

Super-DACs tested:
Six new models compared
Cyrus, Moon, NuForce, Lavry, Electrocompaniet
and M2Tech go head-to-head from £1,000

Can Krell excel with the Cipher?
World's first test:
our verdict on the
new flagship player



Hi-Fi Choice

PASSION FOR SOUND

www.hifichoice.co.uk

Issue No. **350**

October 2011

£3.99

The end for CD

**Laptop beats CD player! Discover why
Classé's ground-breaking preamp will
change how we think about hi-fi**

Inside Rega

We reveal the secrets of one
of Britain's best-loved brands

350th issue!

HFC celebrates 350 editions in
our special anniversary feature

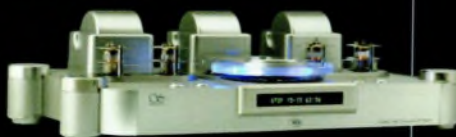


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carefully selected reviews:
NAD, Creek, Cambridge
Audio, Quadral, Elipson
and much more...

Out of this world

Shanling's £2,000 player
brings SACD sound quality
from regular CD!



COMPETITION WIN!

A Naim UnitiQute
streamer worth

£1,425!



How many CDs do you own but never play?



Comes with credit card size remote control

Store, browse and listen to your complete CD collection on the revolutionary Brennan

What's the point in owning hundreds of CDs worth thousands of pounds if you never listen to them? The problem with CDs is that it's quicker to make a cup of coffee than dip into a CD. Try timing how long it takes to pick a CD, load it in the CD player, play a snippet from a track or two, eject it and put it back where it came from. Then there is the problem of finding music. The print on a CD spine is tiny. What if the track is on a compilation CD? What if the CD is in the car? Then there is the clutter. You need to keep your CDs near the player or you won't play them. So you are forced to share your living space with literally hundreds of cheap plastic boxes.

CDs are a great way to listen to music but they are also inconvenient, inaccessible and a bit of a chore.

The Brennan JB7 is a CD player with a hard disk that stores up to 5,000 CDs - and that's not all

It saves space and clutter and delivers near immediate access to an entire music collection. JB7 owners rediscover then 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 the originals in another room or retire them to the attic.

Small enough to pick up with one hand yet big enough for a lifetime of music, the Brennan JB7 is one man's brilliant idea for everyone's forgotten music. It's only available direct from Brennan at www.brennan.co.uk.

The face behind Brennan

Martin Brennan, who designed the JB7, has worked with Sir Clive Sinclair and Sir Alan Sugar and has designed over 20 silicon chips in his career. He was a real pioneer in the computer games industry - he played a central role in the design of the worlds first 64 bit games computer.

Ever since CDs were invented Martin wanted a CD player that would hold his entire CD collection. He wanted something as simple to use as a light switch but at the same time something that would let him find a particular track without leaving the armchair.

Key features

- ▶ Browse albums by spinning the volume knob - push to play
- ▶ Display track names as they play
- ▶ Delete tracks you don't like
- ▶ Seven rainbow colour coded playlists
- ▶ Segue function blends one track into the next
- ▶ One touch record from vinyl, cassette or radio
- ▶ One button plays the entire music collection at random
- ▶ Plays MP3 downloads - future proof
- ▶ Clock with alarm
- ▶ 60 Watt, 4.8 x 16 x 22 cm steel and aluminium construction
- ▶ Backup music to external USB hard disk for safe keeping
- ▶ You can use it with your existing hi-fi or on its own



*"I've suddenly re-discovered my love of music - it's amazing"
"I feel like a teenager all over again - thank you Brennan"*

The Brennan JB7 is available in Cobalt Blue or Titanium Metallic



FULL MONEY BACK GUARANTEE

If you're not suitably impressed with your Brennan JB7 we'll collect it free of charge and refund you in full.

A word about copyright

"In 2006 the record companies said unequivocally that they are happy for you to load your own CDs onto a hard disk but the Advertising Standards Authority have asked us to tell you that it is unlawful to copy material without the permission of the copyright holder. Find out more and have your say at www.brennan.co.uk"



Martin Brennan

ONLY AVAILABLE DIRECT. To order visit www.brennan.co.uk

brennan

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YOUR EXPERTS



PAUL MESSENGER
EXPERTISE: SPEAKERS

PAUL is the UK's foremost expert on loudspeakers. Having worked as a speaker designer and reviewer for over 30 years Paul is internationally recognised for his ability to assess loudspeaker performance, and report on developments in the field.



JIMMY HUGHES
EXPERTISE: SYSTEM OPTIMISATION

JIMMY has been involved in hi-fi for over 40 years. His knowledge of tweaking and optimising systems is unrivalled in the hi-fi industry and he brings enormous expertise to the pages of *Hi-Fi Choice*. If anyone can help you improve your set-up, it's him.



RICHARD BLACK
EXPERTISE: TECHNOLOGY

RICHARD writes exclusively for *HFC* and brings his experience as a successful musician and recording engineer to the title. As Technical Consultant, he's our authority on tech testing, ensuring that our verdicts are beyond compare.



ED SELLEY
EXPERTISE: TROUBLESHOOTING

ED has spent the best part of a decade selling, developing and supporting products from some of the biggest names in audio. As *HFC*'s troubleshooter, he is on hand to help you answer your questions and help you create that perfect system.



NIGEL WILLIAMSON
EXPERTISE: MUSIC

NIGEL has been writing for *The Times* for more than 25 years and has written for various titles including *Uncut*, *Billboard* and *Songlines*. A Mercury Music Prize judge for five years, Nigel has written books on Bob Dylan, Neil Young and the Blues.



JASON KENNEDY
EXPERTISE: TURNTABLES

JASON edited *Hi-Fi Choice* through the Brit-pop era and relinquished the helm after 17 years on the title. A hi-fi addict since his twenties, Jason fell for the beauty of vinyl and has never looked back. He's here to help you get the best from your LPs.



MALCOLM STEWARD
EXPERTISE: EMERGING TECH

MALCOLM is a legend in hi-fi magazine circles. A former editor of *Hi-Fi Review*, he was one of the best known and most outspoken reviewers of the 1980s and 1990s. He now writes exclusively for *Hi-Fi Choice* and he loves being 'back'.

Welcome...

www.hifichoice.co.uk Issue No. **350** September 2011



Hello and welcome to the 350th issue of Britain's only growing hi-fi magazine. We're still going strong in this internet age, partly because we're so embracing of new technology, especially when

there's a tangible benefit in music appreciation. This is perfectly reflected in one of our biggest reviews this month, Classe's new CP-800 preamp. Here's amp with digital connectivity said to be so good that Classe's Dave Nauber said: "I'd rather have my phone and this preamp than *any* CD player at *any* price."

Strong words and something both Jimmy and Jason have been exploring this month. Could a clever preamp *really* negate the need for a CD player? Find out on p56 and 72.

Despite looking back this month we remain forward-thinking as our DACs blind group test illustrates. These accessories have now become critical in updating ageing systems to the latest spec. Onwards, then, to the following 350...

Dan

Dan George Editor
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OUR PROMISE TO YOU

HI-FI CHOICE is passionate about high fidelity. We're dedicated to the very highest standards of sound reproduction. Our commitment is to bring you the most reliable, in-depth hi-fi equipment tests anywhere and we're backed by the UK's biggest technology publisher. Our expert writers will help you get the most from your hi-fi and guide you towards the best-performing products for your budget. Our passion is your passion.



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Since 1949, McIntosh has defined quality sound reproduction and continues to set the standard for performance, reliability and service.

Every music lover has their own personal reasons for owning McIntosh. For some it is the workmanship and tank like build quality. For others it is the prestige and history of a brand that never stops listening to it's customers.

The reasons are many, but what brings every customer together, is the need for the most accurate sound in their listening room and McIntosh delivers every time.

McIntosh is about music as a whole and not about what type of music you like. Whether you love Classical, Jazz, Pop, Dance, Rock or Heavy Metal, no matter how eclectic your musical tastes, McIntosh delivers the music you love as the artist intended.



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free unbiased advice ▶ large product range ▶ free parking ▶ 0% flexible finance*



MCD1100 CD/SACD Player

Variable volume output, Dedicated headphone amp. Five digital input source switching.



C48 Preamplifier

Twin moving coil/moving magnet, Dedicated headphone amp, USB Input, Integrated DAC.



C50 Preamplifier

Twin moving coil/moving magnet, Dedicated Headphone amp, USB Input, Integrated DAC.



MCLK12 "ICONIC" Clock

Designed to either hang on the wall or to fit in an equipment rack. Illuminated digital meters for hours and minutes. A true collectors piece for all McIntosh fans.



MC302 Power Amplifier

300wpc, Larger/Easy to read power watt meters, Ultra low distortion design



MC452 Quad Balanced Power Amplifier

450wpc, Most powerful McIntosh stereo amplifier, Luxurious McIntosh engineering.

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What separates a McIntosh from others?

- It can take up to two years from initiating the concept to creating the final product.
- PC boards are built in McIntosh's factory in Binghamton. Unique boards are delicately crafted by hand.
- McIntosh designed its unique Output Autoformer® for use in many of their solid-state power amplifiers. The manufacturing sequence begins with coil winding techniques that have been used for 50 years.
- Power Guard dynamically adjusts the input levels to avoid "clipping" while preventing harsh sounding distortion. The volume adjusts at the speed of light to prevent overdriving.

- Sentry Monitor is a fuse-less short circuit which disengages the output stage before current exceeds safe operating level and resets automatically.
- The McIntosh Blue Watt meters have become a symbol of superior quality sound.
- McIntosh cuts 1/8 to 1/2 inch glass faceplates with genuine garnet dust to diminish friction and protect your investment over generations of enjoyment.
- McIntosh black faceplates are painted with 12 layers to deliver a beautiful finish that is easily viewed in softly lit rooms.

Hear the difference

Why not give us a call on **01202 911 886** or **01592 744 779** to arrange an appointment to come and experience McIntosh - **because ordinary isn't for everyone.**

*subject to conditions

part exchange* ▶ large selection of used items ▶ home demonstrations*



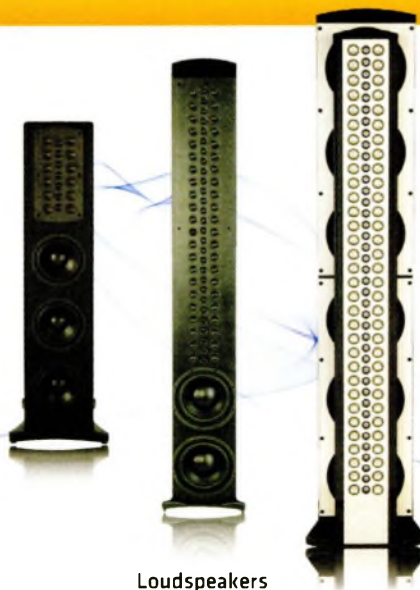
MT10 Turntable

Factory preset tracking force, anti-skate and cartridge position. Two sapphire (horizontal) and two ceramic (vertical) bearings, custom tonearm, .5mv (ebony body) moving coil cartridge included.



MXA60 Lifestyle System

Integrated Audio System: 75 Watt Amplifier/pre, CD/SACD Player, AM/FM Tuner and Loudspeakers (pair). Measures 22.5" long, 10.6" high, and 14.9" deep, including loudspeakers.



Loudspeakers

XR200, XRT1K and XRT2K

McIntosh produce a formidable range of loudspeakers. Perfectly suited to both 2-channel and Home Theater, they sound as striking as they look.



hi-finews
EDITOR'S
CHOICE

NEW MC601

"There was an immediate sensation apparent upon hearing this McIntosh combination, even from ice cold: that of true greatness in every sense of the word."

Ken Kessler, Hi-Fi News, May 2011

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UPDATED MONTHLY



WIN! WORTH **£1,425**

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A Naim UnitiQute streaming system

COVER STORY

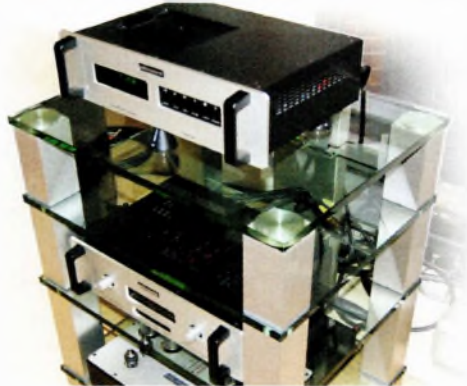
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Rega revealed: the only way is Essex



1991 in music: new decade, new sounds



Dealer systems: Audio Venue struts its stuff



"A ripped CD sounds better than the original on a decent CD player."

Jason Kennedy: Classe CP-800 preamp p56

TESTED THIS MONTH



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Shanling CD-T2000 CD/SACD player



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Quadral Aurum Antal VIII loudspeaker



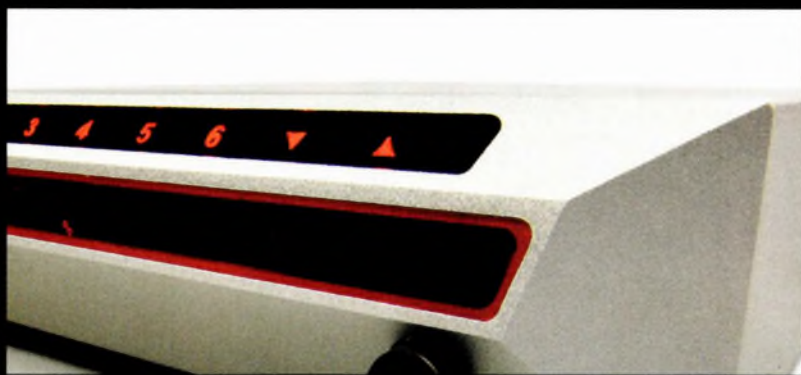
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MINI TEST

Cleaning wizards

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Record-washing system

Subscribe and get a Chord Co. interconnect worth £70! (p32)

Juicy Jades

Wharfedale's new Jade loudspeaker series aims for high-end performance at real-world prices

PRICE: £600-£2,700

AVAILABLE: NOW

CONTACT: 01480 447700

WEB: WHARFEDALE.CO.UK

Wharfedale has announced an entire new range of loudspeakers. The Jade series is designed to sit above the Diamond range and features technology from the flagship Airedale Heritage Classic.

The seven-strong series features four stereo models – two standmounts and two floorstanders – plus there's a wall-mountable surround unit and a choice of two centre speakers.

The cabinets are constructed from a proprietary laminated material called

The cones are, in turn, driven by a motor assembly that Wharfedale says is one of the most linear drive systems yet devised. The voice coil is immersed in a magnetic field for improved balance and features shorting rings to reduce the usual effects of inductance. The result is said to be a cleaner and more extended midrange response.

Unusually, the standmounts, centre and surround speakers are infinite-baffle designs. The two floorstanding models are fitted with 'aperiodic cabinet loading', which consists of an

"Drivers are designed to combine low coloration with high responsiveness."

Crystalam, which includes natural wood elements assembled with a view to reducing vibration and panel leakage below the threshold of audibility. Wharfedale claims the cabinet has no audible influence at all on the performance of the speaker.

The drivers are also proprietary and are constructed from 'Acufiber', a woven matrix of carbon and glass fibre, designed to combine low coloration with high responsiveness.

opening in the base of the speaker that is tuned by a slot that rests between the plinth and the cabinet. This, in turn, is filled with a resistive porous foam that controls airflow. Wharfedale claims the result is extended bass with superb articulation and clarity.

The speakers are finished in a choice of black oak, vintage cherry and piano-black finishes (the latter of which, commands a price premium) and all models are available now.

THE BIG PICTURE

WHARFEDALE IS ONE of four speaker brands owned by the International Audio Group, the others being Mission, Castle and Quad. Whilst historically famous for budget models like Diamond, the Jade series seems to be moving Wharfedale into selling at a slightly higher price point.

IAG has taken care to retain distinct identities for its brands, so the Jade series makes sense in spreading the price points at which IAG speakers are sold and the technology they employ.





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fact[®] loudspeakers represent the ultimate in luxury and audiophile performance; they convey the unadulterated essence of a recording from a wholly elegant form.

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WHAT HI-FI?
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New Rega P3

Rega unveils its latest iteration of the evergreen P3 turntable

Rega has launched a replacement for the long-lived P3 – the RP3. Still visibly part of the same family, Rega says that a number of key changes to the design has improved performance over the previous P3-24.

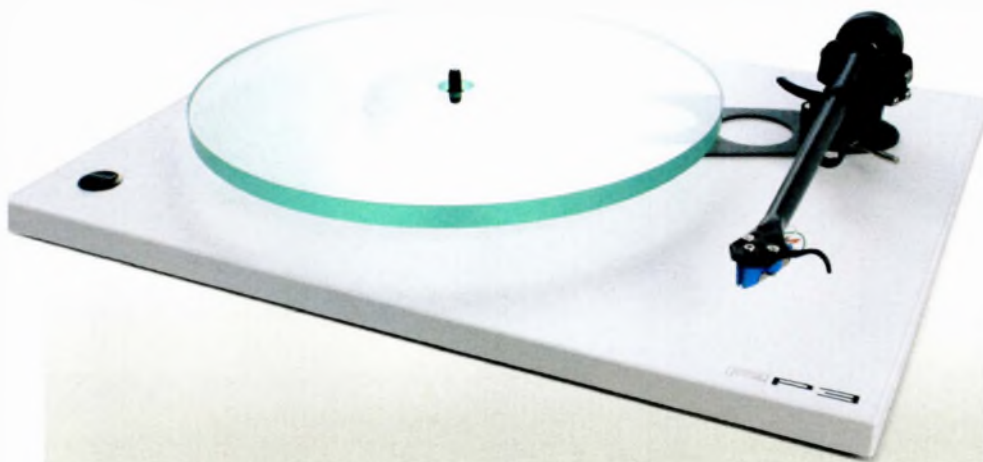
One of the upgrades is the new RB303 tonearm. This is descended from the preceding RB300 and

RB301 but features a new arm tube, increased rigidity in the bearing housing and 'intelligent redistribution of mass', says Rega.

The plinth has also been updated. Rega says that the traditional lightweight plinth has been improved by the use of a phenolic resin double brace, that connects the hub to the tonearm mount creating a 'stressed

beam.' The company claims that this results in a lighter turntable with lower mass, but improved rigidity.

The RP3 is available in a choice of titanium, white and grey finishes and can be ordered without cartridge for £475, or with an optional factory-fitted Elys 2 cartridge for £549. Look out for our in-depth review next month.



PRICE: £479-£549 **AVAILABLE:** NOW **CONTACT:** 01702 333071 **WEB:** REGA.CO.UK

Vitavox returns

Legendary brand returns to hi-fi

Vitavox, one of the major names in the production of drivers for use in horn-loaded designs, is to return to hi-fi.

The S2 pressure unit – a design that has been in production for several decades – will continue and features 15-inch drivers, using Alnico magnets and new versions of some other long standing horn designs.

The company hopes to start selling in the autumn.



PRICE: £TBC **AVAILABLE:** AUTUMN **CONTACT:** 01179 256015 **WEB:** VITAVOXHIFI.COM



Mini-Marvel

CENTRANCE is a new name in DACs and its DACMini has gone on sale in the UK for the first time. The casework has the same overall dimensions as an Apple Mac Mini making it an easy business to stack the units on top of one another. The feature count is also extremely impressive. As well as coaxial and optical inputs, a 96kHz-capable 'driverless' USB input is fitted, as well as an analogue line input and headphone socket. This is paired to a volume control allowing the DACMini to function as a system preamp for digital and analogue sources.

Centrance is making some strong claims about the performance of the DACMini, stating that jitter is 'virtually unmeasurable' and that it has 'exceptional noise immunity.'

PRICE: £720
AVAILABLE: NOW
CONTACT: 020 8418 1470
WEB: CENTRANCE.COM



Pioneer

BOWERS & WILKINS has unveiled its first ever in-ear monitor, the C5. Referring to it as, 'a mixture of long-held acoustic principles and technological advances.' B&W's C5 includes a Micro Porous Filter, which acts as a diffuser for a more spacious performance, while limiting noise-bleed between the ear canal and the outside world.

Attention has also been paid to the fitment of the C5, using a 'Secure Loop' that adapts to the shape of the inner ear and provides a snug fit for every user. The C5 also uses a tungsten mass near the tip of the earphone to improve comfort.

As a 'Made for iPod product', full remote control for iPod and iPhone is provided.

PRICE: £150
AVAILABLE: NOW
CONTACT: 0800 232 1513
WEB: BOWERS-WILKINS.COM



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STEREO AMPLIFIERS
BEST STEREO AMPLIFIER £2000+
LEEMA TUCANA II

"If you get into h-fi to enjoy music, we doubt whether you'll find a more engaging alternative for the money"

"We're massive fans of Leema's Tucana II: it's closer to being all things to all people than any other high-end amplifier we know"

What Hi-Fi? Sound & Vision



Purchase an Antila IIS Eco & Tucana II and receive a Chord Anthem XLR interconnect worth £630 absolutely free!

THE
CHORD
COMPANY

Available only through Leema authorised UK retailers. Due to demand offer extended until 30th September 2011. Terms and conditions apply

Award Winning Hi-Fi

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AWARDS 2007

CD PLAYER
BEST CD PLAYER £1500+
LEEMA ANTILA

WHAT HI-FI?
SOUND AND VISION
AWARDS 2009

STEREO AMPLIFIERS
BEST STEREO AMPLIFIER £1500+
LEEMA TUCANA II

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2006



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Email: info@leema-acoustics.com

Can do

New range of Slovakian valve-based products arrives in the UK

Canor is a Slovakian company better known for its very distinctive wood-fronted electronics, although its new range is more conventional in appearance and features an entirely metal chassis.

Benefitting from a production process that includes extensive burning-in of all valves

used in its products, Canor can test for reliability, noise and all other aspects of performance. The result, says Canor, is vacuum-tube performance, coupled with the reliability of solid-state designs. The range includes integrated and pre/power amps, as well as phono stages and CD players.



PRICE: £2,400-£3,500 **AVAILABLE:** NOW **CONTACT:** 01276 501392 **WEB:** CANOR-AUDIO.COM



PLAY time

SONOS has announced its least expensive all-in-one streaming unit. The **PLAY:3** is designed to be the simplest method yet of streaming audio from a central location to any room in the house. Designed to work over both an ethernet connection or wirelessly with the addition of a Sonos Bridge, the **PLAY:3** makes use of three Class D amplifiers powering a pair of three-inch midrange drivers and a tweeter. Bass is supplied via a passive radiator on the rear of the unit.

The **PLAY:3** is able to access music stored on networks, as well as over 100,000 radio stations, shows and podcasts. Music on demand services such as Spotify and Last.fm are also supported. Like other Sonos products, the **PLAY:3** can be controlled by dedicated remote or Android, iPhone or iPad app.

PRICE: £259 **AVAILABLE:** NOW
CONTACT: 0808 234 6596
WEB: SONOS.COM

Koda conduct

New K10 is 'the ultimate preamplifier'

Robert Koda, the new high-end audio from Japan has announced its flagship K10 preamplifier.

The K10 makes use of the ITC circuit (Inverted Transconductance Coupling) which it says is a 'unique arrangement of semi-conductors central to achieving sonic perfection.'

Other innovations include a DC reactor-type power supply for ultra-low noise levels. The chassis is triple-screened and made of solid copper, while the power supply is encased in its own 'magnetic vault' to further reduce interference. The controls are all manual type with the view to reducing stray interference.



PRICE: £TBC **AVAILABLE:** AUTUMN **CONTACT:** 07508 730899 **WEB:** AMPLITUDE.CO.UK

NEWS IN BRIEF

A selection of news-breaking stories on everything hi-fi



•**ROBERTS** says the £100 STREAM 105 internet radio is the perfect introduction to the technology for those starting out. The unit is fully portable and can be controlled by the new free CONNECTR iPhone and iPod touch application. robertsradio.co.uk



•**FURUTECH** says that a 10-second treatment of audio or video discs with its new DeStat II will remove all dust and static charge, while improving playback. The £400 unit has a powerful fan to remove dust and a four-pole 'Balanced Ion Flow Generator' to clear static. soundfoundations.co.uk



•**MONSTER** has launched the Miles Davis Trumpet high-performance earphone. Developed in conjunction with Miles Davis Properties LLC, the earphone features trumpet syling cues and comes packaged with a copy of 'Sketches in Spain'. monstercable.com



•**GENEVA** has added DAB reception to its £379 Model S. The all-in-one system is now capable of handling FM and DAB, as well as replaying audio from the integral iPod dock. The Model S is finished in a choice of white, red, black or silver lacquers. genevalab.com

Clean & Clear

Clearaudio launches improved record-cleaning machine

Clearaudio's Smart Matrix Professional is an improved version of its Matrix record cleaner and has been developed with a view to 'improving cleaning performance, noise levels, as well as fit and finish'. This was achieved, it's claimed, by bringing production of the Smart Matrix Professional in-house to the the company's factory in Erlangen.

Clearaudio also claims substantial improvements by using the same turbine and motor assembly as higher-end machines, meaning that even very dirty records can be given a thorough clean. A damped chassis also allows much quieter operation.

The Smart Matrix Professional is also capable of bi-directional operation to further improve cleaning. An optional dust cover is also available to keep the surfaces as clean as possible. Clearaudio proudly claims that the design of the cleaner is 'worthy of being placed beside the hi-fi system rather than hid away in a utility room'. But, we'll let you be the judge of that.

PRICE: £930-£995 **AVAILABLE:** NOW **CONTACT:** 01252 702705 **WEB:** CLEARAUDIO.DE



DESERT ISLAND DISCS

Paul Darwin, Rega's UK sales co-ordinator selects four sensational pieces



ALLMAN BROTHERS BAND
LIVE AT THE FILLMORE
Recorded over two days 12 / 13th March 1971, it captures the band at their prodigious peak. Listen to the 11/4-time *Whipping Post* in all its 23 minute glory.



JOE HENRY
TRAMPOLINE
Perhaps better known for his Grammy Award productions and being Madonna's brother-in-law, his talent as a singer and songwriter is often overlooked. An essential classic.



MIDLAKE
THE COURAGE OF OTHERS
Encompassing the best of pastoral folk, without the self-conscious finger in the ear, it is a triumph of beautifully written minor key classics.



JON DEE GRAHAM
NOT AS BAD AS IT LOOKS
An incredibly powerful solo performer, or with his band The Fighting Cocks, the album is well worth it for the track *Burning off the Cane* alone.

THE A-SERIES
THE ART OF NATURE



Natural Dynamics.

These words depict in short what performance you can expect from the new A-Series: a sound experience that comes amazingly close to true natural sound.

A-series

Hi-Fi Choice



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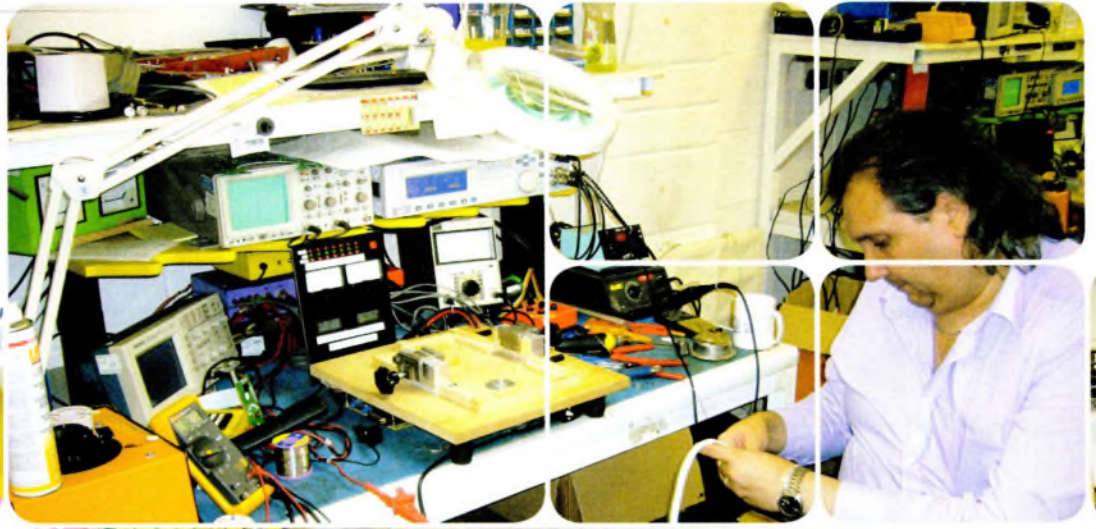


A360 September 2011

A360 September 2011

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THE INSIDER
REGA REVEALED



Rega's world

Rega has a remarkable track record for a company with such a low profile. **Paul Messenger** takes a closer look...

Tucked away in a substantial self-built factory on an industrial estate near Southend-on-Sea is one of Britain's more interesting and innovative hi-fi companies.

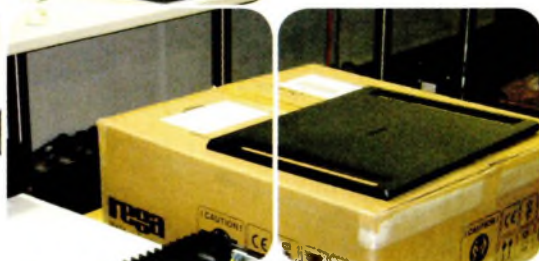
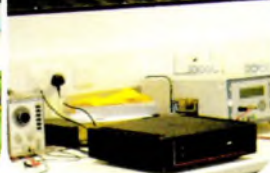
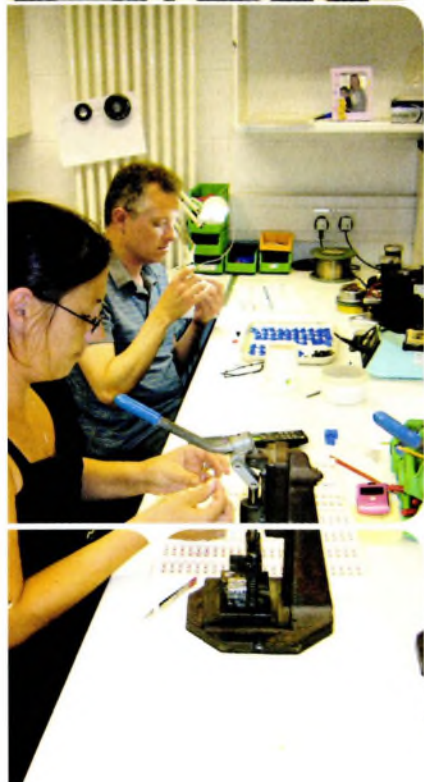
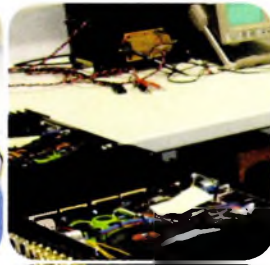
Although the company now has a proper (if radical) management structure firmly in place, proprietor and founder Roy Gandy remains its guiding light and is still coming up with numerous interesting engineering solutions today. Rega began making inexpensive vinyl-spinning turntables nearly 40 years ago and, having weathered the storm when CD arrived, is still in the same business today. The recently introduced entry-level RP1 has picked up numerous review plaudits and production today is around 2,000 units per month, with strong sales worldwide.

Which is not to say that things haven't changed. Turntables remain close to Rega's heart and are subject to continuous research and regular improvements, but the company and its product portfolio have both grown steadily and inexorably, so that it now makes all the components in the hi-fi system, all of which have been well received.

However, it's the Rega culture that is so distinctive. You can't miss the factory because of the enormous Rega-green '6' across the doorway. Go inside and there's no sign of a visitor's reception area, just the factory floor with people buzzing around making things. Having attracted attention, one is led through the stores, up a flight of stairs and into the open-plan design area tucked away at the back of the factory, adjacent to the administration section.

No advertising

The décor abounds in Rega's strong green, purple and yellow colours that have become something of a trademark since the early 1980s. High demand had led to the Planar 3 turntable being heavily back-ordered and Rega became aware of some dealers shipping their monthly allocation direct to customers without bothering even to open the boxes. Irked by behaviour it considered reprehensible, in 1983 Rega



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Did You Know

The stylish and intuitive **n-remote** is packed full of features including backlit keys, full colour screen and a motion sensing backlight to name but a few.





Assembling the complex double-hinged CD player lids



A row of new Rega turntables for testing

nipped it in the bud by slipping the occasional bright green turntable in amongst the regular black models, much to the surprise of some customers, the embarrassed irritation of the guilty, and the amusement of the innocent!

Rega's quirky approach to business extends to a decision not to use advertising. While accepting the effectiveness of advertising *per se*, Gandy feels that using hi-fi magazines doesn't reach the public at large, while to reach the general public as a whole is far too costly for a small company serving a niche market. He then quoted wine-maker Jean-Marie Guffens: "Art of selling rubbish to idiots".

Instead, Rega builds strong relationships with its distributors and dealers, believing that if the latter take the trouble to demonstrate its products, there's a very good chance that customers will buy them. It's a policy that seems to have been very successful, judging by the half million or so total sales racked up so far by the Planar 3 and its successors.

The individuality of Rega's approach is readily visible throughout: in its products; in the factory itself; and indeed in the 60-strong workforce

"With a healthy portfolio of new products, Rega is sailing ahead unencumbered by the economic malaise."

which is unusual in comprising similar numbers of men and women.

Necessary flexibility

This is very much an engineering company, and although a number of key components – castings and other metalwork, wood items for plinths and speaker cabinets and 'stuffed' printed circuit boards – are bought in from specialist suppliers, a surprising amount of actual manufacture is carried out in-house. Rega likes to keep tight control and sources all of the electronic components itself, supplying the kits of parts to the PCB manufacturer, for example.

Rega designed and built (or at least supervised the building of) its factory, combining its trademark idiosyncrasies with considerable flexibility, so that the internal sections may be changed as the company evolves. When it first moved in, it didn't need all the space, so rented one section to its transformer-maker, who has since moved on making room for Rega to expand.

This flexibility is very necessary, as predicting future demand for any new product can be difficult. For example, when in 2009 Rega introduced its first 'high-end' components, the Isis CD player and Osiris amplifier, it anticipated making them in small batches of five and set aside a small room to do this. When the first order came for no fewer than 30 units, it was time for a rethink and production of the high-end components was relocated to a much more spacious, but still secluded mezzanine floor, separate from the hurlyburly where less costly components are made in much greater numbers.

One of the most interesting parts of the factory was a similarly secluded corner where a team of about eight people – including no fewer than four different nationalities – assemble the tonearms and rotate around the various jobs to keep the work interesting. When Rega first

introduced the original RB300 in the mid-1980s, its complex casting that integrated headshell, arm tube and bearing set a new agenda for mechanical integrity.

This has formed the basis for numerous subsequent variations, either to reduce manufacturing costs or deliver refined performance and many examples have been purchased by other manufacturers for use on their own turntable products. Rega also suffers from people outside the company modifying its tonearms in various ways, usually to change the internal wiring. Sometimes these modified versions find their way back to Rega because they're not working properly and these often have much higher effective bearing 'friction' than the original design intention.

The various tonearm variations are under continuous development, keeping production costs as low as possible for the RB101 that's fitted to the budget RB1 turntable, for example, while also adding further refinements to the upmarket RB1000.

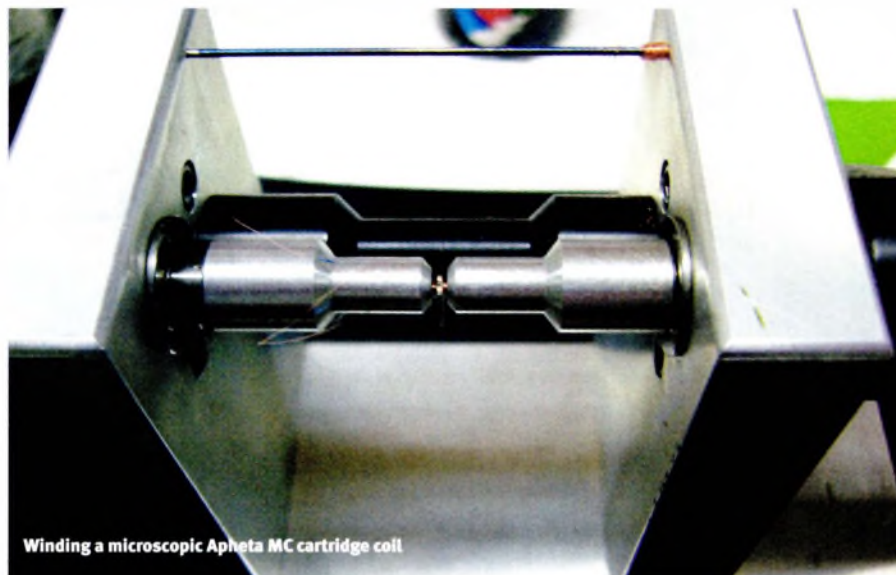
Important though the arm tube is, the really significant and interesting part is the bearing structure and this is where the human skill factor really comes in. Even though the tolerance of the metal components used in the vertical bearing can be held to within 4µm without incurring heavy extra costs, human beings can 'feel' some five different degrees of tolerance within this, a degree of discrimination that's very difficult indeed to measure.

Very low bearing friction is built into the design, but selection of bearing components to eliminate play is used to distinguish the higher performance versions. For example, Barbara Anders, the redoubtable Pole who coordinates the department, takes personal responsibility for assembling the RB1000s.



Magnifying shadowgraph aids cartridge checking

THE INSIDER REGA REVEALED



proved to be the case. However, that success has opened the door to introducing other relatively extravagant components to complete a high-end system. For example, a new and improved Iso phono stage has just gone into production, with extra features and performance over its predecessor and built into the same massive casework as the Isis. It's anticipated that the new tweeter design will make its debut in a forthcoming high-end Rega speaker that will also feature a radical BMR (balanced mode radiator) driver covering the upper mid and lower treble. And we've seen evidence of a very radical turntable design using advanced materials like carbon fibre-reinforced polymer (CFRP) and aluminium oxide, though this is still very much at the prototype stage, as different materials and construction methods are being tried out. We're sure this will be an exciting product when it arrives, but suspect it's still at least a year away.

Mass market

While high-end products make fine grist for the journalist's mill, the reality is that Rega remains fully grounded in the more affordable end of the market and, in many respects, rather more interested in the challenge of delivering superior performance within a tight budget.

The recently introduced DAC (affectionately referred to as Donald by the workforce) pioneered a very neat half-width casework format and is now joined by a new and matching Brio integrated amplifier. We gather these two will soon be joined by a new CD player based on the Apollo, making up a complete and cosmetically matched system with the potential for further expansion.

However, Gandy himself still professes a dislike of all things digital, especially for music reproduction and he was very dismissive when we enquired about the possibility of some sort of digital streaming product. He regards such devices as mass-market items, not unlike AV equipment and considers them quite inappropriate to a relatively small company making niche products. "Rega is an engineering company that's primarily interested in music", was the rather terse comment.

With a healthy portfolio of new products and an even healthier order book that is full right up to Christmas, one might assume that Rega is sailing ahead unencumbered by the widespread economic malaise. That's at least partly true, but rapid expansion can be as hard to manage as contraction.

Product design and development might be the glamour side of the business, but more mundane matters like ensuring that all the parts needed for production arrive on time and are ready and waiting is just as important in the overall scheme of things. Rega has spent years searching in vain for an appropriate computer program to handle stock control, so was well-chuffed to receive help recently from Cambridge University's Institute for Manufacturing. A postgraduate student currently on loan from the IfM is already helping Rega streamline those less glamorous business activities and proving an invaluable extra resource for a company that's clearly going places at quite a rate. ●

bass/mid driver, thereby setting a precedent for subsequent models.

As usual, Rega has its own way of doing things that is rather different from the market stereotypes. It still favours transmission line loading and small main drivers with lightweight paper cones and is unusual in making all its drive units – tweeters as well as cone units – in-house. This is normally not a particularly difficult engineering task, provided care is taken to make high-quality jigs, but it does allow Rega to introduce several interesting innovations.

Eliminating crossover components from loudspeaker systems always makes sense, as it both saves costs and improves sound quality. Rega uses multi-layer voice-coils in order to increase inductance and provide a natural roll-off for cone drivers without the need for additional inductors. It developed a clever winding bobbin to facilitate winding the eight-layer coils used in its bass units and even took out a patent to cover the technique.

The tweeter innovations are even more interesting. A potential problem with all moving-coil drive units concerns the reflections created by the metalwork behind the diaphragm. This is much more serious for tweeters than cone drivers, as the small dome is usually completely occluded by the central pole piece sitting close behind. Rega has found that it's possible to drill out most of the normally solid cylinder, leaving just enough thickness to maintain the magnetic flux, while allowing most of the rearward radiation from the dome diaphragm to pass through the motor largely unobstructed into a shaped dispersed-reflection chamber.

The latest innovation goes one stage further, though it is still in the development phase and has yet to find its way into a production loudspeaker. It involves eliminating the usual moulded 'butterfly' build sub-assembly completely and bonding the diaphragm/surround/voice-coil assembly directly onto the front plate of the motor.

Partly because Gandy has a rather cynical view of costly hi-fi components, the company didn't really expect the high-end Isis and Osiris models to be nearly as successful commercially as has



Multi-layer

A similar situation exists in the room where the cartridges are made. Three shadowgraph projectors make life easy enough for those working on the regular moving-magnet models, but the tiny coils used in the low-output moving-coil Apheta model are wound from almost invisible wire just 0.018mm in diameter. Only the heavily tattooed Lou is currently capable of winding these miniscule coils accurately and consistently.

Few people are aware that Rega built a few pairs of speakers way back in the early 1970s – chunky transmission-line-loaded floorstanders based on the original Bailey Wireless World article. However, coping with turntable demand then put loudspeakers on the back burner until the ELA appeared in the late-1980s. This slim floorstander featured transmission-line-loading and a very small

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The sky's the limit

Some commentators think Spotify is the future of music consumption. **Adam Hartley** is already hooked and now it's the turn of the USA...

Spotify has finally launched in the US, amidst much fanfare amongst America's tech and music press. Yet, once the initial PR love-in has subsided, can the Swedish music-streaming service manage to finally turn a profit and cut it in the biggest market for commercially recorded music in the world?

Firstly, I should really lay my cards on the table here and state, for the record, that I've been a big fan of Daniel Ek's PC, Mac and smartphone app ever since it first arrived in the UK back in February 2009. I've managed to get most of my music-loving friends and family members signed up to the (limited) free version of the service since that time and have taken Schadenfreude-like pleasure in goading friends across the pond who didn't have access. After all, it's not often that we Europeans get something so good, for so long years before our American cousins.

Spotify US currently requires users to have an invite to get involved in the free ad-supported version, much like it did when it originally launched in the UK. This is an extra annoyance to those who have waited so long to try out the hyped 15-million-plus jukebox-in-the-cloud, although for the truly desperate, they can still opt to jump the queue and subscribe to the unlimited or premium packages at \$4.99 or \$9.99 per month, respectively.

The company has also been making further waves in the UK, recently announcing partnerships with the likes of Onkyo and digital broadcaster Virgin Media. If you are in the market for an audiophile-quality home cinema receiver, then the new Spotify-friendly £500 Onkyo TX-NR609 (HFC 348) is most definitely worth a look. And the fact that I can now access all of my playlists via my V+ HD box just convinces me that I've made the right choice in not plumping for Sky+ from Mr Murdoch's infamous News Corp.

So why, with all of this in mind, do I feel like I have Spotify ennui? And why do I think that there are still too many niggly problems with the service before it can truly be considered a contender for the "iTunes killer" crown?

Spoilt for choice

Firstly, I'm writing this column from a remote farmhouse in Normandy. The nearest Wi-Fi is situated in an expensive hotel around 15km drive away. And there is no way that I am going to risk turning my iPhone's data-roaming on, to use the Spotify app,

because the last time I did such a stupid thing, I'd racked up a £50 bill quicker than I could say, "how much per megabyte?" And even last week, back in the relative comfort of free and unlimited Wi-Fi at home, my internet connection went down for a painful three or four days due to some unspecified engineering fault. Not having an always-on connection has brought my over-reliance on Spotify into sharp focus. It has also forced me to start using CDs in the car again.

Which brings me onto my second major issue with Spotify. The fact that there are over 15-million tunes to choose from merely confuses me most of the time. What do I want to listen to? It's a glut of choice.

Sure, the 'What's New' listings help a little and the social aspects of the service are fun. But if I'm honest I don't really care about what my friends and family are listening to, because I have better taste in music than most of them. Egotistical? For sure. But I suspect many HFC readers will feel the same way.

Now that the US launch is done and dusted, it is exactly this music discovery aspect of the service that requires urgent and considerable attention and resources. Because whatever you think of Apple, there is no denying the fact that iTunes just works for many of the great unwashed, largely because it makes music discovery a pleasure (and not a chore) for the average consumer. And if Spotify is truly going to compete with Apple, Rdio, Rhapsody, Napster and the many, many other high-quality digital music offerings that Americans have to choose from, then Mr Ek and his music streaming tech ninjas need to give its user interface a serious re-think.

Some say it's the future of music - Spotify launches Stateside

I don't really care about what my family and friends are listening to, because I have a better taste in music than most of them



ADAM HARTLEY
Adam is a technology journalist who regularly contributes to HFC's sister site techradar.com the UK's biggest tech site

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The test of time

Much has changed in 350 issues of *Hi-Fi Choice*, but as **Ed Selley** points out, some products just keep on going

Thirty six years is a long time in any business and an especially long time in a technology driver such as audio. The early magazine covers we compiled for the feature on page 34 are redolent of a different world to the one we are now in.

At first glance, the stacks of massive receivers with more controls than an airline cockpit and wardrobe-sized speakers sporting a bewildering variety of drivers are a thing of the past. On closer inspection, however, there are products from those early days that are still with us and mixing it with the best of 2011.

The fact that vinyl has not only survived, but looks set to outlive its CD 'replacement' might have raised an eyebrow or two amongst my predecessors. The continued survival of one of the hottest products of 1975 would surely have been greeted with incredulity. Despite this, the Linn LP12 continues in production and is finding happy buyers nearly forty years after it was first launched. Over the years, the design has seen changes to the available arms, motors, power supplies and most heretically of all, to the sub-chassis, but the 2011 Sondek is still recognisably the same design as the 1973 original.

Those of you wanting to partner your living fossil with the correct ancillaries can head over to Denon, whose DL103 cartridge was already pretty venerable in 1975 and in its latest R iteration shows no signs of stopping. A Jelco S-shaped tonearm – essentially a reborn Sumiko MMT, would complete the effect.

Perhaps we shouldn't be surprised that some analogue components have survived unscathed – after all vinyl has been around a long time. Solid-state amplification has no such excuses and yet sat in the 2011 range of one of the biggest brands in audio is another survivor from 1975.

Born survivor

Like the LP12, the Naim NAP250 has seen revisions over the course of its very long life, but

The Linn LP12 – 350 issues not out



the basic circuit is still the Julian Vereker original that has gone on to form the basis of an entire family of amplifiers.

Naim can't be accused of nostalgia or sentimentality either – its move into digital streaming and continued upgrades to the rest of the range show that the NAP250 survives on merit rather than any desire to keep a link with the past.

McIntosh might conceivably stand accused of nostalgia in aesthetics but, like Naim it has been keen to embrace new technology. Despite this, the MC275 – now entering its 50th year of production – remains an integral part of their line up, surviving both the arrival of solid-state technology and the influx of newer valve amps.

With speakers, the changes in technology, styling and overall performance should have consigned most designs from the early issues of *Hi-Fi Choice* to the dustbin of history. Against all the odds, a complete range of speakers that were already over a decade old in 1975 continues in production to this day.

US speaker brand Klipsch has been producing the Heresy, Cornwall and Klipschorn since the late 1950s and even determined attempts to cease production have been thwarted by that most feared of consumer protests, the letter writing campaign. The three-strong range is unashamedly retro in appearance, but its performance in the right system is still something to behold.

Beyond these direct survivors of the early years of *Hi-Fi Choice*, there are a wider number of products that are direct descendents of the ones on those early A5 covers. Examples of this; the Spondor S3/5R², which pays more than homage to the original BBC design, or SME's classic J-shaped M2-12R, a 'reborn' 3009.

350 issues is a long time in audio, but truly great products just keep going. If it ain't broke don't fix it.



The fact that vinyl has not only survived, but looks set to outlive its CD 'replacement' might have raised an eyebrow or two amongst my predecessors



ED SELLEY

Ed worked in retail before joining some of the biggest names in the hi-fi industry creating and supporting audio products

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Seductive Sutherland

Exceptional neutrality and naturalness gave the battery-powered Sutherland PHD phono stage something of a cult following. But why batteries? asks **Jimmy Hughes**

Designing a good phono stage is perhaps the most challenging assignment for an electronics engineer. Agreed, every part of an amplifier has its own unique set of disciplines, and each requires in-depth insight and understanding of the various problems inherent in the circuit.

But, a phono stage is particularly difficult because it has very high gain and deals with delicate ultra-low-level signals of just a few micro-volts. Because of this, issues with noise, circuit track and component layout, susceptibility to radio frequency (RF) interference, bandwidth, and stability, assume critical importance.

Noise from the power supply can result in audible hum and contaminate delicate low-level audio signals with high-frequency noise and RF. So, why not avoid the problem of mains power supplies altogether and go for battery power? That's exactly what US designer Ron Sutherland did with the PHD phono stage.

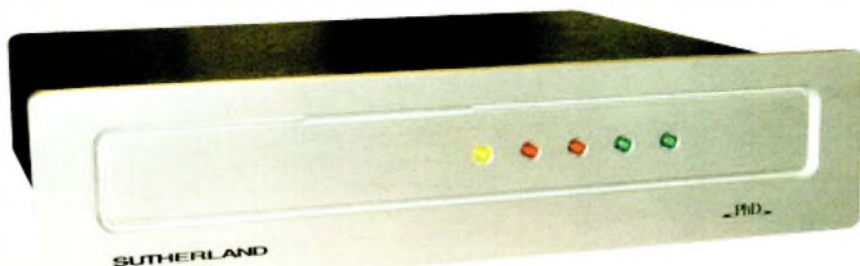
Batteries deliver a 'stiff', noise-free, pure-DC voltage, elegantly side-stepping the problems of conventional mains power supplies. One immediate benefit is the complete elimination of mains noise. Unless you have strange ground loops in the wiring, or you place the phono stage near a power transformer, hum is banished.

Because most well-designed mains-powered phono stages are hum-free, the reasons for choosing a battery supply might not seem that compelling. The PHD's battery power supply zaps noise problems at source, but of greater significance is the subjective effect a battery power supply has on sound quality. It's immense.

The PHD was notable for having an open neutral tonality that was exceptionally pure and transparent. Musically, its presentation was delicate and finely detailed, sounding natural, unexaggerated and 'right'. By comparison, virtually all mains-powered phono stages seemed to sound a touch 'hard' tonally – a shade metallic.

While there were many good phono stages that equalled the PHD for resolution and fine detail, few (if any) could match it for tonality and transparency. The PHD exuded a 'rightness' that was unmistakable and unarguable. It sounded absolutely truthful and neutral, neither adding nor subtracting from the source.

Rival phono stages might be more dramatic, or lively, while others might seem impressively incisive, with crisper transient impact. The PHD just sounded truthful. It wasn't always impressive and (in terms of available gain) wasn't perhaps ideally suited to ultra-low-output moving coils. But it sure sounded real.



The battery-powered Sutherland phono stage

Sonic benefits

The PHD conveyed a certain something one didn't encounter often – and certainly, not from CD. Quite simply, the PHD allowed the unique timbres and tone colours of individual voices and instruments to come through untrammelled.

Conveying individuality is one of the most important things a hi-fi system can do. It's an elusive quality; one that's easily compromised and eroded. For all its faults and limitations, good vinyl reproduction retains more of this 'individual' character than CD.

The PHD could easily be user-customised to suit most types of cartridge. Internally, there were four gain options and four impedance settings and it was a very simple device to operate.

It was a fascinating product for reviewers to own; its exceptional neutrality made it the perfect reference. No matter how good other (mains-powered) phono stages might sound, none ever seemed to match Sutherland's PHD for its relaxed truthfulness and clarity.

Sutherland followed the PHD with the Director Line stage. This was mains powered, but the makers claimed the power supply mimicked the battery PSU sonically. But did it really match the PHD?

Almost. The Director was certainly better than average, but the PHD's indescribable neutrality and openness wasn't fully equalled. By not taking mains power into the casework, you get certain sonic benefits – hence the advantage of having the power supply housed in a separate box. But, eliminating the mains supply altogether is best.

Regarding the PHD's exceptional neutrality, over the years we've noticed similar sonic qualities from other battery-powered hi-fi components – for example, the original early '80s DNM preamp. It's something conventional mains-powered devices find almost impossible to equal, no matter how cleverly designed. ●

Batteries deliver a 'stiff', noise-free, pure-DC voltage, elegantly side-stepping the problems of conventional mains power supplies



JIMMY HUGHES
A hi-fi enthusiast for four decades, Jimmy's knowledge of system-matching and record-collecting are unmatched in the industry

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The digitiser

I confess that I hadn't bought a hi-fi magazine in years, when I noticed the front cover of your July issue (HFC 347) with the promise of 'Computer audio explained.' I thought that it was about time that I understood what was going on in the brave new world of music streaming and who better to guide me than Malcolm Steward, whose enthusiasm and solid good sense had guided my hi-fi journey many years ago.

I thoroughly enjoyed Malcolm's article (and the rest of the issue) and was particularly intrigued by Malcolm's comment that he was "...still involved in the slow and rather laborious process of digitising my LPs". I would really love to know whether digitised LPs can truly bring the same level of musical enjoyment as listening to a good turntable?

Is this a serious audiophile solution and, if so, can Malcolm tell us more about the way he is doing it, however laborious? I am not anxious to give up my precious record deck just yet, but the domestic convenience and space saving would be a great advantage, as I seek to downsize my home. I hope that Malcolm can discuss this in future articles.

Thanks for re-sparking my interest in audio.

James Hanning, via email

HFC Malcolm Steward replies; "I use the Alpha Design Labs GT40 USB DAC/ADC by Furutech, which has an MM/MC input, negating the need for any phono stage to raise the low-output signal from an MC cartridge to line level, along with a laptop and vinyl acquisition software by Acoustica called Spin it Again (If you use a phono stage the GT40 also has a line-level input).



Furutech's GT40 is a one-stop vinyl digitizer

Use decent USB cables, which Furutech can conveniently supply. Then record your LPs at 24-bit/96kHz. Like me, I'm sure you'll be impressed with the results."

Golden age?

Being a mere baby of 41 my hi-fi addiction didn't start until the early '80s when my dad replaced our old radiogram (remember those?) with a brand new Technics system in a horizontal cabinet no less, with more buttons and lights than a Concorde cockpit. I guess that in its day this was a great system from one of the great names in hi-fi (I still own a Technics SL1200 MkII) and is still available on eBay.

Go back a few more years to the 1970s and you arrive at a period that was, for me, the golden age of hi-fi. Thick slabs of silver boxes with VU meters, LEDs, buttons galore, receivers built like tanks, more sound-tweaking options than a recording studio, bass and treble controls, and illuminated tuning dials - the list is endless.

Now don't get me wrong, my current Audiolab system sounds great, but that's it, turn it on walk away and let it play - no buttons to tweak, no heavily weighted tuning knob, no subsonic filters nothing to look at and admire.

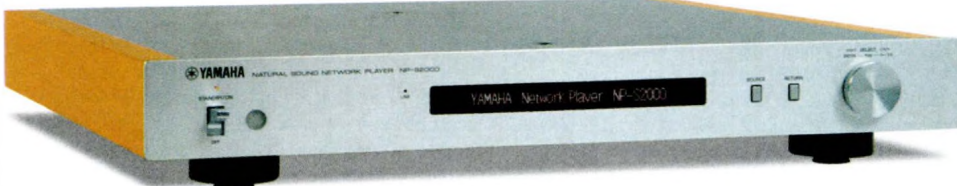
Thankfully, there are now many websites such as The Vintage Knob and Vintage Technics and Pioneer websites, not to mention eBay, from where I have bought and sold many of the top items of the day and to which we can still go to and relive his long-forgotten age of audio heaven.

Jason Hall, via email

HFC Seventies hi-fi is definitely a breed apart. We are in two minds about the decade though. For every legendary Japanese superdeck, there were a dozen nasty and inferior plastic turntables with very few redeeming features.

We do miss the sheer number of controls and functions the average seventies separate had though and we agree that the best built units from the period are finished to an astonishingly high standard.

The good news is that many units on sale today have more than an element of the seventies about them. Have a look at the Luxman or Accuphase ranges or indeed the Yamaha NP-S2000, which we tested in HFC 346 - it combines seventies looks and switches with up-to-the-minute media streaming. What's not to like?



Yamaha's NP-S2000: '70's on the outside, bang-up-to-date on the inside

www.hifichoice.co.uk

Safe and sound

I really enjoyed your articles on streaming (HFC 347/348). I have been trying to make sense of it all and am contemplating a possible QNAP, Naim DAC and a streamer of some kind. The QNAP website tells you a lot about NAS and indirectly raises the big issue.

How do you back up the NAS and, if you're burgled and it's stolen, how do you go about replacing it? How do you tell a quizzical loss adjuster that your NAS contained 30 Linn Masters at about £20 a go? What if you have file-shared?

My point being that if you have terabytes of info worth thousands and it's stolen, then shouldn't everyone contemplating NAS check their insurance first and arrange adequate back-up?

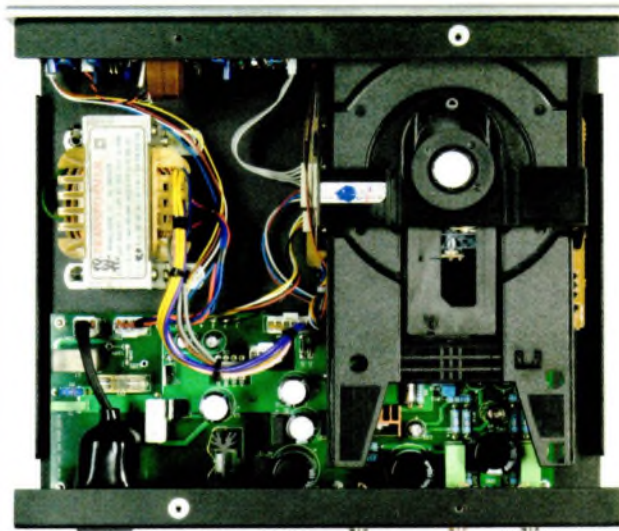
Ian Hall, via email

HFC Digital music has been raising some interesting questions about ownership and insurance for some years now and, as yet, we feel that we have some, but not all of the answers.

With regard to the value of individual purchases, we don't feel that this is too much of an issue. Generally a CD or an LP collection is insured as a whole, rather than as individual items. This means that, as with a physical collection, you will need to honestly appraise the cost of replacing it in the event of it becoming a total loss.

Avoiding it becoming a total loss in the first place is easier than with a physical collection however. Memory is no longer an expensive commodity, so even if you were to use a high-quality NAS drive (as we recommend) for the business of actual streaming, having a second drive mirroring this information need not be expensive – certainly less expensive than making a CD-R copy of every CD in an average collection.

We also feel that the cloud (HFC 349, p34) offers more possibilities to keep material safe. New ventures like Amazon Storage are offering large amounts of space, backed up and accessible from multiple locations and we can see something like this offering



Zero Note CD/II: not the most complex innerds but the sound is superb

the best method for keeping your music safe in the future.

Value-added

I was most interested in Martin Pipe's comments in his *Opinion* column in HFC 347 'Sparkling sound for less', when he sang the praises of the sub-£500 DAC and even suggested you could stop at £500!

Such honesty in a hi-fi magazine is almost unheard of! This thinking didn't make it through to the following issue (HFC 348), however, with Jimmy Hughes rushing to the rescue of high-end in his introductory paragraph to his Audio Note Zero review (p56). All that drivelt about over-specified military-grade components in high-end hi-fi products guaranteeing high prices. Just take a look at the picture of the internals of the Audio Note player (p59) for which the company's asking £1,742!

All you get is one TDA1543 chip and one 6111wa tube. Whereas, on the back page of the same issue is an internal view of the new Audiolab 8200CD (£700), which is less than half-the-price of the Audio Note. There's no comparison between the two units and with the advanced DAC chip and the inputs and outputs on the Audiolab, it's a no-brainer.

If any military-spec components are to be seen then it's in the Audiolab (HFC 340). How Audio Note has the nerve to ask £1,742 for the CD/II beggars belief, but that's 'high-end' audio for you!

Mike Booth, via email

HFC Jimmy's reference to military-grade componentry in the high end was more of a wider reference to high-end audio, rather than specific to Audio Note – after all, most armed forces do not make much use of valves any more. That said, the components that feature in some Audio Note products – new old-stock valves and custom resistors are probably harder to secure than any military-grade items!

The inside of the Zero CD/II is, indeed, rather less complex than the Audiolab – but the former's components are of a high quality and, unlike the latter, Audio Note does not benefit from the economies of scale enjoyed by Audiolab (part of the giant iAG group). Ultimately, we make a decision on overall performance and we have no difficulty in regarding the Zero CD/II as a performer worthy of four stars.

Ripping yarns

I have read with interest your review on the Logitech Squeezebox Touch (HFC 338) and am considering buying one for use in Cyprus. I have many CD albums and intend to copy these for replay using the Squeezebox.

However, I am unsure about a few things. For many years CD player manufacturers have fine-tuned their transport mechanisms and the software that operates them, so how will a £20 computer transport extract all the bits intact? Which method of storage and connection will give the best replay results? A NAS drive via Cat5 or a USB

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A9

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What Hi-Fi



A6

"Christmas day treat - great bass for £1"

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WHAT HI-FI?
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A5

"Finally! Inimitable bass and accomplished beyond these parts"

What Hi-Fi Mar 11



SPENDOR

portable hard drive. (I don't need it to be connected to a network)? Could the Squeezebox be connected via the phono output directly to a power amplifier, using the volume control on the squeezebox, for a very simple system?

Andy Messenger, via email

HFC Ripping CDs accurately is as much about the software as the transport that carries out the rip. Free software such as iTunes or Winamp will generally make a single 'pass' over the disc and it is likely that some errors may be introduced.

More specialised software such as dBPoweramp and foobar will rip CDs more slowly and use multiple passes that can be checked bit-for-bit against the original CD to confirm accuracy. We are confident that a rip performed with this software on the cheapest CD-ROM drive you could find, would still be indistinguishable from a single pass on a very high-quality, bespoke CD drive.

The Squeezebox Touch is notionally unaffected by the connection method, so either USB or NAS drives loaded with the correct rips should sound the same. Our preference would be for a NAS-based system however, as this would be more stable and make for a neater installation. Don't forget that if the NAS is placed on a wireless network, the Squeezebox can also receive files wirelessly and negate the need for a CAT 5 connection. Having an additional USB drive to act as a backup (and possibly as a means of transporting new music out to Cyprus) would be prudent.

It is perfectly possible to connect a Squeezebox directly to a power amp, but we prefer the control given by a more conventional amplifier as the volume control on the Touch is a little rough and ready. A more effective way of making a compact system might be to use active speakers instead, as these often have a more effective volume control.



The Squeezebox Touch prefers a NAS, but doesn't need to be directly connected to it

LETTER OF THE MONTH

Reel-good sound

PRIZE
WINNER!



JIMMY HUGHES'S NOSTALGIC article 'Rewarding Revox' (*Opinion, HFC 348*), surely rang many bells of familiarity to those readers who first started tinkering with hi-fi in the 1960s. Open-reel recording was a fantastically creative hobby and the appearance of stereo models from Tandberg, Akai, Sony, Technics, TEAC, and Revox, of course, generated the ability to produce high-quality music libraries by anybody willing to learn the techniques.

Indeed, the 'audio message' to which Jimmy eluded, was often compiled on small three- or four-inch reels for ease of posting and can now be seen as the precursor to what is now voicemail in our digital world.

I see the advantages to both sides of the digital and analogue fence and have benefited from using TEAC and Revox open reels for the last 40 years. Recordings made from high-quality sources onto a Revox PR99 (pro version of the B77), correctly set up for bias and EQ is still an almost unbeatable sound.

Supporters of open reel need no convincing – which is why so many recording artists are turning back to analogue tape for mastering their albums.

Phil Udall, via email ●

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Which classic Naim feature does the UnitiQute NOT feature?

- A: Chassis Ground**
- B: DIN connections**
- C: Green Naim Logo**

The Naim UnitiQute (reviewed in *HFC 339*) is the smallest Naim streamer, but perhaps the most radical of the lot. This all-in-one combines a 24-bit/96kHz-capable media client that works over both wireless and wired networks with an internal 45-watt amplifier.

Naim has also seen fit to add USB functionality that doubles as an iPod connection, plus a DAB/FM internal tuner. The UnitiQute also features four digital inputs, an analogue line input and a pre-out

Please text your answer: Naim A, B, or C to 87474 or visit futurecomps.co.uk/Naim and follow the instructions, leaving your selected answer and details where prompted

making this a phenomenally feature-packed device. Thanks to the network connection, the UnitiQute can also access a vast range of internet radio stations from around the world.

All this would be meaningless if the UnitiQute didn't perform well, but this is every inch a Naim product with a truly scintillating performance. And thanks to Naim, one lucky winner will be able to experience it for themselves in this month's competition.

TERMS AND CONDITIONS To enter the Naim competition, you can either (a) text your answer to 87474 at any time between 18.08.11 and 14.09.11, or (b) enter online at www.futurecomps.co.uk/Naim with your entry being received between 18.08.11 and 14.09.11. By sending your entry you agree to these competition rules and you confirm you are happy to receive details of future offers and promotions from Future Publishing Limited and carefully selected third parties. If you do not want to receive information relating to future offers and promotions, please include the word STOP at the end of your text message or at the end of your postal entry. Texts will be charged at £1.00 plus your standard network tariff rate.
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HISTORY: CELEBRATING 350 ISSUES



350 not out

Since 1975 *Hi-Fi Choice* has published 350 issues. Editor **Dan George** looks back at the highlights and with the help of a few friends, remembers the issues that shaped the hi-fi landscape

From those early days in the '70s, *Hi-Fi Choice* has seen enormous change, but our values have remained clear: we're committed to bringing you the most reliable, in-depth equipment tests anywhere.

It all started, as Paul Messenger explains on the following pages,

with the consumer firmly in mind. From A5 'bookazines' running exhaustive group tests on a single product type, *Hi-Fi Choice* soon developed a reputation for impartial expert advice that could be relied upon and trusted, something that still holds true today. It was, and still is, all about empowering you – giving you, dear reader, the insight

into products that only experts can reveal, whilst thoroughly enjoying high-fidelity music and the replay hardware along the way.

In this 350th anniversary issue feature key editors past and present look back at the issues that defined their stints at the helm and helped shape the hi-fi landscape of the time.



HI-FI CHOICE CD PLAYERS & TURNTABLES

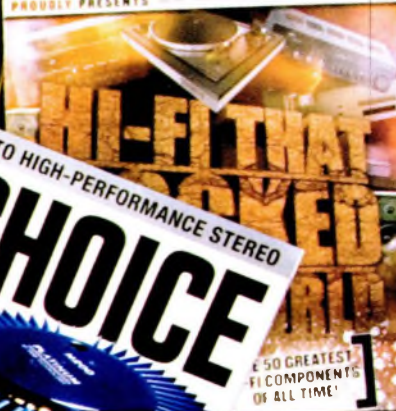
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JIMMY'S TOP 50 TWEAKS/PART ONE



Steps to heaven
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Rio speaker worth £2,000



PAUL MESSENGER
EDITOR May 1978 to April 1982/June 1987 to May 1989

PAUL was pivotal in the early years helping lay the foundations for Britain's best hi-fi mag

Hi-Fi Choice made its debut in the mid-1970s. To a new journalist, who'd recently joined *Hi-Fi News* and indeed all the staff on that venerable journal, it definitely came as quite a shock.

One small volume – its A5 page size was half that of regular hi-fi magazines – contained in-depth reviews of practically every cassette deck on the market, plus a detailed technical analysis of most of the available blank tapes too.

Was it a book or a magazine? Debate raged around the office and we eventually decided to include it amongst our 'Book Reviews', which is probably why I don't have a copy today.

In an era when most products were reviewed in isolation and without any comparative context, *Hi-Fi Choice* came as a bombshell. Each product was assessed subjectively and objectively under the same conditions, and the findings for the group as a whole provided an average against which any individual item could be compared. From the reader and consumer's perspective, the advantages of the group test were manifestly obvious (though manufacturers and distributors were often markedly less enthusiastic).

This *tour de force* of hi-fi reviewing was carried out and written by Angus McKenzie, a respected and established reviewer who had been partly responsible for instigating the whole project, and whose reputation had helped persuade distributors to participate. McKenzie authored the first four editions, but the success of the publication and the amount of work involved in each project (which took some six months from start to finish) made it essential to bring in other reviewers.

Hi-Fi Choice No3 Loudspeakers



Each of the early issues created considerable controversy and debate, none more so than number three: Loudspeakers, published in 1976.

On the newstands just as the industry was gathering for the major annual Harrogate show, it not only picked a Japanese speaker – the Yamaha NS1000 – as one of the very best (which some British manufacturers regarded as sacrilege), it also attracted a libel suit from a major US manufacturer. With hindsight McKenzie's judgement was fully vindicated, since the Yamaha is still regarded as a classic today and the libel suit was dismissed.

Hi-Fi Choice No10 Loudspeakers 2



I joined *Hi-Fi Choice* as editor halfway through issue number nine (Tuners) and was heavily involved in the next issue: Loudspeakers 2, authored by Martin Colloms (1978).

The controversy this time concerned the KEF R105, a brand new and important 'flagship' design, whose inclusion we considered vital. KEF managing director Raymond Cooke (a powerful industry figure) disapproved of group tests and declined to participate, so instead we borrowed a pair from a helpful dealer. Happily the R105 performed very well in the tests, so the controversy quietly evaporated.

Hi-Fi Choice No14 Amplifiers 2



During the 1970s, a large and influential sector of the British hi-fi community claimed that all properly designed amplifiers sounded the same, a claim that others considered risible.

The magazine's first 1977 foray into amplification (number six, by Hugh Ford) largely ignored this elephant in the room, so I took it upon myself to carry out the 1979 follow up, alongside Scottish retailer/engineer David Watson. Since we were both enthusiastic users of Naim amplifiers, we deliberately left these out to avoid any accusations of prejudice. I still don't know whether that project really nailed amplifier sound quality, but at least it didn't ignore the elephant.

Hi-Fi Choice No53



During my second stint as editor, *Hi-Fi Choice* changed from an irregular A5 publication into a proper monthly A4 magazine (November 1987).

Jason Kennedy joined the staff and I got to plan the contents of a 'proper' magazine, which was fun. Less fun in my memory was writing much of a 500-entry directory on a battery-powered Tandy lap top, while flying long-haul to the Tokyo Audio Show.



JASON KENNEDY
EDITOR:

September 1987 to December 2001

JASON brought a unique enthusiasm to the title during his 'life sentence' and HFC became stronger for it

I joined *Hi-Fi Choice* when it became an A4 monthly in 1987 and took my time enjoying the best sounds in the galaxy before finally taking the helm in 1999 (I don't like to rush into things!).

It was a heady time, '99 saw the introduction of SACD, DVD-A and MP3 players and while the magazine explored the potential of DVD players and multichannel audio, I kept spinning vinyl.

Hi-Fi Choice No191



This issue (June 1999) featured a classic format clash between digital recorders (Minidisc versus CD-R). It also had a rather prescient

column by David Vivian about a new company called the Memory Corporation, that was trying to persuade us that we should store all our music on a player the size of a cigarette packet using some new fangled format called MP3. David found the prospect of putting all of his CDs onto the thing less than appealing and queried the claim of CD-quality replay, he wasn't wrong.

Hi-Fi Choice No193



This issue (September 1999) featured the world's first review of Sony's first SACD player, the SCD-1. Incredibly slow in operation this technical *tour de force* introduced the competition for Philips' DVD-Audio format. We lauded its massive bandwidth and the way it avoided the brick-wall filters found in CD players and pointed out the pros and cons of the technology before anyone else.

In the news pages we announced the coming of machines that could play both of these hi-res formats; the birth of universal players.

Hi-Fi Choice No200



Digital amplifiers had begun to appear by 2000, but this issue (March 2000) saw the first review of a one-bit design from Sharp.

The SM-SX100 was described as a 'bolt from the blue' because it was a high-end technology showcase from a company that appeared to have abandoned serious hi-fi some years earlier.

It was unusual for having digital inputs, including one for SACD, but didn't come out well thanks to pretty appalling jitter and variations in power output with frequency. We all agreed that it was a funky-looking piece of kit, though.

Hi-Fi Choice No208

HI-FI CHOICE It must have been Christmas fever or something, but we got carried away and dubbed the Marantz SA-1 'the best CD player in the world'.

This issue (December 2000) also featured the Pro-Ject Debut, the turntable that got the ball rolling for what has turned out to be a massively successful company, one that has recently put this model back into production to celebrate its anniversary.

Hi-Fi Choice No216

HI-FI CHOICE Can a DVD player take the place of your CD player? Testing eight of the things, Alvin Gold came to the conclusion that it couldn't, but it was worth finding out.

There was also a clash of amplifier technology in this issue (July 2001), in which we group-tested valve and transistor amps alongside each other, the final conclusion here was less clear-cut as both approaches have their strengths.

Hi-Fi Choice No217

I've seen a lot of unusual speakers over the years, but few compete with the chess-piece styling of the O'heocha D2-ISO-5 (August 2001).

We also discovered SACD's Achilles heel thanks to an in-depth technical review that highlighted the relative superiority of DVD-A at very high frequencies. But of course that didn't stop Sony's format gaining what was eventually a pyrrhic victory in the long term.

Hi-Fi Choice No223

HI-FI CHOICE A news item this month (June 2002) heralded the arrival of the iPod, which upped the 'hard drive portables' ante by offering a whole 5GB of storage and a firewire connection for £349.

For Richard Black, the £829 Michell Gyro SE was a stunning player, especially when teamed with a Reson Etile moving coil and Tom Evans microgroove Plus phono stage.



TIM BOWNERN
EDITOR
December 2001 to May 2007

TIM's hard work and vision for a better hi-fi magazine transformed the title's fortunes and set new standards

It was a cold, wet December evening in 2001 when I learnt I was to succeed the estimable Cap'n Kennedy at the helm of the good ship *HFC*. The iPod was just one month old and SACD and DVD-Audio were squabbling over a hi-res digital dream that was never realised.

Some were already predicting a swift end to physical disc formats, but while it was clear that downloading was a huge part of music's future, we continued to rejoice in the ever-improving quality of CD players and the resurgence of vinyl and valves.

As the magazine's circulation climbed and others faltered, we were driven by our passion for music – ever the catalyst for *HFC*'s 'Passion for Sound'.

Hi-Fi Choice No236



It's hard to believe now, but for the first 27 years of its existence, *HFC* had never attempted that staple event in a specialist consumer magazine's calendar – an annual Awards issue.

October 2002 saw the inauguration of The *Hi-Fi Choice Awards*, intended to highlight the best hi-fi components at multiple price points, from entry level to high end, with a judging panel hewn from *HFC*'s experienced team of reviewers.

Winners that year included the Sony SCD-XA777ES SACD player, Avid Volvere Sequel

turntable, Arcam DiVA A85 integrated amp and Dynaudio Audience 82 speakers.

Hi-Fi Choice No258

HI-FI CHOICE The Collection – a special annual edition of *HFC* dedicated to the world's finest hi-fi – was first published in the late 1980s, but lasted only a few years before disappearing.

In 2004, we took the bold decision to bring it back with a brand new format designed to celebrate the uncompromising, unequivocal best the audio world has to offer – extraordinary sonic creations of sublime aspiration, inspiring those that follow in their wake.

Its return was well received by readers and the industry alike and it's still going strong today – an important showcase for 'real' high-end audio.

Hi-Fi Choice No285

HI-FI CHOICE *HFC* also sported various covermount gifts, from supplements to CDs and DVDs with a hi-fi theme.

There was a system tune-up disc in association with IsoTek, a DualDisc sampler in conjunction with Dolby, a DVD containing music and interactive elements from B&W, and a series of exclusive compilations from The Naim Label.

The issue pictured here (October 2006), carried one such CD, compiled especially for *HFC*'s readers.

Hi-Fi Choice No294

HI-FI CHOICE Every specialist consumer magazine strives to secure exclusive coverage of

exciting new products from big-cashet brands including B&W, Krell, Marantz, Naim.

June 2007 was my penultimate issue as Editor and featured a number of 'firsts', including a review of Naim's best-ever integrated amplifier, the SuperNait.



DAN GEORGE
EDITOR
June 2007 to present

DAN quit media roles at MTV and CNN to join *HFC* as a staffer. Through hard work and a 'passion for sound' he climbed the ranks to the top job that he still enjoys today

I took the reigns from Tim in June 2007 at a very transient time for both the *HFC* team and the industry. In the days before streaming, the smartest digital components were universal disc players and the Japanese led the way. But vinyl emerged (again) as the most reliable investment over the long term as the once bright light of SACD and particularly DVD-A began to fade.

As format-war-savvy audiophiles became weary of yet another glimmer of hope in studio-quality audio (this time Blu-ray audio), a Sony insider revealed to us privately that BD would be the last 'disc' format. And he was right. Servers, streamers and 'computer music' were the future and *HFC* showed how audio's holy grail (studio-quality music) should be celebrated and not feared.

Hi-Fi Choice No333

HI-FI CHOICE After six months of planning and hard work, *HFC* revealed a smart new redesign (June 2010). The magazine had been transformed from front to back, while retaining its fundamental values and well liked structure.

We committed to greater depth in our reviews, revealed great new features and photography; and set a template for successes to come. *HFC* embraced the emerging computer music era, while acknowledging and supporting those who, like us, prized their collections of 'physical media'.

Hi-Fi Choice No345

HI-FI CHOICE A real favourite issue (May 2011): we asked if Naim's long-awaited streamer could cut it against CD. The verdict:

yes and then some. This was a defining moment for computer music – it *could* be better than CD if approached correctly.

We balanced this forward-thinking cover with a turntable group test and celebrated the news that *HFC* was officially the only growing hi-fi magazine in the UK. And it's still the case today.

How we test

Hi-Fi Choice employs the most rigorous test and measurement regime in the business and here we explain why our definitive verdicts count



Hi-fi reviews

No other magazine offers a more reliable standard of hi-fi testing. Technical Consultant **Richard Black** explains...

EXPERT TESTING

FOR OVER THREE decades, *Hi-Fi Choice* has been trusted for its combination of subjective and technical review expertise. The crucial consideration for any audio component is how it sounds, but it is important to back this up with laboratory measurements for many reasons – everything from the wish to check basic performance to the possibility of uncovering peculiar behaviour under conditions, perhaps slightly different from those of the subjective tests.

Listening

Subjective testing doesn't necessarily require the world's sharpest ears. What's more important is the experience to analyse the sound arriving from the hi-fi and this is where our subjective reviewers come in: they have been listening critically to audio equipment for aeons and have learned to identify the characteristics that make kit informative, involving or just plain dull.

Measurement

But even the most experienced listener, with a stack of familiar recordings heard in familiar surroundings, can't always know what is causing a particular

characteristic in the sound. Brightness, for instance, may be a function of frequency response or distortion and this is where measurements come in. We analyse a range of parameters to see just where the correlation lies between sound and design. Our test equipment has been tried, tested and added to over the years and again our experience with it is unrivalled.

Straightforward presentation

We call on that experience to boil down the measurements to simple bar charts, which show at a glance how well a component behaves relative to others in its category. It's this combination of subjective and technical expertise that makes our reviews the most useful in the field.

“crucial consideration for any audio component is how it sounds, but it is important to back this up with laboratory measurements...”

OUR AWARDS



EDITOR'S CHOICE: Awarded to those products that are judged to deliver reference-standard performance



RECOMMENDED: The products we feel meet a certain high standard of performance



GROUP TEST WINNER: Comparative tests can only have one true winner, and this badge says it all

STATE-OF-THE-ART HI-FI TECH

HFC's test equipment is the most advanced kit available



AT HI-FI CHOICE, we have access to some of the most advanced test equipment currently available on the market, including the Audio Precision APx585, which you'll find in the labs of many top hi-fi manufacturers. The 585 can be configured to test a variety of key hi-fi products, such as amplifiers, CD players/DACs and – with the help of a specially-calibrated microphone – loudspeakers.

In conjunction with some conventional lab equipment at our disposal, the 585 will also be used to test analogue playback equipment including phono stages and turntables. These objective measurements – which conform to recognised industry standards – are designed to complement subjective evaluations such as the listening panels organised by our internationally respected reviewers.

The standard of our test facilities is unrivalled in the UK press. Quite simply, no other magazine offers this level of cutting-edge testing, making the verdicts in *Hi-Fi Choice* the only ones you can really trust.

Unrivalled group tests

Hi-Fi Choice is the only magazine to offer blind-listening group tests, fully backed up with objective data

BLIND-LISTENING TESTS

THIS CRUCIAL test involves relatively rapid-fire comparisons of the test units for a panel of three listeners who are not aware of which product they are listening to. Levels are accurately matched and the test is conducted with the minimum of distractions, playing the same programme through each system while the listeners take notes of whatever pleases or bothers them.

In this way, an evaluation free of prejudices based on brand, price or appearance can be made, while the different tastes and sensitivities of each listener help round out the analysis and make it more widely applicable. Occasional repeats of kit give a 'sanity check', while years of experience help make the process efficient and reliable.

SIGHTED LISTENING

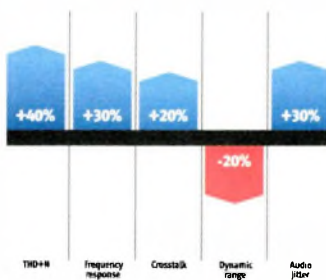
IN ADDITION to the 'blind' test, the author also spends a longer period listening to each system with various items of partnering equipment and a wider range of music. Apart from the obvious fact that this is how most people listen most of the time, this also has the advantage that interesting aspects of the sound can be investigated and different musical

styles tried out to see what works, not to mention experimenting with such variables as listening level.

Long-term reference pieces of equipment (some from past reviews) get substituted for the kit under test from time to time, in order to check on performance relative to the rest of the audio world, while recordings made by the author provide a live reference.

TECH LABS

RESULTS AT A GLANCE



FOR THIS MONTH'S DAC Blind-listening Group Test, we pressed into service the APx585 audio analyser (see opposite). This highly sophisticated PC-controlled instrument can simulate many items of lab equipment, including an oscilloscope, audio voltmeter, chart recorder, phase monitor and test signal/sweep generator. For DACs, the APx585 is used in conjunction with a specially created *Hi-Fi Choice* lab test disc to measure a number of key performance criteria. There are five of these – which are summarised for each of the reviewed products using our unique bargraph system. Anything out of the ordinary is commented on in the lab report which compares like with like across the whole six-way group.

THD+N

We measure DAC performance using 16-bit/44kHz signals. Part of our testing procedure involves measuring THD+N with much lower-level signals (-20dBFS and -60dBFS). THD+N will increase as signal level decreases.

FREQUENCY RESPONSE

You should expect a flat frequency response from 20Hz to 20kHz. The Tech Labs measure this by conducting a sweep between these two frequencies and monitoring the output.

CROSSTALK

We measure leakage from the left channel to the right and vice versa. The higher the figure, the better. There should be little difference between the two figures and what's listed here is the average of the two.

DYNAMIC RANGE

This spec expresses the difference between the highest amplitude, distortion-free signal a DAC can output using a 16-bit/44kHz signal (a sine-wave is used here). The higher the figure, the better. In theory, a 16-bit signal has a dynamic range of 96dB.

AUDIO JITTER

This term is applied to distortion caused specifically by the instability in the 'clock', which controls the data-flow to the digital-to-analog chips. It's a subtle effect, but can contribute to sonic veiling.

TESTING EQUIPMENT USED

- Source:**
 • Cambridge Audio Azur 640C CD player
 • Samsung NC10 netbook computer
Amplifiers:
 • Exposure 3010 integrated
 • EAR 802 preamp/519 power amps
Speakers:
 • ATC SCM20
 • Bowers and Wilkins 803s
Cables:
 Black Rhodium, Kimber, Wireworld

TEST MUSIC USED

LED ZEPPELIN:
BLACK DOG



BETTE MIDLER:
SLOW BOAT TO CHINA



PENGUIN CAFÉ
ORCHESTRA:
CONCERT PROGRAMME



DVORAK:
IN NATURE'S REALM



THIS ISSUE'S BLIND PANEL

This month's panel of experienced listeners from within the industry are:



ABBAS HUSSAIN
JOB: MANAGING DIRECTOR

ABBAS IS currently the main man behind Wireworld UK, but was also involved with Orelle, a maker of fine amplifiers.



TAMRIKO SAKVARELIDZE
JOB: RECORDING PRODUCER

TAMRIKO'S SHARP hearing is used daily in teaching piano and in producing audio recordings.



ED SELLEY
JOB: HFC STAFF WRITER

ED HAS SPENT the best part of a decade selling, developing and supporting audio products. He now works full-time with HFC.

DEFINITIVE VERDICTS

No other magazine offers an equivalent listening programme

Few, if any, magazines in the world can equal our dedication and thoroughness in combining blind and sighted listening with extensive lab tests and detailed internal examination of equipment passing through our hands. Each of these is equally important and it's not just that we do them – we also bring to the table decades of audio experience.

Our listeners in the *Blind-Listening Group Tests* for example, are experts from within the hi-fi industry. Each and everyone of them is used to listening critically during product development and initial product testing. In fact, many of them also get involved in making recordings and their own music.

One of these is HFC's Technical Consultant Richard Black, who has been involved with designing, testing and evaluating audio equipment for a quarter of a century.

It's the culmination of all the aspects mentioned on these pages that makes for the most reliable hi-fi verdicts in the business.

TESTED THIS MONTH: DACS
TURN OVER NOW!

Blind-listening Group test



DACS £1,000-£1,550

New life for old systems

Richard Black and the blind panel ask if a four-figure investment in DAC technology brings real rewards

THE DIGITAL-TO-ANALOGUE convertor is now firmly re-established as a regular hi-fi component. Examples of the breed cover a huge range of prices, from less than £100 to many thousands of pounds and while the majority of those share a, perhaps, surprising number of parts internally, you can now find DACs with unique filtering and/or upsampling approaches, valve outputs, preamp functions and more.

For this ultimate *Blind-Listening Group Test*, we explored the more advanced £1,000-£1,500 territory, where sensibly priced models compete in broadly matched terms, offering straightforward feature sets along with a high-standard of technical performance. None of these models is particularly outré, though there are a few notable features, for instance M2Tech's USB technology which allows the reception of 32-bit data at 384,000 samples per second.

USB is, of course, the simple way to hook-up real hi-fi to a computer data source and, as such, is of increasing relevance as the world moves away from CD and its ilk and towards hard discs and "the cloud". So it's hardly surprising that five of the six DACs here feature a USB input. USB was never intended as an audio interface and it's far from ideal, but its problems have been solved and

it's perfectly reasonable, these days, to expect and demand from it standards of performance barely inferior to those of the dedicated digital-audio interfaces.

That said, one does have to be a bit careful with high-resolution audio and USB. Three of the DACs in this group will accept sampling rates, via USB, up to 96kHz or higher, but if you hook up a 48kHz-limited DAC to a

"It's hardly surprising that five of the six DACs here feature a USB input."

computer and try to play 96kHz files they will usually be downsampled by the computer and output at 48kHz, without any notification, thus completely undermining any high-res intentions. Computers are tricky things where audio is concerned!

That's hardly the fault of the DAC, though, and if the computer is behaving itself, any of the following will give a substantial sonic boost. They can also be expected to lift the performance of older CD players and other digital sources. In fact, some can effectively function as digital-only preamps.



THE PROBLEM FACED by a DAC at the £1,200 average of this group is the Cambridge Audio DacMagic – that and a handful of other super-budget DACs that offer some pretty outrageous performance for £300 or less. Arcam (rDAC), and Beresford (various models) come to mind and that's not an exhaustive list either.

Hand on heart, we can't deny that the law of diminishing returns applies, but we feel the contestants in this group do offer more finesse and insight and often slightly pacier performance too, than the cheapies, good though the latter are.

ON TEST



Cyrus DAC X+ £1,550 P43

Part of Cyrus's large and visually homogeneous range, this DAC is one of the best-equipped in terms of numbers of inputs, though USB doesn't feature. It scores highly for upgradeability, with the options to connect a PSX-R external power supply and also to have it converted in a DACXP+ digital-input preamp.



Electrocompanion PD-1 £1,250 P45

A new addition to the range, noteworthy, not least, for its RF Link input which allows the user to transmit data wirelessly from a PC (with the addition of EC's transmitter unit), without any of the set up issues of Ethernet or Bluetooth. A remote control is included and circuitry shows EC's usual attention to detail.



Lavy DA-11 £1,239 P47

Lavy's incursion into the world of domestic hi-fi is largely a result of the internet cult following that attached to its DA-10 DAC and the DA-11 maintains the brand's tradition of producing solid engineering-based pro-audio products. Apart from a rather hair-shirt user interface, though, there's nothing to put off the audiophile here!



M2Tech Young £1,200 P49

Slightly odd looks, but the big deal here is technological, with the ability to receive hitherto undreamed-of bitrates via USB. It's exciting that the ultra-high-sample-rate ball has been set rolling at last and we look forward to software support. Meanwhile the specs look pretty attractive in terms of regular digital inputs and sources, too.



Moon 300D £1,350 P51

Atypical spread of inputs, the usual sample rates supported, but some interesting features inside if one looks closely. These include minimal analogue electronics, mostly implemented with the physically larger through-hole components than many audiophiles favour, plus careful consideration given to the power supply.



NuForce DAC9 £1,095 P53

Well-equipped in terms of inputs and outputs, the DAC9 also includes a particularly well-thought-out headphone amplifier. On the electronics side, some particularly high-spec analogue parts are supported by a notably large mains transformer. The looks could be an acquired taste and you won't want to lose the remote control.





HDMI Cables



Audio Interconnect Cables



Speaker Cables



Monkey Cable



Three Stunning Ranges

➔ Concept Series

The Concept to bring excellence and affordability under one product range. Designed to meet the critical standards imposed by audiophile and enthusiasts the World over the Concept Series does not compromise.

➔ Clarity Series

For the next generation AV equipment. Taking today's high standards we asked ourselves where we could best exceed these for tomorrow's future technology advances. The result is stunning Clarity.

➔ Connoisseur Series

The ultimate in design and engineering. Lavishly created with our advanced manufacturing techniques and over specified materials. Designed specifically for high-end equipment.

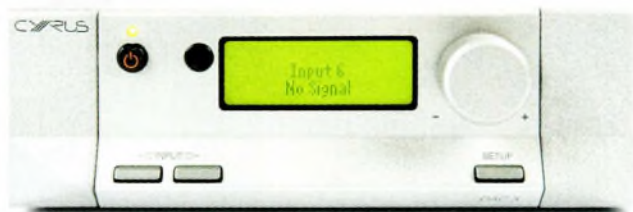


British Designed Cables

Available from: www.planetgizmo.co.uk



www.monkeycable.com



Cyrus DAC X+ £1,550

Plenty of inputs, but no USB – and is the sound starting to show its age, too?

DETAILS

- ORIGIN:** UK
WEIGHT: 3.8kg
DIMENSIONS: (WxHxD) 215x75x365mm
FEATURES:
- Digital inputs: four electrical S/PDIF (phono), two TOSLINK
 - Analogue outputs: two balanced (XLR), one unbalanced (phono), fixed level
 - Digital output: one TOSLINK
 - Other connections: Cyrus MC-Bus, PSX-R
 - Maximum sample rate: 192kHz
- DISTRIBUTOR:** Cyrus Audio
TELEPHONE: 01480 435577
WEBSITE: cyrusaudio.com

Cyrus currently offers two DACs, this and the DAC XP+ (the latter also includes a preamplifier).

You might think this one has some preamp functionality, given the presence of what looks remarkably like a volume control on the front, but the rotary knob is actually used for set up functions, including the rather appealing option to name the inputs to something relevant. And if you hanker after a built-in preamp later, you can always return your DAC X+ to the Cyrus factory for an upgrade to XP+ status.

Cyrus has always been good at this upgrade thing, of course. One of its most successful optional extras is the PSX-R power supply, a stonking great transformer in a Cyrus box, alongside some very high-performance supply regulation circuits.

The transformer built into the X+ is followed by several regulators and these supply juice to a pair of DAC boards, each one sporting a good-quality DAC chip and a handful of op-amps plus decent quality plastic-film capacitors. There's actually quite a lot of analogue circuitry, not least because of the requirement to drive balanced outputs, two sets of which grace the rear of the unit.

As for inputs, there are six in total, all S/PDIF – two optical and four electrical. There's also an optical

digital output which simply relays the chosen source for recording or multichannel decoding purposes. The lack of a USB input slightly dates this unit, though one can pick up USB-S/PDIF converters for well under £100.

Sound quality

An arguably more serious indictment of this DAC's age (it's one of the longest-serving here) came in terms of comments on its sound. Criticism wasn't strong, but our blind listeners would have liked some more detail and insight, especially in musical lines below the top one. As one listener pointed out, there seems to be a consistent dullness in voices and instruments, making the music quite forthright, but ultimately less engaging.

Conversely, brighter-sounding melody instruments seem even more cutting than usual – hard-played lead guitar, for example, which developed a degree of 'fizz' in our Led Zeppelin track. To some extent this is ameliorated by a strong and well-placed bass, but the balance does seem a little treble-heavy on average.

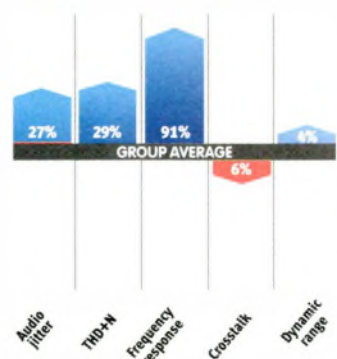
In fact, the business about dullness of accompaniment is a complex one. When, as happens from time to time, the melody is in a low-ish register it still seems to be unduly prominent, so clearly the issue is not simply tonal

TECH LABS

The output level has gain at nearly 5Vrms but, despite this, some very good distortion figures. With 24-bit/96kHz audio the DAC X+ showed, perhaps, the greatest improved distortion reading. The outputs were, however, less closely matched compared to other devices in the group and the gain has likely affected the crosstalk result. At higher resolution audio formats, the crosstalk was much improved, but at rather different degrees by each channel, with the left susceptible to only -88dB and the right at -94dB.

In practical use, the crosstalk reading and the distortion should be low enough to leave any artefacts on the audio passing through as imperceptible. The remarkable frequency response is certainly worth a mention as the continuity between outputs was measured to be within 0.002dB of each other. The unit's dynamic range capabilities are in the order of theoretical limits; for CD audio the full 96dB is available and with 24-bit/96kHz is an impressive 117dB.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★
VALUE FOR MONEY ★★★★★
BUILD QUALITY ★★★★★
FEATURES ★★★★★
- LIKE:** Upgradeable; good ergonomics; strong and clear bass
- DISLIKE:** No USB input; sound lacks some insight and precision
- WE SAY:** The DAC X+ seems to lag its peers in terms of detail resolution

OVERALL



*Beautiful.
Captivating.
Award Winning*



**WHAT HI-FI?
SOUND AND VISION**

AWARDS 2008

PRODUCT OF THE YEAR

STEREO AMPLIFIERS

ROKSAN KANDY K2



K2 is the latest development in Roksan's ongoing devotion to pristine audio performance.

All K2 Products are currently on offer at your local Roksan dealer:

K2 CD Player - £750

K2 Integrated Amplifier - £750

K2 Power Amplifier - £650

K2 Speakers - £750

ROKSAN

Technology Driven by Emotions



Roksan is distributed in the UK by Henley Designs Ltd.
Tel: 01235 511 166, Fax: 01235 511 266, Web: www.henleydesigns.co.uk



Electrocompaniet PD-1 **£1,250**

With or without the proprietary wireless link, this new addition to Electrocompaniet's range has us wired!

DETAILS

ORIGIN:

Norway

WEIGHT:

4.3kg

DIMENSIONS:

(WxHxD)
420x50x340mm

FEATURES:

- Digital inputs: two electrical S/PDIF (phono), one TOSLINK, one USB, one RF link

- Analogue outputs: one balanced (XLR), one unbalanced (phono), fixed level

- Maximum sample rate: 192kHz (USB 48kHz)

DISTRIBUTOR:
EC Distribution

TELEPHONE:
020 8893 5835

WEBSITE:
electrocompaniet.no

The only full-size hi-fi component in this group, the PD-1 has something even bigger to live up to in Electrocompaniet's reputation. It's a relatively new addition to the company's range, part of the 'Prelude' series and as such is relatively modest.

The specification is decent if not outstanding, with four digital inputs – two electrical and one optical S/PDIF plus USB. Oh, and RF. This is indeed something of a unique selling proposition, relying as it does on a proprietary radio link to hook up your PD-1 to a computer. You need to buy the optional EMS-1 adaptor (£300), which connects to your computer via USB and transmits the data onward (losslessly) to the PD-1.

It seems a little ungracious to point out that for less than £300 one could buy a netbook computer and use that, via the household's wireless network, to achieve the same result. Anyway, that's very much the nerd's solution. What's so attractive about the EMS-1 is that it really is a plug'n'go upgrade. At worst you may need to change channels but that's a screwdriver job and basically it's no more trouble than adding, say, a DAC to a system.

Inside, the main audio circuit board carries a good DAC chip and, like most these days, an asynchronous sample-rate convertor which carries out the first stage of digital filtering.

The analogue output, available in both balanced and unbalanced form, is driven by discrete transistors rather than the near-universal op-amps. Volume is adjustable, both from the front panel and the remote control and we found the touch-sensitive controls on the unit to be reliable and hassle-free.

Sound quality

Our listening panel found lots of positive things to say about this model and, if anything, our sighted listening only added to the list. The PD-1 is one of those components that does best by doing least and it is admirably even-handed. This kind of performance, though, can sound slightly undramatic at first, but reading through our listeners' notes showed a clear trend of coming to terms with the sound throughout the test.

Even at the start, though, they found the bass particularly well presented, with both weight and tautness. What usually takes a little longer to register is the balance between detail and excitement, but Electrocompaniet seems to have cracked it rather well here.

Truly detailed sound requires a really 'calm' presentation, which can sometimes sound as if excitement has been smoothed out. But that's not the case at all and the proof here is the way the hairs on the back of the neck seem to stand up.



Certainly, by the final track in our audition of this DAC, our blind listeners were well aware of an excellent level of pace and attack, and also some impressive extension at the frequency extremes. The treble is completely free of any excess fizz or shrillness, but doesn't shirk from reproducing bright instruments when required.

If there's one area where the sound doesn't quite seem to carry the day it's the long-term dynamics, which seems a little tame at times. Otherwise, a most impressive result.

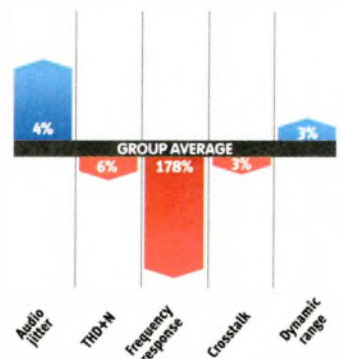
TECH LABS

The PD1 really stands out with the higher rate 24-bit/96kHz audio, although doesn't improve on those figures with a 192kHz sample rate. It's low-frequency reproduction held up better than most of the group and the measured figure was seen above 16kHz. A sharp filter is employed just after 30kHz where the relative level has dropped below 7dB. This may introduce harmonics and reflection artefacts within the audible range.

The Electrocompaniet is another device with relatively high output and the crosstalk figure suffers for this, although when measured using higher resolution audio the figure and balance improved to -95.9 left to right and -95.9 right to left.

Dynamic range accommodates CD's 96dB and at higher bit and sample rate reached 115dB. Overall, the strength of the PD1 is surely in the close-matching channels, less than one percent different on anyone of our tests, which should protect against phase errors.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

SOUND QUALITY

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

★★★★★

LIKE: Very well balanced sound, with resolution and excitement both scoring highly

DISLIKE: Sound could be more dynamic; USB only good up to 48kHz

WE SAY: A fine DAC by any reckoning with useful features

OVERALL



Finally... our definitive answer to the audio cable debate



How can a mains cable make any difference?

How can one metre or so of cable between the socket and your Hi-Fi possibly make any difference to its sound? Well, in our opinion, based on years of detailed research and listening, it can make a huge difference – indeed, in many cases, we believe it can bring about a greater improvement than actually upgrading the piece of hardware itself.

Numerous customers have commented that their enjoyment of music has been dramatically enhanced after upgrading their mains cables. Here's just one example:

"I don't often provide feedback. The fact that I have done so is an indication of how good I think this cable is... it is difficult to describe just how fantastic the system is now beginning to sound... There is a clarity and

focus to such a degree that I can now hear individual strings on guitars when chords are played. Where musicians were in the background before, they now accompany vocals in sharp focus and with tremendous subtlety. Absolutely beautiful ... When I bought my CD player, I also auditioned other players that were considerably more expensive. In my opinion, the improvement gained with the SuperKord is greater than I could have achieved by spending the money upgrading my player". Mr Waghorn, Kent

How do you decide?

There's a lot been said about mains cables over the years. We have pioneered research into this area since the 1970s. Russ launched the very first high-fidelity mains cable back in 1985. At the time they were considered with suspicion; as outside the mainstream of accepted Hi-Fi wisdom.

Even today mains cables still remain controversial. Those who have listened to them, and used them, swear by them. The Hi-Fi press give them five star reviews. But there are still sceptics, and that's good. No-one should ever just take what we say for granted.

But, when you have these conflicting opinions, who do you believe? How do you decide who to trust?

Well, here at Russ Andrews Accessories, we believe that the best person to decide whether one of our mains cables can improve your listening pleasure... is you!

Simply put, you are the expert on your system. Not us. Not the reviewers. Not the sceptics. YOU.

That's why all standard-length Russ Andrews and Kimber cables and accessories come with a no quibble, 60 day money back guarantee.

The Definitive Test

Order your cables from us and you get a full 60 days to listen and decide for yourself. If, after that time, you are not convinced that the product you have bought significantly improves your listening or viewing pleasure, send it back to us and we'll give you your money back. Simple as that. No argument. No quibble. Just a full refund and a thank you from us for giving them a try.

Here are a couple of our Award-winning cables that make an excellent starting point for upgrading your system:



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Lavry DA11 **£1,239**

Pro from start to finish, but does the sound really match up to the internet buzz?

DETAILS

- ORIGIN:**
USA
- WEIGHT:**
2kg
- DIMENSIONS:**
(WxHxD)
205x45x270mm
- FEATURES:**
 - Digital inputs: electrical S/PDIF (phono), TOSLINK, USB, AES/EBU (XLR)
 - Analogue outputs: balanced (XLR), adjustable level
 - Maximum sample rate: 192kHz (USB 96kHz)
- DISTRIBUTOR:**
Bigger Boat
- TELEPHONE:**
07813 760287
- WEBSITE:**
lavryengineering.com

Lavry is a pro-audio company which shows little (if indeed any) sign of interest in the audiophile world, but that doesn't stop the audiophile world being interested in Lavry. The company's DA10 DAC became something of a cult success (*HFC* 341) and the DA11 builds on that success by adding a couple more features.

The most immediately useful of those for most *Hi-Fi Choice* readers, we suspect, will be the USB input. It's actually good for 96kHz sampling, though it may not work that way straight out of the box and Lavry's recommendations for computer set up are worth following. (Indeed, we'd recommend a little such care to any greater-than-48kHz USB set up.) The unit is remote-control compatible, though it doesn't come with one: again, Lavry provides instructions for setting up programmable remotes. And then there's the 'Playback Image Control', which allows for widening and narrowing, asymmetrically if desired, of stereo images.

You get one each of the usual flavours of digital input, including AES/EBU on an XLR socket, while analogue is put out only on XLR connectors, but XLR-phono adaptors are provided and you can configure the output to drive these correctly, unbalanced. Like other settings, including source and volume

(adjustable in rather coarse steps), this is done from the front panel via centre-biased toggle switches, which frankly is an arcane process which we hated from start to finish. Internal circuitry uses familiar parts of good quality and a switch-mode power supply.

Sound quality

A little bit like the Electrocompaniet, this DAC is relatively undemonstrative, but still manages to pack a punch when it needs to. In fact, it can really be quite dramatic at climaxes, a characteristic which makes it a good match to highly dynamic classical music recordings. At the same time, it retains a believably solid sound and image when the music is quiet.

Our listeners did feel, however, that a trace of detail was lost by the DA11, compared with the best in the group. This seemed to be equally true in different styles of music and was also consistent across the USB and S/PDIF inputs. It's not a serious loss and didn't stop anyone enjoying the bigger picture, something this DAC is indeed good at preserving. All the same, the ability to hear a little deeper inside a mix could be useful and welcome now and then.

Tonally the balance is excellent, with good extension at both ends of the spectrum and no sign of favouritism across the midrange. A remarkably clean treble will

certainly endear this DAC to many listeners and it proved quite impossible to fluster it with even the busiest and brightest of recordings. General musical flow was specifically praised and its handling of dynamics on both short and long timescales is assured and lifelike.

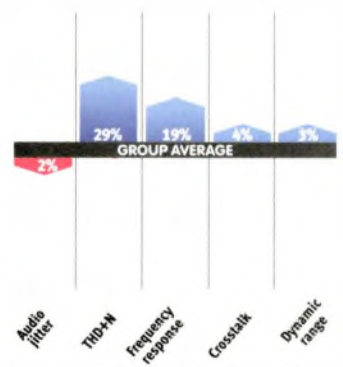
Lots to like, then, but the detail proved a minor, though persistent, niggle. The texture of a multi-layered piece of music is not as clear as one might wish and images seem to lose a little depth, a frequent companion to mild detail loss.

TECH LABS

The Lavry DA11 delivered a relatively low output for the group, although despite this measured only the average distortion, while other output levels in the region of +18dB relative to our 0dB full-scale digital input signal. The device plotted a frequency response that followed our expected audio-weighted curve very well, although with higher sample and bit-rate signals we notice a sharp low-pass filter engaged above 30kHz, which may impact further down if the unit is used with a transparent enough power amplifier and broad bandwidth loudspeaker system.

Crosstalk, with high-resolution material is kept at an impressive -94dB left to right, -97dB right to left. Dynamic range performance was of among the highest of the group with 115dB measured for 24-bit/96kHz signals. The Lavry DA11 stayed comfortably above the group averages for all, but its audio jitter reading, where it was simply out-performed even with a very respectable result.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Comprehensive set of inputs; flexible features; very even-handed performance
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Mild detail loss and annoying user interface
- BUILD QUALITY** ★★★★★
- FEATURES** ★★★★★ **WE SAY:** Needs to get a little closer to the music to excite us

OVERALL



ANTHONY GALLO
 ACOUSTICS

ARCAM

ATLAS Cables

audiolab

AUDIOVECTOR

audio

B&W

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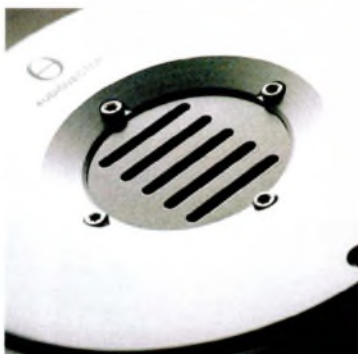
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The only real hi-fi shop in Guildford



M2Tech Young DAC **£1,200**



Sample rates and word-lengths that you can't even buy yet are great, but what about day-to-day sound?

DETAILS

- ORIGIN:**
Italy
- WEIGHT:**
1kg
- Dimensions:**
(WxHxD)
200x50x200mm
- FEATURES:**
- Digital inputs: two electrical S/PDIF (one BNC, one phono), one TOSLINK, one USB, one AES/EBU (XLR)
 - Analogue outputs: unbalanced (phono), fixed level
 - Maximum sample rate: 192kHz (USB 384kHz)
- DISTRIBUTOR:**
Purité Audio
- TELEPHONE:**
020 8815 5878
- WEBSITE:**
m2tech.biz

Every so often a hi-fi component comes along that really does stand out from the crowd. In this case, it's a question of sample rate. We've seen plenty of DACs that can accept sample rates up to 192kHz via dedicated digital audio interfaces, and quite a few that can handle 96kHz via USB. Italian manufacturer M2Tech has expanded the envelope considerably, however, by offering USB-connected sample rates up to 384kHz and support for 32-bit digital words into the bargain.

Yes, software support is currently zero, and yes, even 24-bit resolution is barely physically achievable, but we're never inclined to scoff at a little technical headroom. What harm can it possibly do? As long as it's not been achieved at the expense of behaviour under more mundane conditions and we can't see any sign of that here.

Incidentally, you can't just plug in this DAC and expect your computer to feed it 384kHz audio (which you can at least create by upsampling in software). M2Tech provides suitable drivers and links to capable file-playing software on its website and we had no trouble getting things going.

Input provision is good, with two electrical S/PDIF inputs, thoughtfully using one phono socket and one BNC, plus optical, AES/EBU and, of course, USB. Output is unbalanced only.

Operation is simplicity itself, with one button for on/off and one to cycle through the inputs, while the display, still legible through the (slightly bizarre) metal grille front, shows sample rate. Familiar chips handle digital input, filtering and conversion functions, while the USB input is handled by proprietary means implemented on standard digital building blocks.

Sound quality

More than anything else, our listeners enjoyed the direct, bold and room-filling sound of this DAC. It follows up a tight leading edge with a well-resolved and neutral body and decay to a note and manages at the same time to keep detail clear and open.

As a side-effect of that, the Young can sometimes sound a little bright, but this depends on the material it's playing: music with less in the nature of transients is actually quite laid-back tonally, as we proved to ourselves with a couple of church organ tracks. That same instrument did, however, show up a slight lack of the deepest bass. It's not a major effect but in side-by-side comparisons it's noticeable. Perhaps because of that, one listener found male voices a little underwhelming.

There's invariably a good sense of detail to the sound and stereo imaging is good in both dimensions.



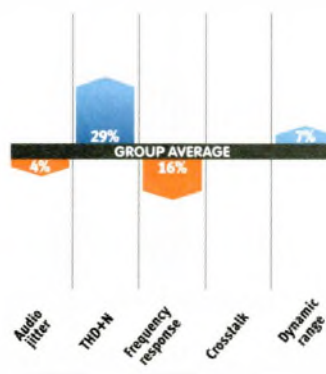
TECH LABS

We saw the greatest improvements of the group evaluating the Young DAC performance, using 24-bit/96kHz audio with the device achieving a dynamic range of 120dB, as well as the greatest improvement and disparity measuring crosstalk and recording -96dB left to right and -102dB right to left. Distortion figures were at the level of CD fundamentals for 16-bit/44.1kHz audio, but exceptionally low high-level THD+N, with the higher format 24-bit/96kHz reaching 0.0007 per cent at 0dBFS; 0.004 per cent at -20dBFS; 0.4 per cent at -60dBFS.

A slightly messy frequency plot saw the DAC drop below average performance, while at higher bit rate and sample frequencies we saw a smoother curve with a dramatic low-pass filter in the region of 30kHz.

The M2 outputs are +8dB relative to the input, but with only 2mV difference are closely matched. Indeed, across our tests the two output channels of the unit are the most consistent of the group.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY**
 ★★★★★ **LIKE:** Lively, clear and forthright sound, with plenty of detail too
- VALUE FOR MONEY**
 ★★★★★ **DISLIKE:** Deepest bass occasionally a little lacking
- BUILD QUALITY**
 ★★★★★ **WE SAY:** High-sampling rates apart, this DAC offers energetic, yet subtle music-making
- FEATURES**
 ★★★★★

OVERALL



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Audio Research
Audiophile Base
Copland
Crystal Cable
Dartzeel
Dream Vision
EAT
Gamut
Grado

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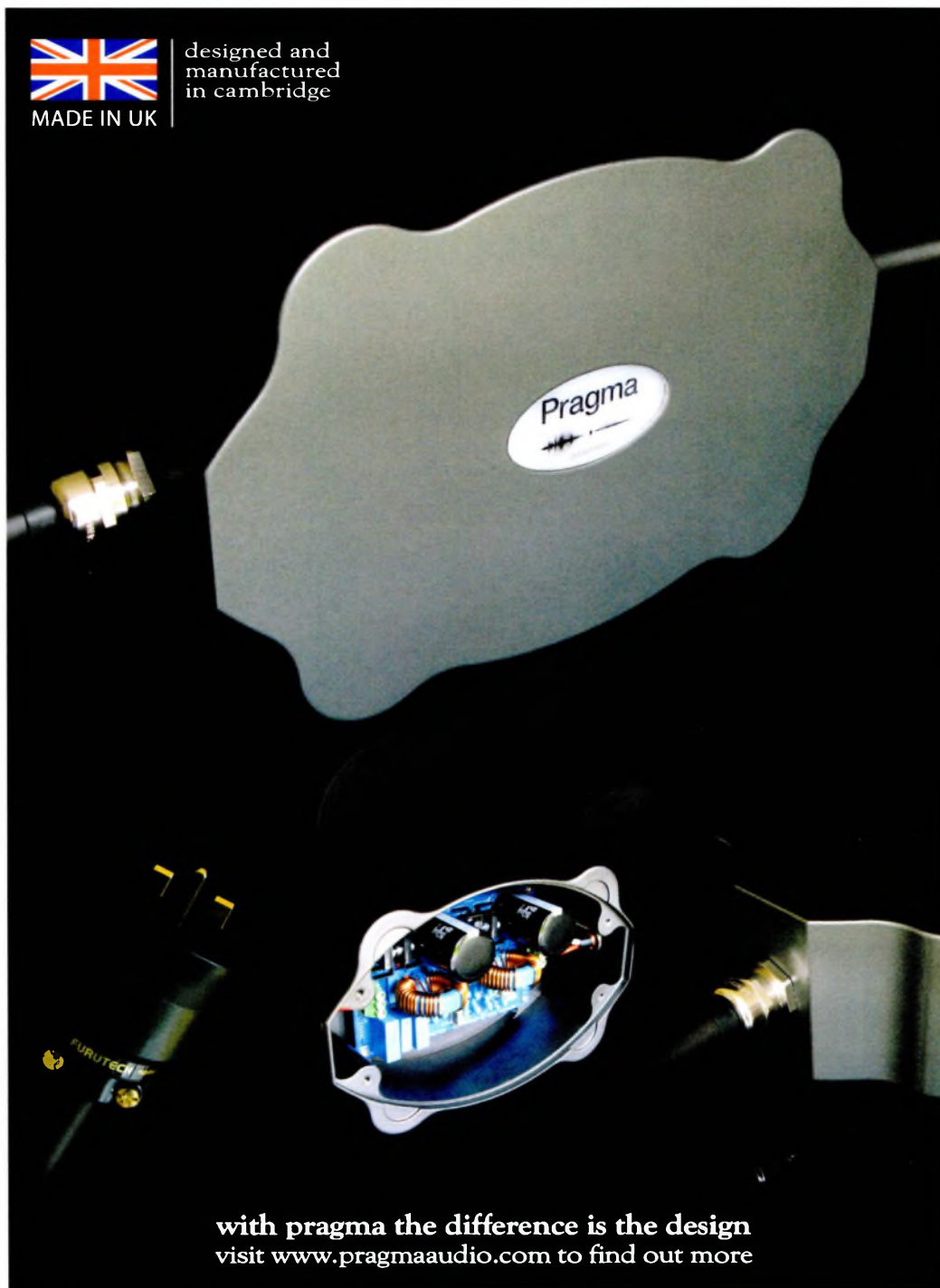
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Moon 300D **£1,350**

Externally, this is Moon at its most typically unpretentious, but is there a dark side?

DETAILS

- ORIGIN:**
Canada
- WBGHT:**
3kg
- DIMENSIONS:**
(WxHxD)
190x85x280mm
- FEATURES:**
- Digital inputs: two electrical S/PDIF (phono), one TOSLINK, one USB
 - Analogue outputs: one balanced (XLR), one unbalanced (phono), fixed level
 - Maximum sample rate: 192kHz (USB 48kHz)
- DISTRIBUTOR:**
Renaissance Audio
- TELEPHONE:**
0131 355 3922
- WEBSITE:**
simaudio.com

There's seldom much about Moon products that stands out a mile externally – which is not to deny them their smart and individual appearance. This particular member of the team has a largely typical specification, with two coaxial and one optical S/PDIF inputs and a USB socket, while analogue output is available both balanced and unbalanced.

Differences are more apparent inside the unit, where Moon has carefully separated analogue and digital parts of the equation. A digital circuit board, largely populated with surface-mounted components, receives the digital input, applies digital filtering and converts it to analogue, forwarding the output to an analogue board beneath. Here, components are all through-hole parts, remarkably few of them for a balanced-output circuit, with passive components evidently having been carefully selected for their specific application. The power supply is unusually generous too, with a large bank of smoothing capacitors.

Most of the integrated circuits that look after functions like digital input reception and D-A conversion are familiar parts, including the USB input chip, which limits operation to 48kHz. A footnote about this on

Moon's website hints that the company doesn't much rate USB as a digital audio interface and suggests that the serious computer audiophile should use an aftermarket soundcard with S/PDIF output, a perfectly valid point.

Sound quality

It wasn't quite plain sailing for the 300D as far as our blind-listening panel was concerned: the odd note of criticism sneaked in, but the general tenor of comments was once again favourable. They were in agreement that treble is a little more present than bass – we're choosing words carefully here because different listeners expressed that in different ways. One found the treble clearer than most, well defined and more precise than the bass. Another thought the bass was fine but found the treble on the bright side, even (in one track) 'splashy'. This kind of difference of opinion is not uncommon in a case like this of subtle tonal imbalance and merely illustrates why no one product can provide all the answers.

The trouble is, though, that even in a blind test like this such things can colour a listener's judgement. It's no surprise that the listener who disliked the treble found fault also with detail and imaging, but the others were much more complimentary about these aspects, especially detail. It's the kind of detail which doesn't rip a piece apart into its constituent strands, but allows the listener to hear what's going on at the top, in the middle and into the bass. The deepest bass is, perhaps, a little general here, with good extension but slightly less precision than some can muster.



Dynamics were well liked too. Our large-scale orchestral track benefitted particularly from this, with quiet passages having a degree of definition and solidity to them that's not often heard. It's easy to overlook low-level performance of audio equipment, or take it for granted, but the 300D really does achieve quite an unusual level of performance with both detail and imaging consistent from loud to soft and back.

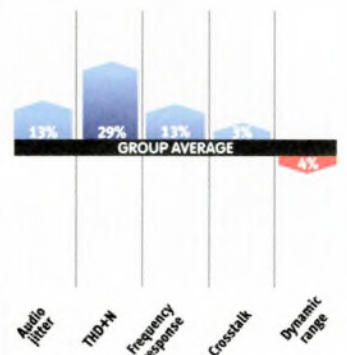
With pace, rhythm and timing also good, though never over-emphasised, it's an easy DAC to like.

TECH LABS

The Moon 300D's jitter result was about as good as we have seen in recent times. A relatively low output level for the group at just under 2Vrms, but extremely well matched. An impressive performance aspect common to other Moon devices is that an exceptional channel parity held across all our tests; frequency deviation measuring only +/-0.308dB left and +/-0.315dB right, a difference of only 0.007dB; crosstalk both reaching -87.9dB for CD audio and -95.6 left, -95.7 right with high-resolution audio. Dynamic range for CD audio is comfortably achieved, but increases to only 108dB with 24-bit/96kHz audio.

The 300D engages the same audible-band-weighted filter when delivering higher resolution material, although a smooth plot should ensure clean reproduction. Distortion improves under 24-bit/96kHz, but not to the degree of some competing devices: 0.001 per cent at 0dBFS; 0.007 per cent at -20dBFS; 0.7 per cent at -60dBFS.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY**
★★★★★ **LIKE:** Good definition under all conditions; good timing; extended treble
- VALUE FOR MONEY**
★★★★★ **DISLIKE:** Can sometimes seem a little too bright
- BUILD QUALITY**
★★★★★ **WE SAY:** The 300D is also a low-stress performer with even-handed abilities
- FEATURES**
★★★★★

OVERALL



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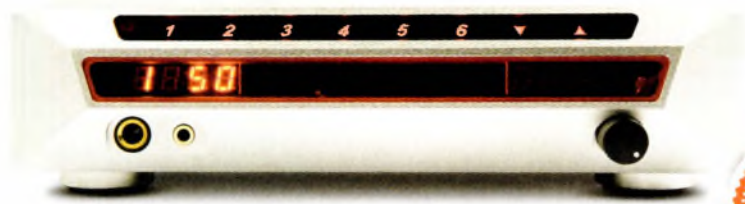
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NuForce **DAC9** **£1,095**

Well equipped and smart in a retro science fiction kind of way – flexible too!

DETAILS

- ORIGIN:** USA/Taiwan
WEIGHT: 3.2kg
DIMENSIONS: (WxHxD) 215x60x400mm
FEATURES:
- Digital inputs: two electrical S/PDIF (one phono, one BNC/phono), one TOSLINK, one USB, one AES/EBU, one minijack optical (front panel)
 - Analogue outputs: one balanced (XLR), one unbalanced (RCA), both fixed or variable level
 - Other connections: headphone sockets 6.3 and 3.5mm (front panel)
 - Maximum sample rate: 192kHz (USB 96kHz)
- DISTRIBUTOR:** HiAudio
TELEPHONE: 0845 052 5259
WEBSITE: nuforce.com

This isn't the only DAC in the group to include a headphone output, but it makes more of a point of it than most, and fair enough, adding as it does a dedicated volume control and both flavours of headphone jack, 6.3mm (quarter-inch) and 3.5mm. The latter, incidentally, also functions as an input, an optical digital input to be precise, in similar manner to some computer sound cards and portable audio devices.

The total input count runs to six, with a further (TOSLINK) optical socket at the rear, alongside AES/EBU, USB and three electrical S/PDIF sockets, two phono and one BNC; one of the phonos is effectively the same input at the BNC so you can only connect one or the other. Selection between the inputs is achieved at the front of the unit by a touch-panel, which we found occasionally reluctant to accept commands.

The remote control is less fussy and is invaluable in adjusting line-output volume, which changes in 0.5dB steps. From the front panel, it is necessary to touch and release for each step, waiting more than a second before the next step can be made. It's just as well that output level is adjustable, though, because at maximum output the DAC9 produces four volts, enough to overload the inputs of a few amplifiers we've seen.

NuForce mentions in its promotional literature that neither sample-rate conversion nor negative feedback is used in the DAC9, which strikes us as a little perverse as the DAC chip (like all current examples of its breed) uses internal sample-rate conversion to implement digital filtering and the analogue circuits include op-amps, which are never used without feedback. They are all high-quality parts, as are the drivers for the balanced output and the analogue volume-control chip.

The power supply employs a very large toroidal transformer. 96kHz digital sources are accepted at the USB input, which is upgradeable to even high sample rates by swapping an internal module.

Sound quality

Comments on this DAC varied between listeners, their reactions depending on personal priorities. It seems that if you value an ultra-clean, high-resolution sound this may not be the best option around, but it has very good drive and dynamics, and possibly the best timing of the group. The listener who liked it least pointed to a degree of 'grunge' in its sound as his main reservation, but despite that there is still some good detail to be heard.

Midrange is generally neutral, though we came to suspect that

the comments about 'grunge' may actually reflect a small degree of subjective upper-midrange lift, which does seem to dirty the sound a little on many recordings. This is all quite minor stuff, though and while it's easy to be critical in comparisons like this we felt the sound over the longer term is more than acceptable.

It would be unkind to close without commending the headphone output, which is particularly revealing and proved worthy of the finest cans we plugged in to it.

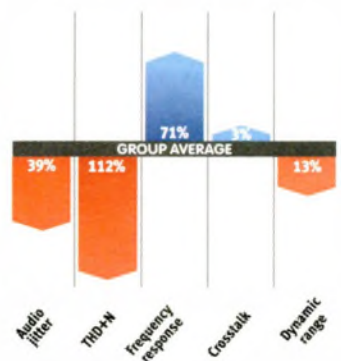
TECH LABS

Under measurement, the NuForce DAC9 suffered some defeats within the group test, recording the largest audio jitter at nearly 300 pico seconds; a distortion measurement approximately three times higher than the best of the group and we saw the unit only achieving a dynamic range for CD audio of 94dB. A relatively low output level of roughly 1.6Vrms may account for this performance characteristic.

Where the DAC9 excels, is in its frequency response curve, which deviated by just over 0.1dB (+/-0.105dB left and +/-0.114dB right). Crosstalk also beat the group average although with a measured difference of almost 1dB between the channels.

With higher sample and bit rates, distortion measured worse than with CD quality test tones, where we would expect it to improve: 0.01 per cent at 0dBFS; 0.02 per cent at -20dBFS; 2.3 per cent at -60dBFS. Dynamic range did improve, but less than expected to measure 98dB.

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY**
 ★★★★★ **LIKE:** Good extension at frequency extremes and very good timing
- VALUE FOR MONEY**
 ★★★★★ **DISLIKE:** Minor boost to upper midrange can make some recordings sound a little 'dirty'
- BUILD QUALITY**
 ★★★★★ **WE SAY:** A capable DAC with good input and output provision
- FEATURES**
 ★★★★★

OVERALL



Lab conclusions

Technical performances were very close as **James Waldron** discovered, until 24-bit/192kHz material was fed through our six subjects...

TECH LABS

Discerning between stand alone DACs, beyond the aesthetic at least, has proven rather difficult in a group situation. Primarily concerned with reproducing the analogue to our 44.1kHz-sampled, 16-bit-described audio, these various models are able to observe knowledge gained over several decades. And to put it simply, they are aptly able to deliver on that broadly understood standard. These days our expectation for these devices, and indeed a contributing factor to their relevance as a dedicated additional convertor to your system, is that they are able to convert higher resolution audio formats.

With CD-quality, 16-bit/44.1kHz material we pretty much saw the whole group describe the limits of the format; a frequency bandwidth not exceeding the Nyquist limit of one-half the sample rate, roughly 22kHz; Total harmonic distortion and noise measuring 0.002 per cent, with 0dB full scale signal, two per cent at -60dB and a Dynamic Range of 96dB. But these days it is reasonable to expect a CD transport to achieve these results as technology and our understanding of the subject improves.

Our Audio jitter measurement offered some insight into the different performance capabilities of the group. We consider two hundred pico seconds to be a

reasonable expectation for modern audiophile products and this group ranged between 150ps and 300ps. 150ps is about as good as we have seen across a number of different digital media transporter types, but 300ps falls more in line with consumer level devices and broadcast receivers.

By using higher sample and bit rate sources, measurements really begin to separate these devices. With 24-bit/96kHz material we saw different dynamic ranges across the group. Some were able to maximise the potential of the higher definition signal, while others barely improved over 16-bit/44.1 kHz signals.



DYNAMIC RANGE often distinguishes one audio device from another, but to highlight the few differences between the DACs in our group test we have quoted their dynamic range for 24-bit/96kHz audio. With the exception of the M2Tech and the NuForce, all the DACs measured 16-bit/44.1kHz material with the full 96dB range. The M2 measured 95dB, the NuForce 94dB, although at 24-bit/96kHz, the M2 measured the greatest dynamic range of 120dB.

RESULTS AT A GLANCE

Make/model	Cyrus DAC X+	Electrocompaniet PD-1	Lavry DA11	M2Tech Young	Moon 300D	NuForce DAC9
Price	£1,550	£1,250	£1,239	£1,200	£1,350	£1,095
Sound	★★★★	★★★★★	★★★	★★★★★	★★★★★	★★★★★
Value	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Build	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Features	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Overall	★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Conclusion	Lags in terms of detail resolution, with foreground emphasis and some brightness	Worthy of the company name, a fine DAC by any reckoning, with useful features, too	Competent and well-equipped, but needs to get a little closer to the music to excite us	A very attractive DAC that offers lively, energetic, but also subtle music-making	Fuss-free, low-stress performer with even-handed abilities across a wide range of music	Ergonomics apart, this is a capable and enjoyable DAC with good input and output provision

Key features

	Cyrus DAC X+	Electrocompaniet PD-1	Lavry DA11	M2Tech Young	Moon 300D	NuForce DAC9
Dig inputs elec/opt/AES	4/2/0	2/1/0	1/1/1	2/1/1	2/1/0	2/2/1
Digital inputs USB	No	Yes	Yes	Yes	Yes	Yes
Balanced output	Yes	Yes	Yes	No	Yes	Yes
Remote control	No	Yes	Optional	No	No	Yes
Sample rate S/PDIF/USB	192kHz/N/A	192kHz/48kHz	192kHz/96kHz	192kHz/384kHz	192kHz/48kHz	192kHz/96kHz

Lab conclusions E = Excellent | AA = Above average | A = average | BA = average | P = poor

	Cyrus DAC X+	Electrocompaniet PD-1	Lavry DA11	M2Tech Young	Moon 300D	NuForce DAC9
Audio jitter	151.3ps AA	198.5ps AA	210.4ps A	214.7ps AA	181.1ps AA	287.5ps BA
THD+N	0.002% A	0.003% A	0.002% A	0.002% A	0.002% A	0.006% A
Frequency response	+/-0.03dB E	+/-0.96dB AA	+/-0.28dB AA	+/-0.40dB AA	+/-0.30dB AA	+/-0.10dB E
Crosstalk	-80dB A	-82.6dB A	-88.5dB AA	-85dB AA	-87.9dB AA	-87.8dB A
Dynamic range	117dB E	115dB E	115dB E	120dB E	107.9dB E	98dB AA

Blind-listening verdicts

Differences may not be huge, but the minor variations on a basically high standard mean there's something for everyone, says **Richard Black**

NOT FOR THE FIRST TIME in recent group tests, particularly those of digital equipment, have we felt that the similarities greatly outweighed the differences between the units under test. That's not to say that there aren't any: our experienced listeners heard some all right and so did we in our sighted listening. But even given that it's human nature to make the most of differences in any context, we all felt the need to stress that some of these differences were small.

So on the one hand that means you can probably be well enough satisfied with any of these six. On the other, it means you can afford to be really fussy and make sure you're not just satisfied, but truly delighted with your purchase. In fact it strikes us, reviewing the six units, that there is something here for just about every taste.

Scoring lowest on aggregate was the Moon 300D. That's a bit unfair, when it actually got five stars for sound, but we couldn't really give it more than three for features and that drags things down a bit. It's good at dynamics, timing and detail, but if it's a little treble-happy at

times, and if that comes across to some listeners as bright it will strike others as simply fresh and open in the treble.

Next up the pecking order is the Cyrus DAC X+. We would really have liked a little more detail from this one, but its sound can be quite forthright and exciting and, as usual with Cyrus, the upgrade options are attractive.

The Lavry, M2Tech and NuForce DACs all scored the same in total, though the crucial 'sound quality' score was lowest for the Lavry DA11. After the success enjoyed by the DA10 (HFC 341) that was something of a surprise, but once again our listeners felt more detail would be no bad thing. Treble is quite exceptionally clear and clean, though, a recommendation in itself.

M2Tech's Young DAC is well rounded with the possible exception of deep bass, but fine timing is a strong plus and we enjoyed its detail too. And then the NuForce DAC9 brings together many admirable aspects, with just a trace of upper-mid emphasis, but also with a very good headphone output, which increases flexibility. ●

THE WINNER IS...

SO OFTEN, THE BEST HI-FI is not the most attention-grabbing. That's certainly true of the Electrocompaniet PD-1, which certainly sounds good at first hearing, but doesn't obviously stand out as a star. The longer one listens, though, the more the sound seems to have going for it. Since one is likely to spend a fair bit of time with any hi-fi purchase, that sounds like a good thing already, the more so when one considers that good things here include beautifully sculpted images, precision-etched details and extended, but immaculately controlled frequency extremes. Combine all that with very good rhythmic properties and you have the outline of a very satisfying performance. OK, it takes up a bit more space on a shelf than the other DACs in the group, but really, who cares? The add-on wireless link is most attractive, it's simple to use and flexible enough on features – the PD-1 is in every way a worthy Group Test winner.



An upmarket DAC only makes sense as part of a carefully chosen system. Here are some suitable partners

NETWORK AUDIO PLAYER: Marantz NA7004 £720

Currently one of the most comprehensively equipped network audio streamers, the NA7004 gives access to just about every form of computer-stored audio available, wirelessly or via wires. It may seem perverse, recommending such a device when most modern DACs will connect to a computer via USB, but the important point is that the NA7004 gives the advantages of a computer without the disadvantages – no noisy fans or hard discs on board, no multi-tasking processors which suddenly interrupt the audio to perform a virus scan, and so on. Its analogue output isn't bad either, but any of the six DACs reviewed here will give a further lift in sound quality.



AMPLIFIER: Primare I32 £2,200

Switching-output power amplification technology has really come of age recently and this integrated amp is living proof. It pumps out 120 watts per channel of coolly delivered power and does it with a combination of exuberance and finesse, which won us over in very little time.

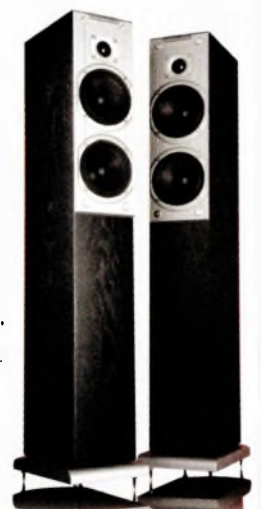
Tonally, it's beyond reproach and its imaging is exceptionally fine: precise, stable and well spread out. Bass is extended and full-bodied, distinctly tuned when it needs to be and also very lively rhythmically. And most impressive of all is the sheer sense of scale this amp is capable of conjuring up, making the most of majestic recordings but still keeping music for smaller ensembles in proportion.



LOUDSPEAKER: Audiovector K13 Signature £1,890

This slim floorstanding model has some unusual acoustic design inside, in the shape of quarter-wave loading for the bass. This doesn't necessarily give it the best ultimate bass extension on the planet, but what it does offer is notably tight bass with very good definition.

Midrange can be a touch forward at times, especially the upper midrange, but this doesn't do much to compromise the general sense of low coloration and very good detail. Imaging is a particular strength, with a real sense that musicians spread beyond and behind the speakers, while the modest dimensions help the K13 disappear visually as well as sonically.



A Classé act

Jason Kennedy tries to get his head around the myriad of features on this deceptively simple-looking preamp

Classé's new preamp is less expensive, yet significantly more well featured than its predecessor the CP-700. In fact, it has more features than any dedicated two-channel preamp we have ever encountered! For starters, it has digital, as well as analogue inputs and, of these, two are USB connections; one in the front panel for your Apple device and another

on the back for a computer. Then it has five output channels with which to incorporate a second system or extra power amps and subwoofer(s) and that's only the connections.

Inside the sleek aluminium casework it's stacked with technological firepower, including bass management, so that you can optimise low-frequency performance almost regardless of where speakers are placed and parametric EQ. If

▣ DETAILS

PRODUCT:
Classé CP-800

ORIGIN:
Canada

TYPE:
Preamplifier

SIZE:
(WxHxD)
445x121x445mm

WEIGHT:
10.4kg

FEATURES:
• Analogue inputs:
3x RCA phono, 2x
XLR balanced

• Digital inputs: 3x
coaxial, 4x Toslink
optical, AES/EBU,
USB A & B

• Analogue outputs:
5x RCA phono, 5x
XLR balanced

• Tone controls

• Parametric EQ

• Bass management

DISTRIBUTOR:
Bowers & Wilkins

TELEPHONE:
01903 221500

WEBSITE:
classeaudio.com

that weren't enough it also has something we've not seen on a high end preamp since the seventies; tone controls. All this with barely a button in sight thanks to a 16:9 touch screen.

Better than *any* CD?

The most controversial thing about the CP-800 however, is that Classé head of sales, Dave Nauber, claims that his iPhone sounds better through it than any CD transport. The front USB extracts a digital stream from your iDevice but that is fighting talk in our books. When *HFC* met Alan Clark, the Scotsman who designed it (and the rest of the Classé range), he wasn't quite so bullish but did claim that the USB input could outperform the S/PDIF – which is pretty controversial itself.

Alan has come up with a variation on the USB receiver, which he claims is superior to all the alternatives on the market. He accepts that the asynchronous route chosen by increasing numbers of serious USB DAC-makers is better than the



synchronous approach found in more affordable converters, but has added a twist which is said to make the CP-800 a world-beater with this computer audio link. Clark calls regular asynchronous USB interfaces 'non-optimal' because the ground noise that is inevitable with computer sources pollutes the clock and the DAC in the receiver.

His solution to this has been to add an FPGA (field programmable gate array) between the USB microcontroller/receiver and the DAC, as a means of isolating both it and the audio clocks within the preamp. The USB receiver has its own clock but it's impossible to fully isolate this because the noise levels are very high within the chip. The FPGA recovers only the data from the incoming signal and uses the precision clock within the CP-800 in order to minimise jitter.

The preamp also has an unusual power supply (PSU). One reason why it costs less than its predecessor is that the PSU is onboard rather than

“If you’re looking for a totally future-proof preamp that can assist with room balance, it’s in a field of its own.”

being in a separate box, but that's not the only difference. The CP-800 has a switched-mode PSU that operates at very high frequencies, which its claimed makes it less noisy than traditional linear supplies. It also makes it more efficient (as is usually the case) and this product hits the EU target of sub single-watt power consumption in standby.

Classé also uses power factor correction, which maintains a constant load on the mains. As a result it should benefit other components in the system, because they are not having to deal with a fluctuating mains supply. We would expect a power amp to modulate the mains, but were surprised that this is also considered an issue with

preamps where power requirements cannot be that great.

Unusually for such a complex product, PCB layout is done by a lady called Cheng, who Clark describes as the world's most patient electronics designer, because she does it all by hand. This is because auto-routing cannot achieve the results that are possible when the effects of each component in a multi-layer board are taken into account. As a result the motherboard on the CP-800 does not look as neat as you might expect, rather it has an organic appearance because signal paths need to be kept away from the noisier elements in the circuit.

Flexible friend

The CP-800 is superbly built; Classé knows how to put a product together and how to finish it better than most. Many build heavier, shinier and more bolt-laden products, but few high-end companies are able to execute their products to this standard. It is also replete with inputs, 15 in total



TALKING POINT

PARAMETRIC EQ is what you find in recording studios. It's a considerably more precise approach to tone control than normal and allows adjustments to be made to narrow frequency bands, rather than the whole of the treble or bass.

Analogue parametric equalizers for the home were quite big in the seventies, but the electronics involved inevitably get in the way of the signal, which in the pre-digital era meant quality had to be very high.

Studios now use software-based EQ and the CP-800 offers something similar. You can pick a frequency that's causing bass boom and adjust its level and Q so that it becomes less of an issue.

Alternatively, if your room has a suck-out in a particular area you can use these filters to boost signals across the desired range. It's clever stuff but hard to implement without effecting the resolution of the device, but if your system has significant tonal irregularities that you can't ignore this sort of EQ could be a major benefit.

Q&A...

WE SPOKE TO ALAN CLARK, HEAD OF ENGINEERING AT CLASSÉ AUDIO ABOUT THE CP-800



HFC: *The number and nature of the features on the CP-800 give the impression that it's a multichannel processor that's been modified for two-channel duty, is this the case?*

AC: No, the CP-800 is an all-new design. We set out to develop a state-of-the-art two-channel preamp that offers great sound for a wide range of analogue and digital audio sources.

Do analogue signals go through an A/D and D/A as they pass through the preamp?

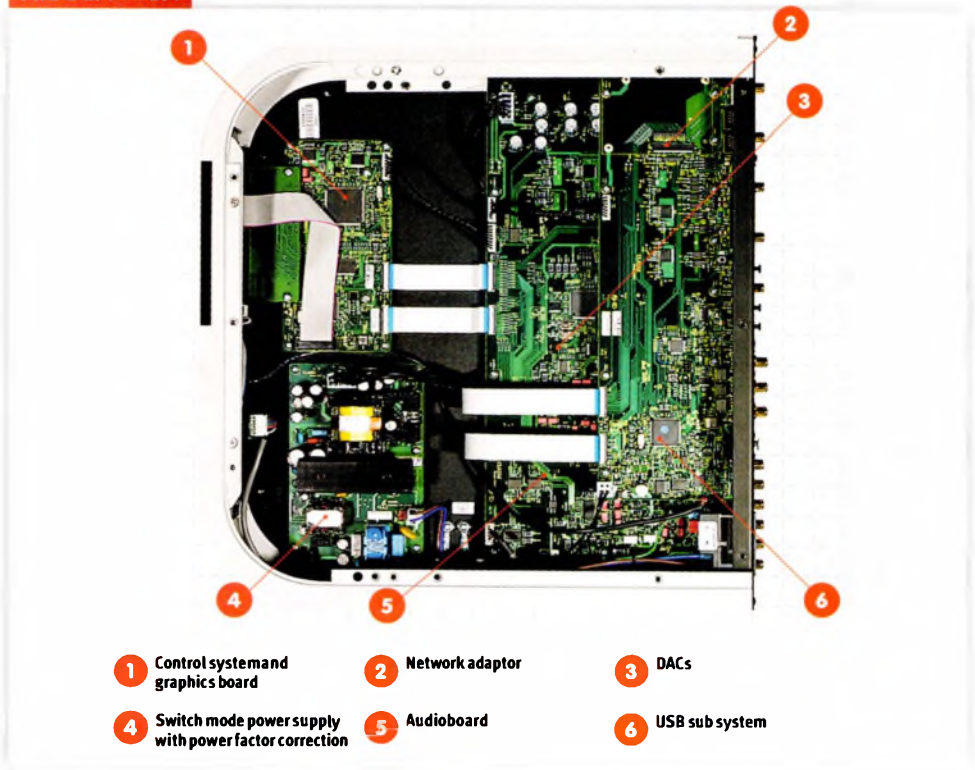
It depends on what functionality the user requires. If the CP-800 is used as a traditional two-channel analogue preamp (input selection, volume and balance control) audio remains in the analogue domain, with the digital audio sub-system switched off. Each analogue input can be set to analogue bypass as required to lock this function. If a DSP mode is required such as tone control or room EQ, analogue audio is converted into the digital domain prior to the DSP performing the required function, before converting back to analogue audio.

Why do you say that your USB input is superior to an S/PDIF connection?

One of the reasons S/PDIF became so successful over the last 25 years is its simplicity and low associated cost. A way it achieves this is to transmit both data and associated timing together in one conductor. This self-clocking topology requires the receiving device to extract the clock and use it to synchronise data reception as well as drive the digital-to-analogue conversion stage. The receiver locks to the incoming S/PDIF signal, any jitter, noise and frequency variations in the system being unwanted artefacts in the conversion process.

Asynchronous USB works in the opposite direction. Instead of data and timing (clocks) being pushed towards the DAC, data is pulled from a PC or iPod with clocks that originate within the receiver (CP-800). This allows the audio data to be synchronised with maximum precision prior to conversion into the analogue domain.

HIDDEN TECH



including balanced and unbalanced analogue in and outputs, all the usual variations of digital input and the 12-volt trigger outputs beloved of North American manufacturers. There's even an RJ45 Ethernet socket which will allow the preamp to stream content directly when a future software update is made available. Those extra three outputs are unusual on a two-channel preamp, but allow the use of two power amps per channel, plus a single subwoofer, or even up to three subwoofers.

There is the option to configure all the in- and outputs, so that one input could be unity gain and use a connected sub, while the others just use the main two channels. Inputs are nameable and can be assigned a specific amount of gain and/or balance setting. We seriously doubt whether there is another two-channel preamp that is this configurable and flexible, it is clearly a variation on a multichannel processor in this respect.

The iPod user will be pleased to read that it's happy to work with most versions of the popular device including Nano, Classic and Touch, not to mention iPhones and iPads.

Laptop, not phone

A carefully ripped CD sounds better played back from a computer than

the original disc played via S/PDIF from a decent CD player. The difference isn't even subtle to be honest, the file produces music that is more revealing and considerably more interesting. A live performance of solo piano is extremely convincing, transporting us to the original venue, thanks to the stature of the instrument and the scale and nature of the acoustic being so palpably real.

Perhaps the S/PDIF input has one hand tied behind its back for the purpose of making the USB input sound better, but that seems unlikely. Especially when you compare it with the USB input of our reference DAC/preamp (the Resolution Audio Cantata) which sounds almost flat by comparison. Clark has clearly done a fine job with this input and raised the bar for the genre as a whole.

As a preamp with analogue signals, the CP-800 has a hidden secret that must be unlocked for its full potential to become apparent; this is the 'analogue bypass' tick box. Sounds simple, but you need to track it down and tick it for each analogue input, otherwise the DSP gets in the way and undermines performance. Once this had been sorted analogue signals are reproduced in a coherent and well-integrated form, with excellent image depth and width. It also has

CONNECTIONS



- 1 USB-B connection for PCs/Macs
- 2 Conventional electrical digital inputs
- 3 RS232 for custom installation control
- 4 Ethernet socket for future streaming potential
- 5 RCA lineinputs
- 6 KLR lineinputs
- 7 Mainanalogue output
- 8 Configurableadditionaloutputs

fine bass extension and articulation, not as fast as the best perhaps, but easily as deep and solid. It has a smooth, clean presentation, rather than one that emphasises the midband, in order to give the impression of greater transparency, such as you can find with valve preamps, but neither is it dry nor fine grained in the style of many solid-state devices.

The Classé doesn't have a phono stage, but can reveal the finesse of a good external one such as the Trilogy 907. Stevie Wonder's *Superstition* can be a little uncomfortable because there's so much low-frequency energy, but the CP-800 keeps everything under control and lets the all-important power of funk ooze into the room. It's also a highly detailed presentation with layering that is often masked in lesser components. We were using the remarkable D'Agostino Momentum power amps, but the sound was nonetheless rich and deep in tone and scale.

Playing an iPod Touch via the front USB input elicited a pared-down result by the standards of more traditional sources, but a vibrant, clean and crisp one that's devoid of grain which can't be bad. It's in the same league as the better digital docks if not the best in class. We didn't have an iPhone, but if one could outperform a CD transport then this reviewer would eat his hat.

We didn't have any subwoofers around with which to assess the various ways in which their potential can be harnessed but had a go with the tone control, which is factory set to operate as a tilt device ala Quad and works in a subtle but distinct fashion. This, by the way, is another first in signal processing.

We also looked at the EQ options and soon realised that you need some decent measurement equipment to make sure you are going in the right direction. There are five filter options per channel



AS CLASSÉ no longer makes source components, distributor Bowers & Wilkins accepted that a logical partner for this preamp should be a laptop, and while there are myriad to choose from, the brand that consistently gives good results is Apple.

The Macbook Pro comes in various guises, but all are suitable for running Pure Music software with either the onboard or external hard drive, depending on how much music you have. This hooks directly to the CP-800's USB input and then you have a choice of two stereo power amps from the Classé range.

The most affordable is the CA-2100, whose name indicates a two-times 100-watt output, while the CA-2300 will produce more power and would be the beast should you need to shift large quantities or air. However, as B&W recommends using this system with the most affordable of its Diamond series speakers (the B05), you don't need to go overboard.

and each of these are adjustable for centre point, level and Q. Useful if you want to iron out a bass hump, but best left alone if you're happy with the balance *au naturel*.

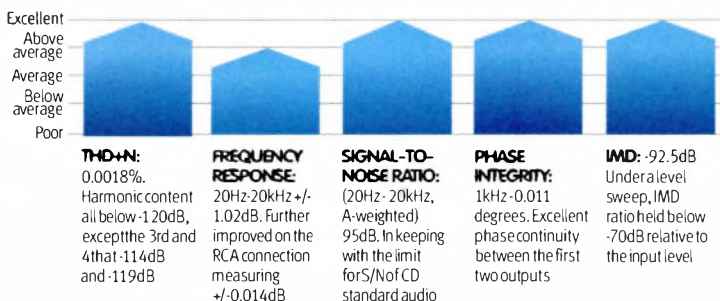
Ready and willing

This is an immensely well-featured preamp with the power of a multichannel processor under the lid. As a fair amount of the budget must go into this side of the build cost, it's not the most nimble example on the market when it comes to pace, but it does a stunning job with signals that emanate from a computer, better than we've previously encountered, in truth.

If you are looking for a totally future-proof preamp that can be used to not only make subtle alterations to tonal balance for those great, but poorly recorded albums, but can also assist with room balance on a per channel basis, then it's in a field of its own. ●

TECH LABS

RESULTS AT A GLANCE



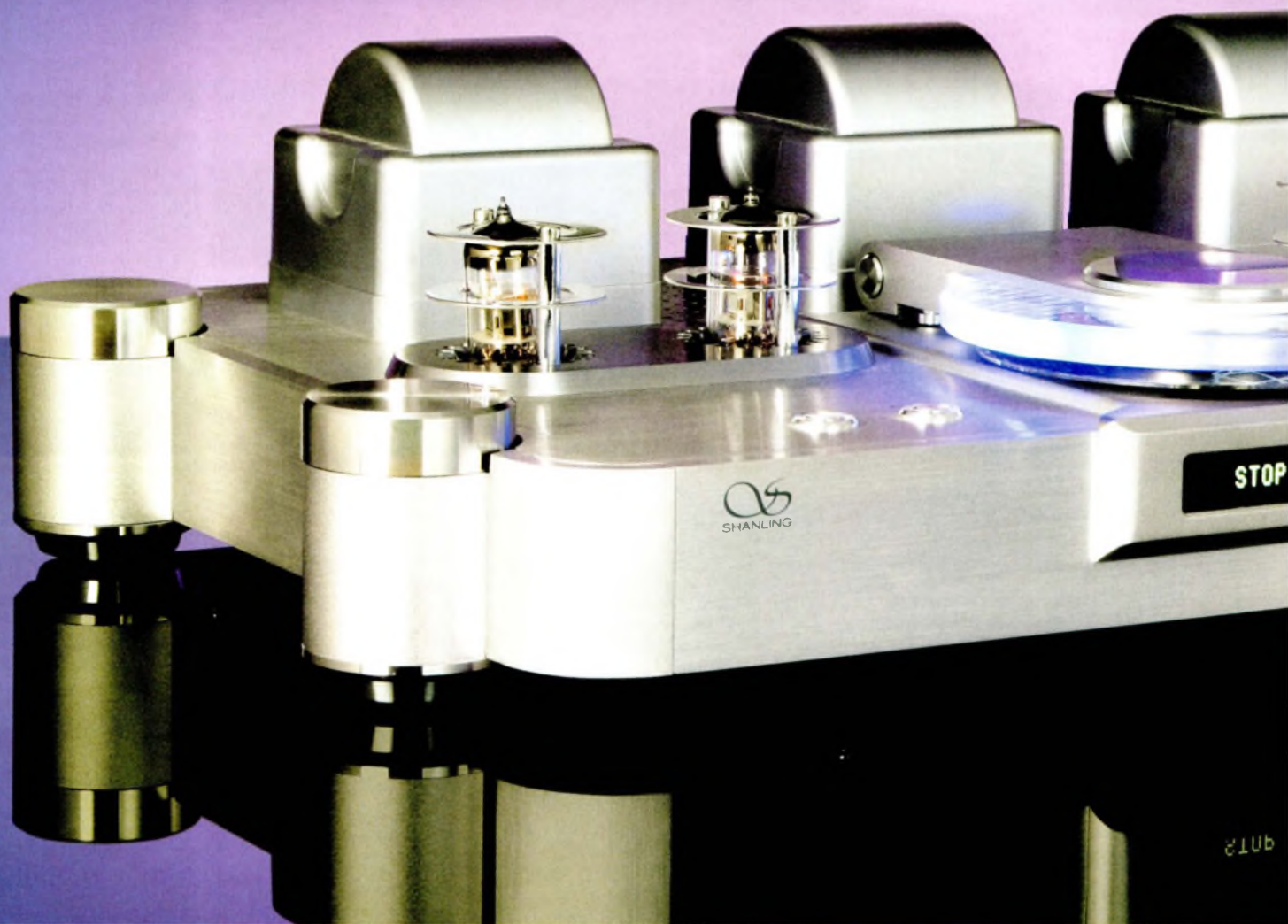
Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Excellent USB DAC with impressive range of features
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Not as fast as a pure analogue preamp
- BUILD QUALITY** ★★★★★ **WE SAY:** A future-proof and well built a preamp; if you are a computer audio enthusiast it will be very hard to beat
- FEATURES** ★★★★★

OVERALL





A star is born



Jimmy Hughes believes Shanling's latest CD player gets closer to SACD performance levels than anything comparable on the market

Shanling's new CD-T2000 shares the stunning aesthetic of the former CD-T1500, but, although superficially similar, the two players are, in fact, quite different.

The CD-T2000 is a Red Book CD player constructed around a high-quality Sanyo HD-850 transport. It also features a Burr-Brown PCM 1792 24-bit/192kHz upsampling

DAC. It has a genuine tube output stage, but no solid-state analogue output. There are actually two 12AU7 (ECC 82) tubes per-channel (four tubes total), because the player offers the option of single-ended or balanced operation.

USB-compatible

Like many new CD players, the CD-T2000 features a USB socket,

DETAILS

PRODUCT: Shanling CD-T2000

ORIGIN: China

TYPE: CD player

WEIGHT: 11.7kg

DIMENSIONS: (WxHxD)
505x142x330mm

FEATURES:
• Tube analogue output stage
USB input

• Sanyo HD-850 pro transport

• 4x ECC82 valves

• Ultra-precise and linear volume control

• Full-function remote control

DISTRIBUTOR: Real Hi-Fi

TELEPHONE: 01257 473175

WEBSITE: shanling.com

enabling you to use its DAC with computer-based music storage systems. It also has a digital input (and digital output) via RCA phono sockets. Two sets of variable analogue outputs are provided – single-ended via RCA phono sockets and balanced via XLRs.

Output voltage levels are claimed to be 2.1V and 4.2V for unbalanced and balanced respectively. The volume control is a digital-type and, having variable output, allows you to connect the CD-T2000 direct to a power amp – though the unbalanced output voltage of 2.1V may be a bit low for some power amps.

There are three power transformers: two for the analogue outputs and one for the digital side of things. To retain the smooth classic lines of the earlier player, while offering various switching options, three of the four corner posts feature selector switches: power on/off; output volume and a CD player/USB input switch.



TALKING POINT

SONICALLY, AREN'T all CD players much of a muchness? While it's not fair to infer they all sound the same, there do seem to be certain characteristics and limitations.

The first is a certain coarseness/congestion that robs the sound of its natural purity, making massed violins sound slightly rough. Voices display a slight 'edge' that emphasises sibilance.

Then there's a sort of 'closed-in' quality that affects the upper frequencies – a slightly hard nasal quality that compromises the natural timbre of voices and instruments, and takes the 'air' out of the sound.

Truth is, if you listen to CD for long enough, you stop noticing these drawbacks and limitations – you simply get used to them and the CD-T2000 tackles these sonic issues with greater success than many players we've heard.

The Sanyo transport is a high-quality device that's virtually silent during operation. There are no audible whirrs or clicks – important for an 'open' player like this, as there's no case to reduce the noise. The transport offers fast track access and reasonably speedy fast search – certainly, better than the CD-T1500, which was very slow.

Shanling's SCD-T2000 (SACD/CD player) had a solid-state output with the option of a tube buffer stage to add a bit of valve warmth. However, this player has a proper tube output stage and no solid-state option.

One slight grumble is the way the CD-T2000's volume control automatically defaults to -40dB once power is switched off. While, useful if you're connecting directly to

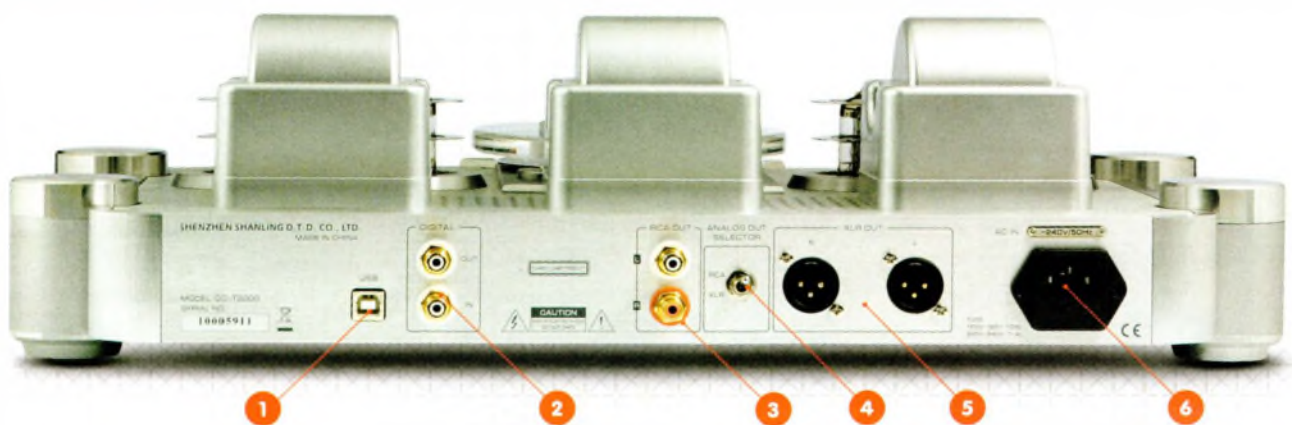
“An unusually good player, it lets you hear the music as it was originally recorded.”

a power amp, it means you have to turn the volume control clockwise about 2.5 turns (or use the remote) to get back to maximum output again each time you switch the player on.

Battleship build

Like most Shanling products, the CD-T2000 offers 'battleship' build quality and a very high standard of

CONNECTIONS



1 USB input

2 RCA digital input and output

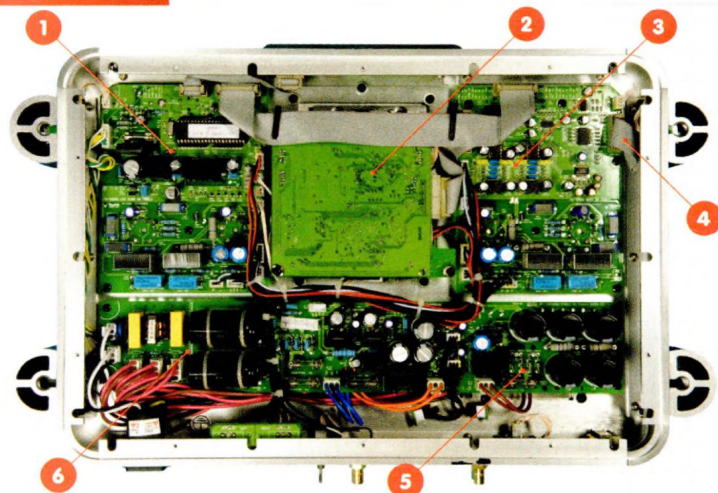
3 Unbalanced analogue outputs

4 Selector switch, balanced/unbalanced

5 Balanced analogue outputs

6 Mains input

HIDDEN TECH



- 1 DAC board
- 2 Underside of the transport
- 3 Servo board
- 4 Link to control interface
- 5 Output board
- 6 Powersupply board

QUESTION TIME

WE SPOKE TO Li Jinhui, (General Manager) of Real Hi-Fi about the CD-T2000.

HFC: Mechanically, the CD-T2000's disc transport seems much quieter than that of the SCD-T2000 – especially at the start of a disc?

LJ: The amount of noise is determined by the servo system. For the SACD player, we used the Sony servo, but this did not offer perfect stability for the CD-T2000, we were able to use a better servo system made by Philips.

Your SACD player featured a tube in line with the solid-state output; is the CD-T2000 similar?

For the CD-T2000 we used a proper tube analogue output stage, employing special custom-made high-end 12AU7 valves. It's superior to the output stage used on the SCD-T2000?

The CD-T2000 is a 24bit/192kHz up-sampling player, but it appears you can't switch between the native and high-resolution options – even though there's a 24-bit/192kHz button on the remote.

There's no switchable up-sampling feature on the CD-T2000, that's why the remote does not work.

Do the four tubes enable balanced operation?

Yes; separate tubes are used for the unbalanced right and left output RCA sockets and the other two tubes are for the XLR balanced right and left channel.

How do you wire your balanced XLR sockets?

Our balanced configuration is as follows. Pin 1: GND, Pin 2: Hot (positive), Pin 3: Cold (negative).

lovely breathy openness that sounds like good analogue. Transients have crisp attack and there's plenty of body and shimmer. But what's unusual and remarkable is the lack of tonal hardness – something that really lets you experience the sound of stick on metal – or metal to metal when orchestral cymbals are crashed together.

Playing the recent Boulez recording of Mahler's orchestral song cycle *Des Knaben Wunderhorn*, we were forcibly struck by the truthful natural quality of the sound – the pure uncoloured timbres and spacious naturalness produced. Had we not known otherwise, we'd have thought we were listening to an SACD rather than a CD – there was a comparable purity and 'rightness' about the sound.

With no pressing copy deadline, we spent many hundreds of hours listening to the CD-T2000 on all kinds of music recorded over a vast period of time and always the sound had a pure, open naturalness that seemed like an open window on the music. If the aim of high-fidelity is to reproduce the original without adding or subtracting, then the CD-T2000 gets pretty close to that ideal. It's a player that satisfies your needs without leaving you hungry for more.

As good as SACD

This is an unusually good player – one that sounds as good as it looks. It delivers a smooth, natural, well-balanced sound that lets you hear the music as it was originally recorded. Considering our enthusiasm for the SACD player, the prospect of a player that could make CDs sound almost as good as SACDs might still prove too much to resist. And anyway, the thought of going back to something 'inferior' once the review period was over was just too depressing to contemplate. Hearty recommendation, as I think you'd agree. ●

finish. The entire chassis is made from solid aluminium panels around one centimetre thick and sits on four corner turrets. It weighs in at about 11kg, which is remarkably heavy for a CD player and whether or not its substantial build affects performance is debatable. But the sound certainly has a 'solid' quality to match the look and feel of the player.

While the chassis dimensions are more or less the same as earlier Shanling players, having the feet at each corner has effectively made the player wider. Indeed, so wide, it only just fits onto a 'normal' 46cm-width hi-fi equipment shelf. Ideally, you need one with a width of about 50cm.

If this product were manufactured in the USA, it would probably cost three or four times what Shanling is asking here and at just under £2,000, makes it a veritable bargain. You can buy it secure in the knowledge that

few products anywhere at any price will match it for build quality and finish.

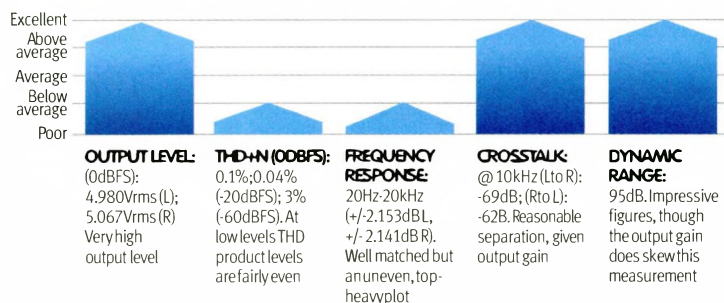
Comparable to SACD

Before auditioning the CD-T2000, we'd been enjoying the sound of the SCD-T2000 SACD player. When playing SACDs, the latter delivers a very open, detailed sound that's very natural and the difference between CD and SACD on this player has been fairly marked (but that's what you'd expect given the technical advantages of a higher-resolution format like SACD).

With CD, however, the CD-T2000 sounds better than the SCD-T2000 and while the latter delivers a very open sound – it lacks that slightly hard 'closed-in' tonal balance you almost always get with CD. This difference is very noticeable on instruments like cymbals. Via the CD-T2000, cymbals reproduce with a

TECH LABS

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Great sound, good looks, superb build and unbeatable price!
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Volume automatically cuts to -40dB when you switch poweroff
- BUILD QUALITY** ★★★★★ **WE SAY:** Asuperlative CD player that sounds great and looks terrific
- FEATURES** ★★★★★

OVERALL





ELECTROCOMPANIET

If music *really* matters™

hi-finews
HIGHLY
COMMENDED

HI-FI WORLD
★★★★★

LYD
& BILDE
Best
i test

Nr. 02/11
★★★★★

Electrocompaniet PD 1
Hjemmekino 6



Bring your digital music collection to life with the new PD 1 DAC from Electrocompaniet

The new PD 1 is our answer to the growing need for a user friendly DAC with USB interface. With our new DAC you can listen to the music from your CD-player, TV/Satellite tuner, iPod and computer the way it was meant to be. The sound from all your digital sources is improved and listening experience is enhanced.

The PD 1 is easy to install and with the remote control you can change between the sources and adjust the volume – perfect if you connect the PD 1 to a pair of active speakers.

When you connect your computer to the PD 1 all music coming from your computer is upsampled to the best possible quality. The dynamics and the details in the music is restored. With the remote control you can put your play-list on hold or move to the next / previous track without touching your computer.

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DETAIL. DYNAMICS. DYNAMIQUE...



Review, Issue 80, Alan Sircom

"Every cable brought out deep and powerful bass, with a broadly neutral midrange, a silken sheen to the upper mids and fine soundstaging... also very well-extended... as you might expect, a dynamic sound too."

"As a newcomer, this is a brilliant rollout of quality products from the get-go. There are brands that have been making cables for years that don't have this kind of consistency and neutral midrange. Dynamique roques!"



Review, June 2011, Richard Black

"Near faultlessly neutral in the midband...precise and stable images with very good depth definition... we were delighted to hear excellent dynamics on offer; swinging from loud to soft effortlessly without compression or exaggeration."

"They are both rather characterless; that is, they don't impose themselves on the music. Unless you are of the mindset that likes to regard cables as tuning devices, that's very much a point in their favour; neutrality being a hi-fi Holy Grail!"

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Far from creeky



Simplicity is an admirable virtue, opines **Richard Black**, as he considers the performance level of Creek's new Evolution 2 CD player

For less than the price of the Evo 2 CD, you can buy a universal disc player that handles all the various flavours of digital discs, reproduces moving and still pictures as well as audio and generally makes this machine look a bit lacklustre. So what's the point? If you didn't already know the answer, you probably wouldn't even be reading this magazine, but there's more to it than simply knowing that the player has been optimised for one task alone. Just before reviewing this, we had some time with a Blu-ray (etc.) player and there were times when we could cheerfully have heaved it out of the window. Too many options, you see!

Get on with it!

Perhaps one day some kind of ultra-flexible (computer-based?) system will know instinctively what to do, but until then, there's a lot to be said for having a single-purpose player that just plays CDs. It loads discs faster than any SACD player (5-6 seconds), has the usual basic transport functions and, er, that's it. Practically all digital music discs are CDs anyway, and SACDs will play in a CD player, just not in high-res.

There's nothing to set up, just the usual audio leads to plug in to the

usual sockets, though you can use a DAC if you want, or connect a digital recorder.

Cut above

It's clear that a significant portion of the budget has gone on making this player a smart, desirable piece of kit, rather than just another faceless black box. The front panel is thick, solid aluminium, while the top is made of steel.

Nor has Creek stinted on the internals, which include a good-quality modern DAC chip (one of a few changes from the original Evolution model) and two different types of op-amp, each selected for its precise application.

Passive components are high-quality, too, while the power supply is based on a relatively large transformer. The Evolution system remote control is a cut above your average with a metal top-plate.

Beauty from inside

Of course, a player can offer all the looks and ease of use in the world, but if it sounds unpleasant or boring it's an ornament at best.

What we really liked about this player was not its exterior, but the beauty it consistently brought out from inside our favourite recordings. It's a trait we've found before in

DETAILS

PRODUCT:
Creek Evolution 2 CD

ORIGIN:
UK/China

TYPE:
CD player

WEIGHT:
6kg

DIMENSIONS:
(WxHxD)
430x70x340mm

FEATURES:

- Single unbalanced analogue output
- Electrical S/PDIF digital output
- TOSLINK digital output
- Dimmable display

• Evolution system remote control

DISTRIBUTOR:
Creek Audio Ltd

TELEPHONE:
01442 260146

WEBSITE:
creekaudio.com

Creek equipment, a highly convincing way of playing music without fuss or artifice, but with honesty, commitment and more than enough detail to convince and beguile any listener.

It's a potent combination, though one that may not always get the quickest sale in a dealer's dem room, as it takes a little while to make its mark. For instance, we tried a well-loved orchestral recording of some Rachmaninov, which seemed more immediate and dramatic on another CD player. As the track progressed, however, it was the Creek that kept our attention with a carefully graded build-up of tension, as the composer intended, while the other player seemed to have given its all near the beginning and was less successful at keeping our interest.

Lots to like

In terms of basic tonality it's hard to criticise this player, though to be picky one might suggest that its bass doesn't quite have the reach of a few upmarket alternatives. Treble is lovely, clear and open with lots of detail, and the midrange seems highly neutral. Stereo imaging is excellent, with width well delineated and depth unusually specific. It's hard to buy a bad CD player these days, but this one stands out in its price range as particularly fine. ●

Hi-Fi Choice

OUR VERDICT

SOUND QUALITY



VALUE FOR MONEY



BUILD QUALITY



FEATURES



OVERALL



LIKE: Smart, desirable-looking player with lots of detail present in performance

DISLIKE: Bass doesn't outstrip rival players

WE SAY: Tonal quality is excellent, especially in well-made recordings; very good value



Smooth Operator



Germany's Quadral is back in the UK and, says **Paul Messenger**, the Antal VIII is a bright star from its high-end range

We actually reviewed a couple of Quadral loudspeakers a few years back, but at the time UK distribution was sporadic. The good news is that this high-end German company is back, via a subsidiary operation based in Stafford and covering Britain and Ireland.

Aurum actually operates as the high-performance upmarket sub-brand of the main Quadral operation and is only sold through specialist dealers. There's just one (decidedly extensive) range of ten loudspeakers (plus a handful of high-end amplifiers and CD players), of which the Antal VIII is one of the smaller models. It's a simple two-way standmount, albeit with quite a number of luxury touches.

Solid and substantial

Let's start with the enclosure. It's a medium-sized standmount, port-loaded at the rear and with an internal volume estimated between 10 and 15 litres. Port-blocking foam bungs are supplied should this give better results in conjunction with the specific room characteristics.

Judging by the weight, build is very substantial and the shape is unusual, too. The front and top edges of the sides are heavily chamfered and deeper at the bottom than the top (overhanging the back panel here). The speaker also has a separate base (presumably for cosmetic reasons).

The standard version of the Antal VIII comes in a choice of three real-wood veneers at £1,280 per pair; in piano high-gloss white or black for £1,380 per pair; or in a choice of lacquer colours for £1,570 per pair. Our example came in a slightly-brighter-than-pillar-box red and certainly looks the business.

The drive units are Quadral's own developments, with a 170mm main bass/mid driver that uses an alloy of aluminium, titanium and magnesium (known as Altima) for its 115mm cone. Claimed to be both stiff and light, it's driven from a powerful motor.

Ribbons rule?

The VIII in the name refers to the eighth generation of Quadral's ribbon-type tweeter. Indeed, few companies have done more to proselytise an 'alternative' approach



Preferring an alternative approach to tweeters, the Antal VIII includes the company's eighth-generation ribbon-type tweeter

DETAILS

PRODUCT:
Quadral Aurum Antal VIII

ORIGIN:
Germany

TYPE:
Standmount two-way loudspeaker

WEIGHT:
12.6kg

DIMENSIONS:
(WxHxD)
222x405x346mm

FEATURES:
• Reflex bass loading via large rear port

• 22x49mm ribbon/planar tweeter

• 1x170mm bass/mid driver, with 115mm metal alloy cone

• Two pairs of chunky multi-way terminals

• Choice of real wood or high-gloss painted finishes

DISTRIBUTOR:
Quadral GB and Ireland

TELEPHONE:
01785 748446

WEBSITE:
quadral.com

to tweeters then Quadral. One consequence of the diaphragm shape is a tendency to beam the highest frequencies in the vertical plane. Reducing any ceiling reflections should help focus the stereo image at some expense in terms of airiness.

Twin high-quality multi-way terminals are fixed directly through an alloy plate, using wire for the optional links. Internal wiring from French operation Real Cable uses bi-metal (BM-series) audiophile cable, combining copper (for bass) and silver for treble. The network proper uses metal-layer resistors and high-quality polypropylene film capacitors. An optional grille is supplied and is probably better removed, though this does leave unsightly visible mounting lugs.

Setting up for optimum results took a little time. It's important to be as

“Delivers a rich and warm sonic character normally associated with larger models.”



PRICED BETWEEN
£1,280 and £1,570 per pair, the Aurum Antal VIII goes head-to-head on price with a number of rather tasty floorstanders.

These high-quality floorstanders include, in no particular order, the £1,699 DALI IKON 7 Mk2, the PMC GB1i (£1,525), the Dynaudio M3/7 (£1,299), the Bowers & Wilkins CMB (£1,250), the Rega RS7 (£1,685), the ProAc Studio 140 Mk2 (£1,690) and the Audiovector Ki3 Signature (£1,890).

The standmount competition includes the Spendor SP2/3R2 (£2,295) which is significantly more costly, the Spendor SA1 (£1,295) and PMC DB1i (£985), both worthy of note, but very small.

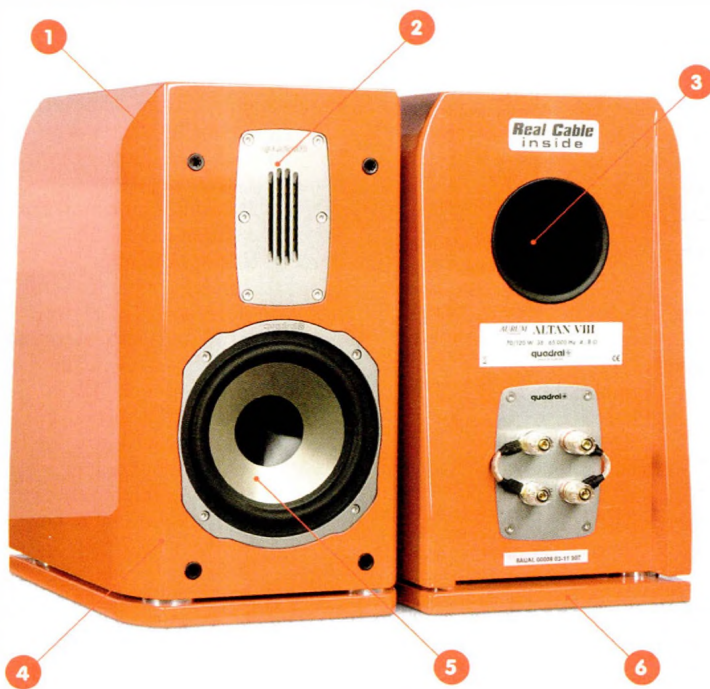
So the Quadral Aurum Antal VIII would seem to make good sense for anyone seeking a high-quality decent-sized standmount.

close as possible to the vertical axis of the ribbon tweeter diaphragm and in our case, at least, this involved adjusting the spikes of our 600mm stands to tilt backwards a few degrees. Exactly what is required here will, of course, depend on individual circumstances: Getting the right angle will depend on how high your ears are in relation to the height of the tweeter and how far away you like to sit.

Next there's the siting and the foam bungs to consider. The Antal VIII has a large and active port and it's tuned to around 52Hz, which unfortunately coincides with a major reinforcement mode in our listening room (and indeed many others). Inevitably there's some excess around 50Hz when the port is active, even with the speakers located well clear of walls, though in practice this proved only a minor drawback and actually helped to compensate for a slight tendency to forwardness in the upper midband.

However, when using swept sinewaves at a fairly high level, in order to establish the best configuration and positioning, the 20Hz starting frequency generated clearly audible harmonic distortion through the port. (The distortion completely disappeared when the bungs were inserted.) It should be added, however, that it was never noticeable even when playing music loud.

FEATURES



- 1 Various surface-finish options include a large range of high-gloss automotive colours
- 2 Ribbon-type tweeter has a 22x49mm diaphragm, the conductive element etched onto heat-resistant Kapton film
- 3 Large reflex bass-loading port on the rear may be blocked by supplied foam bungs, if preferred
- 4 Construction is very solid and chunky, with several clever styling embellishments
- 5 Bass/mid drive unit has a diaphragm fashioned from an aluminium, titanium and magnesium alloy
- 6 Separate plinth appears to be substantially cosmetic

to the minimal low-frequency coloration generated by a very 'quiet' enclosure and it's also a typical characteristic of a metal-alloy main driver diaphragm, though the latter probably contributes to a touch of upper-mid hardness and congestion.

Many compact speakers tend to sound a little cold and clinical, due to a lack of energy in the upper bass and lower midband. When used with its ports open, the Antal VIII entirely avoids this problem and instead it delivers the sort of rich and warm sonic character that is normally associated with significantly larger models.

Smooth and laid-back

Although there was an occasional hint of chestiness on male speech, the warm character is both unusual and very welcome, though it does result in a slightly 'laid back' overall character that tends to underplay expressiveness further up the band. This speaker doesn't have the most dynamic or vigorous sound around, but instead delivers very easy-on-the-ears long-term listening.

The top end is notably smooth, evenhanded and very well judged, and the crossover integration is effectively seamless, ensuring a very coherent overall sound. Stereo images are very well focused across a finely drawn lateral soundstage, but both depth perspectives and transparency seem a trifle constrained.

While it's true that the Antal VIII lacks a little ultimate bass weight, in several ways it combines the best characteristics of floorstanders and standmounts, delivering a scale of sound that belies its compact dimensions, with good agility and generally well-controlled coloration. ●

The bunged-up option

The alternative approach is to use the speakers with the bungs inserted to block the ports. This too worked well, though it was necessary to position the speaker quite close to a wall in order to provide some bass boost. Leaving a gap of 20cm seemed to work best, though the upper-mid prominence was a little more obvious in this arrangement, so the speaker could start to become a little too aggressive when it was used with the volume turned up high.

Indeed, although the differences were quite subtle, free space sitting with ports left open was

considered marginally the best all-round compromise, especially when playing music loud.

However, voice band articulation is somewhat enhanced, especially when listening at low levels, when the speaker is close to a wall with the bungs inserted. There isn't a right or a wrong here: both approaches work well and the differences will be largely a matter of personal taste and the specific room acoustics.

Whichever version of bass alignment and positioning is chosen, a fundamental strength of this speaker lies in its impressive dynamic range. This is partly due



TALKING POINT
THE VIII IN ANTAL means that this is the eighth iteration of Quadral's longstanding ribbon-type tweeters.

In the classic ribbon transducer – arguably more common amongst microphones than tweeters – a pleated metal ribbon is held within a powerful magnetic field. The signal-conducting ribbon and the diaphragm are one and the same, which is an obvious and major bonus, but the low impedance of a ribbon conductor normally requires an impedance-matching transformer.

This is avoided in the Quadral ribbon, where the conductive element is etched onto heat-resistant Kapton film. Powerful neodymium/iron/boron magnets energise the stator, and because the 22x49mm diaphragm is much larger than a conventional 25mm dome, ample headroom and sensitivity is available.

Hi-Fi Choice

OUR VERDICT

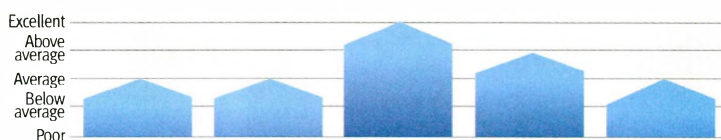
- SOUND QUALITY** ★★★★★ **LIKE:** Wide dynamic range and fine coherence; sweet and smooth top end
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Quite costly for a two-way standmount, especially in some finishes
- BUILD QUALITY** ★★★★★ **WE SAY:** Though not the cheapest, this speaker has a warmth that belies its size, and a laid-back character
- EASE OF DRIVE** ★★★★★

OVERALL



TECH LABS

RESULTS AT A GLANCE



- SENSITIVITY:** Rated at just 87dB, the figure looks quite conservative against the circa 90dB that our far-field in-room regime indicates
- BASS EXTENSION:** The 52Hz port limits bass to 30Hz, but blocking the ports increases this to 24Hz under in-room far-field conditions
- EASE OF DRIVE:** Decent sensitivity is combined with a fairly easy amp load that stays above five ohms, a combination that should suit any amplifier
- FREQUENCY BALANCE:** Despite some limitations, the overall frequency balance is rather good, holding within +/-4dB above 60Hz
- RESPONSE SMOOTHNESS:** The response is reasonably well-controlled through the bass region, depending on the porting and placement

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Let the beat drop

The Drop is one of the most distinctive-looking speakers on the market. **Ed Selley** investigates whether the music is as smooth as the lines

Scandyna has been producing its distinctive pod speakers for over a decade and there is now an eight-strong range of stereo models with supporting subwoofers and amps. The Drop is, however, as the name suggests, modelled on a droplet – even down to the ‘separating stem’-effect at the top of the cabinet.

Plastic fantastic

The Drop retains many classic Scandyna features, including a cabinet formed of ABS plastic. This contains a five-inch Kevlar midbass driver (a nod towards the original point of origin of the concept being Bowers & Wilkins) partnered with a 25mm soft-dome tweeter. A single pair of sprung terminals will support banana plugs if you are careful with them.

Our review pair were in red, but the speakers are also available in black and white.

Scandyna places great emphasis on the mounting options and The Drop can be wall- and ceiling-mounted, in addition to a stand or shelf. The speaker is supplied with three rubber feet, but can also have longer ‘Sputnik’ spikes to increase isolation.

The cabinet is sealed, which further simplifies placement and using the supplied rubber feet, we obtained perfectly respectable results on a variety of surfaces. As each unit only weighs 2.3kg, it is unlikely to overload a shelf, either.

Sealed design

The consequence of the sealed design is that the speaker is not a true full-range unit. Output at 50Hz is down -6dB and, as a result, bass output is going to be considerably lower than a

conventional standmount at the same price (or less). How much this matters is going to depend largely on where you intend to use them. As a speaker on a shelf in an office, kitchen etc, its unfussy placement and appealing design will outweigh its lack of bass. If you are looking to replace a conventional standmount speaker, it may prove more of an issue.

Fit and finish is good, although due to the materials used The Drop will understandably feel less substantial than something constructed out of MDF. The build is good and the rubber feet and uppermost point of the cabinet attach in a straightforward way.

Scandyna quotes a sensitivity of 89dB/w into four ohms, which means the speaker would benefit



DETAILS

ORIGIN:
Denmark
TYPE:
Two-way free placement loudspeaker
WEIGHT:
2.3kg
DIMENSIONS:
(W xHxD):
215x437x170mm
FEATURES:
• 25mm soft-dome tweeter
• Kevlar midbass driver
• ABS plastic casework
• Choice of stand, wall or ceiling mounting
DISTRIBUTOR:
Tascom International Ltd
TELEPHONE:
0118 982 0400
WEBSITE:
scandyna-speakers.com

from an amp of reasonable power output, which may be something to bear in mind if you are partnering it with an all-in-one system.

Fast and agile

The Drop is pleasant to listen to. The lack of low-end output is noticeable, but partly countered by how fast and agile the presentation is. This is, in part, down to there being less low-end inertia to overcome, but the entire frequency spectrum feels dextrous and fleet. The result is a very open and airy presentation.

The overall tonal balance of The Drop is slightly forward of neutral and this lends it a sense of liveliness and excitement that can be beneficial. Acoustic material and voices in particular sound very real and, on occasions, extremely explicit.

Pushed hard, this can make The Drop sound aggressive and a little loud, but this will generally occur at higher levels than we imagine it will be used. When used with rock or dance music that lack of absolute low end can become more noticeable, but generally the speaker sounds more full and cohesive than might be expected from the specs alone.

Attractive and flexible

The speaker is not a perfect solution and some similarly priced designs have fewer compromises. We have seen the Danish make online for near £400, which does improve its value.

Compared to the even more striking-looking Elipson Planet L (see p77), it feels slightly insubstantial and is certainly weaker in the bass. On the other hand it is an attractive, flexible and well-thought-out product that fills a distinct role in the market.

If you need a striking speaker to operate in close confines away from stands it is well worth considering. ●

Hi-Fi Choice

OUR VERDICT

SOUND QUALITY

★★★★★

VALUE FOR MONEY

★★★★★

BUILD QUALITY

★★★★★

EASE OF DRIVE

★★★★★

LIKE: Bold design; easy placement; open and detailed sound

DISLIKE: No shortage of competition; limited bass

WE SAY: The Drop has many likeable features and impressive flexibility

OVERALL

★★★★★



Silver Cipher



SACD may be a niche format, but to Krell it's still a serious business says *Jimmy Hughes* as he exclusively reveals its new flagship player

A new high-end SACD player from Krell is a welcome surprise. It shows there's still a market for the medium. True, SACD software issues are somewhat limited and the format risks being superseded by high-res downloads, but many small classical and jazz labels still support SACD and issue new titles each month.

This is where the new Cipher comes in, replacing Krell's popular EV505 SACD player. It promises an improved performance – especially in terms of Red Book CD playback and while this is very welcome, it's as an

SACD player that the Cipher will stand or fall. Fortunately, Krell has spared no effort to make it as good as possible – with both formats.

Disc accuracy

The Cipher is an advanced digital disc player offering users a choice of SACD and DVD-Audio playback in two channel and multichannel surround formats. The ability to play in surround is unusual – many purist audiophile SACD players dispense with this option, offering just two channel playback.

There's a choice of three fixed-level analogue outputs: RCA (unbalanced);

DETAILS

- PRODUCT:** Krell Cipher
- ORIGIN:** USA
- TYPE:** CD/SACD player
- WEIGHT:** 13.2kg
- DIMENSIONS:** (WXHXD) 440x150x440mm
- FEATURES:**
 - Independent power supplies for disc drive, digital and analogue sections
 - Individual DACs for positive and negative signals in balanced operation
 - Balanced XLR and CAST audio outputs
 - Able to play DVD-R and Audio DVDs – though not DVD-A
 - Surround Sound capability
- DISTRIBUTOR:** Absolute Sounds
- TELEPHONE:** 020 8971 3909
- WEBSITE:** krellonline.com

XLR (balanced) and – for those using Krell amplification with the appropriate inputs – a special four-pin CAST socket (CAST is claimed to offer a significant improvement in sound quality). An output for subwoofers is also included in the mix.

The Cipher's disc drive is mechanically isolated from the main chassis and the mount uses composite materials to minimise vibration-induced errors. Strategically placed damping is used to reduce mechanical resonance and Krell's customised disc-drive firmware is claimed to improve disc-reading accuracy.

SACD disc transports can be temperamental and some players gained a reputation for being mechanically noisy and unreliable. Fortunately, the transport used in the Cipher is very quiet and seems to play a wide range of discs without complaint. CDs that jump or suffer dropout on our other players, played perfectly on the Cipher.

Separate lasers for CD and SACD are employed and these are individually hand-calibrated for



SACD NEVER QUITE captured the public's imagination, so is it still worth taking seriously?

Classical music has, by far, the greatest number of titles (just over 3,500), Jazz titles number a little over 1,000, while rock/pop titles bring up the rear at about 700. If your taste in music is predominantly classical, SACD is well worth going for because many of the smaller independent labels are very committed to the cause.

On the rock front, many SACD releases are now out of print, and pre-owned examples often sell for inflated 'collector' prices on account of their rarity value.

Whether SACD titles will still be available to buy in (say) ten years time is harder to predict. But, stranger things have happened; look at the way vinyl has survived against all odds.

accuracy. All signals are fed into a custom-designed Krell anti-jitter filter module and this is said to reduce jitter to virtually unmeasurable levels, resulting in a perfectly clean digital signal.

D/A conversion is via a pair of balanced 24-bit/192kHz DACs. Most players use a single DAC for each channel, but Krell uses its DACs in pairs and configures them to operate in balanced mode. So, 'balanced' operation occurs throughout the signal chain – from digital through to analogue.

Usefully, the Cipher can play DVD-R data discs – though not, it seems, DVD-A discs. Prior to the launch of SACD, one or two small audiophile labels released audio-only DVDs with a sampling frequency of 48kHz. These provided better-than-CD sound quality and very long (over three hours) continuous playing time.

As an aside, EMI issued its 2005 three-CD set of Wagner's *Tristan und Isolde* as a special limited edition, with a bonus audio DVD containing the complete recording on a single disc lasting three hours and 47 minutes in 5.1 DTS Surround Sound. The Cipher proved able to play this disc and could even deliver the DTS information.

So, if you have any music DVDs, you'll be able to listen to them via the Cipher (most SACD players can't do this). Another slightly unusual feature is the provision of user-selectable output filters; two for CD, and four for SACD. These alter the

out-of-band frequency response and output gain – see Talking Point overleaf for more information.

Confidence-building

The Cipher features all-aluminium casework. Being non-magnetic, aluminium is a good material to use for hi-fi casing, reducing the effects of magnetic eddy-currents. It costs more than steel, but can be relied on to deliver a smoother, more open and natural sound. Finish is excellent, and the 'Cipher' centre panel looks very attractive.

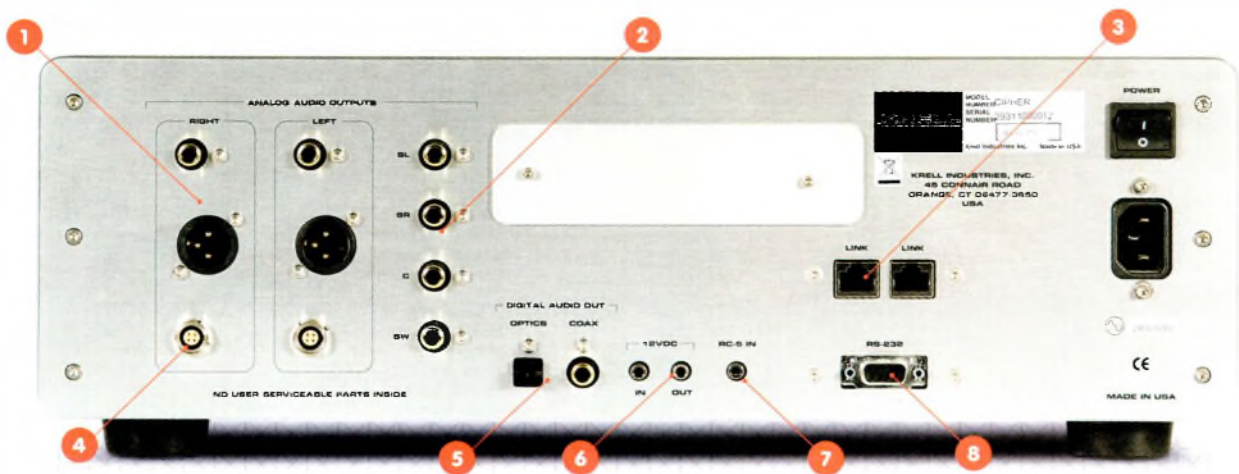
There are about thirty small press-buttons on the front panel – something that appeals to the inner geek in all of us – giving the Cipher a complex 'techy' look. Fortunately, the button layout is logical and intuitive,

“On SACD you get a holographic, almost 3D effect with impressive width and depth.”

so you instinctively find the right one. The buttons have a nice solid feel and operation is smooth and confidence-building.

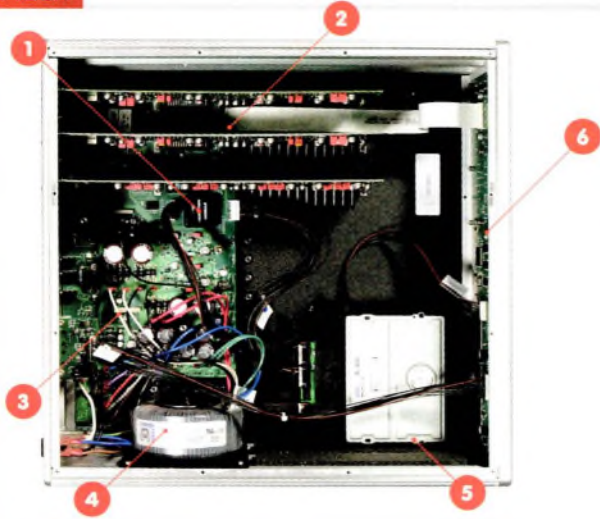
At a cool £12,255 (including VAT) the Cipher is not cheap. Although well made and beautifully finished, we'd not say it offers 'battleship' build quality. However, excessively heavy build is not always advantageous. From the standpoint of resonance and energy

CONNECTIONS



- 1 Analogue outputs: RCA (unbalanced) and XLR balanced
- 2 Surround outputs
- 3 Link sockets for system control
- 4 CAST analogue output sockets
- 5 Digital outputs RCA (S/PDIF), Optical (TOSLINK)
- 6 Remote links
- 7 RC-5 input
- 8 RS232 socket

HIDDEN TECH



- 1 Jitter reduction module
- 2 Analogue output circuit boards
- 3 Main circuit boards
- 4 Mains transformer
- 5 Disc transport
- 6 Front panel control board

storage, a light but solid case (as here) is often best.

Sound quality is likely to be the determining factor when it comes to deciding whether or not the Cipher justifies its hefty price tag. But give it a good SACD and it delivers a quality of sound that even the finest CD players cannot equal.

Smooth tonality

The Cipher's exceptionally lucid presentation is notable for amazing clarity and astonishing fine detail. Musically, the sound is open, lean, and crisp – not the least bit warm or romantic. At the same time, there's impressive refinement and (despite the sharpness) a smooth neutral tonality.

Playing SACDs on the Cipher forcibly demonstrates the limitations of conventional Red Book CD. SACD offers a transparent openness, plus a

wealth of fine detail that even the best CDs can't match. There's a predictable 'sameness' about CD that SACD eliminates – the latter has a far wider range of tone colours and dynamics.

If anything, the Cipher widens the sonic gap between SACD and CD. On difficult, demanding SACDs, the extra detail and information being delivered over CD is really apparent. Yet, despite this, CD via the Cipher proves very listenable – especially when judged on its own terms and not directly compared.

We had another SACD player on standby to provide a comparison point for the Cipher and this cheaper player made the sonic gap between CD and SACD seem less apparent. While SACD always edged it over CD, the difference between the two is much less than it was with the Cipher.



TALKING POINT
UNUSUALLY, THE Cipher has four user-selectable filters. CD has a choice of two settings, while SACD has four.

CD Filter One has a very steep roll-off characteristic above 20kHz, while Filter Two produces a gentler roll-off, delivering a slightly more open sound.

SACD users have a choice of four filters. Filter One has the same gain as the two CD filters and offers the widest bandwidth, having a response out to 180kHz and a gradual roll-off. Filter Two reduces the high-frequency bandwidth to 75kHz, with the steepest roll-off and an increase in gain of 3.5dB.

Filter Three limits bandwidth to 80kHz, with a slightly gentler roll-off and an increase in gain of 5.5dB, compared to Filter One. Filter Four limits bandwidth to 90kHz and has a slightly gentler roll-off than Three, with an increase in gain of 5.5dB compared to Filter One.

On CD, the two filters sound fairly close and there isn't a lot to choose between them. Filter Two sounds a shade more airy and open, while Filter One is a little more tightly-focussed and 'darker'-sounding.

On SACD you have a choice of four filters. Although Filter One has the widest bandwidth, it sounds slightly darker and more closed-in than Three and Four – probably because of the latter's increased gain.

Subjectively, Filters Three and Four offer the highest gain, with Filter Two having slightly more gain than Filter One, but less than Three and Four. Filter settings Three and Four sound slightly more 'alive' and impressive, but One and Two seem to offer greater focus and slightly better control. Got it?

Via the latter, we experienced levels of detail and clarity that no CD player could approach. The Cipher's ability to separate-out individual voices and instruments is almost uncanny, making CD sound 'closed-in', bland, and predictable by comparison. Impressive stuff!

Stereophonically, the Cipher images exceptionally well, creating a broad precisely defined soundstage notable for the solidity of individual voices and instruments. On the right SACD, you get a holographic, almost 3D effect, with impressive width and depth.

SACDs sound cleaner, too. Playing CD, the Cipher minimises that slightly 'furry' coarseness you tend to get on massed violins or heavy brass, delivering a very clean end result. But SACD sounds noticeably fresher and more alive, with crisper transients and a wider range of dynamic contrasts.

The top end is more open-sounding, without a trace of tonal hardness. In comparison, CD sounds a shade muted and not nearly as transparent. Despite these limitations, the Cipher makes a pretty good fist of playing CDs, so that – while never quite as good as SACD – you're still able to listen with pleasure and enjoy the music.

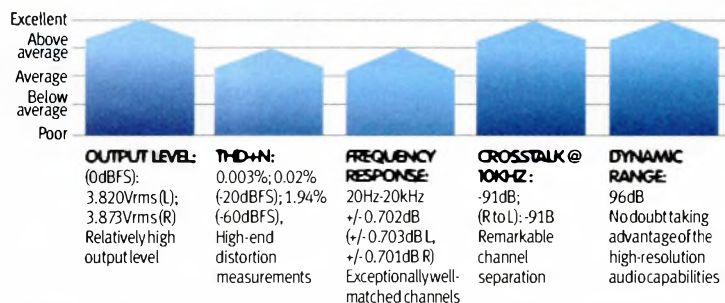
Well-heeled audiophiles

Krell's new Cipher is an exceptional digital front-end, giving state-of-the-art replay of conventional CD and SACD formats. It's via SACD that it really shows its mettle, delivering results that combine stunning clarity with amazing dynamics, plus impressive naturalness and refinement.

It would be equally at home in a purist twin channel system, or a multichannel surround set up. While only the most well-heeled audiophiles will be able to consider purchasing, the Cipher certainly delivers the goods and offers results that will be hard to better, regardless of price. ●

TECH LABS

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

SOUND QUALITY ★★★★★ **LIKE:** Vivid, highly detailed sound; plays DVDs (audio only)

VALUE FOR MONEY ★★★★★ **DISLIKE:** No digital input; 'Perfection' doesn't come cheap

BUILD QUALITY ★★★★★ **WE SAY:** An amazing, hugely versatile product – SACD has rarely sounded so good

FEATURES ★★★★★

OVERALL ★★★★★

ISOtek®

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Syncro is IsoTek's latest product and the company's most advanced mains cable – but it's also so much more.

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HI-FI CHOICE

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HI-FI WORLD

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Wood you?

aircoustic
BY VIVANCO

Wood is good

for some things at least

The greatest speakers and instruments in the world are crafted from wood; this is of course due to its renowned acoustic properties.

In striving to create perfection, we chose not to ignore this natural choice.

aircoustic Wood is good
BY VIVANCO



Music of the spheres

Elipson's Planet L brings the acoustic benefits of a spherical cabinet down to a new price point. **Ed Selley** goes listening 'outside the box'

French hi-fi has made significant inroads to the UK market in recent years, but Elipson remains one of the lesser-known brands. This is in spite of the fact that it has been in existence since 1938 and amongst other achievements were the default loudspeaker choice of French national television for over forty years.

Bowling ball

The striking looking Planet L is the latest in a long line of spherical designs dating back for most of the history of the brand. Elipson says that the shape of the Planet is the result of years of research into cabinet design. Available in black, white and red, the visual impact of a pair of speakers, each the size and shape of a bowling ball, is such that serious hi-fi or not, the Planet L makes a considerable statement about style.

Each Planet L is supplied with a ring that allows it to be placed on a shelf, or table, or technically on a conventional speaker stand. We used the optional £199 floorstand for the review that attaches directly to the underside of the speaker and makes for a stable fitting. Wall and ceiling mounts are also available.

Solid-feeling

Each Planet L makes use of a 6.5-inch paper driver with a coaxially mounted soft-dome tweeter. A small rear port provides bass re-enforcement and a single pair of binding posts protrudes from the rear. Sensitivity is quoted at 90dB/w with impedance given as six ohms, so while not hugely sensitive, the Elipson ought to provide no real problems for a similarly priced amplifier.

Fit and finish is top-notch with flawless paint, a solid-feeling enclosure and magnetic trim tabs for the grille. Given that the grille is pretty much acoustically transparent and removing it rather spoils the lines, we kept it in place for most of the listening.

There is no shortage of £600 standmounts and most of them look more 'normal' than the Elipson does, but the Planet L has to be considered good value. The speaker is solid, well thought out and uses good-quality components. The stands are a little pricey (bespoke designs often are), but overall it feels good value for money.

Star qualities

Any lingering perception that the Planet L is some sort of lifestyle trinket is destroyed shortly after you put some music through it. Placed roughly 20 centimetres

DETAILS

PRODUCT:
Elipson Planet L

ORIGIN:
France/China

TYPE:
Two-way spherical loudspeaker

WEIGHT:
7kg

DIMENSIONS:
(WxHxD):
405x423x428mm

FEATURES:
• Impedance: 6 ohms
• Sensitivity: 90dB

• Power output:
60 watts

• Coaxial driver arrangement
• Choice of stand, wall or ceiling mounting

DISTRIBUTOR:
BBG

TEL:
01923 205610

WEB:
elipson.com/en

from a rear wall with a little toe-in, the speaker shows some star qualities.

The coaxial driver arrangement gives it a focus and soundstage that is uncannily accurate and extremely detailed. The Elipson also has a relatively wide 'sweet spot', that means it can produce an appealing presentation over a wider area than is usually the case for speakers of this size.

The Planet L is also capable of extracting nuances from recordings that even considerably more expensive speakers can fail to reproduce. Tonality is exceptionally good and it rarely sounds anything other than utterly believable and very assured.

The spherical shape is no gimmick either. The Planet L has very little in the way of colouration that can be traced to the cabinet and the bass port is commendably well behaved. Bass output is not seismic – there are a number of similarly priced standmounts (to say nothing of floorstanders) that will go deeper, but the bass on offer here is very clean and incredibly fast.

Strutting its stuff

Pushed to high levels, the Planet L will harden up, but it does so relatively slowly and benignly. They are not going to generate rock gig volume levels and those looking to fill a barn conversion might want to look elsewhere (or at least look at using more than two of them), but for an ordinary lounge, the Elipson should have no trouble strutting its stuff.

Whether it's right for you will ultimately depend on whether you like the distinctive look. If you do, this is an incredibly gifted loudspeaker with a genuine talent for making music and bringing detail to the fore. What further recommendation do you need? ●



Hi-Fi Choice

OUR VERDICT

SOUND QUALITY



LIKE: Well built and clever design with excellent sound

VALUE FOR MONEY



DISLIKE: Looks will divide opinion; floorstand is expensive

BUILD QUALITY



EASE OF DRIVE



WESAY: An intriguing and fine-sounding speaker with many likeable qualities

OVERALL



Digital Audio streaming



New Akurate DS

LINN



New Klimax DS

+2 Promo -Add 2 channels of Linn amplification FREE! - See our website for details

- Audition & compare various products or brands in our listening rooms
- Arcam, B&W, Denon, Linn, Naim, PMC, Rega, Rotel, Quad, Spendor

0% APR Interest Free Credit

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Example: Cash Price £1425. 20% Deposit required £285 plus 12 equal payments of £95. Total £1425 0% APR



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Digital Delight



Cambridge Audio delivers pure digital audio from iPods, iPhones and now the iPad through the new iD100 says **Malcolm Steward**

The home office hi-fi looks rather swish right now with an Apple iPad sitting atop the rack proudly displaying some attractive album artwork – the gifted bassist, Tal Winklenfeld's *Transformation*. However, this not a review of the iPad, but the rather neat little digital dock upon which it rests: the Cambridge Audio iD100.

The iD100 will operate with various iPods, iPhones and the iPad, from which it will extract a pure digital output that it then delivers to a stand-alone DAC or the digital input on your amplifier (if it has one) for maximum performance. Pure digital out from the iPod/iPhone/iPad is definitely the way to go for the best sound quality.

The digital outputs on the dock include TOSLINK, S/PDIF coaxial, and AES/EBU balanced through an XLR connector. There is also a USB connector to allow your iDevice to communicate with iTunes.

Audio flexibility

As well as this useful audio flexibility, the unit furthermore has a switchable video output so that you can view your stored video content through your TV, courtesy of its composite or component connection.

The iD100 comes with rubber adaptors (cushion-like supports) to allow the various Apple devices to connect to the seemingly fragile Apple connector without straining it.

The supplied remote control enables you to control, charge and synchronise the iPad – through the USB connection to your computer – while it is connected to the dock. You just need a standard USB 2.0 type A to type B cable for this connection.

Substantial engineering

The last thing you need in a dock, particularly one that can

accommodate the relatively large-screen of a £650 iPad, is any instability. The metal-cased iD100 is reassuringly sure-footed even though it is not unduly weighty.

The unit comes with a wall-wart switched-mode power supply, which you could swap for a linear supply from a third-party supplier if your system has a particular aversion to these now-ubiquitous devices.

Typical of Cambridge Audio products, it almost goes without saying that the iD100 is substantially engineered and offers outstanding performance and versatility for the money. And, of course, the unit works straight out of the box without any undue faffing about, which is what any fan of iGadgets expects these days.

Rewarding performance

We tested the unit feeding the digital input on a Naim UnitiQute through an inexpensive Chord Company



► DETAILS

PRODUCT:
Cambridge Audio iD100

ORIGIN:
China (under license)

TYPE:
Digital docking station for iPod, iPhone and iPad

WEIGHT:
0.5kg

DIMENSIONS:
(HxWxD)
46x108x128mm

FEATURES:
• Video output as well as audio

• Robust metal case

• Handles iPod, iPhone and iPad

• Can charge and synchronise iDevices

DISTRIBUTION:
Audio Partnership

TELEPHONE:
0845 900 1230

WEBSITE:
cambridgeaudio.com

Codac digital interconnect. Unlike several iPod docks we have experienced, the musical performance of the iD100 comes as a truly pleasant surprise. Apple Lossless CD rips have solid bass, a rewardingly open and detailed midrange and unexpectedly delicate treble with no 'splash' or emphasis of sibilance.

The vocals, in particular, on the Squeeze track *Cool for Cats* are especially well articulated, as is Glenn Tilbrook's dexterous guitar work on *Another Nail in my Heart*. Most importantly, the iD100 preserves the dynamics and rhythm of the music and the album rocks exactly the way it should.

Similarly, the portrayal of Colin Hay's vocals on his *Gathering Mercury* album are magnificent, conveying the depth of feeling in his voice on songs such as *Send Somebody* and *Dear Father* to the point of listeners becoming visibly moved.

Even pop albums from the likes of Adele and country-rock from Jerry Lee Lewis demonstrates that Apple Lossless is a fine file format if you demand music on your iPod with its full quotient of get-up-and-go.

MP3s – even those encoded at the highest bit-rate – do not match the performance of ALAC files, but sound more acceptable than usual, nonetheless. For example, Tal Wilkenfeld does not sound as refined as the ALAC version does. There is neither the same detail nor the grip and control evident with the MP3.

Finest sound

In short, fill your iTunes library with Apple Lossless music and you will quickly discover that the Cambridge Audio iD100 produces possibly the finest sound you will hear from any iPod dock. Just remember to use a decent digital cable to connect it to your DAC or amplifier. And remember to charge it fully beforehand for the best sound quality. ●

Hi-Fi Choice

OUR VERDICT

SOUND QUALITY



LIKE: Great sound from your iGadget at a great price

VALUE FOR MONEY



DISLIKE: It comes with a remote control that you will not want to lose

BUILD QUALITY



WE SAY: The iD100 is the best way to enjoy the music on your iPod/iPad/Phone

FEATURES



OVERALL





New era for NAD

NAD's first foray into streaming has got **Malcolm Steward** examining the potential giant-killer from the brand's established Classic range

NAD seems to have stuck to its established tradition with the C446 network audio player (the C in the model signifies it being a member of the Classic range). Like the pioneering 3020 amplifier of many years ago, it is outwardly a giant-killer, giving the sort of musical performance for which you would expect to pay a lot more money, but with an appearance that you might call utilitarian.

Highly revealing

If you are enthusiastic about terrestrial radio, the C446 is thoroughly well equipped to deliver these services. It even sounds palatable with bandwidth-limited DAB broadcasts, playing through a highly revealing system. The presentation has unusual, but

welcome depth and presence and is far more engaging than any DAB radio has the right to be.

Naturally, the C446 makes an equally fine task of servicing internet radio. Note that selecting and adjusting all the available sources is accomplished through the fascia buttons and rotary control, with the supplied remote control handset, or with an iPhone/iPad app, an Android device or a PC that is running Windows 7.

Setting up favourites on the internet radio can be done through NAD's wi-fi radio portal at vtuner.nadelectronics.com. The C446 also comes fully prepared to play Last.fm, once, of course, you have paid your subscription to the service. You can also play music from a USB memory stick or hard disk connected to the

► DETAILS

PRODUCT: NAD C446
ORIGIN: China
TYPE: Digital media tuner
WEIGHT: 7.4kg
DIMENSIONS: (WxHxD) 440x100x340mm
FEATURES:
 • Streamer handles WAC, FLAC, AAC, MP3 and WMA
 • Unit control through remote or fascia buttons
 • Wi-fi and cable Ethernet network connection
 • UPnP client plays from Network devices and Smartphones
 • RS-232 interface for home automation systems
DISTRIBUTOR: ArmourHome Ltd
TELEPHONE: 01279 501111
WEBSITE: nadelectronics.com

front panel port. If you do not have a compatible iPod dock, the cable supplied with an iPhone (USB to iPhone jack) does not perform its usual function, so better put £100 aside for a NAD IPD dock.

The C446 will deliver its output as an analogue signal, through RCA sockets, or digitally, through a TOSLINK connection. This discovery sent us rummaging through a pile of wires – or, more correctly the wires and fibre optic box – to find a suitable interconnect. We found that a Chord Company Optichord lead, provided a reliable and sturdy optical connection through this fragile medium.

Our primary interest, however, lay with the media player portion of the C446, which can be served either with a wi-fi input or through a wired Ethernet connection, which was the preferred option, so that its sound could be reliably compared to that of other streamers available to us.

In fairness, however, we have to say that the wi-fi connection seemed to work extremely well, with no suggestion of any flakiness. The sound has a remarkable sense of solidity and purpose.

Regardless, we connected it to a pair of NAS units on a GigaBit network: a VortexBox Appliance (HFC 337), running Twonky v5 and a self-built unit running Asset v3.



Porsche GT3

The C446 tops out below 24-bit/96kHz recordings, although the literature implies otherwise, with talk of a 24-bit/192kHz DAC. According to NAD, the C446 DAC can handle sampling frequencies up to 192kHz, but in reality that appears not to be the case. The most we were able to play were 24-bit/48kHz rips, which often sounded superior to 16-bit/44.1kHz material. But if you frequently purchase high-resolution 24-bit/96kHz recordings from HDTracks.com, or a similar web store you will be disappointed and

“The C446 is a leading contender for anyone who is content listening to MP3s and CD rips.”

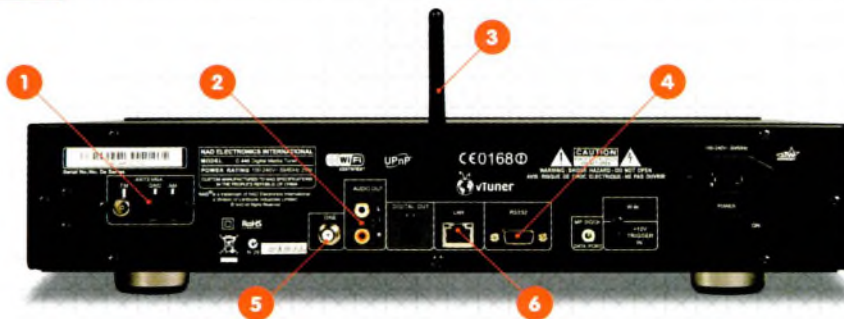
will need to look at another player, such as the Marantz NA7004 (HFC 344), for example. Effectively, NAD has built what looks to be a Porsche GT3, but equipped it with the engine from a 1970's 1200cc Volkswagen Beetle. It is disappointing for those who want to buy higher resolution

downloads and anyone who transfers their vinyl onto hard disc: that transcription process is such a palaver that it is really not worth considering low bit and sample rates. The unit is rather Spartan inside, with a noticeably compact power supply PCB, with a matchbox-sized transformer. There is certainly not the humungous, weighty toroidal transformer that one would expect inside a piece of equipment offering high-end performance. Regardless, we heard no signs of the power supply buckling under the pressure of playing music, so all appeared well.



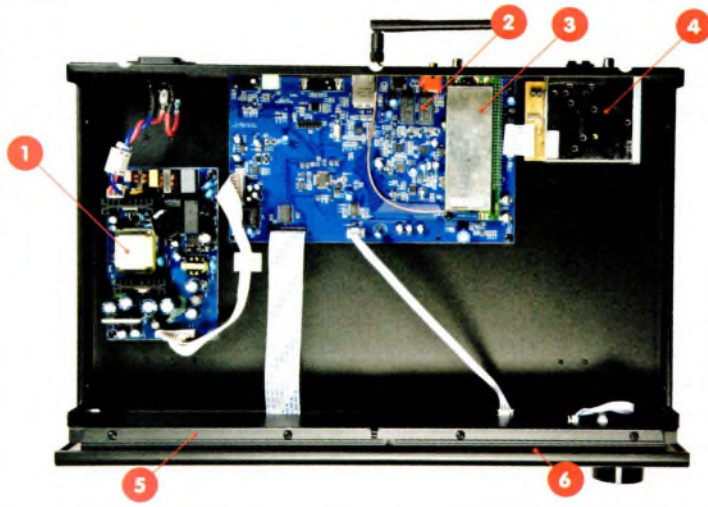
IDEVICES
FUNCTIONALITY with iDevices might not be vital for audiophiles, but it is for many music fans. In this situation the Marantz NA7004 wins hands down, thanks to its integration of Apple Airplay. To listen to the music on your iPod with the NAD, you will need to invest another £99 in a NAD iPod docking system. Without a dock we could get nothing from an iPhone, even with the Apple-supplied USB lead, which was disappointing. The NAD will happily play from USB memory sticks, though. Given the similarity in their prices, the Marantz looks the most attractive of the pair on paper, although it is hard to ignore the sweet musical performance offered by the NAD.

CONNECTIONS



- 1 Analogue aerial connections
- 2 Analogue outputs
- 3 Wi-fi aerial
- 4 RS232 connection for custom installation
- 5 DAB aerial connection
- 6 Ethernet connection

HIDDEN TECH



- 1 Power supply board
- 2 Analogue output board
- 3 DAB module
- 4 FM/AM module
- 5 Display board shielded from other internals
- 6 Rotary encoder linked to front panel control board

Its performance on radio sources seemed rather outstanding, in particular the way it refused to sound ethereal or thin and wispy. Instead it sounds full-bodied and firmly rooted and renders voices with remarkable conviction. Performers on Radio 4 broadcasts sound appreciably 'real', three-dimensional and free from any coloration – no chestiness or adenoidal afflictions are evident.

CD-quality rips

The resolution restriction is unfortunate, because the C446 is otherwise a very fine-sounding network player. With music being supplied from a VortexBox Appliance NAS, through a NetGear GS108 Gigabit switch, the sound from the C446 instantly impresses with its rhythm, dynamism and natural sweetness.

Listening to CD-quality rips, it sounds thoroughly engaging and renders music in a wholly plausible fashion. It sounds smooth and composed, even on lively, maybe slightly over-enthusiastic, recordings. For instance, on *Licensed to Ill* it makes the Beastie Boys sound like the middle class, Jewish preppies they were and not the hard-core gangsta rappers they seemed to want to be. The player seems to have the knack for digging out details that are musically relevant.

On the Tedeschi Trucks Band album *Revelator*, it has no trouble in letting the listener know which guitar is playing up front: Derek Trucks' Gibson SG, or Susan Tedeschi's trademark Fender Telecaster, or less frequently her solid-bodied D'Angelico. It finds no difficulty in rendering the timbre of the guitars accurately and easily conveys the



THE STREAMER and the all-in-one-not-only-a-network-player, market is a complex beast that seems designed to rile anyone who wants to compare players. However, the NAD C446 has a close rival in the Marantz NA7004. Little separates them on price and they are both streamers with terrestrial radio capabilities.

Both have on-board DACs, but only the Marantz allows other components to access it.

When streaming from a NAS, the NAD tops out a 24-bit/48kHz sample rate, while the Marantz is quite content to play higher resolutions, especially 24-bit/96kHz, which is the most important right now.

player's attack on the strings and the tonal qualities they wrung from their instruments through their different approaches to playing (neither is a big fan of pedal-boards.)

The C446 was equally informative with vocal performances: it vividly differentiates the qualities of Susan Tedeschi and Sandy Denny's voices, revealing the latter to be finely honed, powerful and technically excellent, while Tedeschi's perhaps lacks that English refinement and polish, but more than makes up for it with soul, passion and emotive power.

Listening to The Allman Brothers Band playing *In Memory of Elizabeth Reed* on *Live at Fillmore East*, the interplay between Duane Allman and Dickey Betts' playing is nothing short of heart-aching and sublimely beautiful. Equally, Greg Allman's keyboards and the mighty, two drumkit and bass rhythm section provoke similar reactions, when you hear their playing unveiled and open to scrupulous, but effortless inspection.

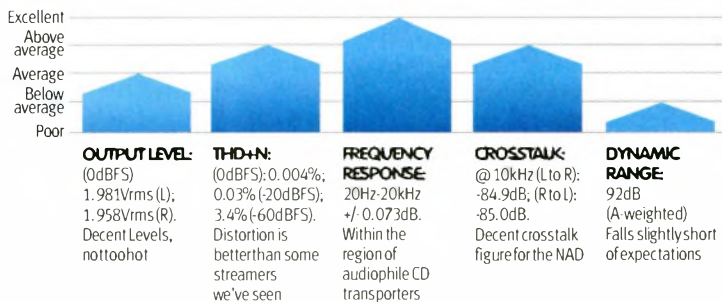
Leading contender

There is no doubt that the C446 is a leading contender for anyone who is content listening to MP3s and CD rips, but if you demand higher resolution, then its restriction to 24-bit/48kHz recordings is too limiting in a world where 24-bit/96kHz downloads are fast becoming ubiquitous and the 'hi-res' norm.

Our only other concern is that you need an additional iPod dock to listen to tunes on your iPad, iPod, or iPhone. The Marantz NA7004, with Apple Airplay, allows no additional extra cost access to your iPod along with iTunes and as well as giving access to its internal DAC to other sources, makes the C446 look distinctly uncompetitive. ●

TECH LABS

RESULTS AT A GLANCE



Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Basic and rudimentary, but it works well and sounds great
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Inability to handle sampling rates above 48kHz rather restricts its appeal
- BUILD QUALITY** ★★★★★
- FEATURES** ★★★★★ **WE SAY:** It's good to see NAD becoming involved in digital media

OVERALL



TEAC

New Reference 01



Reference A-H01
Stereo Pre-main Amp
with 24bit D/A Converter



Reference UD-H01
32bit D/A Converter with
USB Audio Interface



Reference MP-H01
Wireless Audio Adapter with
Apple AirPlay



Reference PD-H01
Digital CD Player
24bit/192kHz



Reference DS-H01
iPod, iPhone, iPad docking station



Apple AirPlay
from iTunes



PC streaming via
Wi-Fi/Ethernet



Control from
iPod/iPhone



USB class2
high-speed input

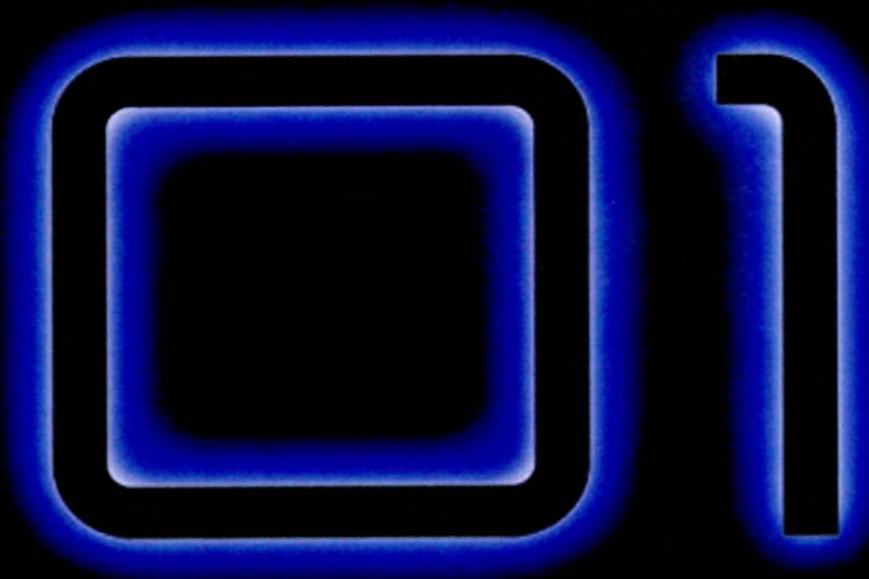


High powered
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The leaders in digital music

R E F E R E N C E



FUTURE PROOF

This is the new Reference 01 Series from TEAC

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1991



SIMON BERKOVITCH

A music historian, ex-record shop guru and Production Editor on *HFC's* annual high-end celebration, *The Collection*, Billy Joel fan Simon not only knows music, he lives it though his love of vinyl and high-class hi-fi

WHAT DO YOU THINK?

Did the albums of 1991 change the game? If so, how?

Email us now: hifichoice@futurenet.com

It's twenty years since a tiny record label in Hackney, East London took on the major labels – and won – by catapulting two groundbreaking albums – *Screamadelica* and *Loveless* – into the charts. **Simon Berkovitch** gets loaded...

As our selected year in music draws to a close, Queen's epic *Bohemian Rhapsody* sits at the top of the UK's singles' charts... déjà vu? We're 16 years on from last issue's year in music, but to paraphrase one of 1975's giant acts – Led Zeppelin – this song remained the same.

The Christmas number one of 1991 was no other than *Bohemian Rhapsody* – topping the charts again 16 years after its first momentous ascent. Unfortunately, the circumstances of this release were less than celebratory: Queen frontman Freddie Mercury had died on November 24th and *Bohemian Rhapsody* hits the number one slot in the UK singles' chart for the second time – one of the rare occasions in which the same version of a single has reached the top of the charts more than once.

But in spite of the return of some rock royalty to the peak of the UK singles' charts – and also enjoying high-profile album activity with the release of new album *Innuendo* in February and *Greatest Hits II* in October – the musical landscape of the '90s was a defiantly modern one. And of any year in that decade, there's a strong argument that

“In spite of the return of some rock royalty to the peak of the UK singles' charts, the musical landscape of the '90s was a defiantly modern one.”

1991 was *the* most important for popular music: in terms of album releases across the board, you are absolutely spoiled for choice – and many of these classic albums will surely grace your beloved vinyl and CD collections.

R.E.M. graduated from student favourites to stadium-rockers with breakthrough album *Out Of Time*, with no small thanks to single *Losing My Religion*. U2 reinvented

themselves for the '90s with *Achtung Baby*. Bob Dylan archeologists emerged blinking into the light laden with treasures from the first delve into the archive, released as the expansive *The Bootleg Series Volumes 1-3 (Rare & Unreleased) 1961-1991*. And, of course, Nirvana went overground with instant classic *Nevermind*, introducing Grunge to the mainstream; released on September 24th, just the day after another of the most important albums of the year.

But, unsurprisingly, the most inventive, daring and invigorating records to capture the record-buying public's imagination in 1991 didn't emerge from the cocoons of major labels. Arguably the most significant British records to emerge that year were fathered by Creation Records, a tiny independent record label with a hedonistic reputation, based in then-unfashionable Hackney, East London.

Valentine's day massacre

Incredibly, it's been twenty years since the release of two of the most important independent albums in the UK. Both Primal Scream's *Screamadelica* (released September 23rd) and My Bloody Valentine's

Loveless (released November 4th) may be two decades old, but still sound like futuristic explorations of the potential of pop music. Both are now deservedly elevated to classic album status with the full 'remastered and expanded' treatment.

In regard to the latter, Amazon promises a double-CD edition of *Loveless*, in September this year, remastered by lead



vocalist and guitarist Kevin Shields. That said, don't hold your breath: this release date could be a tad optimistic, given Shields' previous track record for deadlines.


It was the discovery of Shields' celebrated 'tremolo' guitar style that provoked a seismic leap in My Bloody Valentine's musical evolution. In the space of one single – 1988's epic *You Made Me Realise*, the band had transcended their jangly indie roots and embraced noise and feedback alongside harmony and melody – as well as the infinite potential of the studio. Their first album for Creation, the same year's *Isn't Anything?* signposted bold, new directions for independent music, but little prepared the listener for off-the-map follow-up *Loveless* three years later.

Breaking the bank

Rumoured to be *the* album that nearly bankrupted Alan McGee's record label, *Loveless* was two years in the making and the product of multiple sessions at multiple studios. Although My Bloody Valentine was

Primal scream

Screamadelica live



The complete 'Screamadelica' album performed live on stage for the first time.

"Truly, it's as ecstatic as life gets" - *N.M.E.*
 "A complete success" - *The Telegraph*
 "An unadulterated triumph" - *Record Collector* EREDV879



▣ **INDIE-DANCE**

Will those responsible for indie-dance please stand up? Although the genre is now largely associated with some truly awful records – aural crimes like Vic Reeves and The Wonder Stuff's *Dizzy* and The Soup Dragons' dreadful cover of The Stones' *I'm Free* – it didn't always follow the equation of '60s cover version plus James Brown's *Funky Drummer* beat equals chart hit'.

Alongside Primal Scream's *Loaded* in 1990 – and My Bloody Valentine's *Soon* as remixed by Andy Weatherall – 1989's *Fool's Gold* by The Stone Roses and Happy Mondays' *Wrote For Luck* are among the first and best records of the scene.



▣ **SCREAMADELICA AT 20**

Primal Scream's adventurous 1991 album gets the box set treatment with this tempting package of vinyl, CDs and more. Housed in a red tin (a nod to Public Image Limited's classic *Metal Box?*), the box set is home to four CDs – the remastered album; live in LA, 1992; *Screamadelica* mixes and the remastered *Dixie-Narco* EP – a documentary DVD, plus two remastered LPs. Extras include a replica tour T-shirt, 12-inch DJ slip mat and lavish book of photos and interviews.



a quartet for the purpose of live gigs, this album is largely Shields' musical concern. Just like its blurry, psychedelic pink sleeve, *Loveless* is a hazy experience. Guitars never sounded like this before, but neither had pop. And although fiercely experimental, beneath the buried vocals, fuzzy instrumentation and sampled drums and feedback, melodic songs flourished.

This was still pop music, albeit a beautiful mutant strain. Drum-loop-heavy album closer *Soon* even charted as a single – the *Glider* EP, a prequel to the album released in 1990 – described by Brian Eno as, “the vaguest music ever to have been a hit”.

Two decades after the release of *Loveless*, its follow-up is as eagerly awaited as the second coming of Christ. But, considering multiple scrapped sessions and Shields's rumoured perfectionism, there may be some wait yet. Since the creation of his masterpiece, Shields has collaborated with other musical mavericks, from Patti Smith to Primal Scream.

Carry on screaming

Although the fanfare for the twentieth anniversary of *Loveless*, has been – in appropriate Valentines style – subdued, *Screamadelica's* twentieth birthday party has been far less restrained. In a flurry of activity, fitting for the self-proclaimed ‘high-energy rock ‘n’ roll band’, 2011 has seen them hit the road for a series of *Screamadelica* dates – during which the

album in its entirety has been released, along with a lavish box set for those with deeper pockets.

Primal Scream's best-loved work may have been released in the same year as The Orb's *Adventures Beyond The Ultraworld* and Massive Attack's *Blue Lines*, but it's the credible fusion of rock, indie, acid house and more that sets this album above its peers – and is still deserving of a fanfare twenty years down the line.

Screamadelica's strength lies in its diversity, and it's even more praiseworthy that it's an artistic statement that few would have anticipated. Primal Scream's previous long players, 1987's *Sonic Flower Groove* and 1989's *Primal Scream* were heavily indebted to the jangle of The Byrds and Love (the former) and the guitar overload of The Stooges and The MC5 (the latter). Neither artistic statements looked forward to a conversion to the joys of house music. But it's misleading to recast Primal Scream as an acid house band. While the scene's stimulants may naturally have had something to do with it, the group's key songwriters – singer Bobby

“Two decades after *Loveless*, it's follow-up is as eagerly awaited as the second coming of Christ.”

Gillespie and guitarists Robert Young and Andrew Innes – were also definitely drawn to the possibility of studio as instrument (just like My Bloody Valentine's Kevin Shields), as well as the power of the remix.

The idea was nothing new – think '70s disco re-edits – but the impact on the independent music scene was explosive. With 1990's hit single *Loaded*, DJ Andrew Weatherall took an emotional ballad from the second Primal Scream album and transformed it into the band's first, anthemic hit single. Another mutant strain had been created, soon to be snuffed out by cheap imitators – indie-dance (see p85).

Fine follow-up single *Come Together* kept the Scream machine moving through 1990 – another slice of euphoric indie-dance in its chart-friendly Terry Farley mix form –



but the eventual release of parent album *Screamadelica* the following year was the main event.

Together in eclectic dreams

To describe *Screamadelica* as eclectic is an understatement. Opener *Moving On Up* is the most successful channelling of the spirit of The Rolling Stones without a séance with Brian Jones. Its authenticity was enhanced by a Jimmy Miller production – the man in the hot seat on classic Stones albums *Beggars Banquet*, *Let it Bleed* and *Sticky Fingers*. Primal Scream clearly knew their classic rock history – and they were more than prepared to share it with the listener.

Inside that iconic sleeve – LSD tab meets naïve school painting – musical cross-pollination is revelled in. Psychedelia melds with dance music in the cover of The 13th Floor Elevators' *Slip Inside This House*; dance music assimilates Northern Soul vocals on *Don't Fight It, Feel It*; *Inner Flight* evokes The Beach Boys' *Pet Sounds*; *I'm Coming Down* is complete with a holly free-jazz sax solo and former Public Image Limited bass-player, Jah Wobble, adds foundation-shaking basslines and punk attitude to the *Higher Than The Sun: A Dub Symphony In Two Parts*. Suddenly, the black and white indie scene goes ‘Technicolor’ with a new palette of sounds – from acid house to gospel and dub reggae – to play with.

It's telling that little information other than the songs adorns the sleeve of *Screamadelica*. Here, Primal Scream is a collective, unconfined by any genre of music, liberated by studio experimentation and good times. Perhaps the sample from Peter Fonda's cult flick *The Wild Angels* that opens *Loaded* best sets out *Screamadelica's* manifesto: “We wanna be free. We wanna be free to do what we wanna do. And we wanna get loaded and we wanna have a good time. We're gonna have a good time. We're gonna have a party.” Twenty years later, the party still rages hard. ●



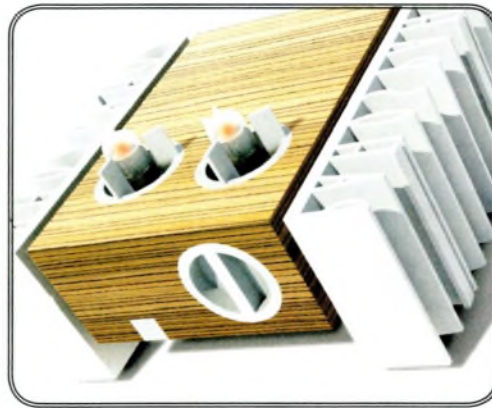


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Hi-Fi Choice, July 2011

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Music reviews

Hi-Fi Choice's pick of the latest high-quality music releases

ALBUM OF THE MONTH

Paul Simon. Still crazy after all these years.



HOT PICK

Paul Simon
Still Crazy After All These Years

Capitolrecords.com

★★★★★

Columbia Legacy

CD

EARLIER THIS YEAR Simon released *So Beautiful, So What*, his best album of new material in two decades. The album was accompanied by some triumphant British live shows, making it a timely moment to revisit his early solo work.

After his break with Art Garfunkel, many questioned Simon's ability to cut it as a solo artist. True, he had always been the songwriter – but would his songs work as effectively without Garfunkel's ethereal voice, which had reached a pinnacle of flawless perfection on *Bridge Over Troubled Water*?

The answer was an emphatic yes, as Simon embarked on a brilliant run of solo recordings in the early 1970s, as he and Stevie Wonder took it in turns to

share the Grammy 'album of the year' award.

The first three of those studio albums has now been remastered and reissued, with the addition of bonus tracks. Each, in its way, is a near-flawless masterpiece. His self-titled solo debut in 1972 included such memorable songs as *Mother And Child Reunion* and *Me And Julio Down By The Schoolyard*, and established him as a performer of remarkable poise and grace, as well as the consummate craftsman as we already knew him to be.

The follow-up, 1973's *There Goes Rhymin' Simon*, included the sparkling *Kodachrome* and *Love Me Like A Rock*. But best of all was 1975's *Still*

“Simon embarked on a brilliant run of solo recordings in the early 1970s.”

Crazy After All These Years, first among equals in this batch of re-releases. Whereas its predecessor had exuded the air of a confident and prosperous family man, like Dylan's *Blood On The Tracks*, *Still Crazy...* was Simon's post-divorce album. Full of doubt and disillusionment, the tone was mature and melancholic, even faintly lugubrious in places, but shot through with a dark, laconic wit and burning humanity. To this day, only 1986's *Graceland* rivals it as the finest moment of Simon's post-Garfunkel career.

Simon turned to a group of top New York session players and they created a jazz-lite, soft-rock sound full of unusual chord changes and augmented by subtle strings and horns.

Their playing is particularly outstanding on the ironic *50 Ways To Leave Your Lover*, where drummer Steve Gadd creates the brilliant rhythmic hook which sustains the song and *Gone At Last*, which has a surging, gospel feel, courtesy of uplifting backing vocals from Phoebe Snow and the Jessy Dixon Singers.

But the best-sounding tracks are arguably *My Little Town* and *Still Crazy After All These Years*. The nostalgic *My Little Town* is also memorable for the long-awaited reunion with Garfunkel, whose voice easily slots into the smoothness of the original production by Simon and Phil Ramone.

Some critics have argued that the sophistication of the sound is at odds with the darker hues of Simon's inner monologues, but the sharp remastering on this reissue sets them up in perfectly calibrated balance. **NW**

Standout tracks: *Still Crazy After All These Years*; *My Little Town*; *50 Ways To Leave Your Lover*; *Gone At Last*

Paul Simon in contemplative mood





Leon Russell
The Best Of Leon Russell
capitolrecords.com
★★★★
Capitol/EMI
CD

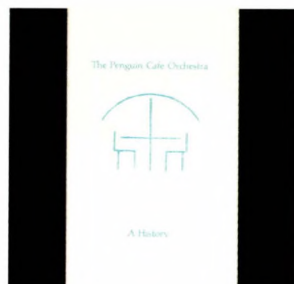
SOMETIMES IT TAKES a career retrospective like this to realise the full scope of an artist's contribution to the rock 'n' roll canon. Russell's name crops up as a scene-maker all over musical history: – Phil Spector session man; hit songwriter (*Delta Lady/Song For You*); George Harrison and Bob Dylan and duetting with Willie Nelson and Elton John. He also made some fine solo records and this 16-track compilation, mostly drawn from his 1970's pinnacle, is a felicitous reminder of just how good he was.

His gritty, blue-eyed soul voice and joyously syncopated piano-playing betray his southern roots in blues, gospel and R'n'B, but with a pop/rock sensibility that overlaps equally with both Dr John and Elton John and most points in-between.

His brilliance as a live performer is also captured in the famous *Jumpin' Jack Flash/Youngblood* medley from Harrison's 1971 *Concert For Bangladesh* film. **NW**



Standout tracks:
Hummingbird;
Tight Rope;
Delta Lady;
A Song For You;
Heartbreak Hotel (with Willie Nelson)



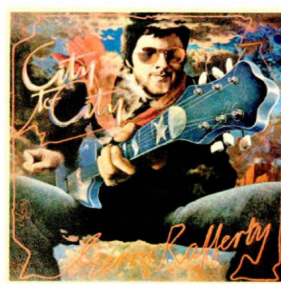
Penguin Café Orchestra
A History
emimusic.com
★★★★
EMI
4-CD

CREATED BY CLASSICALLY-trained composer and arranger Simon Jeffes, the PCO graced the British music scene for almost 25 years. What he created defies categorisation, yet it's a joyous and creative soundtrack for a phantasmagorical café of the mind.

The music here ranges from classical to ambient, taking in folk and Celtic elements, ethnic music from every corner of the world, minimalist drones, found sounds, choral chants and much else besides.

Jeffes himself called it, "modern semi-acoustic chamber music", which doesn't come close to capturing this music's dazzling invention, but will have to do for now. **JH**

Standout track: Music For A Found Harmonium; Telephone And Rubber Band; White Mischief; Beanfields



Gerry Rafferty
City To City
emimusic.com
★★★★
EMI
2-CD deluxe edition (expanded)

IN 1978, PUNK and disco-mania ruled. Then along came a gentle folk-rocker with a song called *Baker Street*. It became one of the heaviest-played radio tracks of all time and the album which spawned it dislodged *Saturday Night Fever* from the top of the charts and sold more than five million copies.

In the context of its times, Rafferty's album restated old-fashioned virtues of songcraft and musicianship and defined an enduring AOR sound. The album now gets the obligatory expansion with a second disc of demos, but if the additional tracks are gratuitous, the original album remains an essential expression of seventies punk-defying soft-rock. **JH**
Standout track: Baker Street; Right Down The Line; Home and Dry; Stealin' Time



The Genius of Dino Ciani
Debussy, Schumann, Weber, Bartok
brilliantclassics.com
★★★★
Brilliant
3-CD

DINO CIANI made a handful of LPs for Deutsche Grammophon, all of which are reissued in this 3-CD box. These include his celebrated recordings of the Debussy Preludes, Books 1 and II, plus a quirkily played coupling of Weber's Sonatas 2 and 3.

Quite simply, it's the best performance of the work ever recorded – ardent, imaginative and full of fantasy. No other pianist gets close to matching Ciani's *Novelleten* – not even Richter. Having known and loved the original LP for over 40 years (a recording DG never reissued, incidentally), it's great to finally have it on CD. DG's piano sound is bright and clean and wears its years lightly. **JK**
Standout tracks: Disc 2, track 14

AUDIOPHILE VINYL

Al Green Let's Stay Together simplyvinyl.com



★★★★ Hi Rcrds/Simply vinyl
180g

ORGANISED RELIGION has a lot to answer for, but luring Al Green away from singing soul must rank among its lowest deeds.

This 1972 album was Green's fourth and most successful in critical and commercial terms. The title track was his only number one and it's not hard to hear why – funk, soul and blues rolled together with one of the most incredible voices in popular music.

Green doesn't have the range of Marvin Gaye or the power of Otis Redding, but he puts so much into his work that he easily deserves to stand alongside those giants in the pantheon of soul.

The songwriting and arranging should also be

given credit, the Memphis horns add dynamics where they're called for and the musicians, especially Charles Hodges on keys, build a bedrock of fine melodies which let the singer shine.

This is not the most sophisticated-sounding album and the use of genuine stereo is rare, since the two channels tend to be used for horns and backing vocals leaving centre stage to the voice and band. **JK**
Standout tracks: Let's Stay Together; La-La For You; How Can You Mend a Broken Heart

HOT PICK

**JS Bach**Brandenburg
Concertos 1-6

newtonclassics.com

★★★★★ **Newton Classics**

2-CD

REFRESH YOUR EARS with these lively, buoyant modern instruments set of Bach's *Brandenburg Concertos* conducted by Peter Schreier. With ne'er an 'authentic' squeak or snarl in sight, the playing is rich and well-nourished, with none of the tonal thinness we routinely get with period instrument bands.

The players sound like they're thoroughly enjoying the music – sample the gloriously bumptious *Brandenburg 3* for example, with its inflated mock-pompous grandeur. The set also includes Bach's *Triple Concerto*, plus the *Concerto For Three Violins* and the Philips Bitstream recording sounds beautifully sonorous and detailed. **NW**
Standout tracks: 5 (Brandenburg No 3, 1st movement)

**Beverley Knight**

Soul UK

beverleyknight.com

★★★★★ **Hurricane**

CD

AS BRITAIN'S very own 'queen of soul' it seems only fitting that Wolverhampton's finest should record an album with covers of the UK soul classics from the seventies and eighties which shaped her life and sound. She's wisely steered clear of reinterpreting the songs of other local songstresses and instead gone for tunes made famous largely by groups and men, including Roachford, Soul II Soul, Heatwave and George Michael.

There's no doubting Knight's passion as she gives full range to her impressive pipes and swoops from hollering diva to playful minx and tearful lover. But while the vocal approach varies, the arrangements seldom do justice to the diversity of the music on offer. **DO**

Standout tracks: Mama Used To Say, Always And Forever

**Basement Jaxx**Basement Jaxx Vs
Metropole Orkest

atlanticjaxx.net

★★★★★ **Atlantic Jaxx**

CD

IT'S BEEN 12 YEARS since Brixton's Felix Buxton and Simon Ratcliffe stepped out of the club shadows and into the hit-making limelight, with singalong floor-fillers like *Red Alert* and the Latino-themed *Bingo Bango*. What's sometimes forgotten is that in amongst the dazzling mix of influences, styles and studio wizardry there's also a terrific canon of songs strong enough to stand up on their own.

Arranged by London conductor Jules Buckley, these full-blooded arrangements include the full 70-piece orchestra plus a 40-strong choir and vary from heart-breakingly intimate to surprisingly witty, to almost Wagnerian levels of hyperbole. **DO**
Standout tracks: Raindrops; Good Luck

HIGH-RESOLUTION DOWNLOADS**Madeleine Peyroux**

Standing On The Rooftop

hdtracks.com

★★★★★

EmArcy/Decca

24-bit/96kHz



PEYROUX'S MOST RECENT release heralds a new approach for the talented vocalist, as she manoeuvres her

jazz awareness into the folk, blues and rock genres. Among individual interpretations of *The Beatles' Martha, My Dear* and songs by Dylan and Robert Johnson, there is some self-penned material, some written with *Rolling Stone*, Bill Wyman.

The production is clean and open without any hint of sterility. The band and its contributions are laid bare, especially the artfully considered playing of Marc Ribot's guitar. The album is definitely worth a listen if your tastes veer more towards, say, *The Cowboy Junkies* than *The Kaiser Chiefs*. **MS**

Standout track: The Kind You Can't Afford; Don't Pick A Fight With A Poet;

The Allman Brothers...

At Fillmore East

hdtracks.com

★★★★★

Mercury Records

24-bit/96kHz stereo

HOT PICK



ROLLING STONE inadequately called this, "one of the greatest live rock albums ever released".

The description is

a total understatement, with the title's combination of majestic virtuoso playing mixed with feeling and good old, down home Southern rock, jazz and blues sensibilities.

This is a live recording, so you get to hear the band playing at its absolute finest. The clarity of 24-bit/96kHz, for example, reveals the all-important interplay between Duane Allman and Dickey Betts' guitars and the outstanding bass-and-two-drummers rhythm section. The recording ably demonstrates that the band had a magical chemistry and clearly delighted in playing together. **MS**
Standout tracks: In Memory Of Elizabeth Reed; Whipping Post

BLU-RAY DVD**AC/DC** Let There Be Rock warnerbros.com

★★★★★ **Warner Bros**
DTS-HD Master Audio 5.1, Dolby Digital 2.0

THIS 1979 FILM captures AC/DC at the peak of its powers during original singer Bon Scott's final tour. The set

opens with *Live Wire*, which sums up the whole event. Lead guitarist Angus Young is electrifying – he never stands still, his head is always banging and his playing, while hardly technical, is totally exhilarating. Young is the master of tease, he'll play the same note until you think you can't take any more and then he'll go on and for some reason it works.

Scott is cooler and more dangerous, at least on stage, where he provides the sleaze that made AC/DC into notorious heathens. Yet in the brief

HOT PICK

interviews with the band he seems almost normal.

The sound is inevitably compressed, but it's much more even than *If You Want Blood*, the live album from the same period.

You'll need a very relaxed system to play it loud but AC/DC is not meant to be painless. There is a documentary on the disc in which various rock pundits tell us why AC/DC rule, but Billy Corgan explains that it's their simplicity that makes them so loud. **JK**
Standout tracks: Live Wire; Bad Boy Boogie; Whole Lotta Rosie

A Sound Venue

This month Audio Venue rustles up the sonic goods with three synergistic systems for real-world wallets. **Ed Selley** listens to affordable electronics with high-end sparkle

Audio Venue was founded in Maidenhead in 1996. From the outset it has been a 'multi-role' dealer and is as happy selling multichannel and multiroom equipment as it is two channel. Business still divides fairly evenly across the categories, although with the arrival of network audio, the boundary between multiroom and a multiple systems playing music off the same network has blurred.

A London store in Ealing followed in 2005, with a more uncluttered layout and the Maidenhead store has since followed suit in adopting this more spacious look.

The brand portfolio is comprised of some of the biggest names in the industry. It is possible here to make meaningful comparisons between products that often only crop up singularly in other portfolios. You will also find some brands combined in pairings not commonly found anywhere else – as we shall see. The typical system price for an Audio Venue system has typically been in the region of seven-to-eight-thousand pounds, but its portfolio supports systems from roughly a thousand pounds to over twenty.

Audio Venue place great emphasis on long term listenability in its systems. They try to avoid the initial excitement that overly bright set-ups can display and generally aim for a sound that is unfatiguing, natural and easy to live with.

We asked Daren, our guide for the day, to show us three systems that demonstrated this ethos and sat back to savour the results.

THE EXPERTS



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LEGEND
CD



**THE
KARMINSKY
EXPERIENCE**
SNAPSHOT
CD

SYSTEM 1 – BORN IN THE USA

System one represents an all-American line-up. The electronics are courtesy of Audio Research and that means an all-valve system, too. The electronics comprise the CD5 CD player, LS17 preamp and VS115 power amp. This trio exudes a class and presence that to many is the very definition of high end.

The fit and finish is excellent and there are no superfluous details or gimmicks. The system is probably the simplest of any of the set-ups being demonstrated to us. The top-loading CD player has no digital inputs or streaming, while the LS17 preamp is also a relatively minimal design. The VS115 is powerful for a valve design with 120 watts on tap from the large compliment of 6550 output valves. It is lower than some of the less expensive systems here, but ample for the speakers Audio Venue have chosen.

Classic combination

The speakers are from another North American brand MartinLogan. The Vantage is the classic combination of electrostatic panel and self contained active driver for bass duties. It is hardly a small speaker, but one that can find a place in a UK lounge without completely dominating it.

The 120 watts of the VS115 power amp is the perfect foil for the Vantage and Daren feels this system has more to offer than even the price tags and on-paper specifications suggest.

We start with Air's *10,000Hz Legend* and within seconds, the system shows why it commands the price premium it does. The incredible presence of Beck Hansen's vocals on *The Vagabond* is simply a class above the other offerings. The MLs have a truly fabulous soundstage that literally creates a wall of effect into which instruments and voices are accurately placed. Tonality is absolutely superb, with literally everything the system comes into contact with sounding real and utterly believable.

Impressive valves

The valves in the system make their presence felt, but in a commendably subtle way. The overall balance of this combination is warmer than the other two



systems, but only fractionally and there is none of the slightly 'syrupy' low end that can result from this. It is more the sense that there is an effortless sense of air and space to the presentation, that make the smaller systems seem ever so slightly closed-in by comparison.

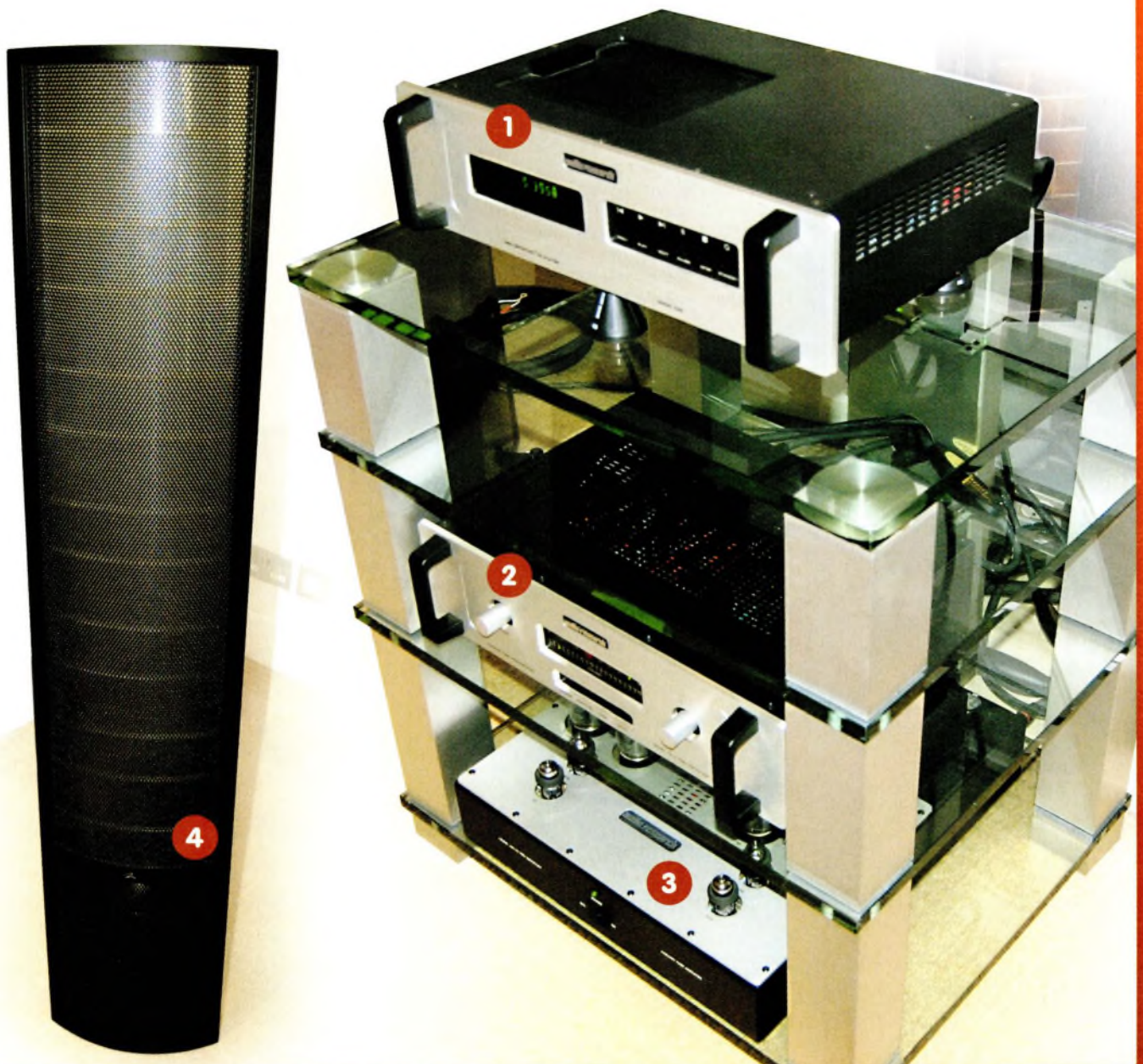
It can rock with the best of them though. Listening to Muse by way of the charmingly bonkers Kandinsky Experience, reveals a superb handling of low-end material that starts and stops with absolute accuracy and chest-thumping power. The hybrid nature of the Vantage is a

considerable help here, as the active bass module is able to go about its business, while the electrostatic panel creates the outstanding midrange and treble that seems untroubled, no matter how complex the material might get.

This is a superbly accomplished system which impressed from the outset. It is still of relatively 'normal' dimensions and totally user-friendly. It is as happy providing background music for a social evening, as it is pinning you to your seat with it's scale and dynamics. This is a maestro you could easily live with every day.

- 1 AUDIO RESEARCH CD5**
£5,614
- 2 AUDIO RESEARCH LS17**
£3,776
- 3 AUDIO RESEARCH VS115**
£6,125
audioresearch.com
- 4 MARTINLOGAN VANTAGE**
£5,499
martinlogan.com

TOTAL SYSTEM PRICE:
£21,014



SYSTEM 2 – BEAUTY AND THE BEASTS

System two dispenses with the valves and panels and turns to more conventional technology. The partnership of components is more unusual, however. Here we have an intriguing combination of British horsepower and Italian finesse combined to great effect.

The five-hundred club

The electronics are supplied by Musical Fidelity. The M6 CD player is conventional enough in design, but features a useful set of digital inputs on the rear panel to allow it to function as a DAC. It is finished in the new sturdy Musical Fidelity casework and is a handsome device, if rather large for a standalone CD player.

It is dwarfed by the partnering amp though. Now that the flagship Musical Fidelity components are class A, the £4,000 M6 500i is the most powerful offering in the stable. Producing 500 watts into eight ohms the M6 500i is designed to be able to correctly drive pretty much any loudspeaker in existence.

The casework is the same design as the CD and smaller M6 integrated, but the massive external heatsink and dB-level display on the front, convey a sense of purpose that the smaller amp lacks.

While this duo exudes muscle, Audio Venue has chosen to partner them with the Sonus faber Liuto.

This relatively compact floorstander has a sensitivity of 89dB/w and relatively benign impedance characteristics. There is nothing on paper to suggest that these handsome Italians will benefit from 500 watts, but Audio Venue feel this unusual combination has something special about it.

Clean and insightful

Returning to the Muse piece, perhaps the most surprising initial feeling is how 'normal' five-hundred watts actually sound. This is not a FA system in a sharp suit, but an extremely clean and insightful performer which achieves uncanny neutrality. The M6 units have a slight lift to their upper midrange. This effectively combines with the trademark warmth that the Liuto's have to their upper midrange.

This is a very neutral and open system, but one that avoids sounding clinical or harsh. Muse sounds huge and exciting, but with an inviting warmth to vocals that is hard not to like. The M6 500i also ensures that the sound is effortless, no matter what level you choose to listen at. Switching to Air's *10,000Hz Legend*, results in an utterly beguiling and spellbindingly real performance.

It takes a little while to realise that behind the apparent lack of drama is a system that is capable of staggering dynamics and remarkable tonal

warmth. It would be perfectly possible to spend an entire weekend with this system, trying the most diverse parts of your collection out on it and never wrong footing it at any stage.

The Musical Fidelity pairing could be partnered with almost anything in the Audio Venue portfolio, but the Sonus faber's create a system that plays to their strengths and adds a welcome touch of warmth and involvement that makes for a compelling listen.

- 1 **MUSICAL FIDELITY M6CD**
£2,499
 - 2 **MUSICAL FIDELITY M6 500I**
£3,999
musicalfidelity.com
 - 3 **SONUS FABER LIUTO**
£3,499
sonusfaber.com
- TOTAL SYSTEM PRICE:**
£9,997



SYSTEM 3 – THE BRIT PACK

The last system was the least expensive of the trio, but in many ways the most advanced. Cyrus is a relatively new addition to the brand portfolio, only being added in December last year. Audio Venue has taken on the bulk of the range and with its considerable experience of network audio, has taken to the new Stream series in a big way.

Stream on

The Stream X media streamer was partnered with the 8QX integrated amplifier. This combination of source and integrated amp is relatively conventional, but it is also possible to use the Stream XP (HFC 346) and connect it directly to a power amp or separate monoblocks for a more compact system.

For those not totally sold on the move to streaming, you can substitute a conventional CD player or DAC and transport combination. The system, we discovered, also offers easy scope for upgrading, with the addition of the PSX-R power supply, or external power amplifier.

The capabilities of these two discrete boxes are distinctly impressive. As well as the line inputs on the amplifier, the Cyrus combo boasts ten digital inputs across the pair, as well as internet radio and iPod connectivity. Given the limited space this duo occupies, this is no mean feat.

The speakers are a long term favourite of *Hi-Fi Choice*. The PMC GB1i (HFC 347) is the smallest floorstander in the PMC range, but all of the usual characteristics are in place. The sturdy cabinets are well finished, with high-quality drivers including the PMC-modified SEAS tweeter. The trademark transmission loading in the base of the cabinet gives these slim towers an impact that few rivals can match.

Incredibly assured

Unlike the other two systems we listened to, the Cyrus/PMC combination was in situ on the shop floor. Audio Venue is not a huge store, but it still seemed to be stretching credibility that two small boxes and a pair of slim floorstanders would be able to shine here. We needn't have worried. This is an incredibly assured system, with a sense of scale that is at odds with the compact dimensions.

Undisclosed Desires by Muse is reproduced with all of the bounce and swagger of the bombastic recording present and correct.

Perhaps the most impressive aspect of this combination is how it manages to sound lifelike and extremely natural, but equally manages to avoid sounding fatiguing or overly bright. The electronics have a grip and control over the speakers that allows them to show exactly why we rate them so highly. There are few designs anywhere near this price that have this assurance or impact.

Switching to the more relaxed material of Jonny Cash, the trio retains the fabulous tonality and shows an incredibly wide and complex soundstage. The combination is not entirely neutral – there is the slightest lift towards the upper midrange, but this helps incidental details come to the attention of the listener in an engagingly subtle way.

This pairing of great British brands is a small system with big flexibility and even bigger sound.

1 CYRUS STREAM X
£1,400

2 CYRUS 8QX
£1,950

cyrusaudio.com

3 PMC GB1i
£1,675

pmc-speakers.com

**TOTAL SYSTEM PRICE:
£5,025**



Audio Venue have taken a collection of 'big' brands (many of which don't feature here) and combined them in ways that are very appealing and often different to the normal combinations.

There is a sense of unflappable control and long term appeal to all three of these systems that mean that they

should provide years of satisfaction – although they've got you covered if you get the upgrade bug!

The common theme of all three systems, despite their differing technologies, is that they are all incredibly easy to listen to for long periods of time. We could have happily

spent a day in the company of any of them were it not for the need to listen to all three. At the most fundamental level, they impose very little of themselves on the music, encouraging you to listen to your collection, rather than the electronics. Ideal for music lovers. ●

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YOUR EXPERTS



PAUL MESSENGER

EXPERTISE: LOUDSPEAKERS

HAVING WORKED on both sides of the audio industry for over 30 years, as loudspeaker designer and reviewer, Paul is ideally placed to offer thorough, in-depth analysis of every speaker reviewed, as well as cutting-edge developments in the field.



JIMMY HUGHES

EXPERTISE: SYSTEM OPTIMISATION

AS EVERY audiophile knows, there's so much more to getting a system to sing than merely throwing components together. Jimmy Hughes has spent 40 years tweaking and optimising systems, as well as voraciously collecting records.



RICHARD BLACK

EXPERTISE: TECHNOLOGY

WRITING EXCLUSIVELY for HFC, Richard brings his experience as a successful musician and recording engineer to bear in our rigorous *Blind-Listening Group Test*. As our technical consultant, Richard is the authority on HFC's test and measurement.



ED SELLEY

EXPERTISE: DIGITAL AUDIO

RESIDENT IN the audio industry for over a decade, Ed has considerable experience of both CD and SACD formats on disc, as well as an increasing personal interest in streamed high-resolution audio and network based systems.



MALCOLM STEWARD

EXPERTISE: COMPUTER AUDIO

WITH DECADES OF experience in audiophile journalism, Malcolm now combines his legendary status as an ex-editor and writer on all things hi-fi, with his unquestionable expertise on streaming, networking and computer audio.



JASON KENNEDY

EXPERTISE: TURNTABLES

ANOTHER EDITOR, Jason opted to become a freelance contributor when he relinquished the helm of HFC after 17 years on the magazine. A hi-fi addict since his twenties, Jason fell for the beauty of vinyl and has never looked back.

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QUESTION OF THE MONTH

Q I read your review of the Shure M97xE cartridge (HFC 345) with interest. Will this fit an old SME 3009 headshell and can you please tell me where I can purchase one?

John Skelton, via email

A We spoke with Shure and it said that as the M97xE is a descendent of the V15 cartridge, that was often paired with the 3009, there should be no problems fitting the newer cartridge to this arm.

We checked for availability on the M97 and found it on sale and in stock at Bleep (bleep.com) and Digital Village (dv247.com).



Another brick in the wall

Q The search for the quintessential 'quaint cottage' has led to a recent house move. The cottage is everything that you expect from Little England and therein lies the quandary.

I have a pair of Ruark Prologue IIs driven by a Marantz 7001KI (I don't suffer from upgraditus). This combination works well with my source material, however, I can no longer accommodate floorstanders. Because of the layout of the room and the furniture, I need to wall-mount my speakers. The room is L-shaped (5m x 5m x 3m x 3.5m) and solid-walled (stone). The sitting position is approximately three metres from where I need to mount the boxes, but as

I have always had floorstanders, I have little or no knowledge of tiny boxes. My budget is up to £1,000 and the speakers must be discreet enough for my wife. She understands my position and is fairly tolerant, but they must be available in oak or cherry veneer and not too brutal looking.

Obviously, they must have great detail, pace and a reasonable bottom end, as we listen to everything from large and small orchestral/choral works, through Fusion and onto pompous Prog-rock!

Recent research has led me to think along the lines of a Rega RS1, PMC DB1i, Spendor S3/5R2 or Usher 718 (although the angled baffle could cause issues). However, as your knowledge is greater than mine, any input would be gratefully received.

Terry Cunnett, via email



PMC's DB1i sounds good and has a wall mount available for it

A Wall-mounting speakers can be a challenging business, as many designs are simply not designed to function as close-to-a-wall as they will be once wall-mounted. Omnimount (omnimount.com) produces the OMNI 20 bracket which can support speakers up to 9.1kg in weight. This would allow you to reliably choose any one of the speakers on your shortlist. Of these, the Spendor is likely to be the one most unaffected



Moon's i3.3 is a very talented integrated with plenty of options

by this mounting method, as it is a sealed-box design. This does mean that even mounted on floorstands it is not the most seismic performer in terms of bass extension.

The PMC is also a strong contender. Not only do we like the sound, the low-end response is impressive for a small speaker and PMC also makes a dedicated wall bracket for the design.

One final option might be to consider in-wall speakers. These would be very discreet, indeed, and with key loudspeaker brands, such as Bowers & Wilkins, Monitor Audio and Focal all producing models, there is no shortage of choice.

(R)amping up

My basic Eikos CD player is currently with Tom Evans for its full spec. upgrade and it has occurred to me that to do the upgrade justice I may also need to upgrade my aging 13-year-old John Shearne Phase 6 preamp (with MM phono board) and two Phase 3 Reference power amps bi-amped to Audiovector M3 Signature speakers via Cardas Quadlink cables (one amp to the bass unit and the second amp to mid/treble on each speaker).

My musical tastes are very varied: rock; pop; country; classical and, what I am hoping to achieve with the amp upgrade, is a taste of high-end hi-fi on a £3,000 budget.

What I have noticed recently with my current system is an upper-mid prominence, where female voices and (some) male voices are becoming quite strident. Also the system lacks a somewhat sweet and airy treble and it's these shortcomings that have prompted me to get the Eikos upgraded.

With a new amp as well, these issues would be addressed. What I'm looking for is a smooth well-balanced and detailed sound that is not too forward. I am thinking about going for an integrated amp,

but would be happy to consider a prepower if budget allows. Either way, I would prefer a built-in MM phono stage board.

John Langley, via email

Firstly, we hope that you found our Blind-Listening Group Test in issue 348 of use. Two of the integrated amps we tested fulfill your criteria exactly, as both the Rega Elicit and Simaudio Moon i3.3 are powerful performers and can be fitted with an internal phono stage (and in the case of the Simaudio, balanced inputs and a digital input board if you prefer).

We found both amps to be excellent across a wide variety of music and they should work well with the Audiovectors. High-end sound means different things to different people, but both of these amps are an extremely satisfying listen.

If you can cope with an external phono stage, the other integrated in the test, the Electrocompaniet EC15 MkII is a very capable amplifier and one that should definitely be under consideration.

The Naim Supernait, which we tested in HFC 294, is also a superb and flexible performer at this price point and will easily accept a Stageline phono stage.

Hit the buffer

Until recently my system consisted of a Sonos ZP90 fed by a Netgear NAS through a MF X-DAC V3 and MF X-PSU, into a Creek Evolution



The X-DACv3 is still a strong-performing DAC

amplifier and output through a pair of Castle Knight 1 loudspeakers.

I had for some time been pondering replacing the MF kit by upgrading to one of the more flexible DACs that are now available, but this was thrown into disarray when I received an X-10 V3 tube buffer (from eBay) as a present.

As you can imagine I'm now kind of stuck with all the MF kit – or am I? Could any benefit be gained by replacing the DAC? Perhaps with something from Rega, Arcam or even a newer MF and then still letting the X-10V3 work its valve magic on the signal, prior to it going to the amp?

Another option would be to send the X-10 V3 to MF and put it through its Fine Tuning upgrade service, however I don't know of anyone who has chosen this path, so am unsure of the potential benefits to be gained from the near £200 investment required.

I know you'll probably be tempted to say, "Get rid of all the MF kit and buy the Rega DAC", but that's going to be very difficult for me to do for a couple of years, at least. I've a budget of around £500 for the right suggestion.

John Rudd, via email

The X10v3 will function in exactly the manner it was designed to, whether it is placed between two units of Musical Fidelity equipment or two units from other brands. This means that this hard-won eBay purchase need not be dispensed with if you were to change the DAC.

The X-DACv3 remains a good product and it must be said that unless you require a USB input, it is likely that even the excellent Rega DAC or Musical Fidelity M1 will be a huge step forward. We are not familiar with the exact upgrade path that a trip back to Musical Fidelity would entail, but it is possible that given they are

likely to know more about the innards of the X DAC, it could be worth considering.

The other option might be to try the system as is and look towards accruing the funds for a slightly larger step up the DAC hierarchy, such as one of the contenders from our Group Test on p40.

Matter of fact

My system at the moment consists of an Inspire Eclipse SE turntable, mounting a Rega RB1000 tonearm with Rega Apheta cartridge. This goes into a Trichord Diablo + NCPSU (pre-phono stage). Leema Pyxis and two Leema Hydra power amps into Monitor Audio PL100 speakers and stands.

Other sources are a Leema Antila CD player, Denon TU1800 DAB and a Graham Slee Solo headphone amp, with a Sennheiser HD650. Cabling is by Nordost.



Mordaunt Short's Performance 6LE is a singular performer

I listen to this in my converted garage (4m x 3m) with a totally separate ring main. Most of the above was demoed at home before buying, apart from the cables, which have been a case of suck it and see.

I listen mainly to what I call soft rock: Dire Straits; Fleetwood Mac; Moody Blues; Genesis, Killers; Kings of Leon; Annie Lennox; Rolling Stones, etc. I think the system sounds fantastic in the limited space available and has given me hours of pleasure.

The speakers could be improved, however, and I now have the opportunity to try some ex-demo Monitor Audio PL200s and PMC fact.8s at home. I would appreciate your opinion on my present system and any advice for improving it.

Tony Davis, via email

A This is an impressive system and suggests a clear preference in both electronics and speakers. If the PL100 is proving musically satisfying, there is a good chance that the PL200 will give a bit more bottom end, with much the same overall tonal balance. If you have a chance to try a run-in fact.8 though, we suspect that its great qualities will shine through. This is an incredibly capable loudspeaker, that despite relatively modest dimensions has truly superb bass extension, thanks to the cleverly incorporated transmission line.

There is no shortage of fine speaker designs at this price point, but when we take into account your electronics, preferences and available space, we would agree that these models are near the top of the list as potential upgrades.

A possible contender would be the Mordaunt-Short Performance 6LE (HFC 308). This has outstanding imaging and coherence, but it has less absolute bass response than the Monitor Audio or PMC.

The possibility of further upgrades to your electronics is more problematic. If the current combination is working well, we would suggest buying some new music instead! On paper, the Trichord Diablo could be bettered by something like the Linn Euphorik (HFC 334), especially in the context of the Leema preamp, which would benefit from the balanced outputs that the Linn

offers. The sonic balance would be more laid back than the Diablo, however, so it is not an automatic recommendation.

Alternatively, you could look into the far more cost-effective Squeezebox Touch (HFC 338) as a way of getting into streaming and internet radio functionality – to see if it is of interest to you.

Naim the speaker

Q I have just taken the plunge with my first complete Naim system:

a 15XS preamp; 15XS power amp; CD5i and Flatcap XS. I chose these on the strength of a demonstration with my existing Bowers & Wilkins CM1 loudspeakers, but I am now feeling that a speaker upgrade is probably the way forward.

I have the space to accommodate floorstanders, provided they are not too enormous. I could also spend up to £2,000, if the benefits are there and I exist on baked beans for a while. I listen predominately to electronica and downtempo material, and am not in a position to listen at massive volume levels.

Dan Castle, via email



The ProAc Studio 140 would be a promising partner for Naim



Exposure's 2010S components deliver the sonic goods

A There is certainly no shortage of choice at this price point with pretty much every speaker manufacturer producing a design between £1,300 and £2,000. Our Blind-listening Group Test of small British floorstanders (HFC 347) would be a good place to start looking for possibilities.

A design that is definitely worth looking into is the £1,490 Neat Motive 1. Neat has a long-held reputation for working well with Naim electronics and this means that although not a test-winner, the Motive would be a good starting point.

An altogether larger design from the same group test is the £1,690 ProAc Studio 140 Mk2, which combines superb bass response with excellent tonality and very high sensitivity (that may help it give its best at lower volume levels). Either of these designs would work well with the Naim gear.

Another possibility is the £1,695 Totem Staaf (HFC 34C) which shows all the signs of working well with Naim electronics and at lower volume. Finding a dealer that stocks all three brands might prove to be difficult but Neat and ProAc in particular have a good UK dealer network and it should not prove too difficult to listen to these speakers, hopefully with the same equipment as your own.

Killer combo

Q I will be buying an amp and CD player combination for about £1,500-£1,600 and, on the strength of the Blind-listening Group Test in HFC 344, I was seriously considering the overall winner; the Exposure 2010S CD player and amplifier.

It does occur to me that the Audiolab 8200CD and 8200A have now individually scored 'perfect' marks when tested separately, so I was wondering if you had any thoughts on how these two pairings stack up? I will almost definitely be pairing them with the Epos Epic 5, which also did extremely well in your magazine recently.

Alistair Burr, via email

A This is not a completely straightforward comparison to make, as not only have the Audiolabs not gone head-to-head with the Exposures, we have not yet had the opportunity to test them together! The Exposure pairing is far less complex than the Audiolab units and has no digital inputs or any of the clever power states that the 8200A does.

Where it excels is as a music-making combination and we feel that it is still right at the top of the pack for musical enjoyment – the blind listening panel were fairly unanimous in their praise and this is still one of the most effective ways of deciding if a component genuinely offers best-in-class sound. We also feel that the Exposures will work very well with the Epos Epic 5, if you decide to buy them.

The very high feature-count of the Audiolab units is very hard to ignore, however, including an asynchronous USB input and the very large number of inputs that the 8200A offers, which means they are more 'future-proof'.

Sonically they are warmer and less upfront than the Exposures, but this might be a benefit depending on the style of music that you listen to.

We see no reason to believe that the Audiolab won't excel with the Epos either. In fact, our Editor, Dan George, once enjoyed an Epos/Audiolab system for many years.

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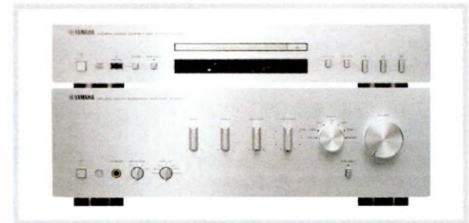
ROKSAN CASPIAN M2 CD / AMPLIFIER
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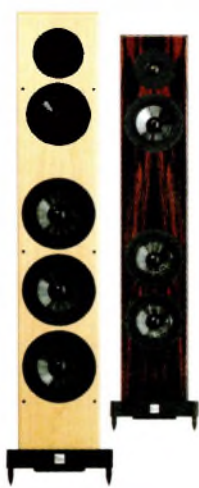
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GOLD GX



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MARANTZ NA7004 NETWORK AUDIO PLAYER

Connect to your favourite music whether it's from your PC, external hard disc, radio broadcast or via Internet Radio or music service.



OLIVE MUSIC SERVERS

Access your digitized music from one centralized library. Everything from 16-bit converted CDs to 24-bit HD files will be at your fingertips along with the ability to play it all in any room of your home.

CYRUS MUSIC STREAMERS

The new streaming platform from Cyrus provides the perfect solution for all music lovers. These new streaming music players provide you with immediate access to your entire network music library. Plus you can listen to literally thousands of different internet radio stations from across the

world, all in true hi-fi quality. With the n-remote you can quickly find specific albums, artists or tracks and it makes browsing your network music library a real pleasure. With its sleek body, full colour screen and two-way control, the n-remote is just one of the features that make the new Cyrus streaming music players very special.



CYRUS
STREAMLINE • STREAM X • STREAM XP

NEW

Please Note: Some brands/products are not available at all stores. Special/added value offers are not in conjunction with any other offer (NICWAOO).

ADVERT VALID UNTIL 23/09/2011. E.&OE.

SEVENoaks
SOUND & VISION

Minitest

Richard Black picks four of the best cleaning products on the market

Caig Audio-Video Survival Kit

PRICE: £42 CONTACT: 01234 741152
WEBSITE: CAIG.COM

IT'S GENERALLY APPRECIATED THAT dirty contacts can cause intermittent sound or crackles, but even before things get to that dire stage there can be subtle degradations in sound caused by slightly corroded electrical contacts.

Caig has long been a trusted name in contact treatment and we wouldn't be without a can of DeoxIT D5 spray, which has served on all kinds of contacts from audio to bicycle lights. This kit includes the product in both aerosol and dropper-tube version, plus DeoxIT Gold and DeoxIT FaderLube, both similarly packaged. FaderLube is for the insides of volume controls etc. and may require some dismantling to be useful, so it's less applicable for most home audiophiles, but the others are a great boon. Various applicators as provided, as well as polishing-off cloths and even some pre-moistened wipes, which are easily replaced by a bit of kitchen towel and a brief burst of spray.

One criticism is that the instructions don't make it entirely clear what's best for what, but basically DeoxIT removes corrosion, while DeoxIT Gold protects against further contamination. Mini-jack plugs seem particularly prone to failure due to contamination and many a time DeoxIT has got connections to portable audio kit re-established. It's not strictly cost-effective, compared with full-size cans, but this kit will last for years.

VERDICT **ESSENTIAL!** Neat and well thought-out kit re-establishes dodgy connections and audibly improves ones you thought good

★★★★



LAST Stylus Cleaner

PRICE: £15 CONTACT: 01234 741152
WEBSITE: LASTFACTORY.COM

IT'S USUALLY PAINFULLY OBVIOUS if the stylus on your LP player is dirty – the sound distorts at climaxes and generally sounds grainy. In fact, the situation is even worse than that: mistracking due to dirt on the stylus or the disc tends to cause permanent disc damage, because the ultra-hard diamond is now no longer smoothly tracing the groove but is bashing into it periodically, potentially knocking tiny bits of vinyl out of the groove-wall surface and indeed even damaging the stylus itself due to increased local heating. Cleanliness is therefore essential if precious discs are to be maintained in good condition.

As always, anything is better than nothing, but with the stylus and cantilever assembly being so very fragile, some improvised methods of cleaning can be downright dangerous. A very soft brush with a few drops of suitable solvent has always been an excellent tool for the job and that's what you get here. You can't just use any old solvent, though, as some have been accused of attacking the flexible suspension that retains the cantilever and this one has been specially formulated to have no such effect. At the same time, it is sufficiently potent to shift deposits from the stylus and using a powerful magnifier we were able to see that it leaves the diamond clean after just a quick wipe. The bottle of fluid is tiny, but the amount used in each application is really minimal.

VERDICT **A HIGHLY EFFICIENT and very safe way of cleaning a stylus; used regularly it will enhance LP sound and help preserve discs and stylus**

★★★★

Milty Permaclean kit

PRICE: £19 CONTACT: 01279 501111
WEBSITE: MILTY.CO.UK

MOST CLEANERS FOR LP ARE DEDICATED to that medium, ditto those for CD. This kit is eminently suitable for both, which in itself is something of a selling point. It's actually as simple as simple can be, consisting of a small aerosol can of solvent and a double-sided velvet pad. Spray some solvent on one side of a disc, then wipe it off complete with grease and grime. It takes a few seconds and while the last few traces of solvent evaporate you can move on to the other side. The same procedure works perfectly well on CDs, DVDs and so on, single-sided of course.

The use of chemical solvents on LPs is always a cause for nervousness, but Milty claims that extensive tests have shown this one to have no effect on vinyl and we're happy to concur that we found none in our tests. Another possible drawback is dragging large particles of dirt round the grooves of an LP and causing more damage, but again we couldn't persuade ourselves that the soft velvet pad was doing anything of the kind.

Indeed we found this a very quick and effective way of cleaning all kinds of discs. Fingerprinted CDs were returned to their original status as confirmed by a precision error-checking test and LPs came up nicely noise-free, on a par with those cleaned on a professional machine. The velvet pad can be brushed clean when dry and the aerosol treats up to 40 LPs.

VERDICT ★★★★★ **A RELATIVELY EXPENSIVE way of cleaning discs, but it you don't expect to treat many this is a great tool to have in the cupboard**



Spin-Clean Record-washing system

PRICE: £80 CONTACT: 01235 511166
WEBSITE: SPINCLEANRECORDWASHER.COM

APPARENTLY THIS USA-MADE RECORD-WASHER has been around since 1975, so it's clearly a case of better late than never, with Henley Designs having just signed up as UK distributor. Supplied in an appealingly small and light box (vacuum-type record cleaners are large and heavy), it's basically a plastic bath in which you quite literally wash LPs. A pair of velvet pads apply light pressure to opposite sides of the disc, while you rotate it by hand through the cleaning fluid. The clever feature, which we really liked, is that disc immersion depth is set by a pair of rollers, which can be put in position to cater to 12-inch, 10-inch or 7-inch discs – this saves the bother of fitting a centre spindle and clamp, as is done with the Knosti disc cleaner, a conceptually similar device.

Spin-Clean supplies a small bottle of cleaning fluid with the kit, which is claimed to be good for up to 700 discs – a four-times-larger top-up bottle costs £20 so running costs are minimal. This fluid is some sort of detergent, added to water (tap, or ideally distilled) and lifts dirt which simply settles at the bottom of the bath. Records are dried after cleaning with the supplied lint-free drying cloths.

It's simple and quick to use and results are excellent, among the best we've encountered from any LP cleaner. The fluid is safe on all discs except cut lacquers (including 78s) and really the only drawback is the need for manual drying. ●

VERDICT ★★★★★ **SMALLER, LIGHTER AND CHEAPER than a vacuum cleaning machine and hardly anymore bother, the supplied fluid does a great job with all vinyl and shellac discs**



Cleanliness in a hi-fi context may or may not have anything to do with godliness, but it is essential in keeping equipment working at its best. Media, styli and electrical connections are the

most important areas, well covered by the above accessories, but keeping general dust at bay is good for all kit. An accumulated blanket of dust is amazingly efficient at preventing heat dispersal

and hence causing premature failure by overheating and once a year or so it can be worth unplugging equipment, taking it outdoors and blowing as much dust out of it as possible.

Hi-Fi Choice Reader Classified

Welcome to *Hi-Fi Choice* Reader Classified, the UK's first and best free private ads service for buying and selling second-hand hi-fi components.

These pages are a must-read if you're thinking about buying used kit, and if you want to sell something it's definitely the place to be. It's free to place an advertisement – simply submit your ad of up to 30 words, remembering to include your email, phone number and county.

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Or mail to: **Reader Classified, Hi-Fi Choice, Future Publishing, 2 Balcombe Street, London NW1 6NW.**
Please note that this service is open to private advertisers only.

FOR SALE

PRIMARE i30 integrated amp and CD31 CD player (black). Good condition, supplied with manuals and remote (not boxed) and Atlas Navigator XLR interconnects. Sold as a pair, but would consider splitting. £1,500. **07748 986963 (Hants).**

LINN Lingo 2, excellent condition £425. Linn Trampolin, latest version, £90. Funk Achromat, turntable mat, 5mm (as new) £55. Linn felt mat £7. Will negotiate on p&p. **01582 867139 (Beds).**

LYNGDORF W210, pair of corner woofers in maple finish and excellent condition, £1,200. **01253 729944 or email lyngdorfw210@tesco.net (Lancashire).**

ARCAM Alpha 7 FM/AM tuner, good condition with original box and handbook £30. **01252 548012 (Hants).**

ROKSAN Kandy LIII stereo integrated amplifier, 30 months old, hardly used and in perfect condition. Usual Roksan features

120 watts, phono stage, remote, rock-solid build etc. (£650) £295. **01896823388 (Northumberland).**

ORIGIN LIVE Sovereign Mk1, carefully serviced, two platter mats. Illustrious Mk2 arm. New replacement power supply upgraded and OFC wiring with Supra mains lead with silver IEC £1,995 **07960 718424 or email mcgillm@talktalk.net (Essex).**

APOGEE Stage full-range ribbon loudspeakers (anthracite grey) with new midrange units. Overall excellent condition, £800. **01825 841104 or email mark.hanna@virgin.net (East Sussex).**

CAMBRIDGE AUDIO Azur 340ASE amplifier (black), with MP3 i/p Mission 750 speakers (black, limited edition) with stands (black) for £200. **07906 492335 or 0208643 2487 (London).**

ROCKPORT Technologies Merak loudspeaker and Sheritan II subwoofer. Ex-demo and brief use (black

gloss), superbly built system (£2,600) £1,300. **08448 221115 or email mark.hanna@virgin.net (East Sussex).**

EXPOSURE 2010S CD player in silver. Excellent condition. £250. **01484 427426 (W.Yorkshire).**

BOWERS & WILKINS DM70 electrostatic speakers from 1969. Large bass units, one non-functional, would suit enthusiast to restore, £350. **07814 198334 (Cheshire).**

QUAD 34 preamps, one with DIN inputs, one with RCA. 2x 303 power amps. All recently refurbished by Quad; £500 per pre/power combination. **01872 870602 (Cornwall).**

BOWERS & WILKINS P4 speakers in good condition £130. Pioneer 737 DVD player in gold. Good condition with remote £20. **07900 662976 (Cambridgeshire).**

WHARFEDALE 10-6 floorstanders with spikes, instruction manual and boxes. Can be bi-wired. Purchased in 2010, only four



A Roksan Kandy K2 amp for £375 is a tempting purchase

hours use, £295. **01248 789432 (Somerset).**

QUAD early portable amplifier made in 1938. Type 57 S.P Fidelity, may be a Peter Walker product. Offers over £350. **01634 817846 (Kent).**

TEAC VRDS 10, faulty, but repairable. Legendary build and great sound. Cosmetically good, call for details, £85. **07704 833767 (Somerset).**

NAIM Uniti all-in-one unit in immaculate condition with box. Would consider part-exchange with Arcam Solo Neo. £1,500. **02380 0738935 (Hants).**

ROKSAN K2 amp. Owned from new (black), boxed with manual and remote control. £375. **02920 568165 or email barbragamester@btinternet.com. (Cardiff).**

REGA P3/RB 300 tonearm, Rega Super Bias cartridge, Pro-Ject Phono Box II USB. All for £250. **embt80@gmail.com 01555 759124 (South Lanarkshire).**

VAN DEN HUL Meridian interconnects. Pair, 900mm length, Neutrik phono connectors £31 plus p&p. Pair interconnects 600mm length, Neutrik phono connectors £28 plus p&p. **i.fraser587@btinternet.com 01582 573570 (Beds).**

REGA Kyte speakers (black). In good working order, but with some damage around rear terminals.

£65. Wharfedale SW150 subwoofer (black), hardly used, £110. Offers welcome. **joshjefferjjeff@hotmail.com (London).**

SPECTRAL MIT interconnects MI3 30 1.5m x2 £210. Handmade equipment support in oak, six-tier, offers. Audio Source, six-way conditioning block (£350) £210. All mint. **0115 9126424 (Notts).**

MARANTZ CD-63 MkII CD player, Thorens TD280 MkIV turntable, Kenwood stereo cassette deck KX-5060S, Kenwood AV stereo receiver KR-V5570, pair of Castle Severn speakers. Sensible offers, will split if necessary. **01422 354995 or email b.d.heyhoe@talktalk.net (West Yorkshire).**

MARANTZ CD10 CD player, boxed with remote. Datasheet available as PDF. **£300 07771 776877 (Herts).**

KORD Tornado speakers, as seen and heard at the Scalford Hall show 2011, classic eight-inch mid-bass monitors. Bargain at £300, including Atacama SL stands. **07814 556915 (Oxfordshire).**

CYRUS CDXT SE+ transport. (black). Purchased new Dec 2010 (£1,550) £1,050. 2 x Cyrus Smartpower Plus power amps (black). (£700) £275. **07970 096244 (Bucks).**

CRYSTAL CABLE Piccolo RCA interconnects 0.5m pair. Multi-award winning cables

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!

in immaculate condition. Very light use, complete with presentation box. £115 ono. **07725 072878 (Leics).**

MONITORAUDIO silver MX1 speakers in natural oak. Boxed with only 12 hours use. Bargain at £299. **01702 556116 (Essex).**

REGA Exon-3 monoblock amps (pair) in black, hardly used, £625. Bang & Olufsen Beolab 6000 active speakers £525. **01782 596470 (Staffordshire).**

RUSS ANDREWS silver mains powerkords; 1x signature, three feet £1,000 and reference, four feet £700. Cash only, buyer collects. **074111 388152 (Herts).**

AVI Nu Neutrons (cherry) Punchy little speaker in good condition, £150. **01484 427426 (West Yorks).**

PRIMARE I30 amp, new condition, boxed £900. **01225 706783. (Wilts).**

QACOUSTICS 1020i speakers with stands, £60. Buyer collects. **01482 563883 (Hull).**

AUDIO TECHNICA AT-F5/OCC moving coil cartridge. Hardly used, £65. Grado SR80i headphones £50 Sale due to upgrade **024 76 711668 (Coventry).**

UNISON RESEARCH Seconda amplifier. Very good condition. Boxed. Instructions. £450. **01255 675115 (Essex).**

NAIM SBL speakers, upgraded bass drivers, 14 years old and excellent condition, £550. Naim SNAXO active crossover for SBLs £250. Mana SBL bases £100. Phone for package price. **01376 331712 (Essex).**

QUAD system 99 pre, CD, 909 amp various ages, plus 2905 speakers. All very good condition. Must collect. No boxes. Will demo. £3,750 ono. **01773 856828 (Derbyshire).**

LINN LP12/Beautiful Fluted Afrosmosia fully upgraded with Akito/Grado Platinum cartridge Cirkus Bearing/Trampoline2 £1,500. Project Phono Box SE11 £120. NakamichiCR4, near mint/full service history from 1986. £300. **07875 719136 (South Wales).**

ATACAMA Uropa 8SE, four -shelf hifi/AV rack (£520)

£225. o.n.o. **01634 842874** or email: **p.evans11@live.co.uk (Kent).**

MARTIN LOGAN Clarity electrostatic speakers in excellent condition. Finished in black and silver, wonderful open sound, £1,250. **02380 224003 (Southampton).**

BOWERS & WILKINS CM8 speakers (black) £895. B&W PV1-subwooferblack £575. Mint. New buyer collects. **020 8951 3178 (Middlesex).**

PRO-JECT record deck and Pro-Ject phono amp/Musical 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) £1,300 ono. Must be heard. **+00353 87 637 6623 (Ireland).**

OPTIMIUM equipment rack, eight glass shelves, brushed steel spacers, 52cm x 61cm, £100 TQ4 5AT **07905 472293** or email: **rodneymoorhouse@btconnect.com (Devon).**

MUSICAL FIDELITY A1 CD Pro in immaculate condition. Comes with original box, manual, receipt and remote. **07814 468747 (North Lond on).**

FOCAL Mezzo Utopia loudspeakers. Cherry and black piano finish. As new, boxed, manuals. Light use, (£8,700) £3,500. Currently in Naim system, can demonstrate **07747 620856 (Lond on).**

HARBETH p3esr speakers, special edition, mint condition, rosewood finish. £850. **02920 419226** or email: **frank8ush@ntlworld.com (South Wales).**

ARCAM FMJ CD33T (Silver) CD player, very good condition, boxed with original manual and remote. £350 ovno. Buyer collects. **01482 865162** or **07760 407871 (East Yorkshire).**

EPOS ES22 speakers (cherry) £500. Audiolab 8000Q preamp £250. 8000M power amps pair £400. 8000C preamp £200. Arcam Alpha 9 CD player £250. All in excellent condition. **01590 674 669 (Hampshire).**

GRADO PS1000 headphones. As new and boxed, won in

competition, £900. **01332 233011** or **07796 912295 (Derby).**

PS AUDIO 4.6 preamp with separate p/s, inputs, phono MC, MM, tape x2, tuner, CD, speaker outputs x2, straight wire or high-gain output, plus mono, £285. **01923 855359** or email **wombat.jr@talktalk.net (Hertfordshire).**

VECTEUR I4-2 integrated amp, 80 watts. Excellent condition, including remote and original power cable, (£1,200) £475. Can demo. **07748 652009 (Portsmouth).**

NAIM SXPS burndy cable for connecting power supply to CD player etc. Excellent condition, £250. **01933 405875 (Northamptonshire).**

MARANTZ CD10 CD player, boxed with remote. Datasheet available as PDF, £300. **07771 776877 (Herts).**

MUSICAL FIDELITY A5 CD V2.5. Box, manual, remote, valve output stage, optical and coaxial digital outputs, £650. **07812 935242** or email **dubmaster@talktalk.net-email (Croydon).**

PRIMARE Pre30 preamp and matching A30.2 power amplifier. As new condition (black), boxed with manuals, remote etc. Preferably for sale as a pair, but will split. If bought together, will include a pair of MIT Proline XLR interconnects, £1,500 ono. **07725 525001** or email **alan.strudwick@googlemail.com (South Wales).**

SONY SCD1 SACD/CD player, as new condition. £2,000 of Audiocom modifications including Ultralock. (£5,000) £1,850 ono. **01462 670786** or email **jr812@hotmail.com (North Herts).**

NUFORCE P9 preamp. One-year old and a true audio bargain, (£2,200) £1,400 obo. **01296 437334** or email **jes35@btinternet.com (Bucks).**

MARANTZ SA-7S1 CD/SACD. Owned from new. Stunning sound quality and build quality, (£5,199) £2,900. **01296 437314** or email **jez35@btinternet.com (Bucks).**

ROKSAN Kandy LIII amp and CD £240 each, Rega P3 turntable £120. Epos M5 speakers £120. All boxed with manuals. **01279 465521 (Herts).**

NAIM Uniti amp/CD/FM/DAB all-in-one system. Immaculate condition with latest specification. Only 14 months old, with box and accessories, £1,600. **02380 738935 (Southampton).**

KIMBER KCAG interconnect 0.5m -14dB attenuation, (£438) £200. Kimber D-60 interconnect 1m, (£335) £190. Other items, filters mains cables etc, half price. **01902 884694 (West Midlands).**

NAIM NAIT2 £400, Pioneer A300R Precision

amp £200, Pioneer PDS505 Precision CD £200, Rogers Cadet 3 £300, Cambridge CD4SE £80. **07818026427 (Yorkshire).**

BRYSTON SST9B 5-channel power amplifier (silver) and Bryston SP2 preamp/processor (silver). Excellent condition £1,500 (each) or £2,500 less shipping if purchased together. Grado S1000 headphones, immaculate condition £750. **00353 18373490 (Dublin).**

SONOS Z90 and c100 controller with cradle, booklet and install CD, fully working. Good intro for streamer, £220 including postage. **07736 773830 (Yorkshire).**

BOWERS & WILKINS 703 (cherry) '90s model, £2,900, Primare SPA21 surround amp £950. Other items also available, please call. Offers welcome. **01707 392743** or email **scotk421@hotmail.co.uk (Herts).**

SONY BDP-S5000ES Blu-ray player, three weeks' old with dealer invoice, £495 **020 8951 3178 (Lond on).**

CREEK 4140 integrated amp, Linn Index speakers plus stands (black ash), Arcam Alpha Plus CD player. £50 each item or £130 for all. **07900 273612 (West Lond on).**

ARCAM FMJ CD17 (black) with user guide/remote, light use from new, can demonstrate, (£600) £350. Cash, no offers. **01606 79032 (Cheshire).**

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Hi-Fi Choice

Buyer's Guide



Welcome to the *Hi-Fi Choice Buyer's Guide* – the ultimate directory to the very best high-performance hi-fi gear that you can buy. Here, you'll find our favourite current products listed under easy-to-use categories, with up-to-date pricing and trustworthy verdicts.

Reviews you can trust

Hi-Fi Choice test results are the most reliable in the business. We employ the UK's most respected hi-fi journalists and use the most stringent techniques to ensure our ratings are the ones you can trust (see *How We Test* p38). 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

You can also read the full review for most of our

Buyer's Guide entries online. Simply go to: techradar.com and enter the product name and model into the search box. You can also browse articles by clicking the 'reviews' tab.

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 consult our *Dealer Guide (Classified)* section to find specialist outlets where you can try them with your favourite music.

BADGES EXPLAINED

OUR AWARDS



EDITOR'S CHOICE: Awarded to those products that are judged to deliver reference-standard performance



RECOMMENDED: The products we feel meet a certain high standard of performance



GROUP TEST WINNER: Comparative tests can only have one true winner, and this badge says it all

NEW ENTRIES...

Every month, our buying bible is updated to include our latest reviews. These new entries are highlighted in yellow and reflect the very best reviews from the previous issue.

SOURCE COMPONENTS

108 _ CD players

Whether CD or SACD, we list the very best players for the job

111 _ Turntables

A selection of our favourites, from a £190 Pro-Ject to a £115k Continuum

111 _ Phono cartridges

The best in both magnetic and moving coil cartridges

113 _ Radio tuners

Surf the airwaves with any one of these carefully selected tuners

113 _ Headphones

Badge-winning headphones for your personal listening pleasure

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Our favourite next-gen hi-fi, from streaming clients to full-on servers

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Digital-to-analogue converters are once again revolutionising quality



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Our pick of the world's best one-box integrated amplifiers

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For those occasions when two boxes seem better than one



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Cables can provide a useful tweak to your system, check out our choices

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Priced per metre, these are our top recommendations for taming speakers



LOUDSPEAKERS

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An invaluable guide to the best loudspeakers for your system

STANDS & SUPPORTS

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The best equipment supports: sprung; solid; air-filled; glass; MDF and more...

123 _ Speaker stands

Stands come in all shapes, sizes and prices, so take your pick from our list



DEALER CLASSIFIED

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A veritable *pot pourri* of hi-fi dealer classified advertisements

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For all your hi-fi wants, check our index of independent hi-fi dealerships



BADGES KEY: RECOMMENDED = ● EDITOR'S CHOICE = ● GROUP TEST WINNER = ● BEST BUY = ●

CD players



Any one of these fine players will make sweet music for years to come

Up to £1,000

Badge	Product	Price	Comments	SACD compatible	ELEC dig output	OPT dig output	CD-RW compatible	BAL analogue out	Headphone socket	Variable output	Issue number
●	Advance Acoustic MCD-204	795	CD player with warm valve sound. Harmonically rich and inviting performance	●	●	●	●	●	●	●	342
●	Audiolab 8200CD	700	No SACD support, but excellent detail, neutrality and communication		●	●	●	●	●	●	340
●	Cambridge Audio Azur 650BD	400	Musical, precise, involving and with great energy at a superb price		●	●	●	●	●	●	340
●	Denon DCD-1510AE	900	If the SACD format is what you're into, then this player is capable of some impressive sounds	●	●	●	●	●	●	●	335
●	Exposure 2010S2	710	Paired with the 2010S2 amp, this CD player is a fine performer with plenty of detail		●	●	●	●	●	●	344
●	Marantz Pearl Lite SA-KI	899	A key CD/SACD player at an attractive price, with support for digital	●	●	●	●	●	●	●	338
●	Marantz KI Pearl Lite	750	Excellent sound, this CD player has also dropped in price from £920 to £750 since our review		●	●	●	●	●	●	344
●	Micromega CD-10	799	The cheapest in the range, the CD-10 has been fine-tuned to please the audiophile		●	●	●	●	●	●	328
●	Moon CD.5	999	Admirably energetic music-maker from this very well-built player		●	●	●	●	●	●	335
●	Musical Fidelity M1 CDT	600	Reviewed in combination with the M1 DAC, this CD transport holds its own against the competition		●	●	●	●	●	●	346
●	Oppo BDP-95EU	999	This universal player is revealing, transparent and musically involving	●	●	●	●	●	●	●	347
●	Pro-Ject CD Box	300	This player belies both its size and its price with sounds worthy of a decent mid-range system		●	●	●	●	●	●	338
●	Rega Saturn	898	Strikingly full-voiced, the Saturn offers a sound that feels remarkably real		●	●	●	●	●	●	344
●	Roksan Kandy K2	899	State-of-the-art technology and precision engineering produces a fine CD performance		●	●	●	●	●	●	335

Above £1,000

Badge	Product	Price	Comments	SACD compatible	ELEC dig output	OPT dig output	CD-RW compatible	BAL analogue out	Headphone socket	Variable output	Issue number
●	AMR CD-777	3,195	Extremely natural and engaging sound that brings analogue to the digital world		●	●	●	●	●	●	332
●	Arcam CD37	1,300	Excellent detail and imaging, neutral tonality and above-average bass resolution		●	●	●	●	●	●	340
●	Audio Analogue Maestro	2,250	Boasts refined highs and good image quality with a fine sense of timing		●	●	●	●	●	●	348
●	Audio Note Zero CD/II	1,742	Reviewed as part of a system, this really is a CD player for those who don't like CD		●	●	●	●	●	●	348
●	Copland CDA 825	3,985	This a highly revealing player that delivers music in a realistically engaging form		●	●	●	●	●	●	332
●	Creek Destiny	1,400	This player presents the music and nothing but the music and is thoroughly recommended		●	●	●	●	●	●	328
●	Icon Audio CDX1 Signature	1,350	Has an open, vinyl sound with a very high listenability factor		●	●	●	●	●	●	341
●	Krell S-350A	2,695	Accomplished CD player with real breeding underpinning its excellent performance		●	●	●	●	●	●	341
●	Leema Stream III	1,495	This is a superb CD player that improves on the performance of its predecessor, the Stream		●	●	●	●	●	●	339
●	Marantz UD 8004	2,450	Sophisticated and highly capable universal player that just about does it all	●	●	●	●	●	●	●	336
●	Meridian 808.3 Signature	10,000	Extraordinarily revealing and open CD player with a first-class performance level		●	●	●	●	●	●	339
●	Micromega CD-20	1,249	No SACD, unfortunately, but without doubt one of the better mainstream players		●	●	●	●	●	●	332
●	Mimetism 20.1	5,107	An impressive player that produces a very convincing and musical sound		●	●	●	●	●	●	330
●	Moon 750D	7,950	Very few CD players can extract as much information off the disc as the 750D		●	●	●	●	●	●	331
●	Naim CD5 XS	1,790	Its composure and openness results in a musical performance that is extremely seductive		●	●	●	●	●	●	334
●	Primare CD32	2,200	Smart, slick and with balanced outputs, this CD player looks every bit the high-end part		●	●	●	●	●	●	348
●	Resolution Audio Cantata	5,995	CD player/streamer that's revealing enough to set it far apart from the competition		●	●	●	●	●	●	336
●	Roksan Caspian M2	1,600	This impressively engineered CD player is punchy and dynamic, with excellent timing		●	●	●	●	●	●	338
●	Theta Compli Blu	2,998	A very accomplished universal player with support for Blu-ray and HDMI		●	●	●	●	●	●	337
●	Unison Research Unico CDE	2,475	Has an engaging and musical sound with strong tonal realism		●	●	●	●	●	●	348

SP:CS 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.

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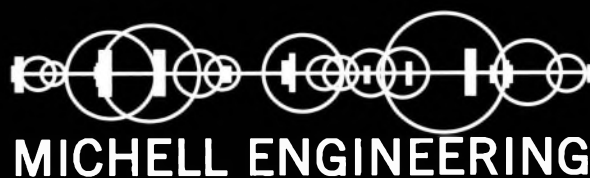


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Turntables



The best record players money can buy

Badge	Product	Price	Comments	Switchable speed change Suspension subchassis Speeds	Supplied with arm Supplier with arm Issue number
●	Clearaudio Concept	1,100	One of the easiest ways of getting into analogue, with excellent results for the price	33/45	● ● ● 338
●	Continuum Caliburn	125,000	Luxury turntable with state-of-the-art design includes Cobra tonearm and Castellon stand	33/45/78	● ● ● 320
●	Dr Feickert Woodpecker	2,995	Offers superb bass, excellent build quality and range of arm choices	33/45	● ● ● 335
●	Edwards Audio TT1	325	Classic, no-nonsense design, with exemplary performance at the price	33/45	● ● ● 342
●	The Funk Firm Funk V2	1,390	Not only as beguiling as those that preceded it, this turntable is also more substantial to boot	33/45	● ● ● 324
●	Hanss Acoustic T-30	3,600	The only multi-armbase deck in its price range, it boasts image stability and precise bass	33/45	● opt opt 331
●	Lumley Heliosphere	2,495	A distinctive-looking turntable with a unique sound and a performance that reflects your vinyl	33/45	● opt opt 319
●	Michell Gyro SE	1,150	Excellent timing really propels a very good performance. Plenty of detail and insight, too	33/45	● ● ● 345
●	Michell Gyro SEduction	2,245	Limited edition version of above with TecnoArm, HR power supply and blue-steel finish	33/45	● ● ● 342
●	Pro-Ject RPM-1 Genie 3	190	The Genie is that rare thing of a product with good looks, fine build and excellent sound	33/45	● ● ● 332
●	Pro-Ject RPM 10.1 Evolution	2,000	This turntable is a good combination of high mass and effective suspension	33/45	● ● ● 348
●	Pro-Ject Xperience 2 Pack	775	Holds its own against all competition (arm included)	33/45	● ● ● 345
●	Pro-Ject 6 Perspex	1,280	Plenty of detail and good rhythmic qualities (arm included)	33/45/78	● ● ● 338
●	Roksan Radius 5.2	1,399	Sophisticated design with accomplished sound quality, excellent imagery and good isolation	33/45	● ● ● 338
●	SRM Tech Arena	650	A welcome addition to the affordable end of the market, this is an engaging turntable	33/45	● ● ● 349
●	Townshend Rock 7	1,750	Very well-defined bass; good detail; well judged rhythm and pace (reviewed with Excalibur arm)	33/45	● ● ● 345
●	Well Tempered Simplex	1,495	Superb timing makes this one of the most entertaining turntables in its price range	33/45	● ● ● 347

Phono cartridges



MM and MC recommendations

Badge	Product	Price	Comments	Replaceable stylus MM MC	Issue number
●	Dynavector DV-20X2L	499	Revealing and open sound from a well-built and easy-to-align MC cartridge	●	342
●	Dynavector Karat 17D3	699	One of the most thrilling-sounding cartridges on the market	●	334
●	Goldring Legacy	595	An MC cartridge better suited to the smoother-sounding turntable, it unearths a mountain of detail	●	328
●	 Grado Prestige Gold 1	150	Unusually assured 'presence' region is the basis of a beautifully musical and involving presentation	●	338
●	Ortofon 2M Red	80	A little fussy about set up, but sound is admirably balanced and full of unforced detail	●	345
●	Ortofon Vivo Red	200	Never less than musically convincing, this all-in-one cartridge is remarkably capable	●	338
●	Ortofon Cadenza Red	750	There's much to admire in this cartridge's fine detail and unfussy presentation	●	330
●	Shure M97xE	82	A budget cartridge, but bass and midrange are to high-end standards and treble is just as assured	●	345

Phono stages



Make your turntable sing

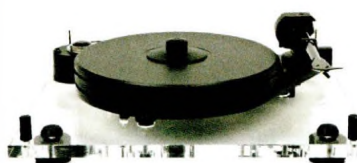
Badge	Product	Price	Comments	MM phono inputs MC phono inputs Adj impedance Adj gain Issue number
●	Dynavector P-75 MkII	595	A stage that will put spring in the step of any decent cartridge you can throw at it	● ● ● 344
●	Lehmann Audio Black Cube	335	This phono amp is a very distinguished performer with an MM source	● ● ● 335
●	Linn Uphorik	1,850	Exceptional sound quality, the Uphorik could easily win over the next generation of LP enthusiasts	● ● ● 334
●	Primare R32	850	If you are into vinyl for the music, then this is one of the most revealing examples on the market	● ● ● 345
●	Pro-Ject Tube Box SE II	435	The big picture is the most evident thing here, but the finer details are there, too	● ● ● 335

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.

HFC TOP PICKS



Dynavector Karat 17D3 £699
The 17D3 gets very close to the results achieved with MCs at twice the price and few can touch it in terms of sheer musicality and resolution of detail



Pro-Ject 6 Perspex £1,280
Our Product of the Year 2010. A winning combination of open and even-handed sound, handsome design and excellent build quality



Dr Feickert An. Woodpecker £2,995
A very flexible and well-thought-out deck that offers brilliant build quality and excellent bass. Able to work with a wide variety of arms, too

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Amplifiers



Our pick of the best one-box amps out there

Up to £1,000				Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number
Badge	Product	Price	Comments						
●	AudioLab 8200A	730	Has detailed sound with good extension and unusually assured midrange	6				60	349
●	Cambridge Audio 840A v2	800	A chunky powerhouse with features aplenty, this amp offers detail and delicacy (silver finish)	8	●	●		120	327
●	Denon DCD-1510AE	900	Offers a taste of high-end excellence at an affordable price	5	MM/MC	●	●	70	335
●	Exposure 2010S2	752	Impressive amplifier with preamp output, the 2010S2 was a blind group test winner	6		●	●	75	344
●	Marantz KI Pearl Lite	750	Impressive performer with a well-filled phono-amp board and now down to £750 from £920	5	●	●	●	90	344
●	NAD C3226BEE	320	Unusually confident into awkward loads and very assured especially in bass. Treble a touch recessed	7		●	●	50	322
●	Rega Mira 3	460	Competent performer that makes an excellent system with the matching Saturn CD player	5	●			60	344

Above £1,000				Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number
Badge	Product	Price	Comments						
●	Audio Note IZero	1,548	A fine performer that provides a catalyst for the Zero system CD player and loudspeakers	4				8	348
●	Consonance Cyber 10 Sig	1,595	Gorgeous tube amp delivering high-end performance at a realistic price	5				11	345
●	Creek 5350 Evolution	1,075	One of the most attractive amps in its price range, with a sound that's immediately satisfying	5	MM/MC	●		120	334
●	Creek Destiny 2	1,600	Excellent tonal balance and gorgeous, effortless detail	6	opt	●	●	116	342
●	Cyrus 8xp d	1,550	Best heard in the context of a Cyrus system, this amp nevertheless has some great qualities	6		●	●	80	342
●	Electrocompaniet EC15 Mk II	2,750	Big, characterful and beautifully built amp, with equally big and unforced sound	6				120	349
●	Emillé Ara	2,450	An extremely competent valve amp in its own right with a useful set of features	2			●	22	343
●	Icon Audio Stereo 60 Mk 3	1,700	An energetic valve amp that offers high power and delivers it with confidence	4			●	65	346
●	Leema Pulse III	1,495	Offers a clean, smooth sound and has an unusually wide array of inputs	6	MM/MC			70	342
●	Moon I3.3	3,000	Lively and lifelike with a good sense of rhythm and generally good performance	4	opt	●	●	10	349
●	Pathos Ethos	3,250	A highly capable two-channel amp that offers great sound, plus a versatile equipment interface	6	●			100	348
●	Peachtree Audio iDecco	1,000	A well-equipped amp/DAC one-stop solution for iPod and digital audio users	2			●	40	344
●	Peachtree Audio Nova	1,099	This amp/DAC combi is a fine heart for a computerised desktop system	3		●	●	80	341
●	PrimaLuna Prologue Two	1,820	This valve amp has many fine qualities that will endear it to many audiophiles	4		●	●	30	346
●	Primare I32	2,200	Gorgeous sound, while the prospect of future upgrades is truly mouth-watering	3				120	344
●	Rega Elicit	1,595	A very good bass, while imaging and detail provide an involving and enjoyable listen	5	opt	●		80	349
●	Roksan Caspian M2	1,600	This muscular-sounding amplifier is load tolerant and more powerful in practice	6		●		85	338
●	Unison Research S6	2,990	This valve amp creates a big spacious soundstage with ample depth and width	5				35	347

Pre/power amplifiers

Separate boxes can bring clear advantages



Up to £2,000				Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number	
Badge	Product	Price	Comments							
●	Cambridge Audio Azur 840E/840W	2,000	Enterprising technology delivers a pre/power combo that always sounds detailed and controlled	●	●	8	opt	●	200	309
●	NAD C165BEE/C275BEE	1,550	An alternative to the usual integrated route and one that offers flexibility and fine sound	●	●	6	MM/MC		130	336

Above £2,000				Line inputs	Phono input	Remote control	Headphone socket	Power output (watts)	Issue number	
Badge	Product	Price	Comments							
●	Audio Research DS450	7,000	Power amp features a very neutral transparent sound with lots of power and low-running temperature	●	●	2			450	337
●	Bryston BP16/ 2B SST2	5,700	Preamp and power amp combo offers superb sound quality	●	●	6	opt	●	100	323
●	Bryston BP26	3,670	Cracking preamp brings detailed results	●	●	8	opt	●		308
●	Cayin SP-305/SP-40M	3,346	Smooth clean sound quality, this combo is well-balanced and natural-sounding	●	●	4	MM	●	40	343
●	Cyrus Stream XP	2,000	An easy to use streaming DAC/preamp with a great combination of sound quality and features	●		5		●		346
●	Cyrus Mono X300	2,495	A power amp with a rare combination of speed and resolution	●		2		●	300	341
●	Linn Akurate Kontrol/2200	7,550	Reviewed as part of an entire system (streamer and speakers), this combo offers a crisp, open sound	●	●	2		●	200	343
●	Mark Levinson No. 326S	8,000	Excellent USB implementation, natural sound and solid build. Excellent performance levels	●		7	●	●		338
●	Musical Fidelity M6PRE/PRX	4,998	For those wanting a powerful high-end pre/power combo at a realistic price, this is a fantastic package	●	●	9	●	●	260	340
●	Onkyo P-3000R/M-5000R	4,200	Superb sounding combination with excellent build, flexibility and connection options	●	●	6	MM	●	80	345
●	Quad Elite Pre/Mono	1,500	Clear and well-focused bass, plus a sound with a high degree of simple honesty	●	●	6	MM/MC		150	349
●	Trilogy 909/990	10,390	Extremely musical valve-based pairing with hybrid power and beautiful finish	●	●	6		●	100	325

SPECS KEY **LINE INPUTS** Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. **PHONO INPUT** Input sockets and on-board phono stage for a cartridge. Either MM (moving magnet) or MC (moving coil), occasionally both. **REMOTE CONTROL** A remote control is supplied with the amplifier. **HEADPHONE SOCKET** To drive your cans with. **POWER OUTPUT** Manufacturer's rated output in watts per channel.

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Streamers/music servers



Streaming and music servers are opening up a new dimension in listening pleasure

Badge	Product	Price	Comments	Internal drive	Wireless	iPod compatible	Internet radio	USB	Balanced output	Apple Airplay	Digital output	Issue number
●	Cambridge Audio Sonata MP30	400	A fully featured streamer that sounds remarkably open and works well wirelessly	●	●	●	●	●	●	●	●	349
●	Marantz NA7004	720	Easy to use, the NA7004 makes getting into streaming simple and all for a great price, too	●	●	●	●	●	●	●	●	344
●	Naim NDX	2,995	The ideal combination of vivid performance and understated styling	●	●	●	●	●	●	●	●	345
●	Olive 4HD	2,200	Allows the music fan to dispense with physical media and download from hi-res internet sites	●	●	●	●	●	●	●	●	333
●	Yamaha NP-S2000	1,429	Drop-dead gorgeous and it sounds appropriately sophisticated	●	●	●	●	●	●	●	●	346

SPECS KEY **WIRELESS** Able to receive files wirelessly **INTERNAL DRIVE** Fitted with its own hard drive **USB** USB Sockets fitted **INTERNET RADIO** Able to receive web radio **IPOD COMPATIBLE** Able to connect directly to an iPod **APPLE AIRPLAY** Able to function as an AirPlay receiver **BALANCED OUTPUT** Fitted with a balanced out **DIGITAL OUTPUT** Fitted with a digital output

DACs



Digital-to-analogue converters are back and the price has come right down

Badge	Product	Price	Comments	Coaxial input	Optical input	USB	Wireless	Sampling rate (kHz)	Balanced outputs	Headphone socket	Volume control	Issue number
●	Antelope Audio Zodiac Plus	1,895	Remarkable resolving capabilities and more inputs than the majority of DACs	●	●	●	●	192	●	●	●	345
●	Benchmark DAC1	950	Very clean sound with plenty of detail and also good rhythmic drive	●	●	●	●	192	●	●	●	341
●	Cambridge Audio DacMagic	230	Detail and imaging are very good and a decent feature count only adds to the appeal	●	●	●	●	96	●	●	●	331
●	Electrocompaniet PD1	1,250	Great sound and superb build, the PD1 allows you to access music on your computer hard drive	●	●	●	●	192	●	●	●	346
●	Furutech GT40	395	The perfect 'missing link' between analogue and the home computer	●	●	●	●	96	●	●	●	342
●	Matrix Mini-i	260	Agile, lively and detailed sound with clear and full-bodied bass	●	●	●	●	192	●	●	●	349
●	M2 Tech Young DAC	1,200	For affordable ultra-high resolution, this DAC has detailed sound and is full of life and vibrancy	●	●	●	●	96	●	●	●	348
●	Musical Fidelity M1 DAC	400	Tested with the M1 CDT CD transport, this DAC boasts excellent sound quality and features	●	●	●	●	192	●	●	●	346
●	Rega DAC	498	A little stunner, combining genuinely high-end sound with a good feature set	●	●	●	●	44	●	●	●	346
●	PS Audio Digital Link III	899	A simple no-fuss product that just sounds great and at its price is something of a bargain	●	●	●	●	192	●	●	●	341

SPECS KEY **COAXIAL INPUTS** Fitted with a coaxial input **OPTICAL INPUTS** Fitted with an optical input **USB** Fitted with a USB input **WIRELESS** Able to receive material wirelessly **SAMPLING RATES** Maximum sampling rate of the DAC **BALANCED OUTPUTS** Fitted with a balanced output **HEADPHONE SOCKET** Can operate as a headphone amp **VOLUME CONTROL** Can be connected directly to an active speaker or power amp.

Cables



Cables really can make a difference, especially our top recommendations

Analogue interconnects				Stranded	Solid core	Copper	Silver	Digital cable type	Issue number
Badge	Product	Price	Comments						
●	Black Rhodium Polar Illusion	250	A good all-rounder, with clear and purposeful bass and particularly fine treble	●	●	●	●		321
●	Chord Co. Indigo Plus	995	Costly, and high-class cable needs running in, but this is a finely detailed design overall	●	●	●	●		323
●	Peerless Sigma	70	A cable that belies its modest price with sound that's detailed, neutral and full bodied	●	●	●	●		343
●	QED Ref Audio Evolution	63	Tonally favours the bass, but overall detail and imaging are very good	●	●	●	●		343
●	QED Signature Audio S	190	Mellifluous and rounded, this cable is a great choice for lovers of the human voice	●	●	●	●		332

Digital interconnects				Stranded	Solid core	Copper	Silver	Digital cable type	Issue number
●	Atlas Mavros	285	By any reckoning this is a very revealing wire	●	●	●	●	E	336
●	van den Hul The Wave	65	The results this cable achieves are excellent and it scores highly for value	●	●	●	●	E	336

Speaker cables (price per metre)				Stranded	Solid core	Copper	Silver	Digital cable type	Issue number
●	Black Rhodium Jive Bi-Wire	14	Bi-wire cable which is full of sonic virtues. It's highly practical, too	●	●	●	●		339
●	Kimber 4PR	65	Many high-end virtues at a budget price, including a well-judged bass and sweet extended treble	●	●	●	●		349
●	Monster MCX-1s	5	Notable for its bass, perhaps a touch overdone at times but could be a good foil to small speakers	●	●	●	●		280
●	van den Hul The Teatrack	35	A bi-wire cable with a sound that's impeccably timed, neutral and full of detail	●	●	●	●		339
●	Wireworld Stream	6	Packs a punch when needed and the detail is good	●	●	●	●		349

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.

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Stereo speakers

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Size, width, height, depth (cm)
 Floorstander
 Ease of drive
 Bass from (Hz)
 Free-space
 Close-to-wall
 Issue number

Up to £1,000

Badge	Product	Price	Comments	Size, width, height, depth (cm)	Floorstander	Ease of drive	Bass from (Hz)	Free-space	Close-to-wall	Issue number
●	Acoustic Energy Radiance 1	600	Limited bass, power handling and dynamics, but exceptional mid-to-treble voicing	18.5,32,25		A	33	●		325
●	Acoustic Energy Neo V2	700	Lots of box, this speaker produces a coherent and engaging sound	20.3,120,30	●	A		●		348
●	Amphion Ion L	900	Sharp styling, fine mid/treble coherence a sweet treble, but less happy bass alignment	16.2,32.6,26.5		A	40	●		310
●	ATC SCM11	867	A very fine little speaker t at its best with natural recordings where it adds little	21,38,25		A-	55	●		293
●	Boston Acoustics A 360	720	A very cohesive and entertaining speaker with a wonderfully musical and tonally even performance	34.5,106,27.4	●	A		●		349
●	Bowers and Wilkins CM1	488	Luxury miniature has laid-back sound, low coloration and fine imaging, but weak dynamics	16.5,28,28		A-	40			279
●	Cambridge Audio S30	130	At its best with energetic, rhythmic music, this bookshelf speaker has class-leading bass	16,22.6,23.5						347
●	Castle Knight 2	400	A true resurgence for the Castle brand, the Knight 2 has a beguiling sound quality	20,38,33.5		A+	42	●		338
●	EB Acoustics EB2	669	Excellent value speaker, its composite enclosure gives a very clean and neutral sound	22.5,45,30		A	64	●		341
●	Epos Epic 5	750	Excellent aesthetic and lively, involving sound, this is a superb performer	28.6,98,38		A		●		347
●	Focal Chorus 706V	389	Advanced drivers deliver an even, healthy dynamic expression and tension	22,39,25		A	27	●		319
●	Focal Chorus 726V	950	Compact and realistically priced, the Chorus 726V is a good all-round performer	22,99,37.5	●	A	25	●		325
●	JBL Studio L880	700	Good value floorstander with neutrality, massive headroom and plenty of punch	22,99,37	●	A	25	●		275
●	KEF iQ50	599	Looks cute and very discreet, with spacious imaging, good balance and a sweet treble	17.5,81.5,26	●	A	23	●		315
●	Mission MX5	600	An engaging listen and worth an audition, if you have the room	25,99.5,39	●	A-		●		341
●	Monitor Audio BX5	500	Attractive and compact design with fast and engaging sound	21.5,86.8,24.8	●	A-		●		345
●	Monitor Audio Silver R58	850	Bold, dynamic sound, it's an easy load that works well in larger rooms	90,18,27	●	A	33	●		276
●	Monitor Audio GS10	900	More neutral tonally than some recent MAs, the GS10 is is easy to drive	20,36,27		A-	40	●		284
●	PMCD B1i	985	Could be more neutral, but a very effective musical communicator	15.5,29,23.4		A+	30	●		334
●	ProAc Tablette Ref Eight	704	Stunning standmount with electrostatic-like imagery. Its brother is even better!	15,27,23		A+	40	●		267
●	Q Acoustics 2010	115	The sheer cleanliness of this speaker's sound is astonishing	15,23.4,20.3						347
●	Q Acoustics 1020i	140	Outstanding value, t smooth well-balanced and lively sound makes a fine communicator	17.5,25,26.5		A+	60	●		318
●	Rega RS1	390	Clever close-to-wall speaker has a fine coherence and good communication skills	15,32,23.6		A	23	●		319
●	Roth Audio 0Li10	100	An even-handed bookshelf loudspeaker with very good upper-bass energy	15.3,199,178						347
●	Tanoy Revolution DC6T	820	Good-looking and compact floorstander with a beautifully judged overall balance	20.2,95.25,3	●	A		●		346
●	Teufel T500	568	Good value, solid build and an extended warranty	19.5,105,32.5	●	A-		●		340
●	Triangle Color	899	Excellent build, with strong and evenhanded sonics	18.8,96.5,27.5	●	A		●		349
●	Wharfedale Diamond 10.0	130	A strikingly energetic bookshelf speaker that's notably communicative with voices	14.5,23.6,16.5						347
●	XTZ 99.26	670	Astonishing value for money, this is a very talented performer with well-recorded music	24.4,39.9,35.2						348

Above £1,000

●	Adam Audio Tensor Delta	8,400	This active loudspeaker brings a powerful range of capabilities to its performance	33,56,34		A	50	●		329
●	AE Energy Radiance 2	1,000	This speaker boasts fine neutrality, sweet top, fine imaging and wide dynamic range	18.5,92,25	●	A	30	●		334
●	AE Energy Radiance 3	1,500	This speaker's effective enclosure ensures a wide dynamic range and a very clean sound	23,92,29.7	●	A	27	●		320
●	AE AE1 MkIII	2,000	This speaker has a lovely midband smoothness and superior image focus	18.5,31,25		A	24	●		337
●	Amphion Argon 3L	2,300	Solid build ensures an impressively clean sound with loads of bass and fine neutrality	19,92.5,30.5	●	A	44	●		322
●	Aspara HL6	4,300	Acoustic material sounds great and there are many strengths in design and performance	18.5,93,34.5	●	A		●		332
●	Audio Note Zero AZ-Two	1,294	A sensitive and immediate-sounding speaker and tested as part of the Zero system	25,90,30		A		●		348
●	Audioplan Kontrapunkt IVB	2,898	Boasts exceptional stereo imaging and mid-through-treble coherence	16,35,26	●	A	45	●		329
●	Audiovector Ki3 Signature	1,890	Very attractive and discreet, with fine stereo imaging and low coloration	14,98,27	●	A		●		343
●	Audiovector S3 Super	2,600	Useful ability to upgrade, offers good musical communication and stereo imaging	19,103,31	●	A	50	●		328
●	AVI ADM9	1,125	Active mini-monitors that are exceptionally accurate and dynamic sounding	20,30,26		ACT	60	●		301
●	Bowers and Wilkins CM8	1,250	Exceptional looking speaker with a fine midrange and superior imaging	16.5x96x28	●	A	60	●		344
●	Bowers and Wilkins 802	11,500	This high-end speaker has an airy, spacious midband, with clean bass reproduction	36.8,138,56.3	●	A	27	●		337
●	Cabasse Bora	2,200	A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics	33,27,50		A	52	●		324
●	Canton Vento 820	1,200	Really emphasises the benefits of the standmount, with great freedom from boxiness	22,36,31.5	●	A+		●		342
●	DALI IKON 7 MkII	1,669	With a wide dynamic range, this speaker offers high performance at a realistic price	20x117x36.4	●	A		●		348
●	Dynaudio DM3/7	1,299	Sound has a fine overall balance and impressive bass weight	20.4,96,27.5	●	A		●		345
●	Focal Chorus 826W LE	1,879	Focal has turbo charged the 826 resulting in lots of energy, excitement and fine detail	28.2,103.8,37.5	●	A		●		330
●	Focal Electra 1027 Be	4,399	Outstanding mid and top with fine delicacy, low coloration, but lacks some bass grip and drive	26.5,111,35	●	A-	25	●		276
●	Free FS1	3,500	An elegant design with the minimum of wiring. Wireless with Sonos or Airport Express	16,87,27	●	ACT	35	●		301
●	Gamut Phi5	3,040	Lovely discreet floorstander has excellent sound and several very clever engineering touches	17,100,24	●		20	●		305
●	Green Mountain Audio Rio	2,000	Fabulously tight timing and coherence makes for a very expressive and musical performer	20.8,40.6,34.9	●	A	80	●		332

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Stereo speakers (continued)

Shapes and sizes for every budget

Badge	Product	Price	Comments	Size - width, height, depth (cm)	Floorstander	Ease of drive	Bass from (Hz)	Free space	Close to wall	Issue number
●	Guru QM10	1,595	A very clever close-to-wall standmount with fine imaging, that sounds a lot bigger than it looks	30,25,2,23,2		A	26	●	●	317
●	Jamo R 907	6,600	Arguably the more 'chummy' of Jamo's dipole flagships, powerful bass and open midrange	44,118,9,7	●	A	30	●	●	317
●	JBL Everest DD66000	44,000	Awesome performance in the true meaning of the word & exceptional musical communication	111,96,5,47	●	A	50	●	●	331
●	Kudos X2	1,350	Attractive presentation alongside a lively sound makes for an involving experience	16,6,78,20,6	●		27	●	●	337
●	Linn Akurate 242	7,300	Wide, smooth high-frequency dispersion, with excellent sound	21,100,38	●			●	●	343
●	Magico V2	18,000	High pricing derives this speaker's superb painstaking engineering & impressive performance	25,5,115,30	●	A	32	●	●	325
●	Magneplan Magneplanar 1.6	2,500	Great with acoustic and classical material, this dipole panel speaker has superb sound quality	48,165,5	●	A	43	●	●	329
●	Mission 796	1,300	Clean, open and detailed, smooth, relaxed loudspeaker does exactly what it says on the box	20,6,99,8,31,8	●	A	25	●	●	321
●	Monopulse 42A	1,995	Oddball styling, fine bass-to-mid balance and dynamics and superb voice coherence	26,110,25	●	A	25	●	●	302
●	Monitor Audio Gold GX200	2,300	A stylish speaker free from boxiness with wide dynamic range	17,99,30	●	A	25	●	●	349
●	Mordaunt-Short Perf 6 LE	4,799	Striking moulded enclosure minimises coloration, overall balance is smooth, neutral and open	24,115,43	●	A	22	●	●	308
●	Neat Momentum 3i	1,790	Sounds bigger than it looks, with good coherence and an impressively wide dynamic range	22,38,27	●	A-	23	●	●	302
●	Opera Callas	3,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	23,37,5,34			32	●	●	311
●	Opera Seconda	1,995	Fine styling and finish, plus very superior voicing, if a shade lacking in warmth	24,102,5,31,5	●	A	20	●	●	314
●	Pioneer S-2EX-W	5,200	This speaker offers superb midband neutrality and exceptional clarity	29,1,56,5,42,5	●	A	37	●	●	320
●	PMC GB1i	1,525	Fine voice reproduction, overall agility and well-judged balance	15,5,87,23,4	●	A	40	●	●	347
●	PMC FB1i	2,100	A floorstander that boasts impressive bass extension and a smooth sweet top end	20,100,30	●	A	20	●	●	329
●	PMC fact .8	5,250	Beautiful styling, alongside a superb all-round sound with a notably wide dynamic range	15,5,105,38	●	A	55	●	●	327
●	PMCI B2i	8,900	Delivers a top class sound quality, fine imaging and exceptional dynamic grip	33,74,46,5	●	A	25	●	●	324
●	ProAc Studio 140 Mk2	1,690	Headroom and high sensitivity are an encouragement to play it loud	19,104,28	●	A		●	●	347
●	Rega RS7	1,685	Lively and transparent with superior dynamic range	24,6,98,8,34,6	●	A	-	●	●	347
●	Revolver Screen 3	2,799	Visually dramatic and very successful in delivering genuine high quality hi-fi sound	50,140,11		A	35	●	●	329
●	Roksan Caspian FR-5	2,475	Sharp-looking speaker sounds exceptionally open and lively without aggression	20,100,25	●	A	22	●	●	290
●	Sonus faber Luito Monitor	1,690	Subtly designed, elegant-sounding package, especially with good recordings	18,5,35,33,5		A-	55	●	●	322
●	Sonus faber Minima Vintage	2,490	Easy, graceful-sounding compact, a natural for acoustic material at moderate volume levels	20,33,27,5		A-	55	●	●	312
●	Sonus faber Cremona Audit.	3,350	Open, exciting and with surprisingly good bass, this is 'The Little Speaker That Could'	20,35,37		A	50	●	●	305
●	Spendor SA1	1,295	Very high-quality sub-miniature with notably superior sound	16,5,30,5,19		A	30	●	●	334
●	Spendor SP3/3R2	2,295	Lovely overall balance with fine voicing and transparency	27,54,5,32,5		A		●	●	343
●	Tannoy Definition DC8	2,500	Stylish-looking, this speaker is a fine communicator with clean, crisp and dynamic sound	27,47,26			55	●	●	343
●	Totem Sttaf	1,695	This speaker delivers good scale with a fine midband	16x85x24.2	●	A		●	●	340
●	Triangle Genese Lyrr	3,300	A well-balanced speaker with generous sensitivity, fine imaging and good expressiveness	23,30,3,113,3	●	A	30	●	●	338
●	Teufel Ultima 800	2,498	Exceptional value for money due to direct sales and easy system-matching	22,98,37	●	A	42	●	●	335
●	Vivid Audio K1	14,495	With a subtle, fast and wide bandwidth, this speaker is one of the finest on the planet	28,130,45		A	35	●	●	325
●	Wilson Benesch Curve	5,383	Much (but not all) of the ACT's performance in a much more compact and affordable package	23,91,37	●	A	28	●	●	254
●	Wharfedale Opus	1,500	Great material value and a solid, if bright and forward sound. Has great loudness potential	26,100,5,41	●	A	23	●	●	314
●	Yamaha Soavo 2	1,200	Cunningly crafted with a beautiful balance that always sounds lively, open and involving	22,38,35		A	28	●	●	296
●	Zu Essence	3,750	Realism and communication skills are more than compensation for balance shortcomings	30,5,125,30,5	●	A	25	●	●	327

SPECS KEY **SIZE W,H,D (CM)** Width, height and depth of one cabinet in centimetres. **FLOORSTANDER** Speakers that don't require stands. **EASE OF DRIVE** How much power the amplifier needs (approximately) to drive the loudspeaker effectively. **A+** 25 watts plus **A** 50 watts plus **A-** 100 watts plus **ACT** Active – the speaker has its own in-built amplifier. **BASS FROM** How low the speaker goes – the smaller the number the deeper the bass. **FREE SPACE** The speakers work best away from wall(s). **CLOSE TO WALL** The speakers will work best when up against a wall (but avoid corners).

HFC TOP PICKS

**Castle Knight 2 £400**

The Knight 2 continues in the great Castle tradition of excellent finish and solid build and climbs to the top of the pile with excellent sonic performance

**Focal Chorus 826W LE £1,879**

Focal has taken the 826 and turbocharged it, keeping the virtues of the stock model but with increased energy, excitement and detail

**PMC fact.8 £4,600**

A fantastic combination of elegant design, well-thought out room-tuning features and superb sonic performance. A 2010 Product of the Year nominee

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Equipment supports

Hi-fi equipment supports come in all shapes and sizes



Badge	Product	Price	Comments	Top plate size (cm) Height (cm)	Number of shelves Welded	Shelf type	Issue number
●	Audiophile Base Std Supp't	1,200	Expensive and quite bulky, but sound is unusually detailed and resonance-free	57	46,35	3	MDF 302
●	Blok Stax 300	180	A simple and effective design that gives some useful isolation across most of the audio band		40,46	3	MDF 334
●	Custom Design Inert Matt	70	Isolation platform can improve the sound of hi-fi components, but is a bit small for most kit		40x25		Metal 311
	Custom Design XL4	380	Simple construction pays off in smart looks. Sound contribution is minimal		60,42	4	Glass 293
	Custom Design Milan	509	Good-looking stand with nothing more to complain of than slight muddying of detail	57	48,39	4	Glass 302
●	Hi-Fi Racks Podium	500	A keenly priced piece of high-class furniture that also happens to sound great		59.5		Wood 320
●	Isonoe Isolation feet	98	A set of four isolation feet that are ideally suited to microphonic kit like turntables				Alloy 327
●	Magic Racks MR1	600	At its best it's very effective and gives real isolation across the audio band	59			Rubber 344
	Partington Minim	470	Adds its own character to rock, but to the detriment of acoustic sounds	78	45,37	● 5	Glass 302
●	Quadraspire QX25 Support	25	Beautifully simple design, cheap and easy to use. Excellent with CD players				Acrylic 327
●	Quadraspire Sunoko-Vent T	800	The sound is detailed and largely uncoloured, while the design is rigid and beautifully veneered		59,47	4	MDF 334
	Russ Andrews Torlyte Rack	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54,49	4	Torlyte 240
●	Townshend VSSS	1,380	This attractive Seismic Sink retains the same excellent vibration-killing sound quality	76	35,50	4	Glass 273

Speaker stands

Not all stands are made equal - try one of our top buys



Badge	Product	Price	Comments	Top plate size (cm) Height (cm)	Number of shelves Welded	Fillable	Issue number
●	Atacama Duo 6	65	Maintains high standards in mid and treble, with excellent tonality and good detail		17,13	●	1 346
●	Custom Design FS104	190	Gets excellent results out of speakers small and large, and excels in fine detail and precise imaging			●	1 346
●	Custom Design SQ404	220	Robust four-pillar design gives very low coloration and maximises performance	61	18,16.3	●	4 283
●	Partington Ansa 60	119	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	●	4 232
●	Quadraspire QV60	250	This stand helps maximise detail and tonal resolution				1 346
●	Soundstyle Z2	70	Bass can be a little imprecise, but there's plenty of detail on offer		17,13	●	1 346

SPECS KEY **HEIGHT (CM)** Height of equipment support and speaker stand (not including spikes) in centimetres. **TOP PLATE SIZE (CM)** Width by depth of the supporting platform(s). Single figures indicate a square platform (Speakers generally overhang top plates). **FILLABLE** The stand can be mass-loaded with sand and/or lead to stop ringing. **WELDED** As opposed to bolt-together construction. **NUMBER OF SHELVES** To put your kit on (different configurations are often available). **NUMBER OF LEGS** That support the stand. **SHELF TYPE** Material that shelves are made of.

HFC TOP PICKS



Atacama Duo 6 £65
This value-priced loudspeaker stand adds a hint of vibrancy to the sound and there's plenty of life and energy in the midrange and treble



Quadraspire Sunoko Vent T £800
A clever solution to the twin problems of equipment cooling and resonance, thanks to a unique shelf design, makes this a worthy 2010 award winner



Townshend VSSS £1,380
Although not cheap, Max Townshend's skillfully engineered rack nears the ideal in terms of isolation and spending more doesn't really bring big gains

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BACK ISSUES
 +44 (0)844 848 2852 **Prices:** UK £5.95 per issue, Europe £6.95 per issue, rest of the world £7.95 per issue

Distributed in the UK by Seymour Distribution Ltd, 2 East Poultry Avenue, London EC1A 9PT. Tel: 020 7429 4000

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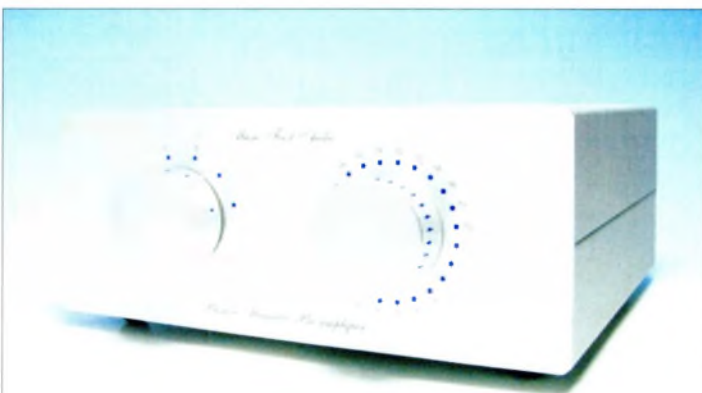
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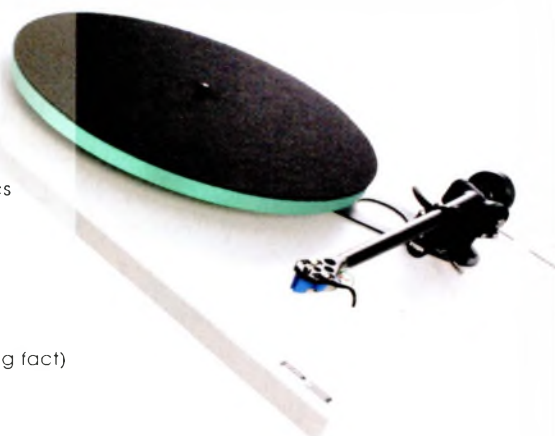
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How to get digital right

Expert **Malcolm Steward** reveals that digital systems are far from flawless after a weekend spent auditioning NAS and hard drives

I thought that 'computerised' audio might make life more straightforward for audiophiles, but I was wrong and I shall attempt to explain why. As interest in networked audio grows, more and more manufacturers are releasing digital streamers/network players. This does not pose any problem because you should not have to drive too far to compare, say, one manufacturer's streamer and another, and then decide which offers you the kind of musical performance and facilities that excite and satisfy you.

But that is not the end of the story. You will then need storage for the music you play through it: for most people this means a NAS (Network Attached Storage) unit that you can hide away on a shelf somewhere and connect to your network with a length of CAT6 cable. Some people will simply scan the internet and buy the excellent VortexBox Appliance (*HFC 377*): others will search computer stores and select something like a D-link or Qnap NAS and fit a couple of hard disks into it. The real masochists, like me, will take the DIY approach and build their storage from the ground up because of the control over hardware niceties this allows. Most, whatever route they chose, will not imagine that this is a truly pivotal purchase and one that will define the quality of the music they will hear. After all, it's just digits on a hard disk, isn't it?

Unfortunately, things are not that straightforward. Many 'experts' see digital music in black and white terms: it is either perfect and works or it is faulty and it doesn't. I regard digital as more of a concept than anything concrete, because during transmission it is only ultra-high-speed analogue square wave signals and equally prone to interference and corruption.

Digital demands

Two professional colleagues – both audiophiles and music fans and one a full-time computer journalist – recently devoted a weekend to listening to different NAS units and, just to add a little spice to the proceedings, also auditioned

different hard disks in one of the better NAS units. You know what is coming, don't you? There were differences to be heard between the presentations of the various NAS units (even models from the same manufacturer) and differences between the sound from the different hard disks. Crazy, I know! It is infuriating too: God forbid but I might be storing my music on sub-optimal hard disks!

Before you pooh-pooh this notion just consider modern disk technology. The most expensive 1TB drive I could find at my preferred computer store costs £90 (exc VAT). The majority are in the £35 to £50 region. Out of that £90 (or £35) the retailer, the distributor and the manufacturer all have to make a profit. Yet the manufacturer still has to squeeze some bleeding edge technology into that 3.5-inch wide, around one-inch deep enclosure. Consider the areal density, alone, of a modern drive: disks store data by magnetically polarising tiny patches of the surface coating on a metal platter smaller than a CD. Seagate has recently announced a disk that will store one-Terabyte on a single platter with an areal capacity of 625 Gigabits (around 78 GigaBytes) per square inch: the three-platter version will offer sufficient capacity to store up to 120 high-definition movies, 1,500 video games, thousands of photos or virtually countless hours of digital music.'

At those sorts of storage densities, with platters rotating at 7,200 rpm or more, you need pretty smart and very speedy error correction. But what happens when it operates? What sort of demands does it place the processor? Processor loading definitely affects sound quality: try listening to music from your NAS while it is enumerating a hard disk after you have added a few albums.

Digital does not always mean flawless. Digital definitely does not mean nothing matters except the loudspeakers because it is all perfect – as one loudspeaker manufacturer would have you believe. Digital opens more doors to more nasty, insidious demons than you can imagine. But I still regard networked music as wonderfully entertaining! ●

Digital opens more doors to more nasty, insidious demons than you can imagine



The VortexBox Appliance: a great choice for the digitiser in you



MALCOLM STEWARD is the former editor of *Hi-Fi Review* and one of the most outspoken reviewers around. He writes exclusively for *Hi-Fi Choice*

WHAT DO YOU THINK?

Should Malcolm's observations about the pitfalls of digital suggest a cautious approach? Email us now: hifichoice@futurenet.com



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