universal will play natively. A Blu-ray player able to access this content might do rather more for high-res music than one able to play *Pet Sounds* on DVD-A, (which may or may not be the only DVD-A I can still actually find in my house).

Another is that the fearsome digital to analogue stages of these players only seem to be accessible via the optical drive in the front, USB or SD card. This strikes me as something of a waste. If streaming is not going to be supported internally, it might be useful to allow a squeezebox or indeed computer to access those excellent DACs directly rather than having to connect it to a matching AV receiver with different design priorities. This also leads on to the idea of accessing those powerful video processors to give non-scaling sources a quick shot in the arm. Given that these units can decode all audio and film formats to analogue outputs, they are perhaps more likely to find themselves in systems with limited video processing and this would be another ribbon to their already sizable bow.

I do not want to end this column having complained all the way through it. I am glad that these products have been brought to market and I feel a twinge of envy for those able to buy them. I do wish though that the concept of what a 'Universal' player might entail could have undergone a rethink in line with the change to Blu-ray as their principle video format. As it is, they are hugely talented (and indeed just plain huge), and extremely capable units. It seems a shame however that some of this talent seems more focused on the past than the future. **HFC**



Blu-ray players now claim to be universal but formats such as DVD-Audio are more dead than alive





Magnifico

Jimmy Hughes brushes up on his Italian with this ultimate dream combo

his month's Beautiful System hails from Italy, and offers something Tutto Italiano. Now that's not to say the music sallies forth with a strong Italian accent - definitivamente non. The connection comes from styling and the look and feel of each component.

LA DOLCE VITA

Yet, under-pinning everything is a certain relaxed charm and confidence. The three components that comprise this month's Beautiful System are certainly seriosa, but (one hopes) not the least bit disperato. Each has a stylish 'retro' look that oozes fascino and eleganza. But, this system has substance and style.

The sound has that same relaxed easy charm and insouciance; that unexaggerated naturalness, allied to a smooth, clear, well-balanced tonality - no rough edges, no harsh jagged corners. Yet also, there's immediacy, clarity, and separation. The music sounds clear, open, neutral - and very true to life

THE VOICE OF THE MOON

Sampling the Unison Research CD player, before setting up the system, revealed a veritable Maestro di refinement. It sounded deliciously smooth and homogenous with a silvery-sharp musical presentation; immaculately clean and groomed.

There was nothing showy or flashy about the sound, yet clarity was excellent - voices and instruments exuding a quiet precision that ensured the music was focused and articulate. The sound wasn't falsely 'busy'. If the music was simple, that's how it sounded. But lots of fine detail could be heard.

The Unico CDE's analogue output is slightly lower than average. This makes the sound seem a tad understated even after raising amp volume levels, but you can increase the output by +9dB via a button on the back, giving the sound a bit more punch and attack

Now in Mk III guise, the Pathos Classic One has long been a favourite integrated among those with an eye for performance and value. It's a tube/ transistor hybrid offering around 70 watts per channel output into eight ohms (130 watts into four ohms), and can be bridged to give 180 watts into eight ohms (270 watts into four ohms).

VARIETY LIGHTS

The preamp circuit features two ECC83 tubes that glow nicely. The circuit is fully balanced, operates with no feedback, and is powered separately from the power amp. Silver cabling is used internally. The solid-state power amp runs in Class A/AB, and during normal use the chassis gets moderately warm.

The Pathos Classic One has an unusual shape, being some 44 centimetres deep from front to back - maybe even 55 centimetres deep if you factor in the protruding knobs and cables at the back yet is only 23 centimetres wide. If a bit impractical, the elongated shape lets the tube preamp and solid-state power amp sections be kept entirely separate

Interestingly, the Pathos amp had a similar sonic signature to the Unison Research CD player, being smooth, refined and well-balanced. While the sound doesn't bristle with detail, this is deceptive; the presentation is actually very detailed and clear - it's just that 'detail' is not thrust in your face.

BEN EOUILIBRATO

No - not Manchester City's latest multimillion pound signing, but the tonal 'signature' of the Pathos Classic One. Overall, the sound is very well balanced in terms of bass/treble extremes. The amp is not obviously 'toppy', while bass is firm and clear - tight and clean without being excessively lean.

The amp (and CD player) comes with handsome wood-clad remote-control handsets. The volume control is motor driven and has an illuminated display that runs from 0 to 99. The makers claim the volume control's resistors are laser trimmed for accuracy, ensuring perfect left/right channel balance.



£2,195

CD player based around a TEAC CD5010A Transport with Crystal CS4392 24-bit/96kHz DAC and Crystal CS8420 digital interface for reduced litter and audio data correction. Tube output stage - 4x ECC83 tubes.



£1,975.

Integrated tube/transistor hybrid amplifier offering 70 watts per channel into eight ohms. Has four unbalanced inputs and one balanced input, plus tape out. Electronic volume control Preamp uses 2x ECC83 tubes and has no feedback



£2,880 plus £545 for stands

Two-way reflex loudspeaker featuring six drive units. Unusual design with three rear-mounted tweeters. Cabinet made from solid wood, plywood and MDF, with high-gloss lacquer finish in Cherry or Mahogany.





□ Inputs are switched electronically via special relays developed for VHF telecommunications and operate instantly and silently. The amp has four unbalanced line inputs, plus one set of balanced line inputs. As the Unico CDE has a balanced analogue output, you can run the system balanced.

Normally, 'going balanced' results in superior sound quality – and a slight increase in gain. Unusually, with the Pathos/Unison Research combination, there seemed to be no difference between balanced and unbalanced, at least none I could hear. Very puzzling!

ITALIANO REALE

For style, the Opera Callas Diva speakers are the most 'Italian' of the trio. The rounded corners and lack of plane surfaces creates an unusually attractive shape. The cabinet shape also increases rigidity, reduces internal standing waves and improves dispersion.

The enclosure is made from a mix of real wood, ply wood and MDF. The sides are 30-millimetre thick ply, while the back is 60-millimetre thick MDF. The top and bottom are 40-millimetre thick real wood and the front baffle is covered in black leather. Cool.! The review speakers came finished in high-gloss Cherry. Mahogany. The Callas Diva is a very

interesting loudspeaker. A smaller version of the floorstanding Calla Divina, it's a two-way design with no less than six SEAS drive units. The five inch (130-millimetre) bass/mid unit has a magnesium cone and solid copper phase plug. The tweeters use ferro-fluid-damped one inch (25-millimetre) Sonotex domes, with neodymium magnet assembly.

The tweeter's small size enables close placement to the bass/mid driver for better integration. There are two tweeters on the front and three on the back. The aim is to create a less directional HF response by distributing the treble energy over a wider area. The result? Clear brilliant sweet-sounding highs without harshness or 'beaming'.

MARIA WOULD HAVE LOVED 'EM...

The Callas Diva certainly produced a very integrated and homogenous sound. Even close up, it was hard to 'hear' the individual drivers – the sound was totally seamless, almost as if there was just one drive unit. The high frequencies have presence and bite, yet do not obtrude.

The speakers measure 38 centimetres by 36 centimetres by 23centimetres. There's a 12-decibel/octave roll off for the bass/mid driver with a nominal turnover frequency of about 1.5kHz.

Interestingly, the front tweeters have an 18-decibel/octave roll off while those on the back are 12-decibel/octave. Clearly, the whole design – from crossover to cabinet – has been very finely tuned.

Sensitivity is on the low side at about 86-decibel/one-watt, but — with a nominal impedance of just under four ohms — this is less of an issue assuming your amp can double its power into lower impedances. With the Pathos Classic One, output increases to about 130 watts into four ohms — so there should be enough power.

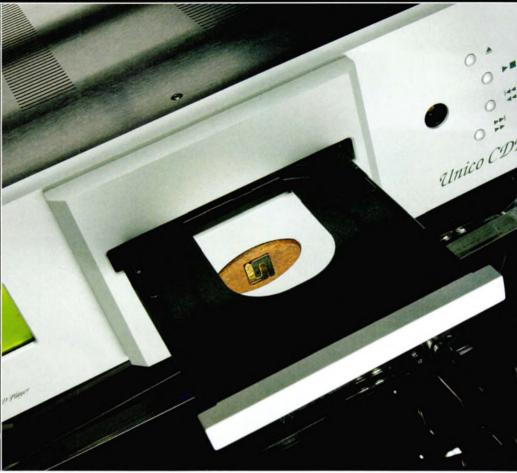
PLACE DI CALLAS

The bass unit is reflex loaded with two rear-facing ports. The makers warn against placing the speaker close to corners to avoid bass resonance issues, suggesting a minimum distance of 50 centimetres. The Callas Divas may prove sensitive to slight movement, due to their rear-facing high frequency drivers.

Bass output is very decent given the enclosure sizes, coping surprisingly well with a 20Hz sine wave and producing clean output with only a little doubling. While the deep bass lacks the massive heft you get with bigger speakers, it's impressively full-sounding for a small box

More important than absolute depth, the low frequencies sounded very clean.





Playing Seji Ozawa's Schoenberg Gurrelieder, the mid/bass was strikingly clear and open.

AND THE SHIP SAILS ON...

The Callas Diva produced a surprisingly big deep soundstage for small speakers. The exceptional stereo detail heard on last month's GamuT system was absent. Instead, the combination produced a broad atmospheric stereo spread, with excellent front-to-back depth.

Overall, the system delivered impressive clarity and separation, but not at the expense of tonal smoothness and integration. The sound was detailed and open, yet tonally sweet, well-balanced, natural, and seamlessly integrated – almost regardless of how close you sat to the speakers. Matching 73-centimetre tall steel stands help get the speakers at the right height and cost around £545.

With a speaker company called Opera making a model named after the Diva of Divas, it would be highly remiss not to sample at least a Maria Callas recording.

I DID WHAT I DID FOR MARIA

Starting with Bizet's *Carmen*, Callas' voice was recreated with crisp articulation, while subtle colouring of the words sounded remarkable. The system was equal to the challenge.

Although recording came late in Callas' career and the recording was not one of EMI's best, the sound was surprisingly ripe and richly detailed.

Next, something Italian; Puccini's *T Tosca* – the legendary 1954 mono recording. Not all modern hi-fi systems deal favourably with old mono recordings – the danger is, you hear more of what's wrong rather than what's right. But here the result was full-bodied and clear.

VISSI D'ARTE

Hearing Callas sing *Tosca* reconfirmed how great the performance was – and how good this system is at reproducing vocal music. Of course, the sound showed its age, but it was mostly strikingly clear and detailed, with impressive presence and surprising impact and dynamic range.

It was a vivid reminder of how exciting and dramatic 1950s mono recordings can still sound on a system that plays to their strengths. The closing few minutes of *Tosca* were thrilling beyond belief, and the clarity of the sound – its sense of space and depth and the way it conveyed the music's passion and drama was remarkable.

The reflective rear tweeters of the Callas Diva helped create a sense of 'spread' and width from the original

mono recording – avoiding that thin line of sound impression some stereo set-ups can produce on single-channel material. The central image was still quite solid, but the sound wasn't lacking in ambience.

EMOTIONAL CORE

This system displayed an uncanny ability to convey atmosphere and mood, tension and feel. The precision and control apparent with classical music was also beneficial on rock and jazz. Recordings that sounded coarse and messy on other equipment were reproduced cleanly, with outstanding clarity and focused cohesion

In this respect, the total result was greater than the sum of the parts – everything stayed focussed and under control, yet the emotional core of the music seemed liberated too.

Presentation was tidy and clean, but it never felt like the music was being squashed or suffocated for control.

There's sufficient power to fill large rooms, yet the system should perform well in smaller rooms where you're sitting close to the speakers. It's at once civilised and smooth, yet deceptively dynamic and very detailed. It gives you the music without unwanted extras—and does so at a realistic price. HFC

Jimmy Hughes









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REVIEWS MOS

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OUR RATINGS EXPLAINED

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y, nor an c we liked point here is to the job of recommend you

Date this with waranz's £800 player, the 17 Mkill M, which has excellent build and e a very good impression in HFC 243. At same price there's also the Cyrus 7, and all rounder in a compact case. 'ter trying the Heart with the standard's we switched over to the Siemens grade, a companson somewhat muddied by

e fact that it was a cold for hot swap - the or rail days with the Our overall conclusion after a livelier

w tubes shone inrough. The Siemens-equipped jayer has an in snappier sound with better timing that es with dense material with remarkable fidence and ease. It even seems to be You can find more civilised players for the money. But few combine dynamics with fine timing skills as effectively as this. HFC

Jason Kennedi

SOUND

Cond build and open, livery
Cond build and open, livery
FEATURES

Profession of the profession

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 Badoe

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



Musical magnificence

Paul Messenger takes a closer look at JBL's state-of-the-art, £44,000, music-making masterpiece

PRODUCT JBL Project Everest DD66000

TYPE Floorstanding loudspeaker

PRICE £44,000 per pair

KEY FEATURES Size (WxHxD): 111x96.5x47cm Weight: 142kg Drivers: Horn-loaded 100mm beryllium dome mid/treble, horn-loaded 25mm beryllium dome supertweeter, 2x 380mm pulp-cone bass drivers (2) 'augmented' two-way configuration

MCT 2 01707 278100 @ www.jbl.com

he Everest DD66000 is JBL's ultimate state-of-the-art hi-fi loudspeaker, a magnificently massive monumental affair that effectively doubles up the already dramatic K2s. Indeed, if asked to nominate my all-time favourite among the thousand or so speaker systems that I've tried over the past twenty something years. I'd definitely pick the Everest's predecessor, the JBL K2 S9800.

I was, therefore, unlikely to say no when asked whether I'd like to review a pair of DD66000s for the Christmas holiday. A quick Google, however, indicated some inevitable practical problems. This 'flagship' model is not only very expensive, it's also extremely heavy.

Weight aside, it's also exceptionally large, though not unduly tall, while the front-to-back depth is surprisingly small. It's also quite beautifully styled, in the way the large midrange horn is integrated into the front and in the classy veneered bass enclosure that forms a continuous curve around the sides and back. The result is very elegant and not unlike a large and beautifully made item of furniture. Construction is complex throughout to combat any possible colorations.

NON-CONFORMITY

Nostalgia plays a part in an unusual shape, which harks back to the very successful 1950s Hartsfield corner horn design. This really put JBL on the Japanese audiophile map and Japan remains the major market for JBL's high-end Project designs. A more prosaic and fundamental reason for this speaker's width lies in a driver line up that places two 380millimetre bass drive units side by side across the front. These sit below a wide, but vertically quite narrow midrange horn (giving 100degree by 60-degree directivity), which in turn sits below a tiny horn-loaded supertweeter (60-degree by 30-degree directivity).

That unusual collection of drivers and their disposition certainly doesn't conform to any current US 'high end' stereotype, but to JBL's history, which goes back to the 1920s. It's successful across every possible speaker category and has learned a thing or two along the way.

This Everest DD66000 might be large, heavy, very costly and decidedly different. but all aspects of Greg Timbers' acoustic design have undeniable logic, and industrial designer Daniel Ashcraft has also done a very neat job from a difficult brief.

24-decibel/octave rate) at 20kHz effectively above audibility.

Whatever one's views about horn-loaded compression drivers, which are certainly regarded with some suspicion by some sectors of the hi-fi industry, using one allows JBL to place that major crossover point down at 700Hz. That's some two octaves below the 2.5-3 kHz frequency used by the vast majority of conventional two-way direct radiator designs and a far better frequency for delivering properly coherent voice reproduction.

"The Everest is JBL's ultimate state of the art hi-fi loudspeaker, a magnificently massive monumental affair..."

COMPRESSION

This is at heart a two-way design, albeit "augmented" (as JBL puts it) with some extra help at both ends of the audio spectrum. The crossover points listed in the specifications explain how it operates. The main crossover point, set at 700Hz, transfers the signal from the inside 380-millimetre bass/mid driver to the horn-loaded 100-millimetre mid/treble compression driver. The other (outside) 380-millimetre unit only operates up to 150Hz, albeit with a relatively gentle six decibel/octave roll-off above that point. The 25-millimetre compression horn 'supertweeter' only comes in (and at a rapid

WHITE PAPER

Using two 380-millimetre drivers to supply the bass for a domestic hi-fi system might seem over the top. But, having enjoyed the single example used in the K2 S9800, I too was nervous that this Everest would deliver altogether too much bottom end. There was some excess to be sure, but not sufficient to be distracting, and thinking it through, such a large bass driver area actually makes plenty of sense. After all, the larger the area of the cones, the less the excursion required for the same loudness and the more closely it resembles the behaviour of a musical instrument. Indeed, in some respects the



SET-UP

When a speaker is this large, its sheer bulk will often limit the available practical options and largely determine its positioning within a room. Furthermore, given the use of twin port-loaded 380-millimetre bass drive units, it is also fairly obvious that this loudspeaker is quite likely to deliver excessive bass output in a typical British room.

While free space siting is clearly called for here, these speakers are also likely to deliver the most even overall balance in large and very large rooms, and/ or those with significant natural bass absorption. The rigid concrete box used to build blocks of flats, for example, is least likely to absorb low frequencies. The suspended wooden floor and plaster ceiling within brick walls – commonly found in older low rise UK housing – will increase bass absorption significantly, but not to the same degree as a dwelling with stud-wall construction.

The Everest DD66000 also incorporates some adjustments to the frequency response, alongside the options to biwire, bi-amp or active drive the speakers. A stiffly held inspection hatch near the bottom of the front may be removed to reveal a number of terminals and brass jumper strips, plus a three-position knob. The latter provides a very subtle 'trim' of +/-0.5 decibels over the range 1-8kHz, which will help match the tonality to the characteristics of the driving amplifier.

The brass strips may be set in a number of ways to make several different adjustments. Crucially, one pair are used to set the speakers correctly as 'left' and 'right', so that the 'outside' bass driver rolls off above 150Hz, while the 'inside' one continues up to the main 700Hz crossover point. More shorting bars are used to adjust the level of each bass driver separately by 0.5 decibels – rather too little to compensate for major room and placement differences, but possibly useful nonetheless.





■ bass driver area here has something in common with that supplied by horn-loaded bass, which has got to be a good thing.

The sheer quantity of information in the Project Everest DD66000 Technical White Paper is rather overwhelming, with far more detail than we have space to cover properly. Heavily edited highlights include very advanced drive units. Both horn-loaded units use beryllium dome diaphragms, 100 millimetre and 25 millimetre in diameter, while the 380 millimetre bass drivers have 320 millimetre diameter doped paper cones with concentric ring stiffening, and a complex motor with an Alnico magnet. Uniquely, the crossover network uses two nine volt batteries to polarise key capacitors and improve their linearity.

The horn enclosures are largely made from precision moulded SonoGlass, with a measure of mechanical isolation from the main enclosure. The main carcase is made from different thicknesses of MDF, totalling 25 millimetres and with extensive bracing, while an extra leather-covered layer takes the front baffles up to 45 millimetres.

THE ULTIMATE TOP END

The speakers were positioned with normal left/right separation and as far from the rear wall as possible without blocking the doorway. Although a little closer to the wall than might have been desirable, I doubt it was much of a compromise, and the weight and bulk rendered further exploration impossible.

There was a bit too much bass when measured under our usual far-field, in-room averaged conditions, but around six decibels below 250Hz didn't seem too excessive. However, what was totally impressive was the remarkably flat and even tonal balance further up: the response from 300Hz all the way up to 10kHz was held within remarkably tight +/-1.5 decibel limits. The ultimate top end roll-off was mildly marred by a small 17kHz spike.

Not unexpectedly, sensitivity is generous, especially below 300Hz, if not quite as high as the specified 96 decibels above 300Hz. Furthermore, it's achieved alongside a fairly easy amplifier load, which stays between six and eight ohms over most of the range, only falling below five ohms at ultrasonic frequencies. The pair match was very close indeed and the ports are tuned to a relatively low 28Hz, ensuring good response down to 20Hz (at 92 decibel sensitivity under our in-room conditions).

HEADROOM

The truly marvellous feature of this extraordinary speaker is its utterly magnificent headroom. There's no stress or strain at any level and if you start winding up the volume, it's pretty certain your ears or your amplifier will give up long before the Everests do. In fact, until this degree of headroom is

actually experienced, it's hard to believe it makes much difference, but believe me it does.

Tied in with this headroom is quite brilliant overall consistency. Play it whisper quiet so you don't disturb the household in the middle of the night and you still hear everything that's going on, albeit quietly. Turn it up as loud as you can, to near disco levels, and every note is clear as crystal. The JBL doesn't mind, It'll simply do its thing with impeccably smooth neutrality, and wonderfully coherent voices.

The overall character might err on the bright side for some tastes and systems and its openness is not kind to poor quality signals. Top quality amps and sources are essential here, even if the trim control helps a little.

BASS MONSTER

But the Everest's best feature for my money was the way it handled the bass guitar. This instrument is the foundation of truly great rock music and I've never heard a speaker deliver bass lines with better poise and delicacy as well as power. Strong but not heavy or intrusive, they're also exceptionally clean and subtle. I dug out most of my Grateful Dead discs, simply because Phil Lesh's bass playing was so engrossing, and took similar pleasure with recordings featuring Jack Bruce, Jaco Pastorius, John Entwhistle and Jack Cassidy.

Massive Attack's *Mezzanine* did sound rather too bass heavy, but conversely *Mingus Ah Um* seemed somewhat bass light, so one can hardly blame either on the speaker. Coloration is exceedingly low, dynamic range is wide, dynamic expression is always vivid, while the speakers proved surprisingly involving and informative when handling notoriously 'difficult' material like early Velvet Underground and Captain Beefheart recordings.

Horns do it differently, especially in imaging terms. They treat sound a little like lenses do light, focusing it into a beam. This reduces the

BERYLLIUM

The debate about the best materials to use for loudspeaker diaphragms continues to rage amongst speaker designers. Low mass is needed for good sensitivity and high stiffness is required for a wide pistonic bandwidth. However, while high stiffness will defer the breakup point of a diaphragm to a higher frequency, it may also tend to increase the severity of the breakup modes.

As a loudspeaker drive unit diaphragm, beryllium has certain properties that make it one of the very best. Among metals, its exceptionally high stiffness, alongside relatively low density (ie light weight) ensures a very superior combination of a wide pistonic bandwidth with decent sensitivity. The core problem is that it's also exceedingly poisonous, which must raise questions about its suitability as a material.



proportion of room reflected sound in the total sound compared to conventional direct radiator designs. The result is remarkably sharp, precise and well focused images, giving great insight into the recording itself, but less of an illusion of musicians coming into the room.

RATTLING THE WINDOWS

Delivery and installation coincided with Rage Against the Machine's brilliant Killing in the Name download making the coveted Christmas Number One slot. I celebrated by digging out my eponymous 1992 LP and using it to 'break in' the Everests. Although my regular Naim NAP500's 150 watt falls somewhat short of the Everest's stated 500 watt power handling. it still generated unfeasibly high levels, to the point where the the listening room windows started rattling while the JBLs showed no signs of stress whatsoever.

High sound levels come naturally to the Everests. They just go on getting louder without complaint or compression, make a great speaker for those into heavy dance/ techno music and will go seriously loud without ever tending to sound aggressive. The massive headroom and lack of strain is always very welcome.

The generous sensitivity means that low noise amplifiers are preferable - some faint hiss became audible via the Naim amplifier when the world became after-midnight quiet, though not sufficient to spoil things. However, despite what JBL says, very low power valve amplifiers are also entirely practical.

THE FIRST WATT MATTERS MOST

The manual (with, one detects, a slightly sniffy air) suggests that the speakers: "will operate adequately with an amplifier or receiver of

70-100 watts", before going on to recommend 100-500 watts to "ensure optimal system performance". In my experience, although the most powerful amplifiers are also usually the most expensive, they only rarely offer the best sound. Clearly the single-ended triode valve amplifier doesn't figure on JBL's radar, but I spent many delightful hours enjoying the Everests with a pair of threewatt rated PX-4-based monoblocks, via a passive Music First pre-amplifier. Simplicity has its advantages.

While this is certainly a speaker for those who like to play their music loud, the Everest is also beautifully smooth and delicate at low and very low levels. Despite the undoubted qualities of my regular PMC's IB2i references. the JBL DD66000 does indeed go a long way towards justifying its much higher price and actually seems rather good value by high-end speaker standards. HFC

Paul Messenger







Sweet emotion

Popular turntable is given a makeover... Jason Kennedy investigates.

PRODUCT Clearaudio Emotion SE

TYPE Turntable, arm & cartridge

PRICE £1.995

KEY FEATURES Size (WxHxD): 8x40x32cm Weight: 7kg Speeds: manual 33.3, 45rpm Drive: freestanding synchronous motor Platter: 28mm GS PMMA

T 🕿 01252 702705

he Emotion was Clearaudio's first budget turntable when it appeared two years ago. This new SE version is the German acrylic meister's grown up incarnation of that simple, but beautifully executed record player. It comes complete with Clearaudio's Satisfy Carbon Directwire tonearm and a Beta-s MM cartridge as a fit and forget package with a good pedigree. Clearaudio, after all, makes some of the most ambitious designs in the high end market. The original Emotion, which we covered in HFC 309 continues at the lower price of £1,140, so the question is does this SE version represent the same great value?

CERAMIC MAGNETIC

For the SE, Clearaudio has upgraded a number of key aspects of the standard Emotion. For a start, the platter is 28 millimetres thick, an increase of 10 millimetres, a change which will add mass and thus increase inertia. The company is using CNC-machined GS-PMMA (Perspex) for the platter and a ceramic alloy for the

bearing: the shaft that sticks up from the bottom half of the bearing is white and only needs lubricating once every few years. It avoids the need for a thrust pad by using opposing magnets to take the load of the platter - the second example of this technique in this very publication. There must be something in the air!

The main plinth is precisely hewn from 20-millimetre acrylic and supported on rubber-tipped aluminium feet. The standard Emotion has acrylic cones which, while they look cute, do little to keep out resonance. The new feet also offer precision adjustment,

The arm itself is a well-executed, simple design with gimbal bearings and a magnetic anti-skate system, which consists of a lockable bolt with a magnet in its tip. The arm's appearance is deceptive in some ways, because it has sapphire and ceramic bearings and a woven carbon fibre arm tube for low mass and high rigidity. The Directwire in the name points to the fact that the arm wiring runs unbroken all the way from the cartridge tags through to the phono plug. It's something which is not uncommon in many arms, but represents a variation on the output sockets approach found in other CA designs.

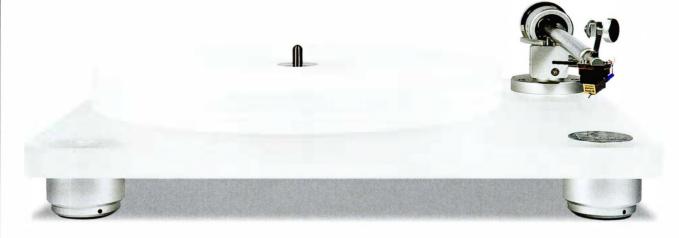
"Properly fettled, this turntable produces a full-scale and open sound which is strong on timing and imaging."

a useful feature for a turntable with a dynamically balanced arm like that supplied.

The freestanding motor comes in a very solid metal case, which has a separate stainless steel base to provide some mass damping and gives the motor greater stability. The drive pulley is acrylic again and is held on to the ceramic drive shaft by three nylon grub screws - screws that have slot heads in and are rather vulnerable to excess force. The same is true of the grub screws in the new arm base – the standard incarnation has a hole in the acrylic plinth, but here CA has added the type of base found in its dearer models.

Also included in the well-designed packaging is a Souther Clever Clamp, a plastic record clamp which uses friction to pin the vinyl down. Although the clamp looks a bit like a cheap plastic coaster, it does work effectively. Clearaudio supplies a spare belt too, as well as bearing oil and a dedicated alignment gauge for ease of set up, not to mention a selection of Allen keys and jeweller's screwdrivers to do the job with.

The supplied Aurum Beta-s cartridge is the top model in CA's moving magnet range and retails for £455 on its own. The cartridge mount is attached to the Satisfy arm tube with CA's distinctive single bolt fixing.



VORSPRUNG DURCH ACRYLIC

The build and finish which Clearaudio consistently achieves is a good enough reason on its own to buy a turntable like this: if you like the look of matt acrylic, it's a real winner. Attention to detail is excellent wherever you look. The adjustable feet, for instance, have three holes around their periphery where you can slip in a suitable lever (a screwdriver or allen key) and then turn to achieve the desired height. It's a stiff turn - hence the need for leverage - but that's because the thread is damped to kill resonance. The motor casing is also superbly cast and finished with bead blasted chrome that looks bullet proof by audio engineering standards. The ceramic magnetic bearing is also quite a luxury and not something I've seen on turntables in this price range before.

ANALOGUE THRILL POWER

There is no shortage of good and very good turntables available for this sort of money, the one which immediately springs to mind is last year's award winner, the Townshend Rock 7. Although the Townshend is a little bit more expensive when an arm and cartridge is included, without doubt it sets the standard at this cost. There's the Linn LP12 Majik for the same price, and Funk Firm's remarkably nimble V2, which offers a stack of analogue thrill power for £1,390 including an arm if not a cartridge.

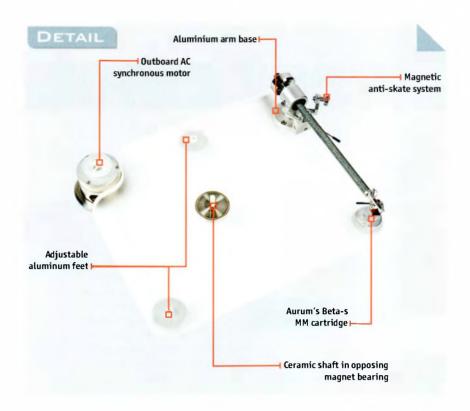
SOUND QUALITY

The Emotion SE is not particularly difficult to set up thanks to the supplied alignment gauge, but it does reveal any shortcomings in that department, as I found out when I set downforce at what appeared to be the recommended two grammes. This resulted in occasional groove-skipping, which I managed finally to eliminate only once I'd screwed the

ACRYLIC PLATTERS

The appeal of the acrylic platter is that it is similar to the vinyl that records are made of and should, therefore, offer a good impedance match with them. The theory being that energy generated by the stylus in the groove will be absorbed into the acrylic and drained into the plinth or subchassis.

Acrylic first appeared on turntables when Pink Triangle unleashed its competitor to the Linn LP12 in the eighties. For a while it was the only company in the game but was joined by Voyd which used the material on its three motor turntable, a design that's still being made by Audio Note UK. Acrylic has since become popular on the analogue scene and Clearaudio is among a throng of European manufacturers drawn to its practicality in machining terms and the ease with which it can be made to look good.



counterweight further onto its threaded stub in order to take the tracking weight up to a not inconsiderable 2.4 kilograms.

Properly fettled, this turntable produces a full scale and open sound which is strong on timing and imaging, but not quite so hot on absolute precision, there's a slight halo around voices and instruments that adds a bit of life and presence to proceedings, but it's not there in the grooves themselves. That said, the Emotion SE is a very enjoyable and engaging listen which does a fine job of pulling out fine detail across the band. Phantom Limb's percussion work is fully evident on Don't Say A Word, and the acoustic guitar is extremely convincing: I found it easy to let myself be carried away to another time and place by this song.

The Clearaudio is also very good at revealing the sense of 'being there' that live recordings can deliver, the extra air that it adds to the mix sounding highly realistic especially if you don't push the level too hard.

You can only really tell that this stylish turntable is elaborating slightly on the recorded truth by comparing it with something better, specifically the Townshend Rock 7 with a Rega arm and Goldring 1006 MM cartridge onboard. This combination delivers a cleaner, more substantial overall result which benefits from a wider dynamic range as well.

Judged on its own terms, the Emotion SE is a very capable turntable that's as much at home playing Beethoven piano sonatas as it is Led Zeppelin. Indeed, I was quite surprised at how much foot-thumping it dug out on the LZ track Hangman, there's clearly little restriction on bass depth. In addition, its

presentation also lower level listening, where the air and sparkle it finds on the disc serves to provide contrast and timbral richness.

RESOLUTION REVOLUTION

While not as good as the very best performers in its class, the Clearaudio Emotion SE is no slouch either, and it's beautifully put together rather more so than the Townshend, it has to be said. Its sound is clearly a marked upgrade on that provided by the regular Emotion, and elements like the adjustable feet and arm base make it a lot easier to install and set up. I enjoyed the life it brings to the party without adding too much of its own character as acrylic platters sometimes can. At the end of the day, I found myself playing the Prodigy far too loud which is always a good sign. HFC

Jason Kennedy



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



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Canned heat

Jon Marks breaks the Tesla barrier with Beyerdynamic's high-end T1 headphones



eyerdynamic has decided to set high-strength magnets at the core of the design for its flagship headphone, the T1. Nestling inside its sculpted foam aluminium flight case, the T1 is a handsome beast, all svelte, business-like industrial design, which leaves a lot of other pricey cans looking almost crass by comparison. Behind the classy mesh grilles on the satin aluminium and plastic earcups are diaphragms made of two-ply foil, which features low moving mass and good inherent self-damping. Fastened to the diaphragms are 600 ohm voice coils, again lightweight examples of the breed designed to optimise the T1's dynamic response. The drivers are fitted to the front of the earcups, angled back towards the ear.

What Beyerdynamic has tried to achieve with these drivers is a similar trick to that managed by the classic F-15 fighter plane – very high power to weight ratio. The F-15's party piece is accelerating through the sound barrier whilst climbing vertically – the T1's skill is a very low-mass diaphragm in a very dense magnetic field of 1.2 Tesla. The result should be a very crisp, fast and transparent sound with low distortion (guoted at 0.05 per cent).

MADE IN GERMANY

To hold the T1 is to want a pair: it's that simple, as these really are very well-built 'phones. The laser-cut headband with its firm, but forgiving padding has minimalist good looks in abundance. The three-metre cable, a double-sided, six-core balanced type terminated in a gold-plated Neutrik 6.35mm jack, feels reassuringly proofed against unintended tugs. To cap it all, despite not being a featherweight item, the T1 remained comfortable to wear for hours on end, though comfort varies, so has to be checked on a listener-by-listener basis. For the price they

Shout album. On the other hand, imaging and soundstaging were both a little restricted, indicating the need to put some more hours on the drivers.

Over the course of three or four days with various CDs on repeat, the extra hours paid off in a better controlled bottom end, more finely detailed treble and midrange, and superior overall transparency. Now the T1 had a more fluid, natural sound, which was musical in a way which kept me listening.

In one respect, the T1's character (and it does have a definite character) reminded me of Lowther's DX5 driver. Sharing high magnetic

"What Beyerdynamic has tried to achieve is a similar trick to the classic F-15 fighter plane – very high power to weight ratio."

command, I have to say I was already tempted to shell out on a pair, in the hope they'd sound as good as they look.

TESLA TO THE TEST

In a nutshell, the T1's sound mimicked its appearance: clean, crisp and persuasive. Hooked up first to Beyer's own A1 headphone amp, midrange and treble were detailed and revealing without being in any way fatiguing. Bass had an attractive weight to it, especially on electronic music like The Knife's *Silent*

flux density and neodymium magnets, the two have a very crisp, detailed sound with an emphasis on the upper midrange, which brings detail forward. On the other hand, while the T1 could never be described as slow, its dynamic agility is less obvious, the boost to the upper midrange balanced against a lift in the lower bass to give subjectively a slightly slower sound.

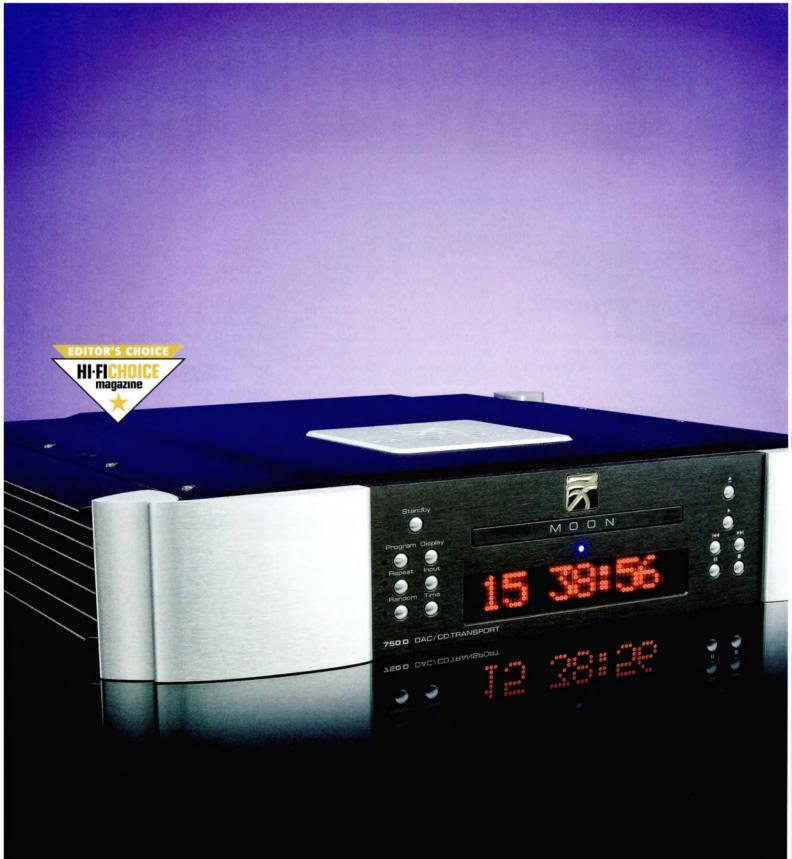
THE FINAL ANALYSIS

The T1 may not be a strictly accurate headphone, but it pays its way sonically. Those high-sensitivity drivers uncover a lot of detail and the lift in the midrange gives them a real sense of presence. The sum of these parts is a welcome new arrival among the ranks of high-end headphones, one which should definitely be auditioned alongside Sennheiser's acclaimed HD800. **HFC**

Jon Marks







32-bit beauty

Jason Kennedy questions whether the Moon 750D is the world's first true 32-bit digital audio player...

PRODUCT Moon 750D

TYPE CD player

PRICE £7,950

KEY FEATURES Size (WxHxD): 10 2x47 6x42 7cm

■ Weight: 16kg ■ Digital inputs: 1x S/PDIF via RCA
phono & Toslink, USB, AES/EBU ■ Digital outputs:
1x S/PDIF via RCA phono & AES/EBU ■ Analogue
outputs: 1x RCA phono, XLR ■ CD Text

CONTACT 2 0131 555 3922

🖨 www.simaudio.com

imaudio claims that the Moon 750D contains not only its most advanced digital-to-analogue converter yet, but that it's the first true 32-bit fully asynchronous digital audio player to reach the market. It also describes this substantial machine as a DAC plus a transport, which is odd given that in most respects it seems to be an integrated player. It's the plethora of inputs and the fact that it can accept high-res digital signals that explains this approach. The 750D is a superbly built player from a company that has extremely good form, so expectations are high for this new midrange model.

DAC OR PLAYER?

Not many companies claim 32-bit conversion for their DACs. In fact, we could only find one other, namely Cary, whose Exciter DAC uses an AKM chipset. In practice, there is no such thing as a 32-bit DAC, because all contemporary DACs are low-bit types that oversample at a high enough rate to give what is usually 24-bit resolution, but there's no reason why you can't run them faster. MSB's Platinum DAC operates at 80-bits in its DSP, but the company only claims a bit depth of 26-bits and that's because it builds its own converters.

Ultimately, 'bits' are misleading because however many the DAC claims to use, any advantages are going to be lost in noise, so dynamic range is a more useful description

of a DACs capabilities. Moon claims the SABRE DAC, is greater than 130dB, while the best result that can be achieved with a good 24-bit DAC is just 144dB.

Moon's description of the 750D as a DAC with a transport rather than a regular integrated player is backed up by the unusual range of digital inputs provided on its back panel. As well as RCA phono and Toslink for electrical and optical S/PDIF inputs, it can accept AES/EBU inputs via XLR and has a USB socket. This should mean that if you have high-res music files on your laptop and the software to play them back, you can do so via this player.

digital outputs come in electrical coaxial and AES/EBU forms. Unusually, the 750D has two XLRs marked for external power supply, presumably something along the lines of the Cyrus PSX-R, which the manual says will be made available for this player in future.

HEAVY METAL

As you have a right to expect at this price, the Moon 750D is extremely well put together and suitably hefty. Its chassis is made up of aluminium slabs that have been precision machined to fit together perfectly. The triangular section corner posts have threaded

"This is unquestionably a superbly built and remarkably revealing CD player. If you enjoy true high-fidelity this is a hard player to beat."

I discovered, however, when talking to Moon's Dominique Poupart, that as it stands the USB input is limited to 16/44 operation. The other inputs will accept sampling rates up to 24-bit/192kHz, so all you have to do is find a source that can output such a bitstream.

According to Moon, the SABRE DAC/filter achieves 'unprecedented jitter immunity and low-level linearity'. I don't know about the measurements, but it certainly sounds uncommonly clean, which would suggest that there is substance to this claim.

The transport side of the 750D is isolated by Moon's M-Quattro suspension system. This is a gel-based mounting that dampens resonances produced by the transport mechanism and the disc's rotation. The latter is useful because the majority of CDs aren't centred and can create quite a lot of extraneous energy when spun at a CD's high revs

Analogue output connections are highquality examples of RCA phono sockets for single-ended and XLRs for balanced, while holes in their bottoms and Moon supplies four conical spikes to screw in. It also supplies little dimpled discs to put under the spikes to stop them from damaging a wooden surface. The drawer is particularly nicely machined from a slim aluminium section and it opens with the sort of smoothness that you only get with high-end players – there are no clunks or whirring of motors here.

The front buttons are logically laid out for the most common functions, but the inscriptions are a little on the small side for more in-depth use. Most are replicated on the remote handset, which is another slab of alloy – this time powder coated, rather than machined. This is intuitive to use and has volume and source functions that operate other RC-5 protocol components. It also has an eject button, but none for track entry.

In its price range, the Moon 750D has some serious competition to contend with, such as the Wadia 381i, which also has plenty of digital inputs, albeit not USB, and can



0&A

We talked to Moon's technical guru Dominique Poupart about the 750D.

HFC: I wasn't aware that 32-bit DACs exist – does this player's DAC run at 32-bit or is it just the DSP?

DP: The DAC runs at 32-bit.



The limitation comes from the connection itself. The S/PDIF standard limits it to 24-bits/192kHz. This is for the S/PDIF, AES/EBU, and the Toslink. There are advantages at having the DAC running at 32-bits, even with lower bit depth signals coming in.

The USB input is currently limited to 16-bits/48kHz. We may have a hardware upgrade in the future for a high-res USB connection. However, whatever the input is (including USB or the internal CD transport) the signal is handled using an asynchronous process to upsample the digital signal to 32-bits.

Will you be upgrading the SuperNova and Andromeda to 32-bit and if not, why not?

There cannot be such an upgrade in the sense that it would be a complete redesign. It would not make any sense. The only part kept would be the chassis (oh, and the transport!). Note that the Andromeda still has a better power supply, for example, and that makes a difference. This is a question of cost and also space.

When you make a power supply to connect with the inputs on the 750D – what role will it play?

The same role that the separate power supply plays in the Andromeda. This future power supply will be similar to the actual Andromeda PS. It will supply the 750D in DC only. So you get two main benefits: no AC at all coming into the player, and the better power supply itself with its better regulation and cleaner DC, to feed the 750D's electronics. When available, this will be a very interesting upgrade.

be used straight into a power amp, thanks to the onboard volume control. But I doubt that it can compete with the Moon's remarkable calm under fire nor its strong sense of neutrality. A stronger contender on that front would be Esoteric's P-05/D-05, a separate transport and DAC with a very good reputation for eking out detail, and with added ability to play SACD.

SOUND QUALITY

The 750D is an immensely calm and measured sounding CD player; it seems to have more time to reveal the fine details of discs than usual and, as a result, does a remarkable job of showing you the make-up of the music. This translates into acres of delay, as each note seems to hang around for longer. It also reveals

DETAIL **Fully balanced** USB digital audio input high-performance circuitry for PC analogue audio Digital-to-analogue converter including 32-bit DAC Two low-noise transformers (analogue and digital) M-Quattro Drive with Ultra-low jitter clocking system gel isolation system

seemingly everything about itself when the music is fairly simple, yet when things get dense there is no sense of blurring or rush – everything is presented in a coherent and precise fashion with a degree of effortlessness that is rare even at silly price points. It has something of the character of Boulder's 1021 in this respect, but manages to bring a little bit more of the soul of the music to the party. The Boulder is extraordinarily quiet and detailed, but somehow lacking in heart, while the Moon is a little warmer and less digital.

While not quite as musical as the Rega Isis, which is something of a master of this particular art, the 750 has a decent grasp of timing as it does with all the detail on the disc, or so it seems. Sometimes the sheer quantity of information can distract you from the musical message, but not in a bad way – it's more a case of hearing elements that had previously been masked. Steely Dan's Boston Rag has a guitar solo on it, for instance, that has not really made much of an impression in the past, but here it becomes quite engrossing thanks to the new layers of tonal and textural detail that the Moon reveals.

It also images with great precision. Some discs like the aforementioned 'Dan' number are pretty constrained, but more up to date tracks, such as Antonio Forcione's *Tears Of Joy*, produce a soundstage that's pushing at the walls and ceiling and coming well into the room.

The Moon has plenty of dynamic range, albeit not as much as the best in class. It doesn't get noisy around the edges in the way that many dynamic players do. You can keep turning the wick up, safe in the knowledge that digital edginess is not going to turn up.

With a spectacular recording it can create a full scale, 3D image that beggars belief and it can show you the precise nature of all the sounds on the disc

RESOLUTION REVOLUTION

This is unquestionably a superbly built and remarkably revealing CD player, or even DAC and transport in one box, and it allowed me to properly hear the constituent parts of wellworn discs that have rarely been apparent in over 20 years of reviewing. There are more musically engaging players, but you trade quite a bit of resolution for that elusive quality. If you enjoy true high-fidelity qualities this is a hard player to beat. Add to this, its broad range of digital inputs and fabulous build quality and you have a star player even at its elevated price point. HFC

Jason Kennedy





Roksan Warranty Notification

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.

In an age where product longevity and second hand resale values are constantly under threat, Roksan wish to reward their loyal customers by allowing their warranty to be transferrable from owner to owner. Thus, the warranty stays with the product from initial date of sale to 5 years old as long as it remains within the country of origin.

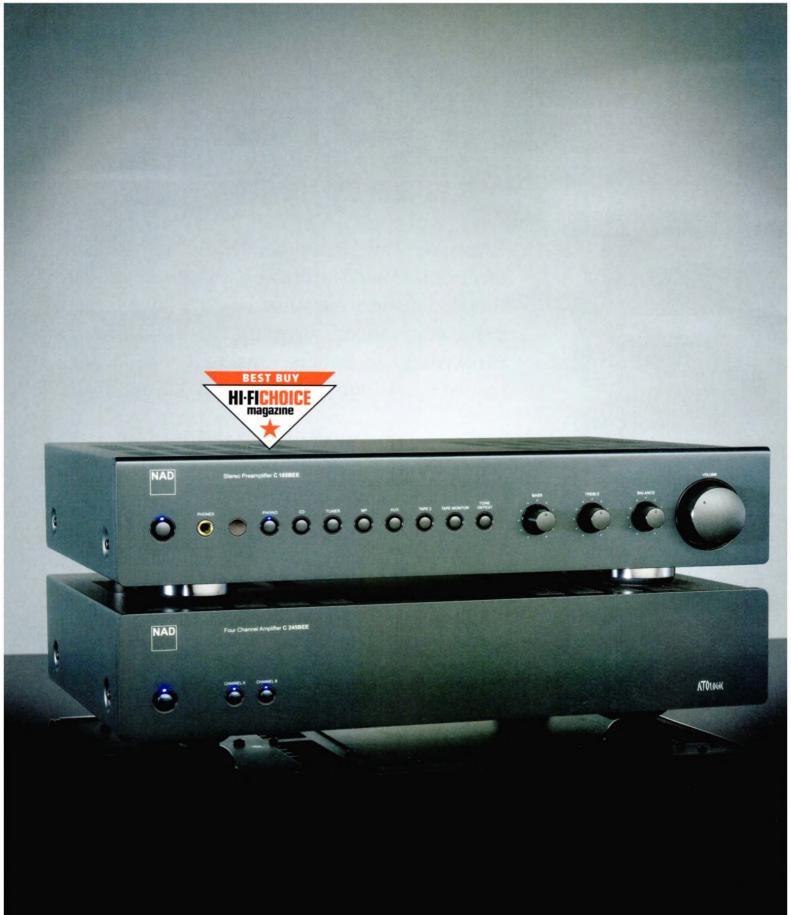
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Dual in the crown

This preamp and power amp combination is a benchmark pairing according to Richard Black

PRODUCT NAD C165BEE/C245BEE

TYPE Preamplifier/power amplifier

PRICE £695 (C165BEE); £495 (C245BEE)

CONTACT 2 01279 501111

www.nadelectronics.com

AD revolutionises nearly half a century of stereo amplification with its latest power amp, the C245BEE. You see, it's not a stereo amp but a quadrophonic one, with four separate channels of amplification sharing one chassis and one mains transformer. Obviously, you can do various multichannel things with specs like those, but what interested me the most was its stereo applications, most obviously bi-amping. As far as I can remember, this is the first dedicated bi-amping solution of its kind that I've seen and the idea is very appealing.

The attraction of bi-amping is that each drive unit of a loudspeaker (assuming a two-way model) gets its own amplifier channel. The signal still passes through the crossover, but the reduced power loading and frequency range that must be handled by each amp section means less stress on the electronics and, typically, considerably improved sound in all sorts of ways.

The usual downside is the need to add a second amp. However, building four channels into one chassis is a great deal less expensive than building two completely separate stereo amps, so NAD's thinking here has logic.

HIGH-POWERED

There are also other things one can do. Driving a set of remote loudspeakers is one possibility, while another is bridging the channels in pairs to make a high-powered stereo amp – this requires no more than flicking a switch at the unit's rear. This may or may not make financial sense if one does

which is about 50 watts and an indication of what's available. Peaks can easily exceed 60 watts, so this amp is rather pokier than the conservative 35 watt rating suggests.

In terms of construction, there's practically nothing in the C245 that couldn't have been done years ago — it's a traditional circuit board, very well filled with components and flanked by a pair of heatsinks that carry the bipolar transistor output stages. The only surfacemount components I could find are on a subboard, while most of the amplifying is done with discrete transistors. Even the case is a good quality affair, with a real metal front panel!

"...this is the first dedicated bi-amping solution of its kind that I've seen and the idea is very appealing."

it from the outset, but is an attractive way to upgrade a system down the line. NAD rates the 245 at 70 watts per channel into the usual eight ohms when working in bridged mode, though I managed to tease a little over 100 watts out of it.

Talking of power output, this is limited overall by the mains transformer, which supplies all four channels and is of decent, but not huge, capacity. When four channels are driven flat out the limit is just over 40 watts on each, but in practice this just isn't going to happen, at least in a bi-amped setup. It's more realistic to take as a guideline the figure for two-channel delivery,

ALL DONE BY RELAYS

The C165 preamp matches the power amp very well aesthetically and shares many design ideas internally too, including the dominance of discrete transistors. There are slightly more surface-mount components here, hidden inside robust metal housings labelled 'Class A gain module' – NAD's signal-amplifying building blocks. Switching is all done by relays, while the phono stage is implemented with discrete transistors and caters for both types of cartridge. It even has switchable loading, adjusting resistance for moving-coil cartridges and capacitance for moving-magnet. Of the two main outputs,



one is level-adjustable via a rear-panel control. Volume, balance and tone controls all use traditional variable resistors: the tone controls have very little effect at high volume settings and are generally a little more subtle than most.

RAZOR-SHARP

With such a range of options on offer it was hard to know where to start, but I decided to go for the plainest configuration, simply ignoring one pair of power amp outputs and using the C245 as a straightforward 40 watt power amp. As such, it's a decent combination, but possibly not one that would unseat our £1,000 favourites in the integrated amp stakes. Still, it gave us a good handle on baseline performance, which has good extension at the frequency extremes, nicely presented detail and plausible, if not razor-sharp, imaging.

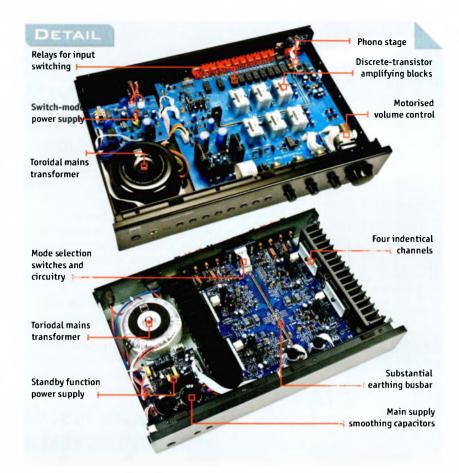
Adding the second pair of channels in a bi-amped setup, however, really makes things start to fly. With my regular ATC SCM20 two-way speaker in use (not normally bi-wireable, incidentally, but I modified the connections some years ago), I found that the sound gained slightly in bass extension and solidity, markedly in treble 'air' and naturalness and quite remarkably in midband detail. What is, perhaps, even more likely to make it stand out from the crowd is that it is surprisingly distinctive from familiar amps.

MUSIC FLOW

With a total price of a little under £1,200, these two are up against units like the Creek Destiny or the ever-popular Cambridge 840A. I'm very familiar with both of those, and fine amps they are too, but there are

BUILDING BRIDGES

Bridged operation is a way of turning a two-channel amplifier into a higherpowered single-channel one. If the two channels are driven with the same signal, but in opposite phase (one positive while the other is negative) and the load is connected between them, twice the voltage is applied to the load compared with connecting one end of it to ground, as is normally done at the output. Twice the voltage means four times the power, so in principle a 35 watt amp like this could deliver 140 watts in bridged mode. The catch is that each channel 'sees' half the load impedance, so an 8 ohm loudspeaker connected in this way will look like a 4 ohm load to each channel. That will usually limit their output voltage to rather less than is delivered into eight ohms, limiting the output power to something less than the 140 watt figure. In addition, few amps really enjoy driving 4 ohms, so there is often something of a quality hit in going for bridged operation.



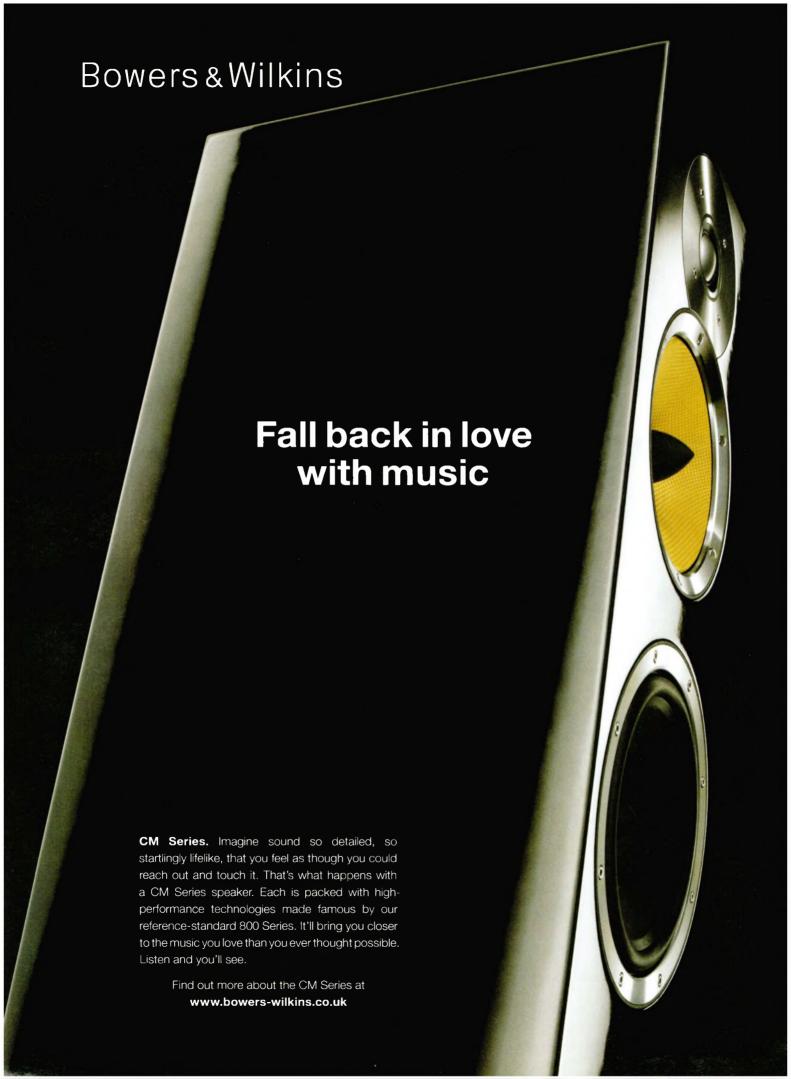
subtle yet, over time, significant ways in which the NAD 165/245 pairing (in bi-amping mode) does things differently. Most noticeable, is a fleetness of foot, which really makes music flow along effortlessly. While the other amps do well in this regard, these NADs seem to lift performance to another level, especially with music that moves quite swiftly. Changing textures and harmonies are beautifully reproduced and rapid melodic passages are exquisitely clear.

What doesn't always quite stand up so well to the competition is the bass. It's good, but standards of bass reproduction in £1,000 amps are high and what I slightly missed from this was the effortless quality of some of the best integrated models around. To succeed fully, bass needs three things – extension, 'speed' and tunefulness – and it's the last of these that I feel sometimes eludes these amps.

Otherwise, the bass does indeed fare well, its extension is about as good as any in this class, and speed is more than decent. Up in the treble and there's quality aplenty, with very nice decay of sounds into silence and, perhaps, just an occasional hint of excessive brightness – nothing we'd worry about. Midrange detail is very good and imaging has terrific extension and, again, specifically in bi-amped mode, pretty good resolution and stability.

I tried the C245 in bridged mode. It works quite well, but loses some grip compared with bi-amped operation and I'm not quite sure why one would bother, except as a temporary measure between upgrades. I also tried the amps separately, though we imagine most buyers will purchase them as a pair and found, to my slight surprise, that the preamp seems to be the limiting factor for the bass. Otherwise, it's very neutral via its line inputs: the phono stage is a little lacking in punch and insight, predictably more so with moving-coil cartridges, but stands up well against typical integrated amp phono stages. It seems the star here then is the C245, but judged as a pair, this is an intriguing and in many ways very appealing combination. HFC Richard Black

VERDICT SOUND PRO Power amp offers unique $\star\star\star\star$ bi-amping from a single chassis, giving impressive **FEATURES** gains in clarity and musical flow. Good bass and treble **** extension too. BUILD Slight lack of tunefulness in the bass seems largely a function of the preamp, which VALUE could also offer a little more insight via its phono input. n alternative to the usual integrated route that offers flexibility and also some very fine sound, in ways not often found at this price. Weaknesses are few and minor and this combination has much to recommend it





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Radio days

Richard Black finds the Sensia to be more than pure radio

PRODUCT Pure Sensia TYPE Internet radio and media player PRICE £250 CONTACT № 0845 148 9001 # www.pure.co

hen is a radio not a radio? First, when it's an internet radio (which strictly uses wires, not radio waves), and second, when it does so many other things that the term 'radio' only touches the surface. But in two ways this is a 'real' radio, as it receives both DAB and FM and it also connects to your internet router wirelessly, ie. by radio. Among various other features, by far the most striking is its ability to play music off your home computer, again wirelessly. Close behind that must surely be the user interface, which is a very natty touch-sensitive screen, just like the ones on many current mobile phones, complete with swipe-sensing.

Pure has been at the forefront of digital radio developments since it got in on the DAB act very near the start, but this is by some way the most advanced product we've seen from the company. Its real beauty is that it does so many internet- and computerconnected things, but it isn't a computer. A computer is a wonderful device, but it's essentially a general-purpose device and, as such, invariably compromised in terms of

single-purpose use, such as audio. You have to do tiresome stuff like launching applications and fiddling with settings and although with experience this soon enough becomes second nature, there's just something a lot more satisfying about a designed-for-purpose, audio-only box.

MOBILE PHONE, TOO

So this funky-looking unit does some clever things. It even features 'apps', just like a mobile phone (actually a lot of its functionality resembles that of a smartphone): currently you can access Facebook and Twitter and I dare say more is to come.

volume setting just doesn't seem to be quite high enough. The sound is a little coloured, especially in the treble which is on the dull side overall but has some distinctly audible resonances in it.

Of course, you can always use headphones, or take an output from the headphone socket and use it to drive an external amp and speakers. This is actually quite an impressive experience and it's most gratifying to hear how good the quality is on many internet radio stations. Maybe not quite as good as well-done FM but perfectly listenable. It's also encouraging that high-rate MP3 files can be satisfactorily streamed wirelessly from the

'Among other features, by far the most striking is its ability to play music off your home computer, again wirelessly."

SOUND QUALITY

If you've heard any of the really upmarket table radios such as those from Meridian, you won't be blown away by the Sensia. It does OK with everyday radio fare including compressed pop and speech, but with more subtle stuff it lacks both precision and gain. There seems to be quite a lot of raw power on tap, but with classical music the maximum

computer. Uncompressed WAV files stutter a bit, suggesting there's not quite enough bandwidth, but 320kbps MP3 seems fine. The Sensia doesn't seem to recognise any losslessly compressed formats - I couldn't check with the instructions as they are online only and lack rather a lot of detail.

Operating the Sensia is a very pleasant experience, while the 'Flowserver' software that runs on the PC, which is acting as the media server was easy to install and set up. It's certainly a very impressive piece of kit and certain to be a talking point. If the sound is a little disappointing, it's only fair to bear in mind that £250 is not a lot of money and Pure doesn't claim this as a super-audiophile product. However, as a superbly-featured radio it has a lot to offer. HFC

Richard Black







Mass appeal

The T-30 turntable could revolutionise high-end analogue, so **Jason Kennedy** gives it a spin

PRODUCT Hanss Acoustics T-30

TYPE Turntable

PRICE £3,600

KEY FEATURES Size (WxHxD): 63.5x22.2x43.5cm Weight: 37.8kg Armbases: Rega with VTA adjustment, SME Speeds: 33.3/45rpm Suspension: magnetic
 Standalone motors x2 Six-piece silicon belt drive

2 07842 126218

n a move that could shake the foundations of the high-end analogue world, Hanss Acoustics has created the T-30 - a high mass (37.8kg), multi-arm turntable that can be snapped up for just £3,600. Chinese company Hanss Acoustic makes phono stages, equipment supports and a CD player but its range of turntables is something else.

The T-30 is the middle model of three substantial turntables with impressive build and an awful lot of precisely turned aluminium for the money. With two substantial motors, two armbases, a separate power supply, and no fewer than six belts, it ticks all the boxes for the hardcore analogue fiend. All you need is a big enough equipment support.

HEAVY METAL

The T-30 is an awful lot of engineering for £3,600. We've yet to test anything that compares to its near 40-kilogram mass - only the extreme end of German and French designs get close, but with price tags to match.

The Hanss T-30 is a very substantial turntable: its platter is 70 millimetres deep and weighs 10 kilograms on its own. The total turntable weight is a staggering 37.8 kilograms and it stands over 60 centimetres wide. But there's more to this baby than mass. The chassis is a sandwich of aluminium and acrylic, a design approach that Clearaudio has been using for some time. Suspension comes in the form of opposing magnets in the three ball feet, a technique used in the Lumley Stratosphere, albeit rather more than three times, and at stratospheric cost.

The platter's bearing that you can see if you

sends the cable straight down. The Rega base accepts the RB300 style threaded column Rega arms and has built in VTA adjustment, which is a useful feature.

The huge motor housings have weighted bases and are totally independent of the turntable itself. In fact, it's not entirely clear how close they should be nor how to orient them, but looking at the pictures on the Hanss site you get the impression that the on/off switches should be at the back. The AC motors power acrylic pulleys with three grooves in them, each of which drives a silicon belt. You'll notice that each motor is a different height so

"The T-30 is the middle model of three substantial turntables with an awful lot of precisely turned aluminium for the money."

look at the turntable side on, also has magnetic suspension, which is a little unusual, but something of a necessity when you have such a high-mass platter. In practice, the T-30 feels and looks like an unsuspended design and has the same sensitivity to footfall.

The arm bases are supplied in SME and Rega fit and can be switched from one side to the other if you are prepared to undo the eight bolts that hold them in place. I used an SME V tonearm, but was unable to fit the standard arm cable plug because of insufficient space inside the base. Fortunately, I was able to borrow an alternative cable with a plug that

that all six belts can be run without interference. Each motor has its own cable, which plugs into a separate power supply with which you can turn them on and off and select speed. You can also fine tune speed if you have a small screwdriver and a light touch.

On top of the plinth is a speed display with three decimal places - getting it to read 33.333 is quite a feat but it can be done with a little patience. Hanss supplies a record clamp which, to be frank, is too lightweight to do a great deal as it doesn't screw down. Also in the box is a strobe disc, which has a cartridge alignment gauge on one side as well as a 🔼



circular spirit level to aid set up. Small but nice touches both.

BASE METAL

The quality of CNC machining is impressive on this turntable – not in the very top league but remarkable for the asking price and about as good as I have seen on a Chinese component. It's well put together and easy, if heavy work, to set up. One snag is that the armbase for the SME seems a little too high – you have to push the arm down as far as it will go to get correct VTA. With two of the three cartridges tried the base was only just close enough to the platter to achieve correct alignment.

In other respects, fit and finish is very good and the hardcoat anodising on the platter particularly well done. The way that the six belts all sit equidistant on the platter is also very pleasing to the eye and threading them on is a doddle, if you are methodical.

ADDED VALUE

To my knowledge, no-one offers this much turntable for this sort of money – there isn't even a model that will accept two tonearms in this ballpark. Fortunately, for the competition, there's more to record playing than extra armbases and mass. The T-30 has plenty of competition from the likes of Kuzma, whose Stabi-S is remarkably musical as is the superbly finished SME Model 10. If you want high mass however, the only alternatives are the big money TW Acustic Raven AC, which also has a 10 kilogram platter, or Acoustic Solid's Solid One, which isn't quite as hefty but comes in at a competitive £4,000.

SOUND QUALITY

Being over 60 centimetres wide makes T-30 something of a challenge to site on conventional equipment supports and you'll really need something big like a Finite Elemente or even one of Hanss Acoustics stands for best results. I made a bigger top

HIGH MASS

The attraction of the high-mass platter is that it brings not inconsiderable inertia to the job of spinning a slab of vinyl. This means that speed should remain constant, regardless of any variations in drag created by the stylus. It also should be able to absorb resonance in the vinyl and dissipate it by turning it into heat. High-mass turntables traditionally have a more stable and powerful sound than their lightweight competitors, but you do need an extremely good bearing design to cope with the mass. That's why designs like the Hanss use opposing magnets in the bearing, this means that very little, if any pressure is placed on the thrust pad. In this case, Hanss uses a ceramic bearing to minimise any potential for rumble at this pressure point.



AC synchronous motors

with acrylic pulleys

plate for my Townshend stand, which looked a bit ungainly but did the job.

With an SME V tonearm and van den Hul Condor XCM cartridge installed, and the output fed to Trichord's venerable Delphini phono stage, the Hanss delivers an extremely stable and powerful result that makes for powerful, full-blooded sound. This is typical of high-mass designs, but most models do not have two motors. It's impossible to say what the second motor brings to the sound because one is not enough to keep the platter spinning. The most likely effect is to underpin the unflappable quality already produced by the platter. It doesn't draw your attention to qualities like timing but a rhythmically tricky piece like the Keith Jarrett trio's Scrapple for the Apple came across in remarkably engaging and coherent form, which suggests that it's not too shabby in this department. I even enjoyed the double bass solo and that's saying something.

Next to my regular turntable, the Rock 7 with a Rega RB300, the Hanss is more definite and precise, not as relaxed nor timely but despite the lack of a damping trough (as found on the Rock) probably its equal in the bass department. It could be a little more relaxed, but if you want plenty of bite – and this is what gives the bass its definition – then the T-30 is a hard act to beat.

There is something a little unforgiving about the turntable that I suspect, is due to the metal surface of the platter, and it pays to use a cartridge and arm that balance this out. I found the perfect match in the form of a van den Hull Colibri. This plastic bodied MC did the trick, bringing relaxation and refinement to the proceedings and allowing artists including Rickie Lee Jones to deliver their full emotional

breadth. In fact, her track *Horses* became beguiling in its grip, with instrumental and vocal texture that could sway the hardest heart.

SONIC ARCHITECTURE

Battery-powered LCD speed display

Hanss Acoustics brings the entry level for highmass turntables down to a new low and that's something to get excited about. It's not the easiest piece of equipment to site but there are some stands, including Hanss' own, built for components of this scale.

While it won't sway the rhythm and timing brigade its remarkable precision and stability means that given a good recording, the speakers disappear to leave a three-dimensional image of genuine architectural solidity in the room. So, if you want to seriously hear the power of vinyl, then the T-30 is the least expensive way to do it. **HFC**

Jason Kennedy



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Pure thoughts

Ed Selley finds Puresound's entry level amp goes light on features but heavy on sound

PRODUCT Puresound A10

TYPE Integrated valve amplifier

PRICE £685

KEY FEATURES Size (WxHxD): 14x23x33cm Weight: 8.5kg Output: 10 watts 66LP based output stage @ Class A operation

2 01822 612449

esigned to demonstrate some of the star quality of the larger A30, the A10 integrated valve amplifier is the newest and least expensive arrival in a range from Puresound which includes amps, preamps and phono accessories. In fact, due to market enthusiasm for the new amps, the A10 may well rule the roost in sub-£1,000 models.

VACUUM MINIMALISM

The A10 is a class A Ultra Linear push-pull design. It uses a relatively conventional complement of valves, consisting of a pair of 6N3 valves in the preamp section and a quartet of 6P14 valves (see boxout) for the output stage. Power is quoted at 10 watts per channel, and the output transformers are wound to accept either four or eight ohm loudspeaker loads.

Internally, the amp is constructed from high-quality components such as carbon film resistors and polypropylene coupling capacitors, whilst the inputs are gold plated - which is no mean feat considering the price. Special mention must also go to the volume control - a top-of-the-range film potentiometer. Not only does it have a smooth, fluid action, but it seems completely free of any channel imbalance, even at very low volumes.

Perhaps as a result of the impressive quality of the components specified by the designer, the feature set of the amp is somewhat limited; it sports a pair of line inputs selected by a two-position switch, a similar switch to power it on and off and that rather impressive-looking volume knob. Anyone seeking more inputs, phono stage or, indeed, a remote control will need to look elsewhere.

Puresound developed the A10 with a view to its use in both entry-level main systems and in second systems in bedrooms and studies where other Puresound models might prove too large or too expensive. The 10 watt output will go a surprisingly

long way if partnered correctly, but those interested in moving to an A10 from a more powerful solid-state amplifier will obviously need to ensure that their speakers are sensitive enough for it to generate reasonable listening levels - a great many of the better known and respected designs at this price point will not be. For my listening tests, I chose a pair of Audio Note AN-K standmounts which have a high sensitivity to work with low output amplifiers and this pairing was able to generate ample real world volume levels in a fair-sized room. Other suitable options are available from manufacturers such as Heco, Tannoy and Triangle.

acrylic pieces separated by metal uprights. This is undoubtedly far easier on the eyes than a metal cage, although depending on how determined any of your offspring are, it's probably not as childproof. The speaker terminals on the rear are large and solid three-way posts which should be able to accommodate all but the most enormous varieties of speaker cable. The overall perception is that Puresound has preferred to reduce the feature count rather than the build and parts quality of the amp. This is precisely the way I would prefer manufacturers to approach constructing equipment for

"...the A10 should prove a positive introduction to anyone who has selected (a valve amp) as their first foray into tube use."

STOUT PARTY

The fit and finish of the A10 is very good indeed. Despite its diminutive chassis, this amplifier tips the scales at no less than 8.5 kilograms and feels extremely solid with neatly rounded edges adding to the quality feel. The wood trim around the volume knob is a neat visual touch and is matched by a plate on the transformer cover. As with a few other designs I have seen recently, the delicate valves are protected by a series of

In use, the A10 proves itself free of the idiosyncrasies and foibles which sometimes come with valve amplifiers and should prove a positive introduction to anybody who has selected one as their first foray into valves. Setup is aided by an informative, well-written manual that should allow even a complete novice to get it running. The A10 warms up fully in less than 20 minutes and seems totally free of background noise or humming that can sometimes blight valve amps.



POUNDS FOR LBS

The overall result is that the A10 is one of the most cost effective ways of securing a well-built valve amp with high quality components throughout. Considered against other EL84 designs, it's less than half the price of similarly powerful models which is impressive considering how much remains. On the negative side, it's limited to two sources, which may or may not concern you, and this can be overcome by adding inputs with a DAC or switching box. The wider consideration, of course, with buying an amp with a limited power output is the likely need to buy suitable speakers for it to perform at its best. This is a more pronounced requirement than with a similarly priced solid-state amplifier.

A LOT OF BOTTLE

Your willingness to invest in a new pair of speakers may increase significantly upon listening to it though. Half an hour with a properly partnered A10 and you will have found a way to manage with two inputs and 10 watts.

A10: THE FACTS

The A10 is the entry-level model in the Puresound range. This smallest amp is intended to make available the qualities of the larger models at a very competitive price point. It uses a variation (6P14) of the classic EL84 pentode in its 10 watt output stage.

The 6P14 shares similar dimensions and pin mountings to the EL84 and is essentially a Russian-built version of the same. In fact, there seems to be strong evidence that it is a copy of the classic Mullard EL84.

Puresound designer Guy Sergeant has a stated preference for the 6P14 dating back to his time at Audio Innovations, citing their excellent performance and reliability. As such they were a logical choice for the A10.

Puresound has designed the A10 with a view to use in high-sensitivity systems and small second systems. It was also conceived with simplicity in mind and, as such, features only two line inputs and a direct circuit on its rear panel. Tone and balance controls have been omitted for a better sound.

A great many modern loudspeakers will not be suitable for use with the A10, as their sensitivity will be too low to achieve reasonable volume levels. As such, suitable speakers will need to have an above average sensitivity, usually stated as dB/w - the output in decibels which the speaker will produce from a single watt of input power. Speakers with sensitivities of above 90dB/w will be an ideal place to start. Those prospective owners using a turntable also need to ensure that the gain available from their phono stage is sufficient for day to day listening.



In keeping with many valve designs, the A10 brings a genuine sense of presence and realism to recordings. Artists and musicians are placed with an accuracy and depth of soundstage that moves well beyond the speakers. Live recordings, in particular, bring an uncanny sense of the space they were recorded in, be it tiny club or cavernous stadium. Contained within it, instruments have the space they need to sound tangibly real and totally unprocessed. Above all, voices come in for special treatment. Male or female, the A10 will place them with total assurance where they need to be, never divorced from their instruments, but equally never engulfed by them either

Where the A10 is emphatically not in keeping with many valve amplifiers, particularly at this price point, is the speed and surprising grip it demonstrates. There is none of the bloat or softness that can reduce the impact of transients or quick bass lines – the A10 has a speed and agility that is often lacking in valve designs. At the same time, the natural and unforced presentation does not seem to result in loss of detail and the all-important sense of excitement that can keep the attention for hours. In absolute terms, the bass – although fast and detailed – lacks the seismic quality normally only achieved with rather more power.

Once it has run out of volume, it can sound slightly strained – although it will hang on for longer than you might expect and never become unduly harsh or severely distorted. The classic comment that a valve watt seems burlier than a solid-state one certainly has some credence here.

PURE MAGIC

Unfortunately, I cannot give an unconditional recommendation to the A10 as a perfect choice of amplifier at this price point. Many people who are already happy that their speakers are working well in their rooms are going to find the output of the A10 too limited to do justice to loudspeakers of average sensitivity. Others will need more than two inputs, and may be unwilling to sacrifice remote control to get it.

For those able to work within these limitations, however, the A10 demands an audition. Simply put, it never fails to make music an enjoyable and rewarding experience, which is surely the purpose of a good hi-fi system in the first place. For many, this will be enough. **HFC**

Ed Selley







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A glass act

Waterfall is confident that its glass speakers are anything but see-through. **Dominic Todd** listens in...

PRODUCT Waterfall Victoria Evo

TYPE Floorstanding loudspeakers

PRICE £2,695

KEY FEATURES Size (WxHxD): 25x101x25cm Weight: 16.3kg each Drivers: 20mm neodymium tweeter, 2x 150mm midrange/bass, 210mm ultra low-frequency Acoustic Damping Tubes (ADT) Acculinear treble filter

ONTAC I 2 01359 270280 @ www.waterfallaudio.co

revious speakers made from glass have tended to sound rather brittle and bright, but then the construction of a glass speaker is an extremely bold move. Not only is the production process highly complex and expensive, but there are also serious sound quality concerns. But, by incorporating sophisticated damping techniques, Waterfall has refined the process to the point where its latest Evo range is in no way compromised by the material itself. Instead, what you get is a distinctive speaker with the positive benefits of glass, such as high density and rigidity. The question is, can function truly benefit from form?

LOOKING GLASS

All sides except the bottom are made from tinted, six millimetre glass with bevelled edges. The glass panels are bonded together to form the cabinet. A secondary front baffle adds an art deco-style motif, additional rigidity and improved damping. At the base is a die-cast aluminium plinth that not only anchors the cabinet, but also acts as housing for the crossover, passive bass unit and spikes.

The crossover is generally of a high quality. if conventional construction. Although not bi-wireable, it features expensive components such as polypropylene capacitors and insulated inductors. Less impressive is the line of block connectors that link the crossover to the drivers' cables

Of note is the Acculinear treble filter. The special type of plastic used in this filter is designed to improve treble smoothness and is just one of the ways in which Waterfall counteracts the natural sonic tendencies of the glass cabinet. A metal plate not only hides the crossover from sight, but also protects it from standing waves; yet another example of function benefiting from form.

All four drive units are made by the French company, Atohm. And, in case you were wondering, the fourth drive unit is an ABR passive radiator at the base of the cabinet. Made of ribbed, moulded plastic, the most intriguing feature of this ABR is the bolt-on weight system. By attaching the supplied weights you can, literally, add mass thereby tuning the bass response. Naturally enough, extra weight increases bass weight, but restricts the speed of response.

Both woofers are more conventional, although their die-cast aluminium chassis is extremely well-vented. This usually gives higher point. Then consider that the speaker is made out of glass and the design becomes more impressive still. There are no sharp edges or awkward angles, just an immaculately finished piece of industrial design that's good enough to win design awards. The tinted glass with semi-mirrored finish and bevelled edges is of the quality usually reserved for expensive Italian glass furniture. Make no mistake, the Victoria Evos are speakers you'd be proud to have in your living room.

Although the quality of finish can't be questioned, the speakers' value for money possibly can. Rival speakers that offer

"Turn up the tempo and the Waterfalls respond admirably... a crisp, dynamic response and expansive soundstage."

power handling and a wider dynamic response.

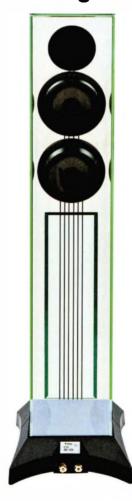
Of more interest than the woofers themselves is the way in which they are mounted. What Waterfall calls ADT (Acoustic Damping Tube) effectively amounts to a woofer sub-chassis. Made of die-cast aluminium with an open mesh at the rear, ADT has several advantages. It damps the rearward travelling airwaves so they don't become too 'excitable' within the glass cabinet. Combined with this is a certain amount of isolation from standing waves within the cabinet itself. It also mechanically isolates the woofer from the glass cabinet by acting as a sophisticated gasket. It's the effectiveness of this technology that will really test the Waterfall's ability not to sound brittle.

The tweeter features a silk dome protected by a metal mesh grill. The die-cast rear plate should help isolate it within the cabinet much in the way that ADT works with the woofer units.

That's the technology, then. How well it is implemented and how competently it stands up to the competition is another matter.

FIRST GLASS

Take the materials out of the equation and the Victoria Evo is still an extremely well finished speaker. Block connections aside, the design impresses with its thoughtful and thorough build. The way that the neat internal speaker cable routing actually adds to the design resembling the strings on a cello - is a case in



similar component quality and cabinet size tend to cost around £2,000. The PMC FB1i, Opera Seconda and Proac D18 are all exceptionally fine sounding speakers with the Opera, in particular, also expensively finished. None have any serious sonic vices and all will sustain several system upgrades before they get out of their depth. If the Victoria Evos are to justify their additional £700 they will have to offer some sonic benefit over and above their unique looks.

THE GLASS ROOTS

The first listen came as a great relief. With Claire Martin's, *Man in the Station*, I wasn't overwhelmed by an overly bright balance or excessive vocal sibilance as I had feared I might be. In fact, Waterfall appears to have suppressed the natural tendency of glass to ring so well, that the resulting balance and natural harmonics would embarrass many a conventional cabinet.

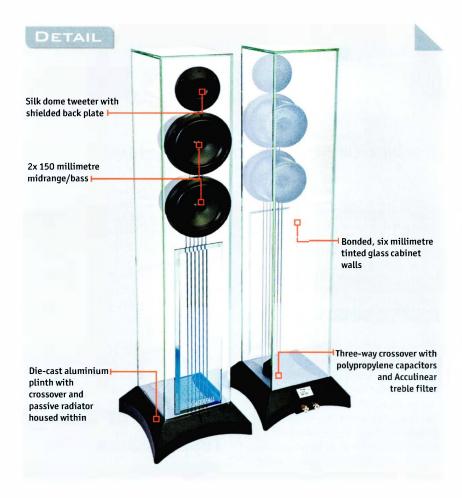
TALKING POINT - LOW FREQUENCY TUNING

Take a look at the passive radiator on the base of the speaker and you'll notice a central thread. This is for bolting on additional weights to improve the frequency response. There are four weights supplied (two per speaker), two of which are 27 grams each, the others seven grams. 'Unweighted', Waterfall claims a low-frequency response of 50Hz. This drops to 45Hz with the seven gram weights attached and 40Hz with the 27 grams. In practice, I found the 27 grammers made the sound too turgid, but the seven grammers usefully improved the bass depth without affecting the timing too much. It's a great idea and one that's safe and easy for the listener to experiment with. One word of warning, though - don't go adding larger weights as, over time, the foam surrounds will lose their elasticity giving you a very sloppy sound!

How it compares - PMC FB1i

What I find most striking about comparing the PMCs with the Waterfalls is not their differences, but their similarities. Both have a smooth treble response and even balance. Both will go fairly low but sacrifice ultimate bass weight for speed of timing. Each has the ability to sound like a high-end standmount speaker with a sound quality that's spacious, pacey and involving. On the downside, both can sound a little congested when put under pressure.

Both are costly to construct, but have overcome this with immaculate finishing and thoughtful detail. Where the Victoria Evos lose out is in terms of value for money. At £2,100, the FB1i is nearly £600 cheaper. Depending upon your taste, that's either a lot of money for a glass cabinet or well worth it for a product that's still cheap by designer furniture standards!



Whether male or female, the vocals are especially well-articulated with excellent projection into the room. If anything, there is a slightly forward bias to the speakers but it's not relentless, and it's more explicit and revealing of the music. Whatever the genre, the Evos are particularly adept at expressing and layering it. Only at very high levels does a little congestion set in and even then it is mild.

Turn up the tempo and the Waterfalls respond admirably. A crisp, dynamic response provides excellent timing, and matching that faultless timing, is an expansive soundstage that competes with the best in its class, not just for width but depth of sound, too. Very deep bass is a little lacking, yet this doesn't diminish the Victorias' zeal in ripping through the music with conviction.

Classical music reveals a surprisingly sweet violin timbre. The combination of silk treble unit and Acculinear filter certainly appears to have done the trick in providing a well-integrated and smooth treble response. Perhaps, as a result of this, the balance occasionally sounds just a little too smooth. Some of the 'space' around instruments seems lost. I suspect that a decent ribbon or panel would pick out a little more detail in the high end. Nevertheless, the Waterfalls do a good job in staging the orchestra and its taut timing ensures that a sense of drama and scale is always maintained.

That the Waterfalls look striking and are exquisitely constructed can't be denied. Given

the unusual construction, their sound quality is impressive, too. Despite some minor criticisms levelled at frequency extremes and a slight congestion of sound at higher levels, the Evos sound engaging, well-integrated and just as adept with a full scale orchestra as a female vocalist. In short, these are the type of speakers that will happily 'hook' you in for a full night's listening. Yes, a handful of slightly cheaper speakers can match the sound, but none are as visually arresting. Clearly, these are the perfect speakers for the design-conscious audiophile. **HFC**

Dominic Todd



















MA06/10

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GROUP TEST & LAB REPORTS: RICHARD BLACK

DIGITAL-TO-ANALOGUE CONVERTERS

Forget the old adage 'size matters', these dinky DACs prove that some of the best things actually come in very small packages...



he new wave of DACs have taken the hi-fi world by storm and, since our last survey 15 issues ago (*HFC* 316), there have been plenty of new models to whet the appetite.

There are also some interesting trends emerging, including generally lower prices and remarkably smaller footprints – the combined bulk of all six in this *Ultimate Group Test* is actually less than a typical integrated amplifier. Obviously, there's little point making kit bigger than it needs to be, but the move towards computer-based audio and desktop systems surely plays a part.

Ah, yes, computer audio. But isn't that the root of all audio evil, what with MP3 and its ilk killing off any attempt at audio purity? Sure, lossy compression has no part to play in high-quality audio, but with hard disk capacities increasing all the time there is less and less need for it. In fact, we used a tiny 'netbook' computer as the sound source for our panel listening test, a flag-flying first for *Hi-Fi Choice*.

We loaded WAV files and played them out through a USB connection: four of the DACs have a USB socket to accept this feed direct, while it was a piece of cake with the rest to insert a USB-S/PDIF converter (from Trends Audio).

With a bit-perfect digital path like this (yes, we checked!), there is really no solid reason why a computer should be in any way inferior to a CD player as a digital source and, although the jitter may be higher, it's not unreasonable to demand that a DAC should deal with this – the behaviour of most of the DACs in this group proves it's possible, even on a tight budget. Of course, CD remains a valid and convenient source and a DAC should at least equal the

performance of a decent CD player's analogue output, which provided a reference for the sighted listening tests.

But whereas DACs used to be seen as an upgrade for CD players, they are increasingly a means of achieving high-quality audio from computer-based systems, as well as a convenient way of bringing multiple digital sources together. And this is the spirit in which we approached this group. **HFC**

EQUIPMENT USED

- CD player
- Samsung NC10 netbook computer (running Cool Edit 2000 and Windows Media under Windows XP)
- Exposure 3010 integrated amp
- ▶ EAR802 preamp/519 monoblocks
- ♠ ATC SCM20 loudspeakers
- Bowers and Wilkins 803S loudspeakers
- Kimber, QED and Wireworld cables

MUSIC USED

- ▶ Pink Floyd Dark Side of the Moon▶ Penguin Cafe Orchestra Concert
- Dick Hyman plays Fats Waller
- Rachmaninov Symphonic Dances

EARS USED

Gratitude is copiously extended to those illustrious members of our listening panel, who gave up their time to listen and comment on the equipment from their vantage point of many years' experience:

Phil Hansen (Red Sheep PR)

Andy Napthine

Nanthine Marketing Solutions

Steve Reichert (Armour Home Electronics)
Thanks quys!





LISTENING TESTS

Each of the DACs was subjected to a rigorous programme of listening and laboratory tests, fed from a variety of digital sources – principally a portable computer via USB and CD. Our comprehensive listening tests were conducted under blind, level matched (to 0.1dB) conditions with some of the industry's most experienced hi-fi panellists. In addition, there were extended sighted listening tests using a wider variety of equipment and music and a varied range of volume levels to attempt to determine real-world performance.

LAB TESTS

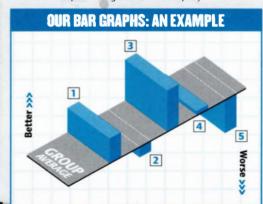
Measurements were made using a combination of customdesigned test tones, devised specifically for these tests, as well as a potent combination of 'traditional' lab instruments with a high-quality ADC, which converted the analogue output of each player back to digital for analysis on a PC, using principally Cool Edit Pro and Mathcad. This methodology provides an analysis of a multitude of aspects, the most important of which are summarised in the bar graphs (with other findings mentioned in the text)

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 key technical measurements. A percentage is given that falls above or below the group average. In this test, the five measurements are:

- 1) Total harmonic distortion. The classic distortion criterion, measured as the purity of a single sine wave at various frequencies and levels.
- 2) Jitter: A measure of how stable the conversion is, in the face of a fairly high level of incoming digital jitter (high, but well within specifications). Measured at the analogue output, this distortion shows up as increased noise and/or low-level interfering frequencies which can contribute to sonic 'grunge'.
- **3) Linearity:** How accurately the output behaves at very low levels. Poor figures can lead to distortion rising considerably in quiet musical passages.
- **4) Dynamic range:** This is effectively the same as signal-to-noise ratio, the difference between full output and the practical noise floor of each player.
- **5) Digital filtering:** Frequencies above half the sampling frequency should be efficiently filtered off. The filter is tested by playing tones at various frequencies and looking for ultrasonic spurious signals that accompany it.



Min



BERESFORD CAIMAN

Does this DAC have the 'snap' of its reptilian namesake?

£235 2 07917 896868 **4** www.homehifi.co.uk

ike a 'DAC to water' Beresford got in on the current revival almost before anyone else. In fact, it was one of the first companies in the UK to offer a miniature budget DAC similar to those featured in this month's *Ultimate Group Test*. And the good news is that the company remains small and highly focused, and its current range comprises three DACs and accessories such as cables. The Caiman is, in fact, the top model and one that is identical in design to the cheaper TC-7520, but using higher specification components.

There are inputs aplenty on this DAC, with two electrical and one optical S/PDIF, plus a USB input. Outputs are generous too, with the obvious fixed-level line output joined by a variable output (controlled by a traditional volume control behind the front-panel knob) and a headphone output. This allows the DAC to also be used as a preamp (in a digital-only system) as long as a reasonably sensitive power amplifier is used.

The digital receiver for S/PDIF signals is capable of handling 96kHz sampling rates, while a Burr-Brown component handles USB reception. The actual DAC chip is a Wolfson – not quite the highest-spec part from that company – but still very capable, including digital filtering. Beresford claims that the WM8716's use of 64-times oversampling is unusual, though we're not quite sure in what respect, since many chips have been offering similar oversampling ratios for years.

Care in component selection extends to the use of reed relays for muting. The possible drawback of these is that they take a finite time to operate when a track opens rapidly from 'digital black', but Beresford has ingeniously included enough time delay to allow for this, so you don't actually miss any music (it would only be a milli-second or two, but the audible result can be an annoying click).

SOUND QUALITY

As it happened, our programme for the main 'blind' listening test followed something of a trend from rock to classical and as it did so, the comments on this DAC seemed in general to become rather less positive. Does this suggest that it's got rather limited musical tastes? Well, yes... and no. Obviously, we'd like every bit of hi-fi we test to sound equally assured with all kinds of music, but this one doesn't seem to discriminate quite as crudely as 'pop equals good, classical equals bad'. If our listeners are to be believed, it seems to be better with music that has a relatively straightforward texture. The least successful track being the large-scale orchestral Rachmaninov, which has some very densely layered sounds to it, while by contrast, Dick Hyman's lively solo piano renditions of Fats Waller tunes danced along most enjoyably

Perhaps surprisingly, given the success with rock, rhythm doesn't seem to be a particular success of this DAC. It's good at what it does, but it's not great and just occasionally our panel of listeners found it a little lacking in punch and energy. Detail's good, though, so you do really find out what's sometimes hidden in your recordings. All-in-all, it's a classic balancing act between resolution and musical energy, coming down slightly biased in favour of the former.

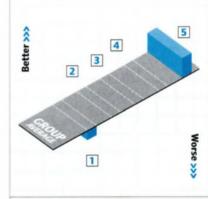
Performance seems largely consistent between the inputs, though there seems to be a slight preference for SZPDIF over USB. The sound is a little clearer, with more extension in the bass and a slightly more precise treble, when using a CD player as source. It's a small difference though, and it certainly doesn't leap out in a 'chalk and cheese' kind of way.

The headphone output is excellent, however, with plenty of drive on tap and consistently good results, given that we tried it with several sets of cans. **HFC**

LAB REPORT

Nothing particularly startling going on here, with measurements that are good in most respects. We were a little surprised to find some hum in evidence - the Caiman uses a universal switch-mode power supply (of comfortingly over-rated capacity) and while these things can have their idiosyncrasies, they are normally a safe route to low hum. But in this case, the output includes 50Hz and odd harmonics of it under all conditions, at a level that one might just hear behind quiet music. The other slightly below-par result is litter rejection on the S/PDIF inputs, though the USB input seems very good in this regard. Low-jitter sources (including most CD players) should be unaffected anyway. Distortion is fine, around 0.003% at full output and vanishing at lower output levels, while noise is OK, if not astounding. The digital filter is typical of modern DACs and CD players, while the analogue output stage inverts polarity.

HOW IT COMPARES



- 1] Distortion >> -10%
- 2] Jitter >> 0%
- **3]** Linearity >> **0%**
- 4] Dynamic range >> 0%
- 5] Digital filter >> +20%

VERDICT

SPECIFICATIONS		10.
Measurement	Rated	Actual
Maximum output levei	2V	2.3V
Total harmonic distortion	0.00003%	0 003%
Signal to noise ratio		98dB

SOUND An intelligent mix of features, with particularly good input flexibility, but sound doesn't quite reach the levels of some at this price. Good resolution but some mildly disappointing rhythmic skills. VALUE VALUE WALUE WALUE





CAMBRIDGE DACMAGIC

"That old DacMagic has you in its spell..."

£230 2 0870 900 1000 **2** www.cambridgeaudio.com

he DacMagic from Cambridge Audio is the only digital-to-analogue converter to make an appearance in both of our DAC Ultimate Group Tests. The first time was in February 2009 (HFC 316) when it won hands down against some pretty stiff competition. It's still sweeping the boards against the current batch of DACS and has also become something of a budget reference, not just for us, but for many listeners. In addition, its reappearance helps provide some degree of overall reference for the group and gives an idea of how the market has changed over the last year or so.

On the other hand, we also had the perfect opportunity to assess Cambridge's USB input, alongside its familiar S/PDIF input because we decided from the outset to make this group a computer-audio group, to the extent that all DACs were fed from a PC source.

In fact, the USB input on the DacMagic is unique among its peers, in that it uses a different receiver chip, a C-Media, instead of Burr-Brown. Its capabilities in audio terms look pretty similar and, as always, it's not so much what you've got, it's what you do with it that makes the difference.

It's the biggest unit in this group, with two S/PDIF inputs, each one both electrical and optical (don't connect both at once!), plus a single USB socket and both flavours of S/PDIF digital output. That means you can get a 'daisy-chain' output or use the DAC as a USB to S/PDIF converter. Audio outputs are available in both unbalanced and balanced forms. Internal parts include one of Wolfson's best DAC chips, a 24-bit/96kHz S/PDIF receiver and Cambridge's very own digital filtering chip, courtesy of Anagram Technologies, with three filter types available via a front-panel switch.

SOUND QUALITY

Slightly modified rapture from our listeners here, so let's get the negative comments out of the way first. One of the listeners just didn't quite click with the DacMagic, finding it a bit coloured. He didn't actually use that word, but it seems a fair summation of his remarks about emphasis on the midrange, boxy sound, thin voices... It's a little surprising because the other listeners said nothing of the kind. Now it's possible that Mr Dissatisfied was wrong-footed (wrong-eared?) by some tiny detail near the start of the presentation and never quite adapted, but it's also possible, and perhaps more likely, that there really is something about the DacMagic's sound that just isn't going to please some listeners. It wouldn't be the first time

All the same, it's a pleasure to report that the majority verdict was distinctly favourable. In particular, this seems to be the most rhythmic and generally involving DAC of the group, with excellent agility and very well-timed bass that integrates well with a precise and insightful midrange and treble, making for sound that's not only highly informative, but also invites extended listening. There's also a good helping of that classic high-end virtue, authority. Indeed, one listener commented on that and wondered if it might not be too much of a good thing, but two tracks later was clearly still enjoying himself greatly so it seems reasonable to conclude that his fears were unjustified.

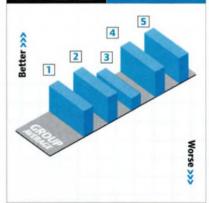
It's also admirable that performance seems very consistent between USB and S/PDIF inputs and it's really very hard to tell them apart. The bass is beautifully extended and clear via any input and only a slight change in treble texture gives away the source being used – though it would be hard to call one 'wrong' and the other 'right'. **HFC**

Serial No. YN C108 0 81 0 0002 Www.cambridge.Audio DecMagic Upsampling DAC www.cambridge-audio.cem Digral Ordputs Digral

LAB REPORT

The main news here is that there's not much to report. Actually there is one thing this DAC seems to do wrong, and it was pure chance we came across it - working as a USB-to-S/PDIF converter it puts out quite a lot of jitter, which any following DAC will have to deal with. But it's not obvious why that will be an issue in most applications. In terms of the DAC functions, this seems to be a very good approximation to truly 'blameless' audio. Let's see: distortion, peaking at just over 0.001% - hard to call that a problem. Jitter is basically not measurable through any input, noise is well below the 16-bit threshold and hum is practically nonexistent. Clean all the way! What is of interest and a genuinely useful option, is the choice of digital filters. We used the 'steep' setting, which unlike most really does eliminate aliasing/imaging, but the 'lin phase' (bog-ordinary) and 'min phase' (no pre-ringing) are worth a try for a subtle change.

HOW IT COMPARES



- 11 Distortion >> +30%
- 2] Jitter >> +30%
- 3] Linearity >> +10%
- 4] Dynamic range >> +30%
- 5] Digital filter >> +30%

SPECIFICATIONS		
Measurement	Rated	Actual
Maximum output level	21V	2.IV
Total harmonic distortion	0.001%	0.0015%
Signal-tiz-noise ratio	112dB	101 dB



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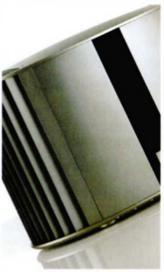
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ts rather involved name may conjure up images of rubber tyres and the Battle of Britain, but here's one DAC that oozes simplicity in terms of performance and design. In fact, many a design-conscious household would probably be very happy to house one of these as their DAC of choice. It's supplied with the usual 'wall wart' power supply, but an optional upgrade is also available for £103 in a matching case. And, since we were also sent one of these, that's how we conducted most of the test.

To reiterate, the Spitfire is simplicity incarnate, with no front-panel controls and just a single digital input (both flavours, though only one can be used at once), plus a single stereo unbalanced output at the rear. Indicator LEDs do, at least, tell you what's going on. This can be useful and we did notice that our sample sometimes seemed to lock up, if initially powered up with no source connected. All three LEDs light up, but switching off and on again invariably fixed it.

Circuitry follows a straightforward arrangement, with a digital receiver chip and DAC both from Texas Instruments and a minimum of analogue output signal path based around a high-performance op-amp. The optional power supply is a linear type, based on a small frame transformer, with simple linear regulation. It's ingeniously assembled so as to use the whole case as a heatsink and connects to the DAC via a supplied cable of about a handspan length.

SOUND QUALITY

We used a USB-S/PDIF converter box from Trends Audio as an interface since there's no USB input and the computer we were using as a source for our blind listening session doesn't have an SZPDIF output. We first checked it for bit-perfect data passing and low jitter so the sound has plenty of weight to it and some good resolution too.

A couple of listeners commented that the presentation is just a little on the bright side, but in a good way, making for a lively sound rather than being tiring or strident. Otherwise, tonality seems neutral and well balanced.

There's more to bass, though, than just its tonal relation to the rest of the spectrum. The ideal hi-fi component should have extension with body, clarity and tunefulness. On the whole, this DAC seems to manage an impressively close approach to that ideal. For instance, it manages the deep heartbeats that begin Dark Side of the Moon effortlessly and with real weight, but it also does a great job of reproducing the low notes on a piano, which can easily come out as a tuneless dull thud. Drums of all sorts have loads of impact and a very immediate presence, while low melodic instruments are easy to follow.

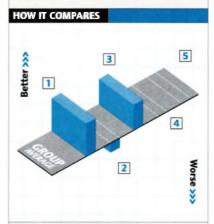
For all that, the slight brightness can at times take the shine off the bass, or at least divert the listener's attention. This is one of those things that will surely vary between listeners. What might not vary quite so much is a slight lack of insight – a very small degree of veiling that can also reduce the scale of stereo images. We found this a little less marked when using a CD as a source, but it's still present.

Ironically, and Firestone won't thank us for saying this, we felt the detail was a little better using the free power supply, though this did cause something of a trade-off in bass quality. Still, it's a capable and likeable product, even if it's not up there in our top three. **HFC**



LAB REPORT

In basic terms, there's not a lot wrong with this DAC. Its distortion is good, going on excellent, its noise floor is lower than that of CD and - perhaps more important with 24-bit sources in mind - lower than that of most amplifiers too. Its digital filter works very well above 24kHz, with the usual slight aliasing around 22kHz. What is rather less good is jitter rejection. Our quoted figures refer to a CD player as source, with quite low intrinsic jitter. Even here, the Spitfire scores relatively poorly, but the nature of the error caused by jitter is pure white noise and, realistically, there's not much of it, so we're not very concerned. However, with the rather high jitter of computer-based sources, we witnessed output jitter of considerably higher level, somewhere around 10ns. We certainly accept that low-jitter sources are best, but a good DAC should cope better than this with jitter in the data and we'd like to see Firestone address this.



- 11 Distortion >> +40%
- 2] Jitter >> -10%
- 3] Linearity >> +30%
- 41 Dynamic range >> 0%
- 5] Digital filter >> 0%

SPECIFICATIONS	823	
Measurement	Rated	Actual
Maximum output level	2V	2.0V
lotal harmonic distortion	0 00 18%	0.001%
Signal-to-noise ratio	112dB	98dB



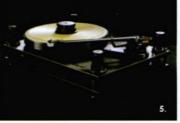
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eet the most basic DAC imaginable, a miniscule piece of kit featuring a mini-USB socket on one end and a pair of phono sockets on the other. There are a couple of blue LEDs to confirm that it's live and ready to receive data, but that's about it.

From a company better known for making valve amps, the Glass FX is amazingly dulllooking in comparison. The case, for example, is machined from a solid block of aluminium, with a steel cover screwed in place. Removing that reveals a continuing theme of simplicity, as there is precisely one semiconductor component inside, an integrated circuit, which connects directly to the USB socket on one side and to the phono sockets on the other. The chip in question is one of Burr-Brown's range of dedicated audio USB receivers, as found in most USB-input DACs, but the majority of specialist audio manufacturers prefer to follow one of these with further de-jittering measures and a dedicated DAC chip

So let's keep an open mind on the quality, given the trade-offs between simplicity and the (presumed) benefits of more sophisticated de-jitter and DAC functions. One technical aspect that does deserve mention, however, is output level: if you power everything from the USB power line and don't include a voltage converter or some other clever means (an audio transformer could do the job, at a price) you're limited to less than the usual two-volt output. In this case, it's about 0.8V, which is fine but just means your volume control will be a bit further round than usual. Most amps have plenty of gain in hand anyway.

SOUND QUALITY

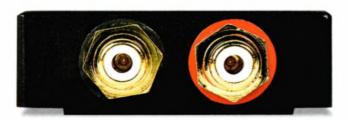
Since we always match playback levels very accurately in our blind tests, the limited output

gave nothing away to our listeners. Something certainly stood out in this DAC's performance, though, as it attracted the most varied comments of any in the group test. Now, obviously, if everyone likes a component it can't be bad, but if everyone has a strong reaction – and at least some of those reactions are positive – things are generally looking up too. Hi-fi that only presses some people's buttons, but presses them hard, is always well worth investigating.

And that seems to be the category the Glass FX DAC falls into. It's clear from their notes of the session that one of our listeners gets much more excited by rhythm and timing than any other single aspect of sound quality, and he's typical of many listeners. He was the one who started being impressed on the first track and was positively ecstatic by the fourth, hearing more vitality than most of the other DACs in the group could produce and enjoying a much more 'foot-tapping' sound than before or after. The music was, for him, more convincing, more involving — simply more lifelike.

At the other extreme, one other listener lamented the lack of detail, which he had heard in presentations through at least some of the other DACs, and pointed to confusion, reduction in the scale of images and a 'boxy' presentation. But then this individual didn't mention timing explicitly anywhere in his notes of the whole session, thus neatly proving the point that different people hear different things in recordings.

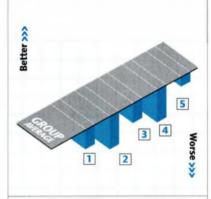
And frankly those conflicting comments seem to sum up this little device very well. It is energetic, but lacks insight. At its price, it would be outrageous to demand all-round excellence and we reckon that excellence in one area is commendable. **HFC**



LAB REPORT

Performance doesn't stand up too well against the others here, but actually it's not half bad in most respects. Distortion is still below 0.01%, which a couple of decades ago was a target figure for highend equipment, never mind budget. Noise is poor by current standards, but with normal CDs the effective noise floor is only a couple of decibels higher than that of the recording equipment. And jitter is a good deal better than other implementations we've seen using the same (or a very similar) chip. That may well be because the tiny circuit board minimises any internal timing issues or interference, but anyway there is a little litter. It's hard to quantify accurately because there is also amplitude jitter - variations in amplitude rather than in timing, which may actually be rather more significant as it affects lower frequencies just as much as high ones. Even so, its effect is little more than modulation noise, as occurs in analogue tape recordings, but at a very much lower level.





- 1] Distortion >> -20%
- 2] Jitter >> -40%
- 3] Linearity >> -20%
- 4] Dynamic range >> -40%
- 5] Digital filter >> -10%

SPECIFICATIONS		1000
Measurement	Rated	Actual
Maximum output level		0.9V
Total harmonic distortion		0.007° u
Signal-to-noise ratio		92dB





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usical Fidelity is very much the child of its creator, Antony Michaelson, a charismatic individual who manages to be equally passionate about his high-end products (especially monster-powerful amplifiers, something of an MF speciality) and his budget components like this one. Why pay a fortune, he asks, for fancy audio kit when a tiny and inexpensive box like this contains all the important bits without any of the frills.

Well, the V-DAC certainly doesn't waste any money. The case is utterly basic, made of steel, but perfectly adequate to contain, protect and electrically screen the gubbins inside. That said, we've two small issues to raise: first, the distribution of sockets on both ends of the unit is a little inconvenient in practice, and second, the mechanical mounting of some of those sockets is not the most robust, and we would advise care in connecting up so as not to break internal solder joints.

The V-DAC caters for all three of the usual digital inputs: USB and both electrical and optical S/PDIF, with a single unbalanced output. Between inputs and output are functional bits, which we quite agree are more typical of high-end stuff, including a samplerate converter and high grade DAC chip. The output opamps are nothing fancy, but none the worse for that and have been seen in some quite upmarket kit. Passive components are likewise decent rather than show-off and the power supply is the usual 'wall wart' kind of thing – not universal voltage though.

SOUND QUALITY

Cheap it may be, but only in the best sense is it cheerful – at least, it seems to have put our panel listeners in a good humour for the duration of its stay in the test system. There was the odd question mark raised here and

there, but the general tendency of the comments is very clearly in favour of the V-DAC's performance. Above all, they kept mentioning the big presentation, even in the smallest-scale music. The last track of the programme was solo voice and piano, but even there the V-DAC managed to find a greater depth to the image. Amusingly, one listener commented that the singer and pianist didn't always seem to be quite in agreement, which is, in fact, a very perceptive comment, as they weren't!

Obviously, it's the big stuff that will really benefit from this kind of presentation – the only possible drawback is if it's accompanied by a lack of precision, which is sometimes the case. Not here, though, and both *Dark Side of the Moon* and Rachmaninov's luxurious orchestration drew praise for the detail as well as the scope in the sound. The one area that, perhaps, suffers a little in very dense music is the bass, which develops a little overhang, but still manages a rapid, precise attack.

Dick Hyman's piano, a slightly bright Bösendorfer, received in some ways the best rendition of the group, with excellent clarity and pace and once again a large scale which suits the instrument – the largest piano in regular production in the world. One listener commented that the rhythm seemed slightly less clear than in a couple of previous presentations, though that was the only negative comment on that aspect throughout the V-DAC's session. Even the Penguin Café Orchestra, in a recording that's not outstanding, but which seems very revealing of kit prowess, revealed some of the best balance, pace and general excitement of the day.

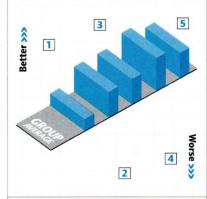
Once again, we found the S/PDIF and USB inputs very similar sonically. We have to hand it to Mr Michaelson – this little unit does pretty much exactly what it says on the tin! **HFC**



LAB REPORT

Congratulations are certainly due to Musical Fidelity's designers on the thoroughness with which they've dealt with jitter: even using a source of known high jitter, there's basically nothing detectable in the analogue output, which clearly tallies with the subjective finding that the inputs sound the same. Most other performance parameters are similarly impressive. The figure quoted for distortion is on the high side, but in reality doesn't point to anything worrying as distortion drops off very rapidly with level. suggesting that in the top few decibels of dynamic range something is getting stressed. Since power amps and loudspeakers are likely to be similarly stretched, what's more important here is that distortion at levels below about -10dB are very good - still not quite state-of-the-art but close to it. Noise is low and digital filtering is better than usual, with less aliasing around 22kHz than is the norm.

HOW IT COMPARES



- 1] Distortion >> +10%
- 2] Jitter >> +30%
- 3] Linearity >> +30%
- 4] Dynamic range >> +40%
- 5] Digital filter >> +30%

Rated	Actual
2,2V	2.1V
0.004%	0.004%
	2.2V

VERDICT	
SOUND ★★★★★	The big presentation really caught our listening panel's attention, but there's more
FEATURES ***	to the sound than that, with good pace and some very impressive detail too. Sound
BUILD *	per pound, it's hard to beat this.
VALUE ★★★★★	HI-FICHOICE OVERALL

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hile all the other DACs in this group use largely conventional tactics and components, turntable specialist

Pro-Ject has adopted an approach beloved of some 'digital retro' enthusiasts, and built a filterless DAC. Now, there's no shame in the company supporting digital formats, for plenty of CD titles have never been released on vinyl. But this move to filterless DAC technology is no 'me too' digital afterthought.

The basic idea is to avoid all digital filtering, which is generally thought imperative to avoid aliasing distortion at ultrasonic frequencies, and instead use multi-bit conversion at the native data rate (no up- or oversampling). The claimed benefit of this is the avoidance of 'time smear' due to the long impulse response time of most digital filters. 'Time smear' is a bit of a nebulous concept and its sonic ills are by no means universally acknowledged. But that doesn't mean the filterless concept is invalid, especially when taken to the extremes Pro-Ject has employed – we can't even see any sign of analogue filtering in the DAC Box FL.

The case is identical to that of the super-tiny preamp and power amp in the 'Box' range, as well as the headphone amp and various other units, though in this case it has an unusual amount of free space inside. Four DAC chips are used, concealed beneath a heatsink and connected electrically in parallel. Other components include a digital input receiver and some power supply components. Some form of switch-mode regulation is used, which can lead to the unit emitting a peculiar whistling noise, only audible from very close by. Inputs are both flavours of S/PDIF, though as usual, only one can be used at a time. There are no indicators for anything, so you just have to listen to see if it's working!

SOUND QUALITY

Not surprisingly, given the design details, this proved to be the most highly characterised DAC in the group and when it's good, it's great. It's at its best when it comes to energetic, lively music making, in which case it's right on the money, full of enthusiasm and very convincing. In fact – and this will probably sell a few units sight unseen - it's so good at that side of things that all our listeners forgot almost completely about the usual hi-fi stuff of balance, detail and so on, and just wrote about how convincing the music-making was. Big scale, wide dynamics, natural sound and suchlike were about the most technical comments to be found. There was just one mention of detail, suggesting it's good, but perhaps not the very best and a couple of mentions of tonal balance, both pointing out that the sound is a little on the bright side though not sufficiently to lapse into harshness.

All of which is very welcome news indeed and in no sense to be sniffed at. On the other hand, there is a danger that the enthusiasm can be a little like that of a puppy – enchanting for a while but a little wearing over time. For obvious practical reasons, our blind listening tests aren't very long, but we felt this DAC could become frustrating in the longer term. It's not so much the brightness, though that is persistently noticeable, but more to do with the lack of fine detail, which makes really analytical listening tricky.

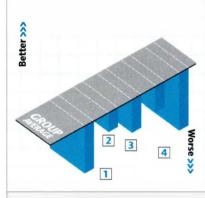
Then again, one doesn't always want to listen analytically. I think in the end, the fairest comment to make on this DAC is that it can open new windows on recordings, but may not be the only DAC you ever want to own. Used with a CD player of more conventional design, it will be a great alternative to the latter's analogue outputs. **HFC**



LAB REPORT

Given the lack of digital filter, it's no surprise that the output contains massive amounts of ultrasonic distortion. The big question, though, is whether this matters in any practical sense. Play a signal at, say 4kHz, and you get a high level of output at 40.1kHz mixed in. But you can't hear 40kHz, and any intermodulation distortion in connected amps and speakers would have to be very severe before any audible effects do arise. What is going to be audible, however, is the very high level of conventional distortion - a little over one per cent at full output and still over 0.1% down to -12dB output. As far as I can see, this is due to the fact the the DAC output has no buffering. It's designed to work into a 'virtual ground', not drive a voltage output, so in this application it produces high distortion of a nature that looks a lot like a singleended valve amp. Could this be why our listeners took to it so warmly? Distortion rules OK!

HOW IT COMPARES



- **1]** Distortion **>> -60%**
- 2] Jitter >> -20%
- 3] Linearity >> -40%
- 4] Dynamic range >> -30%
- 5] Digital filter >> -70%

SPECIFICATIONS	Q (100 m)	
Measurement	Rated	Actual
Maximum output level	1.9V	2.0V
Total harmonic distortion		1.2%
Signal-to-noise ratio		94dB



BRENNAN JB7

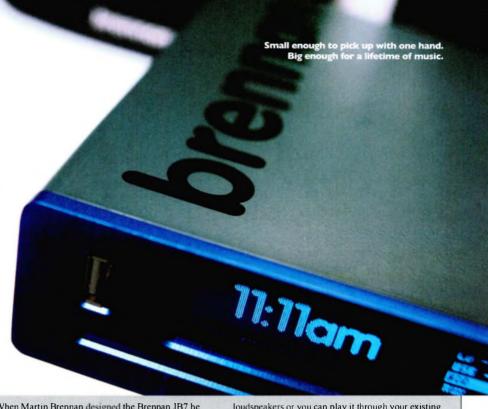
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"Mr Brennan you are a genius. The JB7 is truly a wonderful thing. I have only owned mine for two days but already it feels like an old friend. I admire its simplicity of operation, its range of functions, its unobtrusive size, and the quality of sound simply delights me. It's all I could wish for. Thank you. Kind Regards"



When Martin Brennan designed the Brennan JB7 he threw out the rule book.

The Brennan is a CD player with a hard disk that stores up to 5,000 CDs. It saves space and clutter and delivers near immediate access to an entire music collection. Customers rediscover/fall in love with their music again simply because the Brennan makes it so accessible.

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 rearch facility that

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 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. Cassette 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"



Key Points Three sizes - up to 5000

• One button plays the entire collection at random • Text search finds tracks/ albums/ artists in seconds • Browse albums by spinning the volume knob • Display tracks by name as they play • Load

CDs in about four minutes • 2.6 million album database updated monthly • Seven rainbow colour coded playlists •180 x 32 soft scrolling vacuum fluorescent display • Segue function blends one track into the next • One touch record from vinyl, cassette or radio Loads and plays MP3 from USB • Remote control or front panel • Volume knob pushes to use as a selector • Delete tracks you don't like • Clock with alarm • 60 Watt power amplifier • 4.8 x 16 x 22 cm steel and aluminium construction • Small and tough enough if you are on the move • Used by restaurants, hotels, pubs,

dentists, schools • Sold to more than 30 Countries • Backup music to external USB hard disk for safe keeping • "Superb" -Gramophone • "Best Buy" -HiFi Choice • "Huge fun to use...a great talking point" -Daily Mail • Choice of colours Navy Blue or Gun Metal • Optional matching loudspeakers • Prices from £329

"Huge fun to use... a great talking point"



To get the whole story and order visit www.brennan.co.uk

CONCLUSIONS

A roll of drums please, it's time to give out the Best Buy badges!

e said in the introduction that these DACs are in general more to do with enhancing computer audio than with tweaking up CD. But if one of them stands out as an exception to that, then it's turntable specialist Pro-Ject's DAC Box FL

The point is that performance is both technically and sonically very different from the more run of the mill DAC. And this is due to decisions being taken in the design process that some might regard as bizarre, cussed even, but which produce a sound that proved its worth in the blind listening tests

We also think that the fairest thing that one can say about this DAC, is that it is a godsend for those who find most digital source components bland and mechanical.

The Firestone Spitfire, like the Pro-Ject, lacks a USB input and so is less likely to be used with computer sources. Another problem is that it's not strongly differentiated sonically and doesn't really offer much on the features front - if it, at least, had two or three inputs, it could be used with a selection of kit, including CD, digital radio and a digital recorder. It's good, yes, but its most likely

application, upgrading an aged CD player, is not going to give it a huge market.

Jolida's aptly named Mini DAC does a simple job well. But it's only £5 cheaper than the Musical Fidelity V-DAC, which does the same job better and offers more inputs and full output level In fact, its only disadvantages are its size and the need for a power supply. However, the V-DAC is, in pure performance terms, one of the best-value bits of audio kit around right now.

A little less assured, but more flexible, is the Beresford Caiman. It is a full digital-input 'hub' for a simple system, with a decent headphone output and a volume control making it a replacement for as many as three boxes.

Although it's been around a lot longer than the other DACs featured here, the Cambridge Audio DacMagic still sounds great and offers a near-flawless technical performance. It is also well equipped with inputs and outnuts and has an annearance that is a cut above the others. Selectable filters add some finetuning ability and all-round it remains a true sonic star. HFC

TRY THEM WITH THESE

ONKYO ND-S1 IPOD DOCK £150 Digital iPod dock, which extracts a digital stream and forwards it to a DAC

FUJITSU PI3560 £600

This sturdy powerhouse punches way above its weight and offers great insight

AMPLIFIERS NAD 326BEE £320

An integrated amp that has more confidence and extension than you'd expect

CAMBRIDGE AUDIO AZUR 840A £700 Powerful and sophisticated and highly musical with it.

HINTS AND TIPS

>> Use decent cables for both analogue and digital connections - even USB wires have their own distinctive character >> External power supplies help make these units hum-free, but stray fields from nearby mains transformers in other kit.

and earth loops, can still induce hum

>> If you're using a computer as a sound source, make sure any volume controls are set to maximum as they will otherwise adjust settings digitally increasing distortion. >> Don't try to play high-sampling-rate audio down a USB cable S/PDIE is the only way to go for high-res.

DACS AT A GLANCE



Round-up

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

ust and dirt are powerful and insidious enemies of high-quality LPs. Fortunately, with care they can be effectively dealt with. A quick wipe with a carbon-fibre, velvet, or microfibre cleaner

removes loose dust before playing, but ingrained dirt takes a bit more effort, and this is where a proper record cleaning machine comes in. Don't neglect stylus cleanliness either – it's just as important.

Moth Record Cleaning Machine MkII

TYPE Wet record cleaner

PRICE £450

CONTACT 20 01234 741152 # www.britishaudio.co.uk

here are considerably dearer and fancier record cleaning machines on the market, but this one follows the same basic principles as all of them. You spread a cleaning fluid over the disc then vacuum it off together with all kinds of dirt. There are various reasons why this machine is cheaper than most, and if £450 is too much, you can save a couple of hundred by building it from a kit. One of those reasons is that you have to apply cleaning fluid to the disc manually. This means pouring some from the supplied dropper bottle onto the disc surface and spreading it around with the supplied brush. It's less convenient than simply pushing a plunger but with practice doesn't take much longer, and it has the advantage that experimenting with different fluids is much easier.

VERDICT

A cost-effective way of renovating old vinyl, with ease of changing fluid a bi plus. Noisy operation is the drawback. Recommended.



Dirty fluid is vacuumed off from below as the disc rotates slowly, and this takes about the same time as most machines — a minute or so per side. The vacuum pump, which sounds a lot like a domestic vacuum cleaner (and probably is — heck, that's what I would use!), provokes my one reservation about the machine: it's so noisy, at about 92dB, that one should wear ear defenders while using it. The suction tube needs a little prompting to lift up and stick to the disc's underside, but this soon becomes habit, and results seem to me every bit as good as other machines I've used over the years. With an efficient workflow, 20 discs per hour can be cleaned — about average for most machines. **HFC**



Milty Pixall

TYPE Dry record cleaner

PRICE £18

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

his little device seems to have been around since the ark, so presumably someone is buying it. I've not seen many true audiophiles wielding one, though. Maybe people wonder about whether applying something sticky to the playing surface of a precious record is not such a good idea.

The basic idea is exactly the same as those rollers used to take lint of clothes. The roller is sticky and has enough compliance to get some way into the grooves of an LP so as to pick up loose dust and fluff. After a while the surface loses its 'stick' but you can peel a layer off to reveal a fresh surface underneath. Refills (1.8m, or about 11 or 12 layers) are available for £8. The actual sticky material looks a lot like decorators' masking tape, that's been wound inside-out.

It certainly does lift dust. I found, however, that it doesn't penetrate far enough into the grooves to lift out the finest particles, and for best results one can use the Pixall after a sweep with a carbon-fibre brush (Milty makes one of those too), which does get right into the grooves but tends to leave a visible line of dust particles behind. Running the Pixall over that line a couple of times leaves little or nothing to see.

VERDICT

It may not do the whole job alone, but as an adjunct to a carbon fibre brush this is very useful, lifting loose dust off a disc efficiently.



As for possible damage, I couldn't detect any ill effects. There's certainly no sticky residue, and even with rough handling the roller doesn't scratch the disc. For that to happen, you would probably damage the underside first, or just break the roller handle. **HFC**



Russ Andrews Tip Tonic

TYPE Stylus cleaner

PRICE £11

s you might expect, Russ Andrews offers a wide range of LP maintenance and tweaking accessories, but I was particularly drawn to this one as it performs the same function as an old Audio Technica product (long discontinued), which I treasure and allows wet cleaning of a stylus. Obviously, loose fluff and suchlike can be dislodged easily from a stylus with any soft brush, but discs often have nastier stuff deep in the grooves, which leaves a hard and tenacious residue on the diamond. It may not even be possible to see this with the naked eye, but just the smallest buildup on the stylus will cause imperfect tracking and, all too readily, premature disc wear.

One needs to be careful with wet cleaning, though, as the suspension at the back end of the cantilever may be weakened and/or hardened by use of the wrong chemical solvent, and on such small parts it's likely that capillary action will draw the fluid up from the stylus to the suspension, however carefully one cleans. Tip Tonic is specially formulated for this job and a quick 'nose test' suggests that

it's not an aggressive chemical that's likely to att rubber suspension, but a couple of drops on the supplied nylon brush are highly effective at loosening gunge The brush is just stiff enough for the job and the process takes seconds, but it is well worth the wait. Tip: leave the volume at a normal listening setting for immediate feedback as to whether you're being too rough! **HFC**

PLAYS WITH ONE

APPLICATION

2 FLUID OUNCES

VERDICT Even the most careful record cleaning can't ensure the stylus won't get gunged up It's ideal for stylus cleaning and restoring performance



LAST record preservative

TYPE CD/LP preservative fluid

PRICE £36

CONTACT 201234 741152 @ www.lastfactory.com

his is another veteran of the analogue scene and indeed a personal favourite. The original product from LAST, and now some 30 years old, it has been joined over the years by various interesting treatments intended to improve replay and enhance the life of both CDs and LPs. This preservative, however, is perhaps the most remarkable product in the LAST catalogue. It is a colourless, odourless fluid that is spread on the playing surface of an LP and it is claimed that it makes the disc much more resilient against the damage that can be done by a stylus.

It leaves no residue and is very easy to apply: just half-fill the supplied pipette as instructed, squirt the Preservative on the applicator, and wipe this round the grooved area. The fluid evaporates very fast and LAST's claim that treatment takes only 30 seconds is no exaggeration. I treated half a dozen discs, both sides, and could hardly see how far the level in the bottle had gone down, so we're looking at an impressive pennies per disc treatment cost. But can it work? Chemically, it seems plausible, but the acid test,

VERDICT

If it increases the life expectancy of treasured, discs, it's welcome, and when it's as easy and cheap as this, we recommend it headily



which I applied, is to take two fresh, identical discs, treat one and play the same section of both 30 times. Boring – but illuminating, as the LASTed one was clearly the fresher-sounding of the two at the end. Not only that, but it also seemed a little more precisely detailed even on the first playing. In other words, it does indeed work as claimed. **HFC**Richard Black

Richard Black

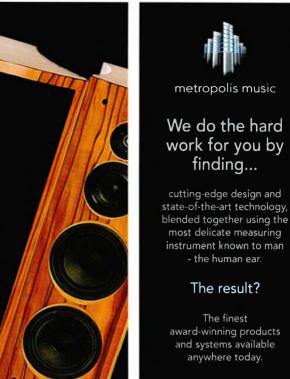
hese four products were not chosen entirely at random: between them, they make up a formidable arsenal of weapons against LP degradation and decay. Add a carbon-fibre brush (which most LP-lovers probably already own), and a supply of fresh inner sleeves, and you've got what it takes to keep your vinyl sounding at its best for

a lifetime. Amid all the uncertainty of changing digital formats, we know that analogue discs have a life of more than a century – I've got 78s behind me, as I write, from 1908, that are still in playable nick. Look after them, and they will still sound as good as new, long after MP3 downloads have been consigned to history!









left ◀ Ayon CD5 middle ◀ Boulder 865 right **4** Ayon Dragon-S

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HI-FI SPECIALISTS



Competition

A pair of Focal 826W LE loudspeaker worth £1,880!

s we discovered in HFC 330, Focal's handsome 826W LE floorstander is a truly enjoyable and engaging performer, which builds on the strengths of its standard sibling thanks to the inclusion of Focal's W high-tech cones in the midrange and bass drivers. Made up of glass-fibre skins with a sandwiched foam filling, these cones are both light and rigid, endowing the speaker with real panache when it comes to scale and dynamics. Thanks to the bullet-proof build and cutting-edge technology of the 826W LE, including Focal's signature inverted-dome tweeter, it's able to dig out bags of detail from recordings without ever sounding harsh or fatiguing.

If you'd like a chance to boost the sound of your system with these very desirable speakers, all you have to do is answer the following question:

What material makes up the middle of Focal's W cones?

A: Ice cream B: Spam C: Foam

HOW TO ENTER

For your chance to win a pair of Focal 826W LE speakers, text Focal to 87474 or visit www.futurecomps.co.uk/focal and follow the instructions, leaving your selected answer and details where prompted.

Terms and conditions

To enter the focal competition, you can either (a) test your answer to 874/3 at any time between 4. March 2010 and 30 March 2010, or (b) enter entire at www.futurecompts.co.uk/focal with your entry being received between 4. March 2010 and 30 March 2010. By sending your entry you agree to their competition rules and you confirm you are happy to receive details of future offers and promotions from future Polishing lumited and carefully selected thing parties. If you do not want to receive minimation relating to future offers and promotions please include the word STOP at the end of your best message or all the end of your best entre and at 50 Only sevent sandful message trafficate.

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Entries must be submitted by an inclinidual (not via any agency or similar) and, unless otherwise stated, are limited to one per household. The Company reserve the right in its sole discretion to substitute any prize with cash or a prize of comparable value. Unless otherwise stated, the Competition is open to all GB reside.

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Leema Acoustics

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MJ Acoustics **Monitor Audio**

Mordaunt Short Musical Fidelity

Niles Nordost

Omnimount Optimum

Opus Ortofon

Partington Polk Audio

Primare

Proficient Audio

Pro-ject Projecta **PSB**

PYLE Q Acoustics Rako

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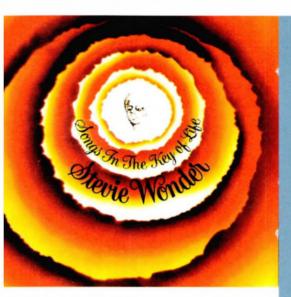




Choice Cuts

New music reviewed and rated by our experts

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



STEVIE WONDER Songs In The Key Of Life Motown

"'Stevie knew he had Motown over a barrel and negotiated a new deal with the company for 13 million dollars over seven years."

Words by Dave Oliver

Classic Album

Remembering the legendary songwriter Stevie Wonder, with a remastering of one of his most iconic albums

Stevie Wender first made clear his intentions to go beyond the Motown hits template with 1971's *Music Of My Mind*, which included unifying themes and a distinctive new synth-influenced sound to create a bona fide album, rather than a collection of singles.

His subsequent wellspring of creative activity led to the 'classic' period of Talking Book, Innervisions, Fulfillingness' First Finale, and culminated in 1976's Songs In The Key Of Life. By this time, Stevie was on such a roll that even a double album wasn't enough to contain his vision – the original vinyl version came with an additional 7in, 33rpm EP shoved into the cover

Despite Motown founder Berry Gordy's early misgivings about Stevie's direction, he couldn't argue with the phenomenal sales he'd been achieving in the early years of the decade. Stevie knew he had Motown over a barrel and negotiated a new deal with the company for 13 million dollars over seven years, which at the time turned out to be the most expensive in history. With it he got full emative control—and made sure he took it to the max.

By the early seventies, Stevie had released six albums in a little over three years, but it would be another 26 months before he released Songs. The time wasn't spent idly, however. His inability to see night or day has been cited as a factor in his peculiar work ethic, which might see him working in the studio for 48 hours on the trot, neither eating nor sleeping, while the muse was upon him. Or calling musicians in the middle of the night to attend a session when he was inspired. "If my flow is goin', I keep on until I peak," he said.

Throwing in everything he'd learned in his early days with the musicians of Motown's legendary Snakepit and latterly with the possibilities opened up by the synthesisers and production techniques of Robert Margouleff and Malcolm Cecil

To say the album was much anticipated is an understatement. When it finally appeared it

roared straight in at Number One on the US chart and stayed there for 14 weeks, despite critical misgivings that it was sprawling and self-indulgent.

It helps that there are hits on board, of course – the funky paean to a troubled childhood I Wish duelled with the deceptively simple pop ballad Isn't She Lovely and the boogie-woogie brass fanfares of Sir Duke contrasted with the gospel-inspired epic As.

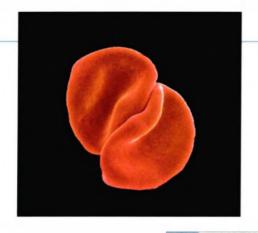
Surprisingly, the now-familiar Isn't She Lovely wasn't actually released as a single, since Stevie reckoned that editing down the six minute plus ode to his new-born daughter would compromise it too much. But that didn't stop it becoming one of his best-known tunes.

Roughly speaking, the album's split in two. On one hand, you get consciousness-raising fare like funky history lesson *Black Man, Village Chetto Land's* with its mock Baroque synthesiser backing. On the other, you find the inner city blues and Eastern cadences of *Pastime Paradise* (later borrowed by Coolio to create a monster hit with *Gangsta's Paradise*), and personal love ballads like *Knocks Me Off My Feet* or *Joy Inside My Tears*. The division isn't marked, however, and the two intermingle throughout the album.

mish-mash on paper. But Stevie brings it al together in the grooves so that it slips and slides, whooshes and dives like the best weekend-long party you've every been to.

But Songs proved to be the last great flowering of Stevie's genius. Later, things got a bit weird with the conceptual soundtrack Journey Through The Secret Life Of Plants and then stalled altogether as Stevie entered his long twilight of sentimental schmaltz in the eighties and from which he's yet really to emerge. HFC

ChoiceCuts



PETER GABRIEL

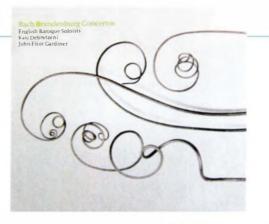
Scratch My Back

Virgin

www.virgin.com/music

Music: It's unclear why such a singular artist as Gabriel should make a covers album – but you have to be rather glad that he has. The X-Factor this is not, as radical surgery is conducted on songs by Lou Reed, Neil Young, David Bowie, and Paul Simon. But it's not all about the bus pass generation, as he sternly tackles material by a younger crowd including Bon Iver, Arcade Fire, Radiohead and, intriguingly, Elbow, whose singer Guy Garvey has been consistently likened to Genesis-era Gabriel.

Sound: With no guitars and no drums, the virtual banishment of rhythm is austere, but in a strange way oddly satisfying, like Beethoven's late string quartets in which everything extraneous is ruthlessly cut away. NW



BACH BRANDENBERG CONCERTOS 1-6



English Baroque Soloists

SDG Records

www.berkey.com

Music: The Bach Brandenberg concertos are an extraordinary set of compositions for their variety and their rhythmic dance like quality. John Elliot Gardiner conducts one and two, which have the kind of structural complexity where a conductor can add something useful. Otherwise, he limits himself to ensuring the works are performed in a way that chimes with his conception of the music.

Sound: There are many fine recordings of the Brandenbergs, but this one stands out for its extraordinary performances. The playing is also vividly alive, its brisk tempi giving it an almost rock and roll flavour, while the overall sound is nothing less than exquisite. Highly recommended. **AG**



DURUTTI COLUMN

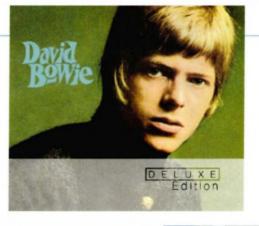


A Paean To Wilson

Kooky Disc

www.kookydisc.co.uk

Music: For his tribute to Factory Records' founder Tony Wilson, Manchester's leading post-punk guitar stylist Vini Reilly aka the Durutti Column, ropes in old mates from Simply Red, John Metcalfe and Tim Kellet, to open up the sound of his overdubbed guitar sonics. Wilson always hated Vini's singing, so the only voices on this largely instrumental suite, much of it based on previous works, are snatches of Wilson speaking and a sample of Marvin Gaye, where Reilly accompanies one of the greatest singers of the 20th Century. Sound: Produced by Keir Stewart and using Canadian ambisonic plug-ins to expand the sound, the richness of detail and coloration of sound make this a tour-de-force for the hi-fi buff! MP



DAVID BOWIE



David Bowie Deluxe Edition

Decca Universal

www.deccalabelgroup.com

Music: The future Dame's 1967 debut has long been written off as throwaway, with the man himself suggesting he "didn't know if I was Max Miller or Elvis Presley". But this spruced up and augmented edition reveals that, though certainly 'of its time', there are some beautifully realised arrangements and oodles of distinctly non-Top 40 lyrics about paedophilia, the absurdity of Swinging London, and murder, all delivered in Bromley Dave's best Anthony Newley 'Cockney' accent.

Sound: Yes, *The Laughing Gnome*'s on it, but so is much more, with future Elton John engineer Gus Dudgeon's impeccably crisp stereo mixes augmented by robustly compact mono versions. *DO*



HIROMI

Place To Be

Telarc

www.telarc.com

Music: Hiromi Uehara has partnered with jazz fusion colossi like Stanley Clarke and Chick Corea, but for her sixth album she forsakes a band and allows her fingers to roam, generally with lightning speed and precision, across her piano keyboard in a series of original tunes and covers inspired by her travels. Opener BQE (Brooklyn Queens Expressway) offers a good introduction to Hiromi's styles with the Philip Glass-style arpeggios

and keys simulating the hubbub of the Big Apple before suddenly giving way to a beautiful, soaring melody that looks to the Manhattan skyline. **Sound:** With solo piano recordings, production is sparse, but her Yamaha Concert Grand has a warm and inviting

tone that commands attention. DO





MASSIVE ATTACK

Heligoland

Virgin

www.virgin.com/music

Music: Heligoland is not quite the return to form fans might have wished for from the trip-hop titans. It's too inconsistent and wanders aimlessly in search of a tune for disconcertingly long periods. But its best moments are sublime. As ever, they rely upon pinning down an elusive melody and matching the right guest vocalist to realise its woozy soul. Guy Garvey on Flat Of The Blade,

Hope Sandoval on *Paradise Circus* and, best of all, Damon Albarn on *Saturday Come Slow*, all nail just such classic Massive Attack moments.

Sound: Over-familiarity means the darkly brooding electronics and off-kilter beats are beginning to lose their original, edgy power to disturb but it's still an impeccable, multi-layered production. **NW**





JASON MENDELLI

Everlasting

Street Lotus Records

www.jasonmendelli.com

Music: London native Jason Mendelli's brand of soul searching deserves to be more widely heard and for his debut album he draws on a startlingly broad range of influences including streetwise funk, down and dirty rock boogie and alt country twangs crossed with soul harmonies, as well as stripped down acoustic ballads, all of them brimming with hummable tunes. Standout *Poorboy* is an acoustic guitar-driven love lament lent a poignant depth by Mendelli's rich, sonorous voice.

Sound: The rock songs sound full and powerful; the acoustic numbers naked and nuanced – it may not be a hi-fi recording as such, but it pushes all the right buttons. **DO**



BRITTEN'S ORCHESTRA

Music Sound

Michael Stern (cond), Kansas City Symphony

Reference Recordings (HDCD)

www.referencerecordings.com

Music: This version of the *Guide To The Orchestra* doesn't have a narrator and as a result it flows better and makes more musical sense. The *Sinfonia da Requiem*, arguably Brittens finest orchestral score, is dark and forbidding while the *Interludes* and *Passacaglia* from *Peter Grimes* are quite simply a masterpiece of expressive orchestration, which helped cement Britten's reputation as a composer. **Sound:** Conducted by Isaac Stern's son Michael, this very carefully engineered recording is of superb quality and sounds almost as good as a Red Book CD when played through an HDCD decoder. The sound has an unusual sweetness by CD standards and is surprisingly 'English' in balance. *AG*

Choice Cuts



THE TEMPTATIONS

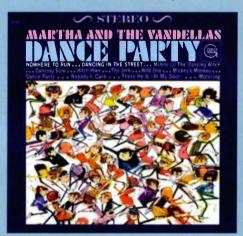


Cloud Nine

Gordy/Speakers Corner 180g www.speakerscorner.de

Music With 1969's Cloud Nine, producer Norman Whitfield took The Temptations from being a pop band with great harmonies into the new world of funk. The key tracks are the title number and Runaway Child, Running Wild, which borders on the psychedelic with a level of intensity that must have shocked the band's fanbase at the time. Worth it for Side One alone.

Sound: The recording is of its time and thus not too open or dynamic, but it has sufficient energy to deliver the power of funk to electrifying effect. JK



MARTHA AND THE VANDELLAS



Dance Party

Gordy/Speakers Corner 180g

www.speakerscorner.de

Music Opening with the powerpop classic Dancing In The Street, Dance Party is pounding stuff with the band's hit Nowhere To Run alongside superb covers of Motown hits like Hitch Hike and Mickey's Monkey. Martha Reeves had a killer voice and this combined with the irresistible beats of a solid house band makes for party fuel that should still fill the floor.

de This is hardly sophisticated, but there's something in the tape compressed bass lines and crashing tambourines that Mark Ronson would kill for. JK

HIGH-OUALITY AUDIO

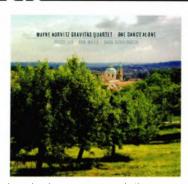
WAYNE HORVITZ GRAVITAS QUARTET

One Dance Alone

SACD (stereo/multichannel hybrid disc) Songlines

www.songlines.com

Music: Avant jazz pianist Wayne Horvitz likes a bit of variety and his latest outing finds him accompanied by cello, trumpet, bassoon and no obvious agenda. They make some interesting sounds that at times veer close to



Villiam Cart

the world of Stockhausen and atonality, but at others develop an unexpected vibe that's rarely encountered. About a third of the 11 pieces could be categorised as difficult or interesting depending on taste, while nothing is predictable. **Sound:** Songlines brings out the colour of these instruments well, which makes all the difference to the often sparse arrangements. The imaging is natural and the dynamics seemingly unconstricted with little in the way of effects. Clean but not clinical. JK



FERNANDO SOR

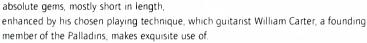
Early Works

William Carter (baroque guitar)

SACD (stereo/multichannel hybrid disc)

www.linnrecords.com

Music: The 19th century Spanish composer Sor, when he is remembered at all, is mainly known for his flamenco-inspired pieces, though he also wrote ballets and vocal music. These early works include a number of



Sound: The performances use a technique involving playing with the tips of the fingers rather than the nails. The result is a sound which is both warm and communicative, and the Linn recording brings out the best in the music in a very expressive way. AG



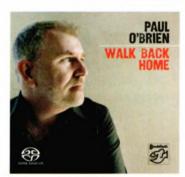
PAUL O'BRIEN

Walk Back Home

SACD (stereo/multichannel hybrid disc) Stockfisch

www.stockfisch-records.de

Music: Born in England, but raised Irish Catholic, singer-songwriter Paul O'Brien played pubs and clubs on the Irish traditional scene for pennies in his homeland, but a move to the wide open spaces of Canada's Pacific Northwest inspired him to create his own quitar-led blend of folk, country, and jazz. His



third album contains a selection of expertly crafted and thoughtful songs that showcase his sparkling fretwork and the mellifluous tones of his rich tenor voice. Sound: The production by Stockfisch founder Günter Pauler is impeccably clean and nuanced, delivering a beautifully clear and open sound that explores every zing of the strings on O'Brien's quitar. DO





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Cyrus CD Xt SE+ | DAC X+

rus' award-winning CD Xt SE and DAC X have been ograded with a + suffix. The transport now features an additional transformer, said to make it equivalent to adding a PSX-R power supply, while the DAC has a dedicated power supply for the re-clocking system

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 ore-amplifier with a newly revised power ampli and contains an onboard DAC for digital sources.

The Servo Evolution CD players, along with the 6XP and 8XP d amplifiers, continue to receive awards including the coveted What Hi-Fi? 'Product of the Year' for the CD6 SE and 6XP.



Michell Gyro SE TURNTABLE

Basedentirely 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 Gyro Dec by



his MKIII version 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 Standard Black with White, Piano Black and Red finish options available at



Marantz

CD6003 CD PLAYER

Replacing the highly-regarded 6002 stage and two sets of speaker terminals



Arcam FM I

Combining sleek design, flexible connectivity and a level of reproduction far beyond that of budget separates systems. Arcam's FMJ range includes two CD players, three integrated amplifiers, monobloc and stereo power amplifiers olus a DAB/FM/AM tuner. A range of home cinema components is also available

Available in silver or black.

FICHOIC

PM6003 AMPLIFIER

series, the new 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 performace from devices such as an iPod or MP3 player while the amplifier has five linelevel inputs along with a MM phono for ease of bi-wiring.



Leema

Antila II Tucana II AMPLIFIER

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

The dual mono designed Tucana Il uses three heavy-duty toroidal power transformers, has a refined bi-polar output stage and is capable of swinging over forty five amps of current, ensuring a vice like grip and precise control of the speakers

Roksan Kandy K2 CD PLAYER | AMPLIFIER | SPEAKERS

The K2 amolifier sounds more accurate, more delicate and even more powerful than its award-winning predecessor, the Kandy Lill. The matching CD player is an impressive performer and is the ideal partner.

The K2 speakers feature a custom designed woofer and ribbor tweeter. These are housed in solidly built piano lacquered cabinets for outstanding







Monitor Audio

Platinum

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Spendor A-Line

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KEF Reference

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The first Reference speaker was launched in 1973 to worldwide acclaim. Several generations later the range benchmark for high-end audio and is legendary for



B&W CM Series

The CM Series from Rowers & Wilkins has long been a favourite among its discerning customers of high performance and exquisite styling at a very



Rotel 06 SE Series

Rotel has launched Special Edition versions of its 06 Series. The four new components include updated versions of the classic CD player and three stereo amplifiers.

All have undergone significant upgrades over the models they replace, and offer even better value for money in terms of audio ability, as well as maintaining Rotel's excellent reputation for build quality





Wharfedale Diamond 10.1

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the right

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HOME CINEMA



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Sony BDP-SS000ES

The BDP-S5000ES is a cinephile-grade machine with full Profile 20 support, internal decoding and bitstreaming of CTS-HD and Dolby TrueHD.





Panasonic DMP-BD80

The 'BD80 from Panasonic blends comprehensive features with top-drawer picture and sound quality



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AWARDS 200

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ANY AMPLIFIE

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Less is more

I'm finding that the older I get, the more I appreciate silence. So many shops have background music, so many people use MP3 players (I don't), so many drivers have the radio on – maybe I'm getting noise fatigue! I've never been fond of listening to music in the kitchen or bathroom, or out and about – I want to be able to concentrate on what I'm playing enough to enjoy it. 'Wallpaper' music annoys me in about ten seconds flat! That doesn't mean I'm spending less time in my listening room though, as it's one of the few places where I can give my favourite recordings my undivided attention.

I do wonder what the future of buying and listening to music holds, when so many people just plug in their iPod as a distraction from their dull jobs stuck in front of a computer, or pointlessly plodding on a gym treadmill.

David Lasseter, Dorset

HFC We can sympathise with your plight, David. Now that music is almost ubiquitous, it rams home the message of how much of it in the public domain is lowest-commondenominator quality (and how poor most PA systems are). The airwaves are not much better; the bulk of commercial radio stations, at least in the UK, grinding



repetitively through the same, short playlist all day long.

We suspect this is one of those matters where personal taste is also a major factor. A quick straw poll around the *HFC* office revealed that some of us would prefer to be in a world without iPods, or music while we work, others not.

It goes without saying that this is hardly a modern phenomenon, as the transistor radio was all over the sixties (like a rash), although music in shops seems to be commoner now than in years past. Don't underestimate the joy of earplugs though; the ability to turn down the volume, wherever you are, is frankly wonderful!

Battery farming

A friend of mine is a bit of a DIY hi-fi nutter and has been banging on about battery power supplies for quite a while now. He's finally got round to putting his money where his mouth is and modified his NAD C162 preamp to run off a battery power supply, which I have to say, does sound a lot better.

There are hardly any battery-powered components as far as I can see, so am I going to be holding my breath for a long time before I take my system off the mains, or is this route just too expensive for most components?

Chodhopper via email

HFC As you've probably noticed from your friend's solder-happy work, battery PSUs tend neither to be small nor inconspicuous, and certainly aren't synonymous with power amps other than very low-power variants.

We have fond memories of a two-box battery amp built by Final of Japan, at the heart of which was a chip power amp (à la 47 Labs) running from a box full of non-

LETTER OF THE MONTH

Skewed view

My new MC has finally arrived and I've noticed that the cantilever is offset slightly to the left as I look at the cartridge from the front. Is this normal, as I don't remember any of my previous cartridges looking like this? If this is the correct position for the cantilever, is it set this way so the tip sits correctly in the grove when anti-skating is applied?

copellarz via email

HFC Unfortunately, cantilevers which aren't aligned along the centre-line of the cartridge are the result of either a

manufacturing error, or perhaps a fairly hard knock from a previous owner in the case of used examples. You should return the cartridge and ask for a replacement, as you won't be getting the best from a wonky example. Remember that the spiral groove of a record exerts a pull on the tip towards the centre of the record. This pull is counteracted by the antiskating force, leaving the tip to sit correctly aligned in the groove. A misaligned cantilever will result in a set of coils (or a magnet in the case of MMs) being out of position in the generator, which will degrade performance.





rechargeable zinc-carbon batteries. Although it didn't have much grunt (and replacing the batteries regularly wasn't cheap), it had a wonderful transparency and tunefulness, particularly with high-sensitivity speakers.

Preamps have been designed, which run for a reasonable period from a small pack of nickel-cadmium, nickel-metal hydride (Ni-MH), or sealed lead-acid rechargeables – an affordable example being the Technics SU-C1000 Mk2 mentioned in this month's *Ask Us* section. The problem is, batteries are relatively expensive, need a mains power supply for recharging, and require replacement after a number of years, as their ability to hold a charge fades.

Current Ni-MH technology has quite good power densities, but if you fancy extended listening sessions, lead-acid is the best choice, but comes with a hefty price tag for deep-cycle types that are designed to handle repeated charge/discharge cycles, (which car batteries are not). Lead-acids are actually quite noisy as well, because of the battery chemistry, so benefit from low-noise regulation downstream.

Batteries do have their advantages, but optimising their use in a hi-fi component isn't necessarily cheap or simple. Until the technology moves on, power amps like Red Wine Audio's 70.2 Signature monoblocs are likely to remain a rare sight for audiophiles.

Boxing clever

I'm thinking of entering the world of PC audio, but haven't been gobsmacked by a lot of what I've heard given how much some of it has cost to put together. I suppose my project is made easier by the fact that I'm only after music replay, not video.

I'm happy to shell out for a cheap DAC if need be, as I have an old PC with Windows 2000 on it, that I'd like to resuscitate for the job. What else am I likely to need to do to get some music out of this old box, including amp and speakers?

prappockZ via email

HFC Computers can be a minefield at the best of times, so we can offer you some pointers. You might still need to spend some time on the web to iron out any other problems, though.

With any luck, your PC will have USB 2.0 ports and a processor fast enough to handle Windows XP, even if it isn't lightning fast by modern standards. Give it 1GB of RAM and a new soundcard, install XP on it, and with any luck, you've got your basic front-end sorted. USB 2.0 is handy for use with external hard drives, if that's where you'll be storing your music. Otherwise, you could use an internal IDE hard drive (assuming there are no motherboard restrictions on capacity).

Have a look at our DAC Ultimate Group Test on page 66, for a number of very affordable converters, if you'd prefer to boost the sound quality. Couple said DAC to a well-engineered integrated, like Cambridge Audio's Azur 340A SE, add a pair of Q Acoustics' 1020i standmounters



and voilà, you have your first budget PC system. Good luck with your first foray into the world of PC hi-fi!

Dead ringer

I've seen auctions online for outer rings which fit around the edge of an LP. What is the benefit supposed to be and can they be used on any deck?

My second question is, why do they cost as much as they do? They seem pretty pricey for what they are.

dangermaus via email



HFC Peripheral rings have been advocated by a number of companies, including Kenwood in its venerable L-O7D direct drive. Record clamps can be designed to work with dished platters to press an LP firmly onto the platter, but there's some truly rogue vinyl, which is too warped to co-operate with many clamps. In this case, a peripheral ring can be a major boon.

Some listeners believe a ring helps to 'sink' vibration within the vinyl into the platter, thus lowering noise. How effective it might be in this respect is open to question, but one clear improvement comes in the platter's moment of inertia aka the flywheel effect. A ring extends this moment, usually to the benefit of speed stability, though some direct drives have time-constants in their motor control feedback loops, which might not appreciate the extra mass. This is why the L-O7D had a switchable time constant to accommodate the DS-20 ring.

Peripheral rings can be time-consuming to manufacture, as ensuring concentricity is tricky, especially if the ring is made up

of two parts (top and side) bonded together. If the ring is machined, a lathe large enough to take the original material is also required. Although good and reliable, used lathes can be bought relatively cheaply if you're a keen hobbyist, along with having access to a three-phase power supply and a very solid foundation to take the weight.

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



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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,



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 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 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.

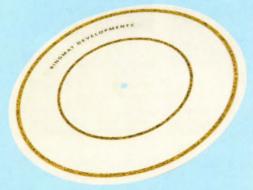
Welcome, mat

I'm a tweaker by nature and have dabbled with mains leads, spikes and cones of various flavours. I'm now thinking about tackling turntable mats, to see if I can squeeze the last ounce of performance out of my Roksan Radius Acrylic deck. Can you advise me on which ones work the best?

diamondgeezer via email

HFC So many mats, so little time, might be one response, but the Radius' suspension prevents the use of heavier copper, steel or ceramic mats. Acrylic is inherently less prone to ringing than metal or glass, so you should probably aim for items like Funk Firm's Achromat, or one of the Ringmat range. We've tested these on a number of decks and generally had positive results in most areas. Bear in mind, however, that your mileage may vary, as they say on the web.

If you want to start off with something very affordable, consider Pro-Ject's Cork Mat (HFC 323). There are more exotic materials as well (including carbon fibre) from a number of small firms which can be found on a well-known auction site.



Ask*Us*

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

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Vintage virtues

Your series of articles on classic Japanese equipment got me thinking about sampling an amp from this era. I'd always been a bit wary of used equipment, particularly when it's 20 or 30 years old, but given the apparent quality of the better designs, I thought I'd finally stick my neck out and make the investment.

After weeks spent surfing the net on vintage forums, as well as many visits to online auction sites, I ended up with a faulty Kenwood L-01A integrated. The decision to buy a non-working amp was deliberate, as I knew it would really need an overhaul to get it sounding its best. And because it wasn't working, the price was a lot lower than for an L-01A in good condition.

For a total outlay of £300, I now have an amp which, frankly, has blown me away with its sound quality. Those large reservoir capacitors and that hernia-inducing outboard power supply add up to an awful lot of grip and punch, but the amp still digs up loads of detail in a very three-dimensional soundstage. As I bought the amp to build a system around it and as you guys seem to be familiar with these amps, could you please give me some recommendations for a vintage turntable and, perhaps, vintage speakers to match?

gdavis via email

HFC The L-01A is a fine amplifier, with a well-engineered power supply, typical of high-end Kenwoods from the seventies and eighties. It has plenty of current on tap through the output stage, so you can partner it with almost any speakers you like, though a pair of full-range ribbons in a barn might be asking a bit much of it.



Loudspeakers are a tricky area as far as vintage goes, as loudspeaker technology has generally moved on quite a way since the Kenwood's time. Bear in mind that the surrounds on many older drivers, whether foam or rubber, are likely to be in pretty bad shape, while tracking down replacements, or finding somewhere to carry out the repair, can be difficult or impossible.

We would actually recommend you plump for some modern loudspeakers. One pair which springs to mind, though quite rare, is the Apogees ribbon monitor. These can be had for around £400-£500 (if they're in good condition) and they would match the Kenwood beautifully with their ribbon tweeter and heavy-duty mid/bass unit. In fact, it produces a very transparent, controlled, but revealing and musical sound. Otherwise, if you have the space, a pair of Magneplanar's small SMGa/b/c panels can also sound great, if you don't mind light bass and a slightly muted top end.

The LO1A has an excellent phono stage, which gives you a broad range of options when it comes to turntables. Of course, Kenwood itself made some very impressive players, including some of its 'faux marble' models with limestone aggregate plinths. As with the amp, be prepared to shell out for an overhaul, though at least Kenwood's bearings tend to last very well. The KD-600/650 is a good performer, even with the original arm, and later models are better still.

Denon's direct drives often feature the company's own speed regulation system, where a magnetised strip around the inside of the platter's periphery is read by a cassette head on the plinth to maintain speed. Unfortunately, this strip is delicate and if it becomes damaged, or somehow demagnetised, the platter will need replacing.

Technics is another name to conjure with, and we have a soft spot for the SL-7, 10 and 15 linear trackers, though many of the full-size decks are very accomplished too. Technics has also made some superb cartridges, though the same caveat applies here as well as to speakers: cartridges don't age well.

Fatman fanboy

I have a Fatman 182 valve integrated and am looking for a pair of small loudspeakers to get the most from it, as my current Acoustic Energy speakers don't really gel with it. They're too forward and the amp doesn't seem to have enough control over the sound. Something which looks as well as sounds good would be appreciated too, at a price up to about £1,000.

gofergofer via email

HFC Working in your favour is the fact that the Fatman, although it's a single-ended, is rated at 18 watts per channel. This gives you some room for manoeuvre, as long as the loudspeaker in question is an undemanding load. A couple of fine standmounts which fit the bill are the Tannoy DC6 (88dB) and the PMC DB1i. The latter presents an easy load, albeit with a sensitivity of 86dB.



Looking for longevity

Each month I read *Hi-Fi Choice* with great interest. You are doing a great job, thanks. So I have decided to seek your assistance in building up a system that will last for a few years before requiring an upgrade.

At the moment, I use a Marantz 6000 OSE CD player, an Accuphase E-211 integrated amplifier, and Revel Performa F32 loudspeakers (recently bought in December 2009). I have van den Hul interconnects, Kimber Kable 8TC speaker cables (with WBT connectors) and Furutech power cords with Neotech plugs.

I would like to replace the Marantz and Accuphase and am willing to allocate up to 10,000 Euros to do this. If it's necessary to replace other components as well, please let me know. In general, I listen to jazz, blues and classical music.

Flavius Muntean, Arad, Romania

HFC It's a shame that the E-211 can't be easily used as a one-box pre and power

amp. If it could, we'd strongly suggest you consider bi-amping as part of your upgrade. That way, you could continue to enjoy the sound of the Accuphase, while gaining all the considerable benefits of bi-amping. As it is, you're left with little choice other than to sell the Accuphase (which is a very solid, reliable item with strong resale value) and invest in a high-end integrated, or a pre/power combo.

We're assuming that your budget includes any money raised from the sale of the Accuphase. In that case, depending on ever-fluctuating exchange rates and the local availability of brands, you should probably start by considering integrateds, like the ATC SIA 2-150 and Plinius 9100. The latter's occasionally over-emphasised bottom-end will neatly off-set the Revel's slightly lean bass.

If Romanian pricing permits, AMR's AM-77 is a very capable component and, of course, there are some impressive pre/power combos like Marantz's SC-11S1 and SM-11S1,

as well as Bryston's virtually bomb-proof BP26 pre and 2B SST2.

There's also a wide range of CD players within your price bracket, all of which will predictably offer very large improvements in sound quality over the much more budget Marantz you have at the moment. We'd suggest your shortlist include Esoteric's X-O5 CD/SACD player, for its very detailed, revealing and musical presentation, or Marantz's beguiling SA-7S1. Leema's Antilla II is another goodie and more affordable, while Marantz's SA-11S2 would naturally provide a perfect partner if its amplification wows you.

Major organ surgery

I'm currently using a Denon DCD-435 CD player, wired to a Rotel RC-1070 preamp. Generally speaking, results have been acceptable. More recently, however, I have become interested in organ music and this is where I have come unstuck.

The input impedance of my Rotel preamp is 24k ohms, but Denon does not declare the correct loading for the CD player. The combination cannot cope with the organ's low notes, which sound ragged, suggesting there may be a mismatch.



I know my class A amp is OK, as are my speakers, because an organ CD played on radio is reproduced flawlessly, but when I dash out and buy the same CD and put it on my machine, the results are hopeless down the bottom end. I deduce, therefore, it must be either the CD player, or a mismatch between the CD player and my Rotel preamp. My local hi-fi vendor suggests I buy a Rotel RCD-06SE player. Your advice would be valued.

John Plowman via email

HFC It's unlikely there's an impedance mismatch between player and pre, as this sort of problem only usually occurs when a valve preamp with a high-output impedance is mated to a solid-state power amp with a relatively low input impedance.

The two main causes of your system losing its way with organ CDs are probably due to the very budget nature of the Denon (it cost only £130 in 2000), as well as the fact that it's almost ten years old. Budget components rarely improve with the passing of the



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years. While the Rotel is one worthy replacement, you might also want to consider Yamaha's CD-A700, which has a more even tonal balance overall.

Enter the digital domain

I have never owned a CD player, as my system is headed by a Pink Triangle Export turntable and TEAC reel-to-reel tape deck to play my extensive collection of LPs and quarter-inch recordings. In addition, I have a NAD 402 tuner, which I'm very fond of, despite the fact that there are very few stations worth listening to these days.

I've been put off all things computerised as I just don't seem to have any natural affinity for PCs, but I've reached the point where I'd like to add a PC-based source to my system, so I can finally join the digital age. The internet appears to offer access to a lot of rare recordings I'd love to hear and there are even some interesting tracks on CD.

As my pre-amp, a battery-powered Technics SU-C1000 Mk2 is getting on a bit now, I was thinking of trying either a preamp with onboard DAC, or a separate pre and DAC. Which would you recommend for a budget of £1,500?

mokkobondo via email

HFC Finding a truly fully featured preamp which has both phono stage and DAC on board is a tricky task. We think you'd be better off dividing to conquer. Since analogue looks as if it will remain your primary musical source, you'd be best off concentrating the bulk of your budget on either individual separates, or a pre like the Cyrus XP d, allied to an external phono stage.

If you buy the Cyrus, you should have sufficient change left for an equaliser like Lehmann's Black Cube Statement, the budget version of its acclaimed BC range. And if you're happy with three boxes instead of two, how about Naim's NAC 152 XS line-level pre, joined by the Lehmann again and an iBasso D10 Cobra – which would add not only a DAC, but a headphone stage too?

Heard but not seen

Our family is moving into a new house this summer and part of the reason that we settled on the place is because the living room is of a reasonable size. On the other hand, it still looks like we are going to need to install shelf or wall-mounted speakers, and place the electronics equipment on a suitable rack positioned in the fireplace.

I saw your review of the Magneplanar MG1.6 and Revolver Screen 3 in *HFC* 329 and was wondering if there was any way the Magneplanar could be wall-mounted like the Revolver. If not, what are my other choices?

goatboy via email

HFC Unfortunately, the Magneplanar can't be mounted against a wall, as its rear radiation is at the same sound pressure level as its forward output. The only other way to do it, and this is obviously not for the faint-hearted, is to fit the



Maggies actually into the wall, so their backs are firing into the room behind them. This would eliminate the bass cancellation which occurs in all dipole loudspeakers, filling out the bottom end. You'd have to be very sure you were going to stick with your chosen loudspeakers though.

Paul Messenger was very taken by the Revolver, as it manages a tough brief very well – producing a clean, clear sound from a cabinet of very limited depth. On the other hand, if you don't mind small monitors on wall brackets, ATC's active SCM16A (HFC 300) is not only petite, but an outstanding all-round performer. The fact that active operation obviates the need for a power amp and a run of bulky speaker cable, is another bonus, though you'll still need some fairly long interconnects.

'Fortune favours the brave'

140kg speaker cabinets? Pah, you're a lightweight; you can't get proper bass out of enclosures the size of an industrial chest freezer! A sensitivity of only 96dB? Good grief, you'll need at least an iPod to drive those directly. You mean you can't actually stand upright in the mouth of the bass horn!? If it's size that matters, you simply can't beat a system built around horns unrestricted by the typical set of social and architectural mores. This approach requires the audiophile to go one step beyond, hire some openminded local builders and go all the way in order to produce a room which should fit the system, rather than vice versa.

For some passionate listeners, this might mean a room with floor and ceiling made from concrete. This material is chosen to eliminate the resonances of wooden boards and the cavities they hide. A select band, in countries such as Germany, Italy and Japan, has decided to make speakers and room one, with bass horns variously built into walls, ceiling or floor. Johan Dryer's listening room, for example, is shown below.

The sensitivities of such systems are often over 100dB, and they can be driven, albeit raucously, by the headphone output of a Walkman, if you're feeling masochistic. In this sort of rarified atmosphere, even the smallest valve amp can thrive, especially if the drivers are working in an active set-up, and the line-level signal is shared out amongst them through an all-valve crossover that is built with audio-grade components.

Horns can sound wonderful, but to achieve the sort of even in-band response of which they're capable, they need to be large, and preferably unfolded. Because of the mouth area necessary for the reproduction of low frequencies, bass horns with genuine downward extension are invariably very large indeed.

The rewards for constructing such an imposing loudspeaker are considerable, assuming the drive units are of the highest quality. Imagine the speed and crispness of an electrostatic, the impact of an array of 12-inch or 15-inch woofers working well within the boundaries of their linear excursion, and the scale and dynamic range which box speakers are simply incapable of yielding. If you live in a flat, keep saving; if you've got the space, audentes fortuna iuvat (fortune favours the brave) as they say.



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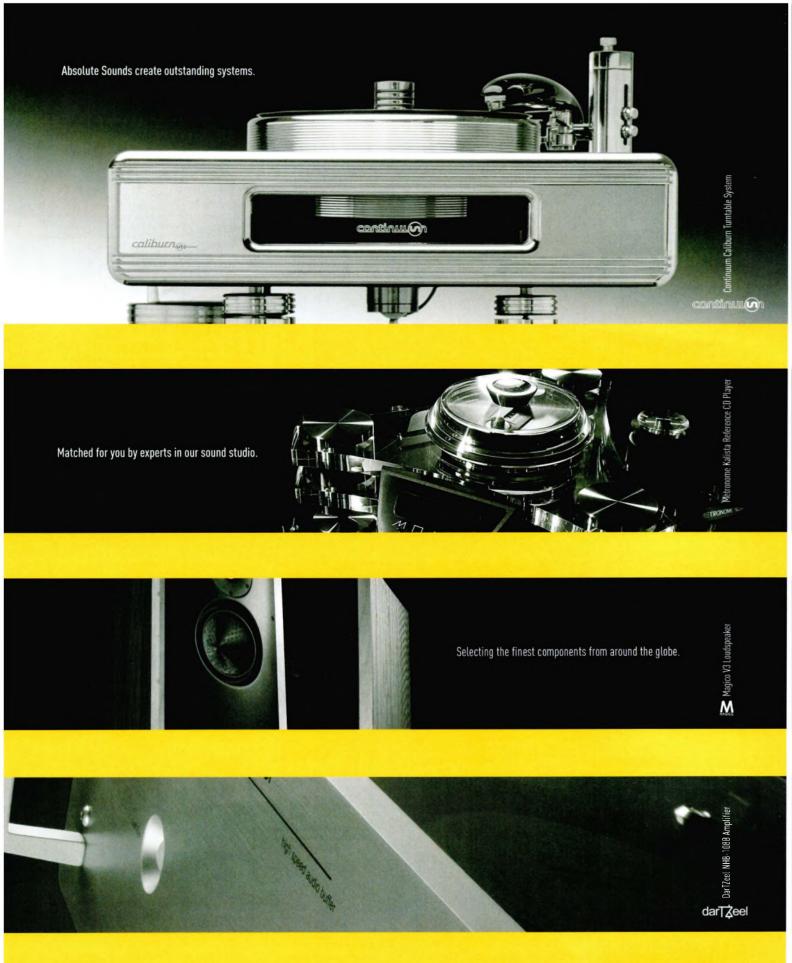
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HFC BUYER'S GUIDE

Welcome to the new-look *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.

For the ultimate in personal listening pleasure turn to page 107 in this month's Buyer's Guide Beyerdynamic's DT880 headphones were a Best Buy in HFC 312 and they're





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Arcam CD17	700	Civilised sound, with a positively deluxe treble. Bass is clear, if not the weightiest ever	CONTRACTOR OF THE PARTY OF THE	-	a	9	0	0		New York		31:
Audio Analogue Crescendo	599	Simple player that's clear and communicative with the appropriate partnering equipment			6	8		8		42		32
Cambridge Audio Azur 840C	700	Superbly capable with a resolution and tonal evenness that's well worth hearing (silver finish)			0	0		-	8	400		31
Cyrus CD6 SE	900	A combination of detail and sheer musical energy with a hint of high end to the performance			-	0			et.			31
Harman/Kardon HD990	550	Highly detailed with excellent extension at both extremes and impressive resolution	/594818		6)	0	0	6	- 20			32
Marantz SA7003	600	Highly civilised sound may not be to all tastes, but there's plenty of detail to be heard	7334010	0	6	0			ישני	0		32
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Micromega CD-10	799	The cheapest in the range, the CD-10 has been fine-tuned to please the audiophile	7430022	-	参	-	0					32
Moon CD.5			-		0		9					
NAD C545BEE	999	Admirably energetic music-making from this very well-built player			-	60	-					32
	350	Apart from slight lack of bass control, sound is very fine indeed – treble is beautifully detailed			60							32
*	895	Its competent musical performance comfortably exceeds the expectations of an entry-level player					400					30
Pioneer PD-D9	850	A mostly well-balanced player that's arguably at its best with classical music	/636734		•	0)	0	48)				32
Roksan Kandy K2	895	State-of-the-art technology and precision-engineering produces a fine CD performance	/483697		•		0		0			31
Rotel RCD-1520	695	Lacks optical digital output, but feature-count is fine and sound quality is expressive and open	/608305		•	-	•		G)			32
BOVE £1,000	1000			2013		M.	431					
Arcam CD37		Excellent detail and imaging, neutral tonality and above-average bass resolution	/395096	0	•	0	•					31
Audio Research CD5		Audibly better than most CD players on the market – assertive and very dynamic	/455309		•				•			31
Cairn Fog 3		Ergonomically challenged, high-energy player with Gallic charm and digital preamp on board			•	*			•			30
Consonance Droplet CDP3.1	1,995	A CD player which gets to the nub of what music is about. Engages the listener every time			•		9					32
Creek Destiny	1,400	This player presents the music and nothing but the music and is thoroughly recommended			•	0	0					32
Cyrus Audio CD 8 SE	1,200	A highly civilised player which can, nevertheless, deal convincingly with raw music	/399370		•		23					32
Denon DCD-2010AE	1,700	Well equipped, finely detailed and with good support for compressed audio and iPod		0	•	-0	-00					32
EMM Labs XDS1	18,995	Very high-performance two channel only player with the option of a standalone D/A converter		0	•	6			-			32
Esoteric X-05	3,995	Superb resolve of fine detail with a perfectly judged balance and an ability to draw you in	/478365		•	9	0		0			31
Eeema Stream	1,170	The most timely disc player at its price point has tactile imaging and good dynamics			0		0					30
Eeema Antila II	2,735	Great build and multiple DACs give this a fast, revealing and totally engaging sound	/612396		0	0						32
Meridian G08	2,400	Advanced digital processing with special apodising filter that gives a very clean sound	/455040		9				@			31
Mimetism 20.1	5,107	An impressive player that produces a very convincing and musical sound			0	0						33
Moon CD3.3	2,200	With clear, detailed and energetic sound, this player also offers a digital ouput	/594609		•		•					32
Naim HDX	4,500	The HDX hard disk player represents an entirely new paradigm for high-fidelity replay			•	0	•					31
Rega Isis	5,998	A magnificently musical CD player at a realistic price. USB input is a useful addition			•		•					32
Roksan Caspian M Series-1	1,450	An exceptionally fine CD player that provides a high-end and musically rewarding performance			9							30
Shanling CD-T1000SE	1,700	This player's valve/direct option gives a choice in terms of performance			•							32
Sony SCD-XA5400ES		Elegant, refined control system and very strong CD/SACD performance	/465933	0	•	•	•	•	19	9		31
Unison Research CDE		Valve CD player with interchangeable DACs that doubles as a standalone DAC that oozes musicality	/483759									31

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.





Our favourite sources



					SPEC	IFIC/	ATION	S		
T	URNT	AB	BLES	WWW.TECHRADAR.COM		SUSP SUBCHASSIS		SUP	SUPPLIED WITH CART	ISSI
The	The best record players you can buy		DARL(SPEEDS	BCHAS	SWITCHABLE SPEED CHANGE	WITH ARM	MITH C	SSUE NUMBER	
BADGE	PRODUCT	Σ	COMMENTS	MOX	EDS	SISS	NO.	MRM	ART	BEA
7	Clearaudio Emotion	1,185	Beautifully built with open and clean sound emphasising mid and top, but delivering nice timely bass		33/45			0	0	309
+	Clearaudio Performance	2,300	Ceramic-magnetic bearing spells a surprisingly uncoloured performance		33/45			0	0	295
*	Continuum Caliburn	125,000	Luxury turntable with state-of-the-art design includes Cobra tonearm and Castellon stand	/587169	33/45/78		0		0	320
*	EAR Disc Master	8,800	Combines new 'no contact' drive technology and high-quality materials to bring state-of-the-art resolution		33/45/78		0	opt		276
Ŧ	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		0	0	0	324
7	The Funk Firm Saffire	2,450	Individual design and a sound that's refined and neutral with strong timing and dynamics		33/45		0	opt	opt	309
#	Lumley Heliosphere	2,495	A distinctive-looking turntable with a unique sound and a performance that reflects your vinyl	/560765	33/45			opt	opt	319
Ŧ	Michell Tecnodec	608	Needs careful partnering but can deliver a very sophisticated result for the money		33/45			opt		309
Ŧ	Michell Gyro SE/RB250	1,565	A marriage of shot-putter-strength, build quality and robust audio (including arm substitute)		33/45					324
Ŧ	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				0	279
7	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			0		294
Ŧ	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		0	0	0	309
Ŧ	Rega P3-24	390	Very competent, uncoloured and musical, much improved by £148 outboard electronic power supply		33/45		opt	0		298
T	Roksan Radius 5/Nima	1,375	Sophisticated design with accomplished sound quality, excellent imagery and good isolation		33/45	0	.0			248
-	SRM Arezzo	699	The Arezzo is an excellent source component for those wanting a superb turntable for vinyl replay	/625025	33/45	0				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		0	0		324

				100	SPECI			
P	PHONO CARTRIDGES		WWW.TECHRADAR.COM			REPLACEABLE	83	
MM	and MC recommend	ation	ns .	RADAR			0.0	SSUE NUMBER
BADGE	PRODUCT	3	COMMENTS	COM	MM	MC	SMIAL	89
₹	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 unearths a mountain of detail			0		328
Ŧ	Grado Prestige Gold	149	Produces rich, open and expansive music with the minimum of fuss		0		0	235
#	Ortofon Cadenza Red	750	There's much to admire in this cartridge's fine detail and unfussy presentation			0		330
-	Ortofon Rondo Red	385	Delivers detail, power and resolution and makes a good case for its price			0		307
#	Sumiko Blue Point Spec Evo III	239	High-output MC with refinement at high frequencies and a nimble, articulate and revealing sound			0		270
T	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

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

_			200	SPEC	TFIC/	•			
PHONO STAGES		WWW TECHR	MM PHO	MC PHC		ADJ	ISS.		
Get	the best performan	ce fror	n your turntable	ADAR.	ONO INF	NO N	ADJ. C	MPEDA	MUN 3
BADGE	PRODUCT	2	COMMENTS	M	SIL	SIL	NIA	NCE	99
7	Cambridge Audio 640P	100	An outrageously good bargain that suits budget systems, but can confidently survive upgrades		0	0			305
#	Creek OBH15	240	Practical and highly compatible unit offering fine detail and a pleasing, mellow balance		8	4			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			0			234
-	Trichord Dino/Dino+	563	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility		0	0	0	0	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 highoutput MC cartridge, making it a firm *HFC* favourite



33/45

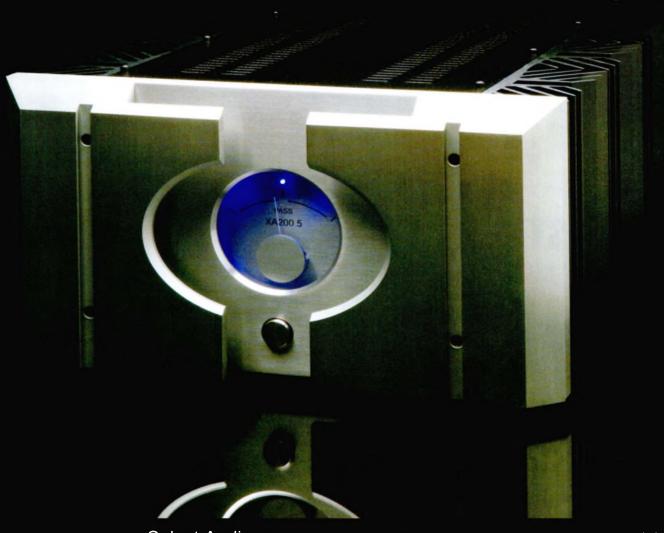
307

Townshend Rock 7£1,720 A great turntable for those upgrading from an entrylevel deck. Sound engineering at a bargain price

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



Our favourite sources



BEST BUY EDITOR'S CHOICE

			SPECIFICATIONS								
		TUNERS se carefully selected tuners substituting the comments		W; VEBAND	PRESETS	FIDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT TUNING KNOB	SSUE NUMBER	
FM TUNERS	L	CONNIVERVIS	WWW.TECHNADIR.COM	01	0,	07	50	-	W.	-	
Creek Audio Evolution	350	Sound is detailed, cohesive and extended both tonally and spatially – very classy		FM,M	80	0	0			308	
Rega Radio 3	390	Strong bass, clear treble and a high enjoyment factor makes this an appealing FM performer		FM,M	20		0			283	
T+A T1210R	1,200	High-end looks are matched by the sound, which is detailed and sophisticated		FM	100	0	0			283	
DAB/FM TUNERS							9				
F Arcam FMJ T32	600	A highly cost-effective way of optimising the airwaves. iPod functionality is definitely a bonus	/559242	DAB,FM	100	0	ė		0	319	
Onkyo T-4555DAB	400	Admirably free of grain or obvious tonal blemishes, this tuner achieves a high standard		DAB	40	0	ē		0	298	
AB/FM PORTABLES				Anti-							
Monitor Audio Airstream 10	225	The range of features on this DAB/FM/Internet radio is certainly impressive	/636713	DAB,FM,Web	4	0			0	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 Flow	150	It makes internet radio integrate beautifully with conventional radio	/465944	DAB,FM,Web	40	0			0	31:	
Pure Evoke-2S (portable)	170	Attractive and well thought-out. Many useful features and very enjoyable with classical music	/516285	DAB,FM	100	0				318	
Pure Avanti Flow	280	One of the best standalone solutions for internet radio with a tonality that's good for voices		DAB,FM,Web	40	0	0			322	
Vita Audio R2i	300	Very smartly built with a sound that's full-bodied, neutral and detailed	/611865	DAB,FM	30	0	6		0	32	

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.

						SPECIFICATIONS								
H	EADPHONES		WWW.TECHRADAR.COM	BLB	SJ	CFR		P		3.5MM JAC	88			
Audi	Audiophile solutions for home and travel use		ADAR.	ELECTROSTATIO	SUPRA-AURAI	CIRCUMAURA	OPEN BACK	CLOSED BACK	IMEIGHT (g)	JACK ADAPTOR	SSUE NUMBER			
BADGE	PRODUCT	£	COMMENTS	MOC	ATIC	RAL	PA.	AG.	Š	(9)	300	BER		
#	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 CT880	276	Combines musical involvement with a high degree of analytical virtues. Also very comfortable				0			205	0	312		
+	Denon AH-D5000	600	Sound is comparable with good open-back models, while isolation both inward and outward is useful				0		0	320		312		
4	Denon AH-D7000	900	One of the best closed-back designs, bearing comparison with the finest open-back models	/478417			0		0	295	0	314		
Ŧ	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		0		0		210	0	322		
4	Grado GS1000i	1,100	A superb transducer, capable of astonishingly high performance standards	/624782							0	325		
-	Grado PS1000	1,795	Offer excellent detail and effortless dynamics, but they can be heavy to wear after a while					0		500	0	329		
Ŧ	Sennheiser IE8	260	With its combination of neutral midrange and treble, this is arguably the best for in-ear, all-round sound							20		319		
T	Sennheiser HD380	140	Clear and detailed, with very natural tonality through bass and midrange with just a little coloration				0				0	327		
4	Sennheiser HD800	1,000	These headphones will convert loudspeaker listeners to the delights of personal stereo performance	/619269			0	0	0	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. **CIRCUMAURAL** 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

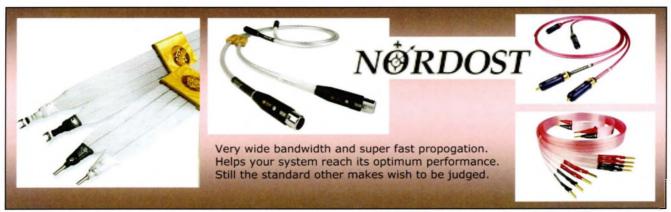
An easy recommendation – Sennheiser's HD380 should really cost more than this – it's simply fabulous and is a genuine bargain in the world of hi-fi



For regular travellers, these custom-moulded earpieces are an obvious choice, thanks to natural noise-cancelling, all-day comfort and great sound

High End Cable

www.highendcable.co.uk For best prices talk to Dave Jackson on 01775 761880





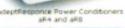




































Great trade in deal on offer if you wish to upgrade to the Ayra range.

The superb range of Ayra Speakers now on demonstration.





C2.0

Designed from the bottom up, all drivers and ribbon tweeters are built in house. Ayra use ceramics drivers, superb crosscovers, unique magnet technology and Nordost Valhalla inter-nal wiring. Offering frequency extension to 50khz these speakers are among the best in the World.

Please visit the High End Cable website for call for more information.



C1.0 and stand

C1.0 was Hi-fi plus Product of the year 2008

Our favourite amplifiers



BEST BUY -EDITOR'S CHOICE

er pick of the best of the product	ne-box	TED AMPLIFIERS CAMPS COMMENTS	WWW.TECHRADAR.CGM		LINE INPUTS	PHONO INPUT	REMOTE CONTROL	HEACPHONE SOCKET	POWER OUTPUT (M)	OOOL NOWIGE
P TO £1,000				4	_					4
Audio Analogue Crescendo		In a room of appropriate dimensions, this amplifier has real musical presence			5	-		0	50	3
Cambridge Audio 840A v2		A chunky powerhouse with features aplenty, this amp offers detail and delicacy (silver finish)			-				120	
Marantz PM8003		Detail isn't the utmost, but great vitality makes this amplifier quite thrilling				ИΜ		0	70	3
WIGGIT 1.5		A likeable amp in many ways, with admirable bass, treble and imaging	/60328) 1	5	0			60 50	-
NAD C3226BEE Naim Audio NAIT 5i		Unusually confident into awkward loads and very assured especially in bass. Treble a touch recessed. More versatile than previous. Nait's, the 5/is a superb amplifier that offers vivid insights into all manner of music.	/00320)	4				50	
Roksan Kandy K2			/48372	22	5 N	41.4			125	
BOVE £1.000	695	Superior design and high-performance credentials makes this amplifier a must-have bargain	740372	22	J 1	TIVI			123	H
Arcam A38	1,450	A winning combination of sonic virtues including highly developed detail and musicality		Н	7 (nnt	0		100	i
Astın Trew AT2000		If you prefer the timbral and timing qualities of music to its bone-crunching potential, then this is a serious contender	/49857	7.4	4	μl			65	
Audio Analogue Puccini Settan		Detailed and lively, particularly in the upper octaves, but lacks a little bass extension	743037	Ť	5 N	MC.	0		160	
Copland CTA405		A musical and involving amplifier, which also has incredible insight and is user-friendly by valve amp standards			5	,10			50	
Cyrus 8 XP d		High on features with a revealing upbeat sound and impressive five input onboard DAC	/60866	59	6				70	
Denon PMA-2010AE		High-class, well-equipped integrated, with a performance that is muscular, refind and detailed	700000	,0	6 M	MMC			80	
Electrocompaniet PI-2		A superb all-rounder, with insight on one hand and effortless musical flow on the other			6				100	
Electrocompaniet ECI-3		This is an impressively resclute and powerful integrated amplifier for the money	/61830)4	5				70	
Gryphon Atilla		With exceptional subtlety and definition, it has more than enough power to cope with just about anything musical			5				100	
Harman/Kardon HK 990		Very clever, with built-in DSP room correction and more – but most importantly a powerful and revealing amplifier	/59482	20	7 N	ИC		0	160	
Leema Pulse	1,270	Admirable bass which combines extension, tautness and clarity. Higher frequencies are highly detailed and revealing			5 M	MMC			70	
Leema Tucana II	3,425	Highly featured, well-built and not short of power, this is a highly resolute and organic amp	/61239	96	7		0		148	
Lyngdorf Millennium Mk IV	10,995	State-of-the-art digital amplifier successfully transcends virtually all the problems that afflicts others of its type	/60323	31	5				150	
Mimetism 15.2	5,415	A powerful amplifier with great dynamics and high resolution that's rare even at this price			6				180	
MSB Platinum M200	13,656	This amplifier's devastatingly good all-round sound quality sets a benchmark that few will approach	/60345	52		0				
Myryad MX12080	1,200	Sound is more assured at the top of the frequency range than the bottom, though bass is melodious and detailed			8		0		80	
NAD 375BEE	1,000	A good, solid amplifier that is fundamentally musical and gives a great bang for your buck	/62532	3	7	0		0	150	
Naim Audio NAIT XS	1,250	Its spellbinding, refined musical performance is a challenge to all integrated amplifiers	/49853	6	6	0	٠		60	
	5,000	Very solid all-round performer has massive power reserves and splendid stereo imaging							162	
Rega Osiris	5,998				6					
Rega Osiris Unison Res Unico Primo		Line input can be converted to phono (at extra cost), plus an excellent mix of valve and solid-state virtues	/49927	9		0			85	
Unison Res. Unico Primo	1,395	VED ABADO		SI	5 PECIF	FICAT	P	REMO!	85 POWER	
Page Unico Primo	1,395	VED ABADO		SI	5 PECIF	FICAT	P	REMO!	85 POWER	
PRE/POparate boxes can be	1,395	VED ABADO	WWW.TEC	SI	5 PEGIF	FICAT	P		85	
PREPP parate boxes can be product 10 \$2,000	1,395	VERAMPS ear advantages COMMENTS		SI	5 PECIF	FICAT	P	REMO!	85 POWER	
PRODUCT TO \$2,000 Cambridge AudioAzur 84(1,395	VER AMPS ear advantages	WWW.TECHRADAR.COM	SI	5 POWER AMPLIFER	LINE NPUTS	PHONO INPUT	REMOTE CONTROL	85 POWER	
PREPP Parate boxes can be PRODUCT Cambridge AudioAzur 84(10VE £2,000	1,395	VERAMPS ear advantages COMMENTS	WWW.TECHRADAR.COM	PREAMPLIFIER	5 POWER AMPLIFER	LINE NPUTS	PHONO INPUT	REMOTE CONTROL	85 POWER OUTPUT (W)	
PREPP parate boxes can be product Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38	1,395 D V pring cle 0E/840W 2	VERAMPS ear advantages COMMENTS	WWW.TECHRADAR.COM	PREAMPLIFIER	5 POWER AMPLIFER	LINE NPUTS 8	PHONO INPUT opt	REMOTE CONTROL	85 POWER OUTPUT (W)	
DRE/P parate boxes can be product Cambridge AudioAzur 840 Arcam C31/P38 Border Patrol Control Unit	1,395 O V pring cle 0E/840W 2	VERAMPS ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled	WWW.TECHRADAR.COM	PREAMPLIFIER	50 POWER AMPLIFER	LINE NPUTS 8	PHONO INPUT opt	REMOTE CONTROL	POWER OUTPUT (VI)	
PREPP Parate boxes can be product TO \$2,000 Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38 Border Patrol Control Unit Bryston BP16/ 2B SST ²	1,395 O V oring cla oe/840w 2	PERAMPS ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around	WWW.TECHRADAR.COM	PREAMPLIFER	PEGIF POWER AMPLIFER	LINE NPUTS 8	opt opt	REMOTE CONTROL	POWER OUTPUT (VI)	
Darate boxes can be product of the p	1,395 OV oring clo	PERAMPS ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around Preamp and power amp combo offers superb sound quality. /60 3,670 Cracking preamp brings detailed results	WWW.TECHRADAR.COM	PREAMPLIFER	5 PEGIF POWER AMPLIFER	LINE NPUIS 8	opt opt	REMOTE CONTROL	95 POWER OUTPUT (W) 2000	
Darate boxes can be product to \$2,000 Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38 Border Patrol Control Unit Bryston BP16/ 2B SST ² Bryston BP26 Chord Prima/Mezzo 140	1,395 OV OF/840W 2	Preamp and power amp combo offers superb sound quality Cracking preamp brings detailed results Small, muscular, beautifully made and styled, and sounds like a dream	WWW.TECHANDAR.COM	PREAMPLIFER	5 PEGIF POWER AMPLIFER	UNE NPUIS 8 7 5 6 8 5 5	opt opt opt opt	REMOTE CONTROL	200 100 120	
Parate boxes can be product of the parate boxes can be product of the product of	1,395 OV OF/840W 2	Pre plus mono power combo with superb build, huge power and enormous flexibility.	WWWTEDFADAR COM	PREAMPLIFER PREAMPLIFER	5 PEGIF POWER AMPLIFER	UNE NPUTS 8 7 5 6 8 5 6	PHONO INPUT opt opt opt	REMOTE CONTROL	95 POWER OUTPUT (W) 2000	
Parate boxes can be product to \$2,000 Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38 Border Patrol Control Unit Bryston BP16/ 2B SST ² Bryston BP26 Chord Prima/Mezzo 140 Classe CP-700/CA-M400 Cyrus DAC XP (preamp/DA	1,395 D V Dring cle 0E/840W 2 3 4 5 7 AC) 24	Pear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around Preamp and power amp combo offers superb sound quality. /60 3,670 Cracking preamp brings detailed results 7,135 Small, muscular, beautifully made and styled, and sounds like a dream. 9,200 Pre plus mono power combo with superb build, huge power and enormous flexibility. 2,275 A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz	WWWTEDFADAR COM	PREAMPLIFER	5 PEGIF POWER AMPLIFER	8 7 5 6 8 5 6 2	opt opt opt opt	REMOTE CONTROL	2000 1000 1200 4000	
PRE PP Parate boxes can be product Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38 Border Patrol Control Unit Bryston BP16/ 2B SST ² Bryston BP26 Chord Prima/Mezzo 140 Classé CP-700/CA-M400 Cyrus DAC XP (preamp/DA Digital Do Main Ba-1	1,395 D V Dring cle 0E/840W 2 2 3 4 5 6 AC) 2 6	ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around 5,700 Preamp and power amp combo offers superb sound quality. 7,135 Small, muscular, beautifully made and styled, and sounds like a dream 9,200 Pre plus mono power combo with superb build, huge power and enormous flexibility. 2,275 A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz By recreating the V-FET, DOM has built one of the most thrilling ampifiers on the market	WWW.TED-FAADAR.COM	PREAMPLIFIER PREAMPLIFIER	5 POWER AMPLIFER	UNE NOUIS 8 7 5 6 8 5 6 2 4	opt opt opt opt opt	REMOTE CONTROL	2000 1000 1200 4000 3000	
Parate boxes can be product boxes can be product boxes can be product by the product by the product boxes can be product by the product by	1,395 D V Dring cla 0E/840W 2 3 4 AC) 2 6 1	ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around 7,700 Preamp and power amp combo offers superb sound quality 7,600 3,670 Cracking preamp brings detailed results 7,135 Small, muscular, beautifully made and styled, and sounds like a dream 9,200 Pre plus mono power combo with superb build, huge power and enormous flexibility 2,275 A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz By recreating the V-FET, DOM has built one of the most thrilling ampifiers on the market 18,900 Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers	WWW.TECHRADAR.COM	PREAMPLIFER PREAMPLIFER	50 POWER AMPLIFER	UNE NPUIS 8 7 5 6 8 5 6 2 4 9	opt opt opt opt opt	REMOTE CONTROL	2000 1000 1200 4000 3000 125	
Parate boxes can be product to \$2,000 Cambridge AudioAzur 840 OVE \$2,000 Arcam C31/P38 Border Patrol Control Unit Bryston BP16/ 2B SST ² Bryston BP26 Chord Prima/Mezzo 140 Classé CP-700/CA-M400 Cyrus DAC XP (preamp/DAC) Digital Do Main Ba-1	1,395 D V Dring cle 0E/840W 2 3 4 AC) 2 6 1 555 xS 1	ear advantages COMMENTS 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled 2,450 Very civilised sound in the best possible way. Well featured and smartly built 3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around 5,700 Preamp and power amp combo offers superb sound quality. 7,135 Small, muscular, beautifully made and styled, and sounds like a dream 9,200 Pre plus mono power combo with superb build, huge power and enormous flexibility. 2,275 A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz By recreating the V-FET, DOM has built one of the most thrilling ampifiers on the market	WWW.TECHRADAR.COM	PREAMPLIFER PROPERTY OF THE PR	50 POWER AMPLIFER	UNE NOUIS 8 7 5 6 8 5 6 2 4	opt opt opt opt opt	REMOTE CONTROL	2000 1000 1200 4000 3000	

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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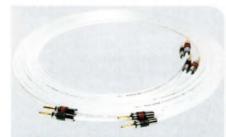
Our favourite cables



BEST BUY EDITOR'S CHOICE

					ECIFI	CATIC	ONS		
	e a di	ifference, especially our top recommendations	WWW.TECHRADAR.COM	STRANDED	SOLID CORE	COPPER	SILVER	DIGITAL CABLE TYPE	ISSUE NUMBER
OGE PRODUCT NALOGUE INTERCONNECT	2	COMMENTS	2	В	Æ	20	25	m	进
Audioquest Sidewinder	45	A detailed cable, with fine tonality and excellent rhythm – slight upper-bass warmth does little to detract		0		0			29
Black Rhodium Prelude	90	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit		0		0			29
Black Rhodium Coda	150	Superb bass with neutral and detailed midrange, treble generally sweet with occasional slight constriction		0		0			29
Black Rhodium Polar Nusion	250	A good all-rounder, with clear and purposeful bass and particularly fine treble		0					32
Cambridge Azur Reference	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble with no trace of dryness				0			29
Chord Co. Indigo Plus	995	Costly, and high-class cable needs running in, but this is a finely detailed design overall	/608313	0					323
Clearer Audio Silver-line	283	Complex, well-screened cable which offers good sound all round with exceptional bass	7000010			0			279
CrystalCable Piccolo	348	Thin, but tougher than it looks, Piccolo has some qualifies of a solid-core type – notably resolution, focus and articulation		ř	0		0		29
Kimber Timbre	145	A very neutral cable that will complement even very upmarket systems		0					312
Monster M350i	45	Few cables at this price reveal so much about the recording space.				0			28
Monster M1000i	230	Very capable, with only a hint of bass dryness to set against excellent results elsewhere		0					28
Nordost Wyrewzard Dream	110	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass				0			30
Oehlbach NF214	63	The bass is a matter of taste, but suits many smaller speakers with good mid and treble			-	0			28
QED Signature Audio S	190								32
Supra EFF-IX	77	Mellifluous and rounded, this cable is a great choice for lovers of the human voice		0		0			30
Townshend Isolda DCT100		Lively sounding cable which maintains a high level of detail and neutrality, musically, a great all-rounder		-		0			31:
	99	Sound has a particularly enjoyable cohesion and naturalness that makes for great listener involvement			-				
van den Hul The Wave	125	Generally neutral, with a hint of upper-bass richness: images seem to reside slightly further away than most		0	Н	0			31:
Kimber DV-30	98	A quearh coformar that looks vary little gues when compared to Kimbar's high, and models		0		0		Е	317
Merlin Scorpion Digital	130	A superb performer that lacks very little, even when compared to Kimber's high-end models Reduces distortion, making sound clear with unusually revealing low frequencies		0				E	31
SupraAnCo	30	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context		*		0		E	30
EAKER CABLES (PRICE P			_	-		-		_	30
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		0	Ė	0			29
Atlas Ascent 2.0	60	A highly analytical cable, with more bass extension than at first appears and very fine detail across the board		0		0			29
Chord Co. Silver Screen	6	Screened speaker cable with excellent treble, but just a little light in the bass at times		0		0			31
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)		-		-	0		30
Kimber 4VS	1,595	In the right system, this cable is a good choice (price reflects 2.5 metre terminated pair)		ě.		0	-		32
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							28
Nordost Heimdall	185								278
QED X-Tube XT300	12.5	Alternative to Valhalla, silver-plated, micro-monofilament construction, suitable for exacting systems A natural and controlled-sounding cable that's cost-effective for mid-priced systems		-		0			310
QED Revelation	15	A flatural and controlled-sounding cable that's cost-effective for find-priced systems Sensibly priced, this cable offers a performance which is a step-up from budget types		0	-	0			318
Townshend Isolda DCT	50	Cryogenically treated 'impedance-matched' cable with stabilising components added		-		0			24
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 ²	25			0	-	0			311
Wireworld Oasis 6		Rather bulky and awkward, but performance amply justifies it with superb bass solidity Excellent base with tweetyleness and extension all first rate. Awkward to begin though	/617560	0		4			
vvii eworid Oasis o	40	Excellent bass with tunefulness and extension all first-rate. Awkward to handle, though	1017300						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.



QED Revelation £15 (per metre)

Giving a consistent result with a wide range of amplifiers and speakers, the Revelation speaker cable boasts a good performance in all areas.



Kimber DV-30 £59 (0.5 metre)

A superb performer that lacks very little, even compared to Kimber's high-end models. Tonality, detail and imaging are really very fine.



Black Rhodium Polar Illusion £250

This super-cooled, unshielded interconnect with solid, silver-plated copper insulation, delivers a treble performance that's admirably clear and crisp.

Our favourite loudspeakers



₹ BEST BUY	EDITOR'S CHOICE	
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rhaps the most influ		SPEAKERS Il link in the chain COMMENTS	WWW.TECHRADAR.COM	SIZE W.H.D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE MUMBER
TO £1,000 Acoustic EnergyAegis Neo 3	363	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight		20,90.5,24	0	Α	24	0		29
Acoustic Energy Radiance 1		Limited bass, power handling and dynamics, but exceptional mid-to-treble voicing		18.5,32,25	-	A	33	0		32
Amphion Ion L	900	Sharp styling, fine mid/treble coherence and a sweet treble, but less happy bass alignment in test room		162,326,26.5		A	40	0		31
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		Α-	55	0		29
	350	A tough and effective little speaker – overall balance is quite smooth and even		19,29,26		A+		0		3
_	488	Luxury miniature has laid-back sound, with low coloration and fine imaging, but weak dynamics	/400500	16.5,28,28	_	Α-	40	0		2
_	699	A fine all-rounder at a realistic price, this floorstander has a smooth, even and nicely open balance	/483503	20,91,30	0		22	0		3
•	879	High-class drivers and a great price makes for a warmly recommended speaker		20,99,34		۸	37			3
	999	Needs care with setup, but rewards you with impressively transparent and obsessively detailed sound		19,100,33	8	A		0		2
_	880	Unfashionably bulky standmount has fine dynamics, grip, bass and headroom and is well mannered		27.5,45,35		A	22	0		2
	389	Advanced drivers deliver an even, overall balance with healthy dynamic expression and tension		22,39,25		A		0		3
Focal Chorus 726V	950	Compact and realistically priced, the Chorus 726V is a good all-round performer		22,99,37.5	0	Α	25	0		3
JBL Studio L880 KEF iQ50	700	Good value floorstander with neutrality, massive headroom and plenty of punch	//00507	22,99,37	0	A	25	0		2
	599	Looks cute and very discreet, with spacious imaging, good balance and a sweet treble	/483527	17.5,81.5,26	0	A	23	0		3
Monitor Audio BR2	230	Good-looking standmount has a muscular sound with superior coherence		18.5,35,25		Α-			0	2
Monitor Audio BR5	450	Not the best dressed in its class, but detailed, bold-sounding and good value		17, 85,25	0	Α-		0		2
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	0	A	33	0	9	2
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			40	0		2
PMC DB1i	895	Could be more neutral, but a very effective musical communicator with fine warmth and sweet treble		15.5,29,23.4			30	0	0	3
ProAc Tablette Ref Eight	704	Stunning standmount with electrostatic-like imagery. Its brother costs £200 more and is even better!		15,27,23			40			2
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		Α	48		0	2
Q Acoustics 1020i	140	Outstanding value, the smooth, well-balanced and lively sound makes for a fine communicator	/516273	17.5,25,26.5			60		0	3
Rega RS1	390	Clever close-to-wall speaker has a fine coherence and good communication skills		15,32,23.6		А	23		9	3
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			
Spendor S3/5R	750	Lacks dynamic muscle and loudness potential, but lovely smooth neutrality and good bass extension		16.5,30.5,190			25	0	9	3
Tannoy Revolution DC4T	599	Ultra-compact floorstander that lacks bass weight and dynamic tension, but sounds open and coherent	/488857	15,85,16	0		40		0	3
Tannoy Revolution DC6	900	Pretty compact standmount likes wall loading, delivering a lively bass and smooth, coherent midband		23,36.5,23		А	40		0	3
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	0		3
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	0	A-	50			3
OVE £1,000	To the		L CASI					75		
Adam Audio Tensor Delta	8,400	This active loudspeaker brings a powerful range of capabilities to its performance		33,56,34		Α		0		3
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	9	А	27	0		3
Amphion Argon2 Anniversary	1,200	Notably superior coherence and focus, fine neutrality and dynamic range with low coloration		19,38,31		A-	24	0		3
Amphion Helium 520	1,000	Sharp styling and fine value for money with excellent voice-band coherence		16,104,22	0		28	8		3
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	0		26			3
ALR Jordan Classic 5	1,550	Slim, laid-back floorstander has sweet sound with fine coherence, imaging and dynamic range		17,99,26	0	А	28			2
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			3
Audioplan Kontrapunkt IVB	2,898	Boasts exceptional stereo imaging and mid-through-treble coherence		16,35,26	0	А	45	0		3
Audiovector S3 Super	2,600	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging		19,103,31	0	А	50	0		3
Aurousal 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	0		20			3
AVI ADM9	1,125	Active mini-monitors that are exceptionally accurate and dynamic sounding		20,30,26		ACT	60	0		3
Bowers and Wilkins CM9	1,760	Tall, elegant, expressive midband and expansive, but well-controlled bass	/597244	20,102.5,32	0	А	60	0		3
Cabasse MC40 Java	1,360	This large and handsome speaker has a notably smooth and evenhanded neutrality		25,110,35		А	20			3
Cabasse Bora	2,200	A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics	/618354	33,27,50		Α	52	0		3
Dynaudio Focus 220	2,630	Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble		20.5,98,29.5			20	0		2
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+		•		2
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	0	Α	45	0		2
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+		0		3
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		Α				3
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	0	A-	25	0		2
	1,000	and the state of t		_0.0, ,00	-					-
Free FS1	3,500	An elegant design for anyone after the minimum of wiring. Wireless with Sonos or Airport Express		16,87,27	03	ACT	35			3

Our favourite loudspeakers



BEST BUY DITOR'S CHOICE

_		_	ABELI/EBA	SPECIFICATIONS							
S I		£ .	SPEAKERS continued	TECHRADAR.COM	SIZE W.H,D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	SOUE NUMBER
BOVE £1	1,000	(A-1)		400	100				20		
G uru	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		Α	26		0	31
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	0	Α	30	0		31
Kudos	s Cardea C1	1,450	A very pretty compact standmount with a delightfully subtle and delicate sound quality		20,35,27		Α	40			30
Kudos	s Cardea C2	1,950	This floorstander is a fine all-round performer with fine voicing and neutrality		20,92.5,27	۵		23	0		32
Kudos	s Cardea C30	5,250	An absolute honey that fully justifies its hefty pricetag, lacking only a little dynamic tension	/394973	20,112,27	-23		22	S		3-
Magic	co V2	18,000	High pricing derives from this speaker's superb, painstaking engineering and impressive performance	/624700	25.5,115,30	0	Α	32	0		32
Magn	neplan Magneplanar 1.6	2,500	Great with acoustic and classical material, this dipole panel speaker has superb sound quality		48,165,5	23	Α	43		0	32
Missi	on 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	O	Α	25	To .		32
Mono	opulse 42A	1,995	Oddball styling, fine bass-to-mid balance and dynamics and superb voice coherence		26,110,25	6	Α	25	0		30
✓ Monit	tor Audio PL200	4,750	A costly, but beautifully presented loudspeaker with outstanding voicing and character		25.5,100,28.5	0	Α				33
Morda	aunt-Short Perf 6 LE	4,799	Striking moulded enclosure minimises coloration, while overall balance is smooth, neutral and open		24,115,43		Α	22			30
Neat N	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	0		30
- Opera	a Callas	3,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	/429144	23,37.5,34			32	133		3
Opera	Seconda	1,995	Fine styling and finish, plus very superior voicing, if a shade lacking in warmth		24,102.5,31.5	0	Α	20	Œ.		3
Pione	er S-2EX-W	5,200	This speaker offers superb midband neutrality and exceptional darity	/587272	29.1,565,42.5	0	Α	37	٥		3
PMC F	FB1i	2,100	A floorstander that boasts impressive bass extension and a smooth sweet top end	/429594	20,100,30	0	Α	20	0		3
PMC	0B1i	3,600	This floorstander delivers a smooth overall balance with wide bandwidth and dynamic range	/429697	20,102.5,325		Α	20	b		3
PMC:	fact. 8	4,600	Beautiful styling, alongside a superb all-round sound quality with a notable wide dynamic range		15.5,105,38	0	Α	55			3
PMC	IB2i	8,900	Delivers a top-class sound quality, fine imaging and exceptional dynamic grip	/617595	33,74,46.5	0	Α	25			3
PSB S	Synchrony One	3,500	Slim and discreet floorstander that delivers superb sound quality and flexible bass	/516267	22,109,32.5	0	Α	45	0		3
Revel	F32	3,200	Meticulously balanced, tonally neutral design makes for a taut, well disciplined sound		22,105,39	0	Α	20	0		2
Revolv	ver Screen 3	2.799	Visually dramatic and very successful in delivering genuine high-quality hi-fi sound		50,140,11		Α	35			3
Roksa	an Caspian FR-5	2,475	Sharp-looking speaker sounds exceptionally open and lively without aggression		20,100,25		Α	22	0		29
Ruark	. Talisman III	1,499	No bass demon, but a sophisticated and agile speaker epitomising Ruark's design ideals		22,84,31		Α	22			25
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	0		32
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	0		3.
Sonus	faber Cremona Audit.	3,350	Open, exciting and with surprisingly good bass this is 'The Little Speaker That Could'		20,35,37		Α	50	0		30
Spend	dor SP3/1R2	1,600	Conservative styling, superb neutrality and coherence with unusually low coloration		22,40,28		А	37			3.
Tanno	by Definition DC10T	5,000	Classy speaker has massive base, high sensitivity and precise image focus	/608326	34,112.5,32	0	Α+	35			32
Totem	Model 1 Signature	1,975	Expensive, but very seductive miniature delivers a beautifully smooth and balanced midband		17,31,23		Α	35	٠		27
Triang	gle Genese Quartet	2,775	Great material value and a solid all-round sonic performance with great loudness potential		23,117,37	0	Α	25	è		30
Triangl	le Magellan Concerto	16,250	New 'sw2' version is less immediate than its predecessor, but it remains highly enertaining		60, 160, 45	0	A-	32	0		29
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		Α	20	0		27
Vivid A	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		Α	35	٥		32
Wilson	n Benesch Curve	5,383	Much (but not all) of the ACT's performance in a much more compact and affordable package		23,91,37		Α	28	0		2
Wharf	fedale Opus	1,500	Great material value and a solid, if bright and forward sound. Has great loudness potential		26,100.5,41	0	Α	23	0		3
Yamai	ha Soavo 2	1,200	Cunningly crafted standmount with a beautiful balance that always sounds lively, open and involving		22,38,35		Α	28			29
711 FS	sence	3.750	Sheer realism and fine communication skills are more than fair compensation for balance shortcomings	3	30.5,125,30.5	0	Α	25	0		32

SPECS KEY SIZE W,H,O (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 experimention 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.

Arezzo & Athena. Sometimes beauty is more than skin deep

New!







Athena - from £599 inc. arm

Arezzo - from £699

Arezzo Reference - from £2999

Music is all about communication - and turntables don't come any more articulate than our acclaimed Arezzo models.

The Arezzo features many innovative design concepts: A powerful synchronous motor drives the sub-platter via twin belts, ensuring rock solid timing and pitch stability. The three-level plinth keeps both external disturbance and motor noise to an absolute minimum. Outstanding fine detail retrieval is achieved by a close tolerance tungsten carbide main bearing and vibration decoupled tonearm mount. The Arezzo Kinetic model adds a balanced flywheel with five belt drive, and the Arezzo Ultra model also adds a High Current Power Supply and Isolation Platform. Furthermore, a standard Arezzo can be upgraded to Kinetic or Ultra specification - by the owner. The Arezzo Reference is our ultimate statement in turntable design and, we believe, sets new standards in vinyi reproduction. All models are now available with a detachable armboard to suit any tonearm. Hand finished clear acrylic covers are also available.

New for 2010 is our Athena which shares the Arezzo's drive system for class leading performance. Incredibly, the Athena starts at just £599 complete with a factory fitted Moth Mk.1 tonearm.

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.

Contact us by email or phone 07749 486783 for details of worldwide dealers or to arrange a demonstration at our UK sales office.

SRM

7 The Acorn Centre, Chestnut Avenue, Biggleswade, Bedfordshire, SG18 0RA. Tel +44 (0) 1767 313691 email: sales@srm-tech.co.uk www.srm-tech.co.uk

There is very little we don't know about turntables, but if you are interested in another type of product -

don't worry because we also specialise in:

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Amphion AstinTrew Jolida
Anatek Audio Audiovalve
Chord Company Graham
Clearaudio Dynavector
LFD Michell Engineering
Nevada Cables Nordost
Nottingham Analogue Neat
Nitty Gritty ProAc Trigon
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EST BUY EDITOR'S CHOICE

				SPECIFIC G P		IFICA			
			ENT SUPPORTS	небнт	TOP PLATE SIZE	W	NUMBER OF SH	SHELI	ISSUE NL
		us ct	ome in all shapes and sizes	HT CM)	E (CM)	WELDED	SHELVES	SHELF TYPE	NUMBER
BAUGE	PRODUCT Atacama Equinox	409	COMMENTS Stable, modular design with style and excellent bass transients	81	50,50	0	4	Glass	217
-	Audiophile Base Std Supp't			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 hert 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
Ŧ	Hi-Fi Racks Podium	500	A keenly priced piece of high-class furniture that also happens to sound great		59-5			Wood	320
Ŧ	Isonoe Isolation feet	98	A set of four isolation feet that are ideally suited to microphonic kit like turntables					Allcy	327
	Partington Minim	470	Adds its own character to rock, but to the detriment of acoustic sounds	78	45,37	0	5	Glass	302
*	Quadraspire QX25 Support	25	Beautifully simple design, cheap and easy to use Excellent with CD players					Acrylic	327
Ŧ	Russ Andrews 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

				1000	SPEC	FICA	TION	S	9193
2	SPEAKER STANDS							NUMBER	ISSUE
Not	Not all stands are made equal – try one of our top buys					FILLABLE	WELDED	R OF LEGS	E NUMBER
BADGE	PRODUCT	ε	COMMENTS	HEIGHT (CM)	(CM)	E	8	SS	æ
	Anvil Sound Display Stand	229	A variety of smart looks available – sound is clear and precise	50	20,17	0		1	293
+	Custom Design RS300	110	An attractive stand whose lack of coloration suits it to high-resolution systems	56	16,5,18	0		1	281
*	Custom Design S0404	220	Robust four-pillar design gives very low coloration and maximises performance	61	18,16.3	0		4	283
-	Partington Ansa 60	119	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	0		4	232
1	Partington Dreadnought BS	299	Sound is better defined in almost all areas than cheaper, slimmer stands can offer	62	17,23	0		5	309
*	Partington Heavill	499	Robust to the <i>n</i> th degree, this stand helps produce very precise bass and upper frequencies	53	31,22	0		6	287

SPECS KEY HEIGHT (CN) 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.



Quadraspire QX25 Support £25 Fashioned from two identical pieces of acrylic sheet that slide together, these feet create a very impressive degree of isolation, particularly for CD players



Partington Dreadnought BS £300 Probably the best speaker stand you can buy for the money – heavily engineered and backed up with sound theory, this mass-fillable stand is a top recommendation



Townshend VSSS £1,380 Although not cheap, Max Townshend's skillfuly engineered rack nears perfection in terms of equipment isolation, diminishing returns kicks in if spending more

www.standanddeliver.com

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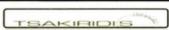


















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David Price Hi Fi World

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Janine Elliot HI FI News - The Missing Link Family of Cables.... "The most beautiful looking and extremely musical cables money can buy"



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"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

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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Acos Lustre, excellent Japanese tonearm
ADC ALT1, excellent
Anatek MC1 award winning mc phono stage
Anston RD80, reasonable order, SME fit
Basis 2200 Signature, Vector 4, Clamp c £8k new
Benz Micro Glider, excellent low hours
Clearaudio Master Solution c/w Unify tonearm
Graham 2.2 Tonearm, nr mint boxed
Graham Phantom, ex demo. excellent boxed
Linn LP12, lttok, Lingo excellent
Linn LP12, Ekos, Lingo in Rosewood boxed superb
Linn Ekos 2, excellent boxed
Linn Axis, c/w Basik Plus arm
Michell Gyro SE, DC Motor, as new boxed
Michell Electronic Reference (no arm, SME cut)
Michell QC Power supply
NAD 533 Turntable (Planar 2), RB250, Elektra
NAIM Stageline S, excellent
Pink 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 RB25s and Super Bias, excellent
Rega RB300 Upgraded winng etc
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Roksan Xerxes 20/XPS7 as new, used
SME 3009/2, excellent
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Thorens TD160HD with TP250, ex demo bargain
Technics SL1210, reasonable cosmetics
Tom Evans Microgroove plus (upgraded ISO), as new
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Meridian 504, excellent
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Musical Fidelity A5DAB, excellent boxed
Nakamichi Dragon, due in
Nakamichi ZX1000L, due in
Quad FM4, excellent later grey version, boxed
Quad FM4, excellent
Rotel Michi, excellent boxed
Digital
Arcam CD7, excellent boxed
Arcam CD17, nr min! boxed
Audiolab 8000CD onginal version black
Audio Research CD7, mint boxed in silver
AVI Lab Series CD player, as new boxed
Bryston BCD1, nr mint boxed
Chord DAC64, excellent boxed to clear
Consonance CD2.2 24bit, excellent boxed
Creek Classic CD, black
Cyrus DACX, excellent black boxed
Esoteric DV60, mint boxed
Esotenc XO3SE, excellent boxed
Marantz CD12/DA12 KI upgraded version
Marantz SA1, boxed recent new laser
Marantz CD94/DA94 combo excellent boxed
Marantz SA15, excellent boxed
Marantz CD17KI, excellent boxed
Meridian 506 16 bit, excellent boxed, factory serviced
Meridian 566 24bit DAC, excellent
Musical Fidelity XRay, excellent, remote, box
Musical Fidelity Tubalog! Rare as .
NAIM CD3.5, excellent
NAIM CD3, excellent
NAIM CDS2/CDPS, new laser in 2009
NAIM CD5i, excellent boxed
NAIM CD5X, as new boxed
Pathos Digit, superb boxed
Rotel RCD02, excellent with remote
Rotel RCD991, excellent boxed
Shanling CDT200, excellent boxed newer model
Shanling Omega Drive, vgc flight cased, serviced
Sony X559ES, copper chassis, rosewood sides, lovely!
Stello CDT200/DP200 Transport and DAC Preamp mint
Sugden CD21SE, as new one owner boxed

Suggen CD21SE, as new one owner boxed
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	1499	Levinson No27 Power amp, vqc	1499
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FOR SALE

CASTLE Conway 3 loudspeakers in mahogany. Excellent condition, £275.

01253 891520 (Lancashire)

REGA Planar 3 turntable, RB300 arm and Elys cartridge. Pale blue deck, excellent condition, 14 years old. Can send photos. £300.

01158 549677 (Nottingham).

RUSS ANDREWS Silencer, 3 for £100. Superpurifier 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: 2 x 600 floorstanders, 1 x CC6 centre channel, 2 x DS6 dipole surrounds, 1 x ASW 1000 subwoofer. £300 ono. 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 15kg high-end DAC, (£2,800)
Separate word, bit, master clock and audio data input (like Esoteric). Superlink, USB, AES, S/PDIF and Toslink inputs. Balanced and unbalanced outs. www.cec-international.de. Seven months old, boxed, as new, £1,749, 07777628426 (Bristol).

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) £2,350 00353 87 637 6623 (County Wicklow)

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 2 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)

AUDIOLAB 8000Q/Audiolab PX pre and power amps. British made, in very good condition with original boxes. Upgrade results in sale for £450 ono. 01778424327 (South Lincs)

ATACAMA loudspeaker stand, black. 30cm high. Spikes included. £30. 01245 264248 (Essex).

PS AUDIO Power Plant
Premiere: Award winning AC
mains regenerator that converts
poor incoming AC to pure 230V
AC. New, boxed, upgraded
model. This is not a passive
filter, but a mains waveform
re-builder. £2,000) £1,250 ono.
07859388167 (London)

SONY headphones, MDR-CD 1700, (£200) £120. 01707 657801 (Herts.)



Above: Pathos Classic Mk 3 amp

TOTEM floorstanding loudspeakers in cherry.
Includes standard and custom made granite plinths. Still under warranty. Excellent condition. (£1,695) £795. 07725 072878 or email: jason-watson@sky.com (Leicestershire).

CHORD CO. Chameleon Silver Plus, one metre £60, Nordost Super Flatline Gold Mk2, two metres per side bi-amp/bi-wire £90, Kimber Silver Streak 0.5-metre, attenuated £90. 01482 887409 (East Yorkshire)

QUAD qc valve preamp, two quad 11-40 valve monoblocs, superb condition boxed with instruction manuals. £3,000. 01202 481386 (Dorset)

AUDIOLAB 8000A amp (1988), mint. Denon DR-M20 tape deck, VGC. Both black, boxed, with manual. Monitor Audio R252 loudspeakers VGC, black. 01524 34627 (Lancs)

KUDOS Cardea C10, cherry wood standmounts, boxed. (£2,400). £1,400. 07899 721899 (London). 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)

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!

FOR SALE

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 12in 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. Marnatz 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 minidisc £60, Technics SLP 770 CD £65, Pro-Ject Debut II Speed box phono 78 adaptor £120. 01708 457691 (Essex)

RUARK CL20 floorstanders, very good condition, wonderful sound. Approx seven years old. Six ohms/87dB sensitivity (£1,650) £575 07896 206056 (Sussex)

SUGDEN Masterclass integrated amplifier, Graphite facia. Just four months old, boxed, mint (£3,675) £1,800. 07899721899 or email: yatestherapy@googlemail.com. (London).

LEEMA Antila CD player £1,400, Vecteur 6-2 amplifier 2 x 160 RMS £800, Avalon NP 2.0 loudspeakers (slight damage to one cabinet) £800. 07811 738295 or 02891473795 or email Sara.mckinty@hotmail.co.uk (Northern Ireland)

RUSS ANDREWS purifier block with one metre reference powerkord, Super purifier plus 3 silencers. £700. 01902 884694 (Dudley).

NAKAMICHI CR-7E cassette deck, stored from new, unused, original box £995, IsoTek Titan power conditioner (silver) with six-way Titan Multilink, professionally hardwired with 1.25 metre Acrolink 6N power cord, immaculate, £1,500, IsoTek Orion four-way mains filter (silver), £250. 01252 620644 or 01962 711800 (Hants)

TEAC Reference 500 midi system. Amplifier 2 x 50 watts, CD Player, tuner, cassette deck. Includes interconnects, rack. Bower and Wilkins DM602/S2 speakers on Atacama stands and QED Silver Anniversary bi-wire cable. All mint. £375 01582 667766 (Bedfordshire).

PIONEER A400 amp, £120 Marantz PM66SE, remote, £95. Nakamichi RX202 cassette, £175 Deltec DPA50S power amp, dedicated cables, £350. Pioneer PL115D record deck, £40. 01708 457691 (Essex).

SUGDEN PDT4 Masterclass CD, boxed, £1,800. Sugden Masterclass M14 integrated class A amplifier, £2,000. 01977 618403 (West Yorks).

CYRUS 3 PSX-R amp in black. No box, but manuals, remote and

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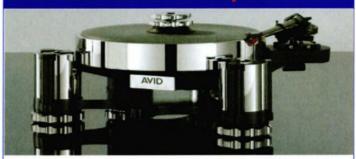
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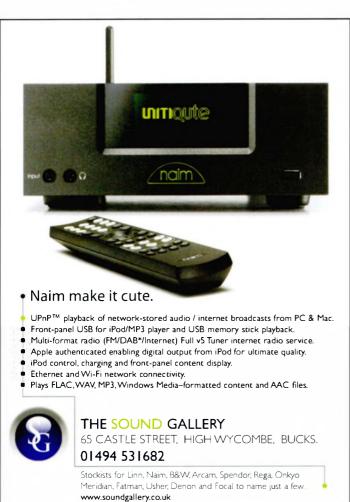
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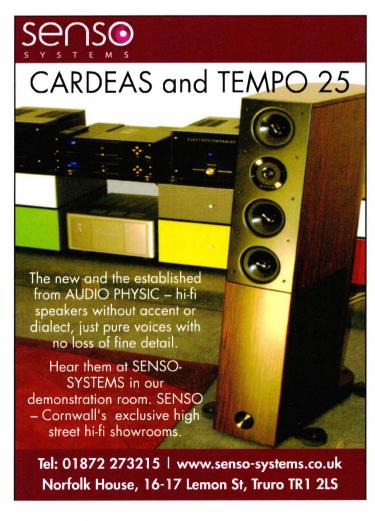
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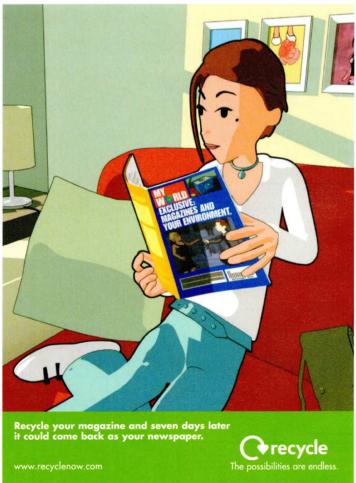
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