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# 3/13/12012010'S

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Focal's red rocket!

Stratospheric sound marks giant's 30th





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# WELCOME...

Future Publishing Ltd, 2 Balcombe Street, London NW1 6NW 2 +44 (0)20 7042 4000



Hi-Fi Choice has just landed from the world's largest international electronics show: CES, Las Vegas. This year's event was one of the best, with some of the greatest names in audio all under the same roof in The Venetian hotel. Our ears (and eyes) were treated to some spectacular performances from six-figure systems, the likes of which can only really

be heard side-by-side at this international audio showcase.

One notable trend from this year's show was ultimate source quality. CD players gave way to laptops with 24-bit files, and yet at the opposite end of the software scale, we spotted several reel-to-reel tape recorders delivering fine sonics. It was a great year to be in Vegas and our full report starts on p14.

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

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









# THE MOST RESPECTED **NAMES IN HI-FI** JOURNALISM...



# PAUL MESSENGER

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



## JIMMY HUGHES

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



#### RICHARD BLACK

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



#### MALCOLM **STEWARD**

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



# **ALVIN GOLD**

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



# JASON **KENNEDY**

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



# **ED SELLEY**

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

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



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# HI-FI WOR

**BEST LOUDSPEAKER** 







# Dance with an Usher

Jordan Acoustics are proud to have been selected as one of a handful of Reference dealers for the revered loudspeaker brand Usher.

Top notch build quality and packed with technology, Usher has become a significant player in the UK high-end loudspeaker market in the last few years. Their use of beryllium and kevlar for their drive units really does add an extra dimension of realism. Those looking for that 'air and space' to the top end should look no further. They are so good that Hi-Fi World recent announced the Be-10 as their loudspeaker of the year! Quite an achievement considering how densely populated the loudspeaker market is!

Our demo pair of Be-10's has just arrived so come and hear for yourself...

Hi-Fi World in a recent review of the Usher Dancer Be-10 wrote:

" It is unremittingly dynamic too, making music sound 'live' in a way that nearly all hi-fi loudspeakers fail to do. Its massive visceral punch, allied to real silky smoothness and sophistication (when given the right ancillaries to work with) makes it an exceptional loudspeaker by any definition, and a worthy winner of its Hi-Fi World Award." Hi-Fi World Awards 2009

**USHER** 



From ex-Luxman valve supremo Taku Hyodo

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

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

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

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





Winner

Leben Integrated Amp CS-600: £4,700

15% Deposit: £705.00 Term: 24 months

CS-300XS: £2,735

**20% Deposit:** £547.00 **Term:** 12 months

Leben Pre/Power Ama Eambo RS-28C (£4,960) / CS-660P (£7,105)

25% Deposit: £3,016.25 Term: 30 months







(NEW - PRODUCT) UD8004: £2,449.00

20% Deposit: £489.80

UD9004: £5,099.00

Play All...

With performance and flexibility that's closely modelled on Marantz's beautiful flagship UD9004 universal disc, the NEW UD8004 is an absolute steal!!!

List of supported formats includes Blu-ray (BD Video Profile 2 with Bonus View support), BD-R/RE, DVD-V + -A, DVD+R/RW, DVD-R/RW, SA-CD (stereo and multi-channel), CD, and CD-R/RW. Let's not forget MP3,

WMA, JPEG, DivX version 6, Kodak picture CDs, or AVCHD files either. A front panel SD card slot reads SD + SDHC cards as well as miniSD and microSD cards with an adaptor for easy enjoyment of JPEC photos and MP3/WMA music files, too.

It's an impressive list and with UD8004's extraordinary ability to reproduce audio/video to such a high standard, it is arguably the ultimate single box solution under £4,000 - that's saying something! Extremely capable. Unmistakably Marantz.

marantz

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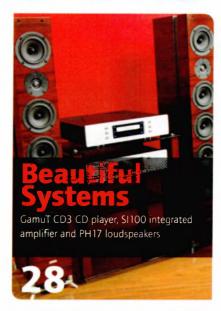
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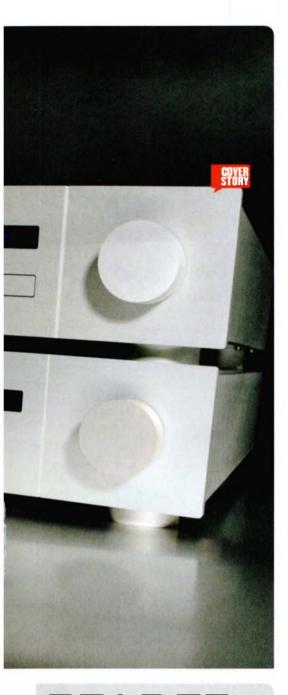






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# ≈COOL GALES

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Give us a **free call on 0800 043 6710** if you need more info or prefer to order by phone. We'll tell you about Clearaudio's newest turntable, the Innovation, which features a high-torque DC motor and electronic optical speed control for stratospherically superb vinyl replay.

**Free delivery** on all orders over £100, including the beautifully minimalist SME Model 10, "the only turntable I've ever seen which makes me think it was produced by a watchmaker" (Ken Kessler, *Hi-Fi News*).



A **30-day money-back guarantee** on most products (details on our website), including the classic Michell Gyrodec SE, which has "unmistakable naturalness and ease, allowing the music to flow unencumbered" (*Hi-Fi News*).

A huge selection of **hi-fi components with style**, like the budget-price-tag-with-high-end-looks Pro-Ject Xpression III, complete with tonearm and Ortofon 2M Red cartridge for only £425.



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# NAM UNITIQUTE \*\*\*

A one-box system that's packed with features

Naim's tiny new arrival is a one-box system built to do almost everything. Behind the OLED display, the non-magnetic chassis houses UPnP circuitry offering FM, DAB and internet radio reception, MP3 playback, iPod connectivity (via the authenticated digital iPod socket) and USB and streamed audio. All digital data from the five S/PDIF inputs is routed to a Wolfson 24-bit/192kHz DAC, whether the file formats are WAV, MP3, Windows Media-formatted, AAC, FLAC or Apple Lossless. Naim has included a digital output too, as a 75-ohm BNC.

Downstream of the DAC is amplification based on Naim's Nait 5i integrated, in this case yielding 30 watts into an eight-ohm load and 45 watts into four ohms. The preamp section sports two sets of line-level

inputs, one the digital/analogue 3.5mm stereo mini-jack on the fascia, the other a pair of RCAs on the back panel. The second 3.5mm front-mounted socket is for headphones. A ground selector switch enables the sound quality to be optimised depending on the source selected

Delivering power to the UnitiQute is a linear supply constructed around a 200VA toroidal transformer, with three separate windings feeding individual power supplies for digital, analogue, and power amp sections. To broaden speaker compatibility, Naim has included a bass management system, which allows the unit to be configured to match either a stereo pair or satellite/sub-woofer combinations.

**Price:** £1,350 **Due:** March **2** 01722 426600

nww.naim-audio.com



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# ⊗ NEWS



The DSi200 integrated amplifier is the first Definition Series component to emerge from Audio Research's Minnesota factory. A radical departure from the firm's usual equipment, it combines a regulated, linear power supply with a high-efficiency, discrete analogue switching-MOSFET output stage. Designed and built in-house rather than from pre-fabricated packages, the DSi200 delivers 200 watts per channel into eight-ohm loads from sources connected via the two sets of balanced or three sets of single-ended inputs.

Released alongside the DSi200 are the Reference 5 line-level valve preamplifier (fully balanced, class-A triode circuitry with zero feedback), and the Reference Phono 2 phono preamplifier (seven loading selections, two separate inputs, and RIAA, Columbia and Decca equalization curves).

Price: £4,998 (DSi200); £10,498 (Reference 5 Line and Reference Phono 2) Due: now 2 020 8971 3909

@ www.audioresearch.com



# **MCINTOSH MXA60** <

The engineers at McIntosh have just unveiled the company's first all-in-one music system, as part of the company's 60th anniversary celebrations.

In its single chassis, the MXA60 houses an AM/FM tuner, CD/SACD player with 24-bit/192kHz Burr-Brown DACs, a hybrid dual-triode preamp and a 75 watt transistor power amplifier. Completing the system is a pair of small, two-way reflex speakers with four-inch mid/bass units and one-inch tweeters.

**Price:** £6,995 **Due:** now **2** 07501 886599

www.macintoshlabs.com





# MERIDIAN 808.3 SIGNATURE REFERENCE

Hand-signed by Bob Stuart and Allen Boothroyd like all 808s, the third generation of Meridian's Signature Reference CD player offers playback from a specially built mechanism based on a custom CD-ROM drive, chosen for its superior data recovery and error correction. In addition to triple first-in, first-out buffering and Meridian's proprietary DSP-based 'apodising' up-sampling system, the 808.3 features improved conversion on its updated analogue input card. There are also twin SpeakerLink outputs to simplify cabling to the company's own DSP loudspeakers.

**Price:** £10,000 **Due:** now **2** 01480 445678

# **WADIA 151 POWERDAC MINI**

News to cheer the hearts of fans of Wadia and Apple: the US outfit has just released a 'PowerDAC' to match the 171i iPod dock. So-called because it adds a current buffer to a Digimaster 24-bit/384kHz upsampling DAC with voltage gain, the 151 PowerDAC Mini can drive loudspeakers of four to eight ohms, delivering 50 watts to the former and 25 watts to the latter. Available in black or silver, the 151 includes two S/PDIF coaxial, one Toslink and one USB input.

Price: £999 Due: now 201992 573 030 





# SONNETEER MORPHEUS SERVER \*\*\*

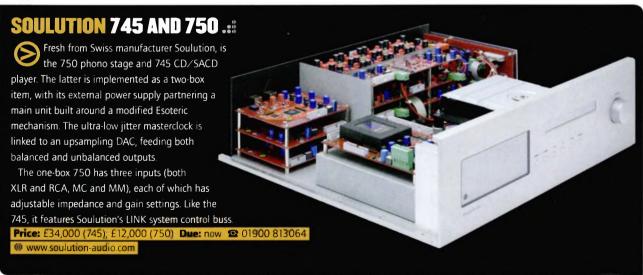
Having produced the sleek, streaming Morpheus Music Centre in 2009, Sonneteer has now added the Morpheus Server. With its built-in CD drive, the Morpheus Server can rip discs automatically to WAV, FLAC or MP3, as well as displaying album art. At the same time, the server can be linked to the Music Centre and controlled via an iPhone or iPod Touch, thanks to an app which can be downloaded for a mere £3. **Price:** £2,500 **Due:** now **2** 01483 566990 **⊕** www.sonneteer.co.uk



# ROKSAN CORUS SILVER

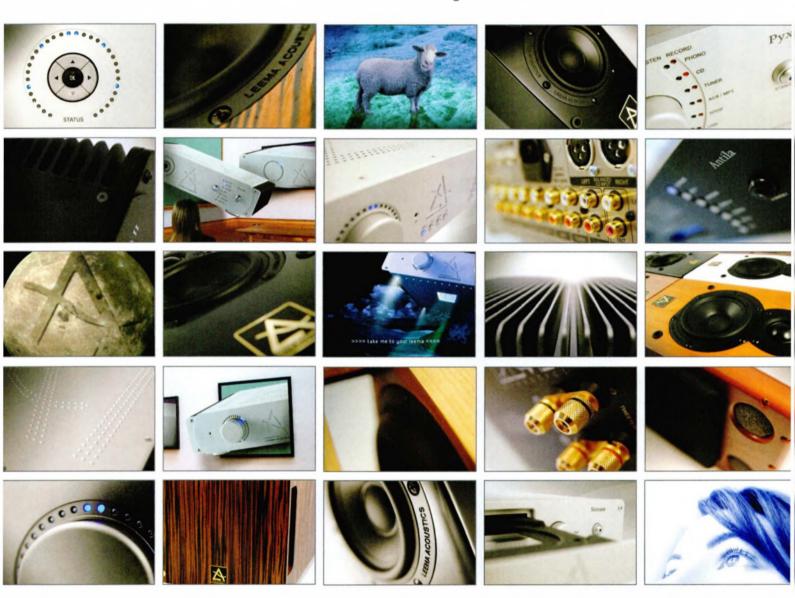
Roksan has launched its new moving-magnet cartridge, the Corus Silver. Based on the company's version of the Goldring 1042, the Silver builds on its acclaimed predecessor with revisions to the suspension and internal wiring. For those who like to ensure their VTF is spot-on, Roksan has also updated its Electronic Stylus Balance (£99), which is now more accurate and solidly built. With a maximum five grams capacity, the balance comes with its own test weight for periodic recalibration if necessary.

Price: £299 (Corus Silver); £99 (Stylus balance) Due: now 





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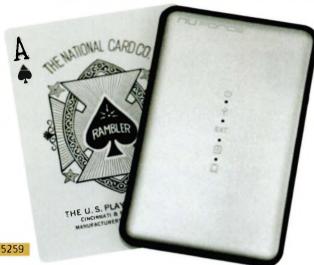


# NUFORCE ICON MOBILE

This tiny American headphone amp and DAC measures just 88 x 55 x 12 millimetres. Inside the black, red, blue or silver case is a USB DAC, which supports 44.1 kHz and 48kHz sampling rates, allied to a headphone amp with 80mW output A gain select switch allows the amp's output to match a wide range of headphones, connected via a 3.5mm stereo mini-jack. Sources are input through the 3.5mm four-pin mini-stereo (with mic) jack.

**Price:** £119 **Due:** now **2**08450 525259

www.nuforce.com



# **SENNHEISER RS 180 %**

Wireless headphones have come a long way since the rather flaky days of early analogue transmission. Sennheiser's new range consists of three models, the RS 160, 170 and 180, in ascending order of price.

The RS 160 is aimed at listeners on the move, the RS 170 at home cinema use, and the RS 180 at audiophiles. Common to all are drivers with neodymium magnets and tranception circuitry. This operates across 16 narrow, switchable bands within the 2.4-2.48GHz range, allowing one base station to transmit the same CD quality signal to up to four headsets, while minimising interference.

Price: £140 (RS 160); £180 (RS 170);

£220 (RS 180)

**Due:** now 2 01494 551551

www.sennheiser.co.uk



# **TERRA INCOGNITA**

Guy Hands' Terra Firma, owner of EMI, has started legal proceedings against the investment bank Citiqroup.

Hands' core allegation is that Citigroup committed fraud in the run-up to the sale of EMI, by leading him to believe on 21 May 2007 that there was another potential buyer interested in the music group and that he would have to table a bid of 265-pence per share by the following morning, in order to become the new owner of the company. According to Boies, Schiller & Flexner (Hands' legal representatives), Citigroup knew that Cerberus Capital Management had already dropped out of the race, with the result that the 265p share price recommendation was deliberately excessive. To make matters worse from Hands' viewpoint, Citigroup was also to provide £2.6 billion to finance the deal.

Posting a loss of £1.3bn in 2008, meant that EMI failed to meet targets imposed in its banking covenants, forcing Hands to inject further funds into the company. Renegotiations on Citigroup's original loan have failed, leading Hands to accuse the bank of attempting to push EMI close to, or actually into, insolvency, so that it could then be sold to Warner.

Citigroup has denied all charges, stating that the case is "without merit" and that it intends to defend the lawsuit vigorously.



# **Soundbites**

ESCIPERIOS software division is offering a series of remasters claimed to feature the highest possible sound quality, captured on the best original master tapes and transferred to CD/SACD using a system, including

system, including
Esoteric's G-ORb Master
Clock and the D-O1 D/A
converters. For vinyl
lovers, 200gm LPs are
also available.

**2** 01727 865488

Dvorak Kertesz

AUDIO-TECHNICA has just released the £25
ATH-T200 and £39 ATH-T300 headphones,
which fill positions in the range previously
occupied by the ATH-T22 and ATH-T44
models. Both new cans
feature 40mm drivers and
3m cables terminated

3m cables terminated with a 3.5mm minijack, as well as dual headbands and a soft support system for long-term listening comfort.

**2** 0113 277 1441

SUPRA'S new CombiCons are multi-function speaker cable connectors. Fabricated from gold-plated beryllium-copper alloy, the modular design allows cables to be attached either along the CombiCon's axis, or at 90 degrees to it. The spade and

banana ends can be interchanged without removal of the connector body. Prices from £30-£35. 22 01223 441 299



TEUFEL has added the Reference loudspeaker and interconnect cables to its catalogue. Apart from the 69 Euro optical S/PDIF, all use OFC copper conductors,

while the speaker cables, priced at 149 Euros for a 2.5m set, are terminated with swappable connector tips (spade, banana and pin).

mww.teufel.eu

The broadcast incarnation of music magazine NME has now moved from being an internet-only entity to a station with national DAB coverage during an eight-month trial period. "We are therefore delighted with this development as it will significantly increase the opportunity to listen to the station across the country," commented NME Radio managing director Sammy Jacob.



# audiofile .:

# SHOW REPORT

# **CES 2010**

**Alvin Gold** shuns the gambling tables for an indepth look at the latest hi-fi gear on offer at the Consumer Electronics Show in Las Vegas

his year's CES suffered to a small extent, from the current economic malaise, so floor traffic was noticeably thin on the ground. While this might have given some of the manufacturers pause for thought, it did make it easier than usual to navigate the various stands and demos.

The drift away from the main Convention Centre became a stampede and most of the key brands were in the impressive Venetian tower suites (pictured right), with its Grand Union Canal on the second floor!

While it may have been a little quieter than usual, CES was still notable for its high-performance audio demos and innovative product launches. Many of these trends are reflected in the stories that we've included in this report, such as the new SACD players from Cambridge and Sony, the increase in solid-state high end and numerous examples of high-performance loudspeakers.

And while there isn't room to include the ultra compact systems which can be driven by iPod and iTouch players, it's worth mentioning Wadia's 176i transport, which is among the first of its kind to work with the native Apple digital output.

Sony, in particular, excelled itself with a couple of significant surprises this year, including a range of Blu-ray players capable of handling SACD and streaming it across the HDMI interface (see page 19). Sony also announced that it plans to be more proactive in the future with an increase in the number of SACD releases. Hopefully, others with pick up on this new trend, because at the time of

# 1. The versatile and compact Cord Click





writing there is still very little music available on Blu-ray

Chord debuted the Click at CES. There are two visually identical versions, which differ only in output power (50-watt and 100-watt). The Click is the core of a miniature high-performance system, one which uses electronics from the familiar Chord range, but condensed into an ultra-small form factor. The Click includes single-ended and balanced inputs, a TOSLINK, digital inputs and a USB.

Magico has a new speaker, the W5, to complement their existing range. It looks pretty ordinary until you see the way it is constructed internally. Pricing is not fixed yet, but it is an unusually complex design, as a cutaway model clearly showed. Expect to pay about £60,000 per pair.

Monitor Audio's newest audio range is its Apex compact speakers. The initial three-model line consists of the A10 stand or wallmounting compact satellite, a larger wall satellite (A40) and a 500-watt sub (AW-12). Each of the satellite's includes a 25mm C-CAM gold-dome tweeter and a 140mm dimpled-cone. The solid enclosure is constructed from die-cast aluminium and available in black or pearl.





A universal disc player with a definite audio focus is the Azur 650BD Blu-ray player from Cambridge Audio. Handling both Blu-ray and SACD, Cambridge have ensured that the sonic side is well catered for with high-resolution stereo, as well as the usual 5.1 and 7.1 variants. An accompanying home cinema receiver, the Azur 650R, boasts seven 100-watt discrete amplifiers to enhance your listening pleasure. UK pricing has still to be confirmed.

Bowers and Wilkins has finally updated its 800 loudspeaker series with the seven-model Diamond range. All of which have been improved across the board, though the standout feature is a higher efficiency quad-magnet, diamond dome tweeter. Bass also benefits from revised magnet structures. Prices range from £1,950 each to £18,500 per pair.

No major introductions from
Nordost this year, but the range has
been tidled up and now includes

bi-wire mono filament speaker jumpers, a range of very effective support cones using different materials and some passive power distribution blocks –which in combination make it easier to optimize complete systems.

Morel's Octave Signature floorstander is unique in that it is comprised of two independent sections, the top-half being the bookshelf speaker and the bottom-half, the subwoofer (both £1,670). Combined, they offer amazing sound, as well as creating a single visual structure. Power handling for the bookshelf is 120 watts, while the sub packs a powerful 250 watts. Available in a black, white and red finish.

Esoteric increased its range this year. The most notable newcomer being the very attractive RZ-1 SACD player, which is combined in a single box with 100-watt (six-ohms, 1 kHz) Class D power amplifier. Features include an MM phono input and a 32-bit DAC. Price is to be confirmed at around £3,995.





# IsoTek®



The power to deliver 'clean' power



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

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

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

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

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

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

01276 501 392

"The whole auditioning process took about 30 seconds. Play a piece of music on GII Mini Sub. Play it again on Aquarius and wonder why you were so attached to the GII Mini Sub." "Very highly recommended" HI-FI PLUS. ISSUE 68,















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First reviewed in issue 327 December 2009



For the PMC IB2



15. Usher diamond dome tweeters

Usher previously majored in Beryllium dome tweeters in its speaker designs. This year they have switched their more flagship models to diamond dome tweeters, with a proprietary metal-alloy base and an amorphous diamond-like carbon layer on both exposed surfaces of its domes.

One welcome surprise at this years Sony launch party was a range of three Blu-ray SACD players. One of which includes full 3D – a major theme at this year's show. Although the retail prices are not yet confirmed, Sony expect all three models to be affordably priced. Most importantly, however, for the audiophile is the fact that each player includes multichannel SACD replay across the HDMI interface

One of the more striking introductions this year was a new Magnepan panel speaker, the 1.7. Driven by a powerful Bryston electronics array, this amazing looking new speaker is just two inches thick and 67.5 inches tall, with a styling that reflects Magnepan's

13. The incredibly slimline
Magnepan panel loudspeaker

earlier ranges, but which manages to look a little more contemporary.

Stereo music was well catered for in the J-corder room, which was awash with none other than 'classic' Technics reel-to-reel tape recorders. Pumping out some impressive sounds through a pair of vintage Epicure tower speakers, these vintage tape machines have been lovingly restored to their original build quality by audiophile Jeff Jacobs. They certainly offered an interesting diversion from all the new kit on display.

We said at the beginning of our report that the show was quiter than in previous years. Yet, after several days of dropping into the various sound rooms and chatting with the manufacturers and their representatives, it was obvious that this year's CES was still full-to-overflowing with new product and exciting innovations.

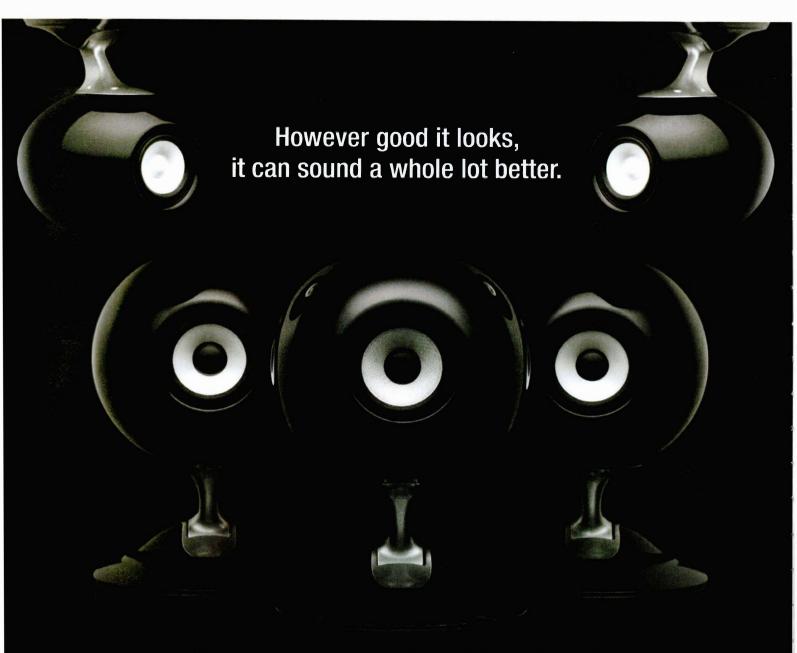
There was plenty of high-end kit to tempt the audiophile, who still has a disposable income, but it was the gadgetry, the inventiveness and the optimistic showmanship that shone through, ensuring that the future for our favourite hobby is everything as spectacular as Las Vegas itself. **HFC** 











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# audiofile



# Richard Black

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

# Technology

Cartridges and their limitations



Mechanical alignment of a stylus and the tilt of a cartridge are critical to obtaining the best results

"Stereo LPs have left and right channels. This means that movement in two orthogonal directions must be accurately converted into electrical signals." As this month's *Ultimate Group Test* (page 64) covers phono cartridges, it seems appropriate to take a closer look at what they do and where their limitations lie. We'll restrict this to magnetic cartridges, which includes well over 99 per cent of cartridges in current use.

A magnetic cartridge works in exactly the same way as an electric generator set. If you move a magnet near an electric wire, you 'induce' a current in the wire – the same, obviously, if the magnet is fixed and you move the wire. That's the basic idea, the real trick being to make the relationship between movement and current linear.

In addition, for the output to be useful, you need quite a lot of wire, so in a cartridge multiple turns of wire are stacked up close to the magnet in a coil. As the names imply, moving-coil cartridges have a fixed magnet and a moving coil and moving-magnet cartridges do it the other way round. The advantage of the MC type, is that the moving mass can be kept lower, the disadvantage being that the stylus assembly has to be permanently wired in to the rest of the cartridge, making stylus replacement a factory job.

Stereo LPs have the left and right channels inscribed on the two walls of the groove, which are at right angles to each other. This means that movement in two orthogonal directions must be accurately converted into electrical signals. It's possible to do this pretty well, but all sorts of factors limit ultimate performance, including the fact that the stylus is attached to a cantilever which is hinged at its top end and the finite physical size of the moving coil or magnet means that the stylus's movements can't be transduced with absolute precision. Simple issues of

mechanical alignment also limit performance, while azimuth (tilt) of a cartridge is obviously critical.

In terms of frequency response, there are three factors which generally define limits, one in the bass and two in the treble. The bass response is limited by a resonance, which occurs due to the mass of the cartridge and of the arm which supports it, coupled with the compliance (springiness) of the support for the cantilever. If the compliance is set just right, the arm/ cartridge resonance will occur at a frequency in the range of 8-12Hz, which is low enough not to interfere with audio reproduction, but high enough not to be easily excited by disc warp information. This is pretty critical, though, and is the main reason why there is so much talk of compatibility of arms and cartridges. Highly compliant cartridges in heavy arms can easily give resonances which are too low for comfort and cause all sorts of overload problems, within the cartridge, and in amplifiers and loudspeakers down the line.

In the treble, the limits are set by groove tracing, which is a function of the stylus shape (a 'blunt' stylus will be larger than the wavelength treble signals in the groove) and by another resonance, this time between the effective tip mass and the springiness of the vinyl material. This resonance is usually in the range of 25kHz to 100kHz, though achieving the latter requires extreme means like diamond cantilevers. This gives a maximum achievable frequency range of 10Hz-100kHz, or 10,000:1 ratio - which is actually better than the recording equipment can manage. Not bad for a system which was invented around 1890! HFC

# SETYOUR MUSIC FREE



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

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

Alan Sircom, Hi-Fi+ (Issue 66)

'The Summit X is just too addictive to live without. I'm putting my money where my mouth is and buying the review pair as my new reference loudspeakers'

Howard Kneller, SoundStage! (September 2009,

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

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# **Adam Hartley**

Adam Hartley is a technology journalist currently trying to reconcile his passion for new music streaming services with his desire to see good artists get paid to make great music

# Lossless music streaming

Spotify is good, but the audio quality needs to be better

"...most of us are still firmly stuck in the 'collector mentality' of simply liking the feel and tactility of physical records and CDs."

y recent dalliances with a range of new music streaming services from the likes of MSN and Sky Songs – essentially unsatisfactory attempts to take on the mighty Spotify – led me to contemplate the whys and wherefores behind the current absence of a truly audiophile-friendly streaming service.

While iTunes offers the option of Apple Lossless file downloads and a number of specialist classical services such as Passionato and leading hi-fi brands such as Naim and Bowers and Wilkins offer their own (rather very good) lossless digital music download services, it would surely seem to make commercial sense for someone to start to offer streaming of very high-quality 24-Bit FLAC files. Not so, it would seem.

"There are a number of reasons why streaming services are yet to offer lossless audio," Spotify's Communications Manager, Jim Butcher informed me, when I quizzed him about this. "One of the main reasons is a lack of bandwidth – in particular in markets such as the UK where internet usage often has monthly caps, so lossless streaming would be impractical for many users.

"A second reason is a lack of consumer demand for lossless as the vast majority of listeners can't distinguish when moving between 320kb/s to lossless – although audiophiles may beg to differ! A third, historic reason, has to do with the record labels only providing lower bit rate files to digital services, although this has begun to change over the past year or so."

And, as audiophiles, we indeed will beg to differ, because we value fidelity and sound quality over and above convenience and speed and 'freemium' ad-supported models. Of course, it should also be mentioned that most of us are still firmly stuck in the 'collector mentality' of simply liking the feel and tactility of physical records and CDs. Plus,

while Spotify is a great service for instantly checking out or remembering old tunes, the sustainability of its longer-term business model is still to be proven over the next year or two.

That said, as soon as more of us have ultrafast high-bandwidth broadband connections, which is really only a matter of a year or two for the majority of Brits, we intend to return to Spotify and others and ask them the same question again.

"There isn't any real demand for lossless streams right now, certainly not enough to justify the extra costs associated with delivering higher quality audio," is how SoundCloud CEO, Alexander Ljung sums up the situation. "However, we are looking at offering higher quality streams for premium subscribers."

As far as high-res downloads go, I've recently been testing out Bowers and Wilkins' online shop, that is part of Society of Sound. You pay £33.95 for a year's membership and you get access to at least 25 albums a year (all in either Apple Lossless or 16-bit FLAC, and the majority also available as very high quality 24-Bit FLAC).

Such stores only offer a limited choice when compared with the likes of iTunes or 7digital, because the focus is purely on quality over quantity. "We also supply CD artwork as part of the package, because we feel that this music sounds best when burned to CD," a Society of Sound rep informed me. Which is a nice touch.

Additionally, these types of lossless download stores are not only distribution services, but they also help to encourage new music. In this case, Society of Sound own the rights to the recordings for two months, after which they then revert back to the artist.

You can head over to blog.bowers-wilkins. com/lab for loads more handy tips on getting the best out of your digital audio set-up. HFC



Bowers and Wilkins' blog website offers information on lossless downloading and digital audio



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# PaulMessenger

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

# Bells and whistles

The integrated amplifier comes of age

"...it was the replacement of hot valves by relatively cool-running transistors that helped the integrated amp come of age."

e take amplifiers pretty much for granted, as one of the more constant factors in the hi-fi system, where change and evolution happens almost imperceptibly. Technological progress inevitably has an impact, but here I'm examining the configurations and the ergonomics, of preamplifiers in particular.

Integrated amplifiers are relative latecomers Years ago, when amps were monophonic and used valves, the power amp would be hidden away inside a well-ventilated piece of furniture, while the preamp was probably mounted through a cut-out in the front. Alongside a volume control and input selector were tone controls and several different EQ settings for disc replay.

Moving from mono to stereo involved adding a balance control (useful, but not vital) and a mono switch (essential for replaying mono vinyl discs). Integrated valve amps had started to make an appearance, but it was really the replacement of hot valves by relatively cool-running transistors that helped the integrated amp come of age.

By 1970, the main marketing strategy of the dominant Japanese multi-nationals was to 'out-feature' each other by adding more and more 'bells and whistles'. This culminated, mid-decade, by the abortive attempt to launch quadrophony, at around the same time that early recognisable signs of a specialist audiophile alternative started to emerge.

Shock and horror was the general reaction when Mark Levinson (the JC-1) and Naim Audio (the NAC12) both introduced preamps entirely devoid of tone controls – in the interests of simplifying the circuitry and consequently improving the sound quality.

TVs and VCRs upped the convenience by offering full remote control by the end of the 1970s, but it came to hi-fi much more slowly. Some brands took their lead from the introduction of CD some years later; others – especially the smaller valve specialists – still ignore remote control entirely.

Once CD had effectively replaced vinyl as the prime hi-fi source, it no longer seemed essential to include the complex active equalisation circuitry required by vinyl pickup cartridges. Tone controls too had long gone and the major sources were now electronically similar in character, so the way was open to replace the traditional preamp with an entirely passive combination of input selector and volume control. A wide choice of separate outboard phono stages now cater for vinyl users.

Numerous integrated amps use such an approach, in combination with high-gain power amplification, but the passive device can also take the place of a traditional preamp and can deliver exceptional sonic value for money, albeit with a rather different character from traditional powered preamps.

There's no mains involved, so no mains-borne interference, but also no buffering. This shouldn't be a problem with the more costly multi-tap-transformer Music First Audio models, which maintain greater impedance consistency across the volume range and should therefore give superior sonic consistency.

Features tend to be limited: although all offer some degree of remote control, none of the above have either balance adjustment or mono switching, which is a pity. But presumably, their extreme simplicity is responsible for the impressive sound quality, especially in relation to price.

But the Music First Audio Mkll's transparency and delicacy can rival anything in the high end Images are tightly focused with fine depth and an underlying freedom from any 'electronic' character gives a refreshingly natural quality unmatched by 'active' preamps in my experience.

Some might still prefer the character of an active preamp. But for sheer transparency, especially when used with valve power amplifiers, I reckon the MkII will be hard to beat at anywhere near its price. HFC



Music First Audio's MkII has a 'refreshingly natural quality'

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# **Jon** *Marks*

Jon Marks has been an audiophile for over 20 years and a contributor to *HFC* for more than four. With over a decade of reviewing experience, he admits a passion for Japanese gear.

# Boot sale bonanza

Searching for the perfect hi-fi bargain

"The re-use of yesteryear's hi-fi gives a true sense of satisfaction, especially as some of it sounds very good once it's been brought back to spec."

number of sub-species, depending, at least, partly on how highly developed is its vital organ, the wallet. Members of the evolutionary branch lines: maximus depositus and chequus rasus, may refuse to mingle in the gene pools frequented by the sub-species financiculus skintus and walleticus minor, but that's their loss, as there's some cracking hunting to be enjoyed in the wilds of the boot sale, audio jumble and internet auction.

For those feeding their hi-fi addiction on an absolute shoestring, the secret is to be savvy and vigilant. It's surprising how close to lughole nirvana one can get with a soldering iron, the survival skills necessary to avoid summary electrocution and the sort of eagle eye which can differentiate an Audiolab pre/power combo end-on from a charcoal grey A4 box file at 90 paces in a dim, drizzly winter dawn.

Even if the only 'jewels' unearthed from the boot of a 1974 Allegro look as if they've been used as wheel props during a tyre change, the perspicacious will remind themselves that what counts is the sound, not the style. You can almost guarantee that whatever electrical goods you buy at a car boot sale will be massively faulty, but look on this as an opportunity to extend your knowledge of electronics and besides, the price is peanuts.

A classic example for me was picking up an Audiolab 8000A for £35 from someone who clearly assumed that, as it was more than 10 years old, it was therefore so far over the hill it had crossed the border into the next sovereign state. I whipped the lid off once I was home (ah, the smell of aged silicon in the morning – much more of a lift than freshly ground coffee!), gave the noisy volume pot a quick squirt of contact cleaner, and the rest was happy listening.

One of my other favourite purchases was a crusty Sansui quadraphonic receiver literally the size of a suitcase. Dragging it back from the boot sale was a sweaty nightmare and it needed a bit of resuscitation and recapping, but once I'd got it fettled, a cheap in-car active crossover between the stereo pre-outs and power amp inputs meant I had a tidy little active system with some two-way speakers sans crossovers

The imaginative re-use of yesteryear's hi-fi gives a true sense of satisfaction, especially as some of it sounds very good indeed once it's been brought back to spec. That said, the biggest rush of all comes from the genuine 'find', a piece of valuable esoterica priced at a few pounds, or the first encounter with an unrecognised giant of the past. These occasions are rare, but their memory lingers for life. For me, the purchase of a pair of Magneplanar SMCa panels, mint, boxed and very, very affordable, was one such moment, as it was my introduction to this beguiling transducer technology. Other examples occurred when I bought a Kenwood KD-990 direct-drive from an ex-Kenwood employee at a knock-down price, or was given a beautiful Sansui SR-929 turntable by a friend who, it transpired, used to work in the company's London showroom on Tottenham Court Road.

Wherever you buy, caveat emptor (let the buyer beware) is usually the order of the day. This works in your favour if you assume everything you buy is likely to be duff and employ 'faulty' or 'spares repair' as your primary search terms on internet auction sites. This can lead to a whole new world of previously unexplored components, which are far too expensive to buy when they're in working order. It's a shame that electronics repair shops are a dying breed, as there are some very capable engineers out there who can find and rectify problems without charging the earth.

As you can probably tell, the moral of this story is to keep your options open; hi-fi can reward an open, inquisitive mind with previously unimagined listening pleasures, regardless of whether your wallet overfloweth or not. HFC



Classic hi-fi kit can pay dividends if it's restored to its former glory





# **Brand loyalty**

Hi-fi compatibility from a single source

here was a time, when the idea of buying a complete hi-fi system from one manufacturer was unthinkable. The logic, it seems, was simple enough. How could a single manufacturer come up with the 'best' component in each individual category?

It was argued in the best hi-fi circles, that the know-how required to make a great loudspeaker was not much help when it came to designing an amplifier. And, being able to produce a class-leading amplifier doesn't automatically mean you can create a great CD player. Brand loyalty? What's that? Choose each component on merit, regardless of who makes it or where.

The very ethos of hi-fi separates was its total 'bespoke-ness'. The idea was to cherry pick each component, so that you'd end up with the best sound your budget allows. However, the counter argument is also compelling and goes something like this...

#### **PERFECT MATCH**

Buying a matched system from a single manufacturer ensures super compatibility. By choosing components specifically designed to work together, you end up with a hi-fi system that's greater than the sum of the parts.

This neatly brings us to this month's *Beautiful System* from Danish company GamuT. Its solid-state CD3 compact disc player and Si100 integrated amplifier are well-built and beautifully styled, while the Phi7 loudspeakers look breathtakingly beautiful and impressive to behold

But is this the Real Thing, or merely a triumph of style over substance? There was only one way to find out. We sampled the amplifier and CD player first, the original intention being just to listen casually – giving the GamuT items time to settle down.

## **BLINDED BY THE LIGHT**

However, from the off we were struck by the crisp brilliance produced by these two GamuT components. The sound has a tactile immediacy that is hugely impressive. Sharp, detailed, exciting; the music seems to project from the speakers with impressive focus and precision.

The Si100 and CD3 sound impressively immediate and clear. The music all but came over and shook hands with you – you didn't have to go searching for it. The result is engaging... and highly involving. Yet, despite its brilliance, the sound is very open and natural – it isn't tiring or harsh.

The amplifier is a powerful, yet compact integrated design, delivering 130 watts into eight ohms and 200 watts into four ohms. It offers good driving ability and produces plenty of sonic impact and bite – though its main attribute is subtlety and finesse, rather than brute strength and ignorance. What's more, the build quality is superb.

## **SAME HYMN SHEET**

Add the Phi7 loudspeakers to the mix and the impression of clarity and detail is augmented. The speakers actually seem to enhance the qualities mentioned above, the sound is forward, but beautifully balanced.

The loudspeakers are 124 centimetre tall floorstanders, featuring no less than six drive units – five 105 millimetre woodpulp cone drivers for bass/midrange and a 25 millimetre 'Dual Concentric Ring Radiator' soft-dome tweeter for treble – the latter specially designed for the Phi series by Lars Goller

Clearly, GamuT has created a system comprised of three components, all singing from the same hymn sheet. The result is lively and energetic, with impressive sharpness and immediacy. The tonal balance is certainly crisp and lucid, but not over bright. Overall, the sound is very open and free from obvious coloration.

#### LINE OF SOUND

This sort of drive unit array is known as a line source – so-called because the



E4,700 Integrated CD player using Burr-Brown PCM 1792 24bit/192kHz DAC sampling. Offers balanced and unbalanced analogue



#### GamuT Si100 £4,450

French-made integrated amplifier producing 130 watts into eight ohms (200 watts into four ohms) Offers four unbalanced inputs and two balanced inputs (via three-pin XLRs).



£3.940

Three-way floorstanding loudspeakers featuring six drive units in a Line Source configuration. Has a special Ring Radiator tweeter, and five 110 millimetre woodpulo, mid/bass units.







speaker creates a vertical 'line' of sound, rather than a narrow point source. There are several advantages to this. For starters, the bass/mid units can be kept small, improving midband performance.

With five drive units moving the air, the combined 'cone area' is quite large. So you get excellent coupling to the air, without the drawback of a large/heavy single driver. A surprisingly complex 18 element crossover is employed. Sensitivity is 90dB and the speakers have a four-ohm impedance.

With the speakers producing a 'line' of sound, you experience a soundstage with added height and scale – essentially, the sound seems subjectively bigger, with increased presence and power – as though emanating from a larger area. As a result, the music has greater presence and depth.

## **OUTSIDE THE BOX**

On good recordings, the Phi7 proves capable of creating a very holographic 'out of the box' soundstage. Instruments and voices locate precisely and you experience a sense of pin-point placement from left/right extremes to the centre – and (more importantly) the places in-between.

The sound is very transparent and coloration seems vanishingly low. With

some loudspeakers, the listener needs time to acclimatise – you need to get used to the way they present things. But with the Phi7 there is no need – the sound is just 'right'.

#### LORD OF THE RINGS

The cabinet is ported, with separate chambers (and ports) for the lower and upper bass/midrange drivers. The tweeter is an interesting 'dome' type, with a large pointed stainless steel 'Ring Radiator'. We feel sure that this unusual tweeter plays a big part in creating a crisp, open tonal balance and excellent high-frequency cleanness.

As previously mentioned, these speakers seem to 'place' voices and instruments in space with remarkable precision. But it goes further than that. Sitting over to the right, physically close to one of the loudspeakers, we were surprised at how audible the distant (left) speaker sounds. Its output isn't masked by the louder/closer right speaker.

#### THE FAR RIGHT

Most twin-channel systems 'beam' if you sit away from the centre line – the stereo balance shifts over to the side you're closest to. But with the GamuT system, this does not happen. Despite sitting over to the far right for part of the time,

the left speaker could still be heard clearly. Initially, we put this down to the tweeter's Ring Radiator creating clearer leading edges and crisper transients. However, it's not the only reason; the CD3 and Si100 also play a surprisingly large part. Something that we soon realised, when briefly replacing the Si100 amplifier with a Musical Fidelity kW preamp and kW-750 power amp.

Coing over to the big MF pre/power combination, our first reaction was that it sounds 'better'. Specifically, the soundstage seems bigger and more full-bodied, with a richer/warmer tonal balance. However, this proves to be a rather superficial evaluation, as there is another difference, which is far more important.

## **HEAVY HORSES**

Playing Jethro Tull's *Heavy Horses*, the GamuT system reproduces the complex multi-tracked mandolin and acoustic guitar parts with great clarity. But, via the MF, the detail no longer seems clear. The sound is just as sharp, but the various individual instruments do not assert themselves as clearly.

The Si100's outstanding clarity and separation enables you to follow individual voices and instruments as they come and qo. As a result, the



music sounds far more interesting and varied – you can hear each distinct line and follow it easily, rather than having your attention taken by whatever is loudest and most dominant.

# TWIDDLY BITS

Loads of little twiddly bits are apparent – with lashings of fine detail to delight and beguile the ear. Yet at the same time the recording sounds solid and cohesive as a whole. The music (and performance) hold together, as though cut from a single piece of cloth – despite being something of a patchwork quilt.

After making these amplifier comparisons, we realised why we'd enjoyed listening to this GamuT system over Christmas and New Year. It's not just good in hi-fi terms, it's every bit as outstanding musically. You're presented with huge amounts of fine detail, but in the process, the overall musical picture is never compromised or sacrificed.

The Phi7 speakers produce a very clear/clean bass, albeit not massively deep or powerful. The low frequencies extend to about 40Hz and sound is rich and full. But, at 20Hz, sine wave tones are reproduced with a fair bit of 'chuffing' and some doubling.

The addition of a good subwoofer (or two) to bolster the lowest frequencies

would add extra richness and bass weight, while further enhancing the ability of the system to produce three-dimensional holographic stereo images that float free from the speaker boxes.

#### WHAT ABOUT THE SOURCE?

And what about the GamuT CD3 CD player? This features a non-magnetic steel chassis that has three isolated internal compartments for the digital and analogue circuits and power supply. There are separate power supplies for analogue and digital, as well as a Burr-Brown PCM 1792 24-bit/192kHz DAC.

Sonically, the CD3 is very much from the same mould as the Si100 amplifier and Phi7 loudspeakers. It offers comparably crisp clarity and produces lots of fine detail. Despite its sharpness, it sounds very clean. The separation between individual instruments and voices is exceptionally good.

This enhances the 'holographic' qualities referred to earlier – it heightens the sense of voices and instruments breaking clear of the loudspeaker boundaries and floating in free space. The CD3 has balanced analogue outputs (plus normal unbalanced ones), so it's possible to use these with the Si100's balanced inputs for even better sound.

#### **DISC FAULTS**

Our only complaint is that the review CD3 seems oversensitive to slight disc faults. It almost seems as though the player's error correction is not doing its job. In particular, the CD3 doesn't like hybrid SACD/CDs, and on quite a few, you hear a rhythmic 'chuffing' sound through the speakers.

As it's very rare for any good modern CD player (let alone one at this exalted price) to do that sort of thing, this was hopefully a fault on the review model.

# **BUILT TO LAST**

The build quality of this GamuT system is exceptionally solid and confidence-inspiring. Each component looks and feels very classy. Whether it's the one millimetre-thick brushed aluminium front panels, or the handsome wood veneers on the speakers, the impression is one of good quality.

Certainly, the individual components that make up this GamuT system are of the highest standard. But, more than that, they combine to produce results greater than the sum of the parts. If you favour a crisp lucid sound with the utmost fine detail, you'll find it difficult to get anything better than this – even if you cherry pick! HFC

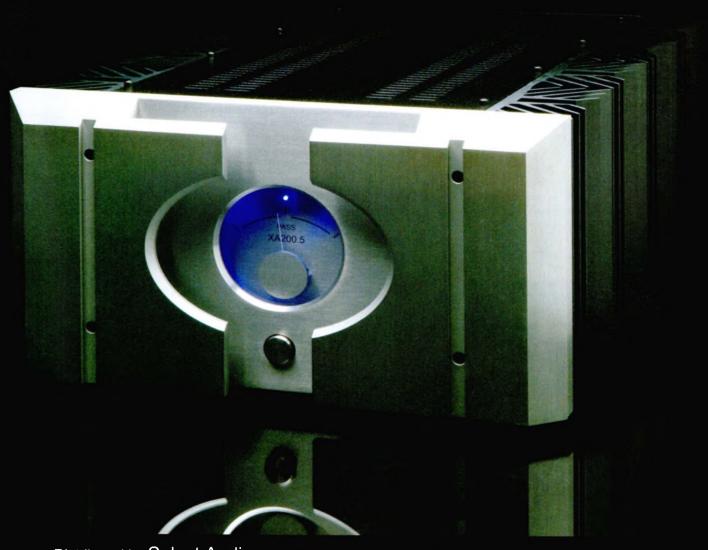
Jimmy Hughes



# Pass Labs by the numbers:

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

.....and counting



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



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#### **ULTIMATE GROUP TEST**

# CARTRIDGES £495-£1,100

- **67** Goldring Legacy
- **69** Grado Reference Master 1
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# **COMPUTER AUDIO CABLES** £10-£105

- **80** Ixos XDF03
- **80** Kimber USB Silver
- **81** QED PS3 controller cable
- **81** Wireworld Ultraviolet 5/2



## **OUR RATINGS EXPLAINED**

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

, nor an point here is a to the job of

ie tris with mararitz's #800 player, the 17 MkII M, which has excellent build and e a very good impression in HEC 243. At same price there's also the Cyris 7, a ng all-rounder in a compact case. ter trying the Heart with the standard s we switched over to the Siemens

grade, a comparison somewhat muddled by ie fact that it was a cold for hot swap - the s had been on for smeral days with the Our overall conclusion

w tubes shone hrough. The Siemens-equipped player has ar in snappier sound with better timing that es with dense material with remarkable

tou can find ware civilised players for th money. But few combine dynamics with fine timing skills as effectively as this. HFC

lason Kennedy

**VERDICT** 

The things we like most about the product

The things we think could be better

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

## OUR AWARD BADGES EXPLAINED



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



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

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



# A right impression

The 20.1 CD player and 15.2 amp are a perfect wedding of high-end know-how!

PRODUCT Mimetism 20.1 & 15.2

TYPE CD player and integrated amplifier

PRICE E5,107 (20.1); E5,415 (15.2)

KEY FEATURES (20.1) Size (WxHxD): 13x43x47cm Weight: 18kg
 Digital outputs: S/PDIF RCA, AES/EBU XLR O Analogue outputs: XLR, RCA Rated power: 180 watts (8 ohms), 360 watts (4 ohms) Inputs: 2x XLR, 4x RCA phono Outputs: fixed/variable XLR & RCA

CT 2 020 8971 3909

imetism is the least famous name in Absolute Sounds' select Absolute Studio product range. It sits alongside Dartzeel amplifiers and the Continuum Caliburn turntable, as an example of what new companies can bring to the high-end market. Mimetism is a collaboration between William Andrea from France, who does the engineering, and Yvan Coderey from Switzerland, who conceived the industrial design. Their creations are distinguished by casework that could be a minimalist's wet dream - there is not a single letter or number on the front panel of either unit and just two knobs with which to operate them.

This control system is initially confusing, but surprisingly intuitive once you start pressing and turning the knobs. We even managed to open the disc drawer on the 20.1 CD player without resorting to the manual, but that was largely luck. Click the right hand knob anticlockwise twice and out comes the drawer. Alternatively, familiarise yourself with the variations on the usual control graphics on the Zap remote handset and you're away

Both these units are unusually long - their feet would sit on our conventional depth rack but not without jutting over the edge. This wouldn't be a concern if the units could grip glass, but every time you plug in a lead it's difficult to stop them from sliding forward The 47cm case depth is significant enough to warrant a dedicated or custom built support system for aesthetic reasons, if no other, but at this price you probably aren't going to shove them on any old equipment support

If the sound quality is anything to go by then it's obvious that the Franco/Swiss team has been paying attention to detail under the lid The 20.1 CD player has an ATAPI interface

DVD-ROM drive, which runs at high speed and streams its output to a Crystal CS8416 receiver, the latter being a low-jitter device that recovers the clock from the incoming stream. An asynchronous sample rate converter upsamples the signal to 192kHz and passes it on to a Wolfson WM8740 DAC, which provides a balanced output. The analogue output stage

devices to the speaker terminals there is clearly no shortage of grip on tap.

Functionally, the 15.2 allows you to change the name and relative level of inputs, the latter by plus or minus 10dB, which should be enough to have all your sources coming through at around the same level - source material notwithstanding. It has outputs

# ...should a fault occur, then Mimetism employs a protection system to stop this behemoth from destroying your speakers."

uses FETs, while the digital output goes through a pair of in-house transformers to isolate it from the power supply. Six separately regulated power supplies run the player from a single 100VA mains transformer.

The 15.2 amplifier manages to double its output into a halving of load, something that you rarely find with integrated designs - but then again not many integrated are this big or expensive. The circuit employs high-tolerance, surface-mount devices, in order to keep signal paths short, while amplification is provided by two pairs of Hitachi MOSFETs per channel. Each channel has its own 60,000 microfarad power supply with separate windings on a 1.000 VA toroidal transformer providing the juice. And should a fault occur, then Mimetism employs a protection system to stop this behemoth from destroying your speakers. With solid copper bars connecting the output

# **WILLIAM & YVAN**

William Andrea has worked with some of France's foremost companies. His resume includes developing active loudspeakers for Supravox. He also worked for FAMCO (French American Company) where he developed the Nuance and Plenitude pre/ power amplifiers. After designing the P-UN preamp and PP-UN phono stage for Yves Cochet, he went on to work for Phlox where he developed products for the YBA name. At Vecteur, Andrea created the wellregarded Club Twelve/ I-6.2 integrated amplifier (£1,845) in 2003. Yvan Coderey owns the store L'Audiophile in Lausanne, Switzerland and distributes various brands as Audio Synthese. What connected the pair were the equipment supports that Yvan designed and which were distributed by Vecteur in France.



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ARCAM \_ th \_ A'TETT H Receiver, BECHOCOLATE a new brand from Belgium, launching the Puroh all in one system. CABASSE – three new speaker launches, Ambrose 3, Bora and Santorin 30. CHORD ELECTRONICS – the Cyan Click and CPM 2800 digital amplifiers. JVC – reveal the XIVIEW LT-32WX50 LCD Monitor only 7mm thick. KEF – The radical new Concept Blade is making its UK debut. MONITOR AUDIO – demonstrating the new Apex Series A10AV12 5.1 system. NAIM – the UK launch of the UnitiQute, compact, digital streaming, all-in-one audio player. PMC – the fact8 floorstander making its Show debut. PROAC – showing the new Studio 140 Mk2 loudspeaker. REGA – the first outing for the Isis and Osiris reference CD player and amplifier. Also, bring along your Rega turntable and get it serviced by Rega's trained staff, visit the website to book your turntable in! REL – New G1 (Gibraltar) Series sub woofers. SENNHEISER – see and hear more new models! SIM2 – Mico 50 LED projector, C3X Lumis projector and much more... VIENNA – the new Klimt Series KISS speaker.

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BY CAR: From the M4 take J19 (M32 - Bristol). Follow signs for City Centre and RAC signs to the Show. For those using satellite navigation systems the hotel post code is BS1 3AD.

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The Cabot Circus Car Park has over 2500 spaces. It is easily accessible from the end of the M32 off Newfoundland Street.

# ADMISSION

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In RCA phono and XLR form that can be used in absolute and relative modes - the former being full signal for a recorder and the latter being variable for a subwoofer or second power amplifier. As the weight suggests, construction is on the solid side. with a 10mm aluminium front plate, 10/15mm 'processed iron' chassis and a 10/15mm aluminium top plate, with damping to minimise resonance.

#### **SOUND QUALITY**

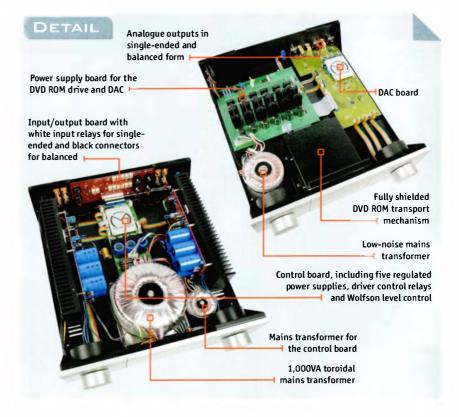
Once we'd got some idea of how the two knobs operate these components and had hooked them up to our Bowers and Wilkins 802D loudspeakers, the fun began. We first auditioned this pair an hour or so after turn on and heard a lively, enthusiastic and unusually dramatic result that was highly atmospheric, but perhaps a little too effusive. The result after the system had been on for three days is distinctly more relaxed and refined. The lack of a power button on either front panel is not merely for aesthetic reasons. Now the sound is strong on detail, as well as substance, the timing is better than average, and the dynamics are right on

What became clear with continued exposure, is that the Mimetism pairing can deliver a lot of detail without the slightly etched quality that detailed systems often have. It seems entirely natural in balance, thanks to very clean high-frequencies and power reserves that allow it to control the speaker without making a big deal of the fact.

#### ABSOLUTE STUDIO

We talked to Absolute Sounds' MD Ricardo Franassovici about his Absolute Studio collection and the thinking behind it. According to him "There are a lot of people making stuff out there that is supposed to be high end, but they don't have the vision to do what it takes to make a serious high end product. To do that you've got to be able to do a few laps around the circuit and then make it five, six or ten times. For the Studio. I looked for smaller brands which have already got to this stage, which have a track record - companies that have proved themselves.

We also asked how he came upon Mimetism? "I listened to players from all the underground companies that fulfilled the criteria mentioned above and it [the 20.1] was the one which was the best that I could find at that price according to the Studio's philosophy of sound." That philosophy is that "there is in the flow of music something that's made to caress your senses. An organic quality that sound has, you don't need to be an audiophile to appreciate this, it's not in the beat, it's in the complete envelope and this is what Studio systems deliver."



A tough test of this sort of thing is Schubert's Winterreise D911 leider (Schäfer/Schneider). where the high female voice can reveal the slightest insecurity in the treble. The Mimetism pairing is more than equal to such a task, producing a strong image of the singer which really stood out.

The heavily treated sounds of Cornelius' Sensuous album are reproduced with greater depth than usual and it's easy to hear the harmonics of each note. The shades that combine to produce each sound are readily apparent because the presentation is calm without being slow. The bass harmonics on a loosening guitar string are particularly rich and solid from a three-dimensional point of view.

Comparing the 20.1 CD player with a couple of alternatives (at admittedly lower price points) revealed a bit more. Next to the Leema Antila, it is significantly more detailed as well as more relaxed and effortless. The Onix XCD50 is slightly better at creating image depth, but can't compete in terms of dynamics and allows the 20.1 to show of its remarkable ability to create a sense of musical presence, thanks to a revealing midband and solid, yet articulate bass. It took an MSB Platinum DAC III to improve on the 20.1 and that is the Signature version with the Mimetism providing transport duties

Bettering the 15.2 also proved difficult. In fact, none of our sub £5,000 amps could come close. Only the very impressive, but single input Digital Do Main B-1a at £6,500 managed to deliver a more natural and fluid result. The only area where it could be bettered is in a sense of grip. The better pre/power amps in the price range have more welly, especially in the bass.

That the Mimetism 20.1 and 15.2 come out of such analysis so well, is a testament to their fundamental strengths of highresolution combined with very clean power. It's not the most dynamic or speedy system but it's a lot better than most in these respects and many others. It may be a new name, but the pedigree of its makers has ensured that the results should propel it into the first degree. Mimetism looks like another winner for the Absolute Studio. HFC

Jason Kennedy





# iChoose quality?

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

#### The Music Chain

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

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

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

#### Hi-Fi Connoisseurs

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

#### Specialist Hi-Fi Retailers

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

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

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

#### Future of Recorded Music

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

### **STAR QUALITIES**





#### **OUR TOP 20 UK HI-FI DEALERS**

#### SOUTH

Ashford, Kent SOUNDCRAFT HI-FI 40 High Street.

01233 624441 Chelmsford

RAYLEIGH HI-FI 216 Moulsham Street. 01245 265245

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

East Grinstead

AUDIO DESIGNS 26 High Street. 01342 328065

Kingston-upon-Thames

INFIDELITY 9 High Street, Hampton Wick. 020 8943 3530

**AUDIO VENUE** 36 Queen Street. 01628 633995

Ravleigh, Essex

RAYLEIGH HI-FI 44a High Street. 01268 779762

Southend-on-Sea RAYLEIGH HI-FI

132/4 London Road. 01702 435255

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

#### LONDON

**Ealing** 

AUDIO VENUE 27 Bond Street. 020 8567 8703

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

**SW11** 

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

#### **SOUTH WEST**

**AUDIENCE** 14 Broad Street. 01225 333310

GULLIFORD HI-FI 97 Sidwell Street. 01392 491194

#### **MIDLANDS**

Banbury OVERTURE

3 Church Lane. 01295 272158

MUSIC MATTERS

363 Hagley Road, Edgbaston. 0121 429 2811

FRANK HARVEY

163 Spon Street. 024 7652 5200

**CYMBIOSIS** 

6 Hotel Street. 0116 262 3754 CASTLE SOUND &

VISION 48/50 Maid Marian Way. 0115 9584404

#### **NORTH**

THE AUDIO WORKS 14 Stockport Road. 0161 428 7887

**ACOUSTICA** 01244 344227

17 Hoole Road.

#### **Gateshead**

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

MOORGATE ACOUSTICS 184 Fitzwilliam Street. 0114 275 6048

SOUND ORGANISATION 2 Gillygate. 01904 627108

#### **SCOTLAND**

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

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

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

#### Glasgow

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



# Speaker's corner

Focal's latest loudspeaker is a fine performer at a bargain price

PRODUCT Focal Chorus 826W LE

TYPE Floorstanding loudspeaker

**PRICE** £1,879

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red loudspeaker on these conservative shores! Is Focal having a laugh? It would seem not, but the company did get caught out. It ordered lots of satin-black stock, only to find that dealers actually like the red version instead. So, perhaps, British tastes are not so unadventurous as they sometimes seem. The red looks superb and is rather less pillar box in the flesh than it appears in the company's literature. There it's called satin imperial red and has a depth to it that's highly seductive.

This new limited edition version of the Chorus 826 floorstander was produced to celebrate 30 years since Jacques Mahul started Focal-JMLab in St Etienne with one employee back in 1978. A few more years (and employees) later and Focal now has 15 per cent of the domestic market with the majority of its turnover made for export.

There is a standard version of this speaker called the Chorus 826 V (HFC 287) and that costs some £530 less than this W LE version, so what's the deal? Well, the deal is in the letter W - this indicates the presence of W composite cones in the bass and midrange drivers. This is the cone type found in Focal's Electra range, which starts at £2,649 (for the standmount 1008 Be 2), and replaces the polyglass cones of the standard version. A 'W' cone is a sandwich of glass fibre skins with a foam core, a combination which provides high stiffness in a very light cone. In this instance, new W cones have been produced to suit the 826 with a different thickness of glass leaf skin and a foam thickness that matches the acoustic requirements of this particular loudspeaker.

It's surprising that three cones per side can make this much difference to the price of the speaker, but this is partly because Focal makes all its own drivers in France – which like the rest of Europe is an expensive place to manufacture. Divide £530 by six to get just over £88, so if you factor in distributor and

dealer margins, this starts to look more reasonable. The most convincing argument for paying the extra, however, is the sound, but we'll come to that shortly.

The Chorus 826 is a well-proportioned speaker that sits on a cast alloy base, which leaves a gap for the downward firing reflex port to vent through. A second port fires forwards – this is a speaker that likes to breathe. The base, which is bolted on, has easy to adjust spikes in its four corners. These have a Torx socket for which the appropriate key is supplied. The key can be kept in the grille.

The MDF cabinet is built with non-parallel

to their environment, by which it means the temperature and the humidity, rather than the colour scheme of your living room. They certainly sounded a bit more relaxed after a few days in the well-damped environs of our dark and mysterious listening room.

It's been a long time since we heard the standard 826, but it never sounded like this W LE version. This thing has incredible get up and go, a vivacity and turn of pace that refuses to be ignored, a little excitable perhaps, but very exciting. There's something Tiggerish about it to be honest – it wants to bounce with the music thanks to the way

## "...this W LE version has incredible get up and go, a vivacity and turn of pace that refuses to be ignored."

inner walls to minimise internal reflections and damped with acoustic wadding. Externally, it's flanked by wedge-shaped panels, which give the cabinet an attractively stealthy shape and just might help with imaging. The central section is finished in black acrylic, which looks fabulous and adds a bit more stiffness than a veneer. Connections are of the single pair variety, because Focal would rather you used a single type of speaker cable only. It obviously doesn't like the idea of someone bi-wiring with different cable flavours and changing the sound in an unpredictable way!

The drive units start with a pair of 165mm bass units using the aforementioned W cones. Their centres are covered by a large and relatively flat dust cap. At 300Hz, these hand over to another 165mm cone, but one with a phase plug at its centre, which covers the midband up to 3kHz. From there, duties are taken on by one of Focal's signature inverted metal dome tweeters – this is the aluminium and magnesium example found across the Chorus 800 range. The theory behind the inverted dome is that it allows optimal energy transfer from the voice coil to produce wide dispersion - a theory that has been accepted by Wilson Audio, which uses Focal tweeters in its high-end speakers.

#### SOUND QUALITY

Focal is keen to point out that the W cone drivers in this speaker take a while to adapt



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■ those W cones can stop and start with such alacrity. The degree to which this is the case varies quite considerably with how it's placed in the room and what amp you drive it with. With a calmer amp you get a more restrained result, but with something dynamic like the Mimetism 15.2 there's a liveliness to the music that is addictive.

It's not all energy, however. Energy is very appealing but it can become a little wearing over time if not tempered by some finesse. Fortunately, the 826 W LE is not unsubtle and can resolve fine detail with relative ease. It proved quite easy, for instance, to differentiate like-priced CD players in terms of image solidity and tonal rendering. If anything, this speaker needs a refined source to temper some of its exuberance, but that is probably a matter of taste. If you want a thrill-powered musical experience, then a dynamic front end will do the trick.

Part of the reason for the taut, fast sound of this speaker is its relatively lean bass. It extends down adequately for its size, but does not push for more depth in the way that standmounts and some floorstanders often do. It trades off floor-shaking powers for

#### **FOCAL TIMELINE**

- 1980 Focal launches Dual voice coil midbass drive units.
- 1981 First inverted dome tweeter created.
- 1984 Multi-ferrite magnet structure developed to optimise cooling of the voice coil.
- 1986 Poly-K sandwich cone built with Kevlar sheets and a core of hollow beads.
- 1988 Deposited Polyglass, silica beads and cellulose pulp membranes used to make competitively priced cones.
- 1993 Titanium dioxide used to coat a titanium dome to produce the Tioxid tweeter.
- 1995 Cones developed with a 'W' membrane sandwiching a structural foam core.
- 1995 Telar 57 used to make magnet systems with high induction/ low saturation and reduced bulk for tweeters.
- 1995 Focus Time Principle places bass, mid and treble drivers in a semi-circle for improved imaging.
- 1996 Utopia range introduced.
- 2001 Optimum phase crossover removes phase difference between mid and treble elements.
- 2001 Gamma cabinet system created to minimise vibration.
- 2002 Focus Ring and Power Flower magnet structures made for Utopia models.
- 2002 25 micron pure beryllium diaphragm tweeter with response up to 40kHz.
- 2003 Utopia Beryllium range introduced.



nimbleness. You can fine tune this balance with proximity to the wall. The closer it gets to room boundaries, the weightier the bass becomes at the expense of speed. As the latter is the rather more enticing quality, the tendency is to give the speaker room to manoeuvre. Then you can hear the harmonics more clearly, thanks to extra midband openness – something that this Focal excels in. It's also very strong on timbre so it's easy to pick out the character of different acoustic guitars when they are playing together, for instance, and there's plenty of differentiation between voices.

Bringing in a real world amplifier, in the shape of Arcam's well-regarded A38, inevitably reduces the thrill power as a £4,000 drop in price usually will, but the result remains informative and engaging. The speakers turn in excellent pace and good scale whenever the recording has it to offer. One piece, the female voice and piano of Schubert's Winterreise (performers: Schäfer/Schneider) is positively beautiful thanks to remarkably open, full scale imaging and a well-judged tonal balance. The Cyrus transport and DAC source was probably also beneficial in this instance; its unusually clean character proving well-suited to this superb recording.

Under the harshest conditions we can muster – a single speaker in the middle of the room, which is about the most revealing way to assess a speaker – the 826W reveals a slight boxiness that's evident in a tendency

toward imprecision in the upper bass, and a degree of loudness.

By comparison, PMC's smaller and less expensive GB1 is a little cleaner, though the mid and bass lines are a bit tidier and only slightly less extended.

So if it has a weakness, it is towards exuberance and that's hardly a sin. In practice, it makes for tremendously entertaining and engaging music that revels in fine detail as well as energy. This combined with its remarkable build quality for the money, makes the 826W LE something of a bargain and a great looking one at that. **HFC** 

Jason Kennedy





# Musical box

Pinnacle's new music server takes on the competition...

**PRODUCT** Pinnacle Audio Folio

TYPE Music server

**PRICE** £2,039

KEY FEATURES Size (WxHxD): 30.6x10.5x36.5cm ○ Weight: 12kg ○ Hard-disk size: 250GB Separate PSU RAID back-up Nokia web tablet (3 Touch-screen tablet control

**2** 0845 868 6588

usic servers were once the preserve of custom installed systems, being more at home with speakers in the ceiling, motorised projector screens and outrageous price tags - but things are changing.

Thanks to the iPod, we all want easy access, having our entire music collection in a single device, for instance. Enter then, a new breed of server. Of course, it does have to compete with the mighty iPod itself, which when plugged into a suitable dock forms a small, ergonomic and versatile music server. We looked at examples from Wadia (HFC 321) and MSB (HFC 324) last year, both of which attempt to raise the audio standard that can be achieved and in many respects this is what newcomer Pinnacle Audio is up against.

The Folio is an attractively cased server that

link also allows you to take music from the PC and for the device to update itself automatically over the web. This system might seem complex, but it does mean you can control the Folio with a high-quality touchscreen interface like the Nokia - you can easily pay more than the price of this server for a multi-room style interface from AMX or Crestron, so it seems quite good value. Pinnacle is looking to replace the Nokia with an Arcos Android device next year and this will be able to upload the music on the HD and operate as an MP3 player, among other features.

On the formats front, it supports WAV, FLAC. Ogg Vorbis and MP3 at between 128 and 320kbps, while a format option tells you what the pros and cons are. FLAC appears to be the favourite. WAV is described as offering no quality gain over FLAC and is therefore not recommended.

The interface takes a bit of getting used to, but once mastered you can do most things by using your finger rather than the stylus. It's quite easy to assemble a play list or just play an album, and once you understand that it won't play the rest of the album if you select just one track, you're away. Getting an album onto hard disk is as simple as pushing it into

with a short lead - so short you'll need to put it on the same shelf or very nearby. Apparently, this cable has to be short because it reduces the amount of regulation required in the player itself. Audio connections extend to analogue in and out (variable) plus digital out on coax and optical sockets. There are also two USBs, an S-video output for a monitor and connectors for multiroom installation.

#### COMPRESSION **FORMATS**

The technology that has enabled the existence of music servers and MP3 players is file compression. This means reducing the amount of space that a digital music file takes up. This can either be done in a lossy fashion which is what you get with MP3, WMA and the like, or in a lossless style such as FLAC or Apple Lossless. The more lossy the system, the less space it takes, but the more information that is lost.

Music can be compressed to various bit rates under MP3, including so-called CD quality 320kbps. But not only do you lose supposedly unimportant detail, but you gain a type of distortion that's peculiar to compression systems. This can be heard as a hissy echo of the music and, in reasonably resolute systems, it's not hard to notice with many types of music. This is why we recommend you use lossless compression if you need to save space and uncompressed WAV if you have plenty of it.

## "On the formats front, it supports WAY, FLAC and MP3, while a format option tells you what the pros and cons are..."

comes in three alternative drive sizes: 250GB, 500GB and 750GB, with the price per gig coming down as the HD expands (note that prices are due to go up at the end of March). Being RAID devices, they have two HDs onboard - one acting as a back-up should the main one fail. This is something you don't get with an iPod in the full sense, although the chances are the music will have been loaded from a PC where it might still reside

The Folio is controlled by a web tablet, in this case a Nokia N810, a slick and compact device with a touchscreen and a hidden keyboard that you can use to quickly search for a track. It controls the player via your wi-fi router, so the Folio also has to be connected to the same router with an Ethernet cable. You could put a wireless bridge on the back of the Folio, but Pinnacle prefers the reliability of a cable. This

the slot drive - the system will rip it and find title info and album art via the router. Pinnacle's aim with this product is to make servers simple and on this level they have certainly succeeded.

Beside the main unit, the Folio has a separate linear power supply in a chunky case





















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#### SOUND QUALITY

Being aware that audio enthusiasts are loth to involve computers with sound systems, Pinnacle has made set up very straightforward. Pretty well all you need to do is remember the password for your wi-fi router and type this into the web tablet when prompted. Allowing the Folio to browse the music you have on your computer is slightly less obvious, but easy really, even if you're a technophobe. And, of course, you don't need to do this at all if you just want to load discs onto the drive itself. Usefully, it can burn copies of playlists or albums for you, but is less useful when it comes to telling you when a disc's worth has been amassed - rather it will ask for another blank disc once it has loaded the first

We loaded up a number of familiar albums onto the Folio and with most of them the system was able to find album and track titles online. A couple of obscure compilations required manual title input, but this is reasonably easy to do with the Nokia QWERTY keypad.

Playing back WAV files via the analogue output is not the most thrilling experience if you are used to a decent CD player. Put the same material on a £350 Rotel RCD-06 and you'll hear a lot more space and tonal detail. The saxophone on *Take 5* sounds rather synthetic on the Folio, but is clearly a brass

# THE STORY BEHIND THE FOLIO

The Folio music server is the brainchild of Pinnacle engineers Andrew Gatt and Phil Napper and, as Andrew explains, came about through a desire to combine two distinct technologies.

"At some point in their life most people look at something and think, 'I could do that - actually, I could do better than that', and that's what we did with the Folio music server. Phil and I are both engineers who love listening to music and whilst there are clear advantages to having your music in a centralised store that can be accessed from anywhere at random, we wanted to retain the performance of our much loved CD players. The Folio combines a computerised storage system with the performance of a hi-fi separate, giving us the best of both worlds.

"The Folio appeals to the audiophile more than the technophile, because we engineered it that way. Our system is deceptively simple and deliberately so: it is all about the end result of listening to great music; not complicated gadgetry requiring a PhD to run it. Support is also key to our approach and the Folio will continue to receive upgrades, making it future-proof."

As well as aiming to attract the hi-fi aficionado, Pinnacle now plans to extend the range, adding zone clients to create a multi-zone system with which it can expand into other markets.



instrument on the Rotel. The CD spinner is also a lot better at extracting the dynamics and timing cues. Use the coaxial digital output of both, however, and the differences are pretty much ironed out. An external DAC transforms the folio and upgrades the Rotel to put them on a level playing field.

We also hooked up both the Folio and a G5 Power Mac to the Cyrus DAC X+ with optical Toslink cables and played the same WAV files with both. Here the Folio showed its advantage by delivering greater bass weight, subtlety of timbre and imaging, alongside a more open and clean midband. So while it's not in the same league as a dedicated hi-fi source, it's got a lot more going for it on its own than a Mac set up in this fashion.

There are, of course, rather better ways of getting music out of a computer and into a hi-fi system and the most popular among these are the Squeezebox digital streaming units. Devices that stream music (wired or wireless) from the PC to an amplifier or DAC. Linn also makes several DS products at prices that suggest very high quality is on the cards.

The other option is the iPod itself. When combined with a Wadia 170iTransport this ubiquitous device gets surprisingly close to the sound of a dedicated CD player. You don't get all the features on offer from the Folio, but you get some others if you have an iPod Touch, for instance, and on a sound per pound basis this is hard to beat.

One possible reason why Pinnacle is not convinced about the potential of WAV, is that this player is not transparent enough to reveal its advantages, however slight they might be. This is a server for the music lover who doesn't want a complete custom installation nor the need to have his or her music stored on a PC. Therefore, as long as you hook the Folio up to a decent DAC, it can deliver the goods. But this rather undermines its easy to use ethos and we can't help thinking that better internal D/A conversion and a fixed level output would make it a rather more interesting product. **HFC**Jason Kennedy





# **Current clean-up**

IsoTek unveils its latest mains conditioner in the battle to offer improved hi-fi sound

**PRODUCT** IsoTek Aquarius TYPE Mains conditioner PRICE £795 KEY FEATURES Size (WxHxD); 44.5x8.5x30.5cm Weight: 9kg Inputs: 6 (2x13A, 4x5A) Power consumption: Less than 0.5 watts Protection: Circuit breaker/fuse **2** 01962 852727

soTek came on the scene a few years back as a specialist in mains filtering and conditioning and it has remained constant in that aim. After a very brief hiatus early in 2009, the company is now back in business and continues to evolve its range. This particular filter is a replacement for one of the most significant and best-selling IsoTek products, the 'GII Mini Sub'. Positioned above the entry-level products such as the Sirius and basic IsoPluq/ NeoPlug filters, but well short of the high-end Titan and Nova, it could still look like quite an expensive luxury to anyone not yet convinced of the virtues of dedicated mains conditioning.

Like most midrange mains conditioners, the Aquarius has several outputs - six, in fact. They are not simply connected together inside, however, but are to a large extent individually filtered. Two of them are high-current outputs intended to feed power amps and these two are connected in common through a large common-mode choke within the unit. The other four outputs are suitable for lowercurrent devices (though their five amp rating means they can perfectly well be used with the thirstiest of source components and, indeed integrated or power amps of lowish output). Each of these has its own set of filtering components; inductors, capacitors and transient absorbers

There has been plenty of discussion among tech-heads as to what kind of filter is most suitable for high-performance audio applications. It might, at first, appear that there aren't many variables, but in fact there are dozens of them, the most significant being the way filters affect the three mains wires (live, neutral and earth) relative to each other. In the ideal situation, apart from the obvious need to maintain 240-volt AC at 50Hz between live and neutral, there should be no voltage difference at all between the wires. If those simple conditions are met and all hi-fi components are fed from the same conditioner so that they all see the

high-frequency noise without compromising performance in terms of power delivery. The use of separate filter subsections for each output, in principle violates the rule suggested above, of feeding all components with exactly the same mains signal, but is a sensible compromise that recognises the nearimpossibility of achieving perfect filtering (in this or any other electronic application): more importantly, it prevents one component in the system from interfering with others via the mains.

In addition, the whole design of the Aquarius is such as to allow large currents to be

## ...with amplifiers of all kinds, there is almost invariably a considerable gain in both analytical precision and musical insight."

same 'ground' reference, mains quality will have been optimised.

Of course, putting that into practice is a good deal more complicated than it may sound, due to all sorts of factors. One of the problems filter designers must deal with is the way audio components draw a current from the mains that is highly non-linear, containing dozens or indeed hundreds of harmonics. Because of that, there is a real possibility of 'over-filtering', limiting the current that the audio equipment actually needs to operate at its optimum and finding the balance between that and genuinely useful filtering is where all the clever stuff happens. In addition, mains interference covers a vast spectrum and includes both relatively low-level noise and occasional high-voltage spikes

IsoTek's approach is fairly gentle in filtering terms, seeking to limit the amount of very

#### IN COMPARISON

IsoTek is far from the only name in the game. Comparisons with other mains conditioning products from Russ Andrews, Isol-8, and PS Audio, to say nothing of 'high street' brands such as Belkin, could be interesting, if hard to arrange as few dealers will carry more than one or two of them. We were able to try a few alternatives and, by far, our strongest recommendation is to use a mains filter - most of them are clearly beneficial. Among the upmarket brands at least, differences are small: but we felt that this is one of the most successful in marrying increased detail with unaltered tonality. One side effect of mains filtering can sometimes be unexpected changes to the tone of the bass in particular, but we detected no such effect here.



# DEFINITIVE AUDIO

















- 1. CEC TLOX Belt Drive CD Transport
- 2. Living Voice OBX-RW Loudspeaker in Ebony
  3. New Audio Frontiers 845 SE Integrated Amplifier
  4. KSL Kondo Neiro Integrated Amplifier
- 5. SME 2012A Turntable with KSL Kondo iOJ Cartridge
- New Audio Frontiers KT66 Legend Integrated Amplifier
   Kore-Eda LLA-1 Control Amplifier & PLA-1 Power Amplifier





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drawn without either reducing filter effectiveness or causing more basic risks such as overheating, lscTek has even fitted a 20-amp IEC mains inlet to maximise safe current handling, arguably a sensible move, not least because it reduces the chance of a user absentmindedly connecting up using a low-current IEC lead. Of particular note is the very highsurge current ability in the face of transient over-voltages on the mains. Realistically, the capability here is vastly in excess of what one might ever expect to see in practice, which should give peace of mind at least. Overall fault current protection is provided by a circuit breaker for the high-current outputs and a fuse for the low-current ones.

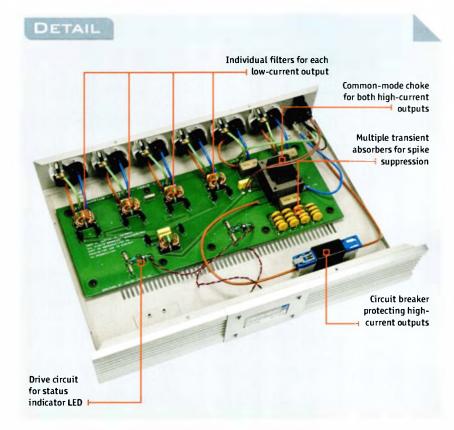
#### **SOUND QUALITY**

If there's one thing that all mains conditioning designers, vendors and users agree on, it's that the precise nature of results for a given unit will vary a little depending on what units sources and amplifiers - it is supplying. It's clearly useful to try any conditioner with various components and we accordingly tested this one with quite a wide range of sources and amps, including trusty old favourites, units kept for just such eventualities, as well as units that had been submitted for review. We can't pretend to have been truly exhaustive, but we did get a pretty clear idea of what an Aquarius purchaser can expect.

At worst, the improvements wrought by the Aquarius are small. At no time, though, did we feel that its addition to a system (compared with no conditioning at all, that is) was a cause of back-sliding in sound-quality terms. Neither it, nor any other conditioner we've tried, has a

#### WHAT DOES A MAINS **FILTER DO?**

The whole point of a mains filter is to remove electrical signals that shouldn't really be on the mains in the first place. Although it is supposedly a pure voltage source with clean, undistorted 240V/50Hz and nothing else, in practice the typical wall socket also puts out spurious signals at a range of frequencies, from harmonics at 100Hz and above, to high radio frequencies picked up as stray radiation from mobile phones and so on. That's a frequency range of at least ten million to one, and that's what the filter should deal with. Some of the signals, especially those at the highest frequencies, will tend to be at pretty low levels but some, including telemetry signals deliberately injected onto the mains by the utility companies, can approach the level of audio signals in interconnects. In general, while most of these signals will have little or no effect on most audio kit, almost all audio electronics seems to be affected to some degree by some of them - hence the usefulness of a good filter.



vast effect on LP turntables, though if you have a socket spare after plugging in more sensitive components a turntable is still likely to benefit. Its effect on a couple of high-end CD players was also quite mild, probably because both machines have clearly had attention paid to mains filtration internally.

At best, the lift in performance is quite remarkable. Particularly with amplifiers of all kinds - pre and power, valve and solid state, high and low power - we found that there is almost invariably a considerable gain in both analytical precision and musical insight. It feels rather as if the recording has just been brought into slightly sharper focus. In fact, a visiting listener put this rather nicely, when he commented that it sounds as if one has just found the original LP, having previously been listening to a good cassette copy.

We were scarcely less impressed by the effect on a handful of mid-range CD players. There seemed here to be rather more variation in the precise nature of the improvements but again we heard more precision and in a couple of cases what sounded like more bass - obviously impossible, taken literally, but explicable as clearer reproduction of low frequencies leading to better perception of musical instruments operating in that range.

Perhaps the most obvious improvement was yielded when we tried the Aquarius with an elderly, but very fine FM tuner, which really stepped up a gear and, in slightly similar vein to the CD players' bass, seemed to acquire a little extra treble extension too. In this case, it really did sound as if a new model of tuner had been put into the system.

That brings us to the hard question: how do the improvements relate to a full-scale upgrade, say to the next model up a manufacturer's range? On the whole, we'd suggest they are typically of about that order or, perhaps, a little less. On that basis, if you have to choose between, say, a £1,000 amp plus Aquarius or a £1,800 amp from the same range, generally it's a no-brainer – go for the latter, or even a £1,400 model. But one Aquarius can feed a whole system and will most often be an upgrade. As such, it's actually very good value as it can lift a fundamentally competent system by more than one is likely to achieve spending a similar amount elsewhere. On that basis, we're more than happy to recommend it. HFC

Richard Black



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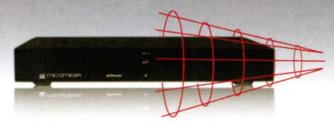
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# **Snakes alive!**

Multi-faceted DAC headphone amp will appeal to the audiophile

PRODUCT iBasso D4 Mamba TYPE DAC/headphone amplifier **PRICE** £225 CONTACT № 0800 756 9564 @ www.ibasso.com

n HFC 326, we reviewed iBasso's D10 Cobra, a well-featured DAC and headphone amplifier with both USB and S/PDIF inputs, as well as a line input. The D4 Mamba is a very similar device, but lacks the S/PDIF option and comes in a slightly smaller case, 92 millimetres long, instead of 104 millimetres. (The other dimensions being a width of 55 millimetres and a thickness of 21 millimetres).

Like other models in the iBasso range, it is intended to function as an upgrade for portable music players, boosting their headphone output in both quality and quantity. (Before anyone mentions that loud listening is bad for you - which is certainly true - we should point out that many upmarket headphones are distinctly less sensitive than cheap in-ear models and are thus only semicompatible with the well-intentioned limited output of many portable players.)

Small it may be, but this device includes not only a USB receiver chip, but also a pair of Wolfson DAC chips and enough op-amps and passive parts to match the performance of full-size hi-fi components. It derives power either from the USB input or from an internal  $% \left( 1\right) =\left( 1\right) \left( 1\right)$  PP3 battery. This is another difference from the D10, which has a built-in rechargeable battery. iBasso estimates the battery life at nine hours; we actually got a little more than that, but, of course, batteries vary from make to make and listening levels will have an effect too.

As with the D10, it's possible to tweak the unit by replacing the internal op-amps. We didn't try it – the fitted ones are good parts and we didn't have any suitable replacements handy - but it's nice to see the odd manufacturer catering to die-hard tweakers. iBasso even supplies a tool for removing the

hooked up a PC and had some fun. With lossless files stored, a computer is a perfectly good 'bit bucket', but some kind of external DAC is pretty much obligatory unless you have one of the few really good soundcards (most of which cost a lot). For home use, one might choose something larger than the iBasso with phono socket outputs, such as the Cambridge Audio DacMagic, but with a laptop computer this unit really does provide audiophile quality on the move.

In fact, with some upmarket Shure earphones plugged in, we were hardly aware that we were listening to a portable system.

## "...this little piece of kit has an astonishing command of frequency range and musical dynamics, which it reproduces with aplomb."

front panel, which you will need to do to change op-amps or to change the case: a replacement black case is supplied in case you don't like the default charcoal grey. Operation is straightforward once you're used to the fact that the 'Aux' socket is an output when the USB digital input is used, or an input when the source is analogue.

#### **SOUND QUALITY**

Obviously a USB input is there for the computer-based music collector, so we



Taking things to extremes, we connected up a pair of Grado GS1000s and were confident enough of what we were hearing to contemplate doing critical editing and mastering in rural surrounding. Although the very finest details of instrumental timbre and stereo imaging may be better brought out by some larger and dearer units, this little piece of kit has an astonishing command of the frequency range and also of musical dynamics, which it reproduces with real aplomb.

As an analogue amplifier, it is no less confident. It doesn't give quite the same sort of quality lift as most portables, but its increased level and drive ability do still result in improved clarity and definition. If you don't need the D10's S/PDIF input, this is a very fine way to improve the quality of music on the move. HFC

Richard Black





# Room sound

This new model in Monitor Audio's high-end Platinum range is a good all-round performer

**PRODUCT** Monitor Audio Platinum 200

TYPE 3-way floorstanding loudspeaker

**PRICE** £4,750

KEY FEATURES Size (WxHxD): 25.5x100x28.5cms Weight: 33kg Drivers: C-CAM high-frequency ribbon tweeter, 100mm midrange, 2x 165mm bass Magnetically attached grille Alloy/Nomex RDT sandwich cones (a) Mineral-loaded resin matrix baffle Complex curved back and sides

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roudly displayed on the substantial packaging that protects Monitor's PL200 loudspeaker, is the reference to 1972, the year in which the company was founded. It's an instant reminder that Monitor Audio now qualifies as one of Britain's longest established speaker brands, especially among those still in UK ownership.

Back in the 1990s, its very successful Studio range led the line, featuring deep-anodised 'C-CAM' metal diaphragms, but 1997 saw a change of ownership. A new design team headed by Dean Hartley came in and steadily upgraded the product portfolio by working its way up the price ladder.

The Studios evolved into Gold References (2000), then the Gold GSs (2006), but 2007 saw a further step upwards and towards the high end with the introduction of the first two Platinum models: the Platinum 100 two-way standmount with 165mm bass/mid driver; and the 300 three-way floorstander with two 200mm bass drivers

These two clearly left room for the recent arrival of this £4,750 Platinum 200, which could be said to split the difference. In truth, it's much closer to the 300 than the 100, as it shares the same midrange and treble drive units, but the use of twin 165mm bass drivers allows it to be significantly smaller and lighter than the 300, without necessarily incurring too great a performance penalty. Furthermore, it seems likely that this middle model of three may well prove the best match for the typically modest dimensions of UK rooms, in terms of relative bass level

As its substantial pricetag suggests, there's a whole lot of serious engineering going on here and no-one could possibly complain about the exceptional quality of the finish either. Indeed, so good is it that, one might be inclined to

wonder whether it was given priority over the engineering content. Happily though, that doesn't seem to be the case.

The outside is beautifully finished in highgloss lacquer (no fewer than 11 layers, in fact) over high-quality real wood veneer -

similar looking 100mm driver with a 90mm cone, while the tweeter is a ribbon device with a mesh-protected 7x 55mm diaphragm. When we first took a look at them, the cone diaphragms look suspiciously similar to the alloy-based units that are used by MA's earlier

## '...it seems likely that this model may well prove the best match for the typically modest dimensions of UK rooms..."

our samples came in a lovely and subtly patterned ebony, while Santos Rosewood and piano-black lacquer are also on the menu. The back and sides are formed as a continuous curve, with slightly convex sides, a slightly concave back and quite gently curved edges. (This unusual shape is created by laminating together relatively thin, ie bendable, layers of MDF with the help of a jig/press.)

The front panel presumably accounts for much of the speaker's considerable 33kg total weight, as it's made from MA's ARC (antiresonance composite) of mineral-loaded resin, though this is tastefully concealed beneath a top-quality charcoal grey leather trim.

Four bolts clamp the back panel firmly in place and an appropriate Allen key is supplied to keep the tensions well maintained. A generous flared reflex port exits around a conical protuberance, which possibly aids the airflow, but is actually the back end of the encouragingly large and sensibly shaped ARC midrange driver enclosure

The whole thing sits on a handsome and reasonably substantial moulded plinth, again in ARC, which ensures a fine stability footprint and secure accommodation for the hefty and rather elaborate floor-coupling kit. The latter provides rubber-tipped discs for wooden floors with screw-in (though not particularly sharp) 'bullet' spikes for carpets. Twin platinum-plated terminals allow separate feeds to the twin bass drivers and the mid-plus-treble pair, for bi-wiring or bi-amping.

The three-way driver line-up is similar to those that are already used in the established Platinum 300, though the latter's twin 200mm bass drivers are replaced here by twin 165mm units, each of which has 120mm diameter cones, and is reflex loaded by the aforementioned rear port. The midrange has a

Studio models, but in fact they use a sandwich construction that Monitor Audio calls RDT. These are ultra-thin deep-anodised magnesium/aluminium alloy skins bonded to a Nomex honeycomb centre, which create a 🔼



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■ diaphragm that is not only considerably lighter, but also much stiffer than anodised metal alloy alone.

#### **SOUND QUALITY**

Those lightweight cones are very effective in delivering a generous sensitivity of around 90dB according to our far-field in-room measurement technique - exactly corresponding to the manufacturer's claim. While the load presented to the amplifier is easy to drive through the midrange and treble, it's more demanding at low frequencies, recording a 3.30hm minimum in the upper bass.

The in-room frequency response is also exceptionally smooth and well ordered through the midrange and treble (above 500Hz). However, below 500Hz, where room reflections and mode interaction play an increasingly significant role, the low frequency output was rather uneven.

Even with the speakers located well clear of walls, there's no avoiding the substantial and clearly audible excess around 50Hz, for which the output of the 43Hz-tuned port must be held largely responsible. And since said port has a curious annulus shape, neither modifying its tuning nor blocking it is really practical.

Auditioning was carried out over several weeks, using Regalsis and Naim CDS3/555PS CD players, a (modified) Linn Sondek LP12/ Rega RB1000/Soundsmith Strain Gauge turntable/arm/cartridge, and a Magnum Dynalab MD 106T tuner as sources. Amplification included a Rega Osiris and a Naim NAC552/NAP500, plus some prototype valve power amps. Cables were from The Chord Company, Vertex AQ, Phonosophie and

#### **RIBBON TWEETERS**

Ribbon transducers are by no means a new technology - a German microphone used the principle way back in 1924 but their use as tweeters does seem to have become increasingly prevalent in recent years. Factors that might possibly be responsible include improved, higher bandwidth sources; more powerful and compact magnetic materials; and the enthusiasm of Chinese manufacturers.

The principle is actually very simple - rather more so than the regular and otherwise almost ubiquitous dome devices - because the ribbon itself takes the place of both the voice coil and the diaphragm of the regular tweeter. The ribbon not only carries the signal current from the amplifier, it also forms the surface that actually radiates the sound. Consequently the positioning of the magnets has to be completely reorganised, creating an even magnetic field across the face of the thin conductive (ie metal, or in this case C-CAM) ribbon diaphragm. Wide lateral dispersion is ensured by using a slim (7x 55mm) ribbon.



Naim, and equipment supports from Mana, Vertex AQ, Naim, and Townshend

While the Platinum 200's bass performance was less than perfect under our conditions. this is very much 'a speaker of two halves', as the midrange and top end are guite brilliant. The tonal balance is lovely with superb neutrality and vanishingly low coloration, alongside an almost magical freedom from boxiness. Stereo imaging is consequently excellent with no tendency to hug the speakers. It also offers realistic spaciousness and depth perspectives.

Essentially sweet and open in overall character, the beautifully judged voicing has a clean and airy expressiveness. Furthermore. the dynamic range is outstanding, while dynamic expression is also very decent, with at least a modicum of grip. And even though the bass had a slightly lumpy character, along with some lack of tension and an occasional tendency to thump, it's actually basically clean and rather enjoyable.

In practice, the output of any loudspeaker system (mono, stereo or multi-channel), through the bass and lower midband in particular, is invariably and substantially modified by largely unpredictable variations introduced by room interaction effects. The bass unevenness here is therefore only partly the responsibility of a speaker system which could well give smoother results under different room conditions.

However, provided some care is taken to ensure that the bottom end works well in the intended listening room, the Platinum 200 is something of a star. Though undoubtedly costly, this is at least partly due to the almost obsessional application of top quality ingredients and partly justified by the outstanding voicing, sweetness and freedom from boxiness throughout the midrange and the treble.

In other words, this speaker not only looks exceptionally beautiful, it also has a delightfully open character without any attendant harshness. HFC

Paul Messenger





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PRODUCT Cyrus CD Xt SE+/DAC X+/PSX-R

TYPE CD transport, DAC and power supplies

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KEY FEATURES (CD Xt SE+) Size (WxHxD): 7.3x21.5x36cm Weight: 3.5kg Digital inputs: DAC X +: S/PDIF via RCA phono and TOSlink Digital outputs: CD Xt SE+, S/PDIF via RCA phono and TOSlink Analogue outputs: RCA phono, XLR (DAC X+ ) Size (WxHxD): 7.3x21.5x36cm Weight: 4.6kg @ (PSX-R) Size (WxHxD): 7.3x21.5x36cm Weight: 6kg

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yrus is one of those companies that won't let things lie. It can't stop itself from tinkering and tweaking with its products in a constant push to make them as good as it possibly can. This means that you are always buying up-to-date technology with its components, even if this is a little frustrating for customers who have just bought the previous version. But at least the upgrade is readily available and usually costing no more than the difference in price between the two incarnations of a component.

It doesn't seem that long ago that we were assessing the SE version of the Cyrus CD Xt SE transport (HFC 316) and here we have a new + version of both it and the partnering digital-toanalogue converter: the DAC X.

The long winded CD Xt SE+ name indicates that this CD transport incorporates the company's servo evolution (SE) technology, something which Cyrus invested in heavily in order to be able to offer a transport that focused purely on audio requirements, rather than the data retrieval goal of off-the-shelf

servo systems. SE achieves improved laser control, which means lower data errors, and thus, less need for error correction. The + part of the suffix is what differentiates this transport from its more affordable predecessor. In practice, it means that it has a re-clocking circuit based on a close-tolerance crystal VCO (voltage-controlled oscillator) located at the threshold of the signal drive circuit in an effort to kill jitter. And naturally it has an extra power supply onboard to drive this PLL (phase locked loop). The circuit also has revised star earthing and has been re-tuned for this version.

When used as a standalone unit the toroidal

obvious changes over its predecessor are more likely to be down to a process of re-voicing the converter. The DAC X was originally voiced six years ago when it was launched, and before the SE project was even conceived. So it was considered an apposite time to bring the sound up-to-date, in order to take advantage of the improvements wrought in the transport. So in physical terms the changes are relatively small, but sonic expectations are raised

The DAC X+ re-clocks the incoming signal, which can be fed in via optical TOSlink and electrical RCA phono inputs at a range of sample rates. Inputs can only be selected via

## "For the DAC-X+, Cyrus has revised components in the power supply for both analogue and digital sections...

transformer uses two separate windings to feed the servo motors and power the reclocking circuits. By adding a PSX-R power supply, the more current-hungry job of controlling the motors (which drive the laser mechanism) is given over to the outboard unit.

In terms of outputs, it's only lightly sprinkled with TOSlink and RCA phono digital outputs, alongside sockets for the Cyrus Link bus system. The remote is the same as you get with any Cyrus component and not the most attractive of devices, but it's more practical than many custom-built handsets.

For the DAC X+, Cyrus has revised components in the power supply for both analogue and digital sections, but the most

the front panel not the remote - a function saved for the DAC XP version as this is also a preamplifier. Outputs are in RCA phono and two lots of XLR balanced form. The specs don't specify which chip is used for D/A conversion, but it runs at 24-bit/192kHz, as is the voque these days, so there is onboard upsampling to bring the CD's 16-bit/44.1kHz signal up to that rate. When a PSX-R power supply is added to the DAC X+ it supplies the analogue output stage thereby separating the most sensitive part of the system.

#### **SOUND QUALITY**

We were encouraged to give these units a thorough run in and it was not hard to hear





why. Soon after arrival they sounded pacey and upbeat, but also a bit dry and grainy. Once the four boxes had been spinning for a few days these characteristics disappeared and the sound became richer and cleaner, while maintaining the strong sense of timing that's there fresh out-of-the-box. The CD Xt SE+ is a little more fussy than normal about the discs it's prepared to play, however. It wouldn't spin certain CD-Rs and took a disliking to our Barb Jungr SACD on Linn Records - a disc that has never been refused by previous players. When we brought this up with the company it said. "Our servo code is designed by Cyrus in-house to take data off the disc with the fewest errors and this means that we have to make choices about some of the less than perfect CDs. Having said that, we are constantly improving the code to accommodate some of the TOC variants."

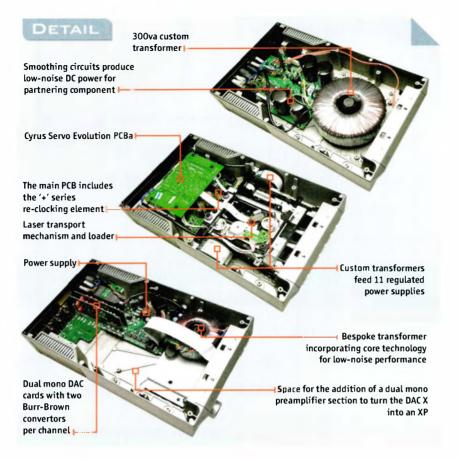
Fortunately, it was happy with most of our collection and did a good job of revealing the music within it. The sound that Cyrus has given the DAC has clearly changed since the last version - that tuning process can be heard in a slight loudness curve that emphasises bass and treble just enough for it to be apparent when playing at high level. It's the sort of balance that works better at lower levels – at normal listening levels, to be frank, because it brings out the power in the bottom, and the sparkle at the top. It's not quite as natural sounding as the dearer Mimetism 20.1, but it's clearly more focused and calm, if less dynamic than the Leema Antila that we use as a reference. The Cyrus is rather better at reaching into the mix and bringing out subtleties of tone and the depth of feeling that such details can evoke.

#### CYRUS HISTORY

Cyrus started out as the amplifier brand for Mission loudspeakers in those heady days when the company was among the most successful in the budget and midhi-fi field with its manufacturing base in Huntingdon.

The Cyrus One and Two were very successful integrated designs, that were introduced in 1983 and 1985 respectively and remained in production until the Cyrus Three in 1992. The amplifier also introduced the die-cast alloy case that you see on the company's range today. Its first CD player was the Mission Cyrus DAD 7000 that launched in 1982 and was developed in partnership with Philips, which was keen to get audiophile brands involved with the fledgling format at the time.

In the mid-90s, Mission morphed into NXT and sold off the portfolio of brands that it had accumulated at the height of its success – companies including Quad and Wharfedale that are now owned by IAG. In 2004, Peter Bartlett, then division manager of Cyrus Electronics, headed an MBO which remains in charge today.



The notes on John Surman's *Brewster's Rooster* track are reproduced with plenty of decay and/or reverb – the pairing is a bit stronger on the end of notes than their beginnings, which is why you hear a lot of detail rather than incisive attack. Timing is well served by this approach, it's not emphatic because it makes space for the other musical qualities, but you are always aware of the tempo and the way in which musicians are working together. Imaging is also well served with this four-box system being capable of sending sound right out into the room where the recording warrants it. Some pieces even produced a sense of image either side of the listener.

Digital interconnects between transport and DAC affected this quite markedly. The Chord Co's Signature cable was easily trumped by the more expensive Indigo Plus, which increased image scale quite dramatically thanks to greater high-frequency extension. As a result, the system lets a lot more of the acoustic from the recording into the room.

The way that Cyrus has tuned the DAC brings this player's character surprisingly close to that of modern Naim players, which given the all round success of that company is probably all to the good. And when you consider the similarity of approach with external power supplies, perhaps this has always been the aim.

It's not the most dynamic of sounds, but it does have an analogue feel that's very appealing, and its strong sense of timing combines with excellent imaging – which is a hard trick to pull off.

By adding PSX-Rs to both units, you bring the price up to a new high for Cyrus. In the context of cabinet finish and the remote, this doesn't sit all that easily, but the sound you get is very good value — and this is what you should be looking and listening for. **HFC** 

Jason Kennedy





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ew hi-fi owners have any means of measuring anything more complicated than the continuity of a cable or fuse. Some folks take the trouble to buy a sound-pressure meter, but even that simple device needs to be used with a setup disc and is quite hard to interpret with real music, due to the complications of weighting curves, averaging times and other obscure variables. A full measuring system is beyond most people's budget and needs rather a lot of skill and experience to use efficiently.

But if you add a home computer and some sensibly written software and user instructions, and then take advantage of the considerable improvement in the cost/performance ratio of cheap microphones recently, you can make a simple and potentially highly effective measurement system for not much money which can be used by almost anyone. That, quite simply, is what XTZ has done here. (XTZ, by the way, mainly makes amps and speakers, currently available in the UK from just one dealer.)

We've actually seen acoustics measurement systems before that in some ways were similar, but the stroke of genius here was to integrate the microphone and interface. Basically, using the system is as simple as plugging the microphone into the USB socket of a PC and then connecting the audio lead, which dangles from the microphone base, to the main amplifier in the system. Load up XTZ's software (which you have to download from its website, registering as a customer in the process), turn on the amp and select 'Measure' on the PC.

There are a few user options available, but apart from possibly needing to adjust the volume on the PC, there's practically nothing

those 'waterfall' graphs you may have seen in some manufacturers' literature, which take a bit more interpretation, but show both frequency response and delayed resonances. You get a numerical readout of decay time at various frequencies and specific resonances can be flagged up.

This is all very nice, but what's the practical use? For owners of the relevant XTZ subwoofers, it is possible to generate an inverse filter, which effectively flattens the room response to something very close to ideal. But for the rest of us, the ability to gauge the performance of a loudspeaker in

## "...the ability to gauge the performance of a loudspeaker in a real listening room is absolutely invaluable in setting up a system."

one needs to do to get a nice straightforward graph of system frequency response up on the screen. The noises the system makes through the loudspeakers are pretty harmless and last a very short time, while the software guides you to where to put the microphone (listening position, or a bit to one side or the other) for each measurement.

Various kinds of graph can be displayed, including simple frequency response (over the full frequency range or, in rather more detail, over the bottom four octaves) and

a real listening room, in objective terms, is absolutely invaluable in setting up a system. You can do it by ear, but at best it takes a long time – and the ear is in many ways very easily fooled, meaning that one can end up superficially satisfied with a setup that could easily be improved.

Taking just a few measurements with this system, however, very quickly shows whether loudspeakers should be nearer to, or further away from the back and side walls, or indeed higher or lower on stands. We were delighted to find that our subjective setup was just about optimal, but moving the speakers a few inches each way soon showed how easily the balance can be upset. For a lot less money than most loudspeaker upgrades, this brilliantly conceived product fills a real niche and is highly recommended. HFC

Richard Black





#### **GROUP TEST & LAB REPORTS: RICHARD BLACK**

# CARTRIDGES

Here are six ways to enhance your vinyl listening pleasure



f you had suggested, some time in the mid-1990s, that this or any other magazine would be running a group test of phono cartridges in a 2010 issue, you would have been branded as hopelessly optimistic about the future of vinyl - or worse. But here we are, with six of the little beauties between about £500 and £1,100, and there are plenty more where these came from, both within and without that price range. In fact, right now, CDs appears to be a more immediately endangered species (thanks to downloading) than LPs, although it's, of course, true that CD sales dwarf those of LP.

But LPs never quite went away and has had a considerable resurgence of late with new discs and new disc players popping up all over the place. All of which makes this a good time to be considering the purchase of some new LP replay equipment. Maybe you've decided to upgrade a well-loved system, perhaps your old cartridge wore out or got damaged, or maybe you have decided to dig out your black discs, or even buy some for the first time – you wouldn't be the only one. But whatever the reason, there's plenty around to tickle your fancy.

It used to be invariable practice that fancy turntables would be sold without a cartridge, often without even an arm. The buyer would have plenty to choose from, though naturally some combinations became very well known and popular. These days, rather more decks are sold as standard with the arm and cartridge included, but the cartridges that we are looking at here are likely to be an upgrade from the 'standard equipment'.

You can always work your way up the cartridge food chain, feature by feature,

and up through the price brackets, and all these models offer levels of insight and refinement that are simply not on offer from budget cartridges. At the same time, one of the endearing features of analogue is that there are no absolutes and personal taste still has an important part to play.

With all that said and done, we hope the following pages will help you decide what might suit your palate. **HFC** 

#### **EQUIPMENT USED**

Even more than elsewhere in a hi-fi setup, system matching is crucial in analogue contexts and we tried the cartridges in a selection of arm/ cartridge combinations, principally:

- Pink Triangle PT Export/SME 309
- **⊘** Townshend Rock/Excalibur
- Pro-Ject RPM 9/Pro-Ject arm

The amplifying device is also important and we had available:

- ▶ EAR802/HEAD stepup transformer
- Cambridge Audio Azur 640P plus a custom-made preamp with adjustable input matching
- Amplifiers by EAR (519), Exposure (3010) and Cambridge Audio (840A)
- Loudspeakers by Bowers and Wilkins (8035) and ATC (SCM20)

#### MUSIC USED

- Walton Façade Suite
- Pink Floyd The Wall
- Stevenson Passacaglia on DSCH
  Grace Jones Pull up to the Bumper





#### **LISTENING TESTS**

Each of the cartridges was subjected to a rigorous programme of listening and laboratory tests. Because of the extensive setup time involved in getting any cartridge to perform at its best, we were unable to use our regular blind panel listening methodology but we did experiment, rather usefully, with making high-resolution digital recordings of each cartridge and playing this to visiting hi-fi enthusiasts for comment. However, most of the listening was, of course, direct to the cartridge under test.

#### LAB TESTS

Measurements were made using a variety of test discs, including the one issued many years ago by Ortofon for use with its TC3000 Test Computer. We no longer have access to one of those, but with modern PC-based analysis it is a simple matter to interpret the output when playing the disc and, in fact, this method offers greater flexibility than the TC3000 itself did.

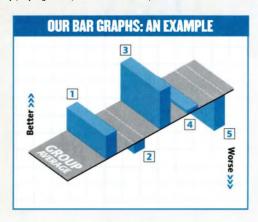
For most of the rest of the measurements we relied on a custom test disc mastered for us over 20 years ago by The Exchange, one of the UK's leading disc mastering houses and pressed in a small quantity especially for *Hi-Fi Choice*'s own use. Signals were again captured and analysed on a PC.

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

#### LAB REPORTS: THE BAR GRAPH

Our 3D bar graphs are a simple way of showing how the products compare across five key technical measurements. In this test, the five measurements are:

- 1] **Tracking:** The maximum amplitude of modulation the cartridge can follow without gross distortion in the midband, 80 microns being the maximum tested, and generally speaking, about the 'hottest' that can be cut on to vinyl.
- **2] Distortion:** Harmonic distortion of a midband signal at approximately 40 microns amplitude, that is, half the notional 'full scale' signal.
- **3] Channel separation:** In principle, the left-right separation of a disc can be very good, but mechanical imperfections limit it to about 30dB in the midband and 20dB or so in the treble.
- **4] Response flatness:** This was tested across a range of 20Hz –15kHz, which is a critical region of naturalness of sound
- **5] Treble extension:** This is typically around 50kHz in a good quality cartridge, being set ultimately by stylus/vinyl resonance above which response is curtailed. It is measured by playing a 33rpm test disc at 78rpm, or even faster.





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# **GOLDRING LEGACY**

Veteran cartridge maker debuts a new model for 2010

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oldring is certainly one of audio's oldest names, tracing its history back to 1906 and its pickup cartridges to the 1930s. The range has changed only very slowly down the years if our reviews over the last 20 years are anything to go by, but the Legacy is a new model and the current range-topper. Like most of its competitors, it is a low-output moving-coil design, with very low impedance that will work happily into either a high-gain preamp or a step-up transformer.

Many of Goldring's designs over the years have fixed to the headshell via plastic 'ears', which were accused by some audiophiles of causing audible resonance. This model, by contrast, has an all-metal body with a large mounting area and threaded holes. The metal is magnesium – a good choice for combining rigidity, light weight and low resonance. It also contributes to a total mass of eight grams. That's a middling figure, as is the compliance, so compatibility is not likely to be a headache with most phono arms.

There are plenty of stylus shapes available to the cartridge designer and Goldring has opted for a 'Vital' profile, a type that used to be fairly common but now only seems to be used by Goldring. As usual for a moving-coil cartridge, stylus replacement is a factory job. The cantilever is aluminium and links back to a generator assembly wound with high-purity copper wire. Recommended tracking force is 1.75 grams.

Even by the high standards typical among cartridge manufacturers, Goldring's presentation is rather deluxe, the cartridge being presented in a leather-covered box, within which the cartridge nestles in a block of solid hardwood. Irrelevant to sound quality maybe, but having spent all that money one might as well enjoy the whole experience!

#### **SOUND QUALITY**

Our first impression of this cartridge was that it is lively and rhythmic. We happened to start our listening session with a piece of cheerful classical music and that turned out to be just the sort of thing the Legacy enjoys: it makes the most of the twists and turns and has no trouble following a fast-moving melodic line. It also has a very convincing way with percussion and reproduces any kind of drum with plenty of impact.

The good news is that such vivacity is not at the expense of detail, as can happen. This turned out not to be the most detailed in the group, but it wasn't far off and it really can excavate new details from well-loved vinyl grooves. Its tonality is very slightly on the light side but in a good way, making it easy to hear deep into a mix and pick out what's happening – for instance, it's unusually clear what the woodwind are playing at the back of an orchestra, when the strings at the front are playing something related, but different.

We experimented with tracking settings and arm height, but found that the Goldring's recommendations for tracking, and the usual configuration with the arm tube horizontal seemed to work as well as anything. Increasing the tracking force by a couple of tenths of a gram gives slightly more solid bass, but we felt the treble became a little less clear and so reverted to the original settings. In any case, the bass performance is satisfying if you aren't greedy – it extends well and has good body to it. We found the bass best when listening via a step-up transformer, but this cartridge doesn't seem particularly fussy about amplifiers and/or transformers.

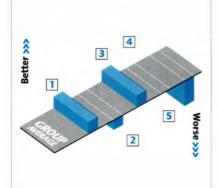
The one slight reservation we have regarding this cartridge concerns stereo imaging. There is good definition from side to side, but we felt

# HI-FICHOICE magazine G

#### LAB REPORT

In most respects, this cartridge measures well, if not outstandingly, for its class. Its output is on the low side, which probably explains our subjective preference for a transformer (which keeps noise low, something that often improves perceived bass). Frequency response is admirably flat up to about 8kHz, with a few small irregularities above that, but still solid output at 20kHz. Testing to ultrasonic frequencies shows a resonant peak at about 46kHz, but largely flat response to 40kHz. Distortion is typical at about 0.6 per cent, while tracking is good, secure up to just short of 80 microns and becoming just detectably rough at the highest levels. Our measurements suggest a compliance figure of about 20mm/N, which is ever so slightly on the high side of average, but gives a perfectly satisfactory arm/cartridge resonant frequency in arms of typical mass.

#### HOW IT COMPARES



- 1] Tracking ability >> +10%
- 2] Distortion >> -10%
- 3] Channel separation >> +10%
- 4] Response flatness >> 0%
- 5] Treble extension >> -30%

SPECIFICATIONS	Rated	Actual
Measurement		
Output level	0.25mV	0.25mV
Compliance	16mm/N	20mm/N
Tracking weight	1. <b>7</b> 5g	1. <b>8</b> g



depth is a little constrained and images can be a little unstable as the dynamics ebb and flow. That's a minor drawback, though, and overall this seems to be a fine all-rounder that is at home with any sound and never makes anything less than very convincing music. **HFC** 

## **BRENNAN JB7**

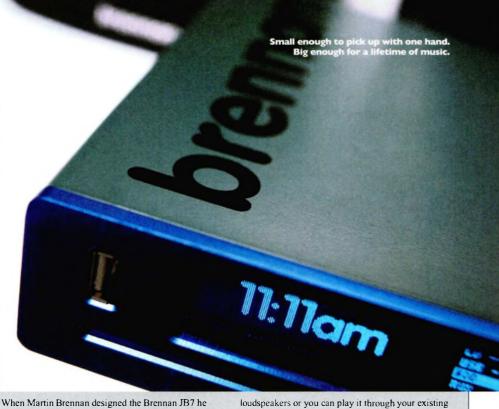
## What's the point owning CDsyou don't Play?

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 wont play them. So you are forced to share your living space with hundreds of cheap plastic boxes. CDs are great but they are also inconvenient, inaccessible and a bit of a chore - thats why Martin Brennan designed the Brennan JB7.

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



threw out the rule book.

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

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

HiFi. The Brennan gives names to tracks and albums from a database of 2.6 million CDs as you load each CD. It takes a few minutes to load a CD. The Brennan has a unique text search facility that shows a reducing number of matches as you press successive letters on the remote control. Once you get the hang of it you can find one track or album out of your entire music collection in a few seconds. So to find "Nessun Dorma" you would press letters "NES" or "DOR" and scroll through the shortlist of

## The face behind Brennan



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

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

never find the right CD. A few years ago I had a go at loading my cassette collection onto a PC. Cassette were obsolete but I owned around 100 and the music on them reflected an important period in my life. I recorded all of the cassettes on to the PC over a period of several weeks The thing is I never listened to the music on the PC. Somehow using the computer to listen to music never worked out. Maybe the computer was in the wrong place but I think it lacked the immediacy of a physical play button. In the end the computer got a virus and the music files were lost - I still had the cassettes thankfully. The JB7 is really my personal ideal music player"



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

Daily Mail



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# **GRADO REFERENCE MASTER 1**

Music is a challenge for this high-output cartridge **£650 ☎** 01279 501111 **⊕** www.gradolabs.com

part from its highly-regarded headphones, Grado makes quite a wide range of cartridges. This is unusual in one particular respect: all of them come under the broad heading of 'moving magnet'. The majority of high-end cartridges, now and back to the 1950s, have used the moving-coil principle, but Grado explains on its website why this is not necessarily the answer to all the world's ills and resolutely produces high-end moving-magnet designs. Some of these are low-output types that will connect to the 'moving coil' input on a phono amp, but this one is a 'traditional' high-output cartridge.

Apart from the business of output voltage, however, this cartridge behaves more like a moving-coil type. For a start, the stylus is not user-replaceable. That was always attractive, but inevitably it compromised system rigidity to some extent. The generator is built into an attractive wooden housing and the stylus guard is cleverly made of the same material – it fits in place with two pins and is one of the most reassuring guards we've seen. Threaded holes in the top of the cartridge body make mounting easy and the middling mass of 6.5 grams makes it compatible with most arms.

Grado fits a nude elliptical diamond stylus to this model, at the end of a relatively long cantilever which has been designed to keep tip mass to a minimum. That's one way in which treble extension has been improved over the 20-odd kHz typical of old-school moving-magnet cartridges, while the unusually low inductance of the generator also helps extend response and reduces sensitivity to cabling and

loading capacitance. Tracking is fairly gentle at a recommended 1.5 grams.

#### **SOUND QUALITY**

We were surprised to find ourselves a little disappointed at this cartridge's performance as past experience with Grado models has been most encouraging. Although there is a lot to like including good rhythm and some very impressive bass, we never managed to get the sort of detail out of it that some of its peers can manage. We fiddled extensively with tracking force, arm height and all the other setup parameters including loading, and while we did establish that arm height (vertical tracking angle) is rather critical for this model, we still didn't quite banish a mild degree of veiling. Do lower the arm base a millimetre or three, though, it's well worth the trouble.

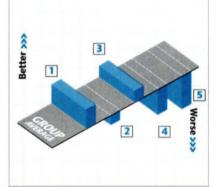
As a result, the sound is unusually dependent on musical style. Bassy stuff like rock — especially if it's of the non-arty variety — is very well served and has the kind of kick and energy that one very seldom hears from digital recordings and, frankly, all too seldom from analogue. We were also very taken with the sound of piano, which has excellent body and an unusually good balance between initial impact and subsequent decay. Solo voice isn't bad either, though we felt the Grado is kinder to male voice than female, which can at times seem just a touch harsh.

What doesn't work so well is music with a wide frequency range and lots of instruments or voices. The more musicians are involved, the harder it is to work out what each one is doing. More to the point, it feels as if a film

#### **LAB REPORT**

Although the treble tonality seems generally OK, the frequency response of this cartridge in the top octave of hearing is rather off-kilter and, in all likelihood, this explains the lack of detail. Response is fine up to about 8kHz, but there is a distinct rise around 10kHz of some 3dB, followed by quite a rapid decline to about -5dB at 20kHz, relative to the midband. That's by no means disastrous, but this kind of response may be indicative of mild resonance somewhere, presumably mechanical in nature, that is subtly interfering with detail. Midrange channel separation is about as good as it gets, at just over 30dB, while distortion is an average 0.6 per cent, with the third harmonic dominating. Tracking, often considered a strength of movingmagnet cartridges, is better than 80 microns, while compliance is above average at 23mm/N and high treble roll-off occurs around 35kHz.

#### **HOW IT COMPARES**



- 1] Tracking ability >> +20%
- 2] Distortion >> -10%
- 3] Channel separation >> +10%
- 4] Response flatness >> -30%
- 51 Treble extension >> -40%

SPECIFICATIONS		
Measurement	Rated	Actual
Output level	SmV	2 6mV
Contribute	20mm/N	2∃enen∠N
Transimi weight	1 Sg	1.5g



#### VERDICT SOUND Bass is good and there's \*\*\* plenty of life and energy in the sound, but detail COMPATIBILITYY never quite seems to shake itself free of veiling and it's often hard to follow BUILD inner details with some \*\*\*\* forms of music HI-FIC OVERAL SCORE \*\*\*

has descended which lessens the actual impact of the music on the listener. One might not always want to listen analytically, but having to listen hard just to follow the thread is more like hard work than one wants to experience after buying and installing a high-end system. **HFC** 



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# **ORTOFON CADENZA RED**

*Lively sounding cartridge scores on all points* **£750** ☎ 01235 511166 ∰ www.ortofon.com

oldring may be able to trace its roots back (slightly) further, but Ortofon is definitely one of the old guard of audio. The company invented the moving-coil cartridge in 1948 and its legendary (for once not an overstatement) SPU model from 1959 is still in production, in various guises. The current range runs to 38 distinct models of cartridge, from the £40-odd OMSE to the Windfeld at over £2,000 – and that's not including the DJ range, which has even more market dominance than the hi-fi products. Many classic LPs were mastered with an Ortofon cutterhead – the 'inverse' of cartridge that cuts grooves in response to an electric signal.

Ortofon's 'Cadenza' range replaces the 'Kontrapunkt' products that had served well for many years and the Red is the base model of four. It uses a 'fine line' stylus on an aluminium cantilever, while the generator assembly uses ultra-pure copper wire and a powerful magnet, producing a relatively high output for a design of its type. It still requires the services of a proper 'moving coil' preamp input or a transformer, though.

The body is made mostly of aluminium, with some stainless steel helping push the total mass up to 10.5 grams, making this a fairly heavy cartridge. Its low compliance will, however, keep low-frequency resonance to a typical 10Hz or so in most arms. Like many current cartridges it has threaded holes for easy mounting, but there's an interesting subtlety in the mounting face. It has three small protuberances (left and right, rear and centre front) which in most arms will give extra-positive three-point contact, aiding stability. The electrical connection pins are

slightly recessed into the housing, which may make connecting up slightly awkward, but keeps overall length short.

#### **SOUND QUALITY**

This is another distinctly lively cartridge, and a slightly bright-sounding one too. So much so, in fact, that in a system that is already erring on the bright side, one might find this a bit too much of a good thing. In more neutral company, however, the perception of brightness soon fades with familiarity – it's well short of discomfort levels. And it seems a small price to pay for the wide range of virtues the Cadenza Red demonstrates in other areas, including bass, midrange and detail.

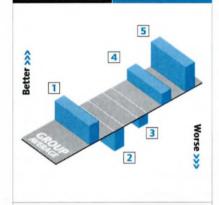
In fact, over the long term, what most impressed us with this cartridge turned out to be the midrange, which is effortlessly informative in the sort of way that makes one want to listen more, and more carefully, than usual. It has a very neutral character and impeccable manners, never drawing attention to itself overtly, but the detail it presents is always clear, consistent and beautifully ordered. As a result, the Cadenza Red can make the most of the widest variety of music, from small-scale classical and folk to huge rock or opera spectaculars, with thunderous - but always well controlled bass and some very gratifying treble clarity too, brightness notwithstanding.

Setup doesn't seem to be terribly critical, though it still pays some dividends with a slightly sharper focus both tonally and spatially when the arm height has been adjusted. In fact, we ended up with a slightly higher-than-average arm base. We also found the cartridge

#### **LAB REPORT**

There is indeed a gentle lift in the treble above about 10kHz, though the rest of the response is impressively flat. Most importantly, though, we didn't detect any resonances within the audio band or indeed anywhere near it with response basically clean to an excellent 65kHz, above which it tails off fairly gently. Tracking is good, comfortably exceeding 80 microns and while distortion is, in fact, the highest of the group (just), it still measures well for a cartridge at under 0.7 per cent. Compliance is pretty much average, measuring 16mm/N, and in a typical arm this will give an arm/cartridge resonance around 8Hz, which is fine. The Cadenza Red is on the heavy side by current standards, but unlikely to cause any problems, and it likes a heavy downforce: Ortofon recommends 2.5 grams and both our listening and our measurements suggest that this is spot on.

#### **HOW IT COMPARES**



- 1] Tracking ability >> +20%
- 2] Distortion >> -20%
- 3] Channel separation >> -10%
- 4] Response flatness >> +10%
- 5] Treble extension >> +30%

Rated	Actual
12mm/N	16mm/N
2 5g	2.5g
	0 45mV 12mm/N

#### VERDICT The sound can be a little bright at times, but that's \*\*\*\* really the only drawback COMPATIBILITY and there is much to admire \*\*\*\* in the excellent bass. fine detail and unfussy BUILD presentation, especially in tricky music. \*\*\*\* VALUE ICE OVERALI

a little fussy about arms and while it was happy enough in the SME309, it never quite sang to its best in the Townshend Excalibur, with or without the damping trough in place. To us, it sounded clearer when used with a high-gain phono amp than with any of our transformers, but there's not much in it. **HFC** 





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# **SUMIKO BLACKBIRD**

American cartridge has an impressive tonal quality **£495** № 01727 865488 ⊕ www.sumikoaudio.net

n American company, despite the Oriental-sounding name, Sumiko has been known for many years as a purveyor of high-end cartridges at typically slightly less than high-end prices. The Blackbird is very much in that tradition with a specification that wouldn't look out of place in a dearer cartridge. The most obvious feature that marks it out as high end, however, is the construction, which with its complete lack of body and protection fairly screams 'enthusiast product'.

It's all been done for a reason, of course. The ills of a resonant outer body on a cartridge have been a topic of audiophile conversation since at least the mid-1980s, when enthusiasts used to fill cartridge bodies with resin. Amazingly, some of them still worked afterwards. Sumiko is not the only maker to have dispensed with such fripperies as body and stylus quard, but this is one of the more extreme examples we've seen, with the ultra-fine winding wires brought out to terminations which it is hard not to touch when handling the cartridge. It's cleverly done, though, keeping the fragile wires on the inside of the assembly. We managed to install and remove this cartridge several times over the course of the review without doing any harm.

An elliptical stylus is mounted on a boron cantilever which drives a moving-coil generator, but in this case it's a high-output type which can be connected to a moving magnet input directly, dispensing with extra electrical gain or a transformer. There's no magic in this. It simply requires the use of more turns, using thinner wire, compared with a normal low-output type and, as a result, the impedance of the cartridge is higher than normal at 135 ohms. Sumiko points out that this will, with typical electronics, give the best possible signal-to-noise performance, ensuring that any noise you hear

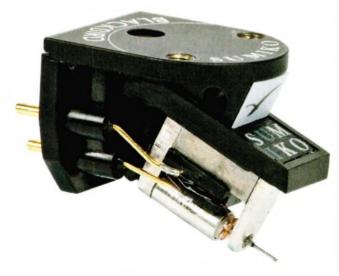
is the irreducible minimum made by the disc itself. That apart, specifications are nothing out of the ordinary, with middling compliance and medium-high mass.

#### **SOUND QUALITY**

Our abiding impression of this cartridge is of an unusually clean and pure treble and upper midrange. One might even think, with some LPs, that the balance is well on the laidback side, but any disc with plenty of lively treble will soon blow that idea away. In fact, we'd say that tonal balance is particularly well judged, but there's something about the way it's presented that makes it less intrusive than it can sometimes be. If you think (as some do) that moving-coil cartridges tend to sound a little bright, even aggressive, this cartridge could be the one that both proves you right and yet in itself provides the exception to the rule.

Probably because of that, we found ourselves leaning towards well-recorded classical discs when looking for the next track in our more casual listening sessions with this cartridge. It can sometimes seem a little too polite with rock discs, although it does present all the information efficiently, even enthusiastically. It also has pretty good bass, well extended and controlled, though we wouldn't mind just a little more tunefulness to it. Attack and timing are again good, but not outstanding.

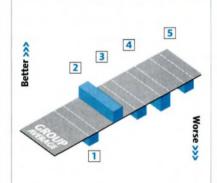
We should mention that we had an unusually awkward time finding the ideal setup for the cartridge, as it has a tendency for the front to hit the LP surface if tracking force is high (unless the arm base is unrealistically raised). That's a pity, because there were signs that the bass and attack were going in a useful direction just before this happened. Even so, it is an impressive performer and offers characteristics



#### LAB REPORT

The only feature of this cartridge that stands out as unusual is its rather low compliance, which in lighter arms will give an arm/cartridge resonance slightly on the high side of ideal. Even so, response above 20Hz is unlikely to be very seriously affected and higher-frequency resonances are typically easier to damp. Frequency response in the midrange and treble is for the most part flat, with a distinct rise in the very high treble, some 3dB up at 13kHz and 5dB at 19kHz. This may be due to a resonance, but if so it doesn't seem to have much effect on the sound and the response is otherwise largely flat to just above 50kHz. Channel separation is about average, while distortion is good at 0.4 per cent. Tracking is not quite as good as some, (70 microns, with the tracking force value of 1.8 grams), which ties in with our finding that increasing tracking force improves bass.

#### **HOW IT COMPARES**



- 1] Tracking ability >> -10%
- 2] Distortion >> +10%
- 3] Channel separation >> -10%
- 4] Response flatness >> -15%
- 5] Treble extension >> -10%

SPECIFICATIONS		
Measurement	Rated	Actual
Output level	2.5mV	2 8mV
Compliance	12mm/N	10mm/N
Tracking weight	2.0g	1 8g

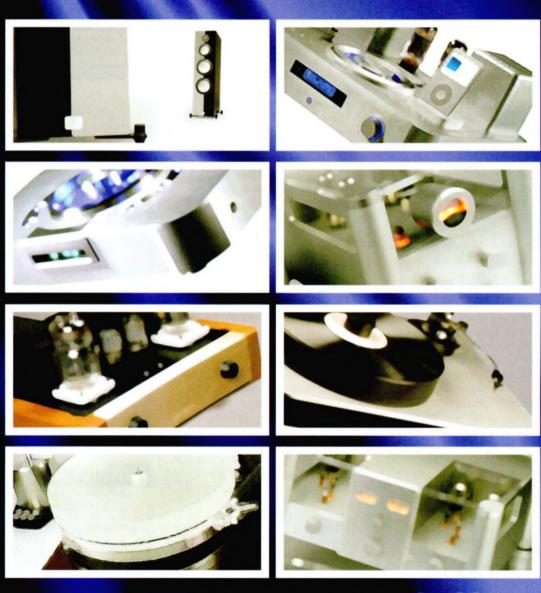
VERDICT	
SOUND	Very good tonal balance with commendable purity in the higher octaves, though some may find it a
★★★★ BUILD ★★★★	little too refined. Seems tricky to optimise for best bass. Set up is quite complicated as well.
VALUE ★★★★★	HI-FICHOICE SVERRALL

not easily found elsewhere. Writing these lines after the cartridges themselves have left for photography, this is one of the cartridges easiest to recall and recall fondly at that. It doesn't often seem to give dramatic new insights into familiar discs, but it is unfussily enjoyable and involving to listen to. **HFC** 

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Almarro A340A Review by Alan Sircom, Hi>Fi+ Issue 70



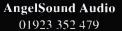
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# **VAN DEN HUL MC10**

This popular cartridge is a splendid musical communicator **£1.050 №** 0115 973 3222 **⊕** www.vandenhul.com

e're so used to seeing cables from this marque that it's easy to forget the company's origins, back in 1980, in phono cartridges. In fact, Mr van den Hul - who still runs the company personally and is a familiar figure at hi-fi shows the world over made his name as the originator of a successful stylus profile, the VDH Type 1. Not surprisingly, that profile is a feature of this and other vdH cartridges, and it has been adopted by other makes, accounting for its use in well over one million cartridges sold to date. Like other special stylus shapes, it aims to minimise the longitudinal contact area between stylus and record groove, so that the stylus doesn't 'average out' the tiny wiggles which would reduce high-frequency tracing accuracy. vdH estimates that this shape is capable of tracing modulations up to 80kHz on a regular 33rpm disc. Few discs ever made will have the slightest sniff of musical information at such a frequency, but a little spare bandwidth never hurt anvone!

The MC10's cantilever is boron, and quite long though it looks shorter as part of it is hidden inside the body. The generator assembly uses silver wire and is wound in such a way as to give it slightly higher output than most (from a slightly higher impedance, which isn't really a drawback). It still needs a proper moving-coil input, but makes the noise requirements slightly less arduous. Physically, the MC10 is of typical dimensions and weight and it mounts to the headshell via threaded holes. Its compliance is quite high and, as a result, the tracking force is relatively low, vdH suggesting something in the range of 1.35 to 1.5 grams. Kudos is due to Mr van den Hul for the superb 'Frequently Asked Questions' page on his website - truly everything you ever wanted to know about

cartridges and related subjects. By the way, the 'Special' in the name means cartridges are built to order, apparently in a couple of weeks.

#### **SOUND QUALITY**

We found this the most 'civilised' cartridge of the group - others might say 'mellow' or even 'dull' depending on tastes and previous experiences. But the simple fact is that its treble is audibly less bold than that of any others here. On the other hand, it is beautifully detailed and never less than clear, with a really nice sense of natural acoustic space around the performers. The midrange is similarly detailed and has, perhaps, the best stereo imaging here too, precise and admirably stable. There's little 'beyond the speakers' imaging, but realistically it's hard to find discs that give much of that on any system and we'll happily settle for a really good image between the speakers. Depth is good too.

Bass is slightly less assured. At low and moderate levels, it is very well extended, but it lacks a little conviction when the music gets loud, slightly lessening its impact. Indeed, impact in general is not what this cartridge does best: it has good but not remarkable timing and prefers a rather more tuneful kind of music. As such, it's certainly very adept with classical music and stuff like ballads, but we also had some very good results with a lot of jazz, where the MC10's ability to separate out instruments and sections goes a long way towards creating a believable ensemble of musicians just beyond the wall.

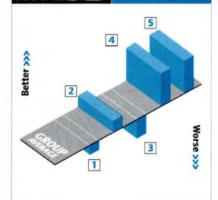
This seems to be an unusually unfussy cartridge when it comes to arms, turntables and phono amps, and its sound was highly consistent in our various setups. It does like a slightly higher arm base than some, and is



#### LAB REPORT

Overall, this cartridge has the flattest and most extended response of the group, within 1dB across the whole 20Hz-20kHz range and extending to at least 70kHz. It gives good figures for distortion, our spot frequency figure being 0.4 per cent, while crosstalk is rather less good than the others here in the midband. That said, it's as good as any in the treble, still managing 20dB at 10kHz, which is about as good as it gets Compliance appears from our measurements to be a little less than the manufacturer claims. Its figure is 28mm/N, ours 18mm/N, but given that the recommended tracking force seemed just right for our sample this is more likely to be differences in means of measurement than sample variation. At any rate, either figure should give perfectly acceptable arm/cartridge resonance values in most arms. Tracking is a little below par, managing 70 microns.

#### HOW IT COMPARES



1] Tracking ability >> -10%	
2] Distortion >> +10%	
3] Channel separation >> -20%	
Al Decrease flatness by + 400/	

4] Response flatness >> +40%
51 Treble extension >> +40%

SPECIFICATIONS		
Measurement	Rated	Actual
Output level	0.65mV	0.65mV
Compliance	28mm/N	18mm/N
Tracking weight	1.4g	1.4g



quite critical of tracking force, or values outside the recommended range tending rapidly towards coarseness (too light) or dullness and lack of sparkle (too heavy). Properly set up, though, it is capable of some very informative music-making, especially with 'unplugged' musicians. **HFC** 

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## **ZYX R100 YATRA**

A little-known cartridge with a fine performance level **£1,100 ☎** 01895 833099 **⊕** www.sibatech.co.jp

YX isn't exactly the most forthcoming company in the world on the subject of itself – its website is 'under construction', hence the link above to its Japanese exporter. Its printed instructions and publicity don't give much away either – but its reputation as a high-end cartridge manufacturer is enviable. The range is quite wide and a little confusing, simplified somewhat by UK importer GT Audio, which carries just seven models. This one sits in the middle of that range.

At first sight, this cartridge looks fairly typical – 'micro ridge' stylus (one of countless variations on the general theme of line contact), boron cantilever of typical length, low-impedance generator with an output on the lowish side, and a robust, non-resonant plastic body. But it's clear that some unusual thinking has contributed to its design. An article by designer Mr Nakatsuka, reproduced in the instructions, lists several criteria he considered, not all of which are obvious and some of which are downright arcane.

For instance, it's usually assumed that the metallic parts of a cartridge will be grounded somehow, but he separates out the various parts (body, yoke, magnet etc) and suggests that a non-metallic body is the best way to deal with the electrical issues arising. Even the direction in which the winding wire was drawn is taken into account, but then plenty of audio cable manufacturers have been considering this for years, so perhaps that's not so surprising. These points, plus the unusual winding arrangement of the coils, lead to what ZYX calls 'Real Stereo'.

The plastic body helps keep the mass of this cartridge quite low at five grams, and the lowish compliance means that arm/cartridge resonance in a lightweight arm could be rather

higher than ideal. Tracking force is recommended at two grams, but with quite a wide permissible range of 1.7-2.5 grams.

#### **SOUND QUALITY**

This seemed to be the fussiest of the group as regards setup, and tracking force is particularly sensitive: we ended up at 2.3 grams in one deck and 2.4 in another, with the arm base a little lower than average. We also distinctly preferred the sound with a good transformer in circuit, rather than a direct high-gain phono stage. Once that was done, though, we had some very good results from this cartridge across the board. Or almost; try as we might, we just couldn't get it to track some of our 'hottest' LPs convincingly. But short of that, it is very capable.

More than anything else, it is an exceptionally dynamic cartridge. We haven't mentioned this aspect in relation to any of the others in the group as there doesn't seem a huge amount to choose between them – they're all basically good. But this one really leaps out as revelling in huge dynamic swings. It may actually be that it's a little exaggerated, frankly, but it's just so enjoyable that you don't worry about that possibility. With any music from solo piano to grand rock – *The Wall* being one smile-inducing example – the sound really leaps out at you in sudden climaxes.

At the same time there's plenty of detail and frequency range extension on offer and the timing is good too. It doesn't necessarily follow that timing and dynamics go together, though they often do. And if we're honest, we'd say that the Yatra seems a little better at the bigscale dynamics than the finer dynamic details that go to make up great timing, but you can still tap a foot to this cartridge without the

# ZYX

#### LAB REPORT

Sure enough, the tracking is a little weak at just 65 microns, and not much altered by tweaking tracking force. That apart, the measurements are very good, with the best channel separation of the group by a small margin, managing 31dB midrange and 20dB at 10kHz. That's vastly worse than the cheapest CD player, but by analogue standards it's excellent and, experience suggests, subjectively more than adequate. Distortion is remarkably good at just 0.2 per cent - a slightly better figure than we had suspected for any of our test discs, while the audio-band frequency response is almost as flat as any with a very small lift - barely 2dB - in the high treble. Above 20kHz, the lift continues to 40kHz and response rolls off harmlessly above about 55kHz. Compliance is a little on the low side, but in most arms the resultant resonance will still be within the acceptable range.

# HOW IT COMPARES Worse W

- 1] Tracking ability >> -30%
- 2] Distortion >> +30%
- 3] Channel separation >> +30%
- 4] Response flatness >> +10%
- 5] Treble extension >> +10%

SPECIFICATIONS		
Measurement	Rated	Actual
Output level	0.34mV	0.17mV
Compliance	15mm/N	17mm/N
Tracking weight	2g	2.3g

#### VERDICT SOUND A terrific performer when it comes to dynamics with $\star\star\star\star$ plenty of other good COMPATIBILITY features including frequency extension at both ends and $\star\star\star\star$ detail. Needs very careful BUILD setting up and, even then, $\star\star\star\star\star$ doesn't track amazingly well VALUE HI-FICHUICE OVERALI

slightest mental effort. Melodic music is well served too, though there's sometimes a sense that the sound is straining to do something more exciting. As a question of taste, this is almost the opposite extreme to the van den Hul MC10, but it's certainly a fine little transducer. **HFC** 

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# CONCLUSIONS

#### Of our six high-end cartridges, we have three surefire badge winners

onducting this survey reminded us of the results we found in cartridge group tests back in the late 1980s – which concluded that no one cartridge does it all. What did surprise us, however, was the way performance has generally improved. We've kept a few cartridges from that period and gave some of them a spin during this test, so we're not imagining things here. Overall, these six have a more even balance, better detail and, in general, more

polish to the sound than any but the very best of the old school.

But we do feel that, between them, some are more successful than others. We were a little disappointed with the Grado Reference Master 1, which puts out plenty of energy but just doesn't want to do detail in the sort of way we expect for £650. Yes, it performs very well with the right sort of music, but the others manage that and still achieve a more all-round musical compatibility on top.

The Sumiko Blackbird and ZYX R100 Yatra are both successful in their way, but we had some reservations about each that stopped us from making them Best Buys. Principally, with the Sumiko, this rests on the apparent impossibility of setting it up to perform at its best because of the problems we had with the structure hitting the disc. The ZYX is appealingly dynamic, but we felt it could do with a little more insight and better tracking.

It was the Goldring, van den Hul and Ortofon that really pressed our buttons, though. They don't sound identical by any means, but each one presents a plausible, balanced and involving performance that serves the music well. The Goldring slightly favours rhythm, the van den Hul is a sophisticated melody-maker and the Ortofon specialises in revealing unsuspected information in familiar records – but they are all fine examples of the cartridge-maker's art. **HFC** 

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#### HINTS AND TIPS

- >> Phono cartridges are invariably highly dependent on setup. Tracking force, basic geometric alignment and arm height are all critical.
- >> If you do install or adjust a cartridge yourself, handle it firmly Most accidents are the result of over-cautious handling.
- >> Keep your stylus (and your records!) clean. Dust and fluff will cause loss of detail and even gross mistracking.
- >> The signal from a cartridge can easily fall victim to hum, but with earthing and signal routing, it should always be possible to banish hum.

#### CARTRIDGES AT A GLANCE



# Round-up

#### Computer audio cables are another way of streaming audio

omputer audio has made us familiar with USB and FireWire digital cables, which are used to connect digitally to DACs. One might expect that they would all sound the same, after all they carry

those same building blocks of digital data, don't they? What's more, extensive buffering and de-jittering are used in both systems. But you may be surprised (and so were we) at the difference...

# **Ixos XDF03**

TYPE Computer audio cable
PRICE £15 (2 metres)

CONTACT № 01844 219000 @ www.ixos.co.uk

ireWire cables are something of a novelty in the audio world despite its established presence in the video domain and a growing number of pro and semi-pro audio devices now using it. Physically, it's similar to USB, whether comparing the cable or plug size, or its flexibility in hooking up to a range of devices. But FireWire is certainly better suited to real-time applications like audio and video. In particular, although its notional data rate is similar to USB, it is capable of handling considerably higher real-time data rates such as those of multi-channel high-res audio. For this, our first-ever review of a FireWire cable, we used a semi-pro DAC from TC Electronic as a test bed, feeding it both normal- and high-res files from a PC. Our 'reference' was the basic cable supplied free with the DAC. Ixos's offering uses OFC conductors, dual screening and gold-plated connectors, which certainly make a more satisfying mate with the female receptacles than those on the free cable.

While the field is still wide open, it's clear even from this limited experience that FireWire cables follow the same trend as S/PDIF and mains cables that likewise 'shouldn't' make a difference

#### **VERDICT**

fireWire cables are no more immune to the intangibles of jitter and interference than other digital links. But this is cheap, and worth the bother!



Because they do and while it's perhaps not as marked as one might find from changing speaker cables it's still worth taking a bit of trouble over. With the Ixos in place, the sound sharpened up a little all round, subtly extending the bass and treble, while stereo images were distinctly more precise and stable. The contrast between instrument and voices in the mix also improved quite noticeably. **HFC** 



# Kimber USB Silver

TYPE Computer audio cable

**PRICE** £105 (1m)

CONTACT ☎ 0845 345 1550 ⊜ www.kimber.com

SB cables, like FireWire, have now also created a space for themselves on the pages of several catalogues of audio specialists. Kimber offers both this cable and a cheaper copper-conductor USB version, both available with the standard Type A connector at one end and a Type B at the other – either the large square version or its tiny cousin. It's available in lengths down to 0.5m – a useful attribute as excess cable is the best way of picking up interference. Apart from the silver signal conductors, materials include high-density polythene dielectric, while the less-critical power cores and shield are made of silver-plated copper. The screen is a very dense braid and it is apparently both crimped and soldered to the connectors to improve integrity. The connectors mate cleanly and securely in the receptacles.

We found this a very effective cable allowing for the passage of clear audio to communicate through it, while maintaining excellent rhythm

#### **VERDICT**

Though it can't fix all the problems of USB, this cable does seem to have the knac of maximising its performanc with a good quality DAC.



and timing, something that USB doesn't always seem to do very well. This was most noticeable with our resident Cambridge Audio DacMagic, which normally sounds distinctly more energetic using the S/PDIF connection than USB. With the Kimber cable in use, the gap was narrowed. Even with the superb Lavry DA11, which is unusually consistent between inputs, this cable seemed to give a small lift to the 'kick' delivered via USB. The DacMagic also benefitted from improved bass extension and solidity, again bringing its performance closer to the high levels attainable when using S/PDIF. **HFC** 



# QED PS3 controller cable

TYPE Computer audio cable

PRICE E10 (1m)

e wouldn't even have spotted this in the catalogue had we not been directed towards it. Both its description and application appear irrelevant to high-performance audio, and it makes no more claim than being a plain USB cable with Type A to Mini B connectors. It is available in lengths of up to five metres at attractive prices and, despite its non-audio intentions, it seems to be well made with good materials. This includes high-purity copper and low-loss dielectric along with some particularly nice plugs fitted at both ends. These are metal-bodied types and the Mini B unit gives by far the most positive engagement of any similar connectors we've tried with its mating receptacle. The cable is a little thicker than most freebies and slightly less flexible as a result, but unlikely to give trouble even when connected to lightweight components. We used it to feed the iBasso D4 reviewed on page 53.

Once again, the main areas of improvement are the general liveliness of the music, and a boost to clarity. The results don't seem to be huge or profound, yet we found ourselves enjoying the

#### **VERDICT**

At its extremely modest price, this cable seems an



performances more and spotting little details that had escaped our lower actaves. Treble was also just a little sweeter with rather more of fine as it was already good. HFG



# Wireworld Ultraviolet 5/2

**PRICE** £50 (1m)

CONTACT 2020 8991 9200 # www.wireworldcable.co.uk

ike Kimber, Wireworld has embraced the concept of USB cables and offers both this and the dearer Starlight model in a variety of lengths up to seven metres, and with a choice of Type B or Mini B connectors. The obvious difference from every other USB cable we've seen is that this one is flat in cross-section, which Wireworld suggests both improves performance and makes the cable easier to handle and route. We'll find out about the first claim in a moment, while the second rather depends on what one is comparing it with. We found this cable a little unwilling to lie where we wanted it, but it mates well at both ends and didn't seem to mind a little rough handling. It combines silver-plated copper conductors with connectors that are both gold-plated.

As with the other cables in this group, Ultraviolet clearly made some differences to sound when compared with giveaway cables, but it does seem to have a distinct character of its own. Specifically, it has a tonal quality that distinguishes it from the others. It has a slight prominence in the upper bass that does no harm at all to

#### **VERDICT**



rhythmic qualities, but sometimes makes familiar instruments and voices sound a little more bassy than one is used to. At the same time, and probably as a side-effect of that, the treble is a little mellower than usual. Still, this all means that the bass is decidedly confident overall, forceful even, and as a result this is a great cable for rock and other bass-rich styles. HFC

Richard Black



t's still early days as far as critical comparisons of cables like these are concerned, but it's still clear from what we've discovered in this Round-Up that they can't be taken for granted any more than can regular analogue interconnects. Of the cables reviewed here, we'd rate the Kimber highest for overall achievement, justifying its higher price.

Wireworld and QED, however, both bring some additional quality to the party and the QED's negligible price makes it a particularly attractive option. Meanwhile, the Ixos cable suggests that FireWire could be a good field for more manufacturers to investigate - any takers out there?

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Johnathan Valin Source: The Absolute Sound - Feb 2010

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Designed as the perfect complement to the C165BEE, the 150-watt C275BEE includes upgrades and refinements taken from the acclaimed NAD Masters Series M3 amplifier, such as Edvardsen's patented Distortion Cancelling Circuit in the output stage and BEE Clamp in the power supply. Careful PCB layout, oversized Holmgren toroidal transformer and copper buss bars all play roles in the amp's fast, taut, punchy, but revealing presentation.

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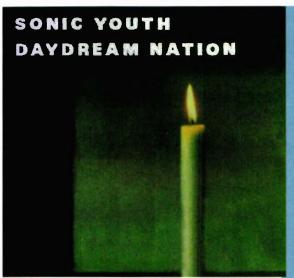
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# ChoiceCuts

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



**SONIC YOUTH**Daydream Nation
Enigma Records

"'Everything was in place to take the band's sound to the next level, redefining what it was possible to do with a guitar, and indeed what was possible within rock music"

Words by Dave Oliver

# Classic Album

An evocative setting, a top-class record producer and a band who thrived on innovation, proved to be a classic combination

By the time they recorded their 1988 double album, art noise rockers Sonic Youth were already becoming the pre-eminent force on a pre-grunge independent rock scene that included the likes of Pixies and Dinosaur Jnr, for which Nirvana had yet to shift the goalposts with 1991's Nevermind

While those bands may have had more 'hits', Sonic Youth's experiments in mixing avant garde noise a la Glen Branca with Velvet Underground and Stooges rock fuzz ensured their underground integrity even as their popularity among the cognoscenti grew way beyond their New York loft-dwelling roots

The Youth had been moving towards a more straight-ahead rock sound for some time (not that they ever really arrived), with some toe-tappers emerging from the de-tuned guitar noise on EVOL and Sister, which won them many more indie rock fans beyond the aficionados who had thrilled to the droning repetition of 1985's Bad Moon Rising.

The band's rough and ready recording was boosted with *Daydream Nation* being recorded at New York's Greene Street studio for \$1,000 a day. It was then well above their normal recording budget leading Thurston Moore to say it was their "first non-econo record".

With production enhanced by the studio's engineer Nick Sansano, who had recently been working on Public Enemy's monumental It Takes A Nation Of Millions To Hold Us Back, everything was in place to take the band's sound to the next level, redefining what it was possible to do with a guitar, and indeed what was possible within rock music.

In a post-ProTools world, it's hard to think that 20 years ago, Sonic Youth's experiments with sound, in particular the electric guitar, de-tuned, cannibalised, modified with screwdrivers and distorted in all sorts of ways, once seemed so revolutionary But the secret o the band's appeal lay in offering a half-open door to their world through the use of rock

markers like power chords, all is and neckstrangling solos, though their songs rarely imitated traditional verse-chorus form.

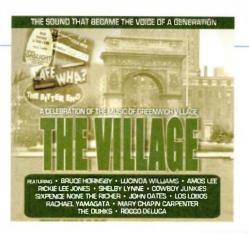
Sonic Youth are nothing if not self-aware, and were fully cognisant of their melding of rock tropes with avant-garde noise experiments and lyrics that flip-flopped between high-minded literary allusions and stoner calls to arms. And they brought a rock band's enthusiasm to what sometimes could have come across as esoteric experimental worthiness, and the album is distinctive for its energy, which fizzes and pops like a live wire from the cascading crescendos of *Teen Age Riat* all the way through its 70-minute length, concluding with the extended journey through sound of *Trilogy* – even the slower jams crackle with barely withheld raw power.

The enhanced production values worked a treat. The sound may often be scabrous but the unusual tunings and dischords make much more sense when they can be heard in full, rather than as a part of a pervading aural fug, as was often the case with the band's earlier recordings.

Daydream Nation got the deluxe CD reissue treatment in 2007 with live versions of all the tracks and a handful of demos and covers, plus a four-album vinyl release with Led Zeppelin IV-style symbols on each record to represent a member of the band. The vinyl version trumps its digital colleague for maintaining the wide-open dynamics of the original, eather than compressing them for enhanced volume, as the CD reissue seems to have done.

The album made number one in online indie mag Pitchfork's Best Albums of the 80s list and is considered a high-water marin independent rock, cementing the band's reputations as godfathers of noise tock even if they were never able to reach those heady heights again. HFC

### **Choice**Cuts



#### **VARIOUS ARTISTS**

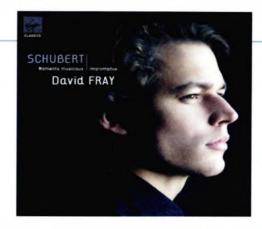
The Village: A Celebration Of The Music Of Greenwich Village

429 Records

www.429records.com

Music: Multi-artist 'homage' albums often fall flat with 'B list' artists failing to do justice to the music. Here's a terrific exception as Lucinda Williams, Rickie Lee Jones, Shelby Lynne and ten others celebrate the songs of the '60s' American folk revival. Five Dylan covers betray his importance, but each is brilliantly transformed into something startlingly new. We also get new insights into the songs of Joni Mitchell, Fred Neil, John Sebastian et al with Cowboy Junkies' take on Tim Buckley's Once I Was perhaps the best of all.

Sound: Despite being recorded in different locations across the US, there's a binding, cohesive honesty to it as every performer intuitively breathes the 'spirit of the village'. NW



## SCHUBERT MOMENTS MUSICAUX D780 ETC



David Fray

Virgin 694 4890

www.emiclassics.co.uk

Music: This young French pianist (born 1981), is becoming known for a repertoire ranging from Bach to Boulez via Liszt and Schubert. He's known for his extravagant gestures at the keyboard, where he is wont to hum along with the orchestra, and joke with fellow musicians, emulating they say, a youthful Glenn Gould. He has also won a number of prestigious international competition prizes.

Sound: These are excellent recordings of first rate performances of some of the most compelling mainstream Schubert played with the utmost sensitivity, elegance and concentration, with a dark edge when the music calls for it, of a standard that belongs in any self-respecting Schubert lover's collection. AG



#### BEETHOVEN PIANO CONCERTO 1, MOZART PIANO CONCERTO 18

Music Sound

Martha Argerich

BR Klassik Archive 403571900701 www.br-online.de/br-klassik-english

Music: Neither Beethoven nor Mozart count in pianist Martha Argerich's core repertoire, but on her day, she has an undeniable touch of magic. Though neither work presents insuperable technical difficulties, she brings a rhythmic quality to the keyboard, and a sense of drive along with a precision that forces the music along. Sound: They are both live recordings dating from 1981 (Beethoven) and 1973 (Mozart), but they are well recorded and bring a touch of freshness to works that can otherwise sound overfamiliar. She uses some unfamiliar (but effective) decoration and phrasing. AC



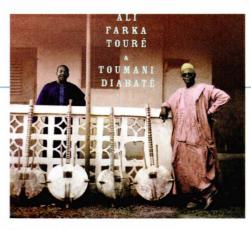
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Fire Records

www.firerecords.com

Music: Take Velvet Underground drone rock repetition, add Farfisa Organ, Vox guitars, strings, saxophone, and lots of effects, and then mix it up with copious hallucinogenics, and the result is a great 'punk' album. Without their drummer, Rugby natives Jason Pierce and Pete 'Sonic Boom' Kember bathed themselves in the subtleties of acoustic ambience and electronic burr. Pierce went onto bigger emotional music with Spiritualised, but the blueprint is all here. Sound: No remaster, just a direct re-issue of the original album from 1987, but the analogue sound is heavenly. Your brain will be tweaked by all the soft oscillations, phasing, echo and boosting of frequencies that the pair achieved throughout. MP



### ALI FARKA TOURE & TOUMANI DIABATE



Ali & Toumani

World Circuit

www.worldcircuit.co.uk

Music: Take two top African virtuosos, record an album of instrumental duets and the result is the 2005 Grammy-winning world music hit *In The Heart Of The Moon.* The follow-up is equally exquisite, if tinged with sadness as guitarist Toure and Cuba's Cachaito Lopez, whose bass underpins the African stringed magic,

have both since died. The interplay between

Toure's guitar and Toumani's harp-like kora is breathtaking with an emotional range that's stately and serene one minute, skipping playfully the next.

Sound: How a great production should sound, letting us hear every flick, brush and press of a string without ever 'hearing' the studio itself. NW





#### JESCA HOOP



**Hunting My Dress** 

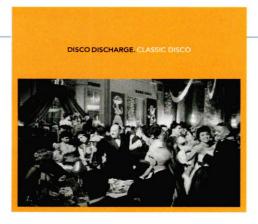
Last Laugh Records

Music: Quirky female singers may be two a penny at the moment, but there should still be room for Jesca Hoop, whose sometimesbreathy, sometimes-soaring voice and stark arrangements sit just on the right side of studied kookiness. The childlike vocal harmonies of Whispering Light are a spooky delight and the standout track Murder Of Birds, with the support of Elbow's Guy Garvey on backing

vocals, delivers a beguiling mix of gothic folk weirdness and pop hooks (try and imagine Paul Simon having a crack at the *Wicker Man* soundtrack).

**Sound:** There's a close-miked intimacy to most of these largely acoustic, mostly drum-free arrangements, with occasional electric guitars and effects all toned down to complement the distinctively angular Hoop yocal inflections. *DO* 





#### **VARIOUS ARTISTS**



Disco Discharge

Harmless/Demon

www.demonmusicgroup.co.uk/Harmless

Music: Once upon a time, disco wasn't a white-suited, finger-pointing anachronism or spangly boobtube wearing fashion disaster. It was a celebration of dancefloor hedonism, guilt-free good times and uplifting music, pumped through state of the art dancehall speakers with an underground, anarchic spirit. This four-disc series celebrates that time offering Classic Disco, Disco Ladies, Gay Disco and Euro Disco with a feast of near-forgotten tracks and a smattering of classics, often in full, 12-inch single extended glory.

Sound: As is the way with compilation albums, the sound quality is variable, though never terrible, and lest we forget, this music was always intended to be played LOUD. DO



#### JIMI TENOR/ TONY ALLEN



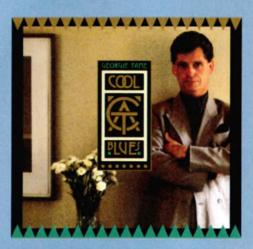
**Inspiration Information**Strut

www.strut-records.com

Music: Finland's Jimi Tenor has made a name as an eclectic musical nomad, taking in jazz, lounge funk, prog rock and classical arrangements. The latest fan-meets-mentor album teams him up with Afrobeat legend Tony Allen and African group Kabu Kabu. There's a little Mingus, a smidgeon of Sun Ra, a soupcon of James Brown and a heap o' Fela among these tightly played, loosely structured grooves, deeply rooted in Allen's funky polyrhythms.

Sound: There's little in the way of polish, but the largely live recording of these tracks, mostly conjured out of studio jams, reflects a close-knit, sweaty, breathing, constantly evolving meeting of minds. DO

### **Choice Cuts**



#### **GEORGIE FAME**

Music \*\*\*

**Cool Cat Blues** 

Go Jazz/Pure Pleasure 180g www.purepleasurerecords.com

Musica This 1991 album was something of a comeback for the 60's star whose talents on the keyboard and mic are on full view. With the help of Van Morrison and Boz Scaggs, this is jazz meets blue-eyed soul from an artist who has clearly progressed since his heyday. With first class backing from Robben Ford and Steve Gadd among others, it's easy to hear why this caught PP's ear.

nd: A very assured and clean recording that positively oozes quality and suggests that no corners were cut in its production. *JK* 



#### **JACKSON 5**



Motown/Speakers Corner 180g www.speakerscornerrecords.com

Music: Following hard on the heels of their debut, ABC placed the ultimate boy band at the top of the R'n'B and pop charts in 1970. The title track alone is worth the candle – there's so much energy and talent it's hard to accept they were so young. The writing and playing is top notch with help from the cream of Motown, and young Michael's presence doesn't hurt. Sound: The recording is high on excitement but a little short on depth. It's a little compressed but has reasonable bandwidth for its era and clearly delivers the goods. JK

#### HIGH-OUALITY AUDIO

#### KING CRIMSON

Red DGM

DVD-A/DVD-V MLP & PCM stereo/MLP & DTS 5.1/CD

www.dqmlive.com

Music: The Crims' heaviest 40 minutes has had a long overdue deluxe reissue and in *Red* and *Starless* remains the pinnacle of the band's progtasticness. The two disc anniversary edition includes a DVD-A/V which offers 24/96 lossless and 24/48 PCM stereo cuts as



well as video footage. The CD has three extra tracks including trio versions of *Red* which is very open and revealing of drums in particular and *Fallen Angel*. **Sound:** Red was always quite a forward album and this issue keeps things largely as they were. The CD is louder, slightly fuller and cleaner than the standard disc while the DVD-A is more open and slightly more natural again. It's good enough to be able to play louder on a revealing system and that's what counts. *JK* 



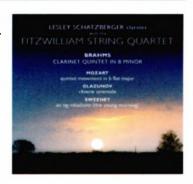
## BRAHMS CLARINET QUINTET, MOZART QUINTET MOVEMENT

Lesley Schatzberger (clarinet), Fitzwilliam String Quartet

Linn Records CKD278

SACD (stereo/multichannel hybrid disc) www.linnrecords.com

Music: Brahms' Clarinet Quintet in B minor is well known, but Lesley Schatzberger uses a copy of the clarinet that inspired Brahms to write it. She says it has 'a less boomy and more focused quality with more potential for



delicacy and varied colours'. The Mozart is an unfinished, albeit substantial, fragment, while the Glazunov and the Sweeny are essentially fillers, if intriguing ones.

Sound: The clarinet used in the Brahms is matched to a more forceful and fluid quality than we are used to, and the same can be said of the other works. The playing is first rate, and the soloist here blends and leads perfectly. AG



#### **ALLAN TAYLOR**

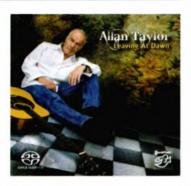
Leaving At Dawn

Stockfisch

SACD (stereo/multichannel hybrid disc)

www.stockfisch-records.de

Music: Folk mainstay Taylor's latest series of 'troubadour road songs' mark the end of a busy decade. After success in the 70s, he spent much of the 80s and 90s studying before returning to music in the noughties. His fourth album since 2001 is a beautiful collection of melancholy, ruminative songs with his mellow,



chocolate-and-grit vocals detailing his poetic mini-epics of searching and loss. **Sound:** Impeccably produced by Günter Pauler, Taylor's rough velvety voice and intricately picked acoustic guitar are very much to the fore, but there's also room for complementary colours from accordion, mandolin, dobro, fiddles and Indian harmonium, creating a series of gently nuanced settings for Taylor's timeless songs. **DO** 



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#### Cyrus CD Xt SE+ | DAC X+ | DAC XP

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

The XP amplifiers are based on the circuitry of the top of the range DAC XP. The entry-level 6XP includes 6 line level inputs along with a zone 2 feature while the 8XP d combines the XP series pre-amplifier with a newly revised power amp and contains an onboard DAC for digital sources.

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



#### Michell Gyro SE TURNTABLE

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



Pro-Ject Genie MKIII TURNTARIE

This MKIII version includes a new motor more stable

#### CD6003 CD PLAYER PM6003 AMPLIFIER Replacing the highly-regarded 6002 series, the new PM6003 amplifier and CD6003 CD player, come housed in Marantz's stylish 'M1' casing. The CD player features a front mounted USB socket allowing improved performace from devices such as an iPod or MP3 player while the amplifier has five line

#### Arcam FM J

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

Available in silver or black.



#### Leema

#### Antila II CD PLAYER Tucana II AMPLIFIER

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

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

#### Roksan Kandy K2 CD PLAYER | AMPLIFIER | SPEAKERS

The K2 amplifier sounds more accurate, more delicate and even more powerful than its award-winning predecessor, the Kandy L.III. The matching CD player is an impressive performer and is the

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





#### **Monitor Audio**

#### Platinum

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#### Spendor A-Line

Introducing the A5 and A6 sneakers. These compact, high performance, floor standing speakers utilize drive units, tweeters and other design innovations developed for Spendor's



#### **KEF** Reference

The first Reference speaker was launched in 1973 to worldwide acclaim. Several remains for many the benchmark for high-end audio and is legendary for its clarity and precision.



#### **B&W** CM Series

The CM Series from Bowers & Wilkins has long been a favourite among its discerning customers Offering a combination of high performance and exquisite styling at a very affordable price



#### Rotel 06 SE Series

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

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





#### Wharfedale Diamond 10.1

This 10th generation version of the '80's classic



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Enjoy Blu-ray disc as it should be: the BD-Live BDP-320 delivers high-end picture quality.



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#### TRANSPORT OF DELIGHT

It's refreshing to read in your magazine of products aimed at extracting the best possible sound from Apple iPods and other digital audio players. Some hi-fi snobs look down their noses at anyone who considers such machines as worthy replacements for stand-alone CD players and transport/DAC combinations, even though the portables cost a tiny fraction of the audiophile equipment. I realise that all-in-one systems usually have low-grade drivers and amps, but a proper dock taking a digital output to an external DAC can sound excellent.

jitterbug via email

HFC We're glad that you're enjoying our coverage of the latest iPod-related kit. There's no doubt that players and docks can sound pretty good, especially more recent products like those by Onkyo and Wadia, which effectively act as transports bypassing the players' internal DACs.

As technology continues to evolve, perhaps some of these companies might eventually offer their own players, based on OEM gear, but modified to reduce jitter and noise in the digital signal. If that happens, there's no real reason why they shouldn't compete with traditional transports in terms of performance.



#### **DOES NOT COMPUTE**

DACs advertised for use with PCs seem to be selling like hotcakes these days, but are they actually any better than a decent PCI or PCIe soundcard? A lot of the more affordable external converters still cost around £200, whereas cards with excellent specs (like the Asus Xonar Essence ST) can be had for less than £150.

Donut777 via email

HFC There are some good cards out there, no doubt, particularly those designed for professional audio usage and supplied with ASIO drivers. On the other hand, cards like the Asus (pictured right), while a cut above more mundane offerings at about half the

price (thanks to its low-jitter clock, Burr-Brown 1792A DAC and Nichicon audio grade capacitors) still have to contend with a hostile environment inside a PC – RF interference, heavily polluted power supply rails and a fair amount of vibration. Perhaps, for these reasons, in our audio-centric experience, most PC soundcards at the price of a Cambridge Audio DACMagic are bettered by that converter and others.



### LETTER OF THE MONTH

#### Guilt-ridden

With our duty to conserve energy, I admit to feeling very guilty when it comes to warming up my hi-fi prior to use. Should I be concerned about wastage, or is it just an old wives tale that kit always sounds better if you give it a period of adjustment?

After all, warmed up or not, I always find that my music sounds harsher in the morning than it does at the end of the day. So folks, the polar ice caps or my listening pleasure?

hifinutter via email

HFC You didn't say what your hi-fi consists of, but quite frankly if it includes

a valve amp, then it can certainly be argued that it will need a warming-up period and, as is the case with such kit, it will also consume vast amounts of energy.

The easy answer and one that might help you cope with any feelings of guilt, is to consider how you can save energy in other useful ways while firing up your hi-fi. For instance, turn off any unnecessary lights, boil your electric kettle before spinning the vinyl and switch the TV off standby.

Doing this will certainly ease your conscience, as well as saving the polar bears from extinction.





#### THE PERFECT PURIFIER?

I have always considered it worthwhile to employ some sort of mains power conditioning for my audio system, long before such practices were popular.

During my annual clean-up cycle, when I check and clean all power plugs and audio connections, I decided to conduct a listening test with various power conditioning devices in the chain, from simple surge protection and clamping to more sophisticated RFI filters and various combinations. The over-riding conclusion was that all the devices had some impact upon the sound, but not always a positive one.

Generally speaking, any sort of filtering tends to have a slight softening or compression affect upon dynamics, while strong or multistage filtering can also have a detrimental affect upon the perceived soundstage, sometimes tending to suck the sound back into the speakers rather than presenting it outside of the speakers. On the positive side of the equation, subjective noise floors could certainly be lowered, but at what cost?

I concluded that a very low level of filtering offered the best compromise (such as might be obtained via a simple RFI filter), cleaning the overall sound, but without unduly affecting dynamics. The interesting thing is that altering the mains power 'waveform' in any way should have such a noticeable impact upon the sound of the connected components. Like most things in audio, the results are somewhat subjective; experimentation and objective listening are key.

Douglas Marc via email

HFC Indeed, mains filtration is a can of worms when it comes to audio systems. While devices intended specifically for use in hi-fi systems can work well, there's no guarantee that they'll be better than off-the-shelf surge protection strips, which are usually quite a lot cheaper. That said, examples like PS Audio's Quintet Power Centre (HFC 307) and Isotek Sirius (HFC 308) do make their presence felt in a positive fashion and some filtering is available in the form of high-capacitance cabling like Kimber's.

If you want to keep the filter components out of the direct path of the mains, you

could go for a shunt filter like Russ Andrews' Mini Purifier (*HFC* 325).

We remember an occasion at a hi-fi show where having spent hours setting a system up the previous night, we ambled off for lunch and came back to find the sound noticeably softer and more sluggish. After having a quick word with a colleague, it transpired that a cottage-industry enthusiast manufacturer of mains conditioners built around isolation transformers had plugged one of his boxes into our mains supply. Removing it promptly brought the system back to life.

In addition to all of the above, as long as you're aware of the required precautions, which must always be observed to work safely around mains electricity and wiring, don't forget to tighten up any loose cableanchoring screws in plugs, wall sockets and the distribution box.

#### **GOT THE BOTTLE/BURNING ISSUE?**

I was pleased to read your review of the Magneplanar 1.6 speaker in *HFC* 329, as I own a pair and I have to say that I'm very happy with them. The thing is, I'd ideally like to have that lovely, smooth, but transparent sound of valves done well in my system, after I spent some time in front of a friend's new set-up. Trouble is, I know from experience that the Maggies take a fair bit of driving. Will I get a fair slice of the sound I'm after if I use a valve preamp with my Cyrus 8 Power, instead of my Rotel RC-1580 preamp?

learnerlistener via email

HFC Mixing and matching with valve gear can be a little tricky for the uninitiated, especially as valve power amps tend to produce relatively low-power outputs and, as a very rough generalisation, possess softer bass than solid-state counterpart.

One consideration when experimenting with valve preamps, is that most have fairly high-output impedances and will benefit from being matched to a power amp with a high-input impedance.

The best way to go is often to audition a preamp rather than a power amp,

particularly if you have quite a power-hungry speaker. Give yourself time to get used to the change of presentation and if your budget permits, you might want to consider adding a valve power amp to your system, though with the 1.6s, you might want to start with something like a push-pull ultralinear rather than a single-ended triode, as the latter just won't have enough grunt to drive the Magneplanar to decent levels. This speaker can be bi-amped though, if you want to go the whole hog, and does sound superbly with capable valve amplification.



Marantz's very rare Model 9s are fabulous EL34/6CA7 monoblocs, shown here at hifido.co.jp

#### **FAREWELL FORMAT**

I well remember the way the audio landscape changed when CD was first a rumour, then a reality, and before vinyl began its steady decline. As an audio omnivore, I was very happy to be bobbing around in a sea of cheap vinyl as CD took over and I can't have been the only one. As sales of physical albums continue to fall, and rippers burn their CDs onto harddrives (often without backups - very foolish), surely I'm not the only one anticipating a bonanza of ever-cheaper used CDs? I know MP3s can be bought as single tracks, which is handy, but I want something physical, something which isn't going to disappear without trace if my hard-drive fails. After all, if you choose to back up to disc, you might as well have the original CD anyway.

vicanbob via email

HFC Frankly, we think it's a case of 'Join the queue'. Any avid audiophile will have music on a range of formats; our Jon Marks is always on the lookout for even Minidiscs and cassettes, if the music on the latter is worth a listen inside his Sony WM-DC2 professional Walkman.





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



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



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



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



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



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

#### Missing link

I would be grateful for your advice on the following. My present system includes a Musical Fidelity X-Ray v3 CD player feeding through a Musical Fidelity Tri Vista 21 DAC. The DAC is new to me and I am having trouble finding a digital cable to connect the two. I have tried a Black Rhodium Rhythm but didn't find it suited the two, being harsh and muddled. Apart from buying every cable out there until I find the right one, I am not sure what to do.

Malcolm Winney via email

HFC As ever, the best bet when confusion sets in is to try and arrange for a home demo of a shortlist of the components you're thinking of purchasing. Many companies offer items (cables included) on a try-before-buy basis; draw up a list of cables based on reviews, then have a look on the internet for dealers who offer a home trial.

As far as our recommendations go, if you were able to stretch your budget up to around the £100 mark, you could try the Kimber DV-30 (HFC 317), which is an excellent all-round performer for the money. Supra's AnCo is a more affordable option, but still worth a look.



# Ask Us

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

#### Send your queries to:

Ask Us, Hi-Fi Choice, Future Publishing Ltd, 2 Balcombe Street, London NW1 6NW. Or email your queries to: hifichoice@futurenet.com

#### **Diamonds are forever**

I have a Denon DL103 at the moment and I would like to upgrade it. Although I've been happy with it, to my ears it doesn't live up to the hype some of the fans put out about it, so I am looking for a replacement with more detail and deeper, better soundstaging. I listen to jazz, blues, classical and some rock on a Rega Planar 3 going into an NAD 375BEE integrated amp (an excellent recent purchase).

Adrian Townley via email



**HFC** One classic MM to slate for listening is Goldring's £224 1042. Although it's been around for years now, it remains a fine cartridge, with a very listenable sound, which combines solid bass and extended treble with good clarity. One of the variants on the 1042 theme is Roksan's Corus Black, which has a ballsier, more driving presentation and can be had for £325. That said, you might want to hang on for its replacement, the Corus Silver, featured in our news section this month (page 10), or audition the Goldring 2500 as well. If it's moving coils you're after, how about an Ortofon Salsa, or a high-output item like the Benz Ace MC20E2-H?

#### High frequencies, high hopes

I am writing with the hope that you will help me in upgrading my current system, or assembling a completely new one. I am looking for a better sound compared to the one that I am getting at the moment. I am especially disappointed by the sound quality in the higher frequencies and I am in constant search of excellent treble performance from the system.

My current set-up consists of a Rotel RC-1070 pre with RB-1070 power amp, Marantz CD6003 CD player and Bower and Wilkins CM7 loudspeakers. Cables are AudioQuest Diamondback and Sidewinder interconnects, with AudioQuest Star Quad Series Type 4 loudspeaker cables.

Some of the components I'm considering, as part of a potential upgrade, are the Rotel RCD-1072 and NAD C545BEE CD players, JBL LS 40 loudspeakers, harman-kardon HK990, Cambridge Audio Azur 740A, Marantz PM-6003 or Marantz PM-15 S2 integrateds, and Marantz SC-11 S1/SM-11 S1 pre and power amps. The van den Hul Integration Hybrid or The Wave interconnects and Chord Silver Screen speaker cable also seem interesting.

Please note that not all of the brands are available in my country. Hence, I would appreciate it if the list of your suggestions includes more options from different brands.

Thank you.

Aleksandar Sahov, Macedonia via email

HFC We suspect the main imbalance in your system at the moment is the Rotel pre/power combination; the company's house sound tends to lean towards prominent, sometimes brittle treble and fairly dry, light bass when it comes to amplification.

You could give some of the pricier two-box options a go, but we would suggest you first try at least, to audition the Cambridge Audio Azur 840A v2, Marantz PM8003, Roksan Kandy K2 or Sonneteer Orton integrateds, as they all have sweeter, more tonally even presentations. On the other



#### **System seeker**

Could you please give me some advice as to how I could best spend around £2,500 on an amp, CD, speakers and cabling?

My current equipment dates from the 1980s and was only cheap when I bought it. I'm planning on buying a new rack at a later date.

Jason Davies, Truro

HFC You don't mention what sort of music you have in your collection, or what sort of presentation you prefer, so we've come up with a number of recommendations.

For a rhythmic, involving presentation to keep your feet tapping, Marantz's SA8003 CD/SACD player, matched to the PM8003 integrated, is a very persuasive combination. Bass has speed, authority and clarity in equal measure and the overall sound remains clear and controlled, even at high volume levels. Although detail isn't class-leading, it is still very good and in no way detracts from the feeling that this is a class combination.

For equally enjoyable loudspeakers to round out the package, step forward Roksan's Kandy K2 TR-5 with its sweet, but very revealing ribbon tweeter. These three should leave you sufficient change to cover the cost of a pair of Cambridge Azur Reference or Townshend Isolda

DCT100 interconnects, along with speaker cables like the Wireworld Solstice 52.

You could assemble a system with a more neutral character and great detail retrieval, by partnering the Cambridge Audio Azur 840C CD player with its stablemate, the 840A V2 integrated. Here, the Roksan would still be a fine speaker selection, or you could add the ATC SCM11 or Tannoy DC6 standmount, or the Bowers and Wilkins 683 for more extended bass. As for cables, Audioquest's Sidewinder is very capable, as is Kimber's 8PR loudspeaker cable.

hand, the Marantz SC and SM11 are certainly very capable, as would be the Roksan Caspian M Series-1 pre and power.

If new amplification doesn't solve your problem completely, you could well be right about replacing your AudioQuest speaker cables as well. As mentioned above, the Wireworld Solstice 52 is an impressive performer, as are Kimber's speaker cables.

#### Gramophone quidance

Your recent review of six new amplifiers highlights a problem I have: none of these has a mono switch. Along with a fair number of LPs and CDs, I have a large number of 78rpm records which are played regularly, hence the need for a mono switch.

My JVC amp is showing its age, at 35 years, and I need to change it soon. Obviously, the choice is a Luxman L-550A, but at around £3,000 it's just too expensive. I wonder if you would have recommendations that would suit the purpose at up to £1,500?

I look forward to your reply. I hope discussing 78s is not forbidden in *Hi-Fi Choice*!

Richard Ives via email

HFC I'm happy to say all audio formats are open for discussion in *Hi-Fi Choice*, including 78s, as there is some wonderful music engraved in those aged grooves. Rather than greatly narrowing your options in terms of a replacement

integrated or preamp by looking for one with a mono switch, why not consider a specialist phono stage like The Restoration Preamp Model 4010 by TDL Technology in the US? Obviously, you'll have to add customs duty to its \$607 cost and the additional shipping quote, but it appears to have a very useful range of features, including a five-position Mode switch, which selects either the left channel, right channel, left plus right (mono mode), left minus right (vertical cut mode) or a left/right blend. There are also 11 user-selectable roll-off and 11 turnover frequencies, as well as adjustable high- and low-cut filters.

Since your JVC sounds as if it's soon to expire, you could invest the remainder of your budget in a replacement integrated. The Roksan Kandy K2 is excellent value at less than a thousand pounds. Alternatively, if you have more to spend, consider the Arcam FMJ A38.

#### **Downsizing**

I need to archive my CD and vinyl collections. I've read a lot about the Brennan JB7 and am seriously thinking about buying one. Would it do everything I need it to?

spamster via email

**HFC** The great thing about the Brennan is that, with the addition of a pair of speakers, it forms a system in itself, as it has stereo amplification built in and sounds really pretty good for the money.

You can indeed use it for archiving your CDs, though its range of file formats is limited: MP3s can only be created in three flavours (128kb/sec, 192kb/sec and 320kb/sec). Uncompressed is truly uncompressed, and that's it. There's no lossless compression like FLAC, which is a bit of a shame, though perhaps understandable considering the Brennan's intended market. Hard-drive size may be another limiting factor depending on the size of your music collection with 320GB being the current maximum.

For archiving LPs, you'll need either a stand-alone phono stage with your turntable, or a deck which has its own, as the Brennan has only a line-level input.



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#### **□** Naiturally Naim

I'm a Portuguese reader of yours. Recently, I bought an SA8003 CD/SACD player from Marantz. I'm expecting to buy an integrated amplifier some time soon to match it, but am having some difficulties making my mind up, although the Naim Nait 5i is my current favourite.

First of all, in my small living room I have an existing system which is built around a Pioneer 1016V audio-visual receiver. The speakers are a 5.1 pack of Monitor Audio's Bronze Reference, with the BR5s serving as the front speakers. The cables are, for now, just very basic models, but I have that under control since I'll be buying new ones very shortly. I also have a Pioneer DVD player and a Samsung LCD TV, but I doubt those are relevant to the two-channel listening I'd like to improve.

I guess my main questions are whether there will be problems using the Nait 5i with six-ohm loudspeakers like the BR5, or whether the amplifier's output of 50 watts into eight ohms will suffice to enjoy music at a considerable volume – I have to admit that I like to try to imagine the musicians playing live in front of me in my living-room. This question arises since I feel a considerable lack of power in the dynamics of the receiver, as well as limited size in the soundstage in stereo listening. Am I right to think the Naim is very balanced and detailed?

Sérgio Vasco, Portugal via email

HFC When we reviewed the BR5 in HFC 293, we found a sensitive speaker which is an easy load. When we put the Nait 5i through its paces in HFC 305, we found a mature, dynamic all-rounder capable of driving fairly tough loudspeakers.

The two are likely to work well together, though an audition is, as ever, strongly recommended. For stereo-only listening, you might want to turn off your AV equipment, as high-frequency circuitry can put radio-frequency interference back in to the mains wiring, which may have a noticeably negative impact on your Marantz and Nait.

#### i-Wonder

I am thinking of buying an i-transport for my iPod but am not sure what DAC would suit either the Wadia i170 or Onkyo docks. Should I be thinking of spending equally on each component, or is the DAC more important than the transport?

Rev Counter via email

HFC Both the Wadia and Onkyo are very capable transports, and will happily work with relatively costly DACs. The choice of how much to spend on a DAC is down to your budget really – the better the DAC, the better your system will sound. Cambridge Audio's DacMagic is an easy pick and won't be too far off your 50/50 rule-of-thumb costing. The iBasso D10 Cobra with opamp upgrade (HFC 326) would also be a fine choice.



#### **Open your mind**

Increasing numbers of audiophiles are finding that iPods and other portable music players, when used with a decent digital dock and outboard DAC, can make surprisingly impressive sources, which also happen to offer very good value for money. PCs with S/PDIF outputs can make handy transports as well – they may be bulkier, but if you're using one as a media centre anyway, why not add a DAC and hook it up to a two-channel system?

Lateral thinking occasionally yielded fruit for open-minded listeners in days of yore too. One of the *Hi-Fi Choice* team remembers a trip to North Carolina back in the mid-Nineties, which included a visit to a brother-in-law who just happened to be a hi-fi lover. While the loudspeakers were a pair of expensive Vandersteens, and the integrated a lovely hybrid, the transport was a cheap Optimus portable CD player!

A couple of owners had reported unusually proficient replay from this unassuming player, and it duly built up a bit of a cult following. It then went mainstream and shelves emptied almost overnight when measurements in a States-side audio magazine apparently showed it had jitter levels similar to those of a contemporary Wadia. Whatever figures it turned in for jitter, it evidently did, according to our colleague, display a crisp, clean, dynamic sound feeding a midrange DAC.

Another unusual transport/player which still has a bit of a following, even if it seems to garner as much controversy as praise, is the better variants of Sony's Playstation 1. According to the converted, with a little modification, it can produce the sort of sounds you'd expect from much more expensive gear. Others have chosen a similar path with tweaked DVD players, improving the power supplies to clocks and DACs, as well as replacing original op amps and capacitors with higher-spec audio-grade parts.

One thing such components as the Optimus are sure to cause is plenty of debate, some of it heated. The moral of these stories, though, is surely that we, as audiophiles, should keep an open mind when it comes to squeezing the best possible sound out of our music collections for a reasonable outlay. The best amplification to fit your budget might not be a pair of megawatt class B monoblocs, or a bijou class A stereo chassis with a mere 25 watts on tap. How about a pair of small, affordable Tripath amps, running off battery power or upgraded wallwarts and fed by an affordable preamp, bi-amping a pair of decent standmounts? With a bit of ingenuity, this could even metamorphose into an active system.

When you're wondering what your next new component should be, you might be better off taking the road less travelled...

# Made in Japan On the Air

Jon Marks tunes in and becomes addicted to the Trio Kenwood L-02T tuner



ast your mind back to HFC 325 and you may remember the wonderful L-07D turntable, which represented Trio/Kenwood's ultimate expression of the science of vinyl replay in late 1979. Weighing in at 36kgs with its outboard power supply and control unit, the L-O7D was an attempt to produce a turntable without compromise, the result of extensive electronic measurement and materials testing. The same year witnessed the release of the L-O1T tuner. Less than half the price of the L-07D, this was intended as a top-flight tuner to match the L-O1A two-box integrated amp. It wasn't until 1982, however, that Kenwood produced a tuner and integrated which would truly match the L-07D.

Aimed at the wealthy audiophile, the L-02T cost a not insignificant 300,000 Yen when it first went on sale (about £2,000 by today's standards, without taking into account almost 20 years' inflation!) For a tuner, this price tag marked it out unequivocally as a flagship model. By contrast, the L-07D cost 360,000 Yen, and the L-02A integrated, with its massive, separate power supply complete with grab handles, an eye-watering 550,000 Yen.

Given the company's history as a manufacturer of RF communication equipment, Kenwood undeniably had a solid knowledge of the field

to draw on, though the FM tuners which resulted were not always sonically outstanding, despite showing real technical expertise. That said, for the L-O2T, Mr Y Hayashi and the rest of the L series team decided it was time to produce what they might justifiably regard as the best tuner Kenwood could make.

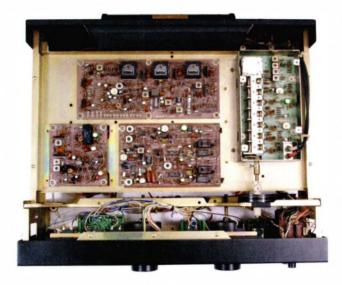
#### **MORE THAN SKIN DEEP**

The three years between the first and second generation of L series amplifiers and tuners brought with them a clear change in styling; whereas the 'O1s had chassis mainly of plastics and fibreboard (this largely non-magnetic casework never looked great and tended to feel rather flimsy), the 'O2s had more modern lines and employed steel and aluminium more widely. Internally too, the L-O2T benefited from a number of key changes, one of which was writ large on the fascia: 'The L-O2T employs a unique technique for the application of feedback in the Intermediate-Frequency amplifier to achieve a dramatic reduction in FM distortion.' The second change was a move away from the Pulse Count detectors which Kenwood had relied on for years, instead, the L-02T had a Phase-Lock Loop detector.

"Now we know why so many collectors who own an L-O2T are tight-lipped about how they like it – overall, the L-O2T is clearly one of the great tuners." www.fmtunerinfo.com



Pioneer's F-26 may only look like an average tuner, but excellent electronics provide high-end sound





This TU-X1 at amp8.com displays a simpler, tidier layout than the L-O2T. The shield lid has been removed to show the tuning capacitor gang

Accuphase's innovative T-1000 benefits from modern layout techniques and components, as well as balanced outputs alongside the more usual RCAs

One very informative website and a must-visit for fans of all things audiophile tuner, is the FM Tuner Group on Yahoo at http://tech. groups.yahoo.com/group/FMtuners/. One of the group's staff members and an L-02T owner is David 'Anonymous', an audio designer himself with successful speakers, DACs and other products to his credit. He summed up the L-02T thus: "Now we know why so many collectors who own an L-02T are tight-lipped about how they like it – overall, the L-02T is clearly one of the great tuners."

The L-O2T is a world away from the simplicity of a Leak Troughline. The balanced J-FET mixer of the Kenwood's front end replaced the diode mixer of the sought-after Kenwood KT-917, which gave the L-O2T a clear advantage over its predecessor in a number of areas, including the fact that the more relaxed drive requirements and lower voltage rail required by the J-FETs eliminated the problem of the diode mixer acting as a 10.7MHz transmitter.

With their choice of semiconductors in the local oscillator, Mr Hayashi and his team took a similar route to Pioneer and Yamaha, using high-spec devices, albeit with some doubling up to reduce noise. Kenwood was proud of its

IF stage too, and it is a great piece of engineering. With very careful alignment, this stage is certainly the equal of those in other super-tuners like Pioneer's slimline F-26 and Sansui's huge TU-X1.

Almost all high-end tuners have weak spots in their implementations and the MPX stage in the L-O2T fails to live up to the standard set by the rest of the circuitry, bar the typically lacklustre output stage. That said, with an external decoder, the results are very good indeed, and there's no need for any modification.

Anyone who's carried out a little DIY tweaking on even the best audio gear from the Seventies and Eighties will know that many examples contain depressingly mediocre opamps, which can hamstring the sonics of an otherwise exemplary component. Many cassette deck output stages, preamp line stages and tone controls (to quote but two examples of many) contain the 4558, or even the elderly and dreaded 741, both renowned for mauling the signal passing through them. Unfortunately, the L-O2T is no exception. If you'd rather not rework the output stage, then the aforementioned outboard MPX/

line-out is the best way to go and can give fantastic sound without the risk of damaging the tuner's resale value.

#### **SOUND WAVES**

Just as there can be bitter divisions in opinion over source technology, as in vinyl versus CD, so some audiophiles are happier with valves or transistors in their amplifiers and tuners. Both camps can provide sterling examples of fine circuitry well implemented, but trying to decide whether a valve tuner sounds better than a solid-state one is about as pointless as spending time fretting over whether CD is better than vinyl. They both have a great

#### **TUNER TUNE-UP**

A classic difficulty with classic tuners is the need for re-alignment. Over the years, component values drift and with so many carefully tuned circuits within them, tuners will almost invariably suffer from a drop in sound quality as they age.

Aligning tuners is definitely not for the faint-hearted. A service manual and a range of test equipment are mandatory, as well as the skill and expertise to use both correctly. In other words, it's a job best left to the pros.

The problem with aligning super-tuners like the L-O2T, is that they need to be measured to greater levels of accuracy than more mundane alternatives, and this requires more expensive test gear. Few places will have this sort of gear, so if you're considering buying an L-O2T, F-26, TU-X1 etc, then track down a competent engineer first. One outfit that appears to have refurbished and re-aligned a wide range of high-end components is www.amp8.com.

 $For all-round\ views\ of\ the\ L-O2T,\ visit\ the\ site\ at\ www.schoor.ch/pg/hifi/Kenwood\_L-O2T/index.html$ 



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John Bamford - Hi-Fi News Pioneer PD-D6/A-A6 / Group Test Winner

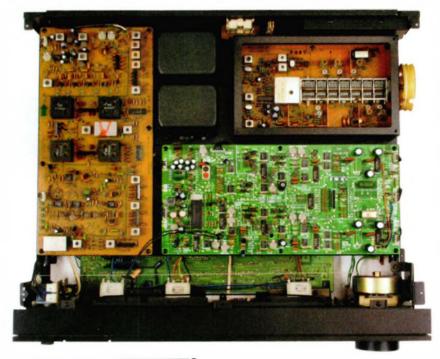
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(Above) The L-O2T has multiple power supplies. (Left) The ST-A7 features heavy screening cans

deal to offer, and the best component is simply the one which sounds the best to your ears in

your own system.

Even without an external decoder, the L-02T has deliciously wide bandwidth, low distortion and an attractively neutral balance. This is no sterile, low-fi biscuit-box tuner full of cheap ICs and opamps, replete with paper-thin soundstage, brittle top end and anaemic bass; the L-O2T has great bass control and extension, transparency and soundstage depth. It has an involving, unfatiguing way about it, which makes it hard to switch sources too - assuming you're blessed with a decent range of stations to tune into. Sadly, this tuner makes no attempt to produce a rose-tinted picture of signals which have been run through the compression wringer and as with all tuners of its era, the electrolytics and quite possibly potentiometers are going to need replacing. Even a fine, low-use L-02T can benefit substantially from a refurb and realignment, improving midrange smoothness even further.

Having sat for many a happy hour in front of an overhauled Leak Troughline with Tim de

Paravicini hybrid external decoder, we could definitely spend plenty of time with an L-02T, especially as its presentation dovetails so perfectly with that of Kenwood's L-08M amps With new electrolytics, these monoblocs have a deeply satisfying clarity, speed and neutrality alongside a naturalness which is very rare in muscle amps of the era.

It goes without saying that analogue audio technology is losing ground to digital as time rolls by, with the vast majority of non-critical listeners, and many audiophiles, opting for CD (and SACD) over vinyl. True digital amplifiers are still in the minority, though the next five years are sure to change that. The development of analogue tuners didn't cease with the advent of DAB, however, despite the fact that digital promised so much, but delivered so little, thanks largely to circumstances which saw the

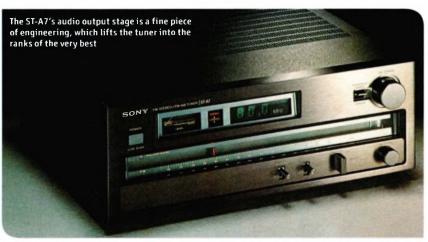
#### **TEMPUS FUGIT**

The L-O2T is not the only great tuner ever made. Pioneer's sleek F-26, Sansui's monster TU-X1 and Accuphase's groundbreaking T-1000 have already been mentioned. There are other worthy contenders, of course, including the Sony ST-A7, Pioneer's F-28 and TX-9500II, the Yamaha CT-7000 and Leak's venerable Troughline with external decoder. Whether to buy one of these tuners is a tougher choice these days due to the ill-conceived decision to turn off FM transmission within a few years. If you're going to invest, make sure you understand how long it might be before your pride and joy becomes, no more than a doorstop.

UK spectrum split more for financial gain than to broaden the choice of quality broadcasts.

Accuphase took the logical next step with its superb T-1000 tuner, which combines analogue with digital in a very perceptive, imaginative design. The T-1000's Direct Digital Synthesis local oscillator is built around a DSP-based sine generator, linked to a quartz oscillator. Further downstream, the multiplex decoder includes an AKM 5385 24-bit/ 192kHz ADC, whose output feeds a Texas Instruments DSP chip, which synthesises and then cancels the pilot tone. The final digital stage is an Analog Devices AD1853 DAC. Of course, thanks to the co-axial S/PDIF output fitted alongside balanced and single-ended, owners can tweak the sound of the T-1000 to suit their tastes, or improve it with a higher quality external DAC.

Tuner design is a complex art, which often results in compromises – many models' Pulse Count detectors have been poorly implemented, undermining a topology which can yield impressive results when properly (for which read 'expensively') implemented. Audio stages too frequently rely on inferior opamps, though Sony's ST-A7 is a shining exception. Still, the L-O2T, beloved of Ken Kessler and many other FM fans, remains a superb performer at the grand old age of 28. HFC





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# HFC BUYER'S GUIDE

Welcome to the new-look *Hi-Fi Choice Buyer's Guide* – the ultimate directory to the very best high-performance hi-fi gear that you can buy. Here, you'll find our favourite current products listed under easy-to-use categories, with up-to-date pricing and trustworthy verdicts.

#### Reviews you can trust

Hi-Fi Choice test results are the most reliable in the business. We employ the UK's most respected hi-fi journalists and use the most stringent techniques to ensure our ratings are the ones you can trust. All the equipment we rate most highly is contained within these pages, from CD and vinyl to the latest disc players, amplifiers, tuners and loudspeakers.

#### **Reviews online**

We've also included *techradar* listings where our reviews appear online with our sister site *techradar.com*. To access selected *Hi-Fi Choice* reviews online, simply type: techradar.com/ into your browser (remembering the forward slash), followed by the six-digit number printed in the first column of our *Buyer's Guide*.

#### How to use this guide

The Hi-Fi Choice Buyer's Guide is the best way to make a shortlist of components to audition. Pick the ones that best suit your taste and budget, then use our Dealer Classified section to find specialist outlets where you can try them with your favourite music and test discs.

THIS MONTH'S HI-FI HIGHLIGHT

Cartridges are
the flavour of the month
in our Ultimate Group Test on
page 64 and in keeping with this
theme, it's worth remembering that for
detail and resolution why not also check
out the Ortofon Rondo Red (page 105). At
the new price of £385, it's still amazing value
for money.



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# Our favourite sources



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D PLA		rs will make sweet music for years to come	WWW.TECHRADAR.COM	SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	CD-RW COMPATIBLE		BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	POOC NOMBEL
GE PRODUCT	-	COMMENTS	AR.COM	PATIBL	UNTPU	UNTPU	PATIBL	COTEXT	UE OU	SOCKE	UTPU	Cition
P TO £1.000	L	COMMENTS	OS EZ AV	m		WE		7				
Arcam CD17	700	Civilised sound, with a positively deluxe treble. Bass is clear, if not the weightiest ever	SAN TOWNS TO SAN		•		0					31
Audio Analogue Crescendo	599	Simple player that's clear and communicative with the appropriate partnering equipment	1000		•	0		0		0		32
Cambridge Audio Azur 840C	700	Superbly capable with a resolution and tonal evenness that's well worth hearing (silver finish)			•	0	0		0			3
Cyrus CD6 SE	900	A combination of detail and sheer musical energy with a hint of high end to the performance					•					3
Harman/Kardon HD990	550	Highly detailed with excellent extension at both extremes and impressive resolution	/594818		•	•	•		٥			3:
Marantz SA7003	600	Highly civilised sound may not be to all tastes, but there's plenty of detail to be heard			•	•						3
Marantz SA8003	830	Classic Marantz sound in a classy and attractive package. Our favourite sub-£1,000 player	/456022		•		•			75		3
Micromega CD-10	799	The cheapest in the range, the CD-10 has been fine-tuned to please the audiophile			•							3
Moon CD.5	999	Admirably energetic music-making from this very well-built player					•					3
NAD C545BEE	350	Apart from slight lack of bass control, sound is very fine indeed – treble is beautifully detailed					0					3
Naim CD5 <i>i</i>	895	Its competent musical performance comfortably exceeds the expectations of an entry-level player										3
Pioneer PD-D9	850	A mostly well-balanced player that's arguably at its best with classical music	/636734	6	•							3
Roksan Kandy K2	895	State-of-the-art technology and precision-engineering produces a fine CD performance	/483697		•							3
Rotel RCD-1520	695	Lacks optical digital output, but feature-count is fine and sound quality is expressive and open	/608305		•		•		•			3
BOVE £1,000			SELVE SE		Sec	Sen.			34	SE	101	
Arcam CD37	1,300	Excellent detail and imaging, neutral tonality and above-average bass resolution	/395096		0	0	•					3
Audio Research CD5	5,055	Audibly better than most CD players on the market – assertive and very dynamic	/455309		•	•			•			3
Cairn Fog 3	2,200	Ergonomically challenged, high-energy player with Gallic charm and digital preamp on board			•				•		0	3
	1,995	A CD player which gets to the nub of what music is about. Engages the listener every time			•		•					3
Creek Destiny		This player presents the music and nothing but the music and is thoroughly recommended					•					3
Cyrus Audio CD 8 SE	1,200	A highly civilised player which can, nevertheless, deal convincingly with raw music	/399370		•	•	•					3
Denon DCD-2010AE	1,700	Well equipped, finely detailed and with good support for compressed audio and iPod			•	•	•					3
EMM Labs XDS1	18,995	Very high-performance two channel only player with the option of a standalone D/A converter		•	•	•	•	•	•			3
Esoteric X-05		Superb resolve of fine detail with a perfectly judged balance and an ability to draw you in	/478365	9	•	•	•		•			3
Eeema Stream	1,170	The most timely disc player at its price point has tactile imaging and good dynamics			•							3
Eeema Antila II	2,735	Great build and multiple DACs give this a fast, revealing and totally engaging sound	/612396		•				•			3
Marantz SA-11S2	3,300	Superb value, this well-balanced player features various filter settings to customise performance			•	•	•		•			3
Meridian G08	2,400	Advanced digital processing with special apodising filter that gives a very clean sound	/455040		•	0						3
Moon CD3.3	2,200	With clear, detailed and energetic sound, this player also offers a digital ouput	/594609		•		•					3
Naim HDX		The HDX hard disk player represents an entirely new paradigm for high-fidelity replay			•		•					3
Rega Isis	5,998	A magnificently musical CD player at a realistic price. USB input is a useful addition	CI de			8	•					3
	1,450	An exceptionally fine CD player that provides a high-end and musically rewarding performance			•	•						3
Shanling CD-T1000SE	1,700	This player's valve/direct option gives a choice in terms of performance			•							3
Sony SCD-XA5400ES	1,199	Elegant, refined control system and very strong CD/SACD performance	/465933	2	•	•	•		0		-	3
Unison Research CDE		Valve CD player with interchangeable DACs that doubles as a standalone DAC that oozes musicality	/483759		•		•					3

SPECS KEY SACD COMPATIBLE Plays high-resolution SACD discs in two-channel mode. ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a DAC or digital recorder.

OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a DAC or digital recorder. CD-RW COMPATIBLE Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs.

CD TEXT Will display album and track titles from inserted disc. BAL ANALOGUE OUT Balanced XLR output connections for similarly equipped amplifiers. HEADPHONE SOCKET Quarter inch

(6.3mm) headphone jack fitted to the CD player. VARIABLE OUTPUT Player features both fixed level and variable, volume adjustable outputs.



After 5 years in production, the Dino is still one of the most popular phono stages around. Highly versatile with accessible switches on the baseplate to facilitate a wide range cartridges.

'Never Connected' power supply technology virtually removes all incoming mains noise allowing only the music to be heard.

Visit our website to learn more about this exciting product and the high performance Diablo phono stage.





# Our favourite sources



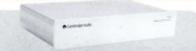
-	REST BLIV	FOUTUR'S CHOICE

	URNT	AE	LES	WWW.TECHRADAR.COM		STICASTIS	SPER	SUPPLIED WITH ARM	SUPPLIED WITH CAR	ISSI
ne b	est record players	you c	an buy	40/ R.	SPEEDS	SUBCHASSS	SPEED CHANGE	HIM	WITH	SSUE NUMBER
DGE	PRODUCT	£	COMMENTS	MO	SOE	SSE	SG E	NA.	ARI	男
=	Clearaudio Emotion	1,185	Beautifully built with open and clean sound emphasising mid and top, but delivering nice timely bass		33/45			0	0	30
7	Clearaudio Performance	2,300	Ceramic-magnetic bearing spells a surprisingly uncoloured performance		33/45			0		29
7	Continuum Calibum	125,000	Luxury turntable with state-of-the-art design includes Cobra tonearm and Castellon stand	/587169	33/45/78		0	0	٥	32
-	EAR Disc Master	8,800	Combines new 'no contact' drive technology and high-quality materials to bring state-of-the-art resolution		33/45/78	0	0	opt		27
7	The Funk Firm Funk V2	1,390	Not only as beguiling as those that preceded it, this turntable is also more substantial to boot		33/45		0	0	0	32
-	The Funk Firm Saffire	2,450	Individual design and a sound that's refined and neutral with strong timing and dynamics		33/45		0	opt	opt	30
7	Lumley Heliosphere	2,495	A distinctive-looking turntable with a unique sound and a performance that reflects your vinyl	/560765	33/45			opt	opt	31
-	Michell Tecnodec	608	Needs careful partnering but can deliver a very sophisticated result for the money		33/45			opt		309
-	Michell Gyro SE/RB250	1,565	A marriage of shot-putter-strength, build quality and robust audio (including arm substitute)		33/45			0	0	32
-	Pro-Ject RPM 5	550	Great looks plus engaging sound puts it in the serious league, but needs good isolation for best results		33/45		.0	0	0	279
-	Pro-Ject RPM 6.1	750	With its huge platter this is a steady design that's capable of fine results with a decent cartridge		33/45/78		0	0		29
=	Pro-Ject X-Pack	1,000	Combines some very strong elements (Ortofon Rondo Red) into a killer package with top sound and value		33/45		0	8	0	309
7	Rega P3-24	390	Very competent, uncoloured and musical, much improved by £148 outboard electronic power supply		33/45		opt	0		29
-/	Roksan Radius 5/Nima	1,375	Sophisticated design with accomplished sound quality, excellent imagery and good isolation		33/45	0	0			24
7	SRM Arezzo	699	The Arezzo is an excellent source component for those wanting a superb turntable for vinyl replay	/625025	33/45	0				325
7	Townshend Rock 7	1,720	Has the ability to pull detail out of a vinyl groove, making it the most resolute turntable at its price		33/45		D.	0		32
7	Townshend Rock WExcalibur II	7,000	If you want to hear everything that's on a record then there's no better machine for the job		33/45	0		0		307

_					PECIF	ICATI	ONS	
P	HONO	C	CARTRIDGES				REPLACEABLE	53
MM	ADGE PRODUCT £ COMMENTS  Dynavector DV-10X5 295 A high-output MC with superb dynamics and fine timing that's difficult to mount, but well worth the effort  Goldring Legacy 595 An MC cartridge better suited to the smoother-sounding turntable, it unearths a mountain of detail			WWW.TECHRADAR.COM			8 £ S1	SSUE NUMBER
BADGE	PRODUCT	٤	COMMENTS	COM	VW	8	STATA	NEH.
Ŧ	Dynavector DV-10X5	295	A high-output MC with superb dynamics and fine timing that's difficult to mount, but well worth the effort					307
₹	Goldring Legacy	595	An MC cartridge better suited to the smoother-sounding turntable, it unearths a mountain of detail			0		328
#	Grado Prestige Gold	149	Produces rich, open and expansive music with the minimum of fuss		8		0	235
Ŧ	Ortofon Salsa	280	Despite a touch of midrange coloration, this cartridge really involves the listener with good extension and a clean sound			0		290
÷	Ortofon Rondo Red	385	Delivers detail, power and resolution and makes a good case for its price			0		307
	Sumiko Blue Point Spec Evo III	239	High-output MC with refinement at high frequencies and a nimble, articulate and revealing sound					270
-	van den Hul MC One Special	699	A gorgeous cartridge that's worth the price every time you hear a familiar track in a whole new light			0		235
-	van den Hul Condor XCM	2,400	A stunning cartridge with stereo imaging, dynamics and resolution to die for			0		265

						SPECIFICATIONS								
P	HONO	2	TAGES	WWW.TECH	MM PH	MC PHO		ADJ	88					
Get the best performance from your turntable  BADGE PRODUCT £ COMMENTS			RADAR COM	ONO INF	NO INP	ADJ.	WD804	JE NUM						
BADGE	PRODUCT	3	COMMENTS	MOC	NPUTS	SIL	NAC	NCE	蜀					
#	Cambridge Audio 640P	100	An outrageously good bargain that suits budget systems, but can confidently survive upgrades			0			305					
-	Creek OBH15	240	Practical and highly compatible unit offering fine detail and a pleasing, mellow balance		0	0			305					
*	Soundsmith Strain Gauge	6,100	Revolutionary kit assembly that rewrites the rules about vinyl playback	/618387					324					
*	Tom Evans Microgroove	480	For dynamics and real bass extension with good tonal colour this is the one to beat			0			234					
-	Trichord Dino/Dino+	563	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility		0	0	0	0	234					

SPECS KY SPEEDS Speeds offered in rpm. SUSP SUBCHASSIS Turntables with a sprung or suspended support for the platter and arm. SWITCHABLE SPEED CHANGE Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. SUPPLIED WITH ARM Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you. SUPPLIED WITH CARTRIDGE Some decks are supplied with a starter cartridge and this is included in the price shown. MM Moving magnet cartridge – see amp and phono stage features to match this type. MC Moving coil cartridge – see amp and phono stage features to match this type. REPLACEABLE STYLUS Some cartridges have separate styli for ease of replacement, but it compromises sound quality.



Cambridge Audio 640P £100 If you need a low-cost way to get your turntable talking to your amplifier, this is by far the best option

**Dynavector** DV-10X5 £295 Fiddly to set up, but dynamics are superb from this high-output MC cartridge, making it a firm *HFC* favourite



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

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



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out performing designs at three times its cost"

Wired For Sound' - Adam Smith HI FI World - The Link Interconnect ....
"distinctly out of the ordinary offering a very detailed and crisp sonic picture leading edges of notes were beautifully precise and forthright with no sense of
hesitancy or blur...the bass end of the spectrum was lithe, tight and focused ....



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# Our favourite sources





BEST BUY EDITOR'S CHOICE

			State of the	SPECIFICATIONS						
RADIO '		JNERS	WWW.TECHRADAR.COM	\$			REMOTE	SIG. STRENGTH METER	ROT TUNING KNOS	188
Surf the waves with th	ese o	carefully selected tuners	ADAR	WAVEBANDS	PRESETS		CONTROL	M HT	N DA	SSUE NUMBER
BADGE PRODUCT	T.	COMMENTS	Ом	NOS	S	BIS	翠	Œ	.B	<b>E</b>
FM TUNERS										
Creek Audio Evolution	350	Sound is detailed, cohesive and extended both tonally and spatially - very classy		FM,M	80	0			0	308
Rega Radio 3	390	Strong bass, clear treble and a high enjoyment factor makes this an appealing FM performer		FM,M	20					283
T+AT1210R	1,200	High-end looks are matched by the sound, which is detailed and sophisticated		FM	100	0	0			283
DAB/FM TUNERS		CONTRACTOR OF STREET	V. Carlo							
Arcam FMJ T32	600	A highly cost-effective way of optimising the airwaves. iPod functionality is definitely a bonus	/559242	DAB,FM	100	0			0	319
Onkyo T-4555DAB	400	Admirably free of grain or obvious tonal blemishes, this tuner achieves a high standard		DAB	40		0	0	0	298
DAB/FM PORTABLES			MARK							
Monitor Audio Airstream 10	225	The range of features on this DAB/FM/Internet radio is certainly impressive	/636713	DAB,FM,Web	4	0			0	326
Pure Move	80	A feature-packed, beautifully built DAB/FM radio that is a pleasure to use	/608367	DAB,FM	20	0				323
Pure Evoke Flow	150	It makes internet radio integrate beautifully with conventional radio	/465944	DAB,FM,Web	40	0			0	313
Pure Evoke-2S (portable)	170	Attractive and well thought-out. Many useful features and very enjoyable with classical music	/516285	DAB,FM	100	0				318
Pure Avantı Flow	280	One of the best standalone solutions for internet radio with a tonality that's good for voices		DAB,FM,Web	40	0	0			322
Vita Audio R2i	300	Very smartly built with a sound that's full-bodied, neutral and detailed	/611865	DAB,FM	30	0			-01	323

SPECS KEY WAVEBANDS Which bands are supported: FM, M - medium wave, L - long wave, DAB - digital audio broadcasting. PRESETS How many stations can be stored in memory. RDS Radio Data System – station names and program titles can be displayed among other facilities (FM only, DAB has more comprehensive display potential). REMOTE CONTROL For the couch potato. SIGNAL STRENGTH METER Useful for setting up an aerial. ROTARY TUNING KNOB An ergonomic alternative to buttons.

				SPECIFICATIONS								
Audi	HEADPHONES  udiophile solutions for home and travel use		WWW.TECHRADAS.CCM	ELECTROSTATIO	SUPRA-AURAL	CIRCUMAURA	OPEN BACK	OLOSED BACK	WEIGHT (g)	3.5MM JACK ADAPTOR	SSIE NUMBER	
BADGE	PRODUCT	£	COMMENTS	3	IIC.	ž	2	9	9	(9)	3	99
4	ACS T2	500	Ear-canal earphones display an impressive midband intelligibility and a knack for digging out the detail	/479584						28		315
	Audio Technica ATH-CK10	279	In-ear headphones offer unforced detail, natural dynamics and excellent clarity							15		319
+	Beyerdynamic DT880	230	Combines musical involvement with a high degree of analytical virtues. Also very comfortable			6	69	6		205	8	312
*	Denon AH-D5000	600	Sound is comparable with good open-back models, while isolation both inward and outward is useful				9		•	320		312
*	Denuri AH-D7000	900	One of the best closed-back designs, bearing comparison with the finest open-back models	/478417					170	295	€-	314
Ŧ	Etymotic ER-4P	195	Fiddle with in-ear earpieces and angles of approach and you'll be repaid with super-detailed sound							20		319
*	Grado SR60i	100	A strong contender with out-of-class sound in most areas: a brilliant budget all-rounder	/603478		<b>5</b> 0		-		210	92	322
*	Grado GS1000i	1,100	A superb transducer, capable of astonishingly high performance standards	/624782				4%			•	32
1	Grado PS1000	1.795	Offer excellent detail and effortless dynamics, but they can be heavy to wear after a while					•		500	形	32
*	Sennheiser IE8	260	With its combination of neutral midrange and treble, this is arguably the best for in-ear, all-round sound							20		319
<b>*</b>	Sennheiser HD380	140	Clear and detailed, with very natural tonality through bass and midrange with just a little coloration				8		0		69	327
*	Sennheiser HD800	1,000	These headphones will convert loudspeaker listeners to the delights of personal stereo performance	/619269			2	₹?	₹8	350		324

SPECS KEY ELECTROSTATIC Uses electrostatic film instead of more common cone or dome dynamics. SUPRA-AURAL Earpads sit on ear rather than around it. CIRCUMAURAL Earpads rest on the head around the ears. OPEN BACK Vented capsules let sound in and out. CLOSED BACK Sealed capsules. WEIGHT in grams. 3.5MM JACK ADAPTOR Allows connection to personal stereos, computers etc



#### T+A T1210R £1,200

There aren't many similarly priced rivals to the Magnum Dynalab MD 90T for FM fans, but Germany's T+A has really hit the spot with the T1210R



#### Sennheiser HD380 £140

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



#### **ACS** T2 £500

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



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### Our favourite amplifiers



BEST BUY EDITOR'S CHOICE

Cyrus DAC XP (preamp/DAC)

Naim NAC 152 XS/NAP 155 XS

Roksan Caspian M Series-1

Digital Do Main Ba-1

Hovland HP-100/RADIA

Trilogy 909/990

MITEO		TER AMERICAN			SP	ECIFI	CATI	ONS		
ur pick of the best o		TED AMPLIFIERS	WWW.TECHRADAR.CO <mark>M</mark>		LINE INPUTS	PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (M)	ISSUE NUMBER
OGE PRODUCT	£	COMMENTS	COM		SIDA	INA	TROL	DE DE	3	VIDEN
P TO £1,000										
Audio Analogue Crescendo	599	In a room of appropriate dimensions, this amplifier has real musical presence			5			0	50	3
Cambridge Audio 840A v2	700	A chunky powerhouse with features aplenty, this amp offers detail and delicacy (silver finish)			8	0	0		120	3
Marantz PM8003	750	Detail isn't the utmost, but great vitality makes this amplifier quite thrilling			5	ММ	55	0	70	3
Moon 1.5	999	A likeable amp in many ways, with admirable bass, treble and imaging			5	0		0	60	(
NAD C3226BEE	320	Unusually confident into awkward loads and very assured especially in bass. Treble a touch recessed	/6032	:81	7		100	0	50	3
Naim Audio NAIT 5 <i>i</i>	765	More versatile than previous Nait's, the 5i is a superb amplifier that offers vivid insights into all manner of music			4		.0		50	
Roksan Kandy K2	895	Superior design and high-performance credentials makes this amplifier a must-have bargain	/4837	'22	5	ММ		0	125	
10VE £1,000										
TC SIA 2-150	2,376	Revealing, dynamic and powerful amplifier that works with a wide range of speakers, has superb build quality	/4784	183	4			0	150	:
Arcam A38	1,450	A winning combination of sonic virtues including highly developed detail and musicality			7	opt	200	16e	100	
Astin Trew AT2000	1,349	If you prefer the timbral and timing qualities of music to its bone-crunching potential, then this is a serious contender	/4985	574	4			9/	65	
Audio Analogue Puccini Settant	a 1,450	Detailed and lively, particularly in the upper octaves, but lacks a little bass extension			5	MC	0	0	160	
Copland CTA405	2,998	A musical and involving amplifier, which also has incredible insight and is user-friendly by valve amp standards			5				50	
Cyrus 8 XP d	1,500	High on features with a revealing upbeat sound and impressive five input onboard DAC	/6086	69	6		ă.	0	70	
Denon PMA-2010AE	1,700	High-class, well-equipped integrated, with a performance that is muscular, refind and detailed			6	MMMC	SP	0	80	
Electrocompaniet PI-2	1,600	A superb all-rounder, with insight on one hand and effortless musical flow on the other			6		9		100	
Electrocompaniet ECI-3	1,650	This is an impressively resolute and powerful integrated amplifier for the money	/6183	304	5				70	
Gryphon Atilla	6,995	With exceptional subtlety and definition, it has more than enough power to cope with just about anything musical			5				100	Г
Harman/Kardon HK 990	1,000	Very clever, with built-in DSP room correction and more – but most importantly a powerful and revealing amplifier	/5948	20	7	MC	9	0	160	
Leema Pulse	1,270	Admirable bass which combines extension, tautness and clarity. Higher frequencies are highly detailed and revealing			5	MM/MC	•		70	;
Eeema Tucana II	3,425	Highly featured, well-built and not short of power, this is a highly resolute and organic amp	/6123	96	7		-		148	
Lyngdorf Millennium Mk IV	10,995	State-of-the-art digital amplifier successfully transcends virtually all the problems that afflicts others of its type	/6032	31	5				150	
MSB Platinum M200	13,656	This amplifier's devastatingly good all-round sound quality sets a benchmark that few will approach	/6034	52		0				
Myryad MX12080	1,200	Sound is more assured at the top of the frequency range than the bottom, though bass is melodious and detailed			8		•		80	
NAD 375BEE	1,000	A good, solid amplifier that is fundamentally musical and gives a great bang for your buck	/62532	23	7	6		0	150	
Naim Audio NAIT XS	1,250	Its spellbinding, refined musical performance is a challenge to all integrated amplifiers	/4985	36	6	6	•		60	
Rega Osiris	5,998	Very solid all-round performer has massive power reserves and splendid stereo imaging			6				162	
Unison Res. Unico Primo	1,395	Line input can be converted to phono (at extra cost), plus an excellent mix of valve and solid-state virtues	/49927	79	5	140			85	
					PEC	IFICA	TION	S		
JRF/DI	$\Pi \Lambda V$	VER AMPS	www						סד	
		T LII AIVII O	) TECH	32					OWER	
parate boxes can b	ring c	ear advantages	WWW TECHRADAR	PREAMPL	AME	N	ONO	CON	POWER OUTPU	
SE PRODUCT	ring C	£ COMMENTS	R COM	PLIFIER	AMPLIFIER	UNE INPUTS	ONO INPUT	NTROL	W IN	
TO £2,000		L Gordon S								
Cambridge Audio Azur 840	E/840W	2,000 Enterprising technology delivers a pre/power combo that always sounds detailed and controlled		0	0	8	opt	0	200	٦
OVE £2,000										
Arcam C31/P38		2,450 Very civilised sound in the best possible way. Well featured and smartly built		9	0	7	opt	0	100	
Border Patrol Control Unit		3,995 Bluff-looking valve preamp, with one of the most neutral yet dynamic sounds around		0		5	opt			
Bryston BP16/ 2B SST <sup>2</sup>			8649	0	0	6	opt	0	100	;
Bryston BP26		3,670 Cracking preamp brings detailed results		0		8	opt	0		
Chord Prima/Mezzo 140		7,135 Small, muscular, beautifully made and styled, and sounds like a dream		0	0	5			120	:
Classé CP-700/CA-M400		9,200 Pre plus mono power combo with superb build, huge power and enormous flexibility.		0	0		opt	8		
		, and porter and ordered	_				-			

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.

2,275 A DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz

18,900 Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers

2,800 A powerful and enjoyable-sounding amplifier combo that brings out the strengths of its CD player

6,495 By recreating the V-FET, DDM has built one of the most thrilling ampifiers on the market

1,920 Preamp and power amp duo offers excellent performance and classic Naim virtues

10,390 Extremely musical valve-based pairing with hybrid power and beautiful finish

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### Arezzo & Athena. Sometimes beauty is more than skin deep

#### New!







Athena - from £599 inc. arm

Arezzo - from £699

Arezzo Reference - from £2999

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

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

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

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

We couldn't have put it better ourselves.

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

### SRM

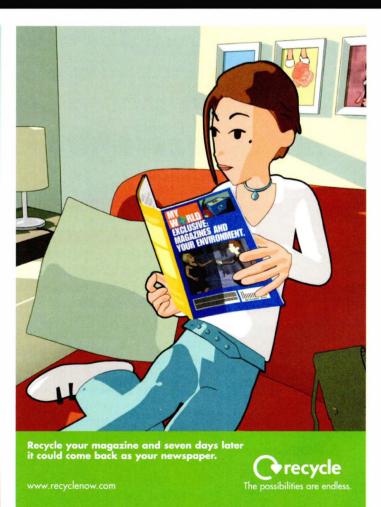
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### Our favourite cables



BEST BUY EDITOR'S CHOICE

			SPECIFICATIONS			ONS			
ABLES		fference and sight, and has recommended in	WAAY TECHRADAH CON	STR	SOLID	0		DIGITAL CABLE TYPE	ISSUE NUMBER
ibles really can maki		fference, especially our top recommendations	RCOM	STRANDED	SOLID CORE	COPPER	SILVER	HAL 3	MEGR
NALOGUE INTERCONNECT		COMMENTS							
Audioquest Sidewinder	45	A detailed cable, with fine tonality and excellent rhythm – slight upper-bass warmth does little to detract		0.		0			29
Black Rhodium Prelude	90	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit				a			29
Black Rhodium Coda	150	Superb bass with neutral and detailed midrange, treble generally sweet with occasional slight constriction		0		0			29
Black Rhodium Polar Illusion	250	A good all-rounder, with clear and purposeful bass and particularly fine treble		0		0			32
Cambridge Azur Reference	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble with no trace of dryness		0		0			29
Chord Co. Indigo Plus	995	Costly, and high-class cable needs running in, but this is a finely detailed design overall	/608313	0					32
Clearer Audio Silver-line	283	Complex, well-screened cable which offers good sound all round with exceptional bass		٥		0			27
CrystalCable Piccolo	348	Thin, but tougher than it looks, Piccolo hassome qualities of a solid-core type – notably resolution, focus and articulation			0		0		29
Kimber Timbre	145	A very neutral cable that will complement even very upmarket systems		0		•			31:
Monster M350i	45	Few cables at this price reveal so much about the recording space.				0			28
Monster M1000i	230	Very capable, with only a hint of bass dryness to set against excellent results elsewhere		0		0.			28
Nordost Wyrewizard Dream	110	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass			0	0.			30
Oehlbach NF214	63	The bass is a matter of taste, but suits many smaller speakers with good mid and treble		æ		0.			28
QED Signature Audio S	190	Mellifluous and rounded, this cable is a great choice for lovers of the human voice				0			32
Supra EFF-IX	77	Lively sounding cable which maintains a high level of detail and neutrality, musically, a great all-rounder		0		0			30
Townshend Isolda DCT100	99	Sound has a particularly enjoyable cohesion and naturalness that makes for great listener involvement			0	0			31
van den Hul The Wave	125	Generally neutral, with a hint of upper-bass richness: images seem to reside slightly further away than most		0		0			31
GITAL INTERCONNECTS	500	THE REPORT OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PE	00.30						
Kimber DV-30	98	A superb performer that lacks very little, even when compared to Kimber's high-end models		0		0		Е	31
Merlin Scorpion Digital	130	Reduces distortion, making sound clear with unusually revealing low frequencies		0				Е	31
Supra AnCo	30	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context		0		•		Е	30
EAKER CABLES (PRICE F	ER ME	TRE)					7		
Atlas Hyper 1.5	12.5	Don't look to this cable to beef up the bass, but its performance at higher frequencies is revelatory at the price		0					29
Atlas Ascent 2.0	60	A highly analytical cable, with more bass extension than at first appears and very fine detail across the board		0		0.			29
Chord Co. Silver Screen	6	Screened speaker cable with excellent treble, but just a little light in the bass at times		0		0			31
CrystalCable Piccolo	1,395	A chip off the old block, this speaker cable has a similarly fast, fluid and subtle sound (price reflects 3 metre pair)			0		0		30
Kimber 4VS	155	In the right system, this cable is a good choice (price reflects 2.5 metre terminated pair)		6					32
Monster MCX-1s	5	Notable for its bass, which is perhaps a touch overdone at times but could be a good foil to small speakers		0					28
Nordost Heimdall	185	Alternative to Valhalla, silver-plated, micro-monofilament construction, suitable for exacting systems		0		0			27
QED X-Tube XT300	12.5	A natural and controlled-sounding cable that's cost-effective for mid-priced systems			0	0			31
QED Revelation	15	Sensibly priced, this cable offers a performance which is a step-up from budget types		0		0			31
Townshend Isolda DCT	50	Cryogenically treated 'impedance-matched' cable with stabilising components added			0	-0			24
van den Hul The Wind	50	Separate conductors provide plenty of room for experimentation and the conductor quantity keeps resistance low			0	9			31
Wireworld Solstice 52	25	Rather bulky and awkward, but performance amply justifies it with superb bass solidity		e		0			31
Wireworld Oasis 6	40	Excellent bass with tunefulness and extension all first-rate. Awkward to handle, though	/617560	œ					32

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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Linn Linto Phono preamp Blk S/H (1Yr G/tee)(1180.00)	£599.00
<b>Linn C 4100</b> PowerAmp Sil New (2Yr G/tee)	£1195.00
<b>Linn Klout</b> Power amplifier S/H (1Yr G/tee) (2400.00)	£800.00
Linn Majik 140 Loudspeakers- Maple E/D (2Yr G/tee)(1590.00)	£1119.00
<b>Naim CD5i</b> CD Player S/H (1-Yr G/tee) (875.00)	£599.00
<b>Naim CD5i-2</b> CD Player E/D (2Yr G/tee) (899.00)	£699.00
<b>Naim AV2</b> Processor E/D (1Yr G/tee) (2600 00)	£1295.00







#### All items listed below with full two year warranty

Arcam Solo Music System E/D (Was 1250.00)
<b>Arcam CD17</b> CD Player <b>E/D</b> (Was 700.00)
Arcam FMJ A18 Amp Silver NEW (Was 600.00)
Arcam FMJ A28 Amplifier NEW (Was 900.00)
Arcam Muso Speakers Pair NEW (Was 400.00)
<b>Arcam P1000</b> Power amp <b>NEW</b> (Was 1600.00)

NOW	•	£/99.UU
Now	-	£295.00
Now	-	£395.00
Now	-	£595.00

Now - £249.00 Now - £629.00

# Our favourite loudspeakers



BEST BUY EDITOR'S CHOICE

TERE  thaps the most influ		SPEAKERS  Il link in the chain  COMMENTS	WWW.TECHRADAR.COM	SIZE W,H,D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	
TO £1,000  Acoustic Energy Aegis Neo 3	363	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight	6,45	20.005.04		А	24	0		
Acoustic Energy Radiance 1				20,90.5,24	0					2
		Limited bass, power handling and dynamics, but exceptional mid-to-treble voicing		18.5,32,25		A	33	0		3
Amphion Ion L	900	Sharp styling, fine mid/treble coherence and a sweet treble, but less happy bass alignment in test room		162,326,265		A	40	0		3
ATC SCM11	867	A very fine little speaker that's at its best with natural recordings where it adds little and reveals much		21,38,25		Α-	55		-	2
AudioPro Avanti A.10	350	A tough and effective little speaker – overall balance is quite smooth and even		19,29,26		A+	38	0		(
Bowers and Wilkins CM1	488	Luxury miniature has laid-back sound, with low coloration and fine imaging, but weak dynamics		16.5,28,28		A-	40	0		2
Bowers and Wilkins 684	699	A fine all-rounder at a realistic price, this floorstander has a smooth, even and nicely open balance	/483503	20,91,30	0		22			
Bowers and Wilkins 683	879	High-class drivers and a great price makes for a warmly recommended speaker		20,99,34	0		20			1
DALI Ikon 6	999	Needs care with setup, but rewards you with impressively transparent and obsessively detailed sound		19,100,33	0	Α	37	0		1
Dynaudio DM 2/10	880	Unfashionably bulky standmount has fine dynamics, grip, bass and headroom and is well mannered		27.5,45,35		Α	22			
Focal Chorus 706V	389	Advanced drivers deliver an even, overall balance with healthy dynamic expression and tension		22,39,25		Α	27			
Focal Chorus 726V	950	Compact and realistically priced, the Chorus 726V is a good all-round performer		22,99,37.5	0	Α	25	0		
JBL Studio L880	700	Good value floorstander with neutrality, massive headroom and plenty of punch		22,99,37	0	Α	25	0		T
KEF iQ50	599	Looks cute and very discreet, with spacious imaging, good balance and a sweet treble	/483527	17.5,81.5,26	0	Α	23	0		
Monitor Audio BR2	230	Good-looking standmount has a muscular sound with superior coherence		18.5,35,25		A-	30		0	
Monitor Audio BR5	450	Not the best dressed in its class, but detailed, bold-sounding and good value		17, 85,25		A-	36	0		
Monitor Audio Silver RS8	850	Bold, dynamic sound marks it out from the crowd and it's an easy load that works well in larger rooms		90, 18,27	0	А	33	0	0	T
Monitor Audio GS10	900	More neutral tonally than some recent MAs, the GS10 is a high-quality stereo design which is easy to drive		20, 36, 27		A-	40	0		
PMC DB1i	895	Could be more neutral, but a very effective musical communicator with fine warmth and sweet treble		15.5,29,23.4		A+				
ProAc Tablette Ref Eight	704	Stunning standmount with electrostatic-like imagery. Its brother costs £200 more and is even better!		15,27,23		A+		0		
Q Acoustics 1010	110	Neatly styled miniature has limited bass and power handling, but fine midband voicing for the price		15,21.5,19.5		Α	48		0	
Q Acoustics 1020i	140	Outstanding value, the smooth, well-balanced and lively sound makes for a fine communicator	/516273	17.5,25,26.5			60		0	H
Rega RS1	390	Clever close-to-wall speaker has a fine coherence and good communication skills	7010270	15,32,23.6		A	23		0	
Russ Andrews SP-1	352	This tweaked Focal 705V RA has a sound that is immediate, engaging and, most importantly, great fun		192,315,24.8			65		0	ľ
						АТ				
Spendor S3/5R	750	Lacks dynamic muscle and loudness potential, but lovely smooth neutrality and good bass extension	4400057	16.5,30.5,190			25	0	0	1
Tannoy Revolution DC4T	599	Ultra-compact floorstander that lacks bass weight and dynamic tension, but sounds open and coherent	/48883/	15,85,16	0		40		0	
Tannoy Revolution DC6	900	Pretty compact standmount likes wall loading, delivering a lively bass and smooth, coherent midband		23,36.5,23		Α	40		0	-
Wharfedale Diamond 9.1	150	Superior shape and finish at an exceptionally sharp price. Sound is laid back, but free from boxiness		19.5,30,28		Α-	45	9		-
Wharfedale Diamond 10.5	480	Despite the low price, the 10.5 ticks many of the boxes, with superior voice band coherence	/636778	22,88,30	0	A-	50	0		
OVE £1,000	6000									Ä
Adam Audio Tensor Delta	8,400	This active loudspeaker brings a powerful range of capabilities to its performance		33,56,34		Α		0		
AE Energy Radiance 3	1,500	This speaker's very effective enclosure ensures a wide dynamic range and a very clean sound	/587236			Α		0		
Amphion Argon 2 Anniversary		Notably superior coherence and focus, fine neutrality and dynamic range with low coloration		19,38,31		A-	24	0		
Amphion Helium 520	1,000	Sharp styling and fine value for money with excellent voice-band coherence		16,104,22	0		28	0		-
Amphion Argon 3L	2,300	Very solid build ensures an impressively clean sound with loads of bass and fine neutrality		19,92.5,30.5	0		26	0		
4	1,550	Slim, laid-back floorstander has sweet sound with fine coherence, imaging and dynamic range		17,99,26	0	Α	28			
ALR Jordan Classic 5		Makes a great case for the active speaker. Includes built-in amps and is good value		27,45,33		ACT	42	0		;
ALR Jordan Classic 5 ATC SCM16A	2,376			16,35,26	0	Α	45			;
ATC SCM16A	2,376 2,898	Boasts exceptional stereo imaging and mid-through-treble coherence		.0100120		Α	50	0		(
ATC SCM16A		Boasts exceptional stereo imaging and mid-through-treble coherence  With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging		19,103,31	0	11				
ATC SCM16A  Audioplan Kontrapunkt IVB	2,898		/479149			~	20	5		
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super	2,898 2,600	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging	/479149	19,103,31		ACT		0		(
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS	2,898 2,600 1,650	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes Active mini-monitors that are exceptionally accurate and dynamic sounding		19,103,31 21.5,107.5,26.8	0					Н
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS  AVI ADM9	2,898 2,600 1,650 1,125 1,760	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes Active mini-monitors that are exceptionally accurate and dynamic sounding Tall, elegant, expressive midband and expansive, but well-controlled bass		19,103,31 21.5,107.5,26.8 20,30,26 20,102.5,32	0	ACT A	60 60	0		3
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS  AVI ADM9  Bowers and Wilkins CM9  Cabasse MC40 Java	2,898 2,600 1,650 1,125 1,760 1,360	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging. The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes. Active mini-monitors that are exceptionally accurate and dynamic sounding. Tall, elegant, expressive midband and expansive, but well-controlled bass. This large and handsome speaker has a notably smooth and evenhanded neutrality.		19,103,31 21.5,107.5,26.8 20,30,26 20,102.5,32 25,110,35	0 0	ACT	60 60 20	0		3
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS  AVI ADM9  Bowers and Wilkins CM9  Cabasse MC40 Java  Cabasse Bora	2,898 2,600 1,650 1,125 1,760 1,360 2,200	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging. The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes. Active mini-monitors that are exceptionally accurate and dynamic sounding. Tall, elegant, expressive midband and expansive, but well-controlled bass. This large and handsome speaker has a notably smooth and evenhanded neutrality. A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics.	/597244	19,103,31 21,5,107,5,26,8 20,30,26 20,102,5,32 25,110,35 33,27,50	0 0	ACT A A A	60 60 20 52	0 0		:
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS  AVI ADM9  Bowers and Wilkins CM9  Cabasse MC40 Java  Cabasse Bora  Dynaudio Focus 220	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes  Active mini-monitors that are exceptionally accurate and dynamic sounding  Tall, elegant, expressive midband and expansive, but well-controlled bass  This large and handsome speaker has a notably smooth and evenhanded neutrality  A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics  Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble	/597244	19,103,31 215,1075,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,29.5	0 0 0	ACT A A A A-	60 60 20 52 20	0 0 0		
ATC SCM16A Audioplan Kontrapunkt IVB Audiovector S3 Super Aurousal VS AVI ADM9 Bowers and Wilkins CM9 Cabasse MC40 Java Cabasse Bora Dynaudio Focus 220 Focal Chorus 816 V	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630 1,099	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes Active mini-monitors that are exceptionally accurate and dynamic sounding Tall, elegant, expressive midband and expansive, but well-controlled bass This large and handsome speaker has a notably smooth and evenhanded neutrality A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble Fine, warm balance, superior dynamics and a sweet top end, but could be smoother	/597244	19,103,31 215,1075,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,295 28,100,37.5	0 0 0 0	ACT A A A A- A+	60 60 20 52 20 20	0 0 0 0		
ATC SCM16A  Audioplan Kontrapunkt IVB  Audiovector S3 Super  Aurousal VS  AVI ADM9  Bowers and Wilkins CM9  Cabasse MC40 Java  Cabasse Bora  Dynaudio Focus 220  Focal Chorus 816 V  Focal Chorus 826 V	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630 1,099 1,349	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes Active mini-monitors that are exceptionally accurate and dynamic sounding Tall, elegant, expressive midband and expansive, but well-controlled bass This large and handsome speaker has a notably smooth and evenhanded neutrality A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble Fine, warm balance, superior dynamics and a sweet top end, but could be smoother Times nicely, goes loud with ease and will produce precise imaging if appropriately set up	/597244	19,103,31 215,107.5,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,29.5 28,100,37.5 28,104,37.5	0 0 0 0 0	ACT A A A A- A+	60 60 20 52 20 20 45	0 0 0 0		
ATC SCM16A Audioplan Kontrapunkt IVB Audiovector S3 Super Aurousal VS AVI ADM9 Bowers and Wilkins CM9 Cabasse MC40 Java Cabasse Bora Dynaudio Focus 220 Focal Chorus 816 V Focal Chorus 816WSE	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630 1,099 1,349 1,499	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes  Active mini-monitors that are exceptionally accurate and dynamic sounding  Tall, elegant, expressive midband and expansive, but well-controlled bass  This large and handsome speaker has a notably smooth and evenhanded neutrality  A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics  Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble  Fine, warm balance, superior dynamics and a sweet top end, but could be smoother  Times nicely, goes loud with ease and will produce precise imaging if appropriately set up  The W cone makes some of the qualities associated with Focal's high-end models more competitive	/597244	19,103,31 215,107.5,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,29.5 28,100,37.5 28,104,37.5 99,8,28.2,37.5	0 0 0 0 0	ACT A A A A- A+ A A+	60 60 20 52 20 20 45 39	0 0 0 0 0 0		
ATC SCM16A Audioplan Kontrapunkt IVB Audiovector S3 Super Aurousal VS AVI ADM9 Bowers and Wilkins CM9 Cabasse MC40 Java Cabasse Bora Dynaudio Focus 220 Focal Chorus 816 V Focal Chorus 816WSE Focal Chorus 836V	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630 1,099 1,349 1,499 1,699	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes  Active mini-monitors that are exceptionally accurate and dynamic sounding  Tall, elegant, expressive midband and expansive, but well-controlled bass  This large and handsome speaker has a notably smooth and evenhanded neutrality  A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics  Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble  Fine, warm balance, superior dynamics and a sweet top end, but could be smoother  Times nicely, goes loud with ease and will produce precise imaging if appropriately set up  The W cone makes some of the qualities associated with Focal's high-end models more competitive  Bulky, sharply priced three-way could be prettier, but has good bass with genuine grip	/597244	19,103,31 215,107.5,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,29.5 28,100,37.5 28,104,37.5 99,8,28.2,37.5 28,115,38	0 0 0 0 0 0 0	ACT A A A A- A+ A A+ A	60 60 20 52 20 20 45 39 28	0 0 0 0 0 0		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
ATC SCM16A Audioplan Kontrapunkt IVB Audiovector S3 Super Aurousal VS AVI ADM9 Bowers and Wilkins CM9 Cabasse MC40 Java Cabasse Bora Dynaudio Focus 220 Focal Chorus 816 V Focal Chorus 816WSE	2,898 2,600 1,650 1,125 1,760 1,360 2,200 2,630 1,099 1,349 1,499	With the useful ability to upgrade, this speaker offers good musical communication and stereo imaging The fine coherence and imaging of a single driver system, plus extra help at the frequency extremes  Active mini-monitors that are exceptionally accurate and dynamic sounding  Tall, elegant, expressive midband and expansive, but well-controlled bass  This large and handsome speaker has a notably smooth and evenhanded neutrality  A real enthusiast's choice with high sensitivity, strong bass and powerful dynamics  Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble  Fine, warm balance, superior dynamics and a sweet top end, but could be smoother  Times nicely, goes loud with ease and will produce precise imaging if appropriately set up  The W cone makes some of the qualities associated with Focal's high-end models more competitive	/597244	19,103,31 215,107.5,268 20,30,26 20,102.5,32 25,110,35 33,27,50 20.5,98,29.5 28,100,37.5 28,104,37.5 99,8,28.2,37.5	0 0 0 0 0 0 0	ACT A A A A- A+ A A+	60 60 20 52 20 20 45 39 28	0 0 0 0 0 0		

### Our favourite loudspeakers



BEST BUY - EDITOR'S CHOICE

					SPECIFICATIO		NS		77		
	TERE PRODUCT	Σ	SPEAKERS continued	TECHRADAR.COM	SIZE W.H.D (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
VO	E £1,000		Additional property of the second		7000						
7	Guru QM10	1,595	A very clever close-to-wall standmount with fine imaging, that sounds a lot bigger than it looks	/465869	30,25.2,23.2		Α	26		0	31
7	Jamo R 907	6,600	Arguably the more 'chummy' of Jamo's dipole flagships, it offers a powerful bass and open midrange	/498515	44,118.9,7	Ò	Α	30	0		3
7	Kudos Cardea C1	1,450	A very pretty compact standmount with a delightfully subtle and delicate sound quality		20,35,27		Α	40			3
7	Kudos Cardea C2	1,950	This floorstander is a fine all-round performer with fine voicing and neutrality		20,92.5,27	0		23	0		3
7	Kudos Cardea C30	5,250	An absolute honey that fully justifies its hefty pricetag, lacking only a little dynamic tension	/394973	20,112,27	0		22	0		3
7	Magico V2	18,000	High pricing derives from this speaker's superb, painstaking engineering and impressive performance	/624700	25.5,115,30	0	Α	32			3
7	Magneplan Magneplanar 1.6	2,500	Great with acoustic and classical material, this dipole panel speaker has superb sound quality		48,165,5		Α	43			3
	Mission 796	1,300	Clean, open and detailed, this smooth, relaxed loudspeaker does exactly what it says on the box	/594834	20.6,99.8,31.8	0	А	25	0		3
7	Monopulse 42A	1,995	Oddball styling, fine bass-to-mid balance and dynamics and superb voice coherence		26,110,25	0	А	25	0.		3
7	Monitor Audio PL300	6,000	New level of sophistication from a manufacturer best known for mainstream, cost-effective designs		41,111,47	0	A-	28	0		3
7 1	Mordaunt-Short Perf 6 LE	4,799	Striking moulded enclosure minimises coloration, while overall balance is smooth, neutral and open		24,115,43	0	А	22	0		3
7	Neat Momentum 3i	1,790	Sounds a lot bigger than it looks, with good coherence and an impressively wide dynamic range		22,38,27		A-	23	٥		3
-	Opera Callas	3,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	/429144	23,37.5,34			32	0		3
7	Opera Seconda	1,995	Fine styling and finish, plus very superior voicing, if a shade lacking in warmth		24,102.5,31.5		А	20			3
P	Pioneer S-2EX-W	5,200	This speaker offers superb midband neutrality and exceptional clarity	/587272	29.1,56.5,42.5	0	А	37	0		3
F	PMC FB1i	2,100	A floorstander that boasts impressive bass extension and a smooth sweet top end	/429594	20,100.30		Α	20			3
7	PMC 0B1i	3,600	This floorstander delivers a smooth overall balance with wide bandwidth and dynamic range	/429697	20,102.5,32.5	b	Α	20			3
7	PMC fact. 8	4,600	Beautiful styling, alongside a superb all-round sound quality with a notable wide dynamic range		15.5,105,38		Α	55	۰		3
7	PMC IB2i	8,900	Delivers a top-class sound quality, fine imaging and exceptional dynamic grip	/617595	33,74,46.5	0	Α	25	0		3
7	PSB Synchrony One	3,500	Slim and discreet floorstander that delivers superb sound quality and flexible bass	/516267	22,109,32.5		А	45	۰		3
F	Revel F32	3,200	Meticulously balanced, tonally neutral design makes for a taut, well disciplined sound		22,105,39	0	Α	20	ю		2
F	Revolver Screen 3	2,799	Visually dramatic and very successful in delivering genuine high-quality hi-fi sound		50,140,11		Α	35			(
F	Roksan Caspian FR-5	2,475	Sharp-looking speaker sounds exceptionally open and lively without aggression		20,100,25	0	А	22	0		2
F	Ruark Talisman III	1,499	No bass demon, but a sophisticated and agile speaker epitomising Ruark's design ideals		22,84,31	0	А	22	0		2
9	Sonus faber Luito Monitor	1,690	A subtly designed, elegant-sounding package that's hard to beat, especially with good recordings	/603221	18.5,35,33.5		A-	55	0		3
9	Sonus faber Minima Vintage	2,490	Easy, graceful-sounding compact is a natural for acoustic material at moderate volume levels	/455417	20,33,27.5		A-	55	0		3
7 9	Sonus faber Cremona Audit.	3,350	Open, exciting and with surprisingly good bass this is 'The Little Speaker That Could'		20,35,37		А	50	0		3
	Spendor SP3/1R2	1,600	Conservative styling, superb neutrality and coherence with unusually low coloration		22.40.28		А	37	0		3
2	Tannoy Definition DC10T	5,000	Classy speaker has massive base, high sensitivity and precise image focus	/608326	34,1125,32	0	A+	35	a		3
T	otem Model 1 Signature	1,975	Expensive, but very seductive miniature delivers a beautifully smooth and balanced midband		17,31,23		А	35	0		2
7	Triangle Genese Quartet	2,775	Great material value and a solid all-round sonic performance with great loudness potential		23,117,37	0	А	25			3
	riangle Magellan Concerto	16,250	New 'sw2' version is less immediate than its predecessor, but it remains highly enertaining		60,160,45	0	A-	32	0		2
_	Jsher Compass CP-6381	2,500	Lots of speaker for your money, with plenty of deep bass, unusual styling and massive build		35,127,65		А	20	0		2
	· · · · · · · · · · · · · · · · · · ·	14,495	With a subtle, fast and wide bandwidth, this speaker is one of the finest on the planet	/625361	28,130,45		Α	35			3
	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	0	Α	28	0		
	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			
_	Yamaha Soavo 2	1,200	Cunningly crafted standmount with a beautiful balance that always sounds lively, open and involving		22.38.35		Α	28			2
_	Zu Essence	3,750	Sheer realism and fine communication skills are more than fair compensation for balance shortcoming		30.5,125,30.5		A		0		3

SPECS KEY SIZE W,H,D (CM) Width, height and depth of one cabinet in centimetres. FLOORSTANDER Speakers that don't require stands. EASE OF DRIVE How much power the amplifier needs (approximately) to drive the loudspeaker effectively. A+ 25 watts plus A 50 watts plus A- 100 watts plus ACT Active — the speaker has its own in-built amplifier. BASS FROM How low the speaker goes — the smaller the number the deeper the bass. FREE SPACE The speakers work best away from wall(s). CLOSE TO WALL The speakers will work best when up against a wall (but avoid corners).



#### Amphion Ion L £900

A great-looking loudspeaker that also boasts a superb mid/treble coherence and a super-sweet treble, some experimention with positioning will reap rewards



Mission 796 £1,300

Mission's 796 is a great choice for audiophiles looking for a clean, open and detailed sound with classic Mission aesthetics and great build quality



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### Our favourite accessories





_	CHIRDLENIT CHIRDCHIA			SPECIFICATIONS						
E	QUIPN		ENT SUPPORTS	_	TOP PLATE		NUMBER OF	So	ISSI	
Hi-fi	equipment suppor	rts co	ome in all shapes and sizes	HEIGHT CM	SIZE (CM)	WELDED	F SHELVES	SHELF T	ISSUE NUMBER	
BADGE	PRODUCT	£	COMMENTS	3	3	ĕ	S	TYPE	Ħ	
	Atacama Equinox	409	Stable, modular design with style and excellent bass transients	81	50,50	0	4	Glass	217	
***	Audiophile Base Std Supp't	1,200	Expensive and quite bulky, but sound is unusually detailed and resonance-free	57	46,35		3	MDF	302	
-	Aurios Classic Bearing feet	230	A widely versatile set of three isolation feet for most hi-fi kit, except suspended turntables					Metal	302	
-	Custom Design Inert Matt	70	Isolation platform can improve the sound of hi-fi components, but is a bit small for most kit		40x25			Metal	311	
	Custom Design XL4	380	Simple construction pays off in smart looks. Sound contribution is minimal		60,42		4	Glass	293	
	Custom Design Milan	509	Good-looking stand with nothing more to complain of than slight muddying of detail	57	48,39		4	Glass	302	
WA	Hi-Fi Racks Podium	500	A keenly priced piece of high-class furniture that also happens to sound great		59.5			Wood	320	
WA	Isonoe Isolation feet	98	A set of four isolation feet that are ideally suited to microphonic kit like turntables					Alloy	327	
	Partington Minim	470	Adds its own character to rock, but to the detriment of acoustic sounds	78	45,37	0	5	Glass	302	
-	Quadraspire QX25 Support	25	Beautifully simple design, cheap and easy to use. Excellent with CD players					Acrylic	327	
***	Russ Andrews Torlyte Platform	146	This unassuming platform can be a godsend, cleaning away mid/treble muddle from the sound	8	48,36		1	Torlyte	302	
	Russ Andrews Torlyte Rack	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54,49		4	Torlyte	240	
-	Townshend VSSS	1,380	This attractive Seismic Sink retains the same excellent vibration-killing sound quality	76	35,50		4	Glass	273	

				The state of	SPECIFICATIONS								
2	PEAK		R STANDS	неіднт (см	TOP PLATE			NUMBER OF LEGS	ISSUE				
Not	ot all stands are made equal – try one of our top buys				SIZE (CM)	FILLABLE	WELDED	R OF LE	NUMBER				
BADGE	PRODUCT	£	COMMENTS	3	3	Æ	0	83	9				
	Anvil Sound Display Stand	229	A variety of smart looks available – sound is clear and precise	50	20,17	0		1	293				
-	Custom Design RS300	110	An attractive stand whose lack of coloration suits it to high-resolution systems	56	16,5,18	0		1	281				
-	Custom Design SQ404	220	Robust four-pillar design gives very low coloration and maximises performance	61	18,16.3	0		4	283				
da	Partington Ansa 60	119	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	0		4	232				
-	Partington Dreadnought BS	299	Sound is better defined in almost all areas than cheaper, slimmer stands can offer	62	17,23	0		5	309				
-	Partington Heavi II	499	Robust to the nth degree, this stand helps produce very precise bass and upper frequencies	53	31,22	0		6	287				

SPECS KEY HEIGHT (CM) Height of equipment support and speaker stand (not including spikes) in centimetres. TOP PLATE SIZE (CM) Width by depth of the supporting platform(s). Single figures indicate a square platform (Speakers generally overhang top plates). FILLABLE The stand can be mass-loaded with sand and/or lead to stop ringing. WELDED As opposed to bolt-together construction. NUMBER OF SHELVES To put your kit on (different configurations are often available). NUMBER OF LEGS That support the stand. SHELF TYPE Material that shelves are made of.



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



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



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

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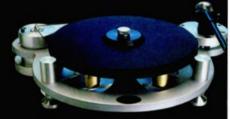
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# Second-hand guide

#### High-quality loudspeakers around the £2,000 mark

ith the average life of a loudspeaker generally being in excess of 20 years, buying second-hand can make a great deal of sense.

Our first speaker, in fact, is nothing like that old and has only been on the market for two and a half years. The Monitor Audio PL100 marked a return to high-end speakers for the company and was very much developed on a cost no-object basis. With this in mind, a ribbon tweeter and incredibly thin alloy-coned woofer with honeycomb pattern were fitted. Matching the speaker design was a bitumen lined stand that, as you'd expect, complements the speaker's acoustics. The sound quality is truly neutral and expansive. Ultimate bass is a little limited, but they're ideal in smaller rooms.

Monitor Audio told us that there were no specific issues to watch out for Excellent build quality should ensure a long life, although that thin woofer cone can be susceptible to damage; so inspect them both carefully and check for any dents. With the guarantee not being transferable, a sustained listening session is advisable. Otherwise, buy from a dealer offering separate cover. With a set of matching stands, the PL100s will set you back around £2,850 new. This made the threemonth-old pair we saw at £1,700, look exceptional value.

When developing the PL100, one of Monitor Audio's reference speakers would probably have been the Wilson Benesch Arc. It's hard to believe that these sophisticated composite



The beautifully poised Solstice loudspeaker from Ruark, in its distinctive-looking yew finish

structured speakers have been around since 2000. Wilson Benesch told us they were ahead of their time and, looking at the originality of the design, we'd agree. Over the past ten years they've fared extremely well with no additional modifications needed to either cabinet or driver design – something that can't always be said of experimental new speaker technologies.

As with the PL100s, the standard five-year guarantee is not transferable, so it's down to you to check the speakers thoroughly. The composite cabinet appears to be extremely strong and can probably handle the odd knock better than a traditional MDF one. Some find the standard black finish a little dull; though it is tough. For a more traditional look, Wilson Benesch did a variety of wood finishes for a premium of around £175.

The matching stands are recommended, although at £550 a pair you may want to opt for some Dreadnoughts instead. Matching stands were, however, included with both second-hand pairs that we saw on the market.



The Martin Logan Ascent i (left) electrostatic loudspeaker and the Monitor Audio PL100 on its matching stand

are the Dynaudio 'tennis ball' midrange units. These account for the exquisite midrange articulation, but they'll also set you back around £160 each to replace. Being so beautifully veneered, it's worth seeking out one of the rare finishes such as yew. We found a pair in good condition for £1,850 and another, which had apparently been unused for eight years, at £2,300.

Another slightly oddball speaker is the Martin Logan Ascent. Combining an electrostatic panel for the midrange and treble with a cone woofer can produce mixed results, but Martin Logan has more experience of this hybrid

# "When developing the PL100, one of Monitor Audio's reference speakers would probably have been the Wilson Benesch Arc."

Just £1,600 was enough for a pair from a dealer, while some nearly new ones for £1,850 from a private seller looked particularly tempting.

A brand we've yet to look at within these pages that is well worth considering is Ruark. The Solstice model was made between 1998 and 2003 and stood just below its range topping £7,000 Excalibur. Splitting the cabinet between a twin-woofered bass section and effective two-way standmount on top gave the Solstice an enviable balance of poise and precision with power and scale.

In 1998, it was one of the best speakers under £5,000, yet it is rarely considered today. The good news is that, although out of warranty, Ruark is still able to supply parts, and the reliability record is excellent. If you're buying blind then ensure that the speakers come with the thick umbilical cords that link the two units. It's also worth checking the squashy feet that separate the two boxes. That said, neither of these are serious, as spares are available cheaply enough. Less cheap, however,

design than anyone. Launched in 2000, it later became the Ascent i. These had a few minor tweaks, but were essentially the same speaker and made up until 2006. Although some of these speakers will still be under the original quarantee, it's not transferable meaning that, as with the others, repairs will be chargeable. Having said that, Martin Logan has an exceptionally good reputation for spares and, prides itself on being able to service speakers manufactured 25 years ago. Provided everything checks out this is a bequiling speaker that does have a seamless midrange and treble. With there not being much difference between the standard and "i" versions, the 2002 Ascents we saw at £2,195 looked a fine buy.

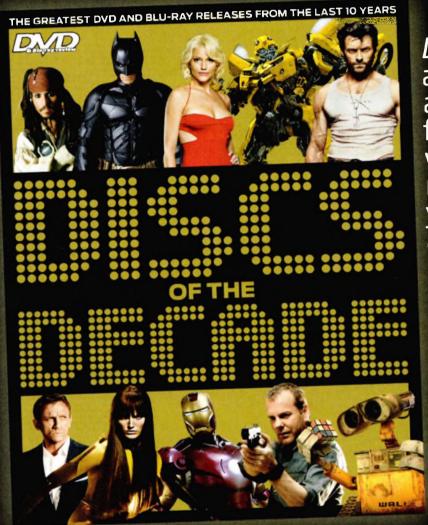
Buy the Arcs or PL100s for a smaller room, the Solstice for a refined but hard-hitting speaker in a larger room and the Ascent for something in-between and you won't go far wrong. Whichever way you go, you'll save a stack of cash. Happy hunting. HFC

Dominic Todd

Next month £2,500 turntables

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CYRUS 3 PSX-R amp in black. No box, but manuals, remote and 3mm banana plugs to fit rear. Perfect working order, no cosmetic blemishes. Powerful, dynamic sounding amp. £320 inc carriage. 0141 578 6966 (Glasgow)

ATC SCM 150 ASL loudspeakers (£12,000) £6,000. Audionet ART V2 CD player (£2,400) £1,000. Partington Dreadnought Broadside stands, with Atacama abites (£300) £150. All as new and complete. 01494 471492 (5 Bucks).

MODWRIGHT SWL9.0 SE signature valve preamp. Just under two years old, immaculate with remote. (£2,600) £1,450. Thiel cs 2.4 loudspeakers. 12 months old. Immaculate. Cherrywood. (£3,800) £1,900. 01296 437314 (Aylesbury).

NAIM Uniti all-in-one audio layer and two speakers, £1,500. No box. 07894 323261 (Manchester)

NAIM DVD 5 CD/DVD player,

hardly used. Mint, boxed, £799. 112x preamp, mint, boxed £275. 150x power amplifier (2008), mint, boxed, £495. Naim Arriva floorstanding loudspeakers (2005), cherry finish, £395. 01984 640588 (Somerset) **WANTED:** Top quality hi-fi separates and complete systems, Naim, Linn, Cyrus, Meridian, Arcam etc, fast,

friendly response and willing to travel/pay cash 0781 5892458 (Essex) **LEEMA** Tucana II. Black, two months old and A1.

two months old and A1. Instructions, remote, box and unsigned warranty card. Genuine sale. (£3,450) £2,500. 07976 261576 or e-mail: raeljon@aol.com.

**KEF** XQ1 in silver, matching stands, excellent condition, as new £400. 07766 078281 (London).

**NAIM** 555PS, rare opportunity to acquire this amazing upgrade. Comes with CDX2 and Burndy cable, all boxed and immaculate, £5,500, no offers. Might split. 07850 351714 (Sussex).

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Above: Leema Tucana II

**GRADO** GS1000, £500. Perfect with Grado RA1 battery H/P amp, £150. Graham Slee Solo H/P amp, two inputs, £250. All mint, boxed and light use 01908 661094 (Milton Keynes).

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#### **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.
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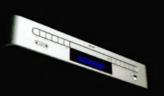
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