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six models rated



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FEATURING...

- > Arcam DiVA A85
- > Marantz PM-17mkII M
- > Bryston B60R
- > Musical Fidelity A3.2
- > Cyrus 6
- > Rega Mira 3
- > Exposure 3010
- > Rotel RA-1062

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### For more details contact

Ultimate Sonics

392 Finchley Road, London, NW2 2HR

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# HI-FI CHOICE

AUGUST 2003 ISSUE 244

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To make sure you get the best advice, *Hi-Fi Choice* employs the most talented and experienced writers in the business.



**JASON KENNEDY**

Jason previously edited *Hi-Fi Choice*, but can now be found swanning about the wilds of Sussex indulging himself with the very best hi-fi money can buy. His own system is simply sensational (trust us) and his love of music knows no bounds.



**PAUL MESSENGER**

A former editor of *Hi-Fi Choice*, Paul has been writing about his beloved hi-fi hobby for some 26 years. In that time he has become one of the world's most respected sonic scribes and probably the UK's foremost loudspeaker reviewer. He also writes for respected US hi-fi journal *Stereophile*.



**PAUL MILLER**

Science officer Miller is hi-fi's undisputed king of lab testing. He employs his own specially designed equipment to pull apart every measurable parameter and explain its effect on a product's performance.



**ALVIN GOLD**

Alvin cut his hi-fi teeth in the retail trade, and has now been writing about his obsession for more than 20 years. In that time he has contributed to almost every hi-fi periodical you can think of (and several more besides). Few can match his encyclopedic knowledge of all things audio.



**DAVID VIVIAN**

An award-winning journalist of considerable experience, David's sharp ears and equally sharp powers of description are a valuable mix for *Hi-Fi Choice*. He also writes about cars, but who needs to take the latest Lotus for a spin when you've got the finest hi-fi to test drive?

Music digs deep into our emotional core like no other art form. It touches the soul and makes grown men weep. Hi-fi is simply a means to a musical end – it provides a conduit for music's energy and detail, delivers scale and space, ensures you get closer to the tone and impact of the original performance. It makes music sound more real and hence achieve its emotional goal. Quite simply, the music that moves you moves you more.

If you don't believe these things, then perhaps you're reading the wrong magazine. But next time you walk into the house and you're tempted to just flop in front of the telly, try this: search out an old album, something you haven't heard for a while but have always loved. Stick on the hi-fi instead of the TV and just listen... I guarantee your spirits will be lifted far higher as a result.

It's convictions such as this that have driven us to make the magazine you're holding an even better read for anyone with an interest in high-performance audio equipment. Now you'll find even more of the finest hi-fi components on the planet, tested to the limit by the most experienced set of writers on the UK hi-fi scene. From in-depth solo reviews to the world's most comprehensive group tests, a new percentage rating system and staggeringly informative lab reports. If you're mad about music and passionate about hi-fi, *Hi-Fi Choice* is your passion reflected in a magazine. We do it for you, so let us know what you think...



Tim Bower **editor**

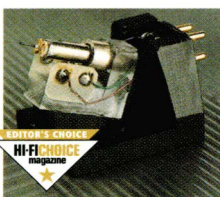
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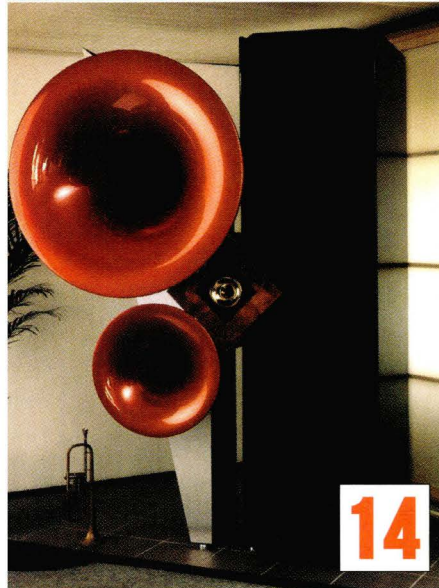
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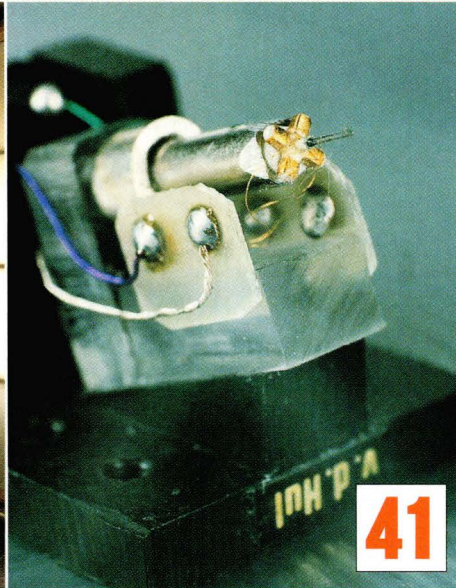
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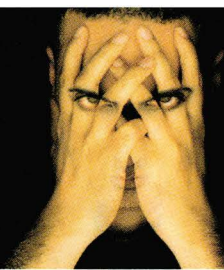


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**Hi-Fi Choice** is your essential guide to audio excellence in the home, from vinyl records to the latest digital music formats. For 28 years, our unique tests have brought you the most thorough and reliable hi-fi journal around. And our mix of rigorous group tests and in-depth solo reviews continues to ensure that **HFC** is the magazine you can trust. Published 13 times a year, it's the *smarter* hi-fi read...

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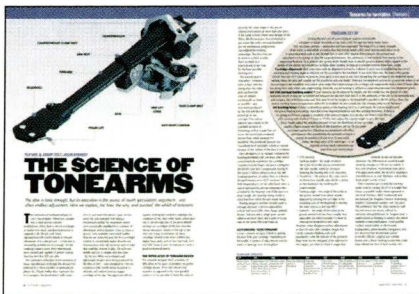
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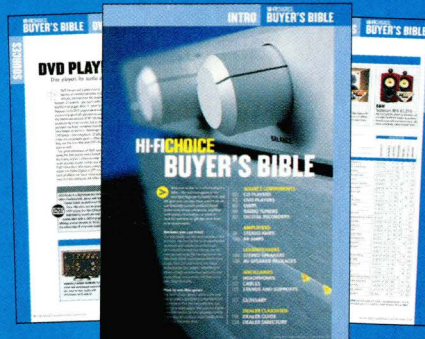
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The ultimate guide to high performance hi-fi and AV – our favourite products for your perusal. Your shortlist starts here...



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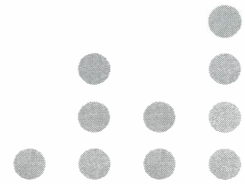
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## STEREO STILL ROCKS

TWO-CHANNEL AUDIO FEATURES STRONGLY IN NEW MARANTZ LINE-UP

▶ Marantz is flying in the face of home cinema fashion with a full range of dedicated two-channel components set to launch in the autumn. New CD players include the CD5400 at £150 and CD7300 at £330. The high-end Premium Series will also see two new models by autumn – the £800 CD-17mkIII, swiftly following the only recently launched CD-17mkII M, and a breathed-on KI Signature version of the same player.

Two new integrated stereo amps are expected, starting at just £180 for the

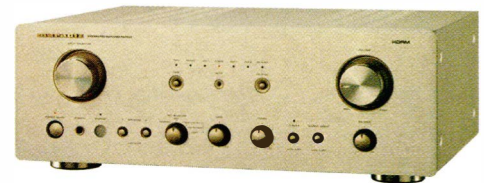
PM4400. It's joined at £330 by the PM7200, a 95 watts per channel offering with a switchable 25-watt Class A mode – expect an in-depth *HFC* review soon.

On the multichannel front, the two most interesting source components are the SA-17S1 and DV8400. The first is an audio-only SACD player – an exclusive *HFC* review is imminent – and the second a new 'universal', play-anything DVD-Audio/Video/SACD player that's set to replace the existing DV8300. These will

be joined in October by a higher-end universal DVD player called the DV-12S2, along with the matching flagship SR-12S1 AV receiver.

☎ Marantz 01753 680868

🌐 www.marantz.com



## PERSONAL SERVICE

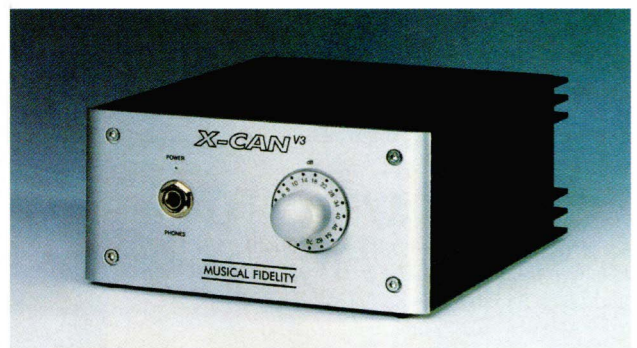
NEW HEADPHONES FROM BEYER

▶ With its super soft velvet ear pads, Beyerdynamic's new £160 DT990 headphone attracted lots of attention when it arrived at *HFC* Towers. Based on the DT990pro, the new cans are aimed at audiophiles and are said to offer a near-linear response to 35kHz.

The replaceable 'circumaural' ear pads are designed to offer maximum comfort and further features include an adjustable headband and a single-sided cord. Beyer claims that "as a precision headphone it delivers audio within a diffuse field to naturally emulate the acoustic conditions of a concert hall". We'll put the claim to the test when we review it in the next issue.

☎ Beyerdynamic  
01444 258258

🌐 www.beyerdynamic.co.uk



## MAN IN THE CAN

X-CANS ARE BACK

▶ Late night music-lovers will be pleased to hear that Musical Fidelity has released a new version of its popular X-Can headphone amp. At £250 the new X-Can V3 has been redesigned to address previous criticisms relating to the control knob and volume control. The latest version has a new metal dial and is said to offer a huge upgrade in performance over its predecessor. Using ECC88 tubes, the new amp boasts a frequency response to 100kHz and is claimed to offer around 0.008 per cent distortion between 20Hz and 25kHz.

☎ Musical Fidelity 020 8900 2866

🌐 www.musicalfidelity.com



# THULE FOR THE JOB

HUGE ELECTRONICS RANGE INTRODUCED TO THE UK

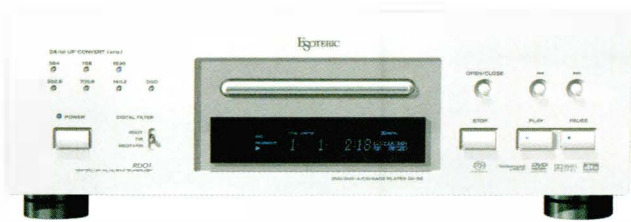
More great news for two-channel fans this month – Thule is back in the UK after a two-year absence with a vast range of electronics including CD players, amps and tuners. The products are split into three main groups – Spirit Line (two-channel), Space Line (DVD and multichannel), and a high-end AV range called Sphere. Spirit Line is dominated by an eight-strong amplifier line-up comprising two integrations along with both balanced and unbalanced pre/power amp options, with pricing starting from £475.

Spirit also encompasses three CD players, with the £1,200 flagship CD150B Digit II offering a “24-bit/192kHz intelligent seven-layer upsampling board” with Burr-Brown DACs and Thule’s proprietary software. Complete with Sony transports and floating laser coupling, the CD players are claimed to offer low mechanical noise and are said to be able to play even damaged discs with scratches of up to 2mm. Completing the Spirit



line up is a £450 FM tuner with RDS and 40 presets. Thule’s multichannel AV gear starts at £1,050 for the entry-level DVD player.

☎ Thule Audio 01764 652719  
 www.thule-audio.com



## TEAC'S UNIVERSAL DVD-AUDIO/SACD PLAYER MARKS BRAND'S 50TH ANNIVERSARY

Teac celebrates its 50th anniversary with details of a new high-end ‘universal’ DVD player. The DV-50 boasts a comprehensive list of features and supports SACD and DVD-Audio, as well as CD, VCD and CD-R/RW.

The player’s 24-bit/192kHz DAC provides three digital filter modes for CD playback. The first, RDOT (Refined Digital Output Technology) carries out standard D-to-A conversion, “more precisely and naturally than ever before”. The second, FIR (Finite Impulse Response) offers a “sharp roll-off characteristic” and the third mode offers RDOT+FIR combined. Jitter is said to be

eliminated due to specialist circuitry within its high-density chassis.

One astonishing claim made of the player’s digital processing is upsampling to a massive 1,141kHz for CD and 1,536kHz for DVD-A. It also adds PAL progressive scan, noise shaping for video and both DTS and Dolby Digital decoding. The DV-50 is available from August priced at £4,500.

☎ TEAC UK 01923 819630  
 www.teac.co.uk

**CONNECTIONS:** Digital out (coaxial, optical) • Balanced XLR analogue audio out • Down mixed analogue audio out (two) • 5.1 analogue audio out • Component video out (two) • S-video out • composite video out (two) • SCART out (two)

## RESEARCH THIS NEW INTEGRATED VALVE AMP

Our US allies at Audio Research have announced details of the £2,900 VSI55 integrated valve amp. With 50 watts of power, it’s described as “affordable” and shares the same high level of build as the more aspirational models in the range.

It’s fully remote controllable, covering all functions including input select, which gives access to the rear panel’s five pairs of single-ended inputs. The fascia has a slightly recessed area with function LEDs on the left and soft-touch input buttons on the right. The remote is supplied in the price and an optional perforated cage-type top cover is also available priced at £250.

☎ Absolute Sounds 020 8971 3909  
 www.audioresearch.com



audiofile  
 PRODUCT NEWS

## Soundbites

NAIM has come to the rescue of customers experiencing problems with playback of copy-protected CDs on its CD players. These discs have been causing difficulties for music lovers around the globe, as they don’t conform to the red book standard laid down by Sony/Philips. As Naim writes its own software, it’s able to offer an update to the following models – CDS2, CDX2, CDX, CDS and CD3.5. The tweak can be undertaken by specialist Naim dealers at a cost of £35.  
 ☎ 01722 332266



TERRATEC has launched a new gadget named the Phono PreAMP Studio USB (pictured above), a clever box that facilitates the conversion of analogue sources to digital, via a PC. Analogue is converted to either MP3 or WAV files on the PC and the unit comes supplied with CD burning software. USB connectivity means there is no need for external power supplies, so the unit can be used with laptops. The £90 device operates with MM cartridges and line-level outputs and includes software to reduce pops, cracks and hiss associated with vinyl while striving to maintain the original sound quality.

☎ 0118 982 1612

KEF has two new subwoofers at two very different price points. Users of its Reference product range should opt for the PSW5000, a 1,000-watt, reflex-loaded design, offering bass extension to 18Hz and a maximum output of 118db for an outlay of £2,500. More modest budgets may stretch to the £350 PSW2500, with its 250mm (ten inch) driver, 250-watt amplifier and 30Hz lower limit. Both models are designed to integrate into KEF’s existing systems and are available in a choice of several veneers.  
 ☎ 01622 672261

**MORDAUNT-SHORT** has a new multichannel speaker system, the Premier Plus. Based around an all-new 150-watt sub with adjustable notch filters, the package boasts aluminium CPC (Continuous Profile Cone) drivers for £650. ☎ 020 7940 2200

**DENON** has a new £650 receiver that it reckons would have cost over £1,000 just one year ago. The AVR-2803 is a 7.1-channel model based around a new Sharc processor that is said to vastly improve surround decoding. It uses 24-bit/192kHz Analogue Devices DACs in dual differential configuration and delivers 125 watts of power to each of its seven channels. ☎ 01234 741 200

**CLEARLIGHT AUDIO** has unveiled its new Super Position Aspekt rack, sharing the same essential construction as the original Aspekt that was highly recommended in HFC but featuring upgraded shelves. Each platform on the new model boasts twin MDF shelves with RDC (Resonance Damping Compound) filled helices that sandwich a further sheet of RDC. The new design is said to increase performance over the original single shelf model. Available in both three and four shelf varieties, prices are £675 and £800 respectively. ☎ 01635 291357

## Hi-Fi diary

### AUGUST

29-1 IFA Berlin 2003  
Berlin, Germany  
020 7886 3103  
*Europe's largest consumer electronics expo*

### SEPTEMBER

26-28 HiFi Show & AV Expo  
Heathrow, London  
020 8774 0847  
*London's best established hi-fi show*

28 National Vintage Communications Fair  
Birmingham  
07947 460161  
*If you're a fan of old valves and 'wireless' radios, this is for you*

26-28 What Hi-Fi? Sound & Vision Show  
London  
*New London event for 2003*

### NOVEMBER

1-2 Dublin Hi-Fi & Home Cinema Show  
Dublin, Ireland  
00353 1 288 9449  
*Good for 'the craic'*



## DOG'S NEW TRICKS

### NEW HIGH-END DAC FROM NAGRA

Fancy dressing your musical mutton as lamb? Nagra's new DAC, priced at a cool £12,700, may be able to do just that with its 24-bit/192kHz upsampling conversion. Called simply the Nagra DAC, it features special filter software called Adaptive Time Filtering that allows the input and output clocks to be completely independent, all in the name of eliminating jitter. The DAC accepts all

kinds of digital audio connections, including optical via Toslink and electrical via phono and XLR, as well as offering both balanced and unbalanced analogue outputs. The impressive front panel allows access to all menus through the use of an arrow keyboard, and a comprehensive remote handset is also supplied.

☎ Nagra Kudelski 01727 810002  
www.nagra.com

## DAB TO GO

### MORE BARGAIN DAB TUNERS

Goodmans has released a range of portable DAB/ FM based audio products likely to introduce more people to DAB radio through affordable pricing. The new products include a 'kitchen' radio (pictured), a portable system and a micro system with CD player. The portable system is certainly novel – a laptop-style product that offers a DAB/ FM tuner, CD player and a modest pair of active speakers, very appealing in a gadgety kind of way. Billed as "the world's first portable DAB/ CD player", the system can be operated by mains or battery power and comes with headphones for more personal moments. Prices start at £100 for the 'kitchen' radio. ☎ 0870 873 0080

www.goodmansdigital.co.uk

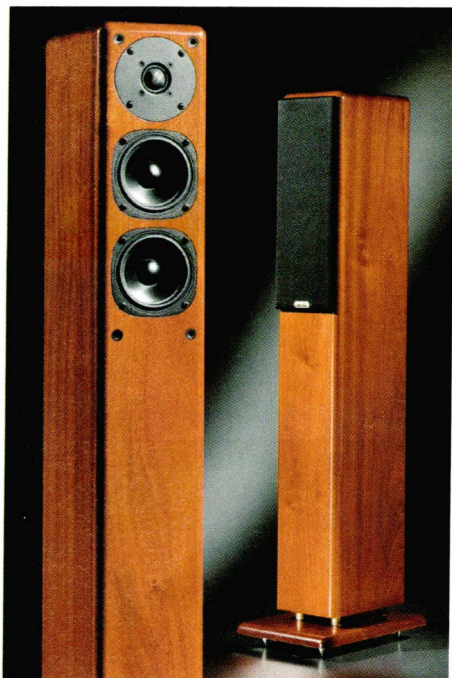


## NEW CYRUS CD UPGRADABLE PLAYER FROM BRITISH SPECIALIST

The latest offering from the Cyrus factory is a CD player called the CD8, said to be the first of a new range of upgradable CD products that allow users to improve the specification of the machine as and when budget allows. Under the lid, the new player sports a revised DAC network featuring extensive retuning and relocking. Also included is a specialised power supply with twin low-noise custom transformers and 11 separately regulated power supplies.

According to Cyrus, the player is the result of an exhaustive development programme that included extensive experimentation with audiophile components and much fine-tuning to create a player that offers "exceptional resolution and musicality". Finished in silver or black, the CD8 is available now priced at £1,000.

☎ Cyrus 01480 435577  
www.cyrus.audio.com



▲ **Opera SuperPavarotti MkII £1150/pair**

Opera's loudspeakers constantly delight both the ear and the eye. This latest floorstander uses high quality drive units to deliver a high class sound from a beautifully crafted, elegant hardwood cabinet.



▲ **Triangle Magellan £20000/pair**

The Magellan is the new statement loudspeaker from Triangle. Five years of development have produced a true high-end reference design whose performance simply astounds.



▲ **Unison Research Unico CD Player £1095**

This new player employs a valve amplification stage in combination with a CD-Rom mechanism and advanced microprocessor control for supreme performance.



▲ **Audio Analogue Maestro CD Player £1600**

Featuring 24bit/96kHz upsampling, high quality audiophile components and Impeccable build quality, the Maestro is a truly musical performer.

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soundpleasure Soundpleasure

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DIAPASON

Elegant Hardwood Loudspeakers

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Stylish Electrostatics

GRAAF

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SELECT

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MONRIO

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**www.ukd.co.uk**

### L-BAND ALLOCATED

DAB L-band allocations are finally on the way. 16 blocks have so far been allocated which means that local broadcasters

will be able to use this extra bandwidth. An example of the way they will be used can be seen in Greater Manchester, which has six frequency blocks, so each only covers a very small area in broadcasting terms.

Most new DAB radios are L-band ready and expectations for its usage were in retrospect rather optimistic. It had been hoped that L-band would take stations from existing bands and thus reduce the downward pressure on bit rates. With less stations squeezed into each band DAB quality might be increased to the point where it would compete with top-notch FM.



However, this first tranche would suggest that the L-band will be for access radio and small local stations with the possibility of pay-per-view/listen data services.

An idea of the quality currently available from DAB in the UK can be seen below:

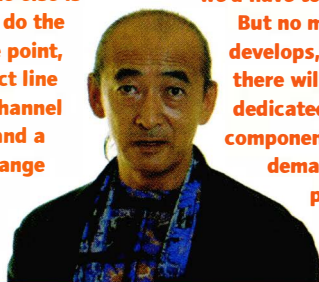
- 227 stations using 128Kbps
- 12 stations using 160Kbps
- One station using 192Kbps
- The average bit rate is 130Kbps
- The average world-wide bit rate for stereo music is 182Kbps

It doesn't look like L-band will be improving this average!

### MARANTZ DIGS STEREO

In a welcome fillip for stereo-lovers, Marantz has reaffirmed its support for two-channel music-oriented products in the face of the global home cinema onslaught.

According to Bert Kiggen, Marantz's European product and marketing manager: "Stereo is still a large market - everyone else is stepping out, so let us do the job." To emphasise the point, the brand's new product line includes various two-channel components (see p8) and a flagship two-channel range is forthcoming, code-named Reference Concept.



However, Marantz's brand ambassador, Ken Ishiwata (below) is under no illusion as to how the market is progressing. "The future for home entertainment is a wireless world dominated by the PC, with full internet and closed network connectivity," said Ishiwata, and we'd have to agree.

But no matter how technology develops, it remains likely that there will always be a place for dedicated, high-quality components for enthusiasts who demand high-performance playback, and that's where Marantz sees its role.

### WEB TAX ATTACK

A new tax aimed at the music download industry has been announced. To create parity between EU and non-EU countries, VAT will be charged on all digital services supplied over the internet. This includes software as well as music downloads alongside any paid-for data. Auction site Ebay has already announced charge increases.

If the commercial MP3 market is as

big as companies like Apple believe it could be, this should turn into a major money-spinner for HM Govt. But there is always the danger that the extra work involved for suppliers in collecting and paying the VAT plus the 17.5% it will add to prices will have a negative effect, discouraging smaller suppliers from getting involved and doing little to switch users away from free file sharing.



### SPEAK 'N' SPIKE

Mordaunt-Short has given HFC a sneak preview of its forthcoming Mezzo speaker range. It's expected to kick off with a circa-£900 standmount, building up to the flagship £3,000 model, and will feature a refinement of the brand's CPC metal cone technology. Readers perturbed by the rather deadly-looking spike protruding from the speakers in the picture above may rest easy - this is an early 'concept' illustration and the end result is likely to be somewhat different!

The prospective new range reflects the brand's new-found energy under Audio Partnership's management to reassert itself as one of the UK's major loudspeaker brands. Its development team has quadrupled in size in the last nine months and an even higher-end range is also on the cards. But that doesn't mean M-S is about to desert less specialist territories: "Sub/sat surround sound packages and in-wall/in-ceiling designs are the biggest growth areas in speakers," said sales and marketing director Paul Masson.



### NUDE TURNTABLES

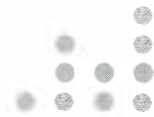
Analogue-o-philes have a new place to revere the record player. At [www.nakedresource.com](http://www.nakedresource.com) there are galleries of classic turntables, tonearms and cartridges from the last 30 years, with articles, manuals and even set-up templates for extinct tonearms. If you remember brands like Syrinx, Voyd and Odyssey this is the place to read about the classics and share your knowledge and experience with other analogists.

# Roksan

you'll never want to leave the house again



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## FRANKFURT HIGH END 2003

*Vorsprung durch technik at one of the most prestigious displays of European high end*



**Clockwise from left:** Garrard's 501 turntable is being made again in the UK under licence; Duevel's highly-efficient omnidirectional horns place less emphasis on room boundary reflections and performed well in the hotel; Danish high-end brand Gryphon was showing its upsampling Mikado CD player, tipped as a Krell rival; Acapella's striking Excalibur horns were an impressive sight, offering an illuminating 100dB efficiency but also requiring a minimum room size of 40 square metres.  
**Bottom:** NAD's new HDCD-compatible S570 DVD player, one of the show's few AV highlights.

The almost obsessive focus on analogue two-channel hi-fi at the Frankfurt High End show, held between 29 May and 1 June at the Hotel Kempinski, is for some, ultimate proof of the show's supremacy among European high-end shows. For others it's a demonstration of the ostrich-like mentality of the German high-end. A trawl through the exhibits showed that Germany has more home-grown horns, valves and (especially) turntables than can possibly be representative of a German home market, currently in sharp recession. Despite this, show space was sold out early, with around 550 home-grown brands disproportionately represented.

The common factor of most of the turntables is that they consist largely of subassemblies that are lathe-turned. Clearaudio had a particularly impressive range, including the new affordable (£600-ish) Emotion but the most welcome (if oddball) sight was a room full of Garrards, built and distributed by Loricraft, based near Garrard's original Swindon works. They had refurbished 301s and 401s, the 501 Inspiration (with bodywork to match the Rolls Royce Corniche, apparently) and the 601 (a kind of cut-price 501), for which Frankfurt was the launch pad.

An uncomfortable truth is that many of the more esoteric analogue dems were not particularly good. There were exceptions of course, but the most impressive sound at the show was of a very high-tech Meridian system playing Bach organ music with the company's new room equalisation software.

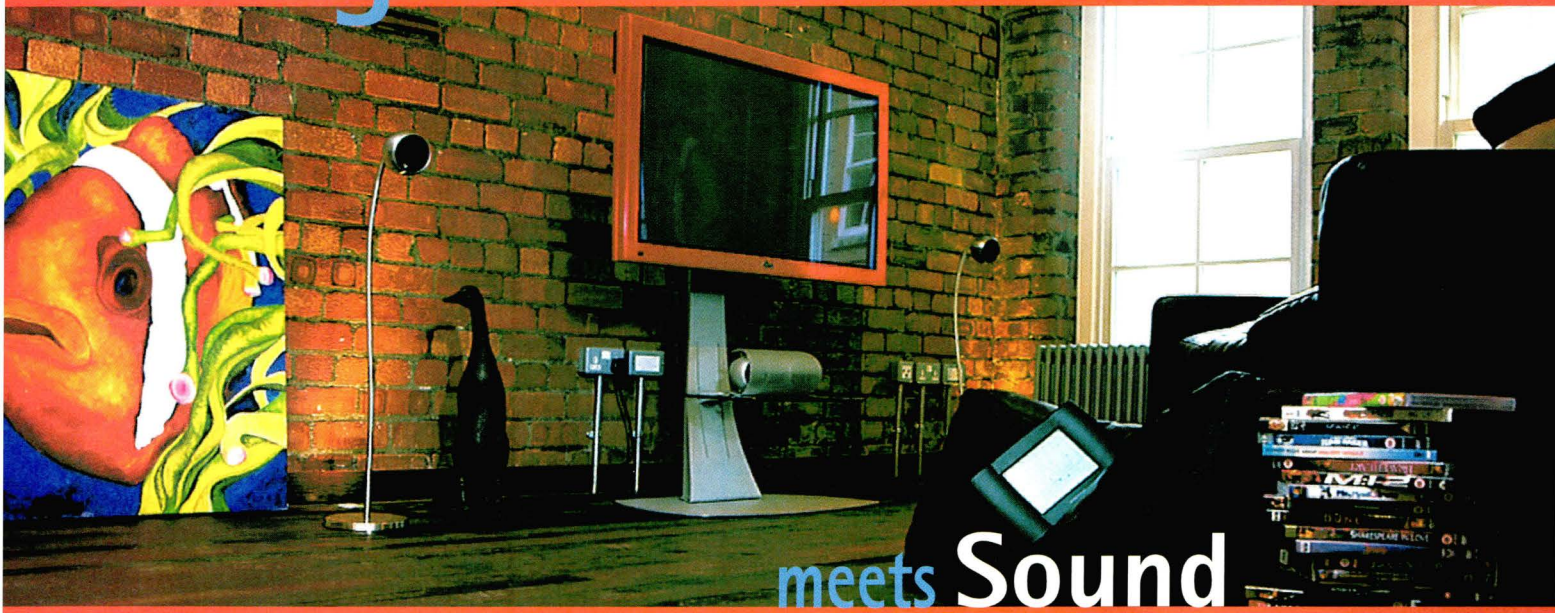
The upcoming Marantz CD-17mkIII CD player looked

impressive, as well as being more real-world than many of the exhibits. But those with a taste for the esoteric would have particularly enjoyed the exceptional JMLab Grande Utopia Be loudspeaker, demonstrated here with £38,000-worth of Halcro pre and power amps (exclusively reviewed in last month's issue).

One of the more incongruous sights of the show was the Bosendorfer name on a range of loudspeakers, which did not on a brief listen seem capable of reproducing the distinctive bell-like quality of a Bosendorfer grand piano off disc. Closer to the mainstream, Dynaudio had some attractive and distinctive designs, including the slender yet imposing Confidence C2 (in the vicinity of £4,000), while Gryphon was showing a range of beautifully engineered high-end components, which makes us wonder why they are not more widely known in the UK.

At the organiser's press conference, it was confirmed that 2003 was the end of the line for the Hotel Kempinski. Next year's show will be at the Munich Order Centre (sic) between 20-23 May 2004, with the promise of more and larger rooms. Hopefully there'll be room for a more globe-straddling collection of kit. **HFC**

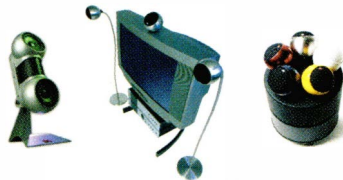




Anthony Gallo doesn't make ordinary speakers...

Instead he designs *beautifully different* loudspeakers. He doesn't build conventional 'boxy' rectangular speakers either, preferring to **design** his *creations* around **spheres** - thus *eliminating* internal **resonance** and external **diffraction**, the two main causes of loudspeaker distortion.

Quite simply - Anthony Gallo produces *the world's finest 'small' speaker systems*.



**ANTHONY GALLO**  
ACOUSTICS

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Gallo loudspeakers are available in a variety of *colours* and *finishes* to **complement** any room, from *striking polished stainless steel* to *vibrant canary yellow*.

Above all, Anthony Gallo speakers bring **exceptional, expansive sound** to living spaces **large** and **small**.

Whether your **interest** is **Stereo, Home Cinema** or **Multi Room** use - why not visit an approved **Anthony Gallo** dealer and *discover why black speaker boxes are yesterday's news*.

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**Audiovision (Yorkshire) Ltd**  
Bridghouse  
Tel: 01484 713 996

**Cornflake**  
London  
Tel: 0207 631 0472

**Cineaste Ltd**  
Cheshire  
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**Cinema Experience**  
Enfield  
Tel: 020 8363 6776

**Cyberselect**  
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**Cymbiosis**  
Leicester  
Tel: 0116 262 3754

**Fortuna Ltd**  
Jersey  
Tel: 01534 732 549

**Futurehome**  
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Tel: 0118 979 8282

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Tel: 01642 248 793

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Tel: 020 7226 5500

**Griffin Audio**  
Birmingham  
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**Hampshire Audio**  
Winchester  
Tel: 01962 854 466

**Harrods (Sound & Vision Dept)**  
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Tel: 0207 730 1234

**Hi-Fi Studios**  
Doncaster  
Tel: 01302 727 274

**Home Media**  
Maidstone  
Tel: 01622 676 703

**Ideas Sound & Vision**  
Cardiff Bay  
Tel: 02920 498 460

**Infidelity**  
Kingston Upon Thames  
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Dungannon  
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**Laser Audio**  
Kilmarnock  
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**Loud & Clear**  
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**Loud & Clear**  
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**Lyric Hi-Fi**  
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**Martin Kleiser**  
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**Martin Kleiser**  
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**Practical Hi-Fi**  
Preston  
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**Practical Hi-Fi**  
Blackpool  
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**Practical Hi-Fi**  
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**Radlett Audio**  
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**Rayleigh Hi-Fi**  
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**Rayleigh Hi-Fi**  
Rayleigh  
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**Robert Taussig**  
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**Russ Andrews Hi-Fi**  
Edinburgh  
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**Stereo Stereo**  
Glasgow  
Tel: 0141 248 4079

**Stone Audio**  
Bournemouth  
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**Sound Academy**  
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**Sound Ideas**  
Faversham  
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**The Audio File**  
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**The Audio Visual Lounge**  
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**The Edge**  
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Tel: 01473 288 211

**The Listening Rooms**  
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**The Sound of Music**  
Crewe  
Tel: 01268 214 143

**The Sound Organisation**  
York  
Tel: 01904 627 108

**Unilet Sound & Vision**  
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Tel: 020 8942 9567

### TIME MACHINE FIVE YEARS AGO

Hi-Fi Choice  
July/August 1998

Alongside Arcam's (at the time) state of the art Alpha 9 CD player, our combined July/August summer issue



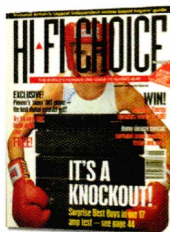
exposed our ears to the first commercially available NXT speaker, the x-Space5. We described this 'flat speaker' technology as

"intriguing" at the time... Five years on and its commercial potential across a variety of applications has been realised, though few would contend that it has yet featured in a genuinely high-fidelity loudspeaker. Other key products in the issue included Linn's first incarnation of the Classic one-box system and Living Voice's Auditorium speaker.

### TEN YEARS AGO

Hi-Fi Choice  
August 1993

David Mellor MP appeared in HFC, sporting blue tie, playing classical CDs and using Bose speakers. Our 17-way integrated amps test brought fame to the NAD 304, and also the Sansui AUX-417R! Positive noises were being made



about the Lynnfield 500L, from Boston Acoustics, a £4,500 three-way speaker – one of the best, but also least practical speakers of the time. And Pioneer was pushing its D-07 DAT recorder, a machine that offered recording and playback with a 96kHz oversampling rate – twice that of normal DAT.

## SYSTEM BUILDER

EACH MONTH, WE PICK A FAVOURITE DISC AND BUILD A SYSTEM TO SHOW IT AT ITS BEST



### FRANZ LISZT Transcendental Studies

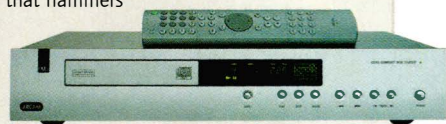
Nelson Goerner (piano) Cascavella VEL 3029

Given Goerner's popularity on the UK concert platform it's surprising that he hasn't got more discs in the catalogue. This one contains some very fine and also very individual Liszt playing. Quite deliberately, Liszt wrote into these twelve fiendishly difficult studies almost every pianistic challenge, colour and mood: naturally they also reflect his seemingly endless creativity and fantasy. Goerner rises to the task with consummate digital skill, from the astonishing filigree passagework of *Feux Follets* to the magnificent grandeur of *Eroica* and some of the most passionate pianistic outbursts you'll ever hear in *Wilde Jagd*. The recordings are of a live performance, so there a few minor 'noises off' (though barely a single split note). There are technical blemishes in places too, but on the whole this is a fine, detailed and very informative recording.

### CD PLAYER

ARCAM FMJ CD33T £1,300

Arcam's new top of the range CD player offers the kind of resolving ability you'd normally only expect from a much more expensive player, coupled to a muscularity that hammers the music home when the going gets tough.



### AMPLIFIER

AVI S21 MKII £1,399

Piano is reputed to be hard to reproduce well: that's true perhaps most of all for amps. What's needed is watts and this muscley integrated has 200 of them, delivered with admirable control, finesse and clarity.



### LOUDSPEAKERS

HARBETH SUPER HL5 £1,699

Harbeth speakers have an undeserved reputation in some quarters for being boring. Maybe they're not much cop for party duty, but they are terrifically informative on good recordings and well suited to piano, with fine tonal neutrality and good dynamics.



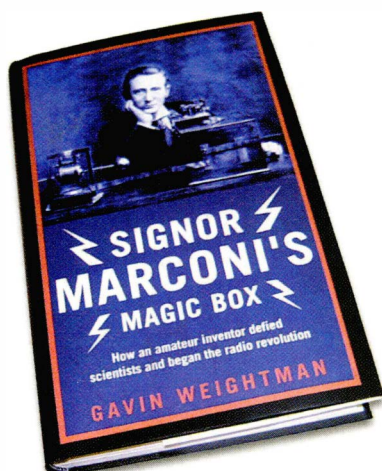
## BOOK OF THE MONTH

### Signor Marconi's Magic Box

By Gavin Weightman

Harper Collins £15.99

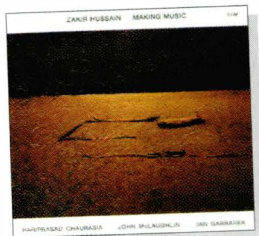
The radio revolution began in 1896, when the first public witnesses to radio believed they were hearing a conjurer's trick. *Signor Marconi's Magic Box* reveals a host of intriguing anecdotes like this in telling the story of the wireless and its amateur inventor, who created it in the attic of his family home near Bologna. The book also chronicles the early days of wireless telegraphy, at a time when London and New York had only just become accustomed to electric light. Early broadcasts contained no more than Morse code, and it's claimed even Queen Victoria was partial to sending text messages – a right royal early adopter.





## READERS' DEMO DISCS

YOUR FAVOURITE MUSIC FOR HI-FI AUDITIONS



### ZAKIR HUSSAIN

#### Making Music

"I've been listening to and loving this on vinyl for over ten years now, also using it regularly to assess new hi-fi and potential upgrades in dem rooms. It should sound good on any system, but will excel if you're listening on something special.

Either of the first two tracks will do the trick – the flute feels as natural as musical breathing, the acoustic guitar is sharp and powerful, exactly as required. Elsewhere there are tablas ticking and whuh-oomping and a saxophone which has as many guises as a woman in a lifetime. One day I'll get the CD."

**Mark Wilson** via email

**What's your favourite disc for hi-fi auditioning?** Why not write in and tell us – 100 words on what and why – we'd love to hear about it. Email your choice to dan.george@futurenet.co.uk or write in to Classic Demo Discs, Hi-Fi Choice, Future Publishing, 99 Baker Street, London W1U 6FP.

## JIMMY'S TWEAKS #11

HANDY HINTS FROM JIMMY HUGHES – HI-FI'S SUPER TWEAKER



### Finding the optimum volume setting

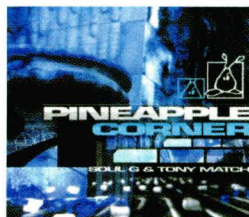
Although the volume level at which we listen to music is very much a matter of personal choice, there is usually an optimum setting that brings the sonic picture into its sharpest focus. Played too loud, music can become hard-edged and aggressive, but played too quietly, it can lose colour and impact.

A natural, believable loudness depends to a large extent on the tonal balance and acoustic perspective of each recording. For example, music recorded in a large spacious hall often sounds most convincing when played at medium/low volume levels – enhancing the sense of distance. Close, forward recordings should be played louder to highlight the impression of immediacy and attack. A good hi-fi system convincingly recreates an acoustic impression of space and depth, or crisp dry detail; whatever's most appropriate for the recording being played.

## ON THE OFFICE STEREO

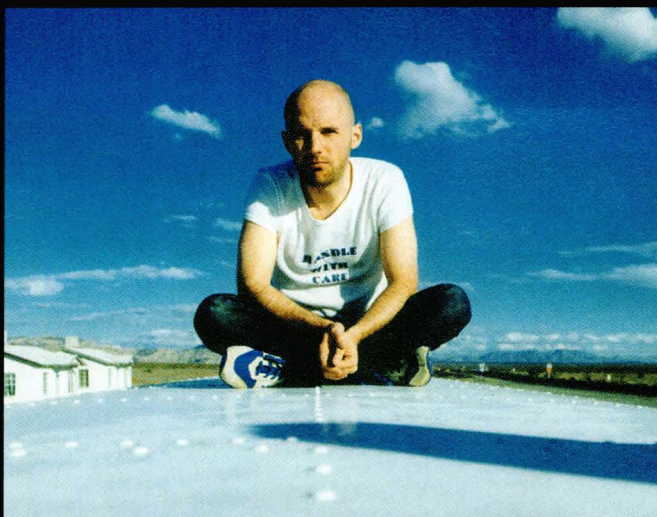
MUSIC THAT AMUSED US WHILE CREATING THIS ISSUE

- Soul G & Tony Match** Pineapple Corner
- Radiohead** Hail To The Thief
- Buddy Guy** Blues Singer
- Alkaline Trio** Good Mourning
- Nitin Sawhney** Human
- Tahiti 80** Wallpaper For The Soul
- Cinematic Orchestra** Man With A Movie Camera
- Various** Tommy Boy Greatest Hits
- Chick Corea** Rendezvous In New York
- The Smiths** Meat Is Murder



## NEW MUSIC IN THE STUDIO

ARTISTS RECENTLY ABSENT FROM THE CUT AND THRUST OF SHOWBIZ HYPE DUE TO FINISHING THEIR LATEST ALBUMS



### MOBY

**Title:** *tbc*

**Release date:** Oct/Nov

Back in the mid-nineties, before the multi-platinum-selling *Play* made him a household name, Moby released the album *The End Of Everything* under the alter-ego, Voodoo Child. Ever inventive, he returns to the alias for an album he describes with typical panache as an "electronic dance record with melodic and atmospheric elements and some nice old-skool effects."

### NEIL YOUNG

**Title:** *Greendale*

**Release date:** Sept

Neil Young's new album is an ambitious 'concept' based around the characters in a small fictitious American town called Greendale. Redolent with heavy ecological themes, he unveiled the work in its entirety on his recent British solo acoustic shows and divided the critics. On the album, however, he's accompanied by his long-standing band, Crazy Horse.

### IRON MAIDEN

**Title:** *Dance Of Death*

**Release date:** Sept

The godfathers of 'nu-metal' return with their 13th studio album. Producer Kevin Shirley says it was recorded with "no ProTools computer tightening and manipulation – what you hear is what they play." Mixed in 5.1 surround sound, tracks such as *Paschendale*, *Rainmaker* and *New Frontier* are unlikely to leave fans disappointed.

### UNKLE

**Title:** *Never Never Land*

**Release date:** Aug

It's five years since UNKLE released

*Psycence Fiction*. Since then DJ Shadow has quit the London hip-hop outfit leaving James Lavelle as the main man. Guests for the belated second album include former Stone Roses Mani and Ian Brown, Brian Eno, Jarvis Cocker, 10cc's Graham Gouldman, Queens Of The Stone Age and 3D from Massive Attack.



### ELVIS COSTELLO

**Title:** *tbc*

**Release date:** 23 Sept

It's little more than a year since last year's well-received *When I Was Cruel*, but Elvis Costello has been back in the studio to record 11 new songs, which he claims are, "among the most direct I've ever written, both lyrically and musically." They range from lush orchestral settings to stark pieces for solo piano. "It can be heard as a kind of story. There's a thread running through it," Costello promises.

### ALSO COMING SOON...

#### ROCK/POP

**Kraftwerk** *Route De France* (Sep), **The Proclaimers** *Born Innocent* (Sep), **Laury'n Hill** *tbc* (autumn), **Jeff Buckley** *Live At SIN-E* (autumn)

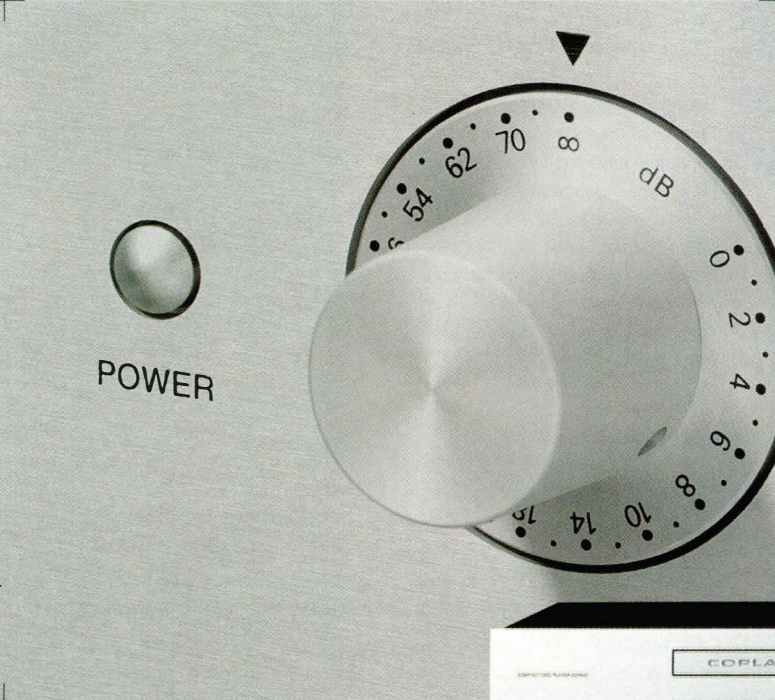
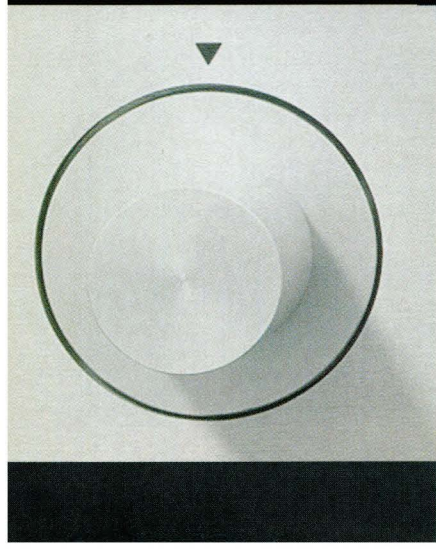
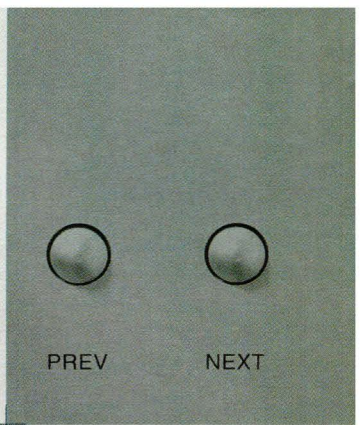
#### CLASSICAL/JAZZ

**Lizz Wright** *Salt* (Aug), **Aaron Neville** *Nature Boy* (Aug), **Jamie Cullum** *tbc* (Sep), **Cecilia Bartoli** *The Salieri Album* (Sep)



# COPLAND

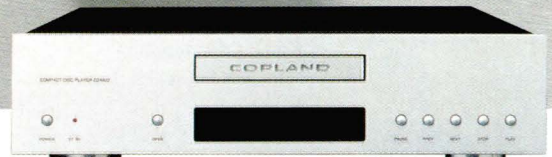
Copland Audio Products:  
**Scandinavian Cool.**



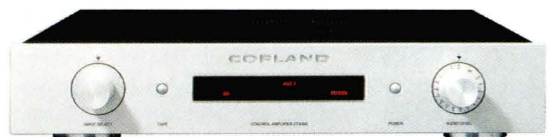
Copland's design team believes that its greatest challenge is to use a scientific approach to create a product which conveys art. Although music has its basis in mathematics, its raison d'etre is to communicate emotion.. Soul. Spirit.

To achieve this end, Copland has chosen to blend the best of proven technologies - the valve - with the most sophisticated of modern methodologies. Because of this, you will find a compact disc player in a range which also reverses the vinyl LP. You will find stereo playback, which has served pure music for a half-century, alongside multi-channel amplification, designed to recreate the cinematic event in the home.

All of this reaches you, the music lover and cineaste, through components which reflect the most striking of Scandinavian virtues: minimalism, simplicity, clarity.



CDA822 - High resolution CD player



CTA305 - High Performance valve preamplifier



CTA520 - Power amplifier (stereo or mono)



CVA306 - Multi Channel Valve preamplifier



CVA535 - 5 channel Audio Video amplifier



**absolutesounds ltd.**

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info@absolutesounds.com www.absolutesounds.com

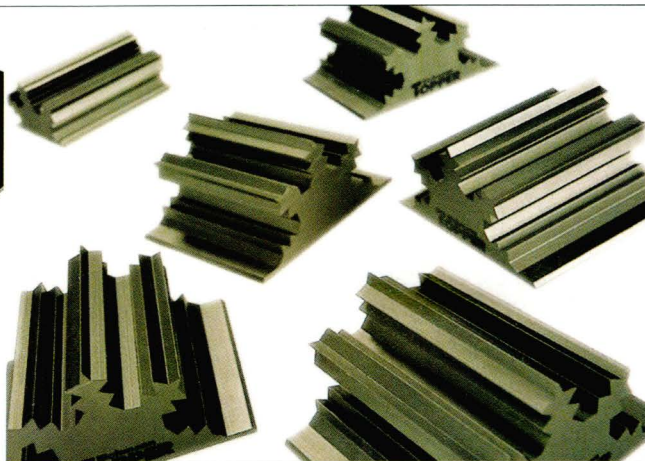


## Custom Design iRAP isolation platform **£100**

▶ A little while ago we praised the ingenuity of Custom Design's 'Acoustic Steel', a simple metal panel which can be put on any horizontal surface to deaden it and damp resonances. We've already seen speaker stands incorporating the concept, and now here's another development – a larger piece of Acoustic Steel and five-point-contact feet in the form of ball bearings and brass supports.

Five feet is not really optimal – leave two out is our advice. The balls are quite small so the shelf is not very secure and can easily be dislodged by careless button-pushing. And from a sonic point of view, its size makes it quite resonant at low frequencies, effectively ruling out use with a turntable. It contributes little enough of its sound under a CD player or amplifier, but it still seems best, sans feet, placed on top.

☎ 0191 262 4646 🌐 [www.customdesign.co.uk](http://www.customdesign.co.uk)



## Eichmann Toppers **£40**

▶ It's hard, even after using these devices and finding that they work, to resist thinking of them as audio jewellery. They contrive to look both hi-tech and rather sweet, and doubtless Eichmann was shrewd enough to consider aesthetics as well as performance when choosing the shape of this product. It's actually made of solid aluminium – heatsink extrusions, if we're not much mistaken.

After all, practically anything placed on, or stuck to, a flat piece of potentially resonant material will have an effect on its behaviour, and if you're very familiar with your listening environment you'll almost certainly hear some effect when these are placed on amplifiers, speakers, furniture or windows as suggested. It's not dramatic but it can clear things up a little and there's plenty of mileage to be had in experimenting. On the whole, positioning away from the edges but not quite at the centre of any sizeable surface will have the most obvious effect. A handy and amusing tweak.

☎ 0131 555 3922 🌐 [www.eichmanncables.com](http://www.eichmanncables.com)



## Isotek Elite mains cable **£75**

▶ Isotek is a mains specialist, and this cable subscribes to the general Isotek idea of keeping interference out as far as possible, with a hefty braided screen. Why bother, though, when the preceding several miles are unscreened? Perhaps because the existence of a screen will help 'dump' some of the interference already there to ground, and also because the bit of wire closest to the equipment is generally the bit most susceptible to high-frequency interference – the most insidious kind. A top-quality MK plug and Marinco IEC outlet complete the scheme.

Whatever the cause, this is one of the more effective mains upgrades we've tried. With various bits of kit there was a small but worthwhile increase in 'hear-through' quality, with more clearly defined spatial cues and a greater sense of nothingness in the gaps between the music. Reasonably practical despite its size, this seems like a successful upgrade and good value for money.

☎ 01635 291357 🌐 [www.isoteksystems.com](http://www.isoteksystems.com)



## Skip Dr CD/DVD repair kit **£30**

▶ Looking like a cross between a prop from a low-budget science-fiction flick and a kid's toy, this device promises wondrous things, removing scratches from CDs and DVDs of all flavours. Spray the offending disc with the supplied liquid (some harmless-smelling solvent mix), clamp it in the device and turn the handle for quite a long time until the disc has completed a whole revolution. As it turns, the disc is polished by a flat band of very mild abrasive.

Does it work? It seems to. Lacking a proper CD error counter, we simply damaged a CD-R until it skipped audibly, then polished it up. Yes, it stopped skipping. No, it wasn't anywhere near visibly perfect. There were still quite a few little scratches visible, plus some striations due to the Skip Dr. But that's still a result and if this recovers just a couple of damaged full-price discs it could pay for itself. A handy gadget for those with children and inveterate Oxfam shop junkies!

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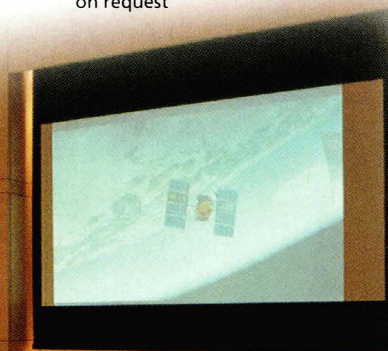
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# COMPETITION

## Win a pair of PMCs!

Effortlessly expressive floorstanders or deceptively compact standmounts

Few specialist speaker brands can lay claim to the level of success enjoyed by PMC in recent years. From its pro-sector roots it has expanded into the realms of domestic hi-fi with enviable aplomb, turning itself into one of the fastest growing loudspeaker brands in the UK in the process. Its products are used in sound studios for monitoring around the world, with a roster of celebrity fans that includes none other than Robbie Williams... no wonder he's always grinning!

We too have long admired PMC's products, from seriously chunky monitors like the IB2 to the effortlessly expressive FB1 floorstander. And now the FB1 has a big brother, the rather fabulous OB1, incorporating a doped paper-cone bass driver, midrange dome and fabric tweeter into its 102.5cm-high frame. In long-standing PMC tradition, its cabinet also sports a transmission line to load the bass driver, helping to deliver a superbly well-extended bottom end.

**SECOND PRIZE**  
A pair of DB1 compact speakers worth £555



As we said in our review last month, this speaker is an "all-round class act" – one that would usually set you back £2,450 per pair. But thanks to *Hi-Fi Choice* and PMC you could win a pair gratis if you can answer the question below. And as if that wasn't enough, the second correct entry 'out of the hat' will win a pair of DB1s worth £555 – a deceptively compact standmount speaker that received a *Hi-Fi Choice* Best Buy Award in *HFC* 240. So... what are you waiting for? Pick up the phone!

**FIRST PRIZE**  
A pair of OB1 floorstanding speakers worth £2,450



To enter just answer the following question and call the number below:

Q) Which pop star once featured in an ad campaign expressing a fetish for PMC?

- a) George Michael
- b) Michael Jackson
- c) Gary Glitter
- d) Robbie Williams

 **0906 700 6001**

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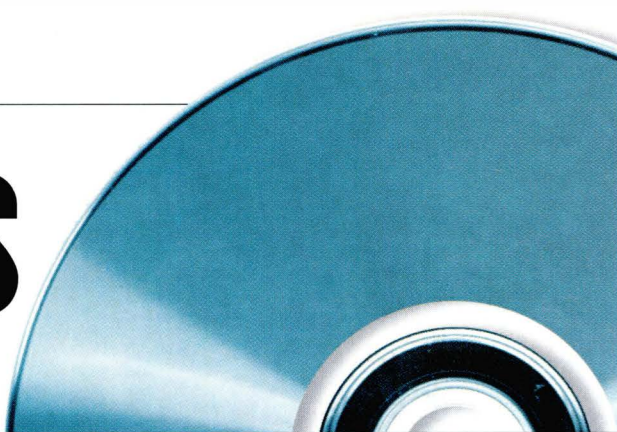
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# ChoiceCuts



This month's varied musical morsels

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



## AUDIOPHILE VINYL

### STEELY DAN Can't Buy A Thrill

Speaker's Corner/ABC 180g vinyl

Music: SD's first album is available on luxury 180g vinyl in a gatefold sleeve thanks to US label Speaker's Corner, though looking at the sleeve you wouldn't guess as much – it's totally authentic. Featuring a band proper rather than the massed sessioneers of later albums, *'Thrill* features tracks that few of us haven't heard, including the hit *Reeling In The Years* and lesser-known gems such as *Do it Again*, *Fire In The Hole* and *Midnite Cruiser*. The stand-outs are *Kings*, which has the sleeve description "No political significance" despite being about Richard Nixon, and *Brooklyn* (*Owes The Charmer Under Me*). ★★★★★  
Sound: The high-quality vinyl contrasts starkly with my 1980s pressing – it's extremely quiet and has body and detail that only original pressings might equal. There's some tape stretch on *Fire In The Hole* but otherwise this is a lovely reissue. ★★★★★ JK

### BOB DYLAN Highway 61 Revisited

Columbia/Absolute Analogue 180g (vinyl)

Music: The middle album of Dylan's 'electric' trilogy is a milestone not only in his own oeuvre but in popular music as a whole. Released in 1965, it contains many of his strongest tracks and probably his best known one, *Like A Rolling Stone*, which seems almost pared down in its original form. The highlights are *Tombstone Blues*, a lively and raw band playing in tight but loose style behind some of the most consistently poignant lyrics in the songbook. *Ballad Of A Thin Man* is a more overtly political and biting song which takes few if any prisoners while *It Takes A Lot To Laugh...* is a JJ Cale-esque blues ballad of real depth. *Queen Jane Approximately* and *Desolation Row* are likewise superb. If you're not a convert yet this will do the trick. ★★★★★  
Sound: Given the vintage of the recording this Absolute Analogue pressing is excellent. It's not phenomenally dynamic but there's plenty of detail and the silent groove lets you hear right into the master tape. ★★★★★ JK

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## COMPACT DISC & VINYL



### SUPER FURRY ANIMALS Phantom Power

Epic

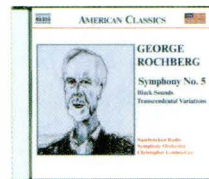
Music: If you bought *Rings Around The World*, you're in for a surprise. The Welsh band have followed that chart-topping, glossily produced effort with a major change of direction in which the techno excesses and super-charged rock riffs have been stripped away in favour of a more unplugged sound. Yet surely nobody can be disappointed as melodies float sublimely, harmonies recall the Beach Boys and there is a fuzzy warmth and open-hearted honesty to the new songs that is utterly beguiling. The DVD version provides an arresting visual commentary on the songs. ★★★★★  
Sound: Opting for an earthier feel doesn't mean shoddily recorded. You have to work twice as hard at the mixing desk to sound this organic. ★★★★★ NW



### INTERNET CAFÉ ORCHESTRA Soundtrack For Cyberspace

Mandala/dalaman@maltanet.net

Music: Think Air on a blues trip, trippy festivals and film soundtracks running rapidly out of control (heart-warmer to thriller to chiller). ICO's album is all these and more, a dazzlingly strange blend of half a dozen different sub-genres. Dave Goodman and Kathy Manuell are pioneers of the festival and ethno-ambient circuits (Manuell sang with Design in the seventies, Goodman has jammed, produced and/or live-mixed almost everyone, from Michael Jackson to the Clash). I don't know what they're on now, but it's a very entertaining hour. ★★★★★  
Sound: Goodman's 30 years of studio experience shows – chords swell up solidly, synths slink from left to right, bass goes deep and it's got more atmosphere than a Mexican village. Play loud. ★★★★★ PS

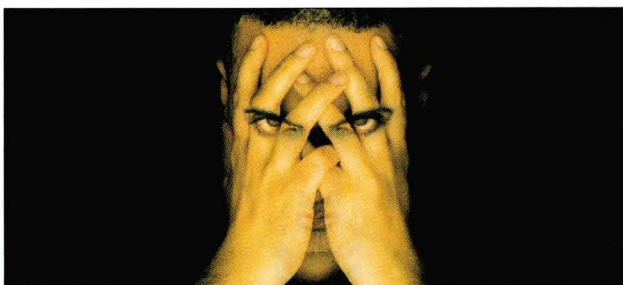


### GEORGE ROCHBERG Symphony No.5, Black Sounds, Transcendental Variations

Christopher Lyndon-Ger (conductor), Saarbrücken RSO

Naxos American Classics 8.559115 (budget label)

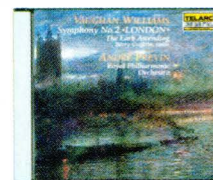
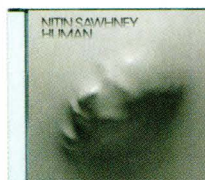
Music: Surprisingly, *Rochberg's 5th* and *Transcendental Variations* are world premier recordings, though the works are nearly 20 and 30 years old. Admittedly, the partially atonal *Symphony* is brusque and abrasive and will be too eclectic for some, but this is great music, redolent with echoes of Mahler, Stravinsky, even Bartok, and its brilliant, percussive orchestration means the rewards are certainly there. The *Variations* for string orchestra is quite different: a beautiful, elegiac piece of just 18 minutes. ★★★★★  
Sound: Captures the massive scale and forcefulness of the *5th* while responding to the passionate tonality of the *Variations*. ★★★★★ AG



### NITIN SAWHNEY Human

V2

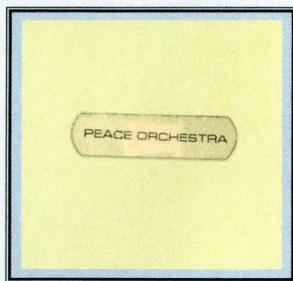
Music: They once called it the 'Asian Underground'. But since Nitin Sawhney's albums have won him a Mobo award and a Mercury Prize nomination, 'overground' might now be more appropriate. *Human* is his most overtly commercial offering to date. His Indian roots still musically underpin proceedings, but tracks such as *The River* and *Eastern Eyes* owe as much to contemporary British RnB and club culture. Well-chosen guest vocalists from Matt Hayles (Aqualung) to Natacha Atlas contribute to a dazzling musical tapestry that switches between pulsating funk and ethereal Asian beauty so effortlessly that it redefines previous notions of global fusion. ★★★★★  
Sound: You're unlikely to hear a more pristine production this year. Sawhney then cleverly contrasts the sparkling studio clarity with crackling samples and other atmospherically ambient 'found' sounds. ★★★★★ NW



### VAUGHAN WILLIAMS Symphony No.2 'London', The Lark Ascending

André Previn, Royal Philharmonic Orchestra  
Telarc CD-80138

Music: The *London* was recorded once before by Previn twenty years ago. The comparison shows that he's is now more introspective, less interested in the rhythmic thrust of the piece, and more immersed in its inner structure, with slower tempi (try the passionate *Lento* movement). With this new maturity, the music blossoms in a reading that will give long-term pleasure from one of Vaughan Williams' finest scores. ★★★★★  
Sound: Not Telarc's best recorded sound, though it responds well to a good replay system. Imagery is deep and wide, but the distant balance needs high replay levels. ★★ AG



## THIS MONTH'S CLASSIC HI-FI TEST DISC "Juicy bass you can almost wallow in."

**PEACE ORCHESTRA** Peace Orchestra G-Stone Recordings

**Music:** Released in 1999, Peace Orchestra was the name of Peter Kruder's first solo project after his break-up with Richard Dorfmeister, a Viennese partnership that defined a dance/chillout genre all of its own. Peace Orchestra the album has its antecedents in the electronic music of Yello and Brian Eno, sharing ground with Fila Brazillia and Tosca by mixing cinematic ambience with laid-back monster beats. Largely instrumental, only two tracks feature female vocals

and then never in a central role. The key instrument on this album is the drum, backed up with double bass, all manner of keyboards and a treasure trove of samples and FX.

★★★★★

**Sound:** This is an extremely spacious recording – it will fill the room with ripe sonic brush strokes. Then there are the bottom octaves... We're talking deep, round, juicy bass that you can almost wallow in. ★★★★★ JK



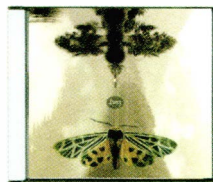
### GILLIAN WELCH

**Soul Journey**

Acony/Warner

**Music:** Californian Gillian Welch has been ploughing a rich furrow through bluegrass and Appalachian folk music for four albums now, singing plaintive acoustic paeans to the mountains, broken homes and whiskey with her partner David Rawlings. *Soul Journey* sees the pair opening out their sound, employing a band for the first time. But though she claims this is her 'sunniest' album, fans of her heartbreakingly emotive vocal style won't be disappointed. Highlights include the country rock of *Look At Miss Ohio* that's a world and a lifetime away from Sheryl Crow, the ominously spartan *One Monkey* and listen out for the harmonica solo on *I Made A Lovers Prayer* – beautifully paced with just the right amount of ingenuousness and soul. ★★★★★

**Sound:** Welch has always had that icy crack in her voice that hints at hidden depths, and the arrangements on *Soul Journey* do nothing to diminish it, providing colour without taking over. ★★★★★ DO



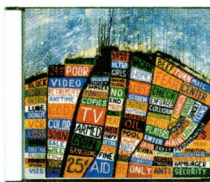
### LUNZ

**Lunz**

Groenland/EMI

**Music:** Lunz (pronounced Loons) are German sound artist Hans-Joachim Roedelius and US composer Tim Story. Together they produce short, partly composed, partly improvised pieces of often stunning beauty and refined emotion. Fans of Satie and Debussy, their sound pictures are painted with a palette of delicately struck piano chords, cello and ambient electronic sounds to create images that are both fascinating and ambient, striking yet ethereal, like a walk through a beautiful wood at dusk, mindful of monsters rustling in the dark. ★★★★★

**Sound:** Pristine, clear and pure, each of these delicately painted aural miniatures evokes a mood and paints its own quiet, contemplative picture. ★★★★★ DO



### RADIOHEAD

**Hail To The Thief**

EMI Parlophone

**Music:** As well as the long slow atmospheric air-guitar music there are songs on this that push the Radiohead sound further out than ever before. *Sit Down. Stand Up* contains elements of Cabaret Voltaire, *Go To Sleep* is pure acoustic Led Zeppelin III, *Where I End And You Begin* could have been produced by Eno and there are even pastoral elements associated with the Canterbury sound of Caravan. Like *Kid A*, it's a tribute to the inventiveness of the Thom Yorke/Johnny Greenwood partnership. ★★★★★

**Sound:** Crystal clear production allows decipherability of Thom Yorke's lyrics as well as the band's panoply of exotic instruments like ondes martenot and toy piano. Have fun spotting the sound sources. ★★★★★ MP

## DVD-AUDIO & SACD

### STEELY DAN

**Everything Must Go**

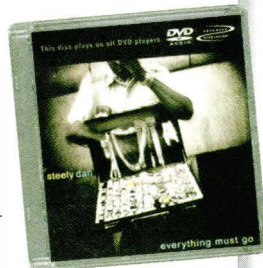
DVD-Audio (24/192 stereo, 24/96 surround,

DTS & Dolby Digital 5.1)

Reprise

**Music:** Becker and Fagen may not scale the giddy heights of their former lives but *Everything...* has an edge in places and some decent tunes in the Dan's upbeat west coast style. The instrumentation verges on the cheesy in places and the lyrics are occasionally dodgy, but it's as slick and polished as ever with supreme musicianship. Stand-out tracks include *Green Book* with its unusual guitar solo and the relaxed title track. ★★★

**Sound:** The 192kHz stereo track is sublime – easy yet taut with gorgeous bass. It has excellent presence and sparkly highs that give a very classy sound – one of the best DVD-As we've heard. The surround mix is only a mite less 'fi' and adds scale without undermining the musical message. ★★★★★ JK



### EDVARD GRIEG

**Norwegian Dances, Symphonic Dances etc**

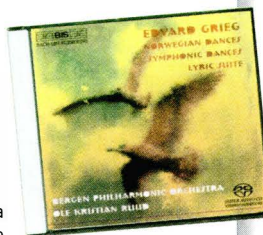
Ole Kristian Ruud (cond), Bergen Philharmonic

SACD (multichannel/stereo SACD plus stereo CD layer)

BIS SACD-1291

**Music:** This is the first surround sound recording of the *Symphonic Dances*, and making it all the more interesting for Grieg fans, the Bergen Philharmonic was in its day Grieg's 'own' orchestra – indeed, Bergen was his home town. Much of the music, the *Norwegian Dances* and the *Lyric Suite* especially, is familiar and tuneful fare, lifted by the atmospheric, rustic air and folk music-inspired themes which evoke the open Norway landscape and people. All three pieces on this disc originally were scored for piano (two or four hands), but you might never know from the lavish scoring. ★★★★★

**Sound:** The DSD recording, made at the Grieg Hall in Bergen, is a little too richly reverberant for those who value articulation and inner detail. The recording occasionally obscures orchestral detail, but the ebullient, lovingly phrased playing makes this a compelling addition to the Grieg discography. ★★★★★ AG



### EMMYLOU HARRIS

**Producer's Cut**

DVD-Audio (24/96 stereo, 24/96 surround, DTS 5.1,

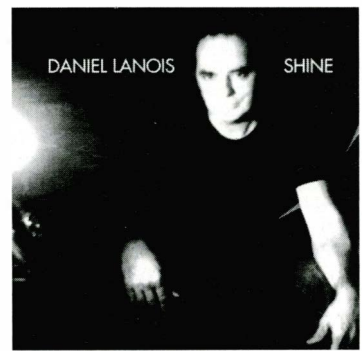
Dolby Digital 2.0 & 5.1)

WEA

**Music:** To experience this collection of songs from Emmylou's early years on Reprise, you'll have to buy into DVD-Audio – this isn't simply a multichannel afterthought to a CD release. It's well worth it, too. Forgetting the country tag for a while, there's an honesty and clarity to Harris's voice that sets her apart from the majority of Nashville hit factory pap and this collection picks some of her best moments, with the stunning *Boulder To Birmingham* setting the pace early on. ★★★★★

**Sound:** The 24/96 stereo mix is the star of the show, with excellent dynamics and the crystal clear vocal performance that is necessary with a voice of this quality. The multichannel mixes are thoughtfully produced, with the DTS track working well on a standard DVD-Video player. ★★★★★ SM





# Still shining

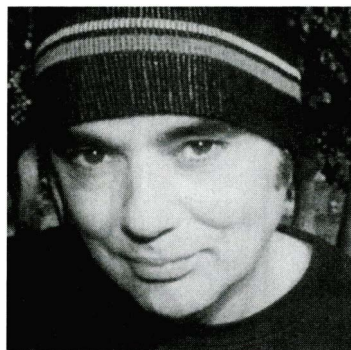
Legendary producer and musician **Daniel Lanois** takes time out to talk to us about hi-fi, his latest album and his work with some of rock's greatest hit-makers. Interview: Mark Prendergast

**H**e's the elusive studio wizard, the Canadian sonic sorcerer who is responsible for rejuvenating careers with a touch of a dial. Daniel Lanois has worked with Brian Eno, Peter Gabriel, U2, Robbie Robertson, Bob Dylan, Emmylou Harris and more. Everything he touches turns to sonic and financial gold. Think of these albums – *So*, *Us*, *Up*, *The Unforgettable Fire*, *The Joshua Tree*, *Achtung Baby*, *All*

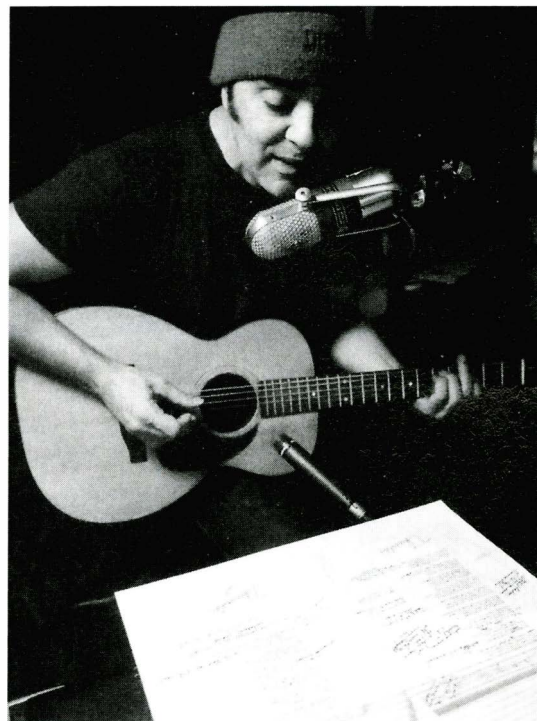
*That You Can't Leave Behind*, *Oh Mercy!*, *Time Out Of Mind* and *Wrecking Ball*. Yes, you've heard a lot about them because they're all career highs and massive commercial hits. No doubt about it, his intervention in Dylan's career saved it not just once but twice. When Peter Gabriel was facing creative death by neuroses in 1985, Lanois locked him in a room and said "write a song or you won't get out". With Dylan,

he took him out to a car park, said "Let's jam," and wrote an album there and then. With U2 he recorded them on castle battlements and ghetto blasters. It's Lanois' "commitment to performance and blend" which does the trick. When Eno arrived at his Ontario studio in the 1980s he was impressed by the coffee, the liqueurs and the amps and mics in every nook and cranny. A rustic rover with a love of 1950s Fender guitars,





**“There’s this little Arkansas company called Klipsch who make speakers and my favourite is the Lascalla.”**



Lanois has recorded all over the world. He’s also made three solo albums – the pastoral *Acadie* (1989), the stormy Hendrix-influenced *For The Beauty Of Wynona* (1993) and now his best, *Shine*, with Bono and Emmylou Harris.

**HFC:** I really liked *For The Beauty Of Wynona*. It was loud, full of Hendrix guitars. I still play it.

**DL:** My first record was a little bit more cohesive in its storytelling. *Wynona* was something else, like a leaf from my New Orleans chapter. Maybe I needed to get out of there. I call it my exit record. It’s about four years since I finished my Kingsway studio. Now I’ve got a new studio base in New Orleans. I’ve also got an apartment in Toronto so I can hang out on home turf.

**You’ve obviously worked with U2 on their latest album but who else?**

Well, I’ve been involved in so many productions. Various soundtracks, a Willie Nelson album, jazz albums and such like. I wasn’t really involved with Peter Gabriel’s new record but he and I did that track *Sky Blue* in the early 1990s. I know because the chorus on it is still the same!

**What comes from these productions with Dylan, U2 and Gabriel?**

Osmosis is always at play when I work with these great people. Some of their personalities rub off on me and I carry them to my own work. You go into somebody’s world, you leave something behind and bring something with you.

*Shine* was recorded in Dublin, Paris, Canada, Mexico and LA. Why? The Mexico thing was probably the biggest deliberate geographical move. I wanted to get out of the usual urban crossroads and into a culture where time stood still a little bit. We recorded in the Baha, in a little town called Totos Santos which means All Saints, almost like a little Western town from 100 years ago. The lack of stimulation opens up the imagination. I wanted the slow pace. I just wanted to hear what the earth had to say rather than the wires! I spent two years in Dublin with the U2 boys and that’s where I wrote the album. I wrote a song with Bono for a Wim Wenders film, *The Million Dollar Hotel*, and he was kind enough to sing on my record. It’s a beautiful vocal. The bulk of *Shine* was recorded in Mexico, some in Canada and then brought to a conclusion in Los Angeles this year.

**Shine has a very mysterious sound, some of it just falls out of the speakers. You want to keep hearing it over and over.**

I always think about flow and night-time listening. I grew up in rural Canada listening to the radio and I loved its mystery. Back in those days they played entire albums at night. So I’ve got a romantic notion about it. I wanted this album to be one of those you could play without skipping tracks on night-time radio!

**The title track has a whopping great melody – perhaps the album’s best?**

It’s the great melody Bob Marley never wrote! (laughs) I had a fragment of it on an ideas cassette and the melody always stood up for me. I recorded most of it in LA and kept the demo feel. The vocal is a mirror of Jamaican records in the 1950s, like schoolyard singing, with no vibrato. It’s about one’s capacity to receive information, the inner light as your beacon.

**What do you listen to music on?**

I’ve been very fortunate recently with this little Arkansas company called Klipsch who make speakers and my favourite of all time is the Lascalla – a medium speaker with a horn and tweeter. My buddy Billy Bob Thornton, who’s from Arkansas, hooked me up with them. And they sent me five speaker cabinets, mint editions of the early 1960s models! I wheel them around my home and studio for whatever. I’ve also got an extensive vinyl collection, about 4,000 records! I use contemporary turntables, Technics decks like the DJs. At home I’ve got two of them, a Bryston amplifier and the Lascalla speakers.

**What about music on the move – cassette, MD or other? I remember you grabbing my Sony D3 recording Walkman in 1987 and saying you wanted one.**

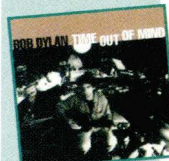
Yes, I still use cassettes and little Walkmen but now for work purposes I’ve got an iPod which I dump all my ideas into and a few of my favourite records. My perfect travelling tool. **HFC**

**Lanois greats**



**U2 – THE JOSHUA TREE (1987)**

Lanois played some guitar on the greatest evangelical rock record ever made. "I knew it was a hit record during pre-production."



**BOB DYLAN – TIME OUT OF MIND (1997)**

Lanois’ has an alchemical relationship with the world’s greatest songwriter. "He’s a great guitar player and a great piano player. Sitting next to him is like a decade at university!"



**DANIEL LANOIS – SHINE (2003)**

His most beautiful solo work yet. "I’m very proud of my steel guitar on the two instrumentals – *Matador* and *JJ Leaves LA*."

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Above: Our in-depth look at the rise of the new digital audio formats from HFC 234.

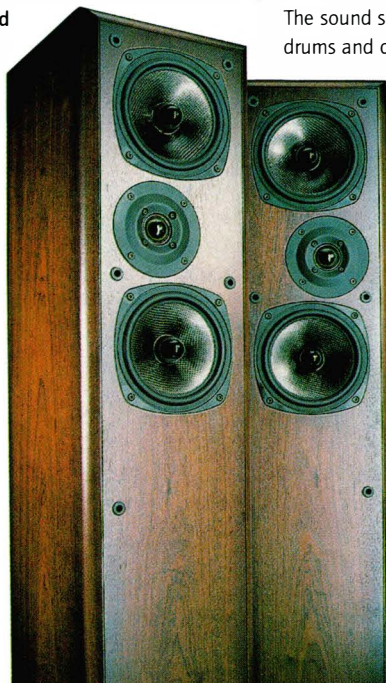
“Cyrus CD + amp + bright room = need for careful partnering.”

## CYRUS MATCHING

I want floorstanding speakers to go with my Cyrus kit – CD7Q and 8 amp. I'm prepared to spend up to £1,000 and I have a soft spot for Castle – I've listened to both the Conway 3 and Harlech S2 and, while they are very different, I just can't make up my mind. They will have to perform in a quite bright-sounding room. I like a fast, detailed sound and listen mainly to acoustic folk stuff.

Roger Harris

**HFC:** An equation we're fond of is Cyrus CD + amp + bright room = need for careful partnering. So if you're adamant on the Castles, choose carefully. The Harlech S2 uses an upward facing driver and so is more dependent on room reflections which, combined with its slightly forward balance, could strip your wallpaper. Go for the Conway 3 – it's up to date and has a laid-back balance that should compliment the Cyrus in a bright environment. What's more, the Conway 3 will satisfy your desire for a fast sound from this expressive and luxurious looking box.



Left: Castle Conway 3

## OUT WITH THE OLD

I re-read your article on the development of new formats like SACD and DVD-Audio in the November 2002 issue. I have been looking for a new CD player of late, and whilst the new high-resolution audio formats are tempting, I decided to go for the NAD C541i to complement my C350 amp. When I got it home and read the manual, I discovered it could decode HDCD discs. So I bought the *Best Of Dire Straits* on HDCD. When I compare it with CD the difference is amazing. The sound seems to come alive, especially the vocals, drums and cymbals, and afterwards a conventional CD sounds dead and flat. Your article never mentioned this new format, which is a shame because it could breathe new life into the CD sound for those of us that do not want to be forced down the multichannel route for audio.

Ian Read

**HFC:** HDCD (High Definition Compatible Digital) isn't new – it's been around since 1996, when Pacific Microsonics pushed the format and its decoding chipset to CD and now also DVD manufacturers. HDCD discs are encoded with 20-bit data instead of standard 16-bit for CD, while still complying with the CD format. It was designed by enthusiasts to improve digital audio quality, while retaining compatibility with CD. At present there

## LETTER OF THE MONTH

### I LOVE 1970

I enjoyed January's Retro column revisiting the Mission 770. But my memory of the 1970s and the rise of the modern two-way speaker are a little different. Mission may have brought something to the party, but the brands and models that brought new levels of performance from two-ways, were KEF with the 104, and Monitor Audio with the MA4. Both were available 1975-76 and indeed were reviewed by Angus McKenzie in the very first *Hi-Fi Choice*. A review of the Mission 770 did not appear until a later edition.

Other two-way brands tested in the first issue were the Chartwell PM200 and the Celef Mini Professional. These models and the 104 and MA4 used bextrene as cone material, and it may be that Mission was the first to employ

polypropylene, but by the time of the later edition a number of models were using this material eg Chartwell, Harbeth.

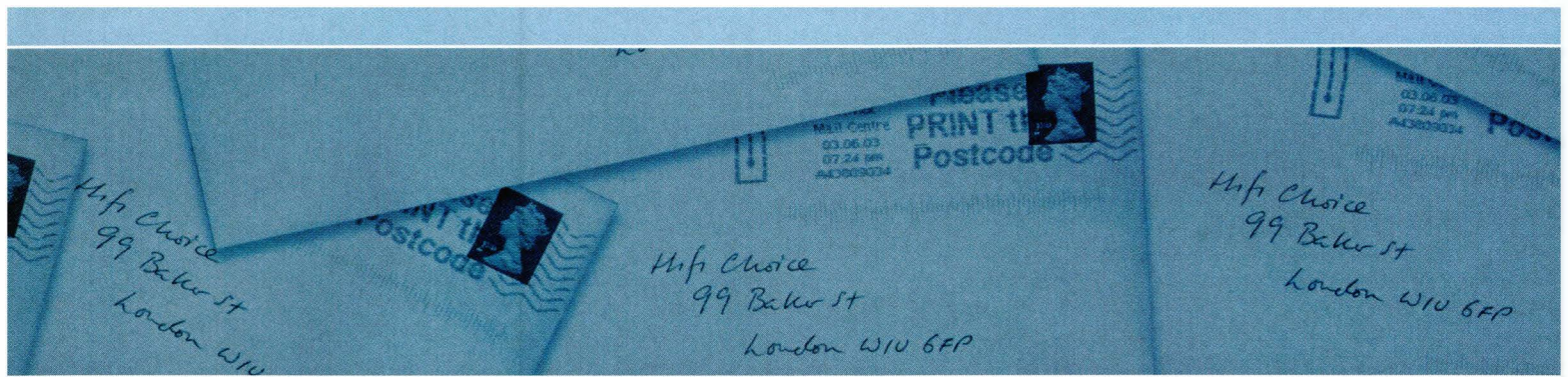
Though the Spondor BC1 was legendary (it was still the best mid-price speaker in the 41st edition in 1979), this was different in that more of the midrange was possibly covered by the Celestion HF 1300, despite its limited bandwidth. I wouldn't want to try and separate the KEF 104 and Monitor Audio MA4 in terms of influence, but in the heady hi-fi days of the 1970s, I think these were the seminal models, predating the Mission 770. I used the MA4s until the early 1990s. My son now has them and he surprises friends with their performance, once they have got over the appearance!

Rod Smith

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The author of our letter of the month receives a free pair of Ixos XHA606 interconnects worth £60, featuring Gamma Geometry and silver plated OFC conductors for superior sound. So get writing! (250 words max please...)



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are around 5,000 HDCD discs available and we're all for it – HDCD discs can sound excellent, though it must be said that differences in general studio practice are more crucial in determining a CD's sound quality than whether or not it's HDCD-encoded. As for breathing new life into CD, it's more of a short puff – the high-resolution DVD-Audio and SACD formats are technically much more advanced.

### SERVE UP THE SOUNDS

In the Digital Audio Recorders section of the Buyer's Bible, there is mention (on p90) of the Yamaha CDR-HD1300 audio server, published in the previous edition of the magazine. How long was the article and was that the first review of an audio server? In terms of audio quality, how do dedicated audio servers compare with PC audio servers? Is 'audio server' the generic term?

**Daniel Wheeler**

**HFC:** We've now reviewed the CDR-HD1300 twice – an in-depth three-page review in *HFC 237* followed by a fascinating group test last month. We've published reviews of hard-disk based kit before, for example, products from Imerge, Linn and AudioRequest. The nature of these components differs, and so do the generic terms people use. Some, like the products listed above, are designed as 'audio servers' (other terms are 'music servers' and 'sound servers'), distributing stored music files around the house.

The Yamaha is a little less ambitious, being a combined CD-RW/hard disk recorder. You can use its HDD to store music to play through a single-room system, and also to provide greater editing capability before dumping to CD-R/RW. The price of this kind of unit often seems excessive compared to a hard disk-equipped PC, but it's fair to expect higher quality from an 'entertainment' server dedicated to the job. However, for optimum audio quality it's important that a 'no compression' option is available.

### SPEAKERS FOR SUGDEN

I have recently bought a Sugden cd21 and a21 combo and now want to buy some loudspeakers to match but I am having a lot of trouble, since there are very few Sugden dealers around. I have listened to some speakers

Below: Yamaha HD1300



## ONLINE FORUM

A few choice comments plucked from our online forum. Join in the fun at [www.hifichoice.co.uk](http://www.hifichoice.co.uk)



I subscribed last year unaware that the blind panel had been retired and I feel an extra layer of information is missing from tests now. **Davo**  
*Actually, blind listening has always remained a part of our testing process, and if you turn to our new Ultimate Group Test format starting on p54 you'll see the panel in all its glory!*

If you plug your CD player into the right side of a twin mains socket and compare it to the left, I guarantee the right will sound best – cleaner bass, deeper soundstage. **Zepfan**

I'm disappointed to see people are paying good money for expensive mains cables because it's deemed to be worthwhile, even though the cable just the other side of the socket you plug your expensive cables into is crap quality mains solid core. **Martin C**  
*A limiting factor indeed, but good mains cables do unquestionably make a difference.*

How can Linn justify £4,500 for the Kivor Index? I can put together a PC of better spec, in aluminium casing, with four high quality sound cards to provide the same multi-room output possibility. Plus it would play DVDs, DivX, VCD. Oh, and computer games, all through a home theatre set-up or to multi-room setups, for £2,000. **Isaac Sibson**  
*Fair point, but a PC can't match the elegance of kit like Linn's for pure audio applications.*

so far from PMC, B&W, Spondor, Linn etc, but I still haven't found what I'm looking for! At the moment I am still using my Monitor Audio Bronze 2 I bought a few years ago for my old system. What would your ideal speaker be for the Sugden cd21+a21?

The budget should be between £1,000-£2000 max. I want an amazing soundstage, a natural and rich sound, good dynamics and a reasonable bass response. I mainly listen to high-tech jazz, in an average sized living room. I hope you will give me a hand on this one.

**B Lopez**

**HFC:** Easy. An obvious partner for your Sugden electronics, in particular the a21, is the Living Voice Auditorium at £1,700. It's a combination that has proved itself to our ears, and in fact, Living Voice's owner Kevin Scott, recommends the a21 to his customers. It'll fulfil all of your listening criteria, being a dynamic and natural-sounding performer

with a well-projected soundstage. What's more, the Auditorium has recently been improved – see our review in *HFC 239* for a complete analysis.

**“In terms of audio quality, how do dedicated audio servers compare with PC audio servers?”**

Below: Living Voice Auditorium review from *HFC 239*.





DENSEN B-400 XS CD PLAYER | ATC SCA2 PREAMP | ATC ACTIVE 20 LOUDSPEAKERS

# 4-box phenomenon

*Maximise your musical enjoyment while putting the bite on clutter*

**B**y the standards of a stressful existence, it's shaping up to be a good day. I don't know how you unwind from it all – I'd be surprised if saying "Horlicks" to yourself does the trick – but I listen to music. Probably for too much of the time and on a constantly-shifting roster of kit most people would consider laughably expensive. It works for me.

At least it works when I can truly forget about the kit. As a hi-fi reviewer, this isn't easy. Striving to pin down how an individual component 'sounds' and the nature of its contribution to any system it might be part of is the first line of the job description. The occasions when it's possible to connect completely with the music while blissfully disengaged from the mechanics of its reproduction are, sadly, quite rare. Which is ironic considering that getting you closer to the music is what hi-fi is for. Let's just call it an occupational hazard.

But today I suddenly feel better about the whole deal. Well, of course I do – I've constructed a system that's an antidote for hi-fi hack paranoia, a system that will get on with the job of playing my CD collection without drawing attention to anything that might be construed as a complex, highly-strung, cable-sensitive, tweak-hungry, not-now-honey-I've-got-a-headache attitude. You see, simple is sexy in my book. The fact that it cuts down on the box count has several significant consequences: fewer components and less aesthetic clutter ease the need to think about the conjectural tangle of interactions that lurk at the heart of more conventional hi-fi systems. And what we have here is beautifully simple – a world-class

CD/pre-monoblock/speaker combo reduced to four subtly glinting silver-grey components – minimal cabling, maximum music.

#### AFFORDABLE HIGH END

The inspirational reductionism resides with Stroud-based pro-sector hero ATC's idea of what a serious standmount domestic 'hi-fi' loudspeaker – and that's the pro-standard take on the term – should look and sound like. If a speaker that costs £2,695 suggests something pitched on the far side of 'affordable high-end', think again. This system is *deeply* AHE. The beauty of the Active 20 is that as well as having a stunning metal-grilled trapezoidal 20-litre aluminium/MDF composite enclosure with curved corners and an exquisitely-engineered 150mm bass/mid driver that could be used as a free weight in a gym, each speaker comes with its own 250-watt monoblock power amp – and that's just to take care of the bass/mid driver. An additional 50-watt amp controls the 25mm soft dome tweeter which has a double magnet construction and extends comfortably beyond 25kHz. The high-flux magnet is used to control a short, edge-wound copper voice coil operating in a close-tolerance long magnetic gap for high power handling. A fourth order electronic crossover splits the incoming signal and the amps operate in Class A for two thirds of the maximum power output, a trait confirmed by the hand-warming potential of the full-length heat sink fins and top plate vents at the back of each enclosure.

So let's read that again: studio-standard speakers driven by their own immensely powerful internal power amps with a degree of accuracy and

**"It's a world-class CD/pre-monoblock/speaker combo reduced to four silver-grey components. Minimal cabling, maximum music."**



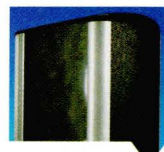
**Densen B-400 XS CD player** £2,500

Densen's flagship disc spinner makes interesting claims about doubling the resolution of CDs but there's no denying the natural and unforced sound quality it displays in the right company.



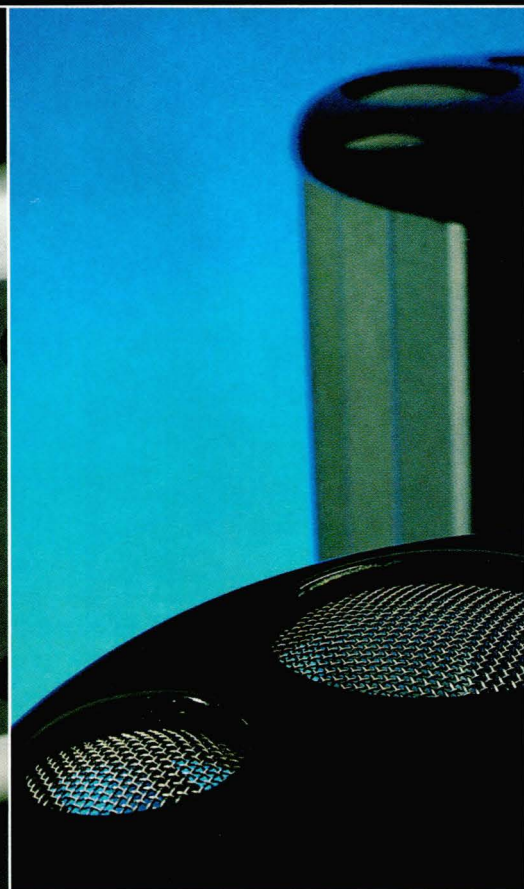
**ATC SCA2 preamp** £3,929

Looks like a seventies throwback but this is a fully-featured preamp with near state-of-the-art performance from pro-sector stalwarts ATC. Balanced outputs drive ATC's Active 20s with ease.



**ATC Active 20 speakers** £2,695

Studio engineering comes to the home, the self-powered 20 combining amazing power and dynamics with remarkable subtlety and insight. The hi-tech styling is unusual but decor-friendly.



control beyond the reach of any comparable passive design... all for £2.5k. Sounds like a steal. ATC's £3,929 SCA2 preamp is deceptive, too. It looks a little old-fashioned with its rounded-off casing, functional black front plate and distinctly seventies-style knobs. Under the lid, there isn't an integrated circuit in sight – it relies on discreet circuits for the entire signal path – also something of a bygone tradition. Actually, the SCA2 was introduced in the early nineties and does everything a modern high-end preamp should and shouldn't. Inputs number a generous eight, two of which are balanced XLR sockets; outputs offer a choice of RCA phono or XLR balanced connections, too, though of course the high output XLRs are mandatory to drive the Active 20s. Once you've plugged them into a convenient mains socket, that is.

#### SLAB AND TICKLE

Ten minutes after slicing open the cardboard cartons, it's all looking rather better than good. Densen's £2,500 B-400XS, now available in a dazzling silver-white 'Albino' finish, would be comparatively flashy if it wasn't for the balancing sobriety of its design. Its elegantly slabby functionalism matches the self-effacing but slightly

idiosyncratic form language of the ATC hardware like a dream. I'm anticipating an equally snug sonic fit, because I know from experience that the Densen is one of those CD players that works well with anything downstream that's genuinely transparent and neutral. Certainly, its engineering is comparably thorough. There are separate converters for right and left channels and the converter board includes an HDCD chip, but also, all control circuitry is designed by Densen and located on one board beneath the Sony-sourced transport for the shortest signal paths and to remove potential jitter between laser and laser reader. Densen claims immeasurably low DAC jitter thanks to an extremely effective new clock circuit.

You'll probably have read in *HFC's* previous review of Densen's somewhat controversial claim that its proprietary 'PlusBit' circuitry extracts a 17th bit from a 16-bit CD, effectively doubling its resolution. Yeah. I don't get it, either. Whatever it does, it makes the B-400XS an extremely smooth and natural-sounding machine with an almost analogue texture to its music making. In some systems it can seem strangely dull and lifeless but given the chance to exercise its subtler talents, it's capable of magical results.

And nothing less than sorcery will do

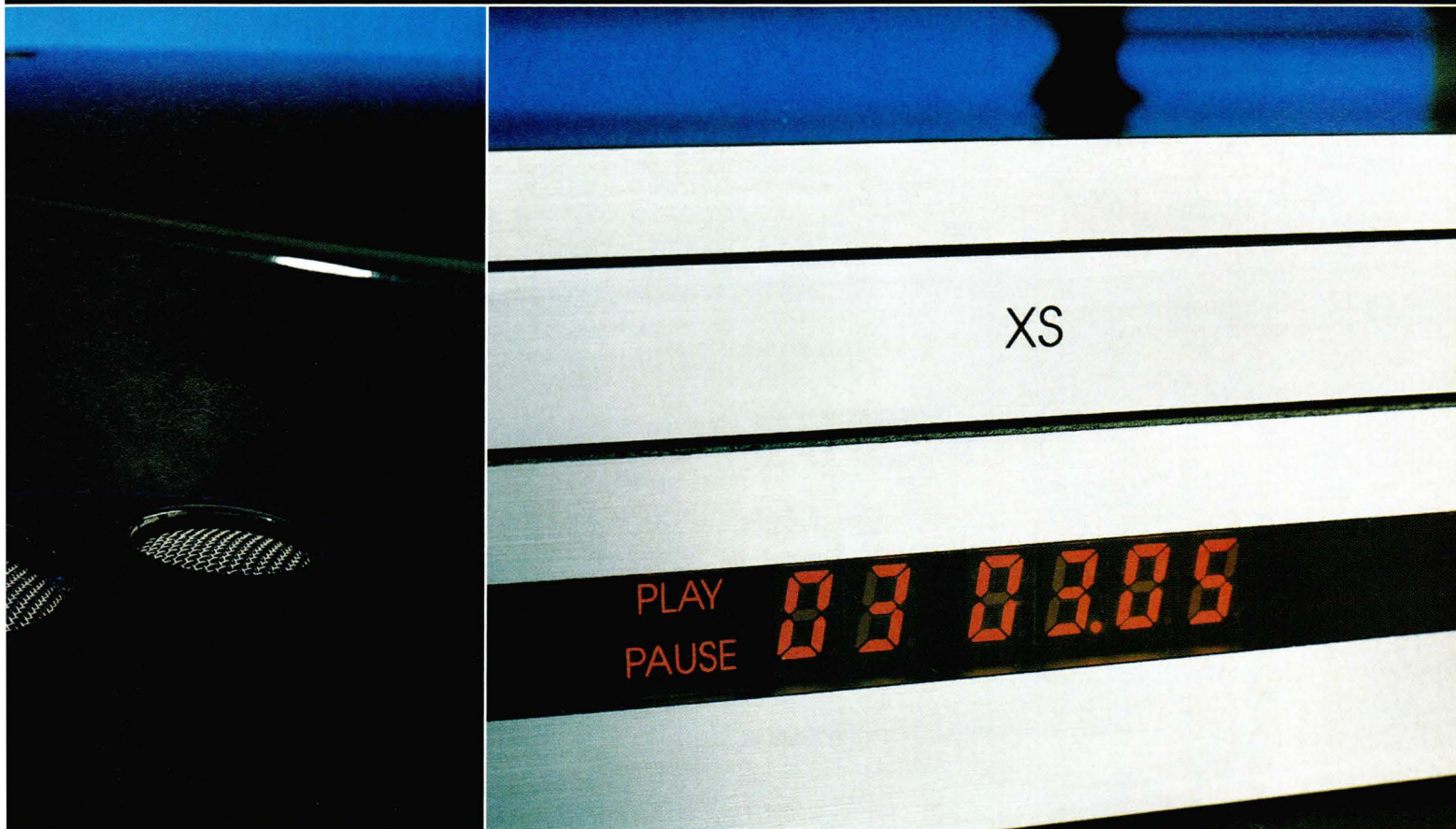
if this system is to succeed on the level I need it to. Not to put too finer point on it, it will have to disappear. I don't want to be sucked into an analysis of the hi-fi, I don't want it to dominate my living space. I want a break from all that. I want to kick back with a can of Stella and play my favourite CDs, nothing less, nothing more.

#### HONESTY FIRST

Joe Sample's almost ridiculously funky *Ashes To Ashes* is an album I've always enjoyed immensely on vinyl that seems to lose some of its sparkle, colour and, er, funk in the transition to CD. Better systems make more of it without quite hitting the spot. But no longer. The Densen/ATC combo's effortless weight and presentation of fine detail instantly ramped up the realism. Better still, the rather pale production was potently restored to full-blooded health with tonal colours and timbres convincingly resolved. Bass that had seemed thin and leading-edgy was now imbued with terrific energy, body and rhythmic drive.

The system's honesty-first approach works with languid classical music, too. A spot of Dvorak – not noted for his jaunty tempos – was handled with fabulous finesse and a real sense of 'performance'. Violin and cello string tone had a particularly natural and





**“Although disarmingly simple and compact, this is a serious system that does what a serious system should do – let the music breath in an effortless, uncompressed manner.”**

unforced quality – smooth without being smothered.

This system doesn't seek attention for itself, only the music. It balances difficult elements that can sometimes trash the ambitions of lesser hi-fi so well that you forget there was ever a problem. For instance, on the Crusaders' first outing in 20 years, *Rural Renewal*, the massed voices of the female gospel choir on *A Healing Coming On* weren't just clear and cleanly separated but were also beautifully rounded, and there was no artificial harshness or edge to Wilton Felder's tenor sax. It all meshes together so naturally, it just pulls you in.

On a selection of cuts, I don't think I've ever heard Larry Carlton's laid-back acoustic guitar playing sound better. In particular, the old Michael McDonald number *Minute By Minute* moved along in a groove so deep even a Range Rover wouldn't have been able to climb out. Kirk Whalum's sax sounded appropriately loud and generous of spirit and the incisive sting of Carlton's

guitar was spot-on. The system once again excelled low down with smooth, deep, tangible bass lines.

#### HIGH CLASS

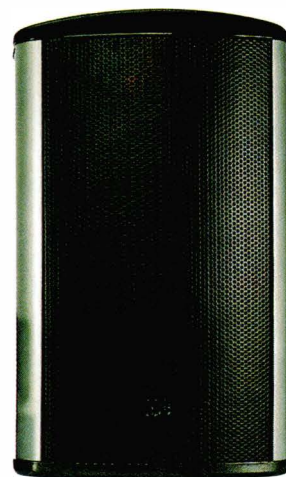
But there was still another gear to go. Not to mention a whole canister of nitrous oxide. Well produced as Carlton's material usually is, Steely Dan's new CD, *Everything Must Go*, is completely off the scale and team Densen/ATC lapped it up. On the wonderful *Things I Miss The Most*, Michael Leonhart's tenor sax sounded sensually warm and reedy and locked solidly in the soundstage. The imaging on this track was virtually holographic with Gordon Gottlieb's drums and percussion placed precisely where they should be, behind Leonhart and Donald Fagen's vocals. Absolutely exhilarating. The system evoked the darkly-tinged fun and atmosphere of *Blues Beach* superbly, too, especially Becker's effortlessly funky bass work.

Switching to some two-fisted playing with jazz pianist Julian Joseph it was

indubitably clear he was playing a grand piano – full size, correctly tuned, a joy to listen to. ATC's boss Billy Woodman says he started the company so he could listen to jazz properly. Sounds like he got his wish.

Although disarmingly simple and compact, this is a serious system that does what a serious system should do – let the music breath in an effortless, uncompressed manner. It represents an artful coalition of power, finesse and neutrality. The key to the system's sound is that it doesn't – it's not merely transparent but a completely open window, revealing acoustic and timing clues on golden oldies like Rickie Lee Jones' *Flying Cowboys* album I'd never even suspected before while bringing a still more tangible and harmonically rich feeling to John Lee Hooker's collaboration with Carlos Santana on *The Healer*. Like all open windows, a certain amount of rubbish is liable to fly in, but get the recording right and the results are breathtaking. **HFC**

David Vivian



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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.

## SOLO REVIEWS

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## OUR RATINGS EXPLAINED

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

musical sense that the detail is being directly injected into the brain. It's all very red, very natural, very flowing. Bass clarity also differs quite distinctly by having a more physical, less ethereal feeling than tends to come across with loudspeakers and other headphones, and in particular it is completely devoid of the tub-thumping excess that is avoided by some.

Our overall conclusion.

... sound as good as... like the former is... of as spacious and out of the head, and the... is rather coloured. More conventional... models can match the AKG and arguably... better if for resolving ability, but not

facilities available at the headphone socket. What seems at first a disadvantage in fact works in the AKG's favour. **HFC**

Alvin Gold

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 more than 85% may qualify for an HFC Award Badge.

**VERDICT**

**SOUND >> 90%**

**PRACTICALITY >> 40%**

**BUILD >> 90%**

**VALUE >> 85%**

**CONCLUSION**

**HI-FI CHOICE OVERALL SCORE >> 85%**

**PRO** A landmark product – scarily realistic and genuinely out-of-the-head sound, perhaps for the first time from headphones.

**CON** Heavy and not suitable for connection to headphone sockets.

## OUR AWARD BADGES EXPLAINED



Best Buy

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

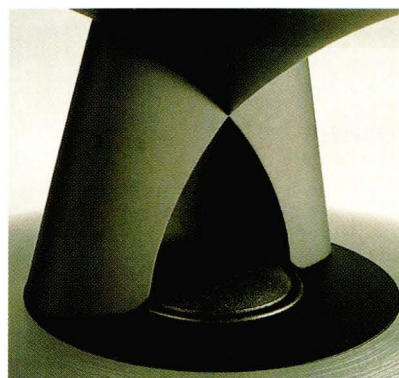
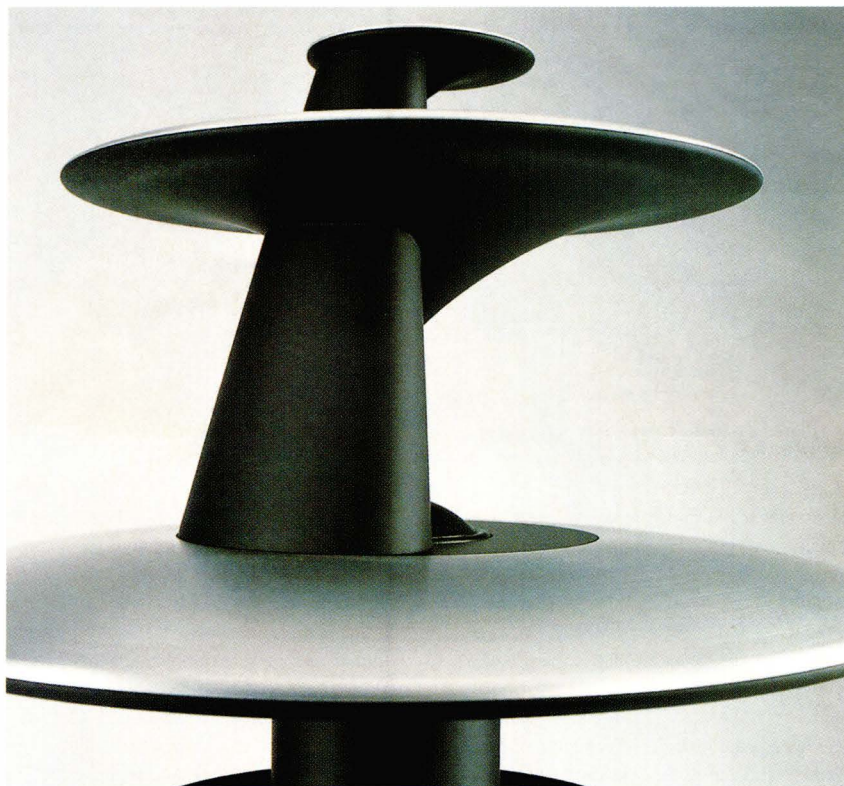


Editor's Choice

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

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





# DANISH DALEKS

*The most radical and complex loudspeaker ever devised ought to put B&O back on the hi-fi map*

**PRODUCT** Bang & Olufsen Beolab 5

**TYPE** Active floorstanding loudspeaker

**PRICE** £10,000 per pair

**KEY FEATURES** Size: 97x10-49cm ◊ Weight: 61kg  
 ◊ Active drive: 2x1,000W + 2x250W ◊ Room-mode compensation ◊ Lens-controlled mid-/treble dispersion

**CONTACT** ☎ 0118 969 2288 # www.bang-olufsen.com

**B**ang & Olufsen is one of the grand old names of world hi-fi, founded way back in 1925, though in more recent years the company has been successfully carving out its own niche as a premium AV brand, applying a distinctive combination of decent performance with very stylish design and ergonomics to both audio and video products.

To say it has distanced itself somewhat from the specialist hi-fi sector during this period is true enough – most B&O sales are now made through 'one make' outlets. But it would be a mistake to underestimate the very considerable engineering skills and resources at the disposal of this 3,000-strong company.

Many of these have gone into creating this extraordinary Beolab 5, which is unquestionably the most radical, innovative and complex loudspeaker ever devised and put into production. It sells for a very

substantial £10,000 per pair, but for that you also get several thousand (!) watts of amplification, plus some very clever digital signal processing.

The styling itself is very striking, its conical shape owing something to the Dalek school of industrial design, yet that curious and complex shape actually adheres closely to the principles of form-follows-function. One criticism of recent B&O speaker designs has been their use of multiple arrays of tiny drive units, in order to create super-slim shapes. However, the Beolab 5 goes to the opposite extreme, its cone shape allowing an enormous 380mm bass driver to be mounted in the base, pointing downwards.

Let's start with the outline spec. Finished in matt black with polished aluminium highlights, it stands around a metre high, though the tapering shape makes it look rather smaller. The underlying cone shape is interrupted by three silver-surfaced discs of different sizes, plus a narrow 'neck'. It's a four-way, four-driver design, the 380mm bass driver handing over to a 165mm unit for upper bass/lower mid, then a 78mm fabric-dome upper midrange, and finally an 18mm fabric-dome tweeter. These are all actively

driven by built-in power amps which supply 2,500 watts of amplification for each speaker.

If that outline sounds intriguing enough, the true technological originality here lies in two key features that are genuinely unique. One provides close control over the directivity of mid and high frequencies, in order to deliver superior stereo image definition irrespective of where the speakers are sited. The other very clever technique both measures and equalises out the variations in bass output caused by the various modes created through interactions between loudspeaker and room.

B&O's extensive controlled listening test researches have found that the best way of achieving the most precise stereo imaging is to avoid floor and ceiling reflections as far as possible. The technique that achieves this uses upward-facing midrange and treble drivers, directing the sound forward towards the listening area using carefully shaped elliptical acoustic 'lenses'.

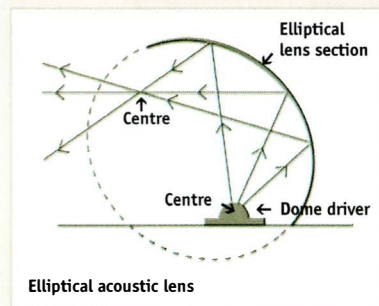
The use of reflectors as 'acoustic mirrors' is not in itself novel – many examples could be quoted, going way back to companies like Lowther and Wharfedale in the mono era. The approach is still often encountered

## ROOM COMPENSATION

The overall tonal balance of any hi-fi system is largely a function of the speakers, their interaction with the character and dimensions of the listening room, and also where they're placed within that room. Uniquely, the Beolab 5 deliberately goes out of its way to address these issues, and should deliver a consistent result largely irrespective of the characteristics of the room and its placement therein.

This is a two-pronged attack. Elliptical 'acoustic lenses' control the distribution of both mid and high frequencies. These avoid both the floor and ceiling reflections that interfere with stereo image precision, and also reflection-induced colorations caused by proximity to the wall behind the speakers.

To explain how this works requires a little geometry. An ellipse is a 'stretched' circle, with two centres rather than one. Crucially, the combined radii from both centres to the ellipse is always constant (see diagram below). Place a drive unit at one of the centres, and the sound reflecting off all parts of the ellipse will always pass through the other centre. Furthermore, because the path length remains constant, phase coherence will also be maintained.

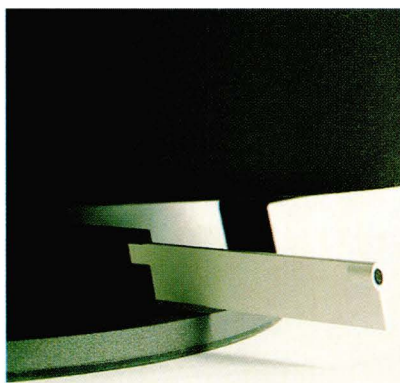


Elliptical acoustic lens

The other feature uses digital signal processing (DSP) to counter the peaks and troughs which are caused by interaction between the drive units and the room modes through the bass region. Bang & Olufsen has developed a technique to 'read' the modal structure of a listening room by comparing two nearfield measurements, one of them very close to the subwoofer, the other a few centimetres further away. The radiation resistance seen by the bass driver is calculated, and thence the digital filtering needed to create an even average sound pressure throughout the listening room.

That said, our normal far-field, in-room-averaged measurements still show significant evidence of room-mode peaks and troughs. Nevertheless, the balance is smoother than most through the bass region, much flatter than in the 'uncalibrated' state, and also impressively consistent irrespective of where the speakers happen to be placed within the room.

The overall balance is a little strong through the sub-200Hz bass decade, and a little shy through the midband decade (200Hz-2kHz). The full range from 200Hz up to the extreme treble is notably flat and seamless, however, and only marginally affected by wall proximity (though free space siting is still preferable here).



Above left: A motorised microphone pokes out from the speaker's base during set-up.



Above right: Connections include analogue and digital phono inputs, IEC mains and a 'sync link'.

symmetrically in some omni-directional speaker designs, but perhaps the best known recent example here in Britain was Canon's asymmetric 'Wide Imaging Stereo' designs, available through the early 1990s.

However, the clever bit here is the use of elliptical sections to form the reflective surfaces. B&O engineers have been working alongside patent-holders Sausalito Audio Works, a US Pro-Audio operation, and this specific variation on the theme would seem to offer substantial advantages both in terms of focus precision and phase coherence over the flat-surface reflectors that are normally found (see 'Room Compensation' sidebar).

The elliptical 'mirror/lenses' here are shaped to cover a 180° semicircle. Nearly all the driver output is therefore directed forward, increasing the efficiency in the listening zone, and also creating a speaker whose output is substantially independent of rear-wall proximity – it effectively creates its own 'rear wall'. Efficiency is further improved because the sound is focused into a limited vertical 'window'.

What happens at the bass end is even more radical. This is an active digital speaker, with powerful built-in amplification and DSP (digital signal processing) to counter the effects of room modes. A number of companies are currently pursuing a similar goal, but B&O's implementation is exceptionally neat and clever. Carrying out the equalisation is the relatively easy bit. The difficult task is working out what filtering to apply to make the set-up procedure user-friendly, and it is here that the Beolab 5 solution is particularly elegant.

The whole set-up process is automated, so just pushing on the top 'mushroom' starts it going. A complex test signal sequence is stored in a memory chip, while a measuring

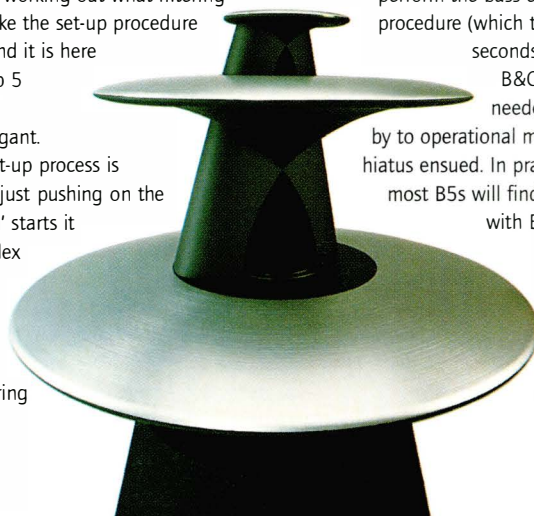
microphone is fitted to a motor-driven metal rod located between the floor and the downward-firing bass driver. There's no attempt to equalise the speaker for a particular listening zone, but rather to achieve a broad average that smooths out the more extreme variations.

A B&O subsidiary company called ICEpower makes very compact digital power amp modules for general sale, and each Beolab 5 uses four of these – two at 1,000 watts for the low-bass and mid-bass, plus two at 250 watts for the mid and treble. The very high powers feeding the bass drivers are needed to provide two stages of equalisation. One is needed to compensate for mounting the drivers in tiny sealed enclosures – 29 litres for the 380mm and five litres for the 165mm unit – then the +10/-15dB boost 'n' cut of the room mode EQ filters must also be taken into account. The high (93 per cent) efficiency of the power amp modules means the enclosures can be completely sealed with no need for special cooling arrangements.

The speaker accepts either analogue (phono socket) or digital (SPDIF) inputs, converting the former with a 24-bit/96kHz A-to-D converter. Processing is handled by a 32-bit Sharc 2 DSP, while a 512Kb Flash-ROM provides for future upgradeability.

Weighing an exceedingly hefty 61kg, the speakers arrived strapped to wooden pallets, but proved easy enough to unpack. Although it was possible to apply mains power and perform the bass equalisation procedure (which takes about 30

seconds for each speaker), a B&O remote handset is needed to go from stand-by to operational mode, so a frustrating hiatus ensued. In practice of course, most B5s will find themselves used with B&O systems, so a relevant handset will usually be readily available. The speaker electronics include



built-in remote volume controls, which will normally be used in a B&O system context. These can also be by-passed for connection to a regular hi-fi system, as was done for this review, when the speakers were primarily driven from a Naim NAC 552 pre-amplifier.

**SOUND QUALITY**

Prior to actually seeing the speaker itself, one of the first elements of a visit to the Beolab 5 factory was a blind listening session in a domestic-size 'standard' room. The immediate impression, with absolutely no knowledge of what one was listening to, was of the speaker's exceptionally precise and detailed stereo perspectives, and its superbly even-handed neutrality.

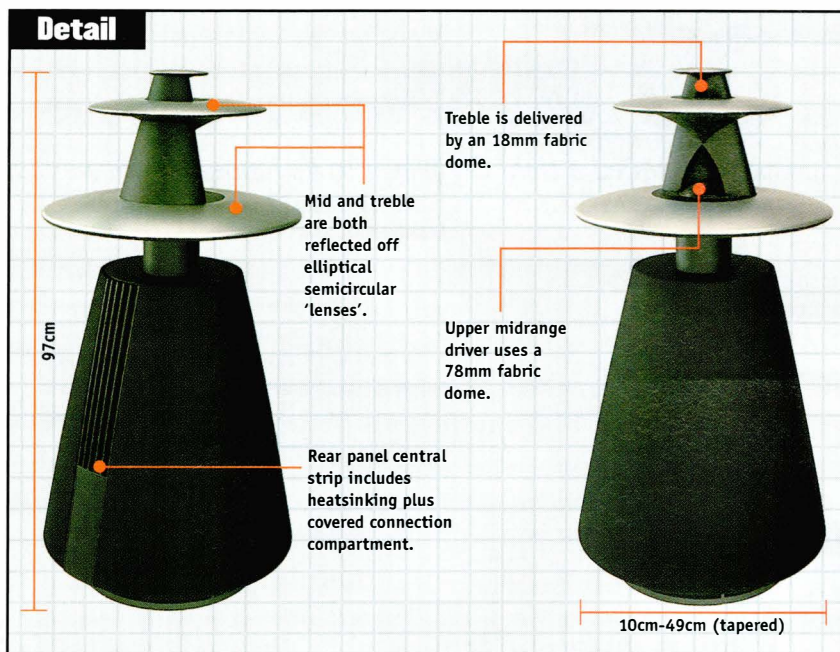
Back at home base some weeks later, precisely the same impressions came through just as vividly. The obvious conclusion is that the 'lens' system used here is extremely effective, and does indeed work 'as advertised'. Furthermore, there seems to be no obvious down-side to the use of reflectors. Past experience with other reflector systems led me to anticipate a measure of coloration, though that wasn't at all the case with this advanced implementation.

Indeed, coloration was exceptionally low throughout the audio band, and this speaker is unquestionably among the most neutral and least coloured on the market. Its cleverest trick, however, is simply the way it seems to 'disappear', acoustically speaking. One simply isn't aware of the location of the speakers themselves – only of the precisely detailed and well-focused soundstage, with all the instruments and voices of a recording portrayed with unusually natural perspectives and proportions.

Such exceptional imaging is more commonly found among small loudspeakers, where it inevitably also involves modest bass weight and extension. However, that's definitely not a limitation with these Beolabs. Indeed, the bass alignment – no doubt assisted by the ABC mode-compensation system – is just about as good as it gets, imparting magnificent weight and power whenever the program material requires, while neatly avoiding the mid-bass thump and thickening that all too often accompanies attempts to deliver deep bass output.

And there's none of the 'woody' or 'boxy' colour and consequent 'thickening' of textures that tends to occur with large conventional enclosures. The B5's relatively small and asymmetric enclosure in heavily rib-reinforced structural plastics isn't totally free from vibration, but it doesn't seem to have any obvious sonic signature.

Even a notorious 'thumper' like Wyclef Jean's *Carnival* (check track 18, *We Trying To Stay Alive*) comes through crisp and clean – and very, very loud if your nerve holds. Mine eventually cracked, when I



**“The conclusion is that the ‘lens’ system used here is extremely effective.”**

feared for the structural integrity of my suspended floor – “No Subwoofer Necessary” should be printed on the B5's carton.

Surprisingly perhaps, in view of the openness and genuine neutrality of the tonal balance, the sound showed little if any aggressive tendencies, even when playing the system at very high levels. Perhaps this is a consequence of the active drive, and consequent avoidance of a passive crossover network, or maybe it's a function of the distribution control and consistency.

Sound distribution is a crucial factor responsible for the different character of loudspeakers. The opposite extremes are represented by omni-directional designs at one end of the spectrum, and dipole panels at the other. A really clever trick of the Beolab 5 is that it seems to combine much of the 'in-

the-room reality' of the former with the image precision of the latter. It's perhaps not quite the best of both worlds, but it's probably just about the best of all compromises here.

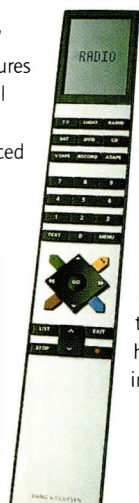
This speaker has a whole lot going for it sonically, but does fall a little way short of best audiophile practice in terms of time coherence and dynamic expression. It won't, for instance, run shivers up your spine in the manner of a triode-driven full-range horn system. Nor does it highlight the innately distinctive characters of our

various analogue and digital sources in the manner of a serious 'high-end' system.

Its appeal is more to the cerebrum than the emotions, and its strengths lie more in understatement and discretion than in drama and tension. No loudspeaker in our experience is more willing and able to 'disappear' sonically from the proceedings, leaving just the sound of music hanging there in the air. Few loudspeakers have such a small 'sonic signature', and none of those that do combine it with the exceptional bass extension encountered here.

Although the in-room bass compensation seemed rather coarser and less effective than might have been hoped, the most important feature of this revolutionary loudspeaker is that its excellence should be fully and consistently realised irrespective of the room in which it is used. And that unquestionably represents a true reinvention of the loudspeaker. **HFC**

*Paul Messenger*



<b>VERDICT</b>	
<b>SOUND &gt;&gt; 84%</b>	<b>PRO</b> This stylish, physically and sonically discreet loudspeaker delivers superb stereo imaging, powerful bass and a notably open and neutral midband, irrespective of room siting and acoustics.
<b>FEATURES &gt;&gt; 98%</b>	
<b>BUILD &gt;&gt; 90%</b>	<b>CON</b> Lacks the highest audiophile standards in dynamic tension and transparency. Bass mode compensation is a tad coarse.
<b>VALUE &gt;&gt; 69%</b>	
<b>CONCLUSION</b> A true revolution in loudspeaker design, B&O's Beolab 5 might not appeal to extreme audiophiles, but delivers superbly even and deep bass, fine overall neutrality, very low coloration and exceptional stereo imaging, consistently and essentially independent of its environment.	
<b>HI-FI CHOICE OVERALL SCORE &gt;&gt; 84%</b>	

# TOO MUCH EXPOSURE?

Exposure has added a third CD player to its range. But do we really need another one?

**PRODUCT** Exposure 3010

**TYPE** CD player

**PRICE** £1,195

**KEY FEATURES** Size (HxWxD): 9x44x31cm

• Weight 5Kg • PCM1704 multibit DACs, one per

channel • Optical and electrical digital outputs

• Defeatable display

**CONTACT** ☎ 01273 423877 🌐 www.exposurehifi.com

As the Exposure brand is owned by a Malaysian company, it inevitably sees the market from an Eastern perspective. In that part of the world it pays to have matching components in each range. So even though we Recommended Exposure's range topping XXII Classic CD player in the February issue at £1,175, we now have a new 3010 series CD player in almost identical casing at £1,195. In the meantime the price of the XXII has gone up to £1,395, so anyone that was swift enough to buy one of those in the last three months may have got a bargain. On the other hand it looks like prices have been manipulated to make room for this newcomer and at its new price the XXII may not be so competitive.

The reasoning given is that the Classic range is built in England, with only the circuit boards made overseas – the metalwork, mains transformer and so on are sourced and assembled over here. The 3010 is remarkably similar to its more expensive brother – externally it has a brushed rather than bead-blasted front panel and plastic rather than metal buttons. Internally its mains transformer connections are not soldered as in the XXII,

but this is something that anyone who's confident with a soldering iron could tackle (not that Exposure is likely to encourage it).

The new 3010 CD player was designed by British engineer Tony Brady, a name that some might associate with the apparently extinct electronics brand Onyx. He's used some tasty Burr-Brown PCM1704 multi-bit digital to analogue converters and runs them in dual mono mode, one per channel for minimal distortion. These are fed by a toroidal transformer with separate windings for the transport mechanism and audio stages, with multiple regulation stages to keep the juice as clean as possible.

Separate I/V (current/voltage) converters feed the filter and output stages, the latter having been optimised for transient response and built with discrete transistors – an expensive process compared to chip-based designs but one which allows the designer more scope for tuning the resulting output. The clock oscillator is fed by two regulators in series in order to ensure high stability for this crucial element in the circuit – the greater the clock stability, the lower the jitter and more natural the sound (all other things being equal).

In practical terms the player and the remote make life a mite less intuitive by avoiding the traditional symbols for 'play', 'pause' and the like, writing out function names instead. It's not confusing exactly, just a bit slower to use when the phone rings, say. Rear panel connections are standard except for the BNC digital output – this is electrically correct but



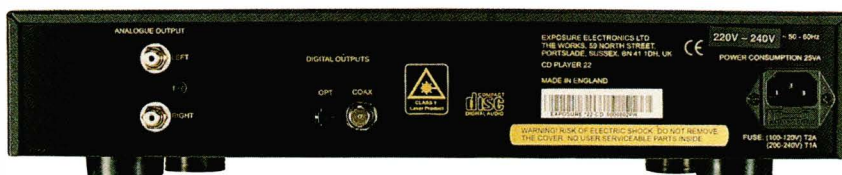
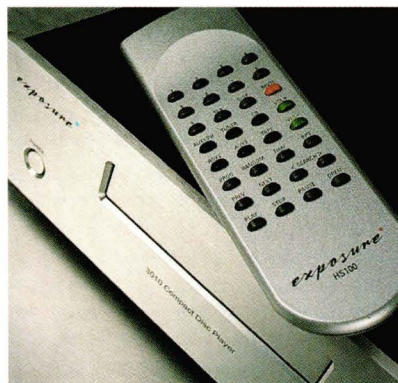
won't match many digital recorders without an adaptor cable, though outboard DACs are increasingly using this connection.

## SOUND QUALITY

Even though Exposure had run this player in for several days before delivery and we left it running for 24 hours prior to use, its sound quality improved markedly from Friday to Monday. It is never an aggressive sounding machine, but those extra hours smoothed the sound out very nicely, turning a decent if unexceptional performance into a rather engaging one.

The extra warm-up relaxes the sound and reduces still further any traces of the electronic or mechanical. A Cinematic Orchestra track revealed more of the nature of its recording, the samples and edits making themselves clear but without interrupting the emotional power of the music. The reverb on Ben Christopher's *Falls Into View* is normally expansive but through the Exposure it becomes positively cavernous, pushing out way behind the speakers. Goldfrapp's *Paper Bag* meanwhile, served to demonstrate the power of the bass that the 3010 can develop – it goes all the way down and remains shapely and textured as it does so.

This CD player is not only good in terms of tonal balance, it's also highly convincing when it comes to rhythmic drive. It is sensitive to the finest variations in timing which makes all the music you play through it highly





## “The bass is almost juicy with the right disc – quite an accolade for a CD player, as the majority tend toward a slightly dry balance.”

engaging. Ali Farka Toure's guitar work on *Niafunke* is almost hypnotic, drawing you in and absorbing you into a meditational state. We're not saying that you can achieve nirvana with a CD player alone but get the right disc and you're halfway there! More rhythmically immediate material such as that found on EST's *Strange Place For Snow* is equally well served, the player allowing the musicians to gel together in a melodic and cogent way that makes the music that much more convincing. The brushed snare work counterpoints the strong and full-bodied piano, double bass propelling the piece along with an easy constancy that belies its effectiveness. The bass is almost juicy with the right disc, which is quite an accolade for a CD player, as the majority tend toward a slightly dry balance.

However, dynamic performance is good but not great. There will always be shortcomings at this price – some would argue that there will always be compromises with CD whatever the price – but a few alternatives manage better in this respect. Energy levels reflect the disc well enough though, and micro dynamics (the varying volume level of individual notes in the mix) are about average. Imaging is pretty strong – not stunning but attractively

solid and responsive to variations in the material. Radiohead's incomparable *OK Computer* CD has a lot of shape-shifting phase manipulation on it and the Exposure does it proud. It also conveys the emotional twists and turns with gusto, revealing the words in full and making their intent transparent. Impressive stuff.

Imaging with more classically recorded material such as *Sacred Feast* by Gaudeamus is not quite as convincing as it can be. This choral SACD recording was made in a church and with the best systems the perceived depth is quite remarkable. One suspects that the 3010 has a slightly softened top end which gives it a 'natural' sounding balance but limits ultimate fidelity. Having said that, there are few if any standard players which can do justice to a recording of this quality at or near this price. The two strongest contenders are Meridian's 507 (£1,195) and Classé's CDP-10 (£1,595), the former offering a highly precise and considered sound that is very convincing while the latter has an unusually natural character that does a lot of favours for acoustic and electric material alike.

This new Exposure may seem like it has been built purely to fill a gap in the range but it benefits from much of the effort that went

into the more expensive XXII model. It is practically the same machine for £200 less, albeit at the price that the XXII started out from! That said, if you're after a natural and entertaining CD player that will make almost any player from the nineties sound coarse, this is a pretty good bet. And if you just want to enjoy your music at close to its best, it's one of the more enticing options around. **HFC**

Jason Kennedy

### VERDICT

<p><b>SOUND &gt;&gt; 82%</b>  </p> <p><b>FEATURES &gt;&gt; 65%</b>  </p> <p><b>BUILD &gt;&gt; 72%</b>  </p> <p><b>VALUE &gt;&gt; 76%</b>  </p>	<p><b>PRO</b>            Natural, rhythmically strong and three dimensionally capable player with a truly musical attitude.</p> <p><b>CON</b>            Not the strongest player dynamically, nor the most precise in terms of resolution.</p>
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**CONCLUSION**  
 The latest Exposure is a fine player, offering you around 95 per cent of the sound delivered by its bigger brother for a £200 saving, conceding only its place of manufacture and finish style in the process.

HI-FI CHOICE >> 75%  
 OVERALL SCORE

# LITTLE BLACK BOX

An Italian phono stage with a lovely midrange but less than generous dynamics

**PRODUCT** Monrio ADN-N

**TYPE** MM/MC phono stage

**PRICE** £275

**CONTACT** ☎ 01753 652669 # www.ukd.co.uk

**M**onrio is a well-established Italian electronics manufacturer with a decent range of components under its belt. Like many of its peers it has witnessed the demise of the 'onboard' phono stage (onboard an integrated amp or preamp that is) and realised the need for a separate unit with which vinyl enthusiasts can enhance their listening pleasure.

The ADN-N is Monrio's first phono stage and it's not expensive given its origins. It comes in an aluminium case with basic in and output socketry alongside a very nice earth terminal – about the chunkiest we've come across and very easy to pin one or more earth leads on to. Switching for different levels of gain and input impedance is accessible once you have removed the wraparound lid. The term 'switching' may be misleading, as there are in fact no switches, just little 'jumpers' – connectors that you pull off and replace in a different position. In theory, this makes for a better sounding system, if not so convenient.

The variations available are not very great. You can choose between two gain settings – 42.2dB in the low setting and 62dB in the high one. Which means that moving coil cartridges with an output of 0.45mV or more and moving magnet cartridges which produce around 3.7mV are catered for. There are also jumpers to switch the load impedance between 100ohms (MC) and 47kohms (MM).

While this may sound like a reasonable amount of variation, it is not as great as can be found in alternatives like the Trichord Dino and in practice the gain is a little low for some moving coils, especially those that



require a high load impedance.

Power for the ADN-N is supplied by a 'wall wart'-style transformer, so the phono stage itself is very light.

## SOUND QUALITY

The Monrio's trials began with a van den Hul Grasshopper GLAIII moving coil cartridge, an unlikely partner for a phono stage of this price but a good reference point and not too testing given its healthy 0.6mV output. The result however suggested that this was far from a perfect marriage. High frequencies seemed rolled off and the bass lacked the structure that alternative stages, even affordable ones, can reveal. Timing is okay and the midband quite detailed but dynamics are distinctly muted. This is probably because the Grasshopper prefers a higher (500ohms) input impedance. However, experimentation with a Tom Evans Groove phono stage, also a 100ohm input impedance device, seemed to work a treat.

That said, these limitations are not unheard-of with budget phono stages and moving coil cartridges, so we replaced the high-end needle with a rather more down to earth one. The Reson Recca is a moving magnet design

based on the Goldring 1000 series, yet its decent output still sounds a bit gutless with the ADN-N set to MM and low gain, the settings one might expect to be suitable. Fortunately, switching to high gain does the trick and the sound becomes more lively and engaging. It's still quite laid back though and has the smooth relaxed sound that many associate with vinyl, yet undersells its true potential. A track by Elbow sounded distinctly more powerful via CD for instance.

While the midrange is unusually captivating, Kurt Wagner's voice on Lambchop's *Is A Woman* standing out with some distinction, this is partly because aspects like the sense of acoustic space could be stronger. Bass is decent enough, though a little short on grunt and highs are clean if a little restrained.

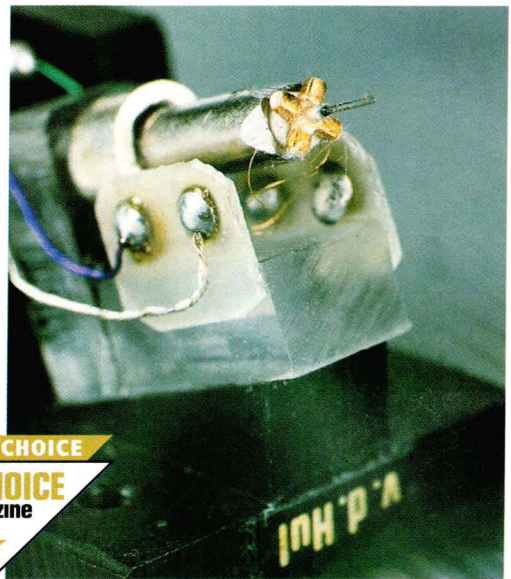
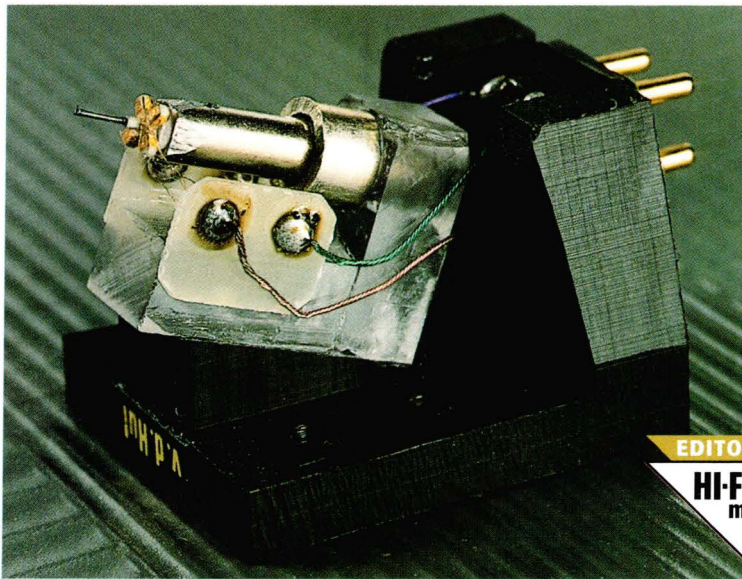
The ADN-N is not a bad phono stage – it gets to the root of the music and keeps you listening. However, you can get more out of your vinyl with the better of the competition from Trichord and Lehmann. **HFC**

Jason Kennedy



<b>VERDICT</b>	
<b>SOUND &gt;&gt; 60%</b> [Progress bar]	
<b>FEATURES &gt;&gt; 58%</b> [Progress bar]	<b>PRO</b> Decent build, variable gain and impedance, lovely earth terminal, good emotional communication.
<b>BUILD &gt;&gt; 60%</b> [Progress bar]	<b>CON</b> Ugly box, fiddly gain and impedance jumpers, limited dynamics.
<b>VALUE &gt;&gt; 58%</b> [Progress bar]	
<b>CONCLUSION</b> A decently built phono stage with reasonable flexibility and a lovely midrange, but a spatially and dynamically challenged sound that won't suit all cartridges.	
<b>HI-FI CHOICE</b> OVERALL SCORE >> <b>59%</b>	





EDITOR'S CHOICE  
**HI-FI CHOICE**  
 magazine  
 ★

# FEELIN' GROOVY

Van den Hul's new high-end moving coil takes a less-is-more approach. So why is it so expensive?

**PRODUCT** Van den Hul Colibri XGP  
**TYPE** Moving coil phono cartridge  
**PRICE** £2,699  
**CONTACT** ☎ 01236 420199 # www.vandenhul.com

**L**ess is more. Rarely is this more true than it is with hi-fi equipment. Every time a layer of complexity or a feature is added to a component it affects its sonic character, and generally in a negative way. Hence AJ van den Hul's latest range-topping cartridge has even fewer elements than its predecessor.

If you are familiar with the vdH Grasshopper and the Beauty series that continued the theme of open-bodied moving coil designs, you will know that they had a pretty distinct front pole – a relatively substantial magnetic modulator that you will find on the majority of MCs. The Colibri, the name derived from a bird, does without this front pole piece all together. The obvious advantage of this is that it can have a shorter cantilever which gives it superior pulse performance because it's stiffer. The drawback is that to achieve adequate output you need more turns of coil wire which add mass and reduce damping. But if you compare the Colibri with the Grasshopper this appears to be a compromise worth making.

There are other differences however. This Colibri, the XGP, is built on a carbon-saturated nylon body with a transparent polycarbonate interlayer, the combination giving superior damping to metal bodies. Incidentally, there are several variations on the Colibri theme.

XGP stands for cross (X) shaped modulator with gold (G) coils and a plastic (P) body, but you could have copper or even platinum coils, or a metal body if you prefer. It all comes down to tailoring – each Colibri is custom-made to suit your tonearm, phono stage and musical taste. The basic descriptions suggest that gold coils are best for classical while copper is the choice for jazz/rock lovers.

## SOUND QUALITY

The Colibri is an extremely sophisticated and smooth device, so much so that initially it seems a little tame. But then you realise that's because distortion has been virtually wiped out. To get the best from it however, careful matching of your phono stage is crucial, and load impedance and gain need to be close to the XGP's unusual requirements if you want to combine dynamic grunt with subtlety of tone and low-level detail. Once that's sorted, this is a cartridge that will tell you all about the instrument being played, what it's made of, the environment it has been recorded in and, most importantly, the quality of playing.

With the Colibri digging the grooves, the various instruments on Cornelius's *Point* sound extremely realistic and each has its own character and acoustic, however busy the mix becomes. This allows you to follow each performer individually, to hear what the drummer, guitarist or pianist is doing in the midst of a dense piece of music and each reveals its character to the full. Such separation can reduce the coherence of music, but here the whole is greater than the sum of

its parts. With a good recording those parts have more life than you'd imagine possible.

If you know the music of Arvo Pärt you'll know it's not the jolliest of stuff, but the Colibri plumbs subterranean depths to unearth the full, tragic beauty of *Fratres* (from *Tabula Rasa*). If you think you've got it tough just combine this LP and cartridge and you'll realise the meaning of despair... Radiohead aren't even in the same ballpark!

In its XGP form the Colibri is probably the finest resolver of detail, tone and acoustic available. Its high-frequency performance is staggeringly beautiful, extended, strong and pure, the bass is deep and resonant while the midrange fills in the gap with a verve and resolve that is rarely encountered. **HFC**

Jason Kennedy

<b>VERDICT</b>		
<b>SOUND &gt;&gt; 98%</b> ████████████████████		<b>PRO</b> Phenomenal resolution, custom building to suit hardware and software, proof that vinyl does indeed rule.  <b>CON</b> Vulnerability of design, price, requires an unusually high load impedance, danger of vinyl junkiedom.
<b>FEATURES &gt;&gt; 92%</b> ██████████████████		
<b>BUILD &gt;&gt; 80%</b> ██████████████		
<b>VALUE &gt;&gt; 85%</b> ██████████████		
<b>CONCLUSION</b> You won't imagine what's hidden in the grooves of your favourite album until you hear this cartridge. The resolution and tonal riches available go beyond your wildest dreams!		
<b>HI-FI CHOICE OVERALL SCORE &gt;&gt; 92%</b>		

# A DIFFERENT VOICE

*Living Voice has made its best Auditorium speaker better, but the changes are all under the skin*

**PRODUCT** Living Voice Auditorium Avatar OBX-R2

**TYPE** Floostanding loudspeaker

**PRICE** £4,000 per pair

**KEY FEATURES** Size (WxHxD): 21x100x27cm

• Weight: 18kg • Outboard crossover • Twin 165mm bass/mid units • 92dB claimed sensitivity

**CONTACT** ☎ 0115 973 3222 🌐 www.livingvoice.co.uk

**L**iving Voice does not go in for surround systems or subwoofers – it doesn't even make a bookshelf or budget speaker.

What it does is make full-scale horn systems with over 100dB sensitivity (so that they will run on ten, preferably valve, watts) alongside a small range of floorstanders which attempt to emulate these horns from compact and relatively affordable enclosures.

LV produces three Auditorium models in basically the same cabinet, changing drive units and crossover components as you ascend the range. The ultimate model tested here is named the OBX-R2, which stands for 'outboard crossover' because its crossovers sit in separate enclosures which are completely removed from the speaker cabinets.

This is not something you see very often because it is expensive and rather untidy – you need cables from amp to crossover and two sets from crossover to speaker. It is also expensive without looking it – you can get a high-gloss lacquer or an exotic veneer for the price of a cabinet to put your crossover in. But it is beneficial.

We have long understood that electric components are affected by vibration and put our source and amplification on tables designed to minimise the energy produced by the speakers. Crossover components, however, usually sit in the midst of this resonance, so by extracting them from the speaker cabinet you are making their lives a lot easier and giving them more space to escape from one another's radiations. Crossover components produce fields that can directly induce other components to produce distortion. You can

**Below:** The OBX-R2's crossover components are housed in a separate box, isolating them from speaker-induced resonance.



get around this by careful orientation but spacing also plays a part, and the generous size of the OBX-R2 external crossover's case (9.5x42.5x26.5cm) offers a far greater area than most crossovers get to spread out in.

The Avatar is an elegant and compact loudspeaker compared to many floorstanders, making it more domestically friendly than most contenders of a similar calibre. Beautiful real wood veneers contrast with three drive units in a two-and-a-half-way configuration. Two 165mm doped paper bass/mid units flank a costly Scanspeak Revelator tweeter in the classic d'Appolito configuration with the tweeter offset. The steel basket bass/mid units may not look very fancy but they were not selected for their aesthetics – this is quite simply the best 165mm driver that Living Voice can source. The Revelator tweeter on the other hand is an obviously classy unit and one which you'll find on speakers costing as much as five times the price being asked here.

The changes wrought for the OBX-R2 compared to its OBX-R predecessor are chiefly in the crossover, though there have been changes to pretty much everything except the tweeter since our last review. The wiring harness, the bass/mid drive units, capacitors, resistors and hand-wound inductors are all revised. The current Avatar cabinet is now

built by Castle out of high-density chipboard – not a material you'll often find in a high-end speaker but one that certainly seems to have its strengths. The veneer is superb book-matched yew, in this instance the single leaf variety that adds £400 to the price but results in a stunning piece of furniture. The standard veneers are ripple maple and ripple cherry while natural Santos and split leaf yew command a £200 premium.

The crossover has been completely redesigned in order to increase overall impedance and thus make the speaker easier to drive, and LV has also sought to extract even more energy from an already dynamically superior design. The crossover has shed the Zobel network on the HF (high frequency) system and had a complete reshaping of the low pass (bass) filter. Living Voice describes crossover topology as "the DNA of a loudspeaker", which is essentially true. There is a finite limit to the variations of drive units and cabinet shapes you can practically combine but the choices in crossover design are infinite, every change has multiple effects and the interactions between components are a technical minefield.

## SOUND QUALITY

Having used original Avatar OBX-Rs for much of the last four years it was intriguing to hear the changes brought about in this latest incarnation. Oddly enough this makes it harder to hear the quality of the speaker, the differences being far more obvious than the overall sound. However, slipping in a couple of alternatives at around the same price reveals that this is, as ever, a phenomenally dynamic loudspeaker, its high sensitivity (92dB) having been joined by a less challenging amplifier load to create a product that's even more spectacular in this area than its predecessor. It's not something that many loudspeaker designers prize so highly – you'll probably need to have spent time with the kings of dynamics, horn loudspeakers, to pursue this aspect of quality with such singlemindedness. But it's well worth it if energy, vitality and life are what you are listening for in your music – and if you're not, the chances are you haven't heard it. It really is that fundamental.

The new crossover combined with the Castle cabinets have brought about a significant increase in dynamic energy and so-called micro dynamics – the small changes in the



level of individual notes or sounds that give instruments their character. So not only do trumpets, guitars, voices, you name it, have more pizzazz, they are also more obviously played, recorded and treated in certain ways. Sound is also more substantial and three dimensional than many alternatives achieve. Jan Hammer's keyboard with the Mahavishnu Orchestra for example, has greater solidity and structure to it than you often encounter, while the low frequency effects produced by a jet engine on Radiohead's *Breathe* are all the more menacing, even disturbing. This track also reveals the Avatar's ability to reach for the sky when the right phase

manipulation comes along, the sound expanding and swooping around in waves.

Eminem's 'charming' *Kill You* reveals that the bass is not only deep and tight, it is elastic and fluid to boot, with deep rich tone and real texture. Comparing old and new crossovers on the new speaker reveals that the bass is now tighter but no less deep, while an upper bass fullness has been eradicated to leave the midrange more transparent. The effect is to reveal more low-level detail in the mix and to allow denser passages to untangle themselves so that you can hear precisely what's going on.

Although it wasn't the stated intent, one

effect of the changes wrought to this speaker is a greater degree of neutrality. This is a less colourful speaker than when it started out and therefore the character of partnering equipment is all the more obvious. Unless you have a particularly aggressive source component or amp this won't be a problem, but when you put a better component in and then have to let it go it's all the more obvious. And the pining lasts that much longer!

For instance, the Exposure CD player reviewed on p38 has a distinctly snappier sense of timing than the Eikos used for this test, and Eminem doesn't sound quite so perky without it. Timing is not an aspect of performance that these speakers emphasise, or at least that doesn't seem the case until you make a change such as this. Then you realise how sensitive they are to this critical aspect of performance.

There are arguably two areas in which these speakers concede ground to their peers, and those are imaging and bass extension. A standmount such as the B&W Signature 805 will produce greater image precision though it's arguable that its relatively dry bass limits the sense of expansiveness. A Tannoy TD8 on the other hand will give you deeper and more powerful bass but whether it could swing the dynamics to the same degree is hard to tell without comparison.

Above all else, the Avatar OBX-R is a musical communicator par excellence. Its transparency gets the message across in an effortless and engrossing fashion, making it a genuine stay-up-all-night-going-through-your-music-collection product. Its high sensitivity also means that tube amp enthusiasts, even those with a single-ended bent, will be able to enjoy their AC/DC albums at full bore. Yet they also work a treat with our Gamut D200 solid state powerhouse. A speaker for all seasons? Yes, and a thoroughly enjoyable one too. **HFC**

Jason Kennedy

**"Its transparency gets the message across, making it a genuine stay-up-all-night-going-through-your-music-collection product."**



**VERDICT**

**SOUND >> 94%**

**EASE OF DRIVE >> 87%**

**BUILD >> 92%**

**VALUE >> 85%**

**PRO**  
Dynamics, tonal colour, detail, space and time resolution. Beautifully veneered, domestically friendly cabinets.

**CON**  
No speaker is all things to all men – some give more precise imaging, others deeper bass.

**CONCLUSION**  
You can't fail to enjoy a loudspeaker like this – its ability to extract the essence of the music alongside the finest details is extremely rare. You may be able to get a bigger speaker for your money but there aren't many better ones.

**HI-FI CHOICE OVERALL SCORE >> 91%**

provides is quite unlike listening to other headphones. With the earpieces opened out, there is absolutely no sense of the soundstage being created in the head. The sound breathes organically, and generates a stereo image in a manner reminiscent of a pair of close-set loudspeakers. There is a strong sense of overall scale, and of differentiation in the depth plane, while central images are properly focused in front. Individual perceptions of headphones vary, for obvious

to come across with loudspeakers and other headphones, and in particular it is completely free of the tub-thumping excess that is provided by some.

I have heard headphones sound as good as this, but only from full electrostatics like the Stax Lambda or Sigma, though the former is not as spacious and out of the head, and the latter is rather coloured. More conventional Stax models can match the AKG and arguably even better it for resolving ability, but not

**BUILD >> 90%**

**VALUE >> 82%**

**CON**  
Rather heavy; not suitable for connection to standard headphone sockets.

**CONCLUSION**  
The AKG 1000 puts paid to the proposition that electrostatics are unchallenged in the world of high-end headphones. Its out-of-the-head, unobtrusively analytical sound puts it at the head of its class, particularly for classical and acoustic music.

**HI-FI CHOICE OVERALL SCORE >> 84%**

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# HIGH RESOLUTION

*Resolution Audio's two-box CD player is an audiophile bargain you simply must hear*

**PRODUCT** Resolution Audio Opus 21

**TYPE** Two-box CD player

**PRICE** £2,850

**KEY FEATURES** Size (WxDxH): 24x25x7.5cm (each)  
 ◉ Digital in (up to 96kHz) ◉ 16x upsampling ◉ DIN, XLR bal & phono outs ◉ Analogue volume control

**CONTACT** ☎ 01277 227355

🌐 www.resolutionaudio.com

**R**esolution Audio is a small, resolutely two-channel San Francisco-based brand established in 1993 by Jeff Kalt, a man who has concentrated his efforts on CD players alone until this year. The autumn will see the unveiling of his first integrated amplifier. We previewed the unusual thinking behind this amplifier in our *Audiophile* section last winter, but in short it is a DNM design in a Resolution case, one that exactly matches that of the Opus 21, the player and amplifier both featuring a multi-pin connection system in the top and bottom of their respective chassis. Look underneath the transport section of the Opus 21 and you will see a computer-style plug waiting for the matching amplifier.

The DNM connection also extends to this CD player which has had design input from Dennis 'DNM' Moorecroft.

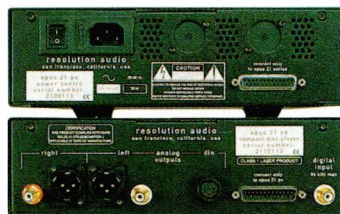
The Opus 21 is a two-box CD player with a difference. Back in the day, the accepted norm with high-end players was to put the disc drive or transport in one box and the digital to analogue converter or DAC in the other. This philosophy began to lose its appeal when a specific type of digital distortion called jitter was discovered in the early nineties. Jitter is often increased when a bitstream is transferred between chassis and this has spawned an increased interest in single box players, even at the high end.

In the Opus 21's case however, one unit contains the transport, DAC and output stage, while the other houses the display and power supplies. This splits the purely audio-oriented elements from the 'noise'-making parts whose radiations have a tendency to upset the analogue and digital sections of a player.

It is such an obvious way of tackling many of the commonly known problems of digital audio that it's only surprising that so few have tried it before.

The Opus 21 units are connected by a multi-pin umbilical with mains power plugged into the display unit only. It seems surprising that the casework connection chosen for amp and player wasn't used for these two boxes, but the idea is to separate the problems of one from the other so you are not encouraged to stack them. More's the pity because they're too wide to sit side by side on a normal rack and therefore need separate shelves.

Audio connections include volume-controlled single-ended and balanced outputs, a digital input for signals up to 96kHz (but no output) and a fixed-level DIN output. The latter is a distinct nod to DNM which loves this connector for its sound quality, an affection it shares with the folks at Naim but few other brands. Suitably



level of individual notes or sounds that give instruments their character. So not only do trumpets, guitars, voices, you name it, have more pizzazz, they are also more obviously played, recorded and treated in certain ways. Sound is also more substantial and three dimensional than many alternatives achieve. Jan Hammer's keyboard with the Mahavishnu Orchestra for example, has greater solidity and structure to it than you often encounter, while the low frequency effects produced by a jet engine on Radiohead's *Breathe* are all the more menacing, even disturbing. This track also reveals the Avatar's ability to reach for the sky when the right phase

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Although it wasn't the stated intent, one

effect of the changes wrought to this speaker is a greater degree of neutrality. This is a less colourful speaker than when it started out and therefore the character of partnering equipment is all the more obvious. Unless you have a particularly aggressive source component or amp this won't be a problem, but when you put a better component in and then have to let it go it's all the more obvious. And the pining lasts that much longer!

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Jason Kennedy

**“Its transparency gets the message across, making it a genuine stay-up-all-night-going-through-your-music-collection product.”**



VERDICT	
<b>SOUND &gt;&gt; 94%</b>	<input type="checkbox"/>
<b>EASE OF DRIVE &gt;&gt; 87%</b>	<input type="checkbox"/>
<b>BUILD &gt;&gt; 92%</b>	<input type="checkbox"/>
<b>VALUE &gt;&gt; 85%</b>	<input type="checkbox"/>
<b>PRO</b>	Dynamics, tonal colour, detail, space and time resolution. Beautifully veneered, domestically friendly cabinets.
<b>CON</b>	No speaker is all things to all men – some give more precise imaging, others deeper bass.
<b>CONCLUSION</b>	
You can't fail to enjoy a loudspeaker like this – its ability to extract the essence of the music alongside the finest details is extremely rare. You may be able to get a bigger speaker for your money but there aren't many better ones.	
<b>HI-FI CHOICE OVERALL SCORE</b>	<b>&gt;&gt; 91%</b>

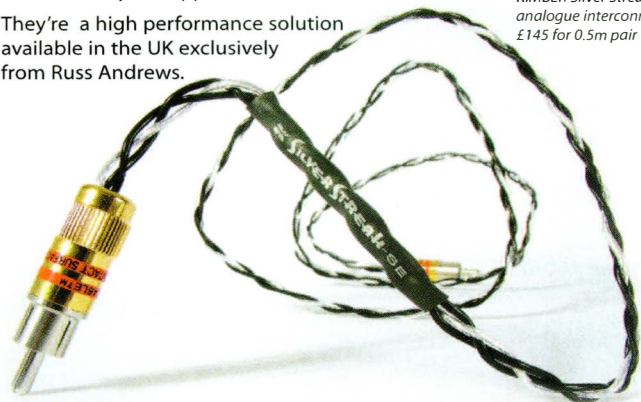
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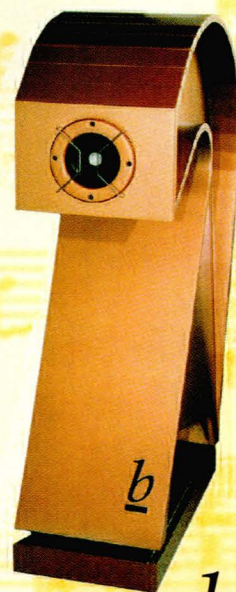
If it's the music that you care about, then these are most certainly the speakers for you. Give your ears a treat, just listen to the B2.2 Revelation speakers (package includes VibraPlinths, as shown). Contact us for more information.

*The Beauhorn Virtuosos simply manage to make music of all kinds more interesting and involving than conventional speakers.*

~Paul Messenger Hi-Fi+

*Verdict: Sell your family. Sell everything. Buy Beauhorns.*

~The Times [B2 review]



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Hastings TN35 4NB England

Telephone: +44 (0)1424 813888

# AIRS AND GRACES

*A high-end headphone from AKG with an exceptionally airy and out-of-the-head sound*

**PRODUCT** AKG K1000

**TYPE** Headphones

**PRICE** £550

**CONTACT** ☎ 020 8970 1910 🌐 www.akg.com

The AKG K1000 looks like a well-made and rather heavy but essentially conventional headphone, until you look more closely. The earpieces are attached to the self-adjusting headband via hinges, and don't touch the ears or the head at all. The only parts that do so are the headband, and two small leather-covered cushions that sit just above the ears. Swinging the earpieces out and forward and the sound source is located forward and well away from the ears – the geometry of this arrangement ensures enough inter-aural acoustic crosstalk for binaural hearing, a requirement for three-dimensional out-of-head perception.

This unusual arrangement is part of a systematic attempt by AKG to reduce reflections from the headphone structure that can cause standing waves and comb filter effects, and which inhibit normal stereo perception. The polymer/fibre composite dome transducer is suspended from the four corners of each open mesh earpiece, and the magnet structure is a novel type (described by AKG as VLD – Ventilated Linear Dynamic) which offers a uniquely high proportion of acoustic transparency to sound-reflecting areas. The key point with all this is that the headphone's structure is open enough to allow the shape of the outer ear to perform image localisation.

By normal headphone standards, the K1000 is spectacularly insensitive. Rather than plug into a headphone socket, the K1000 is instead connected directly to the amplifier speaker terminals via a lead with in-line XLR plug and socket.

## SOUND QUALITY

Musically the K1000 is a remarkable transducer, in part because the experience it provides is quite unlike listening to other headphones. With the earpieces opened out, there is absolutely no sense of the soundstage being created in the head. The sound breathes organically, and generates a stereo image in a manner reminiscent of a pair of close-set loudspeakers. There is a strong sense of overall scale, and of differentiation in the depth plane, while central images are properly focused in front. Individual perceptions of headphones vary, for obvious



reasons, but with the K1000 most will hear a completely detached soundstage of a kind often described as binaural.

Coloration levels are extremely low, and resolving ability high, but although there were many occasions when it was possible to pick out detail that had not been previously identified through speakers, there is none of the usual sense that the detail is being directly injected into the brain. It's all very relaxed, very natural, very flowing. Bass quality also differs quite distinctly by having a more physical, less ethereal feeling than tends to come across with loudspeakers and other headphones, and in particular it is completely free of the tub-thumping excess that is provided by some.

I have heard headphones sound as good as this, but only from full electrostatics like the Stax Lambda or Sigma, though the former is not as spacious and out of the head, and the latter is rather coloured. More conventional Stax models can match the AKG and arguably even better it for resolving ability, but not

when using anything but the best (and inevitably the most costly) step-up transformer or output driver. Anything less sounds vaguely detached and opaque. One of the strengths of the AKG is that it is connected directly to the amplifier output stage, and not the potted-down, low-voltage facsimile available at the headphone socket. What seems at first a disadvantage in fact works in the AKG's favour. **HFC**

*Alvin Gold*

VERDICT	
<b>SOUND &gt;&gt; 91%</b>	
<b>COMFORT &gt;&gt; 73%</b>	
<b>BUILD &gt;&gt; 90%</b>	
<b>VALUE &gt;&gt; 82%</b>	
<b>CONCLUSION</b>	<p>The AKG 1000 puts paid to the proposition that electrostatics are unchallenged in the world of high-end headphones. Its out-of-the-head, unobtrusively analytical sound puts it at the head of its class, particularly for classical and acoustic music.</p>
<b>HI-FI CHOICE OVERALL SCORE</b>	<b>&gt;&gt; 84%</b>



# HIGH RESOLUTION

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**PRICE** £2,850

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The DNM connection also extends to this CD player which has had design input from Dennis 'DNM' Moorecroft.

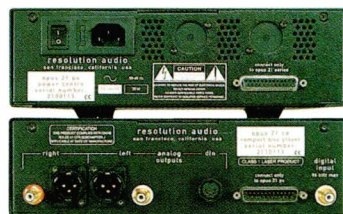
The Opus 21 is a two-box CD player with a difference. Back in the day, the accepted norm with high-end players was to put the disc drive or transport in one box and the digital to analogue converter or DAC in the other. This philosophy began to lose its appeal when a specific type of digital distortion called jitter was discovered in the early nineties. Jitter is often increased when a bitstream is transferred between chassis and this has spawned an increased interest in single box players, even at the high end.

In the Opus 21's case however, one unit contains the transport, DAC and output stage, while the other houses the display and power supplies. This splits the purely audio-oriented elements from the 'noise'-making parts whose radiations have a tendency to upset the analogue and digital sections of a player.

It is such an obvious way of tackling many of the commonly known problems of digital audio that it's only surprising that so few have tried it before.

The Opus 21 units are connected by a multi-pin umbilical with mains power plugged into the display unit only. It seems surprising that the casework connection chosen for amp and player wasn't used for these two boxes, but the idea is to separate the problems of one from the other so you are not encouraged to stack them. More's the pity because they're too wide to sit side by side on a normal rack and therefore need separate shelves.

Audio connections include volume-controlled single-ended and balanced outputs, a digital input for signals up to 96kHz (but no output) and a fixed-level DIN output. The latter is a distinct nod to DNM which loves this connector for its sound quality, an affection it shares with the folks at Naim but few other brands. Suitably





terminated interconnects are therefore scarce.

The Opus 21's volume control is hardly an innovation – such devices could be found on many early CD players, but it's a rarity on serious contemporary machines. This is partly because of the poor quality and limited driving ability of earlier examples, not to mention the fact that most of us use more than one source. Resolution Audio has put a high-quality volume control in the analogue domain, eschewing the bit reduction technique used by brands like Wadia, in favour of more traditional tech. The Opus 21 has a numerical display for level and is claimed to drive any power amp. It certainly worked a treat with a Gamut D200 and a Sugden Masterclass AA (of which more soon).

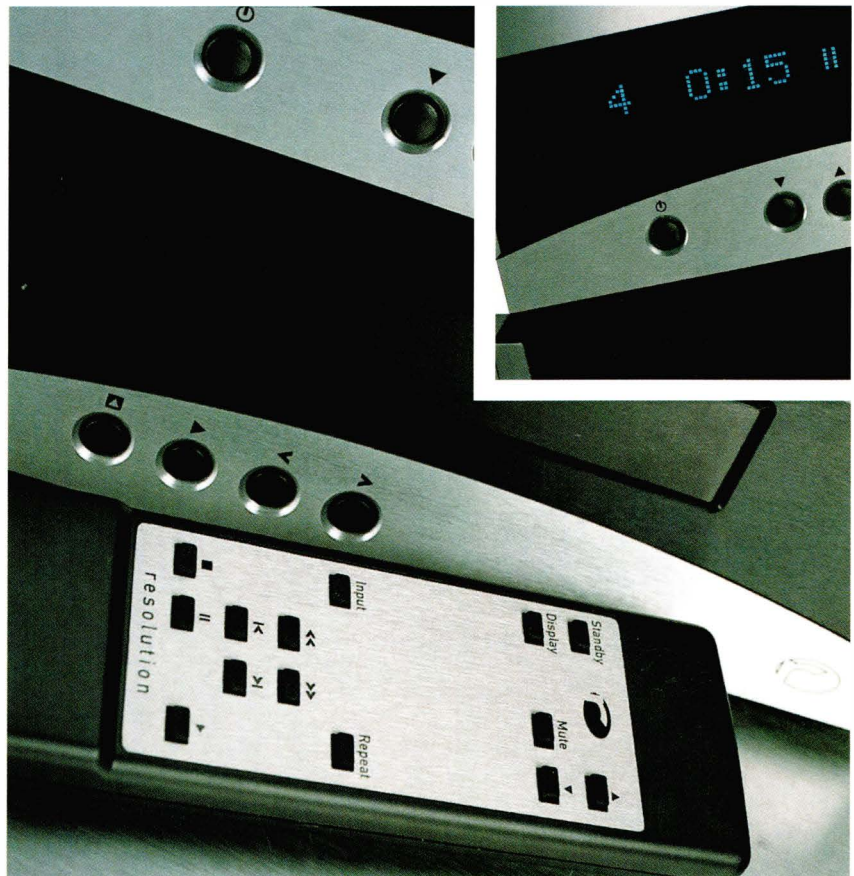
Although this player has been in production for over a year now it has recently been revised with a new transport mechanism – Resolution has replaced the original DVD mech with a CD-ROM unit that's said to be mechanically quieter. It certainly couldn't be heard during this test.

**SOUND QUALITY**

It took an immense effort of will to go back to a traditional preamp in the system chain, because the 'direct input' result is simply stunning. The degree of transparency is so high that even hardened pros like yours truly are inclined to start tweaking racks and cables to squeeze the last ounce of performance from the rest of the system. We tried balanced and single-ended connections, the latter winning largely because the cable type (Living Voice) is better – a balanced LV interconnect might give better results still. The output level is higher with the balanced connection which is usually a good thing, but with a PMC balanced interconnect the sound is slightly harder, the LV Potato giving a more natural balance that encouraged excessive volume abuse. Sweet.

Resolution Audio is an apt name for this player – it offers remarkably high resolution for its price and you'll find plenty of more expensive players that are not in the same league. You can hear right into the mix to a degree that is surprising for the medium and it seems to excel in the areas where most CD players tend to be limited – namely dynamic energy, 3D stereo imaging and naturalness of tone. The degree of solidity and presence to instruments is quite uncanny and will have you scouring your music collection to find out which are the best recordings – not always the ones you expect. 'Audiophile' ECM discs like Anouar Brahem's *Thimar* have a richness and realism that puts them way above the norm, but less likely sources such as Elbow's *Asleep In The Back* also offer unusually high fidelity despite all the processes applied in the studio.

Thankfully, the limitations of a Bryston BP25 are not so great as to undermine this level of quality and the player continued to shine when connected via a DNM DIN-to-phono



**“The Opus 21 offers remarkable resolution for its price – many more expensive players are not in the same league.”**

cable (supplied for review) to this preamp. Its sense of timing became more apparent in this configuration, a quality that few disc spinners offer with such subtlety and precision. It's not a hard-edged thing – this is a fine and extremely revealing player that tells you what's on the disc without adding anything of its own – which is still quite a rare thing with digital electronics. It reflects what the musicians did in the studio – if they played hard and fast that's the way you'll hear it, except you'll also hear all the harmonics and lower level sounds more clearly as well. Elbow's *Bitten By The Tailfly* for instance has a lot of depth to the instruments and voice, and the bite of the guitar is unusually powerful – it's simply a better track than it seems to be when heard on lesser players.

The Opus 21 offers the sort of insight that encourages collection exploration. You'll find more inner detail and tone colour on your discs than you will have heard before, and running through some of the tracks on the *Late Junction* compilation I was surprised at the degree of tonal variety on many of them. Bass is particularly well resolved – whether it be male voice, double bass or piano, you can

hear texture and tone colour that eludes most players, including the Townshend DV757, the Wadia 301 and the Gamut CD1R, and it wouldn't embarrass itself in far more expensive company. This may seem like a pricey CD player but in the grand scheme of things it's an audiophile bargain. **HFC**

Jason Kennedy

<b>VERDICT</b>	
<b>SOUND &gt;&gt; 93%</b> [Progress bar]	<b>PRO</b> Unusually dynamic, well-timed and three-dimensional sound. Good quality analogue volume control plus a digital input for a second source.
<b>FEATURES &gt;&gt; 85%</b> [Progress bar]	<b>CON</b> Direct analogue output via DIN connection only, space hungry (requires two shelves), player ergonomics could be better, no digital output.
<b>BUILD &gt;&gt; 91%</b> [Progress bar]	
<b>VALUE &gt;&gt; 89%</b> [Progress bar]	
<b>CONCLUSION</b> Genuinely high resolution for a very competitive price, this is an extremely strong player in all respects and its onboard volume control means that the dedicated purist won't need a preamp.	
<b>HI-FI CHOICE OVERALL SCORE &gt;&gt; 90%</b>	

# BIZARRELY BEAUHORN

*An unusual looking speaker, but can its sonic impression match its traffic-stopping appearance?*

**PRODUCT** Beauhorn B2.2 Revelation

**TYPE** Floostanding loudspeaker

**PRICE** £3,984 per pair (inc. isolation platforms)

**KEY FEATURES** Size (WxHxD): 34x130x75cm (inc. plinth) • Weight: 28kg (exc. plinth) • VibraPlinth isolating platform • Single 130mm horn-loaded driver

**CONTACT** ☎ 01424 813888 • www.beuhorn.com

If you've recovered from the shock of the accompanying photographs, you might well be wondering why anyone would make a speaker that takes its styling cues from BBC2's ident logo. The clue comes in the name Beauhorn, which identifies this as a horn loudspeaker system, which therefore plays to a quite different set of rules from regular box speakers.

Where the enclosure of a conventional speaker merely has to contain the rearward radiation from the main drive unit, the horn uses the enclosure as an 'acoustic amplifier', a little in the manner of a megaphone, and as such requires careful shaping, and also considerable bulk, both of which come naturally to this curious looking loudspeaker.

The story of horn loudspeakers goes right back to the dawn of sound reproduction, to the pre-electric era of the acoustic

gramophone, and the earliest days of electric reproduction in the cinema 'talkies' of the 1930s. In both these instances, the major problem lay in achieving anywhere near sufficient loudness, and the considerable efficiency gains offered by horn loading were an essential ingredient in making such technologies work.

The modern era brought massive increases in amplifier power, rendering efficiency much less of an issue, while the arrival of stereo required speakers to double up. Horns are necessarily both bulky and costly, so people readily embraced the cheaper and more compact box loudspeakers.

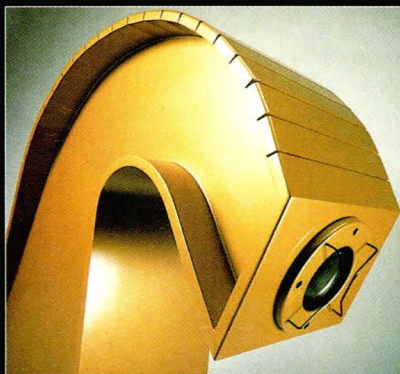
At least as newly manufactured examples for the UK domestic hi-fi market, horns almost became extinct during the 1970s. However, there were still more than enough examples out in the field to keep the horn flame alive, and to demonstrate the very real and peculiar virtues of the type to hi-fi and music enthusiasts. The last fifteen years have seen a major revival of interest in 'retro-fi', and new horn designs – both full-range and hybrid types – have started appearing, partly to provide suitable high efficiency partners for those low power single-ended valve amps.

Taking a classic 'single full range driver' purist approach, Beauhorn has been a leading protagonist in this horn revival, largely through its Virtuoso – a slim-but-deep corner horn based on a single full-range Lowther driver. Trouble is, the costs involved in making small numbers of complex wood-veneered enclosures and fitting them with expensive Lowther units has led to a selling price of around £8,000 a pair – way above the budget of most enthusiasts.

Beuhorn has therefore been working hard to bring down the entry price to its full-range horn nirvana. The first fruits of this exercise were the bizarrely beautiful blue B2, which originally made its sensational debut back in Autumn 2001. The enclosure was designed to be much less costly to make, with painted rather than veneered finish. That original B2 used a drive unit sourced from Fostex in the Far East, but this new B2.2 Revelation comes complete with Beauhorn's VibraPlinth isolation platforms and a new driver from an unnamed Italian source, for a smidgeon under £4,000.

The B2.2 follows the classic pattern of mounting its driver so that listeners hear direct sound from the front of the unit, while horn loading is applied only to the rear. Broadly speaking, the cross-sectional area of a horn will be proportional to the diameter of the driver, while the length of the horn will determine how deep into the bass it will go. To plumb the absolute depths of bass audibility would require a horn some twenty feet long, with a mouth area to match, so the designer must inevitably accept some compromises here. But Beauhorn has intelligently opted instead for a small 130mm-frame driver with tiny 85mm cone to keep the total bulk within bounds. Said cone is a paper pulp incorporating exotic wood fibres, and is terminated in a pleated, doped fabric surround.

Fabricated from 19mm MDF, filleted in order to form the outer curve, this is a big speaker, measuring 34x120x75cm (WxHxD) (plus a further 10cm of height for the plinth), but looks rather smaller because it's not a rectangular box. At 28kg it's also substantial, but not too dramatically heavy. The horn shape is largely defined by the shape of the side panel, which starts at just 19cm behind the driver, and gradually increases to 55cm near the base. Note that the width of the horn also increases along the length, from



15cm to 31cm. Beauhorn's VibraPlinth uses a large foam block to 'float' the whole speaker and avoid transmitting vibrations into the floor. This might feel alarmingly unstable, but in practice it works very well.

**SOUND QUALITY**

Horns do it differently – so differently in fact that one's initial reaction is usually a mixture of shock and horror, along the lines of: "How on earth am I expected to find something nice to say about this heap of ordure", followed about twenty minutes later by: "Oh wow; this is so amazing... I cannot believe there's so much on this record that I never heard before... what shall I play next!" No wonder these speakers polarise opinions.

The truth, of course, lies somewhere in-between. It's tempting to state that this simply isn't a hi-fi speaker, because it doesn't play the game by hi-fi speaker rules. It has obvious colorations and limited bandwidth, and a serious lack of bass extension and power. But it's also one of the most effective and convincing *music* speakers you're ever likely to hear. It doesn't take long to forget about the hi-fi and simply get deeply involved in the musical

**“It’s tempting to state that it isn’t a hi-fi speaker, simply because it doesn’t play the game by hi-fi speaker rules.”**

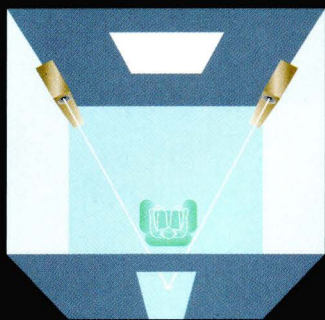
content, thanks to the astonishing sense of realism that comes courtesy of tight midband time-coherence alongside dynamic contrasts that simply sound more 'right' and 'real' than those heard with more conventional speakers.

My first reaction was that the B2.2 didn't have quite the dynamic tension and drama or 'zing' as the Lowther-driven full-range horns we've tried – such as the Ferguson-Hill reviewed in *HFC 242*, or Beauhorn's own Virtuoso from three years ago. The B2.2 is more restrained and laid back than those examples, and consequently a little less vivid and edge-of-the-seat exciting. But it is very well balanced overall, and also rather smoother than is usually the case with horns.

A number of horn designs (like the above mentioned Ferguson-Hill) require the use of additional subwoofers, but that's not the case here. The B2.2 does lack serious bass weight and extension, but it's properly balanced, top and bottom, for use without any additional assistance (though some will doubtless be tempted to experiment). And how serious



## SET-UP



### POSITIONING

Domestic horn loudspeakers are well known for combining dramatically high midband efficiency with limited bass weight and extension, and Beauhorn's B2.2 Revelation is no exception. Both these factors play a part in suggesting optimum conditions for using them.

To make the most of whatever bass is on offer, it makes sense to place this speaker as close to a wall as possible, to provide maximum reinforcement for the downward-facing horn mouth. And because this speaker is unusually deep, its drive unit will always remain some 80cm from the wall, and will therefore be largely unaffected by midband reflection-induced colorations. If room conditions permit, it would also be worth investigating corner placement, which can supply still greater bass boost.

The maker suggests the speakers should be angled so that their axes cross a little behind the listener. This might not be the classic approach, but it does make some sense here. That's because a single-driver speaker inevitably delivers its highest frequencies in a fairly narrow beam, and this will ensure the widest total treble spread into the room.

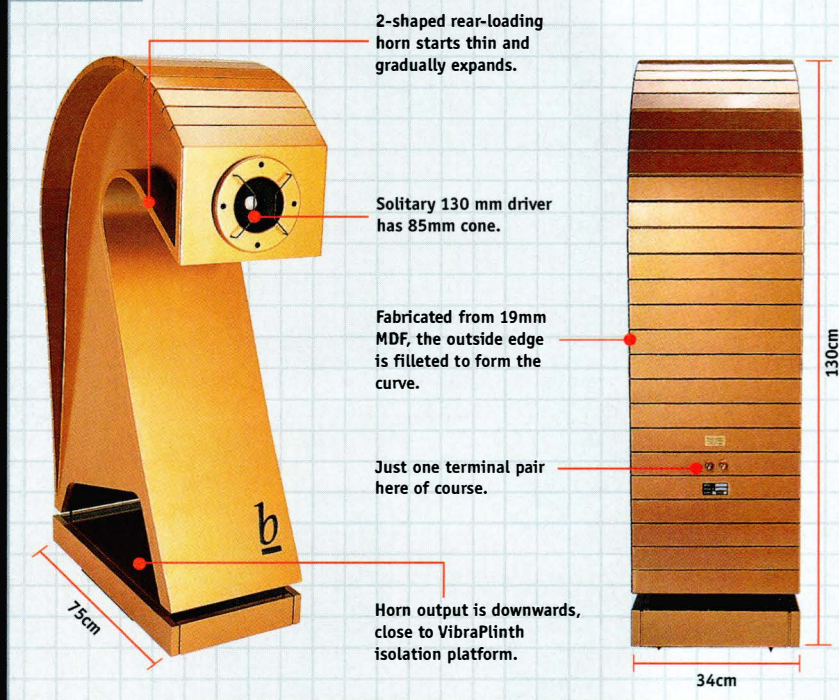
### SYSTEM MATCHING

This is one of the easiest loads any amplifier will have to handle, partly because its dramatically high sensitivity (around 97-98dB across the broad midband) requires only a modest voltage to give plenty of loudness, and partly because the impedance stays at 8ohms or higher throughout, so very little current is required from the amplifier either.

Virtually any amplifier may therefore be used here, with just the proviso that it's better to choose one with a low residual noise level, because the high 'amplification' provided by the speakers themselves will tend to make any background noise audible when ambient noise levels are low. The speakers will make an obvious good match for valve amps, including the very lowest power single-ended triode types. Beauhorn's own Obligato is an obvious and high-quality partner.

In-room, the B2.2 is solid down to 150Hz and still delivers decent output at 80Hz. Though not especially smooth, the balance is very impressive from 150Hz to above 3kHz. There's a suckout centred on 5kHz, above which the treble recovers to above 12kHz.

## Detail



❑ you find that lack of weight will, to an extent, depend on your type of music.

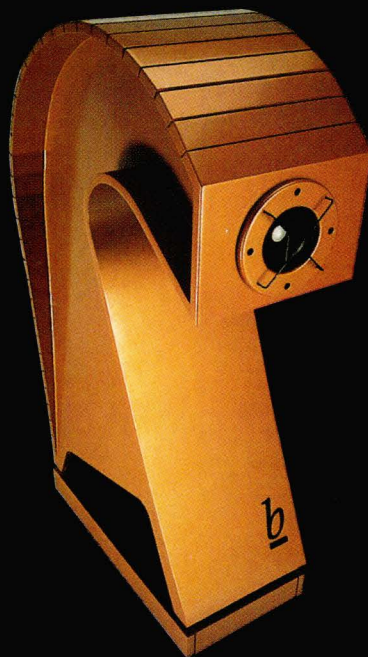
Small combo jazz, blues or classical material is particularly well served, as is any recording heavily featuring human voice, from solo arias right up to large scale choral works. We particularly enjoyed the acoustic blues on Hot Tuna's *Live At Sweetwater*, and were astonished at the way this speaker provides a 'magnifying glass' onto the mix, revealing much more clearly than previously suspected the way instruments were being brought up or down. This speaker reminded me a little of the close-up analysis of headphone listening, albeit without the encumbrance.

The bass limitations naturally become more obvious with heavier material. Full orchestras are just a little lightweight – though hugely

entertaining and engrossing nonetheless – but it's the heavy rock/dance material that really shows up its limitations. The Chemical Brothers *Dig Your Own Hole* sounded expetive fast, for example, but didn't really dig deep enough to convey the true tension of this disc. Voice diction and emotion came through most explicitly on Laurie Anderson's still wonderful *Strange Angels*, but with *Monkey's Paw*, the deep bass power and ambience didn't quite make it.

The strongest evidence for this speaker's exceptional powers of analysis is found in its dramatic sensitivity to any changes made in the system that feeds it, or indeed in the sources from which it is fed. The B2.2 might not play to the same rules as regular hi-fi speakers, but for communicating the music it's a true Revelation. **HFC**

Paul Messenger



## VERDICT

**SOUND >> 83%**



**EASE OF DRIVE >> 94%**



**BUILD >> 72%**



**VALUE >> 76%**



### PRO

An often shockingly realistic speaker that helps you focus on the music and forget the hi-fi. Magnificent midband speed and dynamics give great analysis and communication.

### CON

Bulky, with bizarre styling and very little bass weight or extension. Some coloration is quite obvious, and treble has a rather narrow beam.

### CONCLUSION

Oddball but very persuasive, the B2.2's wonderful midband coherence, speed and dynamics refresh the parts other speakers simply ignore. Great mid communication and analysis must be balanced against a lack of bass weight and extension.

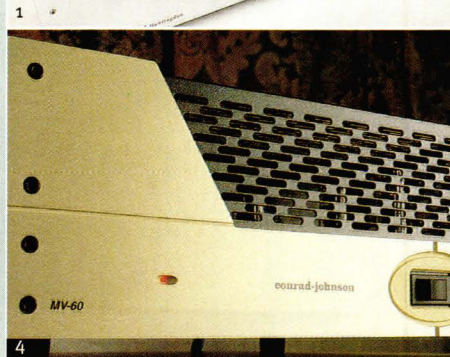
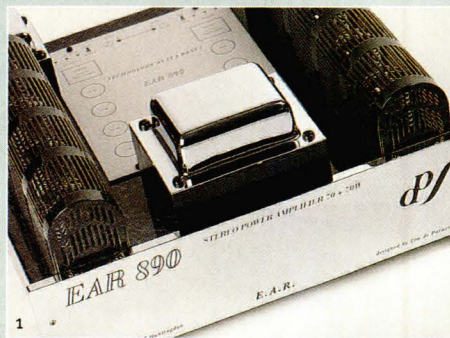
**HI-FI CHOICE** >> **81%**  
OVERALL SCORE

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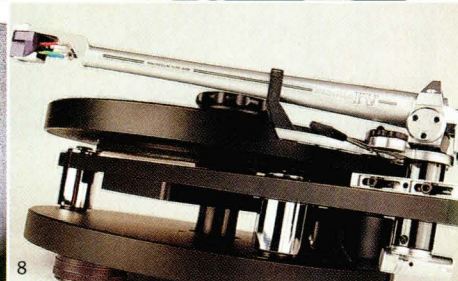
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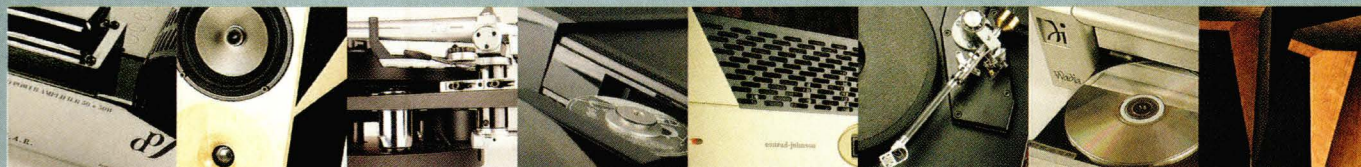
Superb sound and value at £1350. Cartridge shown is Benz-Micro Glider at £650



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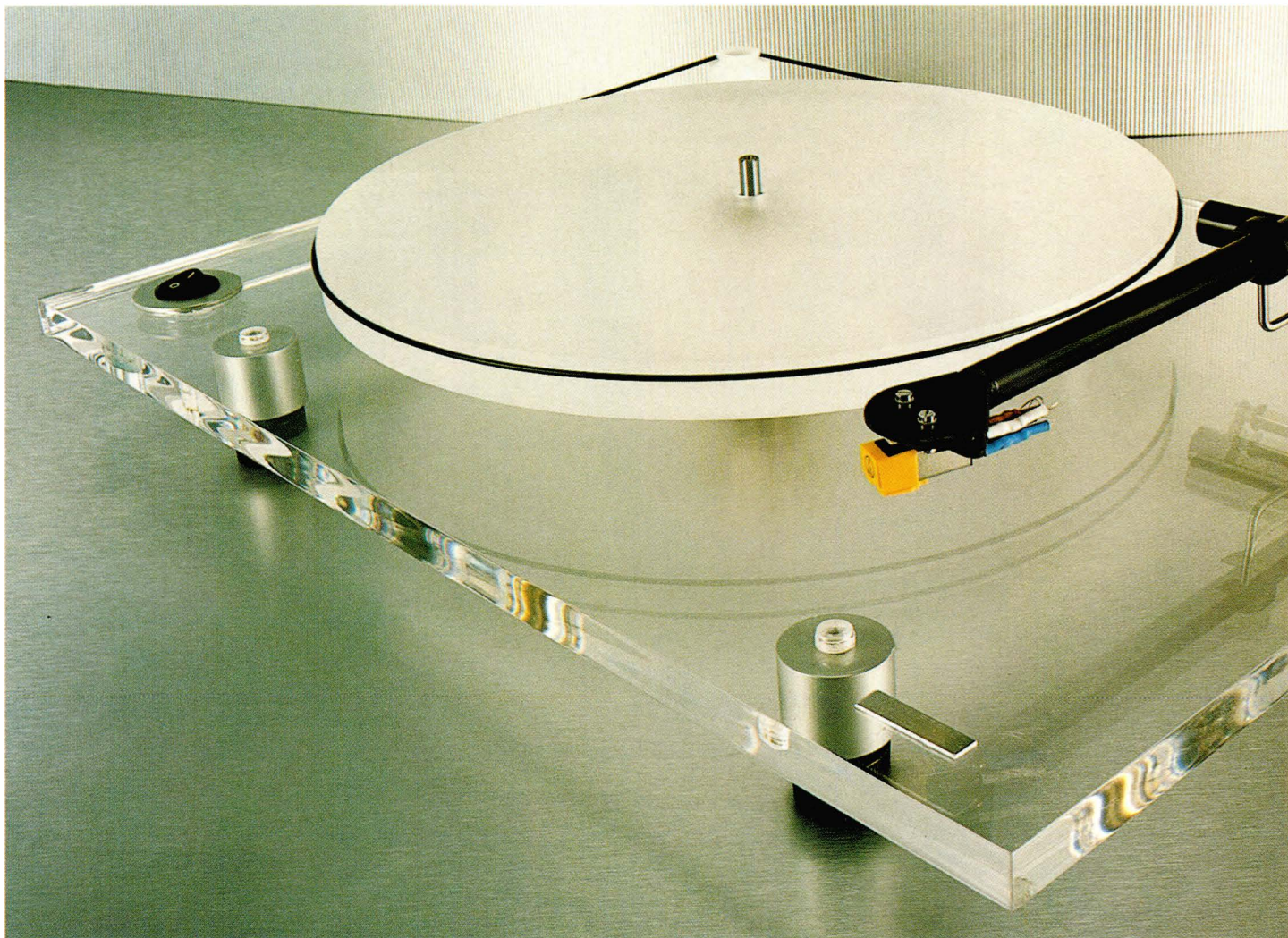
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# BLOWING ITS OWN FLUTE

*The Piccolo turntable from Italian brand Bluenote will certainly turn heads, but will it bend ears?*

**PRODUCT** Bluenote Piccolo/B-5

**TYPE** Turntable, arm & cartridge

**PRICE** £950

**KEY FEATURES** Size (HxWxD): 11.5x47x36cm

⊕ Weight: 3.5kg ⊕ Solid acrylic plinth and platter

⊕ High quality main bearing ⊕ Manual speed change

**CONTACT** ☎ 01746 769156

🌐 www.eminentaudio.co.uk

**B**luenote is an enigmatic manufacturer – rarely do you find a name other than IAV on its products and literature, but then the warranty is all Bluenote and IAV disappears. Still, there's more to these components than a name, and you can tell what they are by the style in which they're executed. A transparent acrylic solid plinth turntable isn't a common thing – there was the acrylic-encased Michell Gyrodec and

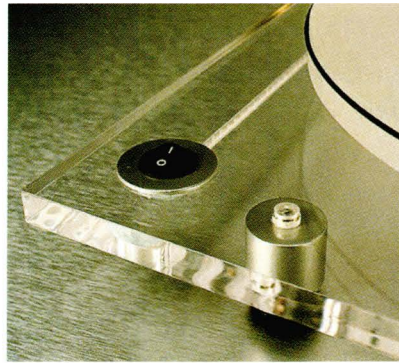
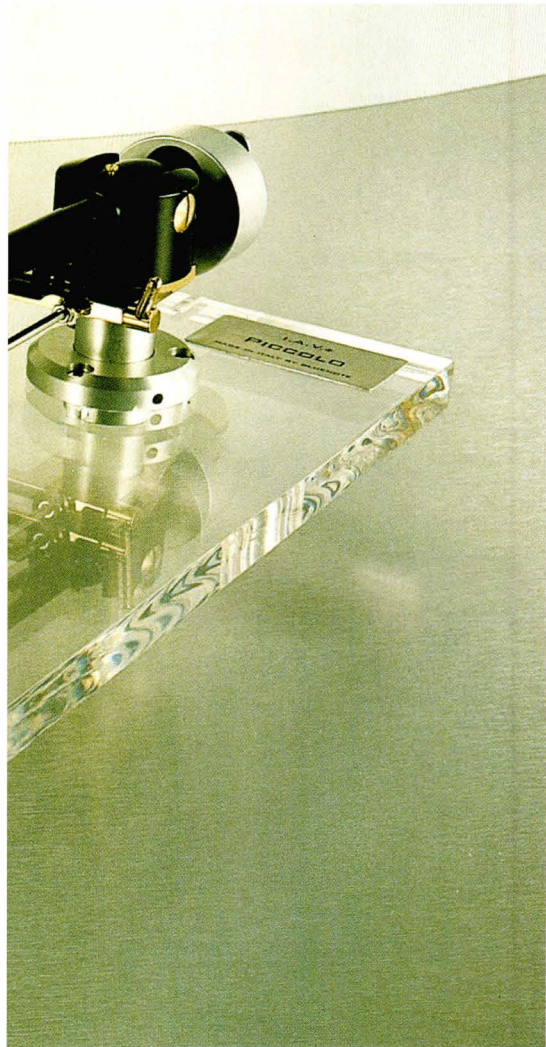
models from Pro-ject and Reson, but you don't see many combinations of clear and frosted acrylic like this.

The Piccolo is Bluenote's entry-level turntable and comes complete with the B-5 tonearm and a starter cartridge for a very reasonable £950. The cartridge is a basic Audio Technica moving magnet with bit of mass loading in the form of a plate that sits between it and the headshell. It looks inexpensive but will be a good start if your budget won't stretch any further, and the fact that it comes with the deck should ensure that there are no set-up issues to worry about.

The B-5 is likewise the entry tonearm but like the Piccolo it's a smartly turned out device with a decent finish and branded Talisker arm cable to plug into the arm base. Fitting is a slightly fiddly affair thanks to not

one, but three locking bolts in the collet-style arm base. These are tiny grub screws and two of them need to be loosened in order to alter the arm height. Their diminutive size means that the matching (supplied) allen key is likewise small and tricky to use up against the plinth, but patience should ensure the correct VTA eventually. Unless of course you decide to fit an unusually tall cartridge, when the angle arm cable plug will limit the extent to which the arm can be raised.

The B-5 arm and Piccolo both use bearings found in Bluenote's more expensive turntables such as the Bellavista/Borghese combination reviewed in *HFC* 239. That's not all the B-5 borrows – it has the same arm tube, counterweight and frankly crude lift/lower device. But in this instance conventional gimbal bearings are used instead of a



one side and the mains on the other. There is no power supply or transformer so this is presumably a 230V motor. It drives a very slightly eccentric nylon spindle which in turn drives the perimeter of the acrylic platter via a relatively stiff round section belt. The main bearing is a high tolerance design which takes some time to work its way together when assembling the deck. The oil forms a seal that slowly lets the air out of the bearing as it turns, the shaft bedding down a few minutes after initial insertion.

Starting the deck elicits a surprising noise which turns out to be the belt. This calms down after a few seconds and you can chance your arm (no pun) with the friction-damped lift/lower device. Turntable set-up is a simple matter of adjusting the three feet so that the deck is level and the bearing is not resting on the supporting platform, as would be the case if the feet weren't wound down a little.

## SOUND QUALITY

For the sake of continuity and to get some semblance of consistency we began with the Reson Recca cartridge, the one used for the tonearm round-up on p68. We also gave the Piccolo a head start by sitting it atop an original Townshend Seismic Stand, the wobbly one that gives phenomenal isolation thanks to its inflatable base. A solid plinth deck like this is always going to need good isolation if it's to perform at its best – if you have to put your turntable near your speakers and don't have a wall-mountable bracket or some form of resonance damping it may be more sensible to find a suspended design.

Phono stage amplification was provided by the Trichord Delphini and other components included Bryston BP25 preamp, Gamut D200 power amp and Living Voice Avatar OBX-R loudspeakers (see p42). Cables by Townshend and Living Voice carried the signal.

After testing tonearms on a Michell Orbe we expected the Piccolo to offer a jolt to the system. But although standards inevitably slipped the result was by no means crude. Joni Mitchell's voice sounds a little warm and full and the piano could be a bit smoother but the sound is appealingly expansive and has decent bass weight. Ruggero Ricci's violin on the other hand came across in rather

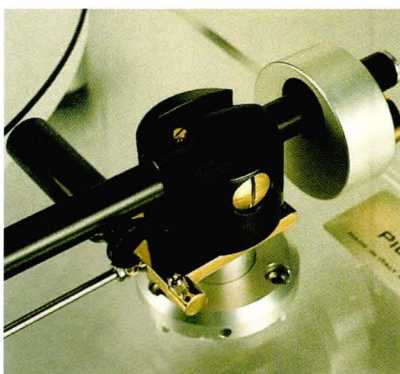
diminutive style, suggesting that the Piccolo favours some frequencies above others when it comes to soundstaging.

Elbow's *Any Day Now* doesn't have quite the bass grunt that you get from the CD but there's plenty going on down in the depths and a distinct enthusiasm higher up the scale. Rachmaninov's *Symphonic Dances* on the other hand is reproduced with more meat on the bone than its digital alternative, gusto and spirit being the order of the day albeit overlaid on a less than inky black background.

The classic Peace Orchestra track *Domination* shows up the deck's sense of timing and transparency very effectively. The sucking and exhaling of the bong coming across in no uncertain fashion while the bass lines sound really juicy. But a slice of Lambchop reveals a degree of sparseness – what you get is presented in a clear and coherent fashion so you don't notice what you're missing until a familiar track comes along. Then you realise that the atmospheric charge is depleted and you're not getting the full impact of the recording. But this is judging the Piccolo by the standard of more expensive turntables and on the whole this is an entertaining and well-rounded deck.

Installing the supplied Audio Technica starter cartridge doesn't prove too disastrous either – the soundstage diminishes rather but the inherent groove is maintained. It's a coarser overall experience but not uncomfortably so, even in tandem with relatively exalted amplification and speakers, and in the context of a more modest system the Piccolo should prove more than a distraction from alternative sources. Tracking is still fine despite the lack of an anti-skate mechanism – Bluenote doesn't seem very keen on this basic aspect of cartridge management, but like Rega and VTA, it takes all sorts. Bass likewise suffers with this basic needle, but it's more than enough to get started and when the next salary bonus comes in you'll know what to do with it. **HFC**

Jason Kennedy



unipivot. The B-5 incorporates what Bluenote describes as a "bearing fork", said to be made of stainless steel, yet the bearing fork towers are hewn from "decoupled bronze, anticorrosion aluminium and brass". Clearly there's a good variety of metals in them thar forks! The arm tube is made from an "aluminium alloy of different densities and hardnesses" with a steel sock inside the tube to shield the OFC OCC Hyper litz copper wiring.

The Piccolo's transparent slab plinth means that its workings are plain to see. It is fundamentally very simple – a motor in one corner is connected to an on/off switch on

VERDICT	
<b>SOUND &gt;&gt; 68%</b>	
<b>FEATURES &gt;&gt; 60%</b>	
<b>BUILD &gt;&gt; 65%</b>	
<b>VALUE &gt;&gt; 65%</b>	
<b>PRO</b> Looks great, times well and is never short of enthusiasm.	
<b>CON</b> Tricky to adjust VTA, motor engineering could be better.	
<b>CONCLUSION</b> An attractive turntable with a decent bearing and well-finished tonearm, the Piccolo/B-5 combo is a pretty exotic record player for the money. Though not the last word in vinyl replay, it should keep you away from the telly for many hours!	
<b>HI-FI CHOICE OVERALL SCORE &gt;&gt; 65%</b>	

GROUP TEST & LAB REPORTS: PAUL MILLER

# INTEGRATED AMPLIFIERS

While the big boys concentrate on AV amplification, stereo-centred audiophile brands have an increasingly bloody fight on their hands. Let battle commence...

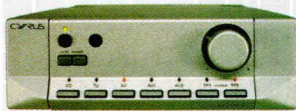
## ON TEST



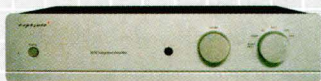
ARCAM A85  
£800



BRYSTON B60R  
£1,700



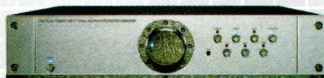
CYRUS 6  
£600



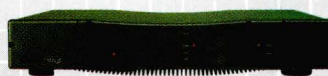
EXPOSURE 3010  
£1,000



MARANTZ PM-17MKII  
£1,000



MUSICAL FIDELITY A3.2  
£979



REGA MIRA 3  
£548



ROTEL RA-1062  
£595

Over the past few years, the amplifier market has polarised into two quite distinct strands. The amplifiers that once boasted features, connectivity and knobs-a-plenty have evolved into multichannel AV receivers and amplifiers with onboard Dolby and DTS processing, on-screen set-up menus and video as well as audio inputs. Manufacturers including Sony, Pioneer, Technics and Kenwood, who once fuelled the mass market with entire ranges of stereo amplifiers, now make just one or two token models or have abandoned the breed altogether. For these truly multinational brands, the quest for features and flexibility means that multichannel and AV represents the new 'mass' market.

All of which leaves the two-channel specialists with less direct competition from the big boys of audio. The larger audiophile brands like Arcam and Musical Fidelity might lack the economy of scale to compete with the likes of Sony or Pioneer, for example, but have relied on a reputation for superior sound quality to maintain their small share of the overall market. Now all this has changed with the stereo market almost entirely populated by specialist brands. Almost overnight, names like Arcam, MF and Rotel have become far bigger fish in a rapidly evaporating pond.

So what does this mean for the audiophile? Sure enough, with specialist models now in the ascendant, this suggests the entry price to two-channel audio might be higher than before. But with no lower cost mass-market competition beneath them, these sound-orientated companies will be forced to fight it out on more level terms. Moreover, their designs must also move forward to accommodate new, wideband stereo sources made

available by DVD-Audio and SACD. So this is not the time to sit back and rest on past laurels.

The prelude to this battle begins here with eight different integrated amplifiers, spanning a not inconsiderable £548-£1,700, lining up for an exhaustive series of lab and listening tests. Eight models from eight highly regarded companies and the closest representative we have of Far Eastern mass manufacture is Marantz, a company with the engineering resource to tackle AV and multichannel audio but with commitment not to abandon its two-channel heritage. An exception that almost proves the rule. **HFC**

## EQUIPMENT USED

- ⊗ Denon DVD-A1 CD/DVD-A player
- ⊗ B&W Nautilus 802 loudspeakers
- ⊗ Townshend Isolda DCT interconnects
- ⊗ QED X-Tube 400 speaker cable

## MUSIC USED

- ⊗ Foreigner 4 *Jukebox Hero* (24-bit/96kHz DVD-Audio)
- ⊗ Pat Metheny *Imaginary Day* (24-bit/88.2kHz DVD-Audio)
- ⊗ Ryan Adams *Gold* (16-bit/44.1kHz CD)
- ⊗ Dvorak: *Symphony No.9* (*From The New World*) Harmoncourt/Concertebouw (separate discs used - 16-bit/44.1kHz CD and 24-bit/96kHz DVD-Audio)
- ⊗ Eleanor McEvoy *Yola* (hybrid SACD/CD)

## EARS USED

Thanks to the following panellists or their experience and diligence in facilitating our unsighted listening tests: John Bamord (Pioneer) Roger Batchelor (Hayden Labs) Mark Hockey (Harman International) Andy Whittle (Exposure Electronics)





## STRUCTURED LAB & LISTENING TESTS

Each of these amplifiers was subject to a penetrating series of lab and listening tests which together provide a unique insight into their performance and compatibility. The latest QC Suite Functional Testing Station was used to probe every crevice of the amplifier's electrical performance including power and current output under dynamic conditions, trends of distortion versus frequency and output, response and output impedance all the way up to 100kHz. These, together with standard noise, crosstalk and DC measurements leave no stone unturned in our quest to get under the skin of these products.

The listening tests were no less rigorous, being conducted under blind, level-matched conditions with the assistance of some of the industry's most experienced panellists. Levels were electrically, rather than acoustically, matched for greatest precision. This means any perceived difference in level between one amp and another was not 'real' but provided an important clue to the amplifier's character and long-term suitability.

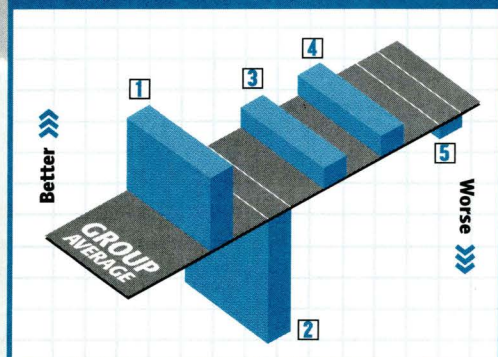
**No other magazine offers an equivalent test and listening programme for comparative tests.**

## LAB REPORTS: THE BAR GRAPH

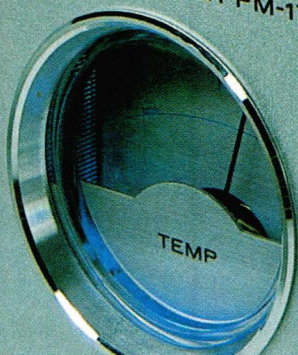
Our 3D bar graphs are a simple way of showing how the products compare across five technical parameters. In each case, a percentage is given that falls above or below the group average. In this test, the five parameters are:

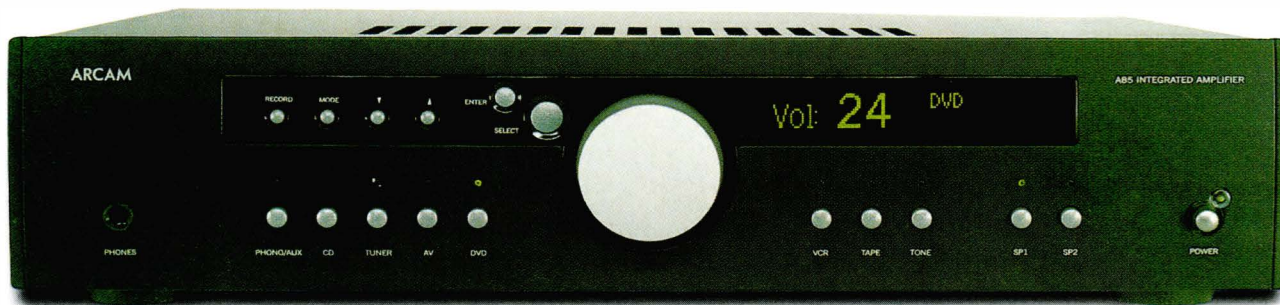
- 1] Dynamic power output:** Depending on the nature of the amp's power supply, this will be somewhat higher than its *continuous* output and provides an indication of its delivery under realistic, music-like conditions.
- 2] Speaker load tolerance:** As the name suggests, this indicates the amplifier's capacity to maintain a given level of performance into tough, low-impedance speaker loads.
- 3] Audible distortion:** A measure of how distortion changes with frequency (bass through midrange to treble) and power output. The type of distortion harmonics are also factored into this equation.
- 4] Noise:** This is a direct representation of the amplifier's A-wtd S/N ratio, measured with reference to 1W/8ohm.
- 5] Overall compatibility:** An important category that not only includes both load tolerance and distortion but also wideband frequency response (for DVD-A/SACD sources) and output impedance.

## OUR BAR GRAPHS: AN EXAMPLE



**MANHATTAN**  
INTEGRATED AMPLIFIER PM-17mkII





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## ARCAM DIVA A85

*Old fave holds its own against new and improved competition*

Launched some two years ago, the Diva A85 amplifier was the first product of Arcam's revitalised design team and a marked departure not just from its predecessors but also the cheaper A65 and A75 models in the range. Production changes have been kept to a minimum, but the price has crept up by £100. For this you get a very sophisticated amp that makes extensive use of software for switching its five inputs (plus two tape loops), output protection, global volume and tone control. You can even customise the tone and volume trim on an input-by-input basis – the result is shown on its display.

Tied to a central microprocessor, all this is accessible via Arcam's CR-389 system remote. This flexibility is not unique among our test models, but neither has Arcam compromised the analogue engineering at the amp's core. Indeed, while Arcam's earlier models were AC-coupled, voltage-feedback designs with FET power amp stages, the A85 is fully DC-coupled, utilises current-feedback and a bipolar power amp with integrated thermal tracking (see lab report).

Optional extras include a rather tasty MM/MC phono module at £110 and an up-and-coming 7.1-channel input selection and volume card which links the A85 with the multichannel analogue outputs of a DVD-A or SACD player. When released, it'll add another £350-£400 to the A85's cost.

This amp is an established reference and it's classy sound did not disappoint under blind conditions. From the lowest to the highest frequencies, the A85 offers an incredibly detailed, if what was described as a slightly "over engineered", sound. Dynamics are very well represented, underpinning a sure-footed sound that's both clean and slick. Unlike the Musical Fidelity model, it was suggested, this is an amplifier that "knows exactly how good it is, a public school jolly hockey sticks type" that, if criticism is required, is perhaps too confident, too slick for its own good.



Eleanor McEvoy's *Yola* sounded extended and detailed, very composed and insightful and despite the slightly vague vocal imagery, still possessed a weighty, articulate bass with a beautiful vocal and piano tone. Foreigner vocals had a convincing Marlborough Man gruffness, even though there was some phasiness about the central image. Toe the speakers inward slightly and this snaps into focus – pull your speakers out too far and the A85 can develop a 'hole' in the middle.

Similarly, as the pulse of Metheny's track beat into the room we were reminded of its place in classic hi-fi demonstration material – impressive sounding stuff but not enthralling or captivating in a truly musical sense. One listener suggested that the sound was "slightly processed", others that it sounded like the "classic hi-fi amplifier".

Interestingly enough, Arcam has used the A85 as the core of its P7 multichannel power amp where conventional 'imagery' is reinforced by centre and surround loudspeakers. Nevertheless, as a pure stereo product our listeners were forced to dock the A85 a point. Imagery aside, it's difficult to fault either the balance, grip or detail delivered by this amplifier. Two years on, and this Diva can still hold its own. **HFC**

### VERDICT

**SOUND >> 82%**

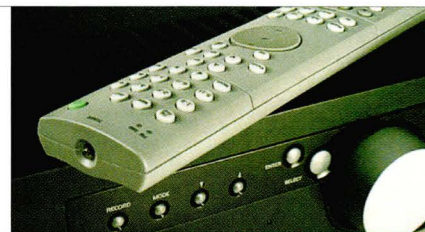
**FEATURES >> 88%**

**BUILD >> 80%**

**VALUE >> 82%**

**HI-FI CHOICE 83%**  
**OVERALL SCORE >>**

More powerful than its 85W specification might suggest, this sophisticated 'bruiser' sounds clean, clear and confident. Steer clear of clinical sounding ancillaries and the A85 will surely show its class.

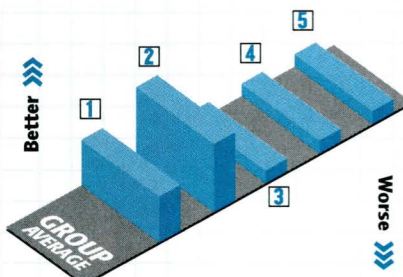


### LAB REPORT

Arcam has always under-specified its amplifiers, and the A85 is no exception to the rule. Rated at 85W, in practice it will sustain some 2x105W/8ohm and 2x155W/4ohm. Under dynamic conditions, this increases still further to 150W, 265W (8.1A), 410W (14.3A) and a full 510W (22.6A) into 8, 4, 2 and 1ohm loads, respectively. While this combination of continuous and dynamic output is above average, the amplifier's tolerance of difficult speaker loads is second only to the Rotel in this survey.

The ~0.1ohm output impedance rises to 0.9ohm at 100kHz but remains consistent through the bass and midrange where distortion, too, is as low as 0.001%. The amplifier's S/N ratio is at the industry average of 85dB (re. 0dBW) but crosstalk, particularly at high frequencies, could stand some improvement. Otherwise, the A85's extended response (just -1dB at 80kHz) reinforces Arcam's 'wideband' credentials. Indeed, if it were not for EMC regulations, this amplifier's extended power bandwidth (~400kHz) would allow it to broadcast into the LW band!

### HOW IT COMPARES



- 1] Dynamic Output >> 30%
- 2] Speaker Tolerance >> 45%
- 3] Distortion >> 10%
- 4] Noise >> 10%
- 5] Compatibility >> 10%

### SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	85W	105W
Distortion (1kHz/8ohm)	0.005%	0.002%
Input sensitivity (CD/Aux)	250mV	260mV



£1,700 ☎ 08704 441044 🌐 www.bryston.ca

# BRYSTON B60R

*Bomb-proof construction and unsurpassed reliability*

**H**aving just celebrated 40 years in the audio business, Bryston has extended the modular SST topology of its B-series power amplifiers to other models, including the popular B60 integrated. This B-60R, so-called thanks to the addition of a simple remote volume control, is shoe-horned into an ultra-slim chassis. There's just enough real estate to accommodate four line inputs, a tape loop and pre-out/power-in jumpers at the rear of the case, along with a pair of substantial 4mm speaker connectors. Inside, the amplifier is divided into two entirely separate mono channels, complete with localised input selection.

So why does this diminutive, 60 watt-rated amplifier cost £1,700? Bryston hails from Canada, so there's the inevitable cost of importation. Moreover, buying a Bryston means buying into a philosophy where compromises in build and component spec are all but unacceptable. It's a credo preached by Bryston in its, largely successful, attempt to produce the most reliable and long-lasting products in the professional sector.

Every component is hand-soldered onto the glass-epoxy circuit boards within. Every wire is trimmed and fitted by an engineer, not a robot. Flow solder processes are shunned to avoid artificially ageing passive components and transistors alike. So confident is Bryston in its fastidious approach that every B-60R comes with an "unlimited, unprecedented and unequalled" 20-year warranty.

For such a slim amp, the B-60R produces a decidedly chunky sound, a performance with vim, vigour and a warmth that adds meat to the bite of strings and percussion alike. Our Foreigner DVD sounded particularly energetic and detailed, albeit trading some loss of texture for a welcome smoothness to Lou Gramm's forward, close-miked vocals. There was less of the acid sibilance heard with the Rotel but also a softening, a dampening of the atmosphere and leading edge attack.

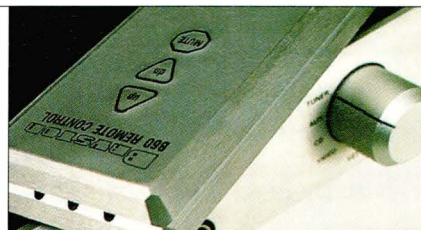


Pat Metheny's *Story Within The Story* sounded smooth and calm, a slightly cool perspective that we all enjoyed for its easy-going, unhurried pace. This amp will never thrust the music forcefully into the room, but its sobriety is not achieved at the expense of life or passion. It's a well-judged balancing act and one that holds true for both CD and extended bandwidth DVD/SACD software.

Typically, the busiest music is not allowed to run riot but is, instead, tempered without being too constrained in either dynamics or tone. A gentle recording, like the Dvorak symphony used here, sounds open and deep but perhaps a little too hesitant, just as the laid-back demeanour of Eleanor McEvoy sounded just a little plummy. Here at least, the warm bass was a tad too soft although, as a whole, it continued to sound composed, lucid and very easy on the ear.

If you don't intend to buy another amp for the next 20 years, then Bryston's deceptively beefy B-60R is the choice of the cautious audiophile. Whether it sounds too polite for its own good, of course, remains a matter of personal perspective. But ask a hundred enthusiasts how they could improve their system and 99 will reply "a smoother treble and fuller bass". The B-60R is the perfect antidote to the bright or lively system. **HFC**

VERDICT	
<b>SOUND &gt;&gt;&gt; 76%</b>	Bryston's superb build quality and reliability evidently comes at a price, for £1,700 is still an awful lot of money for a 60 watt-rated amplifier, no matter how impressive its overall pedigree may be.
<b>FEATURES &gt;&gt;&gt; 60%</b>	
<b>BUILD &gt;&gt;&gt; 96%</b>	
<b>VALUE &gt;&gt;&gt; 60%</b>	
<b>HI-FI CHOICE 73%</b> OVERALL SCORE >>>	



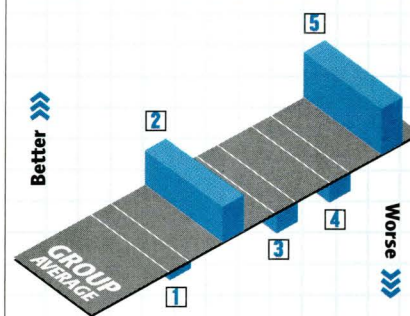
## LAB REPORT

Bryston amps are all about performance: low distortion, low crosstalk, excellent load tolerance and generous reserves of power. The B-60R clearly follows this philosophy with a very solid set of results. Sure enough, while its 2x75W/8ohm and 2x105W/4ohm power output is unexceptional for a £1,700 amplifier, there is security in its robust 115W, 200W, 331W (12.9A) and 303W (17.4A) dynamic output into 8, 4, 2 and 1ohm loads, respectively.

Importantly, the B-60R's output remains stable, with no sign of limiting or protection, into all these loads up to full power.

Distortion is consistent at 0.0008-0.0018% through the midrange from 1-70W/8ohm but does increase closer to 0.015% at 20kHz and beyond. The B-60R's response is extended (-3dB @ 95kHz) while the new power amp's impedance stays below 0.03ohm to 10kHz, rising thereafter to 0.075ohm/20kHz and 0.7ohm/100kHz. Bryston still uses an analogue volume pot, but the 0.15dB channel balance error is perfectly acceptable, as is the 89dB stereo separation through the midrange.

## HOW IT COMPARES



- 1] Dynamic Output >>> -5%
- 2] Speaker Tolerance >>> 25%
- 3] Distortion >>> -15%
- 4] Noise >>> -15%
- 5] Compatibility >>> 30%

## SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	60W	75W
Distortion (1kHz/8ohm)	0.02%	0.0009%
Input sensitivity (CD/Aux)	440mV	480mV



£600 ☎ 01480 435577 🌐 www.cyrusaudio.com

## CYRUS 6

*New entry-level model falls short of its more costly sibling*

Cyrus's investment in the tooling required for its innovative magnesium alloy casework must surely have been paid off several times over as the familiar little 'brick' is retained for another season. Its predecessor, the Cyrus 5 (HFC 205), was less successful than the upmarket Cyrus 7 (HFC 196), so this latest entry-level amp has benefited from numerous revisions. The five line inputs are retained along with two tape options and a separate preamp output. The Cyrus 6 is also one of the last UK-built amps not to have abandoned its insulated BFA speaker connections, possibly because their reduced stature is ideal for the cramped conditions around the back.

The boot-up logic sequence features a different LED pattern to distinguish it from the Cyrus 5, but its functionality is the same. IR remote covers volume, balance, mute and input selection but Cyrus's internal micro also harbours several 'hidden' features. Holding down an input select key on the amplifier, for example, triggers a mode that allows the gain of that input to be independently trimmed.

Under the bonnet, the Cyrus 6's preamp stage now has a wider bandwidth and features better quality passive components with new Burr-Brown op-amps. The main power supply enjoys better regulation while the power amp itself is now based around the higher-current Sanken devices that seem very popular these days. The intervening period has also seen Cyrus's entry-level amp rise in cost from £500 to £600, though the upgrade path to the Cyrus 8 (which has replaced the 7 – see HFC 239) is retained for another £250. This brings with it the option to use a PSX outboard power supply, an upgrade that, in the past, has finally helped realise the full potential of this diminutive amplifier.

On its first pass through the listening mill, this amp had the misfortune of following the likes of the Rotel RA-1062 and Exposure 3010, two amps that exposed the relatively



recessed and less 'interesting' sound of the Cyrus 6. Our Foreigner DVD-A sounded sharp and to-the-point but also steely rather than enthralling. "There's something missing with this one", said one listener, "lean in the bass and lacking some flesh in the midband". This theme continued with the contention that "if the Marantz has a J-Lo bottom end, then the Cyrus 6 is the Victoria Beckham of the group".

There's detail, but a lack of atmosphere – a trait ruthlessly exposed by the Pat Metheny disc which lacked both transparency and openness. This amp has little hunger for the music, for while it's pretty clean and clear there's also a dilution of its energy and passion. On the other hand, the difficult Ryan Adams CD was handled with more discretion than we might have anticipated, delivering a very controlled but restricted and bleached rather than forward or aggressive sound.

Like bloodhounds on the scent, our blind listening panel pursued its quarry to an inevitable conclusion, judging it to lack both power and detail. One could offer price in mitigation, but the Cyrus 6 was significantly outperformed by the two other sub-£600 amps. The more costly Cyrus 8 is undoubtedly the more accomplished of the pair. **HFC**

### VERDICT

**SOUND >> 48%**



**FEATURES >> 80%**



**BUILD >> 75%**



**VALUE >> 62%**



The older Cyrus 5 always lived in the shadow of the 7, and despite recent improvements, history looks likely to repeat itself between the sadly uninspiring Cyrus 6 and beefed-up Cyrus 8.

**HI-FI CHOICE 61%**  
OVERALL SCORE >>

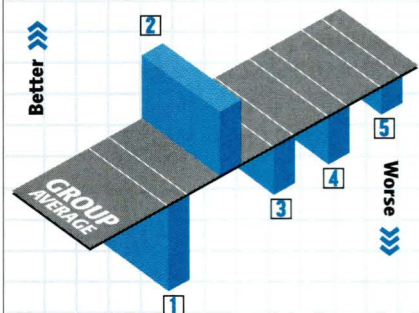


### LAB REPORT

Improvements to both pre and power sections of the Cyrus 5 have helped the performance of the model 6. Distortion, for example, is as low as 0.0005% through midrange frequencies, increasing to 0.03% at 20kHz. The output impedance is also reduced to below 0.06ohm right across the audio range, increasing to 0.15ohm at 100kHz – a figure that's lower than that achieved by some competing designs at 20Hz! Nevertheless, the pattern of distortion harmonics is less 'harmonious' than the figures might suggest, while the limited 2x50W/8ohm power output suggests that high sensitivity speakers are a must.

Nevertheless, while its *continuous* output is understated, the amp does show some backbone under dynamic conditions which, broadly speaking, are more typical of real music. Here, the Cyrus 6 is capable of delivering 72W, 140W, 250W (11.2A) and 240W (15.4A) into 8, 4, 2 and 1ohm loads, respectively, the latter limited by the amp's electronic protection.

### HOW IT COMPARES



- 1] Dynamic Output >> -55%
- 2] Speaker Tolerance >> 40%
- 3] Distortion >> -30%
- 4] Noise >> -30%
- 5] Compatibility >> -20%

### SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	40W	50W
Distortion (1 kHz/8ohm)	<0.003%	0.0008%
Input sensitivity (CD/Aux)	179mV	209mV



£1,000 ☎ 01273 423877 🌐 www.exposurehifi.com

# EXPOSURE 3010

Exposure's new 3010 amp plays music with aplomb

The seeds of Exposure's near phoenix-like transformation were sown back in 1999 when the company was bought out by Malaysian financiers. Improvements in metalwork and build quality are the direct result of Far Eastern resources although the design base and head office remains in the UK. This new-found economy of scale has, quite simply, allowed Exposure to produce better quality hi-fi at a more agreeable price.

As the latest addition to this stable, the 3010 looks and feels like a bigger version of the entry-level 2010 although, in practice, it's pitched between this and the upmarket Classic series. While the 3010 features one of Exposure's typically over-sized power supplies, it now has a more rugged Sanken-based power amp circuit to make best use of it. Features are limited to volume and input selection but both these rotary controls are motorised for use with the HS100 system remote, which also carries an electronic mute.

Additional MM and MC phono boards are available for £140, so you'll need to choose which one has the optimum gain for your cartridge type. The rear is clearly laid out, with five line inputs, a tape loop and a pair of pre-out terminals for bi-amping with a matching power amp. Before you spend the money, Exposure has also provided parallel pairs of 4mm speaker outlets, so you can bi-wire your speakers in the meantime.

The 3010 manages the trick of conveying detail without any attendant harshness, a quality that's particularly useful with full-on tracks like the 'unplugged' version of Foreigner's *Jukebox Hero*. Here there was a real grip of events, a confidence that produced a deep and powerful bass, husky but not too fierce or sibilant vocals and a very sweet, elegant-sounding top end. The Metheny track had great separation, enabling us to dip in and out, listen to one performer and then another without unraveling the threads of the music as a whole. Eleanor



McEvoy's voice was exceptionally sweet throughout *The Rain Falls*, the quick-sounding percussion providing a perfect counterpoint to draw us into her performance.

Rock tracks bustle with detail but are typically infused with an effective warmth and weight. For once we were able to hear the overdubbed harmonies of Ryan Adams's own voice together with the ruddy warmth of the organ in the background. The difference between this expertly delineated sound and the muddled quality heard with other amps with busy CD material can only be fully appreciated on audition. But then, the 3010 has a way with all styles of music that's not wholly neutral – there's some loss of high treble – and yet remains both captivating and convincing on an emotional level.

Atmospheric and relaxed without being constrained, the 3010 had us all enthralled with its luxurious and remarkably "well-sorted" sound. The amp's moderate output impedance will influence its transparency and top-end extension with different loudspeakers, but even this affectation failed to dissuade our listeners from its charms. In every important respect, the 3010 delivers all you could ask from an amplifier at this price and, most probably, well beyond. **HFC**

## VERDICT

**SOUND >> 93%**



**FEATURES >> 70%**



**BUILD >> 75%**

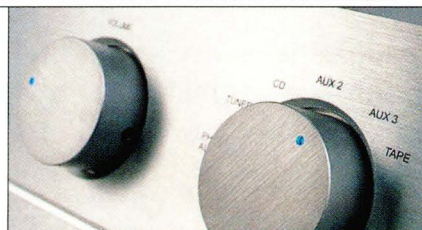


**VALUE >> 90%**



A real mix of the old and new with significantly greater power and tolerance of tricky speakers together with the sweet and enthralling sound that has epitomised previous Exposure designs.

**HI-FI CHOICE 88%**  
OVERALL SCORE >>

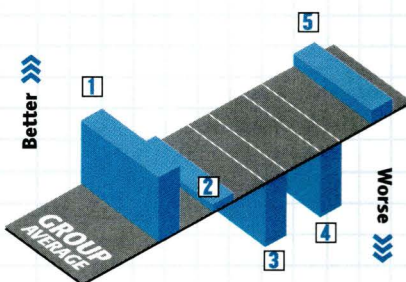


## LAB REPORT

If proof were needed that the 3010 is an altogether lustier beast than previous Exposure outings, then its 2x120W/8ohm and 2x180W/4ohm power output even pushes it ahead of the recent Exposure 28 power amp. Under dynamic conditions, the supply regulation is sufficiently 'loose' to permit momentary increases in output of 166W, 298W and 465W (15.3A) into 8, 4 and 2ohm loads. The amplifier is limited to 18.7A (350W) into 1ohm loads before protection kicks in.

Distortion is gratifyingly consistent at ~0.005% through the midrange between 1-70W/8ohm but does increase to a not insignificant 0.11% at 20kHz. Even into a purely resistive 8ohm load there's some 'sweetening' of the treble with a response that's -0.7dB down at 20kHz, rolling away to -3dB at 43kHz and -11dB at 100kHz. For, despite the new power devices, Exposure still slugs its output with a ~0.2ohm resistor, yielding a cumulative source impedance of 0.26ohm. The overall system response will, therefore, vary somewhat with the HF impedance of the attached loudspeakers.

## HOW IT COMPARES



- 1] Dynamic Output >> 40%
- 2] Speaker Tolerance >> 5%
- 3] Distortion >> -40%
- 4] Noise >> -40%
- 5] Compatibility >> 10%

## SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	100W	120W
Distortion (1kHz/8ohm)	<0.03%	0.005%
Input sensitivity (CD/Aux)	250mV	275mV



£1,000 ☎ 01753 680868 🌐 www.marantz.co.uk

## MARANTZ PM-17MKII M

Are recent changes enough to revitalise this long-running model?

The last time we looked at Marantz's PM-17mkII it was clad in champagne gold. Two years on and while this beautifully engineered product is no more expensive, it has benefited from a respray to champagne silver, a nod to the increasing popularity of the 'new black' that Marantz refers to as 'Platinum'.

Look more closely and you'll see a little 'M' badge to the far left of its substantial alloy fascia. Rather than call the PM-17 a mkIII, this 'M' (for 'Modified') variation reflects not only a change of colour but also one or two subtle revisions that have occurred under the bonnet. These include changes to the type, if not the value, of components in the power supply and the choice of a new film capacitor in the feedback network, the latter potentially having a significant effect on sound quality.

Functionally of course, the PM-17 remains unchanged. It's one of the last amps with a surviving MM/MC phono stage that is allied to four line inputs and two tape loops, one labelled for CD-R. The 4mm speaker outputs are switched from the front panel just as volume, balance and input selection are accessible via remote control. Balance and tone controls are bypassed using the 'source direct' facility while an illuminated, analogue meter shows the PM-17mkII M warming to its task. As this widget has no 'over-temperature' indication, perhaps it's best to treat it simply as an aesthetic gizmo.

This amplifier has an inherently neutral sound, one that's extended with a very taut and controlled bassline and joined by a detailed but often somewhat lifeless treble. The string tone from both the Pat Metheny and Foreigner discs was especially strong, its powerful and dynamic quality successfully kept in check by the amplifier's own, authoritative influence. In the most general terms, its presentation of stereo can seem as highly and professionally 'engineered' as the amplifier itself, which is fine if you don't want



any surprises – nasty or otherwise.

The reaction to the more fierce sound of the Ryan Adams CD was less favourable, prompting suggestions from the panel that the music sounded "flat and tame" in response to the vocal and string energy being focused into a constrained soundstage. Different styles of music and quality of recordings also have some influence over the PM-17mkII M. It certainly allowed the open acoustic of Dvorak's symphony (DVD-A and CD) room to breathe if not ultimately swell. And yet, despite this lack of incisiveness, the music remained inherently well composed. A pity then that such a measured and even-tempered sound should fail to strike an emotional chord with our listeners.

From a technical standpoint, the PM-17mkII M is a tightly regulated, compensated and protected design, features that in all likelihood contribute to a sound that's, well, also a little uptight. So the amplifier always seems to play safe, never offending with bum notes but also refusing to take the sort of risks that might allow the music to burst into colour. Remove the electronic shackles and unfetter the music would be my advice to Marantz, but then that's probably the domain of the PM-17mkII KI Modified... **HFC**

VERDICT	
<b>SOUND &gt;&gt; 62%</b>	No question about the material and engineering value of the PM-17mkII M, which looks and feels every inch the £1,000 amp. But while specialist models are in the ascendant, it <i>sounds</i> disappointingly dated.
<b>FEATURES &gt;&gt; 80%</b>	
<b>BUILD &gt;&gt; 90%</b>	
<b>VALUE &gt;&gt; 70%</b>	
<b>HI-FI CHOICE 70%</b> OVERALL SCORE >>	

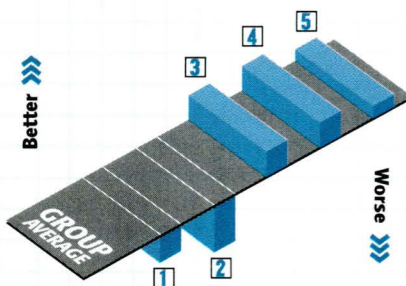


### LAB REPORT

Compared to the sample tested in HFC 214, this 'M' version of the PM-17mkII is no more or less powerful but there are very subtle differences in both its distortion and noise performance. THD is very slightly higher (though not high) at 0.001% at 1kHz up to 10W/8ohm, increasing to 0.003% at 70W/8ohm. As a measure of the amount of compensation (feedback) applied, THD at 20kHz is still only 0.007% at 10W/8ohm. The S/N ratio is now closer to 86dB than 88dB, the response down -3dB at 85kHz while separation remains excellent at >80dB across the board.

Power output remains unchanged at 2x90W/8ohm and 2x148W/4ohm while its tolerance of low impedance loads is largely determined by Marantz's current limit of ~11A. This is not especially generous, even for an amplifier that's conservatively rated at 60W/8ohm. Throw the very strict regulation of the PM-17mkII M's power supply into the equation and *dynamic* outputs are limited to 97W, 174W, 200W (10.0A) and 117W (10.8A) into 8, 4, 2 and 1ohm loads, respectively.

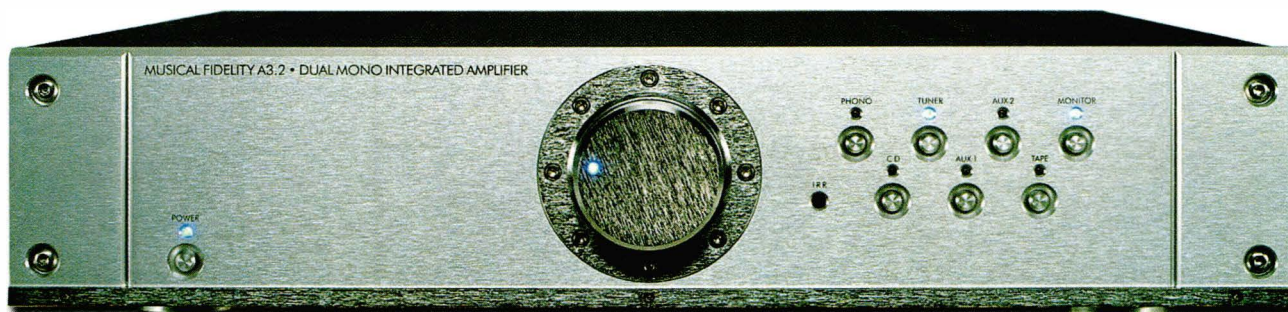
### HOW IT COMPARES



- 1] Dynamic Output >> -20%
- 2] Speaker Tolerance >> -30%
- 3] Distortion >> 20%
- 4] Noise >> 20%
- 5] Compatibility >> 10%

### SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	60W	90W
Distortion (1kHz/8ohm)	0.01%	0.001%
Input sensitivity (CD/Aux)	220mV	260mV



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# MUSICAL FIDELITY A3.2

MF keeps the A3 flag flying with the re-styled A3.2

There are certain parallels between the evolution of Marantz's PM-17mkII and the rebirth of Musical Fidelity's A3 as this A3.2 model. The rather garish gold-anodised embellishments are erased from the fascia in favour of a medium and fine-grain alloy. Similarly, lessons learned in the development of the more recent TriVista amps (like the A308) have been incorporated here. The Sanken-based power amp is retained but the driver stage has been improved in an effort to reduce distortion at high frequencies, a nod towards the slowly growing acceptance of wideband SACD and DVD-Audio sources.

The function buttons have been rearranged on the fascia and while there are no additional inputs (four lines, one tape loop and an integrated MM/MC phono stage), the 'Aux 2' option is now renamed 'Home Theatre Direct'. Inputs to this socket are routed directly to the power amp, bypassing the volume control. The idea is to use the volume control on an attached AV processor and utilise the A3.2 as one or two of the power amps required for a 5.1 or 7.1 channel system.

Volume and input selection remain accessible by remote control while the ideals of a true, dual-mono internal construction, including two separate power supplies, are rigidly maintained. Necessarily then, MF has met increased costs, particularly for the cosmetics, pushing up the price from £849 (A3 in 1999) to £999 for the A3.2 today.

It sounds like a slightly fresher, tauter but less sympathetic version of the Exposure 3010, which means that while it never gives less than 110 per cent, it can just as easily sound too hard on occasion. As expected, the A3.2's big sound suited our Foreigner track, which bowled up with great enthusiasm – "very frisky sounding" suggested one listener. Nevertheless, while the top end is alive with percussive detail, the bass is not as full or weighty as it might be. This same large, but slightly lightweight balance was remarked



upon through the Metheny selection, despite the fact that the music still hung together impressively. "10/10 for trying" said one "but it's not as good as it probably thinks it is".

The classical selection was undeniably pleasant but still slightly washed out. "More peroxide than strawberry blonde" remarked one listener who was less enamoured of the crystal-clear presentation than others who appreciated its technical style of music-making. Eleanor McEvoy's *The Rain Falls* was led by its brassy percussion rather than either the impact of piano or weight of bass which, sadly, seemed too thin. It was a theme repeated as we worked from track to track.

The A3.2's family tree can be traced back through the A3 to the XA-100R before it and while all have been admired, none have broken through that final emotive barrier in our blind listening tests. If nothing else, this does suggest a degree of consistency on both parts. Perhaps the A3.2 is best summed up by analogy: its performance likened to a stroll in the country on a brisk spring morning, the sun shining, the sky a bright blue but there's still a chill in the air and you've forgotten your jumper. For all the detail and cleanliness of this music, it's still not possible to comfortably bask in its presence. **HFC**

### VERDICT

**SOUND >> 73%**

**FEATURES >> 75%**

**BUILD >> 80%**

**VALUE >> 70%**

The original A3 amplifier always faced stiff competition, and despite minor technical and cosmetic improvements, the increased cost of the A3.2 suggests that it, too, faces a similar battle.

HI-FI CHOICE 75%

OVERALL SCORE >>

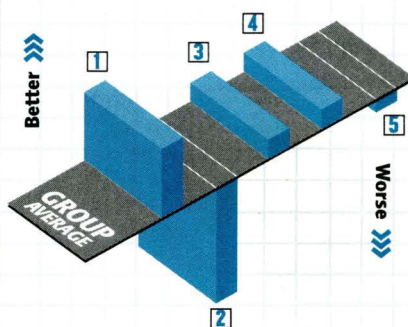


## LAB REPORT

The A3.2 is clearly an evolution over the A3 (HFC 196) with its slightly lower treble distortion (0.015% from 0.018%) and fractionally improved 85.5dB A-wtd S/N ratio. The 1.1dB error in channel balance (re. 0dBW) could stand improvement, but the low 1mV DC offset and fairly extended response (-3dB at 80kHz) are both positive features.

The A3.2 now delivers 2x130W/8ohm and 2x190W/4ohm, comfortably exceeding the 2x110W/8ohm measured three years ago for the A3. Similarly, while the A3.2's dynamic output has increased to 173W and 302W into 8 and 4ohm respectively, it remains unchanged at 158W (8.9A) and 83W (9.1A) into 2 and 1ohm loads as a result of the same, fast-acting current limiter. In this light, Musical Fidelity's claim of a 24A peak current capability would seem over-ambitious. Either way, it does undermine the amplifier's grip of the most taxing speaker loads, suggesting the A3.2 is best partnered with easy-going if not high-sensitivity loudspeakers.

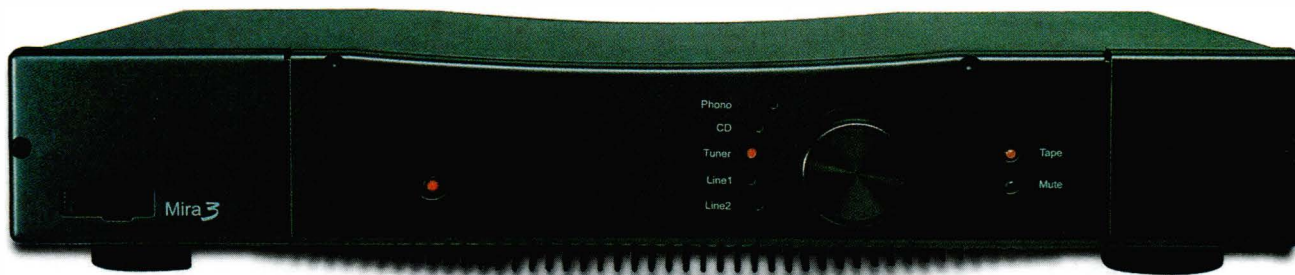
## HOW IT COMPARES



- 1] Dynamic Output >> 45%
- 2] Speaker Tolerance >> -75%
- 3] Distortion >> 15%
- 4] Noise >> 15%
- 5] Compatibility >> -10%

## SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	115W	130W
Distortion (1 kHz/8ohm)	<0.01%	0.0015%
Input sensitivity (CD/Aux)	250mV	260mV



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## REGA MIRA 3

*Smooth and distinctive amp is good... but not great*

One step up from the Brio comes the third iteration of Rega's Mira series in a physical incarnation that's pretty close to the Mira 2. Again, the single rotary control, tape and mute buttons plus indicators for five of the remaining inputs are all that decorates its rather bleak, black plastic fascia. The chassis is made from an extruded alloy and includes provision for heatsinking, although the it rarely breaks into a sweat.

While the Mira 3 includes an IR receiver, you'll need to shell out another £25 for the optional Solar System remote handset that triggers its few functions. Conversely, an MM/MC phono stage comes as standard, even if its limited MC input sensitivity is better suited to higher output cartridges. It is possible to change the gain (amplification factor) of the Mira 3's preamp section to accommodate higher and lower output sources, but you'll need to discuss this option with your dealer.

Closer inspection reveals the 'volume control' to be a rotary encoder. Spin the wheel for volume or click and turn to rotate through the different inputs. The 20 red LEDs that decorate the periphery of this control now give a more accurate indication of volume (4dB each) while the increments themselves are now reduced to a finer 1dB. Nevertheless, there's still no hysteresis built into the control, so watch out for wrist-ache when spinning the wheel from low to high volume...

Light on its feet but often remarkably clean and vivid, the Rega Mira 3 cut to the chase of Foreigner's *Jukebox Hero*, developing a big soundstage albeit with a hint of coarseness through the midband. The bass is tuneful but fleet, often lacking some substance as it waffles rather than delivering a weighty punch. So the Mira 3 was described variously as sounding like "a slightly grainy or synthetic version of the Bryston B-60R, its music driving along with a decent amount of detail and soundstaging but just lacking a



certain degree of weight and sophistication".

Nevertheless, the Mira 3 made a good fist of Ryan Adam's overly-busy *New York, New York* rock track, bundling plenty of string and vocal detail into a wide soundstage without particularly emphasising any one facet of this musical tirade. Similarly, our classical selection moved out from the speakers and into the room, sounding easy and accessible but, once again, without the weight and gravitas we know to be possible. As if the performers had not quite drawn the deepest breath, the shading of these pieces was simply not as dynamic as we would have wished.

In many respects the Mira 3 is all about easy listening, sprinkling brassy percussion from the likes of Pat Metheny's *Imaginary Day* into the air with an almost casual grace. Other amplifiers certainly sound more vivid and alive, but the Mira 3 simply ticks over with little fuss or fanfare.

In the context of this group, Rega has price on its side and still offers a decent phono input. The enhanced, stepwise volume control also adds some value over its predecessor. Nevertheless, and not unlike the Mira 2, while the Mira 3 is a good amp, for want of a little extra grunt and control in the bass, it could so easily have been a *great* amp. **HFC**

### VERDICT

**SOUND >> 70%**



**FEATURES >> 62%**



**BUILD >> 70%**

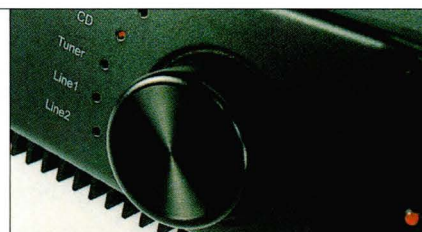


**VALUE >> 76%**



Evidently best suited to relatively 'friendly', moderate-sensitivity speakers, the Mira 3's easy-listening style makes for a safe, long-term bet if one that is unlikely to stretch your music collection.

**HI-FI CHOICE 70%**  
OVERALL SCORE >>

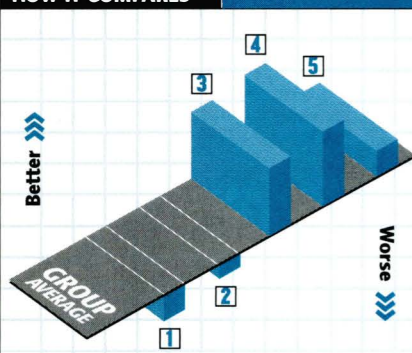


### LAB REPORT

Possibly from crossover effects, the Mira 3's distortion trend decreases with increasing power output (~0.015% at 1W to 0.002% at 60W) prior to clipping at 2x73W/8ohm and 2x115W/4ohm. Its clip is both very hard and abrupt, incidentally. Under dynamic conditions, the clip is no gentler but it is possible to coax higher outputs of 100W, 185W, 323W (12.7A) into 8, 4 and 2ohm loads, respectively. Only 17W (4.1A) is possible into 1ohm thanks to Rega's protection mechanism.

At a given power, distortion is consistent, and principally odd-order, till about 4kHz beyond which it climbs, reaching ~0.04% at 20kHz. The HF response is also slightly tailored, dropping -0.35dB by 20kHz and rolling off thereafter to -3dB at 65kHz and -8dB at 100kHz. The output impedance also hovers around a low-ish 0.04ohm through much of the audioband before rising at HF. Noise is the lowest of the group at -88.5dB (A-wtd) and the channel balance is good to 0.01dB, courtesy improvements to Rega's volume network.

### HOW IT COMPARES



- 1] Dynamic Output >> -20%
- 2] Speaker Tolerance >> -10%
- 3] Distortion >> 45%
- 4] Noise >> 50%
- 5] Compatibility >> 20%

### SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	61W	73W
Distortion (1kHz/8ohm)	Not specified	0.01%
Input sensitivity (CD/Aux)	220mV	243mV





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## ROTEL RA-1062

*Rotel's latest mid-market amp is a giant-slaying stunner*

Judged by the size of Far Eastern giants like Sony or Matsushita, Rotel is a small, family business – the last of its kind in Japan. But then Rotel does not manufacture motorbikes, elevators or even plasma TVs. Specialist hi-fi is the core and extent of its operation, so while the 'big boys' abandon two-channel audio, Rotel is set to make a killing with keenly-priced amps like the RA-1062. In practice, this two-tone product is an evolution of the RA-1060 with the addition of an MM phono stage, balance control and substantial WBT-lookalike speaker connectors.

A rotary encoder handles the six input options while conventional analogue controls are provided for rec-out selection, volume and balance adjustment, A+B speaker selection and a rather nifty 'contour' facility. Replacing the traditional bass/treble tone controls, this contour option offers two levels of broad bass enhancement, one of treble lift and a mixture of the two, not unlike a loudness boost.

Under the bonnet we find Rotel's customised power supply and tried-and-tested symmetrical power amp circuit. Nevertheless, as part of its evolution from the RA-1060, exhaustive listening tests have apparently resulted in some 60-odd passive components being changed, including key decoupling capacitors. The circuit configuration however remains unchanged. After all, if it ain't broke...

All the amps in this test were adjusted to a matched output level and yet the Rotel sounded biggest and loudest on the day. In general, it has an expansive quality but one that's also ruthlessly revealing of recordings that sound fast and loose. The Foreigner DVD-A sounded as immediate, hard and forward as we had remembered. We could hear the vocalist spitting into his microphone and the strings thrashed to their fibre – a powerful, acid sound but one that we suspected was pretty faithful to the source.

Pat Metheny's DVD-A simply exploded into space, the strings swelling to fill the room



with a gloriously rich and entertaining sound punctuated by the sparkle of percussion. Furthermore, rather than shower us with unruly information, its 'construction' of this huge sound remains both precise and orderly. The bass is very deep and powerful, the top end sweet with realistic detail – a very live and convincing sound that had our listeners tapping feet and drumming fingers with great appreciation. And, despite the fact that this amp has a 'louder' presentation than many, even Ryan Adams' compressed *New York, New York* had a warmth and ruddiness that offset the fierceness of strings and vocals.

Criticisms? Just this, that while the Dvorak symphony sounded very colourful there was a suggestion that "some instruments have been gone round with a highlighter". Otherwise, alongside Exposure's impressive 3010, this superb overall result turned out to be the apex of the day's listening.

If they don't know it yet, then Rotel's RA-1062 is an amp that its peers will grow to hate. It is solidly and reliably constructed, offers a generous assortment of features and delivers a powerful, purposeful and crisp sound that pushes all the emotive buttons. All this and more, but at a price that represents a slap in the face to its competition. **HFC**

### VERDICT

**SOUND >> 92%**

Overall, the RA-1062 represents the pick of this season's crop. Fabulous sound quality, useful features and the ability to drive almost any speaker in its path adds up to a winning combination.

**FEATURES >> 86%**

**BUILD >> 82%**

**VALUE >> 96%**

**HI-FI CHOICE 92%**  
OVERALL SCORE >>

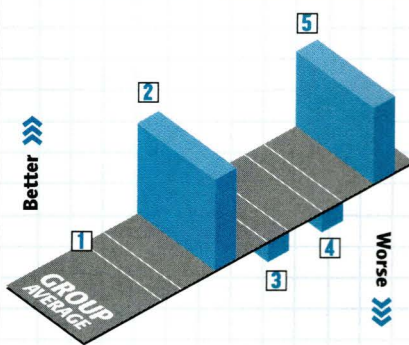


### LAB REPORT

This amplifier is not without some 'character'. First, its gain of +43.5dB is quite high so its volume control position is not always idealised with high (line) level sources. Shifts in channel balance can be expected. Distortion, too, is very consistent with power output (0.017% across the board) but climbs to 0.12% at 20kHz thanks to a euphonious 2nd harmonic. Rotel's sub -0.02ohm output impedance is useful, as is the 2x95W/8ohm and 2x145W/4ohm power output – pretty impressive for a mere "60-watter". Under dynamic conditions the RA-1062 is not hamstrung by protection, so peaks as high as 120W, 235W, 391W (14.0A) and a whopping 515W (22.7A) are possible into 8, 4, 2 and 1ohm loads, respectively.

The -0.1dB bass shelf will not be audible and the mere -1dB/100kHz roll-off demonstrates tremendous extension. The L2 contour provides a +6.8dB boost at 20Hz, L1 a +3-4dB lift from 80-20Hz while H provides a high treble boost amounting to +4.5dB at 35kHz. The LH option is a combination of L2 and H.

### HOW IT COMPARES



- 1] Dynamic Output >> 0%
- 2] Speaker Tolerance >> 60%
- 3] Distortion >> -15%
- 4] Noise >> -15%
- 5] Compatibility >> 50%

### SPECIFICATIONS

Measurement	Rated	Actual
Continuous power output (8ohm)	60W	95W
Distortion (1kHz/8ohm)	<0.03%	0.017%
Input sensitivity (CD/Aux)	160mV	184mV

# CONCLUSIONS

The 'mass' market two-channel amp is a dying breed, but specialist stereo models are on the rise...

**W**ith the two-channel amplifier market now largely abandoned by many of the mass producers, those products that remain are, almost overnight, addressing a potentially wider audience. And, because of the nature of these more specialised separates, the quality standard for the market has risen quite substantially. This is just one reason why we were disappointed by the Cyrus 6 which offers all the flexibility but a relatively mechanistic sound that found little empathy with the

panel. For all its modification, neither did the Marantz PM-17mkII M much exceed the performance of its forerunner. The Rega Mira 3, Musical Fidelity A3.2 and Bryston B-60R occupied a middle ground in our test, the latter hamstrung by its high price. Powerful but relaxed, the B-60R is a great late-night amp and was voted "most likely to wear a polo neck and medallion" by the panel. The A3.2 offers bags of space and detail but, in turn, can still sound a little diluted or washed out.

The edginess of Rega's Mira 3 gave it some advantage over the more neutral but dispassionate B-60R, for example, but there's also a 'fluffiness' that prevented us getting to grips with the music. Arcam's A85 is more articulate and extended in its musical reach while its greater power output casts a wider net over your choice of partnering speakers. The new Exposure 3010 and Rotel RA-1062 were the clear favourites, the latter winning its Best Buy thanks to the generous £600 ticket. During our listening

tests, Eleanor McEvoy's hybrid SACD/CD brought an instant reaction with the Rotel. Its sound was so much more open, natural and flowing, the layers of the keyboard, vocals and deep, deep bass line producing a beautiful and believable sound that had our listeners enthralled. But while the Rotel is brightly coloured, Exposure's 3010 offers a warmer perspective, enough to take the fizz out of the highest treble but never so obvious to bring a bloom to the mid or treble – another Best Buy. **HFC**

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## HINTS AND TIPS

⊕ Few hi-fi electronics give off their very best cold from the box. Give the amp 30 minutes to warm up before making a critical judgement.  
⊕ Don't assume the CD input is best. Other line level inputs (labelled 'aux' or 'tuner' etc) may

have a higher input impedance that better suits your player.  
⊕ Solid-state amps are far less microphonic than valve ones, but many benefit from a proprietary shelf or table. Never park your amp near the front of a speaker.

## AMPLIFIERS AT A GLANCE



MAKE MODEL	Arcam DIVA A85	Bryston B-60R	Cyrus 6	Exposure 3010	Marantz PM-17mkII M	Musical Fidelity A3.2	Rega Mira 3	Rotel RA-1062
PRICE	£800	£1,700	£600	£1,000	£1,000	£979	£548	£595
SOUND	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
FEATURES	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
BUILD	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
VALUE	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
OVERALL	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
CONCLUSION	More powerful than its 85W spec suggests, a sophisticated 'bruiser' that's clean, clear and confident.	Superb build quality and reliability, but £1,700 is a lot of money for an amp of this specification.	Like the Cyrus 5 before it, the uninspiring entry-level 6 loses out to the beefed-up Cyrus 8.	Good tolerance of tricky speakers together with a sweet and enthralling sound.	Superb material and engineering value, but with specialist models in the ascendant, it now sounds dated.	Minor technical and cosmetic improvements to the original A3 don't fully justify the A3.2's higher price.	Easy-listening style makes for a safe, long-term bet though it's unlikely to tackle the full colour of your music.	Fabulous sound quality, useful features and the ability to drive almost any speaker in its path.
KEY FEATURES								
LINE INPUTS	5	4	5	5	4	4	4	3
TAPE LOOPS	2	1	2	1	2	1	1	2
PHONO STAGE	Optional	Optional	No	Optional	MM/MC	MM/MC	MM/MC	MM
PRE OUT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
REMOTE CONTROL	Yes	Yes	Yes	Yes	Yes	Yes	Optional	Yes
LAB CONCLUSIONS E = EXCELLENT • G = GOOD • A = AVERAGE • P = POOR								
POWER	105W	75W	50W	120W	90W	130W	73W	95W
DYNAMIC POWER	150W <b>E</b>	115W <b>E</b>	72W <b>A</b>	166W <b>G</b>	97W <b>P</b>	173W <b>G</b>	100W <b>G</b>	120W <b>G</b>
CURRENT	22.6A <b>E</b>	17.4A <b>G</b>	15.4A <b>G</b>	18.7A <b>G</b>	10.8A <b>A</b>	9.1A <b>P</b>	12.7A <b>A</b>	22.7A <b>E</b>
DISTORTION	0.002-0.016% <b>G</b>	0.001-0.015% <b>G</b>	0.0005-0.025% <b>A</b>	0.005-0.1% <b>P</b>	0.001-0.007% <b>E</b>	0.001-0.015% <b>G</b>	0.003-0.04% <b>A</b>	0.017-0.12% <b>P</b>
NOISE	-85.0dB <b>A</b>	-83.0dB <b>A</b>	-81.9dB <b>P</b>	-80.5dB <b>P</b>	-86.2dB <b>G</b>	-85.5dB <b>A</b>	-88.5dB <b>G</b>	-83.0dB <b>A</b>

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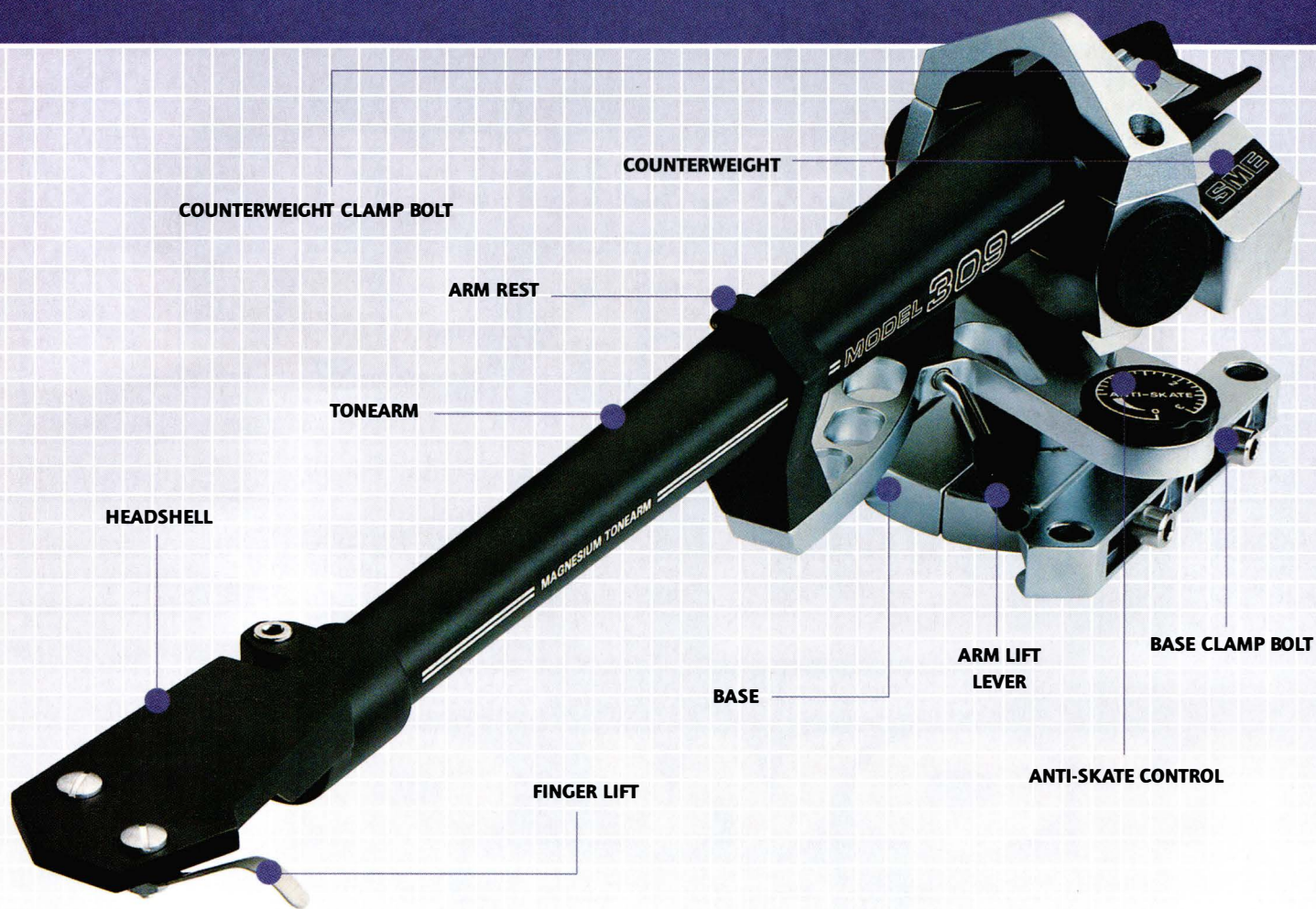
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FEATURE & GROUP TEST: JASON KENNEDY

# THE SCIENCE OF TONEARMS

*The idea is basic enough, but its execution is the source of much speculation, argument... and often endless adjustment. Here we explain, the how, the why, and overleaf, the which of tonearms*

**T**he tonearm is a fundamental part of every record player. When you consider that a vinyl groove contains modulations of less than a micron you begin to realise how much mechanical precision is required to do the job well. Music reproduction with vinyl is based on minute refinement of a crude process – a rock that is vibrated by undulations in a trough. Yet the resulting sound is more three dimensional, more natural and capable of greater realism than the best that CD can offer.

The tonearm is a linchpin in the evolution of music reproduction. Although the devices that held metal or thorn needles on gramophone players for 78rpm Shellac discs represent the first examples, the breed didn't really come

into its own until the electric stylus. At this point the arm changed from being a mechanical conduit for resonances which were acoustically amplified into a means of allowing an electro-acoustic stylus to trace a groove. Early examples were much bulkier than we see today because the first cartridges tracked at considerably higher downforces. You may have seen old tonearms with a stylus that could be rotated to play 78s with one needle and LPs or singles with the other.

By the late fifties more elegant and lightweight designs were being produced by the likes of SME – arms designed for the low compliance (the needle being mounted in relatively soft rubber) moving magnet cartridges of the day. This approach offered

superb tracking but tended to highlight the condition of the vinyl rather badly, which gave rise to the introduction of the more refined moving coil cartridges of the late seventies whose successors remain at the top of the vinyl tree today. Compliance on these cartridges tended to be lower (stiffer) and higher mass arms such as the Linn Ittok, Zeta and SME Series V were introduced to create a good mechanical match.

## THE INTRICACIES OF TONEARM DESIGN

The tonearm designer faces a number of difficulties in his quest to produce the perfect cartridge bearer. If we take the pivoted tonearm, as opposed to the rarer parallel tracker, it is not possible to have the stylus at

precisely the same angle as the groove (viewed from above) at more than one place if the stylus is fixed (there were designs in the fifties, like Burne-Jones, that attempted to get round this with a moving headshell, but the mechanical compromises outweighed the tracking advantage). The best that can be done is to have a stylus that's as small as is practical and to set it up for the least possible tracking error.

The second issue is resonance – tonearms have to deal with the energy that the stylus picks up from the vinyl yet remain mechanically as dead as possible – any resonances produced by the arm will also be picked up by the cartridge. One radical solution was created at the Cranfield Institute of Technology with a trough that sat across the record and contained silicone fluid which damped the headshell. This eventually became the Townshend Rock turntable, a deck so named because of the solidity of the bass it produces.

Most designers try to manage resonance by building extremely stiff, low-mass arms which cannot easily be excited by the cartridge. Examples include Rega's one-piece casting for the RB300 and SME's magnesium casting for the Series V. Wilson Benesch chose the self-damping qualities of carbon fibre to enhance the performance of its ACT1 tonearm. The Well Tempered arm on the other hand takes a radical approach by silicone-damping a disc attached to the 'bearing' end of the arm in a large trough, this 'bearing' being merely a nylon line from which the arm beam hangs.

Bearing design is another variable used to manage vibration. Common approaches include ball races (SME, Linn, Rega), gimbals (Breuer, Roksan) and a single point system called a uni-pivot that's like a spike in a cup, seen in the Naim ARO and Hadcock.

**CUSTOMISING YOUR TONEARM**

Correct tonearm set-up is critical to getting the best from your cartridge. Depending on the model, a number of adjustments may be made to 'tune up' your record player:

**TONARM SET-UP**

Getting the best out of a record player requires considerable attention to detail. Turntable set-up varies with the type but these break down into two basic varieties – suspended and non-suspended. The Rega P3 is a classic example of the latter, a solid plinth on rubber feet that merely needs a flat, level, non-resonant place to sit.

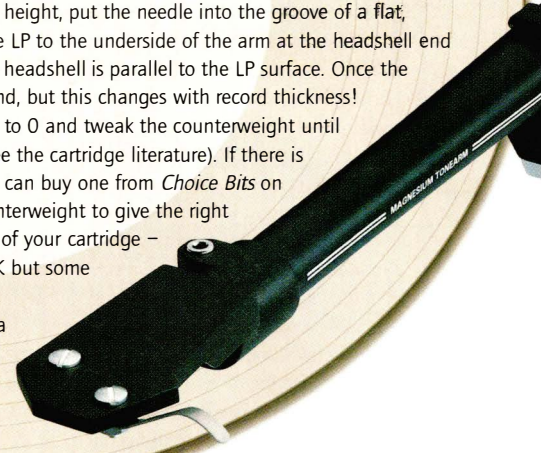
A suspended deck such as the Michell Gyro or Linn LP12 requires fine-tuning in the position and adjustment of its springs so that the suspended element, the subchassis, is well isolated from energy in the supporting furniture. As a general rule, sprung decks should show a smooth, pistonic bounce when tapped in the middle of the platter and should not oscillate when running. Setting up a tonearm involves three basic stages:

**Cartridge alignment:** Most arms come with an alignment protractor, a device to assist you in establishing the correct overhang and tracking angle at which to set the cartridge in the headshell. If you don't have one, the Polaris Plus gauge (£5.95 from the *Hi-Fi Choice Accessories Shop*, p83) is very easy to use. Start by putting the cartridge in the headshell about midway along the slots and roughly set the downforce and arm height. Then use the alignment protractor to ascertain where to set the cartridge in the headshell slots and at what angle. Flat-sided moving coil cartridges will magnetically hold a fine (0.5mm) Allen key along their sides which aids angle setting. Generally you are looking to achieve a compromise between two alignment points.

**Set VTA (vertical tracking angle):** If your tonearm can be adjusted for height, put the needle into the groove of a flat, unwanted record (it may get scratched) and measure the distance from the LP to the underside of the arm at the headshell end and compare this with the bearing end. You want to set the height so the headshell is parallel to the LP surface. Once the deck is working it pays to experiment with VTA to establish the best sound, but this changes with record thickness!

**Set tracking force:** If there's a downforce spring on the bearing, set it to 0 and tweak the counterweight until the arm is floating horizontally, then dial in the required downforce (see the cartridge literature). If there is no spring you'll need a gauge to establish stylus pressure (again, you can buy one from *Choice Bits* on p83, starting with Ortofon's T Force at £7.95), then adjust the counterweight to give the right force. Finally, adjust the antiskate pressure to suit the downforce of your cartridge – usually a figure around two thirds of the downforce will be OK but some

cartridges require less. Adjusting any parameters will affect performance, thus establishing the optimum setting is a matter of (careful) trial and error. Or you could follow the Rega ethos of fit and forget – it all depends on how much interaction you want from your record player.



- VTA (vertical tracking angle) – the angle at which the stylus sits in the groove viewed from the side, usually varied by raising or lowering the bearing end in its mounting.
- Downforce – the pressure the stylus exerts on the groove, usually adjusted by a spring on the bearing or by tweaking the counterweight.
- Tracking angle – the angle of the stylus in the groove viewed from above, usually adjusted by twisting the cartridge in the mounting slots of the headshell or moving the entire arm in a sled (eg SME).
- Azimuth – the angle of the stylus in the groove viewed from the front, usually non-adjustable but where possible it's done by twisting the headshell or arm tube.

However, some designers eschew adjustments to the VTA and other variables. Rega's Roy Gandy considers fiddling with such parameters to be the domain of the paranoid. Rega arms are not designed to be adjusted in this respect, yet while it's hard to argue that

tonearm set-up can become obsessive, the differences in sound brought about by changes in VTA are not subtle. A few arms (Triplanar, Townshend) even allow VTA adjustment while the record is playing so that differences in vinyl thickness and cutting head angles can be sorted.

Other tonearms get around the tracking angle issue by tracing the LP in a straight line. Linear or parallel trackers have appeared in electrical (Technics, B&O, Goldmund) and mechanical (Air Tangent, Eminent Technology, Souther/Clearaudio) variants over the years. The problem is that the stylus needs to 'pull' the arm across the record without its cantilever being deflected. Air Tangent used a sophisticated air bearing to achieve this which required a substantial pump. Good parallel trackers sound similar to electrostatic loudspeakers, phenomenally transparent with low distortion but limited bass power. Ironically, Edison's original wax cylinder format was a linear tracking system that could have offered the best of both worlds. **HFC**

**TONARM TIMELINE**

1877	1887	1898	1912	1920	1933	1948	1957	1959	1983
Thomas Edison records his voice on a cylinder phonograph.	Emile Berliner's first flat disc recording, using Shellac and a fixed 78rpm speed. The first acoustical tonearm is created.	Valdemar Poulsen invents the first magnetic tape recorder.	The Fortin electrical pick-up is introduced.	Electrically amplified and motorised gramophones take over from wind-up models for 78s.	Alan Dower Blumlein develops the first stereo cutting head.	The first twelve inch LP (long player) microgroove vinyl record is introduced.	The vinyl stereo LP becomes a commercial reality.	The first SME tonearm is produced.	Eminent Technology produces the ET-1, the first air bearing linear tracking tonearm.

# TONEARMS

Neglecting your tonearm is tantamount to vinyl abuse. Here are six worth your consideration



£600 ☎ 0141 307 7777 🌐 www.linn.co.uk

## LINN AKITO

Linn's entry-level tonearm is not entirely dissimilar to Rega's famous RB250 – it has the same bearing cradle and cast tube, and similar plastic armrest. However, it differs in its use of a separate collet-style arm base that allows considerable height variation.

The Akito is a smartly finished nine-inch arm with ball bearings and simple balance-style downforce, the counterweight featuring a calibrated dial that should be turned to zero when the cartridge is perfectly balanced. It will then allow you to accurately set the desired downforce by turning the whole counterweight toward the bearing.

The headshell features the third hole mounting point used by Linn cartridges and an integral fingerlift. Unusually long cartridge tags are supplied with stiff casings on their fragile

connections to avoid damage. These casings had to be teased off in order to properly mount our Reson Recca cartridge, but presumably Linn's own MM needle, the Adikt, is a happier fit.

On the Michell Orbe, the Akito turned in a respectable and entertaining performance – not bad considering it's designed for a rather different turntable (the Linn LP12). Lively but not brash, the Elbow test track sounded smooth if a little lightweight, with an emphasis on the cymbals rather than the bass guitar and drums. The vocal was impressive though, and the bass had depth if not power. As one might expect of the brand, it also plays an enthusiastic tune, which may be related to a slight forwardness in the upper midrange.

The Akito unveiled the spaciousness of the Peace Orchestra record with bass that, while not

quite as tight as it could be, was at least well textured. Joni Mitchell's *Court And Spark* retained its warmth and organic tone, and proved to be highly engaging. A spin of *Rachmaninov's Symphonic Dances* revealed a more robust side to the Akito, which if not the subtlest of arms has a broad range of capabilities and no shortage of enthusiasm.

### VERDICT

SOUND >> 68%



FEATURES >> 80%



BUILD >> 80%



VALUE >> 60%



### CONCLUSION

Easy to install and use, its sound is better suited to wood-based decks like the LP12 but it is capable of good results in most situations.

### HI-FI CHOICE OVERALL SCORE

>> 72%



£346 ☎ 020 8953 0771 🌐 www.michell-engineering.co.uk

## MICHELL TECNOARM

Turntable maker Michell Engineering was the first company to source and install Rega tonearms, so founder and designer John Michell has had plenty of experience with the genre. So much so that he has come up with his own variation on the Rega RB250.

Alterations include a wiring loom made by Incognito that uses Cardas copper cabling with non-magnetic phono plugs and extensive shielding. But the most obvious change is to the counterweight. The usual circular weight has been replaced by a (lockable) counterweight holder which slides back and forth with the aid of a threaded adjuster. This holder accepts two alternative weights, one for cartridges weighing 3-6g and the other for those between six and 13g. This is because it is best to have the counterweight as close as

possible to, and below, the bearing. Our Reson Recca cartridge lies on the cusp at 6.3g so we used the larger counterweight.

The Tecnoarm includes VTA adjustment with a threaded collar on the arm base. Similar to the Origin Live but easier to use, it still requires good access to the underside of the arm base – not a problem on Michell turntables.

Installed on the Orbe, rather than the Tecnodec it was created for, the TecnoArm put in a robust performance. Bold and energetic, it's not afraid to paint a vivid picture of the performance. Ruggiero Ricci's violin on *La Campanella* sounded strong and rich, his playing enthusiastic and colourful. It's not perhaps as refined as some of the (more expensive) competition but certainly draws you into the music and won't let go. The bass in

particular is very appealing – on the Joni Mitchell track for instance it was strong and remarkably deep, though not quite in SME territory. The arm is also very good at revealing scale when the recording allows – there's a sample of a children's playground on the Elbow track where the sound expands in all directions, and the Michell certainly makes the most of it.

### VERDICT

SOUND >> 70%



FEATURES >> 75%



BUILD >> 80%



VALUE >> 85%

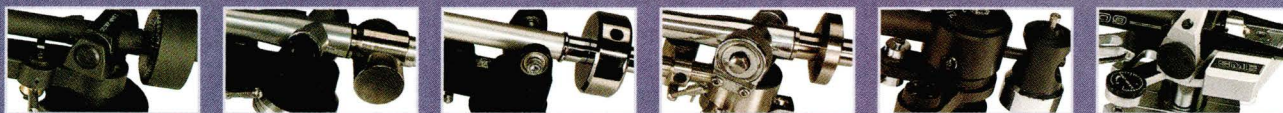


### CONCLUSION

Michell has done a fine job of refining a good arm and keeping it at a sensible price. If you want energy from your vinyl it's excellent value.

### HI-FI CHOICE OVERALL SCORE

>> 78%



£599 ☎ 02380 578877 🌐 www.originlive.com

## ORIGIN LIVE SILVER

**O** rigin Live is a small British company that has made all manner of record player related components and accessories over the years. The Silver is the least expensive of three tonearms and is based around a Rega RB250 arm base system and bearing cradle. OL has substituted its own bearings, arm tube, headshell, counterweight and cabling. These give the Silver a less slick appearance than you get with bigger brands but a certain Caterham-style pared down appeal.

It comes with pretty comprehensive instructions but is inherently straightforward to set up. The only complication one might encounter is adjusting VTA on an enclosed plinth turntable. OL has made an adjustable collar that allows the base to sit at alternative heights but requires access to the underside to

do so. The thick arm cable might also be a nuisance on suspended decks, though a large P clip is supplied. The cable is terminated in Bullet Plugs at the phono stage end and large spring terminals at the cartridge end.

Arm cables aside, it's hard to see why this should be a better arm than the Rega it is based upon. However, the bearings are fitted to the cradle rather than the tube and the construction is rather different, so it should at least sound... *different*.

On Mitchell's Orbe turntable the Silver put in a tightly focused performance that suited some material better than others. Ricci's violin didn't expand as much as it can, the ambience of the room not being fully portrayed and the piano not as deep in the soundstage. Instrument tone is good however, with sparkling highs. Likewise,

Mitchell's voice is warm and rich, the listener's attention drawn to the lyrics as much as the playing. The Peace Orchestra track revealed a good portion of its detail, bass being relaxed but rich and well-timed with it. The overall balance seems highly natural but imaging could be more expansive, the Elbow track seeming almost compressed in this respect.

### VERDICT

SOUND >> 72%

FEATURES >> 75%

BUILD >> 62%

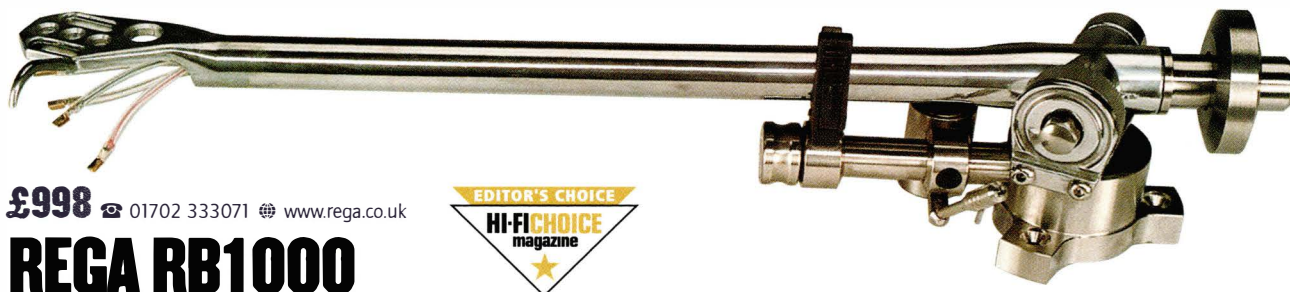
VALUE >> 60%

#### CONCLUSION

An interesting rebuild of a classic arm which offers useful VTA adjustment and a decent if not mind-blowing sonic alternative.

#### HI-FI CHOICE OVERALL SCORE

>> 67%



£998 ☎ 01702 333071 🌐 www.rega.co.uk

## REGA RB1000



**T** he RB1000 is the ultimate incarnation of the RB300/250, the most popular tonearm in the hi-fi world. You'll know it by the polished finish of the cast arm tube and the machined stainless steel base. It also eschews the usual single large nut fixing, using a three-bolt approach to improve rigidity.

This is more than an aesthetic exercise – the RB1000 is built to an extremely high standard, with the finest of tolerances. The bearings, said to be the highest quality available, are graded by hand and ear before being fitted to a stainless steel shaft with a tolerance of five microns. They are then assembled using interference fitting to achieve zero tolerance.

Each arm goes through a rigorous quality control testing process where every aspect of performance is assessed, 'time no object'.

As with all Rega arms, VTA adjustment is not an option. Indeed the owner's manual describes those concerned with this aspect of set-up as "neurotic/paranoid". You have been warned!

Using a custom armbase that gave near-correct VTA with our Reson cartridge, the Rega gave a highly impressive performance. Ricci's violin revealed its woody nature in realistic fashion, the interplay between he and his accompanist being unusually cohesive and temporally precise. It doesn't have SME-style bass but offers sparkle in exchange.

Elbow's efforts were likewise keenly accommodated, the voice in particular delivering a passion and depth rarely encountered. Fine details appeared that other arms seemed to miss, revealing the RB1000's unusual transparency. It also revelled in the

electronic beats of the Peace Orchestra, tracking the studio manipulations that give this album its shape and depth with ease.

Clearly Rega's selectivity and refinement of this popular design have paid dividends. Although the price is high, this is the best arm in the group – at least for this particular combination of turntable and cartridge.

### VERDICT

SOUND >> 95%

FEATURES >> 70%

BUILD >> 92%

VALUE >> 80%

#### CONCLUSION

The RB1000 is the smoothest and most transparent arm in this group – its refinement both sonic and mechanical is simply stunning.

#### HI-FI CHOICE OVERALL SCORE

>> 90%



£500 ☎ 01235 511166 🌐 www.roksan.co.uk

## ROKSAN TABRIZ ZI

**R**oksan makes two basic tonearms, the Tabriz and the Artemiz. The Zi version is halfway between the two – a Tabriz arm with a so-called 'intelligent' counterweight derived from the Artemiz. This is a distinctive, free-moving affair that hangs from the rear of the arm beam. The theory is that by de-coupling the mass you reduce the overall energy storing capabilities of the arm and allow it to channel resonance into the turntable chassis where it can be dissipated in a relatively unharmed way. It is also a good idea from a physics point of view to have the mass underneath the beam.

The Tabriz is built around an aluminium tube that is flattened out to form the headshell at one end, and is bonded into a gimbal bearing

housing at the other. It uses a similar collet arm base to the Linn but this is held tight by a single large, knurled fixing clamp rather than multiple bolts. The arm cable is made by Van Damme (presumably not Jean Claude) and features a short, highly flexible section before the plug for the arm base. This is to allow friction-free movement on sprung decks.

In Elbow's vinyl groove this arm sounded calm and open, with good image width and fine timing. Bass could be deeper but this is a natural and engaging device. It dug up more of the 'solidity' of the Peace Orchestra record for instance, reproducing the presence, depth and power in the material. The percussion sounded a little busy but not in an obtrusive way.

Joni Mitchell's velvet voice retained much of

its fine detail and subtlety, the piano was strong and well defined spatially and the dynamics were better portrayed than with lesser tonearms. Ricci's dramatically intoned violin likewise sounded sweet and enthusiastic, the gusto of the playing and the energy of the instrument making a strong impression.

### VERDICT

SOUND >> 80%



FEATURES >> 85%



BUILD >> 80%



VALUE >> 78%



### CONCLUSION

The Tabriz in its Zi incarnation is an extremely competent arm that should work very well with a range of decks.

### HI-FI CHOICE OVERALL SCORE

>> 80%



£767 ☎ 01903 814321 🌐 www.sme.ltd.uk

## SME SERIES 309



**T**he quality of engineering that goes into SME products is in a different league – it is simply astonishing that this arm costs so little when one looks at the competition. One of the nicest of many great features on the 309 is the sled-style arm base, and this combined with the gauge supplied makes cartridge set-up child's play. The headshell features holes rather than slots so you bolt the cartridge in, attach the headshell and then use the supplied tool to adjust the position of the whole arm in order to align the cartridge. This is as easy and accurate as the process gets.

The instructions that come with this arm are the most comprehensive in the business – a 24-page illustrated booklet tells you everything you need to know from drilling out an armboard to installing the cartridge.

The arm itself is a work of art in cast magnesium and steel. Roller bearings support the tapered arm tube which finishes in a sled for the underslung counterweight. This is adjusted and locked by Allen bolts which allow for precise downforce setting.

The 309's build quality is reflected in the sound it produces, which is calm, strong and unusually well extended in the bass. Even with the Ricci piece for piano and violin it was clear that bass performance had stepped up a grade. You can hear it in the extra space and image depth, and the improved solidity of individual sounds. Higher registers benefit from the arm's relaxed nature and there's no hint of midrange exaggeration or curtailment of treble.

Bass on Joni Mitchell's *Court And Spark* was gorgeous – clear and rich, with quieter

instruments equally well served. The 309 also invigorated the Peace Orchestra, pushing out the image both back and sideways, letting you revel in the rhythmic variations and phase effects. And it continued to dig the detail with Elbow, delivering the drum sound with clarity and following the groove with a rare fluidity.

### VERDICT

SOUND >> 92%



FEATURES >> 98%



BUILD >> 98%



VALUE >> 90%



### CONCLUSION

Phenomenal build quality is reflected in the assured yet highly resolved sound it elicits – you won't find a better tonearm for less.

### HI-FI CHOICE OVERALL SCORE

>> 95%

### HOW THE TESTS WERE DONE

Each of these arms was fitted with a Reson Recca (MM) cartridge and set up aboard a Michell Orbe SE turntable. We used a Polaris Plus alignment protractor, Mana spirit level and Shure downforce gauge. Phono amplification was courtesy of a Trichord Delphini

which fed a Bryston BP25 preamp and Gamut D200 power amp prior to Living Voice Avatar OBX-R speakers. We played several LPs including audiophile pressings (Joni Mitchell's *Court And Spark* on DCC). Supports and cables were by Townshend and Living Voice.



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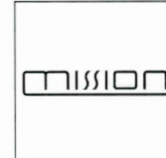
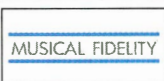
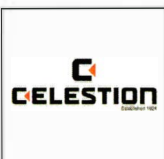
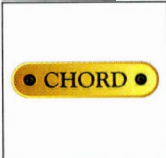
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# R

## RETRO

NAIM NAP250 STEREO  
POWER AMPLIFIER



For many years the most inspirational of all 'audiophile' power amps was the Naim NAP250. It was introduced in 1975, when Naim Audio was barely six years old, and finally replaced last year by an all-new NAP250 with a clean-slate circuit topology.

As power amps go, it was always a most improbable object of desire. Plain, black and relieved only by a single self-illuminated power switch, it was nothing to look at externally – or internally for that matter. It was conceived at a time when component insertion machines and the tidy, high-density circuit boards they enabled were a distant dream. The hand-loaded boards proved to be remarkably reliable, however, if by modern standards it all looked rather Heath Robinson. It is not altogether reassuring to discover that by his own admission, the designer knew nothing about amp circuits before the project's beginnings. He spent a year perusing books on circuit design before embarking on a creation aimed initially at the studio market. And once the amp was made he spent a further year making it work reliably.

The designer in question was Naim Audio's founder Julian Vereker, and the product first saw light of day as the NAP200 in 1973. Two years later, it was relaunched with a larger reservoir capacitor bank and four regulated supplies capable of delivering ten amps at 40 volts continuously, and with BDY 58 output bipolars. The cool-running amplifier was built around a large toroidal transformer whose laminations had the habit of buzzing – a common problem then, and explained by Julian at the time as the price you pay for a good sounding transformer. The NAP250 was rated at 70 watts into eight ohms, 125 watts into four ohms and around 400 watts on transient peaks.

Since its introduction there have been changes and improvements, but nothing fundamental, and even the earliest models remain fully serviceable to this day. Most that were sold – 7,407 between 1982 and 2002 – are thought to be still in everyday use. In 1982, Naim started fitting their own NA001 output devices, and two years later the transformer was upgraded to a 500VA unit, the same as is fitted to the NAP135. The familiar corporate green front was introduced in 1989, and

**“It was built around a large toroidal transformer whose laminations had the habit of buzzing – explained then as the price you pay for a good transformer.”**

that is more or less it. Other changes have been minor and infrequent, a testament to the strengths of the original design.

Without doubt what helped put the NAP250 on the map was Naim's association with Linn Products. Linn's MD Ivor Tiefenbrun used to demonstrate his LP12 turntable through Crown (later Amcron) studio amps, and Julian was able to demonstrate to him that even the lower spec NAP 160 had no problems trouncing them for breakfast, lunch and tea. Both products went on to hit the spot, each benefiting from the kudos of the other. There was a time when no self-respecting audiophile didn't either own a Naim 250 and LP12, or aspire to them.

But the 250 (and indeed the LP12) got there on talent. Even today it's remains desirable, though it has always had its limitations. The 70-watt power rating, surprisingly, wasn't one of them. It was always good at driving loads, including the full range of Linn speakers like the Sara and the Isobarik, which were never designed to make the amplifier's task easy. It always had an easy and generous output, a bold dynamic quality and the ability to provide an almost physical framework to the music. But it was never the most detailed or refined amp, though it was only in its later years that this shortfall became obvious. It has what is perhaps most kindly described as an old-fashioned sound: muscular, immensely controlled and tuneful, especially in the bass, but it simply doesn't resolve the kind of detail, or reproduce music with the finesse of the best contemporary designs. But this does nothing to undermine the fact that for a long moment in history it was simply the best – the one above all others that *defined* the high-end British power amplifier. **HFC**

*Alvin Gold*

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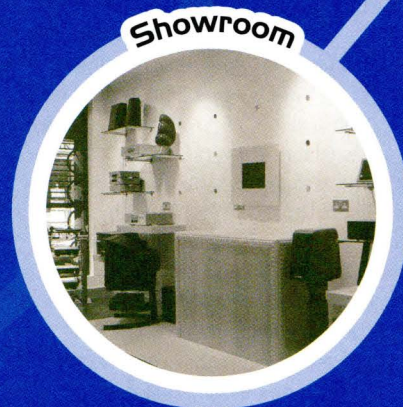
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# M

## MUSO

THE BEACH BOYS  
HOLLAND



By 1972 Brian Wilson had already become a tenuous presence in the ongoing franchise that was the Beach Boys. Live band members came and went, and Brian refused to tour, preferring to remain at home in California working in the studio.

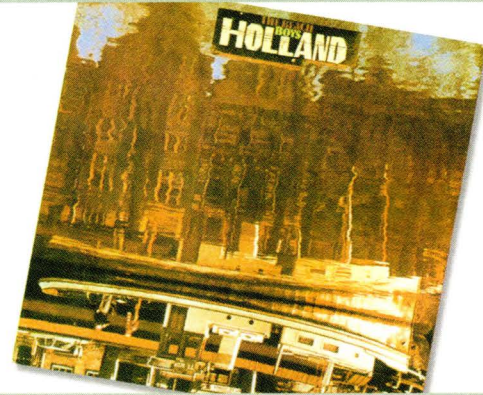
Sales of recent albums such as *Surf's Up* and *So Tough* had proved disappointing as the Boys struggled to reconcile their clean-cut boy band image with the realities of their changing world view and the increasingly erratic behaviour of their chief songwriter and sonic architect.

Following their European tour, the band, including South African session musicians Blondie Chaplin and Ricky Fataar, decided to stay on in Holland, keen to capitalise on the country's laid-back feel and lack of industry pressure. They rented a farmhouse in the middle of nowhere (Baambrugge, to be precise) where they could concentrate on recording a classic Beach Boys album free from distractions.

That was the plan. But the Boys' perfectionist attitude to recording meant that they couldn't be satisfied with any of the equipment that was available locally. So as well as flying out their families and entourage, they also commissioned a new studio to be built from scratch in LA, then dismantled and flown out at the earliest opportunity. Legend has it that every single flight from LA to Holland (four daily) contained Beach Boys equipment for over a month. Once the studio had been brought to Baambrugge, further work was needed to bring the farm building up to scratch, building false floors and walls.

The idea was that the Boys would record the basic tracks, overseen by middle brother Carl Wilson, who had been picking up his elder brother's slipping production mantle. Brian was meant to show up later to help produce and record some vocals.

He never made it. Increasingly paranoid about flying, it was an effort to even get him to the airport. The other Beach Boys waited at Amsterdam airport, and when he wasn't on the plane, panic ensued, especially since his ticket was found on an empty seat on the plane. He was eventually found sleeping on a couch in the duty free lounge at LA airport.



**“Holland may not be the polished gem that was *Pet Sounds*, but it’s not the unfinished mess that was *Smile* either.”**

While *Holland* may not be the lovingly polished gem that was *Pet Sounds*, it's certainly not the unfinished mess that was the abandoned *Smile* project either. Through what emerged as a slightly murky mix by Carl, some of the Beach Boys' best songs are here, not least the live favourite *The Trader* and Dennis Wilson's beautiful ballad *Only With You*.

But Warner/Reprise executives almost rejected the album over the inclusion of *Mt Vernon And Fairway (A Fairy Tale)*, Brian's cracked fantasy about a young boy and his magic radio, read (not sung) by Beach Boys manager Jack Rieley. A compromise was reached whereby it was included as a bonus seven-inch single given away free with the album.

Mike Love and Al Jardine's *California Saga* also caused some sleepless nights. A postscript to Brian's idea of containing all of American musical history on *Smile*, it was a three-part suite broken by spoken word passages recalling old California. The suits were still concerned about the lack of an obvious hit single and drafted in Brian's lyrical collaborator on *Surf's Up*, Van Dyke Parks, who apparently showed up at the office 'within minutes' with a demo tape of *Sail On Sailor*, an unreleased song which he and Brian had written. It was re-recorded with the band in LA.

Despite the huge expense of recording (half a million dollars is a conservative estimate), *Holland* was not the hit that had been hoped for. It did return them briefly to the Top 40, but despite some sterling tunes, it was still a world away from the public's popular perception of the good-time surfin' boys. It also marked Brian Wilson's last songwriting contributions to a Beach Boys album and the end of a sustained bout of creativity before they settled for being a greatest hits package, interspersed with the occasional clutch of below-par new material. **HFC**

Dave Oliver

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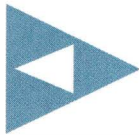
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# DIGITALIA

## UPSAMPLING VERSUS OVERSAMPLING



The audio and AV industry is not only driven by new technology but also the buzzwords that surround it. As far as CD player technology is concerned, 'upsampling' is becoming the new '24-bit' in the marketing dept's armoury of impressive logos. But there is often ambiguity in the use of the term upsampling, if not in the application of the technology itself. Just look at the amount of reviews with talk of upsampling and oversampling in one breath. Sure enough, there is plenty of common ground, but the terms are not necessarily interchangeable.

What we are really talking about is Sample Rate Conversion (SRC), where upsampling, in a nutshell, means that the output sample rate is higher than the input rate. The same is true of oversampling, although methods of execution vary according to its application. A basic 4x oversampling filter will, for example, introduce three additional samples between each pair of existing samples. In a CD player, these additional samples will increase the sampling rate from 44.1kHz to 176.4kHz. The very crudest form of 4x oversampling uses a 'step and repeat' method, adding three *identical* samples between each existing pair. There is no interpolation or filtering and no substantive reduction in 'digital images' immediately outside of the audio band.

Simple oversamplers may use a moving-average or comb filter to generate three mean (additional) samples at slightly higher resolution. The maths is straightforward with 2x oversampling – here two sequential 16-bit/44.1kHz samples are added, then divided by two yielding one extra sample at 17-bit/88.2kHz. For better performance, FIR filters provide very sharp attenuation in the stopband with minimum amplitude and phase effects at the corner frequency (typically at the top of the audio range).

These digital filters might be dealing with 128 samples at a time, so it's rare to find the technique used above 8x. Beyond 8x oversampling, simpler filters might be used to reduce overheads. Indeed, the noise-shaping oversamplers used in today's PWM/sigma-delta DACs will apply this technique just to accommodate the huge throughput of data caused by increasing the sample rate by 128x or 256x.



***“These DACs could be used ‘off the shelf’ in any CD player. But how much better to have that ‘96kHz’ or ‘192kHz’ logo?”***

So why is there this rash of 'upsampling' players on the market? Think back a few years ago when the manufacturers of DAC ICs offered chips that would accept a 24-bit digital word-length. CD player producers then scaled the word-length of the data to meet this new input capacity and – hey presto – the so-called '24-bit CD player' was born. Now we have DACs that not only accept a 24-bit word-length but also input sample rates of 96kHz and 192kHz for compatibility with new DVD-A sources.

These same DACs will also accept 44.1kHz inputs and could be used 'off the shelf' in any CD player. But how much better to have that prized '96kHz' or '192kHz' logo on your player? Hence the need for asynchronous SRC to elevate 44.1kHz data to 96kHz or 192kHz. So in practice, many upsampling players really use a form of asynchronous oversampling.

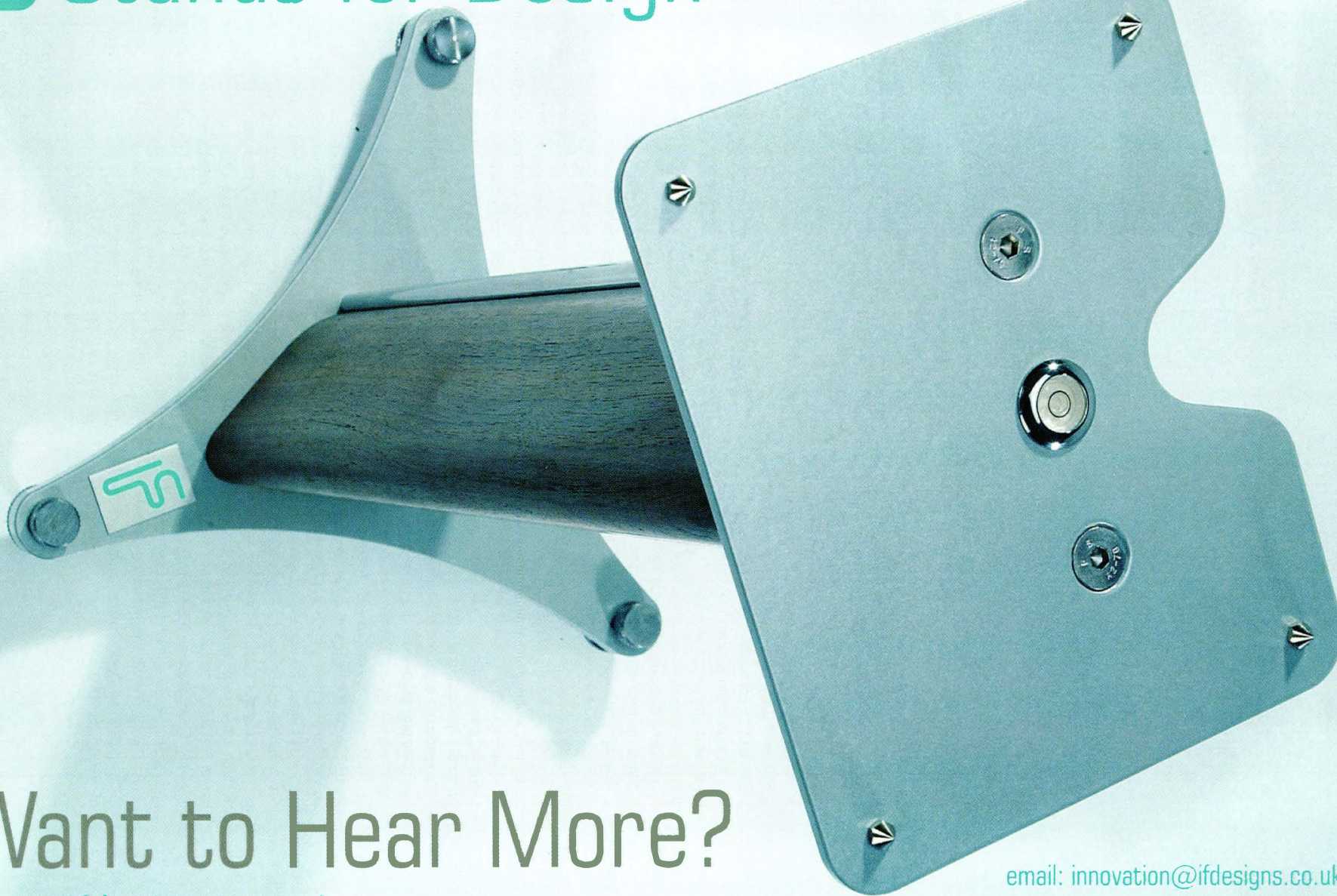
Asynchronous SRC is a technical headache as the 44.1kHz input data should be oversampled to a value that's divisible by both 44.1kHz and 96kHz before being downsampled to 96kHz. Because this results in an unwieldy data rate for digital filtering, most chips use a lower value and accept the resulting increase in noise and distortion. Some devices use clever techniques, such as noise-shaping on the timing errors, to reduce this distortion.

Either way, the vastly more complex process of asynchronous SRC, which also necessarily requires two master clocks, is only now being reduced to a price that's within the compass of domestic CD players. It's an example of manufacturers using powerful DSP technology simply because they can. Which begs the question: why not use synchronous upsampling from 44.1kHz to 88.2kHz and achieve virtually the same advantage of a 96kHz rate but without the mathematical migraine and increased susceptibility to jitter and other digital gremlins? **HFC**

*Paul Miller*

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**CONRAD JOHNSON 1** preamplifier with phonostage (£2,300) £1,300. Helios 1 CD player (£1,250) £600, Grado SP225 headphones £100. 07812 728201 (Devon).

**CYRUS 8** amplifier with PSX-R Power Supply. Brand new, boxed, unused. Unwanted competition prize, highly regarded £960. John 01224 322644 (Aberdeen).

**CYRUS CD7Q** CD player, £800 and Cyrus 7 Amplifier, £500. Both silver, 9 months old, light weekend use. Boxed with all bits, as new. 07971574899 or email [piers@seymoursinclair.co.uk](mailto:piers@seymoursinclair.co.uk) (London).

**DYNAUDIO CONTOUR 1.3 II** cherry, two years old, perfect condition £800. Jason 07831 271714, or 01883 345 305 evenings (Surrey).

**ECLIPSE TD512** speakers (pair), boxed, absolute mint condition, very highly reviewed £900 ono. Email [sally@sahall.fsnet.co.uk](mailto:sally@sahall.fsnet.co.uk) (West Yorks).

**HEYBROOK HEYLO** compact floorstanders £175, Denon 1055R CD player, alpha processing £125 both as new. 01278 792341 (Somerset).

**KIMBER ORCHID** digital balanced interconnect 0.5 metre £170 01772 314151 or 07751 475062 (Preston).

**KRELL KAV3001** integrated amplifier, 150wpc, remote, manual, boxed, as new condition, cost new £2,550, sell £1,500 ono 07976 833168 (Bath).

Arcam A85



## WANTED

**KIMBER** silver reference mains leads 01772 314151 or 07751 475062 (Preston).

**HI-FI YEARBOOKS** 1981, 1982. Others for exchange 01708 457961 (Essex).

**KRELL KSA MKII** £1,050, MF P270 £475, Meridian 601 Preamp £525, 602/606 £850. All mint. Bob 01279 724804 (Herts).

**LINN LP12** deck with basic plus arm and K9 cartridge, Naim Nait amp. Spondor prelude speakers with stands £250. 01726 813745 (Cornwall).

**LUMLEY S170** power amp (£2,250) £750. Two 4ft Kimber ref mains leads with wattgate 320 £85 each. Kimber base unit 3 £390. 01772 314151 or 07751 475062 (Preston).

**MARANTZ 4100** DVD player, recently serviced, (£400) £120 ono Yamaha DSP-A2 AV amp, (£900) £200 ono. Both are two years old boxed with manuals. Neil 07801 952305 or email [neilp6777@hotmail.com](mailto:neilp6777@hotmail.com) (Southampton).

**MARANTZ SR5200** AV receiver (£420 new) £240. Under 20 hours use, great reviews. Martin 0207 684 2046 or 07730 912080 (London, City).

**MERIDIAN 551** integrated amp, good condition £450. Acoustic Energy AE1 Mk II speakers, Rosenut finish, 18 months old, boxed, as new £450. Andrew 0131 226 2645 (Edinburgh).

**MERIDIAN 566 DAC** (£1,400)  
£500 01509 230694 (Leics).

**MUSICAL FIDELITY A3CR**  
preamplifier (£1,000) £550  
RCF4001 crt (£4,500) £1,000  
ono. Hand-built monitors 2.5 way  
8", Tannoy D/C 8" bass £250  
ono Dennis 01204 63086  
(Bolton).

**MUSICAL FIDELITY LP-5**  
MM/MC phono amp, boxed, mint  
as new £110. 01903 247 779  
(Sussex).

**MUSICAL FIDELITY NUVISTA**  
3D CD player, immaculate  
condition, boxed. £1,850. 01204  
460585 (eve) or 07941 424322  
(day) or email  
idbrunt@v21mail.co.uk (Bolton).

**MUSICAL FIDELITY X10D**  
missing link and two van den Hul  
D102MK III interconnects £80.  
01524 853165 (Lancs).

**MUSICAL FIDELITY XA-2**  
integrated amp, mint cond,



PMC OB1

boxed, manual, receipt, bargain  
(£500) £275ono. Stephen 01727  
893349 (Herts).

**NAIM 72** pre amp £350 and  
180 power amp £550, both in  
new condition with boxes etc.  
01843 834266 or 07812  
757437 (Kent).

**NAIM CD5** plus NAC122,  
NAP150, Flatcap 2 and Kimber  
Monocie XL speaker cable plus  
lots more. (£4,700) £3,100 ono.  
Mike 07713 760964 (West  
Midlands).

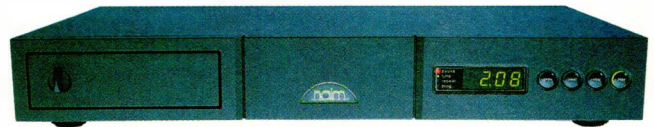
**NAIM INROS** (pair) as new  
£300, Naim NAC92R preamp,  
Naim NAP90 power amp as new  
£525. Jim 07818 023554  
(Milton Keynes).

**NAKAMICHI BX2** cassette deck.  
Fully serviced. Includes Chord  
Chrysalis interconnect (for Naim)  
£200 Ian 020 8642 7961  
(Sutton).

**ONKYO K-622** cassette deck  
midi size, black, three motor,  
three head, dual capstan. HX Pro  
plus Dolby B and C NR. Excellent  
condition, boxed. £180 ono.  
01865 858637 or email  
petercockroft@aol.com (Oxford).

**PIONEER PDR509** CD recorder,  
excellent condition, boxed  
complete with instructions. £100  
ono. Paul 01652 636712 or email  
johnsonpaul0@talk21.com  
(Lincs).

**PIONEER VSA AX-10** surround  
amp (£2,700) £1,550. Pioneer  
DV-747A universal DVD player  
with Techtronics multi-mod  
(£940) £420 email  
ianjastle@yahoo.co.uk (Notts).



Naim CD5

**PMC OB1** speakers, one month  
old, mint and boxed £2,000.  
01253 737567 (Blackpool).

**QUAD 306** amp/34 preamp.  
First class condition £250. Email  
ep@starscenes.co.uk.

**QUAD 34/ 306** pre/power  
amplifier boxed mint £450 ono.  
01422 345674 (Halifax).

**ROTEL** amplifiers, RA971 mkIII  
integrated, 60wpc, mint, £175.  
RB971 mkII power, 60wpc, mint,  
£150 or £300 for the two. David  
01843 231616 (Kent).

**SONUS FABER CONCERTINO**  
front-ported speakers plus their  
fixed stands. Wonderful sound,  
lovely walnut and leather finish,  
boxed £500 ono. 01865 858637  
or email petercockroft@aol.com  
(Oxford).

**SONY FA3ES** amplifier, Denon  
DCD/1290 CD player, both  
boxed and as new £100 each.  
Speaker cable Sonic Link AST 200  
bi-wire three metre terminated

pair £50. 0116 223 8926  
(Leicester).

**SUGDEN CD21** Mint condition,  
boxed, instructions and remote.  
Selling at half price due to  
upgrade to Wadia. (£1,050)  
£525 07791 080075 (London).

**TECHNICS RP-FDA100** stereo  
headphones £200 ono. Creek  
OBH-11 headphone amplifier  
£75 ono. Mr Greenway 01229  
470961 after 6pm (Barrow-in-  
Furness).

**VIDEOLOGIC DRX-601E DAB**  
tuner, absolutely brand new, in  
original packaging (still sealed  
and stapled), genuine unwanted  
competition prize £175+p&p  
01202 462837 or email  
atom2004@ntlworld.com  
(Bournemouth).

**WILMSLOW** audio microbass  
subwoofer £50. Pair of excellent  
used Focal TC90k tweeters £40  
ono. 01603 766668 or email  
faradaysound.co.uk  
(Norwich).

## BUYING TIPS

Buying second-hand can be a great way to pick up a bargain. A formerly expensive second-hand component might well prove a better long-term bet than a brand-new product if the price is right.

Do some research on which brands have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a dealer, you're unlikely to get any warranty, so it's up to you to ensure the fitness of any gear that you buy.

Usually, speakers should be less prone to breakdown than amps, and amps should be more reliable than CD players. But any abused component could be trouble – have a proper dem, and judge the seller as well as the goods!

## Welcome to the Hi-Fi Choice accessories shop

Choice Bits is the easy way to buy the best audio accessories available today. Simply pick up the phone, order online, drop us an email or fill out the order form opposite and pop it in the post. Ordering couldn't be simpler!

This month we've managed to round up some of the best mains-related products available. Giving your system a stable, clean mains supply will allow all of your components to function at their best and will therefore improve the overall sound.

Whatever your budget, there's an easy way to improve your system's supply. Using Caig DeoxIT, for example, at just under £14 a can, will raise the quality of signal transfer throughout your system. Protecting disused outputs with Cardas Caps and installing a good quality mains cable will also increase performance, helping you to enjoy your music more.

### SHOWCASE

#### IsoTek MainLine

High-quality mains cable with active mains filtering

#### Key Features

- High quality OFC shielded mains cable
- 5-6 stage filter module
- High power rated filter, will not compress dynamics
- 25-year guarantee



#### IsoTek MainLine High Quality Power Cord

The MainLine combines IsoTek's high quality OFC-shielded mains cable with a state-of-the-art 5-6 stage filter module rated at 10 amps (2300VA),

enough to drive the toughest of loads without dynamic compression. The module contains 27 individual components dedicated to mains purification. The beauty of the MainLine is that it offers a high-quality mains supply to individual components without huge financial investment.

The MainLine is available as standard (S) or with the addition of the sixth stage for either digital (D) or AV (AV). It comes with a 2m length of high-quality cable as standard.

**Only £199.95 (S)  
Or £224.95 (D/ AV)**

#### Cardas Caps



Cardas Caps fit over all unused female jacks in your stereo/AV system, keeping RFI distortion out and your noise floor lower.

Let your system function at its best with Cardas Caps.

**Only £34.95 (12Qty)**

#### AudioPrism QuiteLine Parallel AC Line Filter Special Offer - While Stocks Last



Improve the sound of your audio and video system by eliminating the noise on the power line with AudioPrism's QuietLine parallel AC filter. QuietLine has been specifically designed to eliminate RFI and EMI noise on your power line, acting as a shunt filter for noise and interference without affecting the flow of the power to your equipment. It's easy to install, simply plug modules into outlets adjacent or next to noisy appliances.

Special offer pack of four for only £79.95 – normally £34.95 each (£139.80 for four!)  
**QuietLine Pack (4Qty) only £79.95**

#### Caig DeoxIT Contact Cleaner



DeoxIT contact cleaner will give huge improvements throughout audio systems. DeoxIT features fast-acting deoxidising agents that clean, preserve and improve conductivity on all metal connectors and contacts. It will also remove traces of oxidation and corrosion.

**Only £13.95 (200ml)**

#### Furutech FI-20 Super High Quality Audio Grade IEC Connector



Manufactured from nylon and polycarbonate, all parts are processed with bronze or OFC and then 24k gold-plated to achieve a completely non-magnetic connector. The Furutech IEC plugs are the only connectors to use unique 'Earth Jumpers' to eradicate electromagnetic signals in all of the metal parts. Easy to install as a replacement connector, these will give your power cables the best transmission possible. Will accommodate cable sizes from 6.6mm to 18mm.

**FI-20 Gold IEC only £59.95**

#### IsoTek 1.5M Elite Mains Cable



Manufactured in the UK using Oxygen Free Copper and RFI and EMI-shielded to eliminate radio frequency pollution. The IsoTek Elite also features high-quality 24k gold FI-15 Furutech IEC connectors.

**Only £74.95 (1.5m)**

☎ **0870 240 7228**

🌐 **www.choicebits.co.uk**

## FEATURED PRODUCTS

AudioPrism QuiteLine (4Qty) Special Offer	£79.95	<input type="checkbox"/>
Caig DeoxIT Contact Cleaner (200ml)	£19.95	<input type="checkbox"/>
Cardas Caps (12Qty)	£34.95	<input type="checkbox"/>
Furutech FI-20 IEC 24k Gold IEC Connector	£59.95	<input type="checkbox"/>
IsoTek Elite Mains Cable (1.5m)	£74.95	<input type="checkbox"/>
IsoTek MainLine Power Cord	£199.95/£224.95	<input type="checkbox"/>

## ANALOGUE ACCESSORIES

Anniversary Ringmat	£69.95	<input type="checkbox"/>
A.R.T. Head Q-Damper	£16.95	<input type="checkbox"/>
Cardas 180g Frequency Sweep LP	£21.95	<input type="checkbox"/>
Clearlight Audio Record Puck	£49.95	<input type="checkbox"/>
Clearaudio Clever Record Clamp	£12.95	<input type="checkbox"/>
Clearaudio Deluxe Bubble Level	£21.95	<input type="checkbox"/>
Clearaudio Exact Stylus Gauge	£265.00	<input type="checkbox"/>
Clearaudio Stroboscopic Test Record	£24.95	<input type="checkbox"/>
Clearaudio Stroboscopic Light	£69.95	<input type="checkbox"/>
Clearaudio Record Clamp	£69.95	<input type="checkbox"/>
Electronic Needle Nose Pliers	£30.95	<input type="checkbox"/>
Express Machining Rega Stub End	£24.95	<input type="checkbox"/>
Express Machining VTA For Rega	£29.95	<input type="checkbox"/>
Goldring Strobe Disc	£1.85	<input type="checkbox"/>
Graham Bearing Cap	£259.95	<input type="checkbox"/>
Cyrascope Electronic Stroboscope	£224.95	<input type="checkbox"/>
John Michell Techno Rega Heavyweight	£67.95	<input type="checkbox"/>
Loricraft Stroboscopic Light	£49.95	<input type="checkbox"/>
Michell Engineering Record Clamp	£22.95	<input type="checkbox"/>
Michell Universal Dust Cover	£44.95	<input type="checkbox"/>
Origin Live Express Heavyweight	£89.95	<input type="checkbox"/>
Origin Live Rega Tonearm Upgrade Kit	£74.95	<input type="checkbox"/>
Opus3 4.1 Test Record	£17.95	<input type="checkbox"/>
Pebbles 'The Weight' Modification	£67.95	<input type="checkbox"/>
Polaris Plus Stylus Alignment Gauge	£5.95	<input type="checkbox"/>
Pro-Ject Bubble Level	£14.95	<input type="checkbox"/>
Ringmat Development's The Ringmat	£49.95	<input type="checkbox"/>
Ringmat's How To Set Up A Turntable	£7.50	<input type="checkbox"/>
Shure Stylus Force Gauge	£24.95	<input type="checkbox"/>
T Force Ortofon Tracking Force Gauge	£7.95	<input type="checkbox"/>
The Cartridge Man Digital Force Gauge	£199.95	<input type="checkbox"/>
The Cartridge Man Digital Level Gauge	£199.95	<input type="checkbox"/>
Universal Tweezers	£6.95	<input type="checkbox"/>

## DIGITAL ACCESSORIES

Allsop DVD Optimiser/Laser Lens Cleaner	£19.95	<input type="checkbox"/>
AudioPrism CD Blacklight™	£39.95	<input type="checkbox"/>
AudioPrism CD Stoplight	£19.95	<input type="checkbox"/>
AVIA Home Theatre Set-Up & Calibration	£39.95	<input type="checkbox"/>
A-Z CD Clips	£7.95	<input type="checkbox"/>
Chesky DVD Surround 5.1 Set-Up Disc	£24.95	<input type="checkbox"/>
Chesky Ultimate Demonstration Disc	£15.95	<input type="checkbox"/>
Compact Dynamics CD Plus	£14.95	<input type="checkbox"/>
Compact Dynamics CD UpGrade	£14.95	<input type="checkbox"/>
Densen DeMagic CD	£11.95	<input type="checkbox"/>
Furutech RD-1 Disc Demagnetizer	£349.95	<input type="checkbox"/>
Lasertrack CD2000 Set-Up Disc	£19.95	<input type="checkbox"/>
Marigo Orpheus CD Crossbow Mat	£79.95	<input type="checkbox"/>
Opus3 Showcase (HDCD)	£14.95	<input type="checkbox"/>
Ringmat CD Blue	£37.50	<input type="checkbox"/>
Ringmat The Statmat MkII	£19.95	<input type="checkbox"/>
Sound Improvement Disc (Model 14/15)	£17.95	<input type="checkbox"/>
Ultra Burn-In CD3000	£24.95	<input type="checkbox"/>
XLO Reference Test & Burn-In CD	£24.95	<input type="checkbox"/>
Tommy Larsen CD-Lift™ (Green/Grey)	£14.95	<input type="checkbox"/>

## CD STORAGE PRODUCTS

CaseLogic Hardshell CD Case	£5.95	<input type="checkbox"/>
CaseLogic Koskin 32 CD Wallet	£9.95	<input type="checkbox"/>
CaseLogic Koskin 64 CD Wallet	£14.95	<input type="checkbox"/>
CaseLogic Koskin 88 CD Wallet	£19.95	<input type="checkbox"/>
CaseLogic Koskin 208 CD Wallet	£34.95	<input type="checkbox"/>
CaseLogic Nylon 208 CD Wallet	£29.95	<input type="checkbox"/>
CaseLogic Nylon CD Wallet 88	£17.95	<input type="checkbox"/>
CaseLogic ProSleeves®	£5.95	<input type="checkbox"/>
Tommy Larsen Multi Media Rack	£24.95	<input type="checkbox"/>

## CARE/ CLEANING PRODUCTS

Allsop Carbon Edge Laser Lens Cleaner	£14.95	<input type="checkbox"/>
Allsop CD & DVD Fast Wipes	£4.95	<input type="checkbox"/>
Allsop CD Scratch Repair Kit	£12.95	<input type="checkbox"/>
Allsop Radial CD Cleaner	£10.95	<input type="checkbox"/>
Caig OpticALL	£13.95	<input type="checkbox"/>
CD Radial Cleaner	£9.95	<input type="checkbox"/>
Clearaudio Carbon Fibre Record Brush	£13.95	<input type="checkbox"/>
Goldring Deluxe Record Brush	£14.95	<input type="checkbox"/>
Goldring Exstatic Record Sleeves	£11.95	<input type="checkbox"/>
Last All-Purpose Record Cleaner	£39.95	<input type="checkbox"/>
Last Power Cleaner	£39.95	<input type="checkbox"/>
Last Record Preservative	£39.95	<input type="checkbox"/>
Last Stylast Stylus Treatment	£29.95	<input type="checkbox"/>
Last Stylus Cleaner	£19.95	<input type="checkbox"/>
Lyra SPT Stylus Cleaner	£24.95	<input type="checkbox"/>
Me-We CD Sound Elixir	£9.95	<input type="checkbox"/>
Miniature Vacuum Cleaner	£14.95	<input type="checkbox"/>
Nagaoka Antistatic Record Inner Sleeves	£14.95	<input type="checkbox"/>
Optrix CD Cleaner & Clarifier	£16.95	<input type="checkbox"/>
Onzow Zerodust	£29.95	<input type="checkbox"/>
ProGold (ProGold 20ml)	£13.95	<input type="checkbox"/>
Ross Mini Disc Head & Lens Cleaner	£14.95	<input type="checkbox"/>
Turbo Mini Vac	£16.95	<input type="checkbox"/>
Unbranded Inner Sleeves	£24.95	<input type="checkbox"/>

## ISOLATION RACKS - CONES

A.R.T. Q-Dampers	£69.95	<input type="checkbox"/>
Atacama Audio Equinox Series	£139.95	<input type="checkbox"/>
Atacama Audio Nexus Series	£49.95	<input type="checkbox"/>
AudioPrism 2.5 Iso-Bearings	£54.95	<input type="checkbox"/>

AudioPrism 3.3 Iso-Bearings	£84.95	<input type="checkbox"/>
Clearaudio Spikes (Each)	£12.95	<input type="checkbox"/>
Clearlight Audio RDC Aspekt Rack		
Black 4 Shelf Rack	£549.95	<input type="checkbox"/>
Clearlight Audio RDC Aspekt Rack		
Black 4 Shelf Rack Cherry Legs	£599.95	<input type="checkbox"/>
Clearlight Audio RDC Aspekt Rack		
Grey 4 Shelf Rack Beech Legs	£649.95	<input type="checkbox"/>
Foculpods Support Systems (4)	£14.95	<input type="checkbox"/>
IXOS Sorbothane Feet	£19.95	<input type="checkbox"/>
Michell Tenderfeet Small	£12.95	<input type="checkbox"/>
Michell Tenderfeet Tall	£14.95	<input type="checkbox"/>
Michell Tenderfeet Cups	£12.95	<input type="checkbox"/>
Nordost Pulsar Points (Aluminium)	£54.95	<input type="checkbox"/>
Polipods Support Systems (8)	£14.95	<input type="checkbox"/>
RDC 1 Cones (Qty 4)	£39.95	<input type="checkbox"/>
RDC 2 Cones (Qty 4)	£29.95	<input type="checkbox"/>
RDC Cone Cups (Qty 4)	£17.95	<input type="checkbox"/>
RDC 3 Cones (Qty 4)	£44.95	<input type="checkbox"/>
RDC 4 Cones (Qty 3)	£119.95	<input type="checkbox"/>
RDC 5 Cones (Qty 4)	£119.95	<input type="checkbox"/>
RDC SPP Platform	£109.95	<input type="checkbox"/>
RDC Super Position T	£199.95	<input type="checkbox"/>
RDP Feet	£54.95	<input type="checkbox"/>
Ringmat Feet MkII	£74.95	<input type="checkbox"/>
Spikes M6/M8 (4x M6/M8)	£7.95	<input type="checkbox"/>
Stands Unique Carbon Fibre Isolators	£24.95	<input type="checkbox"/>
Superpods Support Systems	£24.95	<input type="checkbox"/>
Townsend Audio Seismic Sink Rack Model One (530x400mm / Internal 430x400mm 3 Tier)	£670.00	<input type="checkbox"/>
Townsend Audio Seismic Sink Rack Model One (530x400mm / Internal 430x400mm 4 Tier)	£810.00	<input type="checkbox"/>
3D Seismic Isolation Platform	£234.95	<input type="checkbox"/>
Voodoo AIRTEK (430x360mm / 20kg)	£199.95	<input type="checkbox"/>
Voodoo AIRTEK (490x430mm / 45kg)	£249.95	<input type="checkbox"/>
Voodoo AIRTEK (510x480mm / 75kg)	£299.95	<input type="checkbox"/>

## AUDIO BOOKS

Home Theatre For Everyone	£19.95	<input type="checkbox"/>
How To Set Up And Fine Tune A Turntable	£7.50	<input type="checkbox"/>
The Classical Long Playing Record Book	£119.95	<input type="checkbox"/>
The Complete Guide To High End Audio	£24.95	<input type="checkbox"/>
The LP Is Back	£9.95	<input type="checkbox"/>
The Ringmat Support System	£7.50	<input type="checkbox"/>

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# definitive audio

Peddlers of fine wares, including:

**Record players:** SME models 10, 20 and 30; Kuzma Stabi, Stabi Reference; Nottingham Analogue Interspace, Space Deck, Hyperspace and Dais; Michell Orbe; VPI AriesScout; Avid Volvere, Sequel and Acutus.  
**Arms:** Rega 300/600/900; SME Series IV and V; Kuzma Stogi; Triplanar.  
**Cartridges:** VanDenHul Grasshopper and Colibri; Kuzma KC Ref; EMT; Reson Reca and Elite; Cartridge Man Musicmaker; Benz-Micro including Ruby Open Air; Kondo lo J.  
**Amplifiers:** Border Patrol; Canary; Sugden; Art Audio; Monarchy; Western Electric; Icon; Tom Evans Audio Designs; SJS.  
**CD Players:** Wadia; Sugden; Primare; Resolution.  
**Louspeakers:** Living Voice; Vitavox; Lowther.  
**Cables and Tables by Living Voice.**

Sale of part exchanged and ex-dem items

	Sale	New
EAR MC3 moving coil transformer 4/12/40 ohm switchable - as new	£500	£750
Rega Planet CD player + remote	£300	£480
McCormack mc phono stage - new - bargain	£400	£600
Tom Evans Groove - mc phono stage - 500 ohms, 0.2mV - as new	£1500	£1850
Clear Audio Solution - no arm SME cutout - very clean - giveaway	£400	£900
Horning Agathon - 98dB 2 way horn - Mahogany - new PM6As (alnico)	£1600	£3800
Canary Audio CA 301 - 300B - 22 watts - juicy and fabulous - new valves	£3000	£5400
Canary Audio CA 608 standard - blue - 25 watt class A integrated - superb	£1700	£2250
Canary Audio CA 300 - single ended monos - valve rect. - 8 watts	£1900	£3500
Jamo Concert 8 - loudspeakers - 2½ years old - maple - spotless - giveaway	£600	£1365
Townsend Seismic - speaker stands - ugly and bouncy	£400	£695
Linn LP12 + Lingo - black - Alphason HR100 - Music Maker - tidy	£700	
Audio Innovations Series 1000 - silver circuit - 50 watts class A	£900	£2500
Nottingham Analogue - Mentor turntable with Reference PSU - LV mat	£1950	£3580
Nottingham Analogue - Dais turntable with LV mat - lovely - as new	£2500	£3400
Nottingham Analogue - Interspace turntable - RB300	£500	£768
Nottingham Analogue - Horizon turntable - RB250 - new	£400	£590
Kuzma Stabi S turntable - Stogi arm - new unboxed	£750	£1100
AudioNote Soro - phono integrated - serviced/new valves - smooth & sweet	£500	£1900
Audio Research LS2 B - l-line pre - fine condition - giveaway	£900	
Pink Triangle PT TOO Export - black - vgc - great sound - giveaway	£300	
B&W DM603 S3 - black - very good condition - unboxed	£350	£600
Snell Type Eli - walnut - industry classic - new bass-mid drivers		
high mass Pirate stands - lovely sound - 92 db per watt sensitivity	£700	
Snell Type JII - french polish walnut - industry classic - very nice sound	£400	
AudioNote ANJ-D - walnut - Huygens high mass stands	£600	£1400

## LIVING VOICE



### Auditorium Avatar

Hi-Fi Plus *Editor's Choice*  
 Hi-Fi Plus *Product of the Year*  
 Hi-Fi Choice *Editor's Choice*

"The Avatar is a near perfect balance of size, bandwidth, efficiency and tonal refinement. Its slim lines and small footprint deliver a genuine 94db sensitivity, and excel when it comes to delivering the scale, vibrance and colour of the music. Its unobtrusive quality allows it to cut straight to the heart of a performance, unlocking the music trapped in the recording, whilst its refinement makes it equally at home with both basic and surprisingly expensive amplification."

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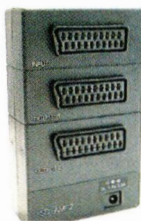
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# HI-FI CHOICE BUYER'S BIBLE



Welcome to the *Hi-Fi Choice Buyer's Bible* – the ultimate guide to the very best high performance hi-fi and AV gear you can buy. Here you'll find all our favourite current products listed under easy to use categories, together with useful information on what to look for and how to get the most from your components.

#### Reviews you can trust

Our test results are the most reliable in the business. We employ the most experienced reviewers and use the most thorough 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 multichannel disc players. Whether hi-fi stereo or high performance surround and vision, these components will take you a step closer to reality.

#### How to use this guide

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

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# CD PLAYERS

Audio disc players for music only



Despite the emergence of new formats and the resurgence of an old one (vinyl), CD is still the king of formats if you require breadth of choice. And despite the fact that other sources will play CDs, if you want to hear your discs at their best there's little substitute for a dedicated CD player.

It's also the most enduring format on the market. Despite high-resolution contenders like SACD and DVD-Audio, nothing has been able to undermine this universally popular format.

CD players work by reading a stream of 1s and 0s off a disc that spins at a constantly changing speed (to counteract the increasing length of 'groove'). This bitstream is then digitally filtered before undergoing digital-to-analogue conversion in the DAC (D-to-A convertor). Thereafter, the signal is filtered



again before being amplified and sent to the output sockets.

The processes of reading the disc and converting the data are sometimes split between a CD transport and separate DAC in so-called two-box players. A popular approach with very high-end kit, this separates the electronically noisy elements from the sensitive analogue stages, but can introduce timing errors known as jitter, therefore one-box players usually offer best results where budget is a consideration.

## SUPER AUDIO CD



SACD or Super Audio CD is a relatively new audio-only format introduced by Sony and Philips. It offers higher resolution than CD in the form of considerably greater bandwidth and improved dynamic range. It also has the potential for uncompressed six-channel surround, and most new discs take advantage of this. SACD discs are usually hybrids and will play on normal CD players, but you won't be able to appreciate their highest quality or their multichannel capability without an SACD-compatible player. Some SACD players also play DVD and even DVD-Audio – these are listed in our DVD section.

## Q&A

### WHAT'S A DAC?

A DAC or digital-to-analogue convertor is a fundamental part of any CD player and converts the digits read from the disc into an analogue music waveform which is amplified to line level.

### WHY HAVE SEPARATE TRANSPORTS & DACS?

Discs are read by a transport or disc drive, which creates radio frequency 'noise'. Separating the DAC means the conversion can be done with less interference.

### CAN I USE AN OUTBOARD DAC WITH MY INTEGRATED CD PLAYER?

Yes, if it has a digital output – and most do.

### DO I NEED DIGITAL CABLES FOR A CD PLAYER?

No. All analogue cables are suitable for connecting a CD player to an amp. Digital specific cables with 75ohms impedance are useful when connecting the player to a digital recorder or DAC.

### WHAT IS OVERSAMPLING/UPSAMPLING?

Oversampling involves multiplying the sampling frequency by a whole number, usually between four and 32, but sometimes higher, and is designed let the DAC to work in a more linear fashion. Upsampling is where the data stream is stretched out by interpolation and is typically used to refer to large changes in sampling rate such as from 44.1 kHz to 192kHz.

### CAN I PLAY SACDS ON A NORMAL CD PLAYER?

Yes. The vast majority of SACD discs are hybrids, with a CD layer that all CD players can read.

### CAN I PLAY DVDS ON A CD PLAYER?

No, the same applies to DVD-As. But you can play CDs and DVD-As on normal DVD players.

## TOP BUYS



### Marantz CD6000 KI Signature £500

An affordable high-end machine, this very impressive player has it all: brawn, finesse and class. Not to mention the full range of features.



### Meridian 507 £1,195

The entry-level player from British digital audio specialist Meridian is an absolute peach – a transparent and detailed sound, and superb build quality to boot.



## Our favourite CD PLAYERS

GROUP TEST BEST BUY 
  GROUP TEST RECOMMENDED 
  EDITOR'S CHOICE 
  NEW GEAR REVIEW

### Audio only CD and SACD players

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS							ISSUE NUMBER
				SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	CD-RW COMPATIBLE	CD TEXT	BAL ANALOGUE OUT	HEADPHONE SOCKET	
<b>UP TO £1,000</b>											
RE	Arcam CD92	900	High-resolution player needs a touch of spit and polish to be completely convincing	●	●		●				212
EC	Copland CDA 822	1,598	Well built and carefully thought out, if you go for the more sophisticated musical forms it is superb value	●			●		●		241
RE	Cyrus CD7	800	New Cyrus player has strong all-round attributes to match its good looks	●							212
RE	Exposure 2010	600	Undistinguished in the final analysis, but the 2010 nevertheless is a return to form for this famous marque	●	●	●	●				231
RE	Linn Genki	995	Explicit, rather bright-sounding player with strong multiroom appeal							●	212
RE	Marantz CD6000 OSE LE	300	Detailed, well rounded, at home in any musical context – a real bargain	●	●		●		●	●	217
RE	Marantz CD6000 KI Sig	500	Impressive mid-market player is an unusually accomplished all-rounder, and is also well built	●	●		●		●	●	231
RE	Marantz CD-17 MkII M	800	Insight, detail and rhythmic precision make the modified CD-17 MkII M a top-draw player at the price	●	●	●	●				243
RE	NAD C541i	330	High-octane player has the occasional rough edge, but is remarkable value for money	●	●	●					231
RE	Rotel RCD-02	375	Against some strong competition in the same price area, the new Rotel generally holds up well	●		●					231
RE	Rotel RCD-1070	495	Technically sound and well equipped, this player lacks a little excitement but shows excellent precision	●							226
<b>ABOVE £1,000</b>											
EC	Arcam FMJ CD33T	1,300	Engaging mix of refinement and muscle from svelte FMJ series CD23T replacement	●	●	●	●				243
EC	Audionet ART V2	2,300	Built to last forever, this CD has a dark natural sound with excellent bass and would be cheap at twice the price!	●			●				231
RE	Classé CDP-10	1,599	Very natural yet capable of revealing the finest of details in a coherent and engaging manner	●			●		●		238
RE	Exposure XXII	1,175	Natural sounding player, great with voices and acoustic instruments and makes for engaging listening	●	●	●					238
EC	Gamut CD1R	2,350	Natural, precise and impressively 3D sound that marries precision with emotional communication	●			●				240
EC	Krell KPS 25sc	24,998	One of the finest CD players available, this is also a state of the art preamplifier with Cast interface technology	●	●	●	●		●	●	236
RE	Marantz CD17 MkII KI Sig	1,200	Fabulously built player adds musical integrity to an already impressive basic model (the CD17 Mk II)	●	●						226
EC	Mark Levinson No390S	6,495	Superbly built and comprehensively equipped with genuinely high-resolution sound	●	●	●			●	●	231
RE	Meridian 507	1,195	Unusually precise and considered performer that sounds as different as the discs you stick in the drawer	●	●	●					238
EC	Musical Fidelity CD-PRE <sup>24</sup>	2,000	Substantial player incorporates upsampling and extensive analogue and digital preamplification facilities	●	●					●	229
EC	Musical Fidelity Tri-Vista	4,000	Limited edition stereo-only SACD/CD player that is simply the best player MF has ever made	●	●	●	●	●			237
RE	NAD S500i	1,200	A beautifully built machine that treads the fine line between precision and musicality with aplomb	●	●	●			●		238
RE	Naim Audio CD5	1,150	Recommended subject to audition – a dynamic machine, yet some physical minuses								212
EC	Naim CDX2	2,650	Fine quality one-box CD player, but its best feature is upgradeability via outboard XPS supply				●				238
RE	Primare D30.2	1,499	Superb high-resolution player gives a strong taste of musical structure and physicality		●				●		226
EC	Sony SCD-XA333ES	1,200	High-end multichannel SACD player is excellent with CD, impressive in surround	●	●	●		●			224
EC	Sony SCD-XA777ES	2,300	Superb multichannel player that set the benchmark for the format at its launch	●	●	●		●	●		223
EC	TEAC D-70/P-70	13,000	This two-box solution is one of the best CD replay systems available, with a fantastic range of facilities	●	●	●		●	●		239
EC	Wadia 301	3,650	Insightful player with digital preamp options and good onboard volume control. Try it direct for maximum effect	●	●				●	●	228

**SPECS KEY** **SACD COMPATIBLE** Plays high-resolution SACD discs in two and multichannel modes. **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.



**Copland CDA822 £1,598**

A beautifully built Scandinavian player with an equally attractive sound. If natural, fluid music-making sounds up your street, make sure you give it a spin.



**Naim CDX2 £2,650**

A superb player that mixes rhythm and timing with precision and poise. Add the £2,300 XPS power supply (pictured) to make one of the best CD players in the world.

# DVD PLAYERS

Disc players for audio and video



DVD has proved a phenomenal success in commercial terms and has virtually extinguished the market for budget CD players – you can't really beat a multiformat player when it comes to features. Early DVD players were not particularly good CD spinners because of the enormous amount of RF interference produced by video circuits, but as this problem has been identified manufacturers have begun to tackle it. Nowadays, most DVD players are competent CD players and a few are remarkably good – often as not they are the ones that play DVD-Audio discs as well.

The great advantage of DVD, apart from being the first digital video format for the home, is that it offers discrete multi-channel sound. In the case of plain DVD video discs, this music is encoded in either the Dolby Digital or DTS format, both of which use 'lossy' compression to fit onto the disc alongside the video data. You



can use a DVD player with your stereo system by connecting the stereo outputs, though this won't give the surround benefits that the format specialises in.

## Q&A

### WHICH AUDIO OUTPUTS GIVE THE BEST QUALITY?

Use the analogue outputs for CD, DVD-A and SACD, and the coaxial digital output for DTS and Dolby Digital movie soundtracks.

### WHICH VIDEO OUTPUTS GIVE THE BEST QUALITY?

The best connection is component video closely followed by RGB Scart, which is clearly superior to S-video and the basic composite video option.

### DO I NEED A MULTICHANNEL AMP TO USE A DVD PLAYER?

Only if you want to hear the benefits of surround sound. DVD players can be used with stereo amps to great effect, but you won't be able to decode the Dolby Digital and DTS soundtracks on movies.

### DO I NEED PROGRESSIVE SCAN VIDEO?

Not unless you have a progressive scan/NTSC compatible monitor or TV – as yet there is no PAL version.

## DVD-AUDIO

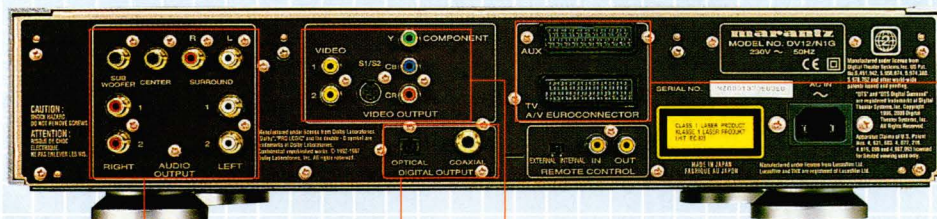
DVD-Audio is a high-resolution format that offers multichannel, stereo and Dolby Digital tracks on dedicated DVD-A discs.



The discs can be played on any DVD player, but the CD-beating high-fidelity sound can only be appreciated with a DVD-A player. While offering similar benefits to SACD, it has the advantage of on-screen display for

information – lyrics, images and so on. To save you having to decide which format to go for, a few brands are bringing out universal players to cover SACD and DVD-A, and this would seem to be the best route if you want to enjoy high-resolution digital audio. If you're after a high-end model, look for one with a 'high bandwidth' digital audio output as well as 5.1 analogue outputs.

## CONNECTIONS



**ANALOGUE AUDIO OUTPUTS:** For stereo and multichannel connections, use these for best results with DVD-Audio, SACD and CD.

**DIGITAL OUTPUTS:** For Dolby Digital, DTS and PCM audio bitstreams.

**VIDEO CONNECTIONS:** Yellow sockets are composite; red, green and blue sockets are for component which gives best results, while the black multipin socket is S-video, which sits qualitatively between the two.

**SCART CONNECTIONS:** These are a good-quality option for video, especially ones that output RGB.

## Our favourite DVD PLAYERS

G GROUP TEST BEST BUY 
 R GROUP TEST RECOMMENDED 
 E EDITOR'S CHOICE 
 N NEW GEAR REVIEW

### Audio/Video disc players

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER
				DVD-A COMPATIBLE	SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	HEADPHONE SOCKET	
<b>UP TO £1,000</b>									
<span style="border: 1px solid black; padding: 2px;">E</span>	Arcam DIVA DV88 Plus	1,000	The first DVD player (just) enabled to deliver progressive scan with UK-spec PAL discs. Superb picture and good sound						238
<span style="border: 1px solid black; padding: 2px;">N</span>	Cambridge Audio DVD57	200	DVD-Audio replay, progressive scan pictures and a good performance at a silly-low price. Fantastic value for money.						243
<span style="border: 1px solid black; padding: 2px;">R</span>	Cyrus DVD 7+	1,000	Typical Cyrus style – open, vivid and bouncy sound, with moderate picture quality to match						237
<span style="border: 1px solid black; padding: 2px;">E</span>	Denon DVD-2800 MkII	750	Excellent Silicon Graphics processing, a wide range of features and sharp pricing make this a winner						237
<span style="border: 1px solid black; padding: 2px;">E</span>	Denon DVD-3800	1,000	High and progressive DVD-Video player with good CD and DVD-Audio capabilities, priced below its station						234
<span style="border: 1px solid black; padding: 2px;">R</span>	Pioneer DV-656A	400	Do-it-all 'universal' player is a decent performer with all disc types, and superb value for money considering its range						240
<span style="border: 1px solid black; padding: 2px;">E</span>	Pioneer DV-757Ai	800	State of the art universal player with iLink digital interface provides performance stretch currently unavailable to others						240
<span style="border: 1px solid black; padding: 2px;">R</span>	Primare V25	1,000	Bold pictures on screen are matched to easy, likeable sound quality and a huge range of outputs						237
<span style="border: 1px solid black; padding: 2px;">E</span>	Sony DVP-NS905V	400	DVD-Video and SACD is a distinctly superior package, with above average performance						234
<b>ABOVE £1,000</b>									
<span style="border: 1px solid black; padding: 2px;">N</span>	Cyrus DVD8	1,200	An impressive step up from the DVD7+, which includes component video outputs						238
<span style="border: 1px solid black; padding: 2px;">E</span>	Denon DVD-A1	2,500	A convincing case for the DVD-A format, battleship construction combined with sonic and visual finesse						230
<span style="border: 1px solid black; padding: 2px;">E</span>	Marantz DV-12S1	2,500	THX Ultra-progressive DVD-A player is a classy all-rounder, and absolutely top notch in legacy CD mode						229
<span style="border: 1px solid black; padding: 2px;">E</span>	Meridian DVD596	2,485	Very classy player with DVD-A upgrade potential, one of the few that is also a superb CD player						218
<span style="border: 1px solid black; padding: 2px;">E</span>	Meridian 800	10,805	The ultimate in DVD replay, modular construction, buffered ROM drive, upsampling and high-res digital outputs						230
<span style="border: 1px solid black; padding: 2px;">R</span>	Roksan Caspian DVD	1,195	A good all-rounder – a solid and propulsive sounding DVD player which is also a surprisingly capable picture-making machine						237
<span style="border: 1px solid black; padding: 2px;">E</span>	TAG McLaren DVD32R	3,995	An engineering <i>tour de force</i> . It's pricey and plays neither DVD-A nor SACD, but performance – especially video – is top notch						212
<span style="border: 1px solid black; padding: 2px;">E</span>	Townshend DV-747A	2,899	Major upgrade to Pioneer machine turns it into a giant slayer of a disc player, available as an upgrade to existing owners						232

**SPECS KEY** **DVD-A COMPATIBLE** Plays high-resolution DVD-A discs in two and multichannel modes. **SACD COMPATIBLE** Plays high-resolution SACD discs in two and multichannel modes. **ELEC DIGITAL OUTPUT** Electrical coaxial output for digital connection to a multichannel amplifier or receiver. **OPT DIGITAL OUTPUT** Optical Toslink output for digital connection to a multichannel amplifier or receiver. **HEADPHONE SOCKET** Quarter inch (6.3mm) headphone jack fitted to the DVD player.

### TOP BUYS



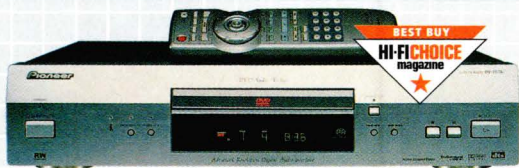
#### Sony DVP-NS905V £400

SACD-compatible DVD-Video player offers excellent audio and video performance.



#### Denon DVD-3800 £1,000

This DVD-Audio compatible player is excellent with music and equally sharp with video.



#### Pioneer DV-757Ai £800

Pioneer's latest 'universal' disc player – strong with CD, SACD, DVD-V and DVD-A alike.



#### Marantz DV-12S1 £2,500

A superb DVD-Audio/Video player – great with DVDs and unusually fine with CDs too.

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**EDITOR'S CHOICE**

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# VINYL

## Turntables, cartridges and phono stages



Record players or turntables offer the digital revolution serious competition when it comes to sound quality. Even a modest model can turn musical tricks that most CD players struggle with. Some call it vinyl warmth, but in reality it's a lack of digital hardness that makes the format so engaging. True, the software requires a bit more care, but even a knackered LP is more playable than a scratched CD.

Record players are made of three, perhaps four, fundamental parts. The turntable is the plinth and platter, usually also containing the motor and any suspension system. A tonearm sits on the plinth and allows the cartridge to trace the vinyl groove by pivoting or parallel tracking over the record. The cartridge contains the means of turning the mechanical movement of the groove wall into an electrical signal.

A fourth element is an amp dedicated to the delicate job of amplifying and equalising the cartridge's insubstantial output. This is called a phono stage and can be found in some integrated amplifiers and preamps, but is increasingly purchased separately for use with line-only amps.



### TURNTABLE SET-UP

Setting up a turntable varies from model to model, but the general principle is to level the platter by adjusting the suspension or, as with solid platters, the surface it sits on. Sprung suspensions sometimes require a bit of fine-tuning to sound their best, but the principle is to achieve a smooth, pistonic bounce. Cartridge set-up is even more critical, as the angles at which the stylus traces the groove affects its tonal balance and levels of distortion. A good alignment protractor is essential if you are intending to set up your own cartridge, as is a degree of patience. In essence, there are two angles you need to get right: the tracing angle as the cartridge crosses the record if you are looking from above, and the vertical tracking angle (VTA), which is adjusted by raising or lowering the arm base to bring the arm parallel with the record surface.

There are two types of phono cartridge: moving magnet (MM) and moving coil (MC), and with a few exceptions the latter outperforms the former. But MCs produce a lower output and require better-quality amplification to be heard at their best. As a general rule, MCs offer a broader bandwidth, greater dynamics and more detail, but the better moving magnets do most things well enough to distract you from your CD collection.

## TOP BUYS



### Rega P3 £298

Latest version of a hi-fi classic is a very capable deck for a very modest price, with very little serious competition from other makes. A great turntable for the money and a very safe buy.



### Audio Note TT1/ARM1 £594

Simple, unpretentious and relatively inexpensive, Audio Note's TT1 delivers a real taste of high-end performance at a realistically affordable price.



### Michell Orbe SE £1,825

A fine example of the turntable art, the stripped down SE version of Michell's flagship now features a DC motor. Does justice to the best arms and cartridges.



### Avid Volvere Sequel £3,500

A beautifully made turntable that delivers a high-end vinyl experience without costing the earth. Neutral, even-handed, detailed and frankly spellbinding.

## Our favourite **TURNTABLES**

GT GROUP TEST BEST BUY 
 RT GROUP TEST RECOMMENDED 
 EC EDITOR'S CHOICE 
 NGR NEW GEAR REVIEW

### Record players

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER
				SPEEDS	SUSP SUBCHASSIS	SWITCHABLE SPEED CHANGE	SUPPLIED WITH ARM	SUPPLIED WITH CART	
<span>GT</span>	Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high-end performance at an affordable price	33/45	●	●	●		203
<span>EC</span>	Avid Volvere Sequel	3,500	Heavyweight turntable that will deliver more of what's in a vinyl groove than most of the competition	33/45	●	●			229
<span>EC</span>	Avid Acutus	5,000	Extremely capable design with no apparent shortcomings. Don't sell your vinyl 'til you've heard it on this!	33/45	●	●			194
<span>RT</span>	Bluenote Bellavista/Borghese	1,594	Charming in appearance and sound if not particularly practical. Start your love affair with vinyl here	33/45			●	opt	239
<span>RT</span>	Clearaudio Champion Level 2	1,955	Neutral balance, great looks, but only so-so detail. Benefits greatly from isolation	33/45			●	●	223
<span>RT</span>	Linn LP12 Bask	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc are still top rank	33	●		●		103
<span>NGR</span>	Michell Gyro SE	1,058	New DC motor-equipped Gyro offers great looks and even better sound. Price includes RB300 arm	33/45	●		●		239
<span>EC</span>	Michell Orbe SE	1,825	A superb turntable, able to mix it with the best at virtually any price. Now features new DC motor.	33/45	●				235
<span>NGR</span>	Pro-Ject RPM 6	500	Basic, very neutral turntable and arm combination that can take a very expensive cartridge. A high-end bargain!	33/45			●		236
<span>RT</span>	Pro-Ject RPM 9	1,000	Capable deck with some unusual features. Highly engaging sound with an essentially neutral character	33/45			●	opt	239
<span>EC</span>	Rega P2	198	Updated Planar 2; just as much fun as ever and now even better value as the competition falls away	33/45			●		214
<span>RT</span>	Rega P3	298	Updated Planar 3, building on the strengths of the P2 with added subtlety and detail	33/45			●		214
<span>RT</span>	Rega P25	619	The contemporary aesthetic wins admiration, the sonic assurance turns it into your own personal music shrine	33/45			●	opt	239
<span>EC</span>	Rega P9	2,248	Exceptionally elegant hi-tech player with complex outboard supply, ceramic platter and wonderful RB1000 tonearm	33/45		●	●		228
<span>EC</span>	SME Model 10A	3,411	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	33/45	●	●	●		195
<span>EC</span>	SME Model 20.2A	5,274	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	33/45/78	●	●	●		186
<span>EC</span>	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in clean, clear reproduction	33/45	●	●	●		205

## Our favourite **PHONO CARTRIDGES**

### MM and MC cartridges

PRODUCT	£	COMMENTS	SPECIFICATIONS			ISSUE NUMBER
			MM	MC	REPLACEABLE STYLUS	
Audio Technica AT110E	29	Excellent performance for the price, with little more than some mild coloration and a touch of hardness at high levels	●		●	214
Clearaudio Aurum Beta S	270	Clear improvement over cheaper Alpha, and good sound all round by any standards	●			223
Clearaudio Sigma	580	A nimble and revealing cartridge that is more at home in lower mass arms		●		235
Goldring Elite	250	A remarkably subtle and persuasive design that should tempt anyone		●		235
Grado Prestige Black	40	Offers admirable detail and treble extension, with good bass and ambience too	●		●	214
Grado Prestige Gold	110	Produces rich, open and expansive music with the minimum of fuss	●		●	235
Lyra Helikon	1095	Highly capable and highly neutral, this is a cartridge for all seasons, albeit fussy about vinyl quality	●			215
Reson Recca	250	If you're after a high-quality moving magnet cartridge, they don't get much better than this	●		●	192
Reson Etile	485	Plenty of life and detail, and refined with it		●		223
Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300		●		192
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		●		235

## Our favourite **PHONO STAGES**

### Phono stages

PRODUCT	£	COMMENTS	SPECIFICATIONS				ISSUE NUMBER
			MM PHONO INPUTS	MC PHONO INPUTS	AU. GAIN	AU. IMPEDANCE	
Creek OBH-8SE	160	Neutral, relaxed and involving sound from this neat little unit	●				223
Lehmann Black Cube	275	Creates a well balanced sound that has few limitations and plenty of good qualities. Very flexible for the price	●	●	●	●	234
Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	●			●	201
Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	●	●			201
Tom Evans Microgroove	400	For dynamics and real bass extension alongside good tonal colour this is the one to beat, excellent value for the money		●			234
Tom Evans Microgroove Plus	700	Stunning detail, gives new insights into familiar discs		●			223
Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for maximum information retrieval off any LP		●			201
Trichord Dino/Dino+	498	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility	●	●	●	●	234

**TURNTABLE SPECS KEY** **SPEEDS** Speeds offered in rpm. **SUSP SUBCHASSIS** Turntables with a sprung or suspended support for the platter and arm. **SWITCHABLE SPEED CHANGE** Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. **SUPPLIED WITH ARM** Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you.

**SUPPLIED WITH CARTRIDGE** Some decks are supplied with a starter cartridge and this is included in the price shown.

**CARTRIDGE SPECS KEY** **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 stylus for ease of replacement, but it compromises sound quality.

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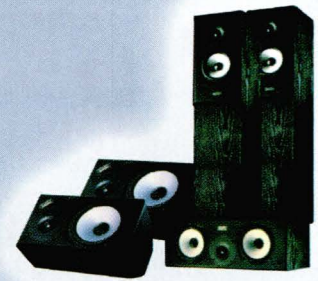
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**SOUND & VISION A HOME ENTERTAINMENT AWARD WINNING COMPANY**



# RADIO TUNERS

## FM and DAB hi-fi separates



Radio is a fantastic musical resource that's in danger of being taken for granted, but whatever your tastes there's someone out there catering for it. If you haven't got a decent tuner hooked up to your hi-fi already, you're missing out!

### DAB or FM?

Digital Audio Broadcasting (DAB) is said to be available to 80 per cent of the population and the long-term plan is to switch public broadcasting over to digital, but hardware prices have yet to come down to a point where this would be acceptable. Its advantages over FM include hiss-free reception, the potential for a wider range of stations and the ability to display comprehensive programming information. FM's RDS system means that station name and occasionally track titles are displayed, but the range of information is fairly limited.

Where FM scores over DAB is in the lower cost of hardware and the greater reception

area. It can also provide higher sound quality if reception conditions are favourable. Absolute sound quality judgements are muddled by the fact that you are listening to different forms of compression and processing at the studio for each station.

What is clear, however, is that there are more and more radio stations broadcasting on DAB that aren't available on FM. So if it's variety of programming you're after, they have a lot to offer.

### RECEPTION

The quality of signal you feed a tuner will dictate its sound quality. So serious FM listeners should get a decent external aerial and connect it with as few junctions and splits as possible. Every time you split the cable (ie take a feed for another tuner) you halve signal strength! With DAB the same applies but get a DAB-specific aerial. See [www.bbc.co.uk/digitalradio](http://www.bbc.co.uk/digitalradio) for details.

### TOP BUYS



#### Denon TU260L II £130

The benchmark for all other budget AM/FM tuners, with great sound and features.



#### Cambridge DAB300 £150

A low-cost DAB radio that gets very close to much more expensive digital models.



#### Rega Radio 3 £374

An excellent sound-first FM/MW tuner – low on features but big on sound.



#### Magnum Dynalab MD102 £2,200

If you're serious about radio this superb FM tuner is about as good as it gets.

## Our favourite TUNERS

GROUP TEST BEST BUY  GROUP TEST RECOMMENDED  EDITOR'S CHOICE  NEW GEAR REVIEW

### FM & DAB HI-FI SEPARATES

STATUS	PRODUCT	£	COMMENTS	WAVEBANDS	PRESETS	RDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT. TUNING KNOB	ISSUE NUMBER
<b>FM TUNERS</b>										
<input type="checkbox"/>	Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM,M,L	64					193
<input type="checkbox"/>	Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM,M,L	64					193
<input type="checkbox"/>	Denon TU-260L II	130	The return of the all-time favourite, now enhanced with RDS and sounding as fine as ever	FM,M,L	40					193
<input type="checkbox"/>	Magnum Dynalab MD102	2,200	Unique remote control analogue FM tuner delivers a superbly transparent sound that makes radio fun	FM	5					241
<input type="checkbox"/>	Marantz ST6000	180	Another budget killer from Marantz, with sound well above its class and useful features	FM, M, L	90					211
<input type="checkbox"/>	Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29					193
<input type="checkbox"/>	NAD S400	600	One of the best around – bass and treble are both well extended and detail is excellent	FM	30					230
<input type="checkbox"/>	Primare T21	600	Identical to NAD S400 and likewise a very fine tuner	FM	30					230
<input type="checkbox"/>	Rega Radio 3	374	Unpretentious unit which does what it claims, very well. Unusually fine FM sound in all areas	FM,M	20					242
<input type="checkbox"/>	Rotel RT-02	279	A highly competent tuner which always sounds appealing and fuss-free	FM,M	30					242
<b>DAB TUNERS</b>										
<input type="checkbox"/>	Arcam DT-81	650	A very smart and polished DAB performer	DAB	16					221
<input type="checkbox"/>	Cambridge Audio DAB300	150	Simple unit with limited features (no RD1) but decent sound – a very near match for more expensive models	DAB	10					242
<input type="checkbox"/>	Pure DRX-701ES	250	An excellent introduction to DAB, fine value, simple to use and feature loaded	DAB	99					234
<input type="checkbox"/>	Pure Digital DRX-702ES	330	Very flexible DAB (inc L-band) and FM tuner. DAB is good, FM a touch disappointing	DAB,FM,M	99					242
<input type="checkbox"/>	TAG McLaren T32R+DAB	2,290	Classy hi-fi at its best: top sounds on FM and DAB, and a joy to own and use	DAB,FM,M,L	99					230

**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.

# DIGITAL AUDIO RECORDERS

CD, MiniDisc and hard drive recorders



## MiniDisc

MD's strength is versatility. You can record and then re-record many times over. Editing facilities are second to none – you can erase mistakes, name tracks and re-order a disc's contents with a few simple button pushes, making it ideal for building compilations. They're pretty robust too.

Sound quality is below that of CD-R/CD-RW. The format uses a Sony-developed compression technology called ATRAC, which discards part of the data in order to squeeze it on the disc. If you're copying from CD to MD, the result tends to sound a little cold in comparison, lacking a degree of detail and ambience. But to most people it still sounds light years ahead of cassette – clean and hiss-free.

## Recordable CD

With recordable CD you have a choice of two disc types: CD-R discs are the cheapest, but you can only record once; and CD-RW discs are a little more costly, but you can re-record on them *ad infinitum*.

Though the latest machines incorporate some useful editing facilities, CD-R/RW is not as flexible as MD. However, sound

quality is higher – if you're recording from a CD, the best models will give you a copy that is very close to the original. In terms of compatibility, most CD players will play back a CD-R disc, but older models might have trouble with CD-RW (though you can, of course, play the disc back on your own recorder). If you want to play a CD-R/RW on a DVD player, check for compatibility.

## Hard drive

The latest contender on the digital recording scene is also the most flexible. Some HDD (hard disk drive) recorders can store whole music collections if you use a compression format such as MP3. HDD recorders are taking over from multidisc CD changers as sound servers in multiroom installations, where their ability to play more than one piece of music at a time is a great boon. HDD also offers impressive editing facilities on a par with MD, and they can also record from CD (or to CD-R/RW) at high speed.

At present, sound quality isn't the driving force behind the format – flexibility and storage capacity being bigger issues – and a plain CD-R/RW machine will outperform an HDD recorder in fidelity terms.

TOP BUYS



**Philips CDR802** £300

Multi-disc recorder that's slick and accomplished, albeit with a slightly flaky build.



**Marantz DR6000** £400

Quality in a box – it eschews gimmickry, but it does a simple job very well.



**Sony MDS-JE480** £130

Entry-level MD recorder that does exactly what it says on the tin, at a bargain price.



**Yamaha CDR-HD1300** £600

Impressive implementation of hard drive technology for home audio applications.

## Our favourite DIGITAL RECORDERS

GROUP TEST BEST BUY    GROUP TEST RECOMMENDED    EDITOR'S CHOICE    NEW GEAR REVIEW

### CD-R/RW, MD and HDD recorders

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS			
				DECKS	HD CAPACITY (GB)	OPTICAL IN/OUTPUTS	ELEC IN/OUTPUTS
<b>CD-R/RW RECORDERS</b>							
R	Denon CDR-1000	400	A respectable player and recorder, though some midband congestion was noted when recording	1		● ●	218
R	Marantz DR6000	400	No frills, but in its fundamentals this is one of the finest CD recorders on the market	1		● ●	233
R	NAD C660	500	Audiophile twin deck offering high-speed copying, HDCD replay and notably fine recording from analogue	2		● ●	243
R	Philips CDR802	300	Tacky looks and build notwithstanding, this is a well-equipped and technically sound 3-to-1 autochanger/recorder at a good price	2		● ●	233
R	Philips CDR951	380	An improvement on previous models, it delivers the musical goods in some style	1		● ●	205
R	Pioneer PDR-609	270	Classic CD recorder with outstandingly good sound for the money on both record and replay	1		● ●	243
R	Pioneer PDR-W839	350	Good-quality twin CD burner makes recordings that can be hard to distinguish from the original. Good value too	1		● ●	218
R	Sony RCD-W3	250	Superb Sony build and ease of use complement great recording ability and amiable CD playback	2		●	238
<b>MD RECORDERS</b>							
R	Pioneer MJ-D508	200	Well equipped, but musically sleep-inducing player that receives its Recommendation owing to the price	1		● ●	205
R	Sony MDS-JE480	130	Straightforward and effective, but the three real killer features are price, price and price	1		●	233
<b>HDD RECORDERS</b>							
R	Imerge S2000	1,599	Intended as the centrepiece of a multi-room installation, this three-output server combines flexibility with good sound	2	80	● ●	243
R	Yamaha CDR-HD1300	600	Superb combination of high-speed CD-RW drive and hard disk, adding editing flexibility to CD recording	2	80	● ●	243

**SPECS KEY** DECKS Amount of drive mechanisms on board – twin-deck recorders use one to play while the other records. **HD CAPACITY** Amount of gigabytes of storage capacity, for HD only. **OPTICAL IN/OUTPUTS** Optical Toslink in and outputs for digital connection to a CD player or DAC. **ELEC IN/OUTPUTS** Electrical coaxial in and outputs for digital connection to a CD player or DAC.

# Sevenoaks SOUND & VISION



**Sevenoaks Sound & Vision stocks a wide range of Hi-Fi separates, DVD players, amplifiers, speakers, plasma screens, LCD televisions and projection systems from all the leading manufacturers.**

From starter systems to custom designed multi-room and home cinema installations, our friendly staff are available in all outlets to advise, demonstrate and guide you through the home entertainment jungle. If you're interested in home entertainment and want to avoid the confusion, contact your local Sevenoaks Sound & Vision outlet and **experience more.** 0% interest free option\* is available on most products. \*Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.



**LINN**

The **CLASSIK MOVIE DI** is Linn's latest integrated audio and video source product. This offers the performance and features of the Classik Movie together with the added benefits of greater flexibility, additional processing power, superior audio and video performance plus surround sound decoding from external digital and analogue sources.

Developed from the new Linn Unidisk 1.1 flagship Universal disc player, the Classik Movie Di integrates DVD and CD playback with an AM/FM tuner, multi-channel power amplification and multiroom distributed audio. With two digital audio inputs for external sources as well as composite video, S-video and component video inputs and outputs, the CLASSIK Movie Di outputs concurrent digital and analogue audio. Linked audio and video sources ensure simple operation. Hi-Fi World (July 2003) concludes - "It's probably the best performing one-box multichannel machine on the market."



**NEW LINN CLASSIK MOVIE DI SYSTEM**



**DENON DVD-2900 UNIVERSAL DISC PLAYER  
WITH PAL PROGRESSIVE SCAN**

## **NEW DVD-2900 Universal Disc Player**

Marking one of most significant product introductions in the company's history, Denon has introduced the **DVD-2900** player, the company's first-ever all-format universal disc player. Offering both DVD-Audio and Super Audio Compact Disc playback, it includes a host of leading-edge technologies and features to offer ultimate-performance multichannel audio and PAL progressive scan video playback.

Consistent with Denon's philosophy that a DVD player is a high-end audio component as much as it is a video playback device, the DVD-2900 is designed for unsurpassed sound quality. It incorporates leading edge Burr-Brown 24-bit, 192kHz audio D/A converters for the highest possible resolution and fidelity along

with maximum surround sound separation and dynamic range. The DVD-2900 also offers full digital bass management for DVD-Audio and Super Audio CD, with selectable crossover slopes to optimise sonic performance with any loudspeakers and room environment. In addition, the player includes built-in Dolby Digital and DTS decoding with 5.1-channel outputs, plus built-in MP3 decoding that provides up to 10 hours of music playback from a single MP3-encoded CD-R or CD-RW disc. The video performance of the DVD-2900 is equally exceptional. The player incorporates precision Analog Devices 12-bit, 108MHz video D/A converters, and Denon's PureProgressive Scan™ technology featuring the Silicon Image Sil504 decoding engine. The processor is capable of real-time computation at more than 6 billion operations per second-massive computing power that assures seamless, artifact-free image quality.

## **Custom Installation**

Are you are looking to neatly and seamlessly integrate a Home Cinema or Hi-Fi System into your home? Our Custom Installation experts are fully trained in all areas and provide a prompt, reliable and professional service. Whether you're looking for lighting control systems, a dedicated home cinema installation with a retractable screen and built-in speakers or an integrated control system, Sevenoaks Sound & Vision has the solution.



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Please refer to Page 7 for full address and telephone number details.



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With selected Turntables - Ask in-store for details

## PRO-JECT

### RPM4 Turntable £349.95

### Turntables & Tuners

<b>Arcam</b> DIVA T61 Tuner.....	<b>£249.95</b>
<b>Cyrus</b> FM X Tuner.....	<b>£499.95</b>
<b>Denon</b> TU260L MKII Tuner.....	<b>£119.95</b>
<b>Marantz</b> ST4000 Tuner.....	<b>£109.95</b>
<b>Michell</b> Gyro SE/RB300 Turntable.....	<b>£1049.95</b>
<b>Michell</b> TecnoDec Turntable.....	<b>£599.95</b>
<b>Project</b> Debut Phono SB Turntable.....	<b>£169.95</b>
<b>Project</b> Debut II Turntable (Black).....	<b>£119.95</b>
<b>Project</b> Debut II Turntable (Colours).....	<b>£134.95</b>
<b>Pure</b> Evoke 1 DAB Radio.....	<b>£99.95</b>
<b>Pure</b> DRX-702ES Analogue/DAB Tuner.....	<b>£329.95</b>
<b>Sony</b> ST-D777ES FM/DAB Tuner.....	<b>£499.95</b>

"If you want severe turntable styling on a budget, you need look no further than this.

The shape of the main plinth here follows the outline of the record platter and arm to give a cut away look to the deck, and while it looks a bit like a cakestand with the dustcover in place, in use the RPM4 looks much more the business.

The RPM4 soon impresses with the quality feel of its arm and the screw-down clamp to hold and flatten records, and as soon as the stylus settles into the groove it's clear this is a superior player. There's much less surface noise than with the Debut, and the music has much greater scale and power, allied to closer detailing. That lovely organic feel you only seem to get from great vinyl playback is apparent... This is a very grown-up record player for reasonable CD player money: it's well worth exploring."

**WHAT HI-FI? August 2002**

Selected outlets are Project Turntable Centres. Colour Options are available at additional cost



Michell Gyro SE/RB300  
£1049.95

## STARTER SYSTEM

**marantz®**

CD4000 (Black) CD Player  
PM4200 (Black) Amplifier



m71i Speakers

List Price £420

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Includes Speaker Cable Worth £20 FOC

## PURE DIGITAL DRX-701ES Digital Tuner £229.95

"This new tuner from the recently renamed Pure is based on the 2001 Award winning Videologic DRX-601ES, but under the lid is an all-new third-generation digital radio engine, in the form of Frontier Silicon's Chorus FS1010.

The tuner uses 24-bit/192kHz conversion with 4x upsampling and data interpolation, and is

powered by a low-noise toroidal transformer - such attention to

sonic detail pays off. Digital outputs are provided on electrical and optical feed, but most people will use the analogue out, and these sound very good indeed. As usual the tuner is subject to the signal quality off-air, but when it's fed from a high-quality outdoor aerial and a good signal it's capable of a crisp, powerful and detailed presentation. Even more populist music stations like Radio 6 benefit from the mix of a neutral balance and fine weight, while speech is also neutral and easy to follow... If you want a quality home tuner for digital radio, you need look no further."

**WHAT HI-FI? ★★★★★ October 2002**



**SAVE £20**

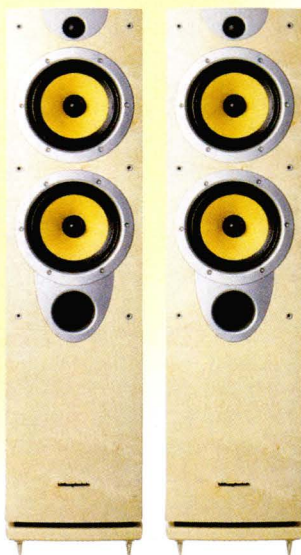
### CD Players

<b>Arcam</b> DIVA CD62T.....	<b>£369.95</b>
<b>Arcam</b> DIVA CD72T.....	<b>£449.95</b>
<b>Arcam</b> DIVA CD82T.....	<b>£599.95</b>
<b>Arcam</b> DIVA CD93T.....	<b>£949.95</b>
<b>Arcam</b> FMJ CD33T.....	<b>£1299.95</b>
<b>Cyrus</b> CD6.....	<b>£599.95</b>
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<b>Linn</b> Ikemi.....	<b>£1949.95</b>
<b>Marantz</b> CD4000.....	<b>£99.95</b>
<b>Marantz</b> CD6000Ki Signature.....	<b>£369.95</b>
<b>Marantz</b> CD17/II M.....	<b>£799.95</b>
<b>Meridian</b> 507.....	<b>£1194.95</b>
<b>Musical Fidelity</b> A308™.....	<b>£1999.95</b>
<b>Musical Fidelity</b> Tri-Vista SACD.....	<b>£3994.95</b>
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<b>Roksan</b> Kandy KD1 MKIII.....	<b>£544.95</b>
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<b>Rotel</b> RCD1070.....	<b>£494.95</b>
<b>Sony</b> CDPXE570.....	<b>£99.95</b>

Please Note: Some products may not be available at all outlets. \*Not in conjunction with any other offer. E&OE

Advertisement valid until at least 30th July 2003. E&OE.

## Wharfedale Pacific Evo 30 Speakers £649.95



"Evolution? This is more like a revolution: Wharfedale's new range is more than just an upgrade of its Pacific series. The changes are radical, but the most obvious transformation is the removal of the original's unattractive tweeter module, which was situated on top of the speaker. The tweeter housing is now sunk into the Evo 30 cabinet, the intention being to improve dispersion and benefit from the improved rigidity of the strongest point of the cabinet.

Listen to the Evo 30s and the sonic changes leap out at you. Sitting on their chunky spikes and situated in free space, the speakers sound wonderful: low frequencies delve deep and delivery is punchy and fast.

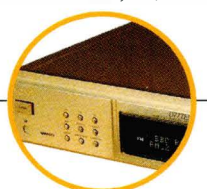
You'll have gathered by now that we love the Evo 30s. They're beautifully made and are great all-rounders."

**WHAT HI-FI? ★★★★★ March 2003**



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<b>Arcam</b> DiVA A65 Plus Amplifier .....	<b>£369.95</b>
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<b>Arcam</b> DiVA A85 Amplifier .....	<b>£799.95</b>
<b>Arcam</b> FMJ A32 Amplifier .....	<b>£1149.95</b>
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<b>Musical Fidelity</b> Tri-Vista 300 Amplifier .....	<b>£3994.95</b>
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WHEN ANY DiVA CD & AMPLIFIER PURCHASED TOGETHER

**DiVA CD82T CD Player** **£599.95**  
**DiVA A85 Integrated Amplifier** **£799.95**

**DiVA CD82T** "Arcam's latest sounds like a more mature version of its little brother. On an initial listen the increased solidity and refinement are obvious, but over time the subtler dynamic shading and more assured handling of transients come to the fore... The Arcam CD82T is one of the best CD players available at this price point." **WHAT HI-FI? ★★★★★ Sept 2002**

**DiVA A85** "You'll have realised by now that we rather like this amp. It took us completely by surprise, and further strengthens Arcam's already impressive product range... The A85 is superb, and we can't wait to put it up against its peer in a group test." **WHAT HI-FI? ★★★★★ March 2001**



**B&W Bowers & Wilkins**  
**DM602S3 Speakers** **£299.95**

**FREE SPEAKER CABLE\* WORTH 10% OF THE**  
SPEAKER VALUE WITH ANY 600 S3 OR CDM NT SERIES SPEAKERS

"But the B&W 602 S3 are our winners. They're big and not particularly beautiful, yet if it were our money they're what we would buy. No rival can match the wide ranging dynamics or low frequency performance of these not so compact standmounters. Add all-round sonic excellence and the choice is easy. Give them sufficient space to breathe, then sit back and enjoy the music."

**WHAT HI-FI? ★★★★★ Superbest Winner August 2002**

Also Available (Pictured Right)  
**B&W CDM NT Series • Prices start from £749.95**



**ROTEL** **RCD-02 CD Player** **£379.95**  
**RA-02 Amplifier** **£349.95**

**FREE INTERCONNECT CABLE\* WORTH £60**  
WHEN ANY ROTEL CD & AMPLIFIER PURCHASED TOGETHER

**RCD-02 CD Player** "Whether it's the raw, and sometimes just plain barking vocals of Tom Waits, or the stinging guitar stabs of Pete Townsend on some old Who tracks, the Rotel is one of those players that can't help but bring a smile to the face - it's a breath of fresh air." **WHAT HI-FI? ★★★★★ Sept 2002**

**RA-02 Amplifier** "The amp has a fast, detailed and yet satisfyingly full presentation. That allows it to make a fine job of the beats of Groove Armada's *Goodbye Century* set without losing sight of the fine details of the mix, and also husking out Marianne Faithfull's deliciously smutty vocals on *Kissing Time* with real relish. Add in decent levels of equipment - and the convenience of remote control, and we reckon Rotel has a winner on its hands." **WHAT HI-FI? ★★★★★ August 2002**





CYRUS

CD8 CD Player **£999.95**  
8 Integrated Amplifier **£799.95**

Cyrus has been developing high performance hi-fi systems for nearly 20 years. Today their upgradeable, modular product range includes multi-room systems, home cinema and some of the world's finest hi-fi systems. Cyrus products are hand finished, half size die-cast enclosures and include a hidden digital command system that allows simple operation of any size system.

Joining the new Cyrus 8 amplifier is the stunning new high performance, upgradeable CD player, the CD8. Other new models in the 8 series include the AV8 digital AV processor and a new disc player, DVD8, featuring specially tuned video and audio circuitry.

**Cyrus 8 Amplifier** "The 8 is a large step forward from older generations of Cyrus amplifiers, and takes the company back into the leading pack in the sub-£1000 integrated amp sector... The Cyrus 8 is a must-audition product."

★★★★★ January 2003



## ROKSAN

Kandy KA1 MKIII Amplifier **£544.95**

**FREE INTERCONNECT CABLE\* WORTH £60**  
WHEN KANDY CD & AMPLIFIER PURCHASED TOGETHER

"When we last reviewed Roksan's Kandy integrated amp in February it fought off serious competition to come top in a *Supertest*. This is its replacement, the MKIII. Internal changes include an updated power supply for the preamp section and identical mono modules for the left and right power amp sections. Roksan also claims 50 percent lower distortion on line-level inputs and a whopping 150 percent less on the phono input. The rated power output is an impressive 120 watts per channel into 8 ohms, and this amp has a confident, muscular way with music that bears this out. But don't be fooled into thinking this amp is raw but unrefined. With Van Morrison's *Down the Road* the Kandy has the guts to render the performance exciting and dynamic, but also the guile to deliver subtle details.



Roksan has the guts to render the performance exciting and dynamic, but also the guile to deliver subtle details.



The upgraded Kandy MkIII is an excellent amp; the MkII version was impressive, but MkIII is a stunner. It betters all the amps here in the timing department, and has a wonderfully robust character that works well with all types of music. It manages to retain the good points of the MkII while adding extra resolution and subtlety. All the amps here have a place in the market. It's just that at £550 the Kandy really does set the pace."

★★★★★ October 2002



## QUAD

11L Speakers **£379.95**

"Quad is best known for its superlative electrostatic designs, which start at £3500. So any £379 pair of speakers that carries the company's name has to be going some to avoid tarnishing the family reputation. The first surprise is that the 11Ls come in real-wood veneers covered with piano-gloss lacquer. This type of finish is almost unheard of at the £1000 mark, let alone at this price. Has anything been sacrificed for such a luxury finish? Here's the second surprise: apparently not.

The final surprise? Well, saving the best for the last, the sound quality of the 11Ls is phenomenally good. These are small speakers at just 33cm tall, but the scale and authority of their performance is terrific. The laws of physics dictate bass extension limitations, but thanks to a clever dual rear firing port arrangement the 11Ls plumb the depths with the determination of a rottweiler, even when placed in free space.

If you're in the market for a pair of top quality standmounters these Quads are a must listen. Quite simply, they're good enough to scare the competition big time."

★★★★★ August 2002



Also Available  
Mission 780SE **£349.95**

### Speaker Selection

<b>Acoustic Energy</b> Aegis Evo One .....	<b>£179.95</b>
<b>Acoustic Energy</b> Aegis Evo Three.....	<b>£349.95</b>
<b>Acoustic Energy</b> AE1 MKIII (From) .....	<b>£1699.95</b>
<b>B&amp;W</b> CDM 1NT.....	<b>£749.95</b>
<b>B&amp;W</b> CDM 7NT.....	<b>£1249.95</b>
<b>B&amp;W</b> DM303.....	<b>£179.95</b>
<b>B&amp;W</b> DM601 S3.....	<b>£249.95</b>
<b>B&amp;W</b> DM602 S3.....	<b>£299.95</b>
<b>KEF</b> Q1 .....	<b>£249.95</b>
<b>KEF</b> Q3 .....	<b>£399.95</b>
<b>KEF</b> XQ1.....	<b>£999.95</b>
<b>Linn</b> Katan (Cherry/Maple).....	<b>£634.95</b>
<b>Linn</b> Ninka (Cherry/Maple).....	<b>£1044.95</b>
<b>Mission</b> 780SE .....	<b>£349.95</b>
<b>Mission</b> 782SE .....	<b>£899.95</b>
<b>Monitor Audio</b> Bronze B2.....	<b>£199.95</b>
<b>Monitor Audio</b> Silver S1 .....	<b>£299.95</b>
<b>Monitor Audio</b> Gold Reference 10.....	<b>£799.95</b>
<b>Monitor Audio</b> Gold Reference 20.....	<b>£1499.95</b>
<b>Quad</b> 22L.....	<b>£894.95</b>
<b>Ruark</b> Epilogue II.....	<b>£344.95</b>
<b>Wharfedale</b> Pacific EVO 30.....	<b>£649.95</b>

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## MUSICAL FIDELITY **A3.2 Series**

**A3.2 CD Player** £999.95  
**A3.2 Amplifier** £979.95

**FREE INTERCONNECT CABLE\* WORTH £100**  
WHEN ANY MF CD & AMPLIFIER PURCHASED TOGETHER

Replacing the **WHAT HI-FI? SOUND AND VISION** Award Winning A3 CD and Amplifier, the new A3.2 models have been further refined and re-styled. The A3.2 CD Player now incorporates the same DAC, filter assembly and control mechanism as the highly-acclaimed Nu-Vista CD Player. The A3.2 Amplifier draws on experience gained through the development of the Nu-Vista M3 amplifier and as such has inherited many of its qualities, producing a sense of ease and flexibility that is normally only associated with far more expensive designs.



## MONITOR AUDIO Silver S6 Speakers £599.95

**FREE SPEAKER CABLE\* WORTH 10% OF THE**  
SPEAKER VALUE WITH ANY SILVER OR GOLD REF SPEAKERS

acclaimed and award winning Silver Series speakers. "The aim has been to offer real advances in performance and value", says technical director Dean Hartley. "New models include the S1 and S2 standmounters, the S6, S8 and S10 floorstanders.

"With a close-miked track such as James Taylor's *Line 'Em Up* from SACD they really deliver the character of the singer's voice and they're just as expressive with the cultured rhythms of Groove Armada's latest outing, having just the right mix of rhythmic control and fluidity... But amazingly the best is yet to come: these are simply beautiful speakers for classical music, once a few days' thrashing has tamed their initial rawness. With the latest release of Holst's *The Planets* on DVD-Audio, they thunder out *Mars* with true conviction.

These are rather magical speakers, with a poise and grace that belies their ability to turn on the power when required. Pair them with a good CD player and suitably accomplished amp, and you won't go far wrong."

**WHAT HI-FI? ★★★★★ October 2002**



Also Available  
**Gold Reference**  
GR10 & GR20

## Pioneer PDR609 CD-RW Recorder £199.95

"While it looks simple, the Pioneer has an impressive array of features, including the handy double-speed disc finalization and CD-Text compatibility. Internally, the PDR609 is a big step up from the Award-winning PDR-509 it replaced: the DAC is now a 24-bit/96kHz number, aided and abetted by Pioneer's Legato Link conversion technology, and it has 24-bit A-to-D conversion, which is ideal for copying your vinyl onto CD. If this is your plan, you'll appreciate that the Pioneer makes it easy to create first-rate copies from any source, helped by the manual recording-level controls. It was hard to tell our copy of Jim White's *No Such Place* from the original.



Also Available  
**Sony CDR-W3**  
CD-RW Recorder • £219.95

While the Pioneer's replay quality can't match the Marantz, it costs £120 less, which would buy you a lot of blank discs. If you've already got a dedicated CD player, we'd go with this recorder."

**WHAT HI-FI? ★★★★★ August 2001**

### Recorder Selection

- Harman Kardon CD-R30 CD-RW..... £499.95**
- Sony RCDW3 CD-RW..... £219.95**
- Yamaha KX393 Cassette Deck..... £119.95**
- Yamaha KX580SE Cassette Deck..... £199.95**
- Yamaha CDR-HD1300 CD-RW..... £499.95**



**WHAT HI-FI? Award And Vision**  
**Product of the year**  
2002  
**HIFI & HOME CINEMA AWARDS**  
**RECORDERS**  
Pioneer PDR-609

## pricing policy

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.



**TAG McLaren**

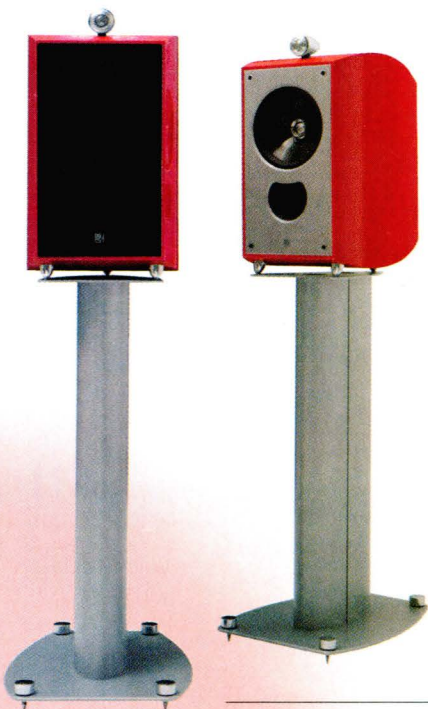
**AV30R AV Processor £1799.95**  
**100x5R Power Amplifier £2994.95**

TAG McLaren's AV30R AV Processor is aimed at the home cinema enthusiast who is concerned with keeping up-to-date with the latest surround formats. When partnered with TAG's 100x5R Power Amplifier it makes an exceptional combination.

According to What Hi-Fi? Sound and Vision magazine in their October 2002 issue: "In use, the AV30R, connected to TAG's 100x5R power amp, is superb. True, it can't quite match the clarity and power of the latest-specification TAG flagship, the AV32Rbp-192, but by any AV standard this is a very high-end piece of kit, with excellent impact and fine detail across a range of movie soundtracks from Once Upon A Time In America to the explosive actionfests. Channel steering is immaculate, and the sense of a soundfield wrapped around you - even in 5.1-channel mode - entrancing, with spine-tingling rear-channel effects. The fine Pro Logic II implementation serves music as well as it does non-discrete AV soundtracks, and with

an SACD machine hooked up via the 5.1 channel inputs, the lack of coloration and sheer bass oomph is extraordinary."

**WHAT HI-FI? ★★★★★ October 2002**



**XQ One Speakers £999.95**



By combining technologies from its Reference and Q Series, KEF has introduced the new XQ speaker range.

Featuring KEF Uni-Q® 'point source' arrays for unrivalled off-axis performance and 'super audio' Hypertweeters™, the XQ range fully exploits the wide bandwidth of digital formats like SACD and DVD-A. The range comprises the XQ One and Three stand mounters, the XQ Five floorstanders and XQ Two c centre speaker. All XQ models are available in a variety of finishes.

When tested in a group test, the **XQ Ones** received top honours - "KEF's new XQ Ones really are in a class of their own. With a depth of insight that is unmatched, plus a sense of cohesion that is rare - the XQ Ones are startling" concludes Hi-Fi World - April 2003.

**Please Note Price Excludes Stands**



**19mm Titanium Dome Hypertweeter™**

Developed directly from the Reference Series and time-aligned with the main array in its own low diffraction steel pod, KEF's new 19mm titanium dome Hypertweeter™ has the same wide dispersion characteristics at 'super audio' frequencies. With a flat response to 55kHz, it provides the high frequency extension needed to take full advantage of SACD and DVD Audio.

ACOUSTICS  
**REL**

**FREE INTERCONNECT CABLE\* WORTH £100**  
 WHEN YOU PURCHASE ANY REL SUBWOOFER OVER £700

**Strata III Subwoofer (Wood) £699.95**

REL is an audiophile company who take great pride in designing and building their highly acclaimed subwoofers. Because of their total commitment to performance, REL sometimes adopt unusual solutions to otherwise straight-forward problems.



"The aggression of Rage Against The Machine's Take The Power Back is n ear-tangible, the midrange a spitting, spiteful companion for the tight, deep, air-agitating bassline. As for the more deft creations of Chick Corea, the REL's articulate nature serves subtly to underpin basslines, rather than swamp them. The adaptability makes the Strata III a highly recommended subwoofer - it's a very versatile, musical piece of kit, and it doesn't cost the earth." **WHAT HI-FI? ★★★★★ July 1999**

**SAVE £100**



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**Brighton** 57 Western Road, Hove **01273 733338**  
**Bristol** 92b White Ladies Road, Clifton **0117 974 3727**  
**Cambridge** 17 Burleigh Street **01223 304770**  
**Cardiff** 104-106 Albany Road **029 2047 2899**  
**Cheltenham** 14 Pitville Street **01242 241171**  
**Crawley** 32 The Boulevard **01293 510777**  
**Edinburgh** 5 The Grassmarket **0131 229 7267**  
**Exeter** 28 Cowick Street **01392 218895**  
**Glasgow** 88 Great Western Road **0141 332 9655**  
**Guildford** 73b North Street **01483 536666**  
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**Lincoln** 20-22 Corporation Street (off High Street) **01522 527397**  
**Liverpool** 16 Lord Street **0151 707 8417**  
**Maidstone** 96 Week Street **01622 686366** Open Sunday  
**Manchester** 69 High Street, City Centre **0161 831 7969**  
**Newcastle** 19 Newgate Street **0191 221 2320**  
**Norwich** 29-29a St Giles Street **01603 767605**  
**Nottingham** 597-599 Mansfield Road **0115 911 2121**  
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**Preston** 40-41 Lune Street **01772 825777** Open Sunday  
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**Sevenoaks** 109-113 London Road **01732 459555**  
**Sheffield** 635 Queens Road, Heeley **0114 255 5861** Open Sunday  
**NEW Solihull** 149-151 Stratford Road **0121 733 3727**  
**Southampton** 33 London Road **023 8033 7770**  
**Swansea** 24 Mansel Street **01792 465777** Open Sunday  
**NEW Swindon** 8-9 Commercial Road **01793 610992**  
**Tunbridge Wells** 28-30 St Johns Road **01892 531543**  
**Witham (Essex)** 1 The Grove Centre **01376 501733**  
**NEW Wolverhampton** Burdett House, 29-30 Cleveland St. **01902 312225**

## within the M25

- Bromley** 39a East Street **020 8290 1988**  
**Chelsea** 403 Kings Road **020 7352 9466**  
**Croydon** 369-373 London Road **020 8665 1203** Open Sunday  
**Epsom** 12 Upper High Street **01372 720720** Open Sunday  
**Holborn** 144-148 Grays Inn Road **020 7837 7540**  
**Kingston** 43 Fife Road **020 8547 0717** Open Sunday  
**Southgate** 79-81 Chase Side **020 8886 2777**  
**Swiss Cottage** 21 Northways Parade, Finchley Rd **020 7722 9777** Open Sunday  
**Watford** 478 St Albans Road **01923 213533** Open Sunday

Please call to verify hours of business.

Contact our outlets via E-Mail [outlet@sevenoakssoundandvision.co.uk](mailto:outlet@sevenoakssoundandvision.co.uk)

## who are sevenoaks?

Founded in 1972, Sevenoaks Sound & Vision is one of the largest and most successful hi-fi and home cinema retailers in the country.

Each Sevenoaks Sound & Vision outlet stocks a wide range of quality products, covering all categories of specialist home entertainment, from Hi-Fi Separates to Widescreen Plasma Televisions and Projection Systems, all at highly competitive prices.

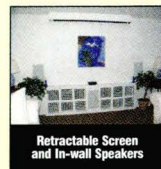
Friendly staff are available in all stores to advise, demonstrate and guide you through the home entertainment jungle.

## new outlets now open

We are delighted to announce that we have opened new stores in the following locations. **Poole** 01202 671677 • **Solihull** 0121 733 3727 • **Swindon** 01793 610992 and **Wolverhampton** 01902 312225. Also, our **Leeds** store has re-located to larger premises.

## custom installation

Sevenoaks Sound & Vision's Custom Installation Service enables the integration of a home cinema or hi-fi system into your home as neatly and seamlessly as possible. All electronics can be hidden away, speakers discreetly mounted either in the wall or ceiling and the complete system operated via remote control.



Our installation experts are fully trained to the highest standards in all areas and provide a prompt, reliable and professional service. Whether you're looking for a multi-room system, a dedicated home cinema installation with a retractable screen and built-in speakers or an integrated control or lighting system, Sevenoaks Sound & Vision has a diverse range of products available to cater for all your requirements.

## sevenoaks online

The Sevenoaks Sound & Vision website has news and information on the Sevenoaks group and its 48 outlets nationwide. The website is designed to provide you with answers to the questions you may have when buying new equipment.

There are regularly updated stock clearance lists with hundreds of products on offer and detailed pages to help you locate your nearest outlet.

For impartial advice and information, just click on [sevenoakssoundandvision.co.uk](http://sevenoakssoundandvision.co.uk)

## stock clearance

With 48 outlets nationwide, the Sevenoaks Sound & Vision group stock and display a wide range of products. As individual models and product ranges are changed or superseded, the preceding models are made available at a reduced price, for clearance. Visit our Website for an up-to-date list of the clearance stock, listed by outlet, within the Sevenoaks Sound and Vision group.

## 0% finance option†

Spread the cost of buying. 0% finance option is available on the vast majority of products we stock. †Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

## pricing policy

Whilst we do not claim always to be the cheapest, we try to ensure our prices are highly competitive. Take into account the expert advice, unrivalled product selection, demonstration facilities and excellent pre, during and after sales service and the lower price might not look such good value.

In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention. We will always endeavour to offer you the best deal.

# STEREO AMPLIFIERS

Integrated and pre/power amps



Amplifiers come in two basic forms: integrated and preamplifier (pre) plus power amp combinations. Integrated simply means that both pre and power sections are in one box. There are definite advantages to separating the low level, delicate signals in the preamp from the radiations of a power amp, so the more ambitious designs come in two or more cases. In some cases, each channel has its own power amp called a monoblock.

Amplifiers use two basic technologies: transistors or valves. Transistors are popular because of their practical and technical advantages, but valves – aka tubes – live on owing to aspects of sound quality that transistors can't replicate. If you want to play your music loud, use transistors; if you appreciate acoustic music, try valves.

The fundamental of amp/speaker interfacing is power rating and speaker sensitivity. You can drive a high-sensitivity speaker with a ten watt valve amp, but it takes a 200W behemoth to get the best out of speakers which present a difficult load. As a rule, you can't have too much power.

## How to choose an amp

The main areas in which amps vary are: timing, dynamics, stereo imaging and transparency. Timing is the ability to present the attack and decay of each note precisely; amps with strong timing have a snap and coherence that is very appealing.



Dynamics is a general term for the ability to portray variations in level between individual notes and is different to dynamic range (the difference between the loudest and softest notes). Dynamically strong amps tend to have more life and energy.

Stereo imaging is how solid or three-dimensional an instrument or voice sounds. The point of having two rather than one speaker is to make it possible to recreate the soundstage of the original recording, thus amps that have strong imaging skills can create a sonic space that seems to extend the room.

Transparency of detail is the most obvious difference between amps. One amp will present more subtlety than another, but the drawback with using this as your main criterion is that a forward or 'bright' sounding amplifier will emphasise detail at the expense of overall musical coherence.

## Q&A

### SHOULD I LEAVE MY AMP ON ALL THE TIME FOR BEST RESULTS?

All audio electronics perform better when they are warmed up, and this is particularly the case when it comes to amplifiers. If there's no way that you can leave it on all the time, make an effort to switch it on at least 20 minutes before listening.

### WHAT IS BI-WIRING AND BI-AMPLING?

Bi-wiring is when you run separate cables to the treble and bass/mid terminals on the speaker. In most instances, this improves sound quality so long as identical cables are used. Bi-amping is using two stereo amps to drive one pair of speakers, using one amp to drive the treble and the other for the bass/mid sections of the speakers.

### WHY DO VALVE AMPS HAVE SO LITTLE POWER?

Valve amps are inherently low powered in absolute terms – at least when you compare them to their transistor-based cousins. But when partnered with high-sensitivity loudspeakers, they are quite capable of producing perfectly adequate head-banging levels.

## HOME CINEMA STEREO

Stereo amps can be used in home cinema set-ups as well. You don't get the surround and centre channels, but well set-up stereo speakers do a remarkably good job of creating atmosphere for movies. Stereo amps

tend to be better at reproducing music as they don't have the (electrical) noise-inducing digital processing of AV amps. AV amps cost three to four times as much as stereo models of a similar quality.

## TOP BUYS



### Rotel RA-02 £349

A terrific budget integrated from Rotel's latest line-up. Offers pace, guts and finesse, wrapped up in a prettier package than one might traditionally expect from the marque.



### Primare A20 £750

This revised version of Primare's A20 MkII sounds significantly more engaging, with genuine punch and rhythm coursing through its circuits. A real musical maestro.



### AVI Type S21 MI £1,399

This AVI's full name is Lab Series Integrated Amplifier Type S21 MI – a lengthy moniker for such a neat little amp with a hugely accomplished sound.



### Exposure XXIII/XXVIII £2,790

A beautifully natural and dynamic sounding pre/power amp combo – a transistor design with a touch of the valve amp sound.



## Our favourite GROUP TEST BEST BUY GROUP TEST RECOMMENDED EDITOR'S CHOICE NEW GEAR REVIEW **STEREO AMPLIFIERS** *continued*

### Pre/power amplifiers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS						
				PRE-AMPLIFIER	POWER AMPLIFIER	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	POWER OUTPUT (W)	ISSUE NUMBER
R	Bryston BP25/4BSST	4,000	Extremely transparent, high-power combo, you'll listen louder and longer because you can	●	●	8	opt	●	300	241
EC	Classé CP-35/CA-101	2,797	Very classy Canadian pre/power combo with a natural, open and no-nonsense sound	●	●	4		●	100	237
EC	Electrocompaniet EC4.7/120DMB	3,448	Bulky Norwegian combo has wonderful transparency, wide dynamic range and fine musical tension	●	●	6		●	120	216
EC	Exposure XXIII/XXVIII	2,790	Highly natural and dynamic amplifier that offers the fluidity and energy of valves via transistors	●	●	6	opt	●	70	241
EC	Halco dm10/dm68	75,900	Extravagant, extreme and massive amp combo will probably polarise opinions, but delivers stunning midrange clarity	●	●	5		●	225	243
EC	Krell FPB 700cx	14,998	Reference class amplifier may represent overkill in many systems, but when no compromise is called for, this is it	●	●				700	234
EC	Linn Klimax Kontrol	6,000	Beautifully executed example of Scots audio art, sounds as clean as it looks and is a lot more transparent than most	●	●	4		●		238
EC	Linn Klimax Twin	6,000	Super-slim stereo power amp uses advanced switch-mode power supplies to fast, engaging effect	●	●				125	230
EC	Mark Levinson No380/No334	9,490	Pre has precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	●	●	6		●	125	195
R	Naim NAC 202/NAP200	2,720	More sophisticated than its forebears with a fleet-footed sound that draws you into the music	●	●	8		●	70	241
EC	Naim NAP500	10,995	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition	●	●				140	208
EC	Naim NAC552	11,750	Extremely expensive preamp, but still solid value. Magnificent sound with fine flexibility and convenience	●	●	6		●		233
R	Primare PRE30/A30.2	2,400	Beautifully built with great selection of features and serious power delivery	●	●	7		●	120	241
EC	Steinhardt DVP 2XR/Fidelio 102 DD	7,440	Brilliantly musical, making even difficult material enjoyable, but gets hot and has ergonomic foibles	●	●	7		●	100	236
R	TAG McLaren DPA32R/250MR	4,940	In a class of its own for extendibility and it's tremendously subtle, though it can sound constrained dynamically	●	●	6		●	250	230
EC	Unison Research Unico Pre/DM	2,590	Hybrid designs with a rich powerful performance that makes a fine balance between valve and solid state sound	●	●	3		●	150	242

# AV AMPLIFIERS

Surround sound amps for music and movies



The multichannel, surround sound or AV amplifier is a popular option, thanks to the success of the DVD player and home cinema. Now you can buy five channels or more of amplification for the price of two. Now that multichannel music is also on the agenda, there's a lot to be said for a good AV amp or receiver (an amp with a radio tuner built in).

So if you fancy hearing what DVD-Audio, SACD or even music DVD-Video can do, then check out a multichannel amp and speaker set-up – they're stunning with movies and none too shabby with music.

AV amps are usually designed primarily for movies and come with digital processing for the various soundtrack formats – Dolby Pro-Logic (analogue), Dolby Digital and DTS, which offer discrete surround sound in 5.1 and 7.1 channel formats. More ambitious designs also offer THX post processing, designed to emulate the sound of the mixing theatre at home.

Processing in AV amps is needed because the surround formats on DVD-Vs are compressed, limiting their high-fidelity



potential. This is why new formats SACD and DVD-A, which don't use 'lossy' compression, were created for music.

All this processing power can take its toll on analogue formats. The best multichannel amps for music are often the simplest, but any that offer a complete bypass option with six-channel input are suitable. It's also worth looking at real power – five or seven channels of amplification are not easy to produce with a feeble power supply, and the cheaper amps in particular often fail to live up to the claims.

## Q&A

### HOW MANY CHANNELS?

Depends on how many speakers you want. Multichannel music discs come with six or 5.1 channels, but for new movies, 7.1 systems are where it's at. 7.1 set-ups also mean you have speakers directly behind you – preferable for music discs.

### WHAT'S THE DIFFERENCE BETWEEN A PROCESSOR AND AN AV AMP?

Processors don't have amplification on board and you need separate power amps. AV amps and receivers have processing and amps in the same box.

### WHAT DOES THE .1 IN 5.1 STAND FOR?

This is the LFE (low frequency effects) or bass channel that is reproduced by a subwoofer.

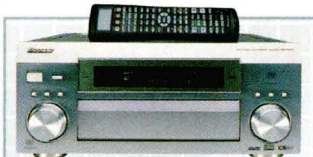
## HI-FI MEETS SURROUND SOUND

With DVD-Audio and SACD offering high-quality multichannel music, surround sound is no longer just a home cinema thing. An increasing number of people want to build a multichannel system that will do their music as well as

their movie DVDs justice, and the number of AV products delivering sufficient quality is on the increase. But most aren't cheap – building a top-quality system with five or more channels is inevitably more expensive than sticking with stereo.

There are some very decent integrated options below £1,000, though the best (and most costly) route is to buy a separate processor and power amp(s). Or you can add AV amplification to a stereo model you can't bear to part with.

## TOP BUYS



**Pioneer**  
VSX-D2011 £900  
A feature-packed receiver, and a great sounding one to boot. Only Denon's AVR-3803 currently competes at the price.



**Marantz**  
SR9200 £2,000  
Few AV receivers manage to sound as musical as this one. A top all-rounder and an excellent multichannel solution.



**Denon**  
AVC-A1SR £3,000  
Denon's AV behemoth is arguably the best integrated multichannel amp to date – superbly cinematic and one of the very few with genuine 'hi-fi' music credentials.



**Arcam**  
AV8/P7 £5,498  
A fantastic achievement from this respected UK brand – a top-ranking AV processor and seven-channel power amp.

## Our favourite AV AMPLIFIERS

GROUP TEST BEST BUY | GROUP TEST RECOMMENDED | EDITOR'S CHOICE | NEW GEAR REVIEW

### Multichannel amplifiers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS				
				RECEIVER	7.1 COMPATIBLE	5-CHANNEL POWER (W)	ISSUE NUMBER	
<b>INTEGRATED AV AMPS</b>								
BT	Arcam AVR200	800	Upgraded AVR100 with Dolby Pro-Logic II and some bass management. Great for stereo, a bit bass-light for multichannel	●	6	70	229	
➤	Denon AVR-3803	899	Feature packed 7.1 channel AV receiver which needs a lot of studying but does everything well	●	11	110	239	
RT	Denon AVC-A11SR	1,800	Feature-packed with superb spatial processing, combined with powerful, though slightly opaque overall audio quality		11		235	
EC	Denon AVC-A1SR	3,000	An AV amp with genuine high-res hi-fi credentials. Includes a ground-breaking 'wide bandwidth' digital audio link		8	170	232	
➤	Harman Kardon AVR 5550	850	The upgrade to the AVR 5500 comes with features that are actually of some use to the audiophile and a meaty sound to boot	●	9	85	240	
BT	Marantz SR9200	2,000	Powerful, cool-running UK-customised THX receiver with spacious, relaxed sound quality with music and movies alike	●	9		235	
➤	Pioneer VSX-D2011	900	Outstanding sonic performance for the price and a remarkable features list to boot	●	10	140	235	
EC	Pioneer VSA-AX10i	2,700	Seven channel tour de force with automatic speaker set up and eq, excellent with music, movies and DVD-A/SACD		8	150	229	
RT	Sony VA-777ES	1,500	Smart circuitry gives this model unusual precision and transparency, and it is a fine all-rounder		9	100	210	
<b>AV PROCESSORS AND POWER AMPS</b>								
EC	Arcam AV8/P7	5,498	State-of-the-art processor (£2,999) and seven-channel power amp (£2,499). An excellent fusion of stereo and surround sound		7	180	235	
EC	Bryston SP1/9B THX	7,100	Stripped-back 5.1 channel processor/amp combo reaches genuine audiophile heights		6	opt	120	219
EC	Copland CVA306/CVA535	3,748	Tube analogue six-channel pre transforms multichannel audio from a novelty into a genuine advance for the high fidelity art		5		125	236
RT	Cyrus AV8/3x Smartpower	2,900	Classic Cyrus sound translated to a multichannel arena, limited features and power, but civilised sound		3		105	238
EC	EAD TheaterMaster 8000 Pro	5,200	Arguably the most 'musical' sounding AV processor to date – tested with the PowerMaster 8300 multichannel power amp		9		242	
BT	Marantz PS-17/2 x SM-17	3,400	Classy and capable system, great steering, warm solid sound and high detail resolution, and some great gadgets		10	60	238	
EC	Meridian 861	9,833	Powerful surround processor with flexible modular construction, marvellous versatility to drive any speaker configuration		6		230	
RT	Myriad MDP500/MA240/360	3,799	Superb three-box, five-channel AV amplifier. Great with movies and beats most multichannel amps hands down with music		9	opt	120	215
RT	Naim AV2/NAPV175/NAP150	4,175	First truly credible multichannel system from Naim is idiosyncratic but offers excellent basic sound with modest spatial steering		5	50	238	
EC	Parasound Halo C1/A51	8,500	Powerful and flexible processor/power amp combo with impressive sound. Excellent value – processor includes onboard screen		11	250	243	
BT	Primare SP31.7/A30.5	4,200	Great all-round system which brings the qualities of good stereo high fidelity to a multichannel world		5	120	238	
RT	Roksan DSP/5ch amp/VSU	2,440	Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels		4	80	210	
EC	TAG McLaren AV32R EX	2,994	Flexible AV processor, unusually good with music. Excellent for multichannel system in standard or seven-channel 'EX' form		6		215	

**SPECS KEY** **RECEIVER** Integrated multichannel amp with built-in radio tuner. **LINE INPUTS** Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. **7.1 CHANNEL COMPATIBLE** The amp either has seven-channel in and outputs or in some instances is equipped with seven channels of amplification. **5-CHANNEL POWER (W)** Power output in watts per channel of all channels driven by the amp.

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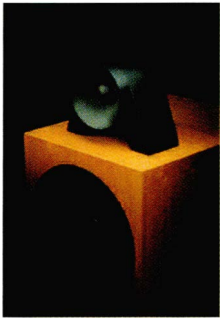
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## Winners !



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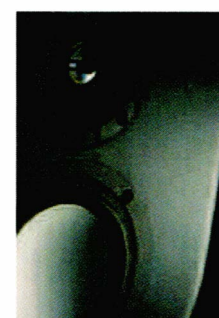
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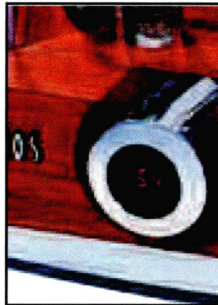
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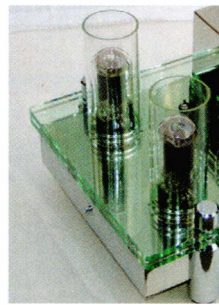
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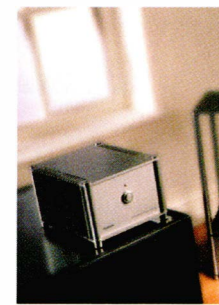
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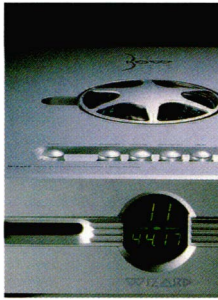
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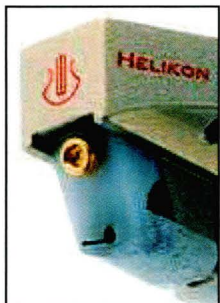
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Win a superb Stratos interconnect worth £125; choose RCA or balanced. Identify as many of the twenty leading brands we represent and demonstrate from each photo. Write, fax or e-mail your name, address and phone number to [competition1@audiosalon.co.uk](mailto:competition1@audiosalon.co.uk). If you tie, the first three will be drawn from a hat by Baby Anne Lawson (1 year old). Winners names and Anne's photo will be published in next month's Hi-Fi Choice.

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**Question:** How does a £99 interconnect offer high performance without the multiplication factor of marketing and distribution costs?  
**Answer:** by mail order.

Stratos was conceived by a leading audio designer and evolved over six years by exhaustive subjective evaluation. It is manufactured from unique materials and techniques not available elsewhere.

Foremost techniques include:

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- (3) - 3-T solder. Time, temperature and twinned tin and silver solder to assure long-term adhesion

Market research indicated that most competing cables merely redesign off-the-shelf materials, but we found most wires and phono plugs degraded sound audibly. Stratos series III interconnects feature our own design of 140 strand 8N purity copper with proprietary di-electric, geometry. Triple shielding gives an industry high of over 80% effectiveness using the standard measure. Beautifully finished in pearlescent clear sleeving, the interconnect is sealed at both ends to resist capillary moisture and oxygen.

Our phono plugs are unequalled. Made from direct gold-plated phosphor bronze, it is machined from bars, not folded metal; this retains the desired crystal structure and makes a very handsome finish; fully shielded with reflective outer surface; centre pin and outer (earth) are internally connected very close to signal transfer which is passed to the socket by levered and high grip "teeth" - centre pin is generous in size and sprung levered.

In short nothing has been left to chance or term deterioration. By offering 1.2 metres for no extra charge over the standard 1.0 meter, you get the advantage of the standing wave phenomenon. Over six years, 87 prototypes resulted in series III - an interconnect which will make all the difference to the music. Try it and "hear". Save your music signal and save money by direct buying with 28-days trial offer. Visit [www.audiosource.co.uk](http://www.audiosource.co.uk) for further information.

## New, Ex-dem and Previously Cherished Hi-Fi

Our prices are 10 - 20% below market value for rapid turnover  
 All used equipment guaranteed for six months; new and ex-dem adds manufacturer guarantee. New (factory) sealed boxes indicated (New), Ex-dem (Ex-D) or Used (s/h)  
 Goods shipped next day delivery by TNT or UPS. Premium service costs £9 per box UK.

Digital	LIST	SALE
BOW ZZ 8 CD Player I2S Bus (ex-d, mint)	£4,995	£3,495
Gryphon Adagio (3 months old, s/h, mint)	£4,300	£3,250
Neukomm Reference CD Player (ex-d, mint)	£2,250	£850

### Amplifiers

Art Audio Diavolo monoblocks 300B chrome/gold (ex-d, mint)	£5,995	£3,995
Audio Note M7 Pre-amp (ex-d, mint)	£7,500	£3,500
Audio Note Keron C Poweramp (s/h, mint)	£87,000	£22,000
ATC CA2 Preamp (s/h, mint)	£765	£495
BOW ZZ 1 Integrated Amp (ex-d, mint)	£2,795	£1,995
Conrad-johnson PV10AL (s/h, mint) (brand new NOS Tungstram Valves)	£1,195	£495
Gryphon Callisto 2200 Int Amplifier (s/h, mint, with phono)	£5,790	£4,150
Naim 82 Preamp s/n 82209 (1993) (s/h, mint)		£995
Naim 250 s/h 164185 (2000) (s/h, mint)		£1,195
Naim HiCap s/h 164904 (2000) (s/h, mint)		£395
Neukomm Ref Amplifier 150 wpc (ex-d, mint)	£2,500	£850
PassLabs X-2 Pre-amp (New)	£2,550	£1250
PassLabs Aleph-5 (s/h, mint)	£3,350	£1750
Proceed Pre-amp (Fully Balanced, s/h, mint)	£1,995	£795

### Sugden

Masterclass Phono Amp (ex-d, mint)	£1,250	£850
Masterclass Pre-amp (RC, bal, s/e, ex-d, mint)	£2,300	£1,450
Masterclass Monoblocks pair (bal, ex-d, mint)	£6,600	£3,990
<b>Sugden Bijou System (ex-dem)</b>		
CDMaster (ex-d, mint)	£1,299	£1,095
HeadMaster pre (with R/C) (ex-d, mint)	£659	£550
FMMaster tuner (ex-d, mint)	£949	£850
AmpMaster power amp (ex-d, mint)	£689	£575
Unison Research 845 Absolute (s/h, mint, very rare, beautiful and sonically without an equal)	£19,995	£8,500

### Loudspeakers

Audiostatic Wing Electrostatics (ex-d, slight mark, satin white)	£5,000	£2,495
Audiostatic Wing Electrostatics + Fins (ex-d, satin silver)	£5,500	£2,995
ATC Active 10 (s/h, mint)	£1,600	£950
Avalon Arcus (cherry finish, mint, s/h)	£7,800	£4,650
Proac 1SC (s/h, mint, burr oak)	£1,439	£850
Proac Future 2 (ex-d, mint, birds eye maple)	£11,450	£5,995
Wilson Audio 6.1 (s/h, mint, piano black)	£20,000	£9,995
Revel Studio (ex-d, mint, black/silver)	£9,995	£POA
Zingali Overture 1 (ex-d, mint, walnut with stands)	£1,990	£1,550
Zingali Overture 4 (ex-d, slight mark) (s/h, mint, walnut, genuine offer)	£4,750	£2,950
	£4,650	£1,750

### Analogue

Clearaudio Insider MC Cartridge (s/h, very little use) - inspected and tested by us	£5,750	£1,995
Lyra Lydian Beta MC Cartridge (new, sealed box)	£595	£349
SME Model 10 + IV Arm + Audio Note ANVx + VDH Frog Mark 2 (s/h, mint)	£5,658	£3,995
Sumiko Pearwood MC Cartridge (new)	£1,195	£850

List no 89. For an updated and comprehensive list of equipment and audio cables, please visit [www.audiosalon.co.uk](http://www.audiosalon.co.uk)

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# STEREO SPEAKERS

Speaker pairs for stereo sound



While loudspeakers are relatively straightforward in construction, they have one of the most difficult jobs in hi-fi – turning an electrical signal into an acoustic one. Most consist of two or more drive units in a box that usually has a port in it to make life easier for the cone in your mid and/or bass driver. Alternatives to this arrangement include panel speakers, which use electrostatic or ribbon technology, and horns, which use drive units in complex cabinets that greatly improve efficiency.

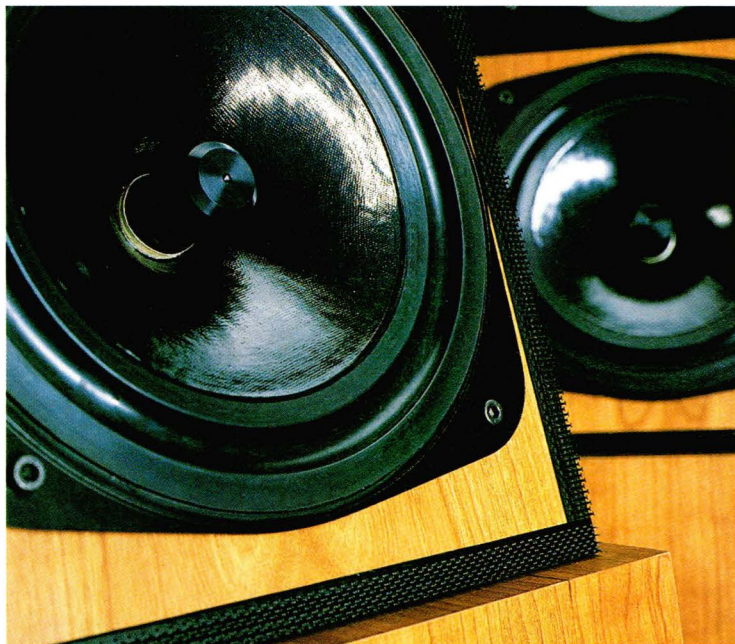
Box speakers are either designed to stand on the floor (floorstanders) or on a stand (stand or shelfmounts). Floorstanders have greater internal volume which can translate into greater efficiency and/or bass extension, but less substantial designs also introduce cabinet resonance and thus distortion. But they don't need stands and therefore have the aesthetic edge. Standmounts have less cabinet to vibrate and often score in terms of imaging and timing, but need good stands to work well.

## Positioning

The closer the speaker is to a wall, the greater the reinforcement of bass. As all rooms differ, there's no simple formula for placement and experimentation will yield the best results. Altering the angle at which the speakers face the listener can also make a difference to balance and stereo image.

## Going multichannel

Many stereo speakers can be augmented with centre and surround channels from the same brand to create a multichannel system. The most important element is a centre channel, which needs to match the stereo pair as closely as possible. For the best musical results, surrounds should be as per the front left and right channels, but if space or funds don't permit, smaller designs can be used quite effectively.



## Choosing speakers

Because speakers and the rooms they are used in vary so much, choosing a pair tends to be quite subjective. To find some that will suit you, try to listen to a good variety to hear how they differ, and if possible, audition some at home. Tonal balance tends to vary the most, but is less important than more subtle factors such as timing and dynamics. Finally, listen with your ears not your eyes – great-looking speakers aren't necessarily great sounding.

## Spikes

Floorstanding speakers and stands have threaded inserts for spikes that allow rigid coupling with the floor. These have the advantage of draining resonance from the speaker and giving tighter bass, but can result in more vibration getting back to the electronics and often cause the floor to resonate as well.

## POWER

Though some speakers have a power rating, this isn't as informative as a rating for how difficult they are to drive, nor does it indicate wattage extremes for the partnering amp. In practice, an amplifier cannot be too powerful. Our listings quote ease of drive to indicate how much power

your amp needs to avoid a mismatch. An above-average (A+) speaker will work with amps rated at 25W plus, while an average (A) speaker will need 50W or more, and a below average (A-) speaker could require 100W plus to sound its best. These are guidelines rather than rules.

## Q&A

### IF SPEAKERS ARE RATED AT 75 WATTS, DOES THAT MEAN I NEED A 75 WATT AMP?

No, see the box on power for the full story.

### WHICH SPEAKERS ARE BEST FOR SMALL ROOMS?

Those designed to work close to the wall will be smoother in confined spaces. Speakers that have relatively dry, tight bass will also sound better.

### WHICH SPEAKERS ARE BEST FOR BIG ROOMS?

Big, efficient, easy-to-drive designs are more likely to be able to fill a room better than compact models.

### DO I NEED TO BUY CENTRE AND SURROUND CHANNELS FROM THE SAME BRAND AS MY STEREO SPEAKERS?

Yes, assuming that you're wanting to create a homogenous surround sound experience, where voices don't change when they move from one channel to another.



## TOP BUYS



**Dynaudio**  
Audience 42 £400

It might be expensive for a vinyl-covered miniature, but it's an aristocrat among the breed, and we'd be surprised if there's a better small speaker around for the price.



**JMLab**  
Cobalt 816 Sig S £999

One of the best all-round performers below £1,000, combining a lively and dynamic character with an unusually smooth and neutral balance.



**B&W**  
Signature 805 £2,500

You won't get this degree of resolution out of a wider bandwidth speaker at anywhere near the price, and most of your music will sound considerably better through them.



**Neat**  
Ultimatum MFS £2,995

A standmount speaker that sounds much bigger and more spacious than it looks. A touch bright-sounding perhaps, but superbly informative.

## Our favourite STEREO SPEAKERS

GROUP TEST BEST BUY | GROUP TEST RECOMMENDED | EDITOR'S CHOICE | NEW GEAR REVIEW

### Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE WxHxD (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL
<b>UP TO £1,000</b>									
GB	Acoustic Energy Aegis Evo 1	180	An unusually classy and sophisticated performer for the price; laid-back sound and good looks too	19,36,24	A	30	●	226	
GB	ATC SCM12	999	Transparent, engaging and quick – a revealing, high-fidelity performer that's not afraid to bare all	22,39,25	A	62	●	237	
FR	Audio Note AZ One	449	Delivers music with great gusto and enthusiasm, but also more than its fair share of coloration	23,83,29	●	A	30	●	215
FR	AVI Biggatron Red Spot	599	Good bass coherence and timing, but the lean and decidedly forward balance won't be to every taste	19.5,37,30	A	30	●	211	
GB	B&W DM303	180	Chunky looking and lively sounding, with deep bass, a fine midband and a restrained top end	20,33,23	A	23	●	226	
GB	B&W DM602 S3	300	Old-fashioned size/shape, but this timeless design has a rare combination of grip, authority and headroom	24,49,29	A	25	●	234	
GB	B&W DM309	330	All the grace and punch of the smaller DM303 – a superb floorstander for the money	20,91,30	●	A	60	●	235
GB	B&W DM603 S3	600	Excellent all-rounder, smooth for its price with fine bass and mid, though top might be more refined	20,91,29	●	A-	25	●	231
FR	B&W CDM-1NT	750	An uncommonly stylish and sonically self-effacing standmount that should be very easy to live with	22,40,29	A	30	●	208	
FR	Bluroom Minipod	249	Wonderfully blobular styling aside, it's hard not to fall for the Minipod's openness, expression and detail	18,34,17	A	50	●	225	
FR	Castle Durham 3	399	A very attractive near-miniature wallmount with a lively and communicative disposition – lots of fun	19,37,22	●	A	45	●	227
GB	Castle Conway 3	930	Lovely real wood finish and a beautifully balanced sound, fine dynamics and transients, but might have more 'air'	22,91,27	●	A+	30	●	237
FR	Dali Royal Tower	750	Cutely compact floorstander has a delightful liveliness and lightness of touch to match its luxury real wood finish	17,85,22	●	A	25	●	237
GB	Dynaudio Audience 42	400	An aristocrat of the vinyl-covered miniature breed. A terrific small speaker for the price	17,29,24	A	40	●	215	
FR	Dynaudio Audience 62	729	Pricey but cute vinyl floorstander that is a class act sonically – lightweight, but clean and dextrous	20,86,26	●	A	30	●	231
FR	Elac JET 205	650	Sweet, smooth, clean and delicate tweeter justifies hefty price tag, but a little lacking in warmth and body overall	20,33,29	A	40	●	231	
FR	Energy Connoisseur C-5	600	Has a marvellously even and neutral overall balance, if a little too laid-back with restrained dynamic expression	20,95,37	●	A+	23	●	240
GB	Epos ELS3	200	Few affordable speakers sound as clean and convincing while taking up so little real estate	18,27,19	A-	60	●	241	
GB	Epos M12	499	Retains the beguiling midband coherence that made the ES12 such a favourite. A genuine class act	20,38,26	A	40	●	215	
GB	JMLab Chorus 715	529	A fine all-rounder, this compact floorstander is lively and well balanced with good dynamic drive and grip	20,94,28	●	A-	22	●	227
FR	JMLab Cobalt 816	899	A little lean, cool and bright, but has righteous dynamic expression and lively communication skills	22,99,29	●	A	22	●	224
GB	JMLab Cobalt 816 Sig S	999	Great all-rounder – lively and dynamic, smooth and neutral, marred only by a slight treble 'sting'	22,98,31	●	A-	25	●	242
FR	KEF Q1	250	Stylish if slightly small-sounding stand-mount with fine midband coherence; works well close to a wall	22,35,30	A	30	●	234	
FR	Mission m71	129	Neat-looking and very discreet-sounding at a very nice price; experiment for best placement	17,29,28	A	40	●	226	
GB	Mission m73	199	Good-looking floorstander. Dynamics are a little limp, but it has a good overall balance. Excellent value for money	20,88,31	●	A	25	●	215
GB	Mission m51	300	Distinctive and dynamic – not the last word in subtlety but enjoyable with both music and video sources	21,32,34	A+	58	●	228	
FR	Mission 782SE	900	Definitely one of the prettiest speakers around. Very even balance but could sound more exciting	17,80,30	●	A	35	●	242
GB	Monitor Audio Bronze B2	200	A lively and entertaining speaker with tight controlled bass and pronounced midband	18.5,35,25	A	42	●	238	
GB	Monitor Audio Silver S1	300	Super-quick sonics thanks to the C-CAM metalised drivers. Resolution and speed – a great value box	18,30,24	A	45	●	236	
FR	Monitor Audio Silver S8	800	A thoroughly impressive all-rounder, notable for its wide dynamic range, excellent imaging and fine neutrality	19,90,27	●	A	20	●	237
FR	Monitor Audio Silver S10	1,000	Timing might be less than the best, but the full balance and fine dynamic range deliver plenty of detail.	20,100,27	●	A+	20	●	242
GB	Mordaunt Short MS914	300	An even and open loudspeaker that is both detailed and precise. A budget gem	21,90,27	●	A	50	●	234
FR	Neat Petite III	845	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,31,20	A	30	●	211	

**SPECS KEY** SIZE WxHxD (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 walls(s). **CLOSE TO WALL** The speakers will work best when up against a wall (but avoid corners).

# PJ Hifi

*Do you want to choose your hifi or home cinema system, in a comfortable and relaxing environment...?*

*Do you want friendly and impartial advice ( and a cup of tea) ...?*

*Do you want to buy your system based on what you hear, and see, and not what somebody tells you...?*

## **Do you live in GUILDFORD...?**

.....or Addlestone, Aldershot, Ashford(Middx), Ashstead, Bagshot, Basingstoke, Bracknell, Bookham, Bramley, Camberley, Chertsey, Chipstead, Chobham, Cobham, Cranleigh, Crowthorne, Dorking, Epsom, Esher, Farnborough, Farnham, Fleet, Frimley, Godalming, Hartley Wintney, Hampton, Haslemere, Hook, Horsham, Kingston, Liphook, Leatherhead, Liss, Molesey (East&West), New Malden, Odiham, Petersfield, Reading, Reigate, Redhill, Richmond, Shepperton, Virginia Water, Walton-on-Thames, West Byfleet, Weybridge, Windsor, Woking, Wokingham, Yateley .

**Nobody else** in these areas carries all the following major hifi brands:

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**Nobody else** in these areas carries all the following major Home Cinema products:

DVD players: Arcam & FMJ, **Cyrus**, Denon, Harman Kardon, Meridian, Rotel, **Tag McLaren**, Yamaha,

Processors: **Arcam FMJ AV8**, **Cyrus**, **Lexicon**, Linn, Meridian, Rotel, **Tag McLaren**.

Amplifiers: Arcam/FMJ, **Bryston**, **Cyrus**, Denon, Harman Kardon, **Lexicon**, **Naim**, Rotel, **Tag McLaren**, Yamaha.

Display devices: Plasma screens from Loewe, Panasonic, Pioneer and **Yamaha**. Televisions/LCD: Loewe.

Projectors: **Barco(CRT/DLP)**, **Sim (DLP)**, **Yamaha(DLP/LCD)** Screens: **Stewart/Draper/Vutec** ,

Video Processing: **Faroudja**, **I-Scan**, **Key Digital**, **Lumagen**, **Tag**. Control systems: **Crestron**, Lutron lighting.

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## Our favourite **STEREO SPEAKERS** continued

### Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE (WxHxD) (CM)	FLOORSTANDER	EDGE OF DRIVE	BASS (FROM Hz)	FREE SPACE	CLOSE TO WALL
R	Opera SP-1	525	A strong case for serious hi-fi with curves. Sound is clear, crisp and detailed	16,29,23		A	50	●	225
EC	PMC DB1	555	Lacks a little weight and authority, but beautifully balanced, free from boxiness, and loads of fun for a tiny	16,29,24		A	50	●	240
EC	PMC TB2	700	A worthy successor to the TB1, which sets a high standard in its size/type for neutrality and transparency	20,41,31		A	30	●	211
R	Sonus Faber Concerto Home	999	Looks good and sounds better. Great midband communication skills, well aligned for close-to-wall siting	24,36,34		A	40	●	233
R	Spendor S3	600	Beautifully voiced, unboxy, lacks some dynamic and loudness capabilities. Best suited to small rooms	17,31,21		A-	30	●	223
✓	Spendor SR5	1,000	This wall-mount very cleverly avoids the usual colorations, delivering a very dynamic if rather dry sound	31,31,18		A+	50	●	240
EC	Tannoy Mercury mX3-M	229	Beautifully balanced and voiced, with low coloration and good transparency, but could be more dynamic	19,87,25	●	A+	45	●	234
R	Tannoy Eyris 1	600	Pricy but very cute wallmount miniature; oddball, but has marvellous midband subtlety and delicacy	17, 35, 26		A+		●	227
R	Tannoy Eyris 2	999	This super-slim and cutely different-looking floorstander is very communicative, despite weak treble	17,91,26	●	A	20	●	231
✓	Tannoy Sensys DC2	649	A great-value speaker combining a super-tweeter and Dual Concentric drive unit at a real-world price	21,97,29	●	A	35	●	242
EC	Triangle Antal XS	875	Ugly ducking has a rather tasty sound, with plenty of vigour and excitement	22,108,30	●	A-	40	●	219
<b>ABOVE £1,000</b>									
EC	ATC SCM10A	1,269	Stylish, active powerhouses with plenty of subtlety when required (balanced connection only)	23,39,31		A	45	●	221
EC	ATC SCM20 SL	2,051	Not too transparent, but has great dynamic grip and bass to die for. Needs a powerful amp	24,44,33		A-	65	●	219
EC	ATC Active 20	2,538	30k + 300W equals resolution and bass that most amp/speaker combinations dream about – a bargain	56,28,36		act	45	●	240
EC	ATC SCM50A SL	7,255	350W of power combine with superb drive units and a 48kg cabinet to provide alarming resolution	35,72,48		A	38	●	218
R	Audio Note AN-E/D	1,520	This classic large standmount might have throwback aesthetics, but it delivers an exceptional all-round sound	36,79,28		A+	20	●	204
R	Audio Note AN-J/SPe	1,675	Retro styling, but a vigorous and dynamic performer that creates fine musical tension	33,59,25		A	38	●	219
R	B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31		A	28	●	199
EC	B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art. Needs real power, but gives real sound	39,111,55	●	A-	34	●	183
R	B&W Nautilus 801	8,500	The 801 is a magnificent loudspeaker in nearly every respect, but it is one that likes to play loud	52,111,69	●	A-	34	●	186
EC	B&W Nautilus 800	11,000	Unequivocal challenge for world domination. One of the most revealing speakers around	45,120,65	●	A-	<20	●	231
EC	B&W Signature 805	2,500	Staggering transparency and resolution for the money, one of the best standmounts money can buy	24,42,34		A-	42	●	232
R	BC Acoustique Araxe	1,300	Neat compact floorstander is a very lively communicator, if a little short on deep bass grunt	21,92,30	●	A-	40	●	204
EC	Castle Harlech S2	1,000	Improved Harlech is slightly aggressive, but lots of fun, and very good-looking too	20,96,33	●	A	50	●	219
R	Castle Howard S3	1,350	A solid all-rounder with uniquely spacious imaging, bit pricy compared to some though	21, 99, 32	●	A+	38	●	229
R	Dali Noble	1,059	Easy on the eye and the ear, but unerringly musical. Some might prefer harder-hitting dynamics and bass	18,117,23	●	A	41	●	225
EC	Dynaudio Audience 82	1,460	Bulky, with vinyl finish, but offers exceptional neutrality, bass extension, power handling and loudness potential	22,106,36	●	A	30	●	229
R	Dynaudio Contour 1.3 MkII	1,198	Outstanding performer among compact standmounts; neutral, with fine punch and dynamic range	20,38,29		A-	45	●	219
EC	Ferguson Hill FH001	6,853	Looks and sounds wonderful, with realistic dynamic expression, but needs careful amp matching and sub(s)	90,166,80	●	A+	180	●	242
R	Harbeth Super HL5	1,699	Looks old-fashioned, but classic monitor combines authority and transparency with good neutrality	33,64,31		A	30	●	233
EC	Infinity Intermezzo 2.6	1,600	Bi-amp speaker sounds laid back and 'disappears' acoustically; highly enjoyable, looks and sounds great	25,38,29		A+	27	●	233
EC	JBL Ti-2K	1,250	Solid standmount with boat-tail rear end and highly detailed, spacious sound alongside weighty bass	42,28,42		A	45	●	230
EC	JMLab Cobalt 826	1,279	Big three-way French floorstander is lively, informative and mostly neutral, if a tad bright	22,103,34	●	A-	35	●	219
EC	JMLab Micro Utopia	3,349	Superb top-of-the-line standmount with magnificent powers of analysis and communication; no deep bass	26,43,41		A-	50	●	220
R	Linn Katan Aktiv/LK140	2,325	Too small to have much grunt or loudness, but bright top is very sweet, clean and detailed	17,34,23		act	40	●	214
EC	Living Voice Auditorium	1,700	New improved version even better than before. Beautifully natural and expressive – a real universal soldier	22,97,28	●	A+	35	●	239
EC	Living Voice Avatar	2,700	Dynamic and highly resolved, yet physically discreet design with a relaxed balance	22,104,27	●	A+	40	●	218
EC	Living Voice Avatar OBX-R	4,000	Discreet, but extremely fine design with external crossover and an affinity with great amps and sources	22,104,27	●	A+	45	●	196



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Our favourite GROUP TEST BEST BUY GROUP TEST RECOMMENDED EDITOR'S CHOICE NEW GEAR REVIEW  
**STEREO SPEAKERS** continued

Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE (H/D (CM))	FLOORSTANDER	FASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL
	Meridian M33	1,560	Compact active wallmount packs remarkable dynamic vigour into a very discreet package	15,38,22	act	45			214
	Naim Allae	1,990	Chunky little floorstander has a 'cold' overall balance, but remarkable powers of musical analysis	24,94,28		A	40		229
	Naim NBL	6,925	Elegant, large floorstander is exceptionally informative, with an awesome dynamic range and dry, forward balance	29,116,47		A-	20		200
	Naim SL-2	4,995	Delivers magnificent musical analysis and communication skills in a notably discrete physical package	28,103,33		A-	20		232
	Neat Ultimatum MFS	2,995	Wonderful five-driver standmount sounds bigger than it looks. Very spacious and informative, if a little bright	22,38,37		A+	25		241
	Neat Ultimatum MF9	8,500	Superb musical communicator with splendidly deep and agile bass and fine open neutrality	22,150,40		A-	20		226
	PMCLB1	1,150	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic	17.5,53,26		A-	40		199
	PMC FB1	1,410	Has the lively coherence of a simple two-way, alongside impressive bass weight and extension	20,105,31		A	20		204
	PMC AML1	3,700	Sparkling active Pro monitor with serious attitude, 'in yer face' balance and great dynamics	20,40,32		A	25		214
	PMC IB2	6,150	Stunning in an understated way, this speaker creeps up on you and hooks you with its transparency and power	33,74,47		A-	25		237
	Royd Revelation RR2	1,199	Pretty little floorstander delivers genuinely deep bass without 'thump'; lovely clean, open midband too	19,89,18		A-	20		221
	Ruark Prologue II	1,250	Attractive shape with a punchy and unusually open and neutral sound that's impressively free from harshness	22.5,96,24		A+	40		229
	Ruark CL20	1,650	This punchy rock'n'roller has plenty of drive and enthusiasm, but can sound aggressive	23,93,34		A	38		219
	Snell E.5 Mk2	1,520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30		A	20		211
	Spendor SP2/3e	1,295	Large standmount is polite to a fault, but has beautiful 'hear-through' transparency – a genuine classic	28,55,33		A+	50		219
	Spendor S8	1,700	Classic midband neutrality and transparency, the S8 has great subtlety and fine bass grunt too	23,92,32		A+	40		229
	Spendor S9	2,500	Meaty three-way with superb bass and explicit mid – one for detail fans	24,99,8,38		A+	37		223
	TAG McLaren F1	17,995	Oddball aesthetics with accurate, unflappable, controlled and consistent sonic neutrality	40,127,48		A-	25		202
	Tannoy Dimension TD8	4,000	This stylish speaker is a splendid all-rounder, with fine dynamics, precise imaging and minimal coloration	30.5,85.5,30		A-	25		240
	Tannoy Dimension TD10	5,000	Extremely competent and rhythmic speaker, a futureproof supertweeter and detail to die for	35,101,37		A-	38		215
	Tannoy Dimension TD12	6,500	Art Deco-inspired style, plus magnificent headroom and genuine monitoring neutrality – a tour de force	42,126,41		A-	23		225
	T+A Talis TLS3	1,799	Super-slim and beautifully engineered metal towers deliver marvellous musical results with superb imaging	15,130,17		A	30		225
	Triangle Zays 222	1,295	Wonderful freedom from time-smear gives invigorating and realistic dynamics, but colorations are also obvious	26,116,32		A	22		242
	Vandersteen 2Ce Sig	1,990	Very superior midband neutrality, impressive freedom from boxiness and splendid stereophony. A classic	41,109,26		A-	30		229
	Waterfall Victoria	1,500	Glass enclosures go with any decor. The Victorias make music in a confident and involving way	21,100,21		A	45		225
	Wilson Benesch Chimera	15,000	Elegant with lovely sonic delicacy and plenty of weight too. Works best at low levels, but a difficult load to drive	24,145,55		A-	20		234
	Wilson benesch Discovery	5,500	Innovative three-way with built-in stand, combines great subtlety with weight and headroom	23,47,38		A-	45		212

# AV SPEAKERS

## Speaker solutions for multichannel surround sound



Multichannel speaker systems have a front left/right (L/R) stereo pair, a centre or dialogue channel, two (5.1) or four (7.1) surround speakers and often a subwoofer. For best results, each of these speakers bar the sub should be identical. The problem is that few surround systems are dedicated to music and perform a home cinematic role as well, meaning the centre speaker has to sit above or below a

video monitor. Centre channels are usually wide and short for this reason.

This should not be a barrier to great surround for music and movies however, as many brands make centre channels with a very close sound to their L/R designs.

### Music vs movies

High-resolution SACD and DVD-A music recordings tend to be mastered with

surround speakers in the ITU standard position which is as far behind the listener as the front channels are in front. 5.1 movie soundtracks tend to place surround channels not so far behind and to the side of listeners. Usually, practical limitations will dictate a limited range of placement options, but if you are a dedicated music fan, check out the ITU set-up regulations in the booklet supplied with SACD discs.

### SET-UP

Ideally you should set up surround speakers with as much care as you would stereo systems, but practical issues tend to have a significant bearing on surround and centre speaker placement. Surround channels can be floorstanding or wallmounted, and centres usually have to perch on the TV or underneath it. Given these limitations, adjust your L/R front

speakers to give the best tonal match with the centre. If there's more than just you listening, 'toe in' the speakers so that their axis crosses in front of the listening position – this gives a wider stereo image. And if there's a subwoofer it should be placed near the front speakers. Use a sound pressure metre (available from Tandy among others) to accurately set levels.

### SUBWOOFERS

Subs start working where stereo speakers run out of steam at low frequencies. The idea is to create deeper, better-controlled bass rather than more of it. They usually have onboard amplification (active) and connect to either the LFE (Low Frequency Effects) channel in a home cinema set-up or the speaker terminals in a stereo set-up.

## TOP BUYS



**B&W**  
600 S3 package £750  
Incorporates 602s, 601s and an LCR 600 centre speaker. Great in both stereo and multichannel surround modes.



**KEF**  
Q AV7 £1,300  
With the latest Uni-Q refinements, this system is astonishingly accomplished and amazing value.



**Mission**  
m5 package £1,450  
A five-speakers-plus-sub package giving a strong performance with both music and film soundtracks. Excellent value.



**Mirage**  
Omni 2 £2,650  
Dark tonality but superb imagery makes this an excellent all-round choice for music and movies alike.

## Our favourite AV SPEAKER PACKAGES

GROUP TEST BEST BUY 
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  EDITOR'S CHOICE 
  NEW GEAR REVIEW

### Multichannel speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				EASE OF DRIVE	NUMBER OF SPEAKERS	BASS FROM (Hz)	FEEL SPACE	CLOSE TO WALL	ISSUE NUMBER
<input type="checkbox"/>	B&W 300	900	An excellent compromise between the requirements of music and those of home cinema	A-	6	27	●		241
<input type="checkbox"/>	B&W 600 S3 package	900	Unquestionably delivers the sonic goods. High-quality drivers in standmount enclosures (uses 602 S3s at the front)	A-	5	22	●		224
<input type="checkbox"/>	Castle CAV Sterling	1,250	Lovely real wood veneers. Sound has fine dynamic drive and expression, but can sound a little hard	A	5	28		●	224
<input type="checkbox"/>	Dynaudio Audience 42	1,142	AV package for hi-fi purists with real authority and imaging, but needs subwoofer for full-bore movie sound	B-	5	53	●		241
<input type="checkbox"/>	JMLab Cobalt	1,797	A little lean and bright, but with righteous dynamic expression and lively communication skills	A	5	22	●		224
<input type="checkbox"/>	JMLab Electra	3,017	Bold, solid system, tremendous consistency and easy to expand with an added subwoofer	A	5	50	●		232
<input type="checkbox"/>	KEF Q AV7	1,300	With latest Uni-Q refinements, this system is astonishingly accomplished and amazing value	A+	5	35	●		232
<input type="checkbox"/>	Mirage Omni 2	2,650	Dark tonality, but superb imagery makes this an excellent all-round choice	A	5	30	●		232
<input type="checkbox"/>	Mission m5	1,450	Main m52 is a clean, attractive full-range stereo speaker, while the m5as does big bass for movie fans	B	6	28	●		241
<input type="checkbox"/>	Mordaunt-Short Declaration 500	1,600	Good value vinyl THX Select package with Power Towers. Good authority, but must be 5.1-connected	A	5	25		●	210
<input type="checkbox"/>	PMC FB1/TB2	2,485	Classy, if bulky and pricey, package has good transparency, coherence and weight	A	5	20		●	210
<input type="checkbox"/>	Rega Jura/Ara/Senta	938	Classy real wood package does a good all-round job, but sounds bright and might have more surround weight	A	5	25		●	210
<input type="checkbox"/>	Spendor S-Series	1,650	Ultra-tinies lack some dynamic and loudness capabilities, but beautiful voicing and freedom from boxiness	A	5	30		●	224
<input type="checkbox"/>	Tannoy mXAV4	500	Lacks some grunt, but smooth and refined with seamless surround coherence. Excellent value	A	5	20		●	210

**SPECS KEY** **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. **NUMBER OF SPEAKERS** The amount of individual loudspeakers in the package. **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).

## Our favourite SUBWOOFERS

GROUP TEST BEST BUY 
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### Bass speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS			
				SIZE WxHxD (CM)	POWER (W)	BASS FROM (Hz)	ISSUE NUMBER
<input type="checkbox"/>	Acoustic Energy Aesprit 308	650	Tuneful and dynamic sound with music or movies from this compact sub, which comes with a handy remote	41,37,30	200	35	225
<input type="checkbox"/>	Monitor Audio ASW100	300	For the price, this compact subwoofer performed well	32,32,34	120	27	225
<input type="checkbox"/>	REL Q150E	500	Great value compact 'cube' sub adds genuine weight and drive thanks to superior filtering	29,32,33	150	20	239
<input type="checkbox"/>	REL Strata III	700	A little more bottom octave might have been preferable, but in terms of agility and coherence, this is a fine hi-fi subwoofer	42, 52, 33	100	20	210
<input type="checkbox"/>	REL Storm III	900	Excellent sub with powerful, detailed and deep bass. Comprehensive facilities, including flexible filter adjustment	42,62,33	150	18	225
<input type="checkbox"/>	REL Stadium III	1,500	It's a bulky piece of furniture, but offers superior filtering as well as an ability to delve deep into the bass nether regions	59, 56, 39	200	16	217
<input type="checkbox"/>	Ruark CL300	2,000	Shows what a good subwoofer can do: controlled, detailed and dynamic. A delight with music and movies alike	60,52,5,40	300	30	225
<input type="checkbox"/>	Titan Saturn	800	Very bulky sub has curious styling, but decent filtering gives good weight and headroom	72x48x72	200	20	239

**SPECS KEY** **SIZE WxHxD (CM)** Width, height and depth of one cabinet in centimetres. **POWER (W)** How many watts the onboard amplifier of active models delivers. **BASS FROM** How low the sub goes, the smaller the number the deeper the bass.

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*The EAD Master 8000 Pro produced the best picture and sound I've seen or heard from any DVD player. - Stereophile Nov 2002*

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# HEADPHONES

For your ears only



Headphones come in several varieties and some are designed for particular usage. The majority of 'cans' use dynamic cone and coil-type drive units and can be used with anything from a personal stereo to a dedicated amplifier. Other types also exist, most significantly electrostatics that use a charged panel membrane to produce a distinctly refined sound. These are supplied with their own dedicated amplifiers, which tends to increase the price.

Cans are split into several types. There are open and closed-back designs, the latter being best for noisy (or noise sensitive) environments as they minimise leakage and intrusion. Open-back types tend to have a more open, less 'in-head' sound. There are also three variants of earpad design: circumaurals

enclose the ear and press on your head, supra-aurals press on the ear and intra-aurals sit in the ear and are particularly popular with personal stereo users.

### Getting the best from your cans

Getting a good result with headphones is not quite as straightforward as it should be. Merely plugging them into the output on your CD player or amp will not give particularly engaging results unless you are very lucky. If you are planning on serious listening, invest in a dedicated amp – the increase in dynamics is not in the least bit subtle. A variety of models are made and prices start at around £80 for a QED, a little more for designs from, say, Creek or Musical Fidelity. And if you're really into cans, look up the valve-powered Earmax.

## Our favourite HEADPHONES

### Stereo headphones

PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER		
			ELECTROSTATIC	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK		WEIGHT (g)	3.5MM JACK ADAPTOR
AKG K44	20	Lively, enjoyable and remarkably detailed: a bargain			●		●	190	●	219
AKG K100	36	Leather-clad groover with bags of power and clarity, for a respectable asking price		●				190	●	205
AKG K270 Studio	129	Pro oriented design which is very transparent and great with acoustic material			●		●	270	●	230
Audio Technica ATH-D40fs	105	Detailed and involving sound with a professional 'studio' quality appeal			●		●	250	●	194
Beyerdynamic DT931	150	Nimble, well resolved and extremely comfortable, this is a cracking pair of cans			●	●		295	●	240
Grado SR60	90	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste		●			●	200	●	194
Grado SR80	110	Not perhaps as neutral as some but they communicate well and that's the point of the exercise.		●			●	200	●	230
Philips HP890	70	A remarkably sophisticated and very comfortable headphone			●	●		330	●	219
Sennheiser HD590	160	Assured and confident player with very low coloration and great comfort			●	●		270	●	205
Sony MDR-CD480	40	Generally neutral and nicely detailed – comfortable too			●	●		250	●	219
Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics		●			●	160	●	205
Stax System II	400	Luxury option at its price, but the sound delivery is five-star quality all the way	●		●	●		295	●	205

**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.



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**CONNECTIONS** (A division of Connection 90' Travel Ltd.)

# CABLES



## Wires to hook your system together



Hi-fi cables come in two varieties: interconnects and speaker cables.

Interconnects come in preset lengths, generally with RCA phono plugs attached, though some equipment uses XLR connectors for balanced connection. Speaker cable is sold by the metre and can be used without plugs or can be fitted with screw or solder-on types.

Choosing the best cables is not quite as

straightforward as it might seem. One problem is that components interact with the cables you use and this often results in audible effects, but there are few cables that are fundamentally incompatible with any components, and we recommend the advice of a good dealer. In any case, you should look to spend as much as you can afford.

Digital cables come in two flavours: electrical and optical. In most instances

electrical varieties sound better than optical, but if you are after a smoother sound the light carriers have the advantage, as they do if long lengths are needed (10m+). Optical outputs tend to have Toslink connectors (around 99 per cent), but some electrical digital outputs are of the superior BNC type, which uses a bayonet-type socket. Check which type your digital component has before buying a digital interconnect.

## Our favourite CABLES

### Interconnects and speaker cables

PRODUCT	£	COMMENTS	SPECIFICATIONS				
			STRANDED	SOLID CORE	COPPER	SILVER	DIGITAL CABLE TYPE
<b>ANALOGUE INTERCONNECTS</b>							
Chord Calypso	30	Informative, clear sound at a decent price	●		●		211
DNM TBB75	75	Bass not always completely consistent, but sound has great clarity and insight		●	●		241
Ecosse The Composer	30	A high degree of realism and delicacy, and a fantastic price (0.8m)	●		●		211
Ecosse Reference Diva	100	Very good performance in all areas, with particularly fine, tuneful, bass (0.8m)	●		●		224
Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness	●		●		211
Kimber Silver Streak	242	Not the cheapest around, but more than justifies itself with terrific poise and balance of virtues	●		●		241
Monster Interlink 400 Mk2	70	Really lively and enjoyable sound	●		●		224
QED Qunex 1	20	Well balanced and easily rivals more expensive cables	●		●		211
Townshend Audio DCT100	99	Unusual construction with copper strip conductors, giving very detailed sound, but just an occasional hint of hardness		●	●		241
Townshend Isolda DCT	300	Unusual construction and cryogenically treated too: whatever the reason, a remarkably capable wire		●	●		234
van den Hul The Bay C5	45	Terrific detail, nice balance – a great cable	●		●		224
van den Hul The Well	49	Hybrid cable with carbon-fibre conductors added. Very slight bass coloration does little to detract from fine performance	●		●		241
van den Hul D102 Mk III	79	Hybrid conductors (carbon and copper) and intelligent construction give strong bass and excellent detail	●		●		234
<b>DIGITAL INTERCONNECTS</b>							
Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound			●	E	207
QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced			●	E	207
QED Qunex SR75	50	Lots of bass and good clear midrange and treble at a sensible price	●		●	E	234
Ross OP004	20	Sounds much like most other Toslink leads: slightly lacking detail, but good value				O	207
Supra Trico	40	Very well made digital/video cable which noticeably improves the sound of a cheap DAC	●		●	E	241
van den Hul Optocoupler MkII	49	Noticeably has the edge over other optical leads, but still second best to electrical types				O	234
<b>SPEAKER CABLES PRICE PER METRE</b>							
Black Rhodium Aero Space S130	20	Bi-wire cable with great kick in the bass, though the treble can sound dry and recessed	●		●		227
Black Rhodium S300	18	Tight, precise and extended bass makes this a great cable for rock 'n' roll	●		●		241
Ecosse Reference MS2.3	23	Favours excitement over refinement: can be slightly bass-shy, but plenty of life	●		●		227
Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere – one of the best all-round cables available		●	●		241
Ixos Gamma 6003	3	A little midrange dryness, but bass is among the best at this price; strong and consistent	●		●		203
Kimber 4PR	5	Considering the price, this cable's very slight dryness is forgivable when everything else is so right	●		●		192
Kimber 8VS	18	Beautifully full, open and transparent sound right across the board. Price for 1m terminated pair	●		●		227
Kimber 8TC	39	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	●		●		203
Kimber 8PR	21	Bass very full, just occasionally a touch flabby, but detailed and sweet upper frequencies make this a good value cable	●		●		241
QED Silver Anniversary	5	A few minor flaws, but overall performance is very assured for this price	●		●		192
QED XT300	10	A natural and well controlled sounding cable that's cost effective for mid-priced systems		●	●		234
QED Profile Silver 12	15	Very slightly laid back, but good tone and detail – wears its achievements lightly	●		●		215
Supra Ply 3.4/S	8	Good in all areas, with rich bass and just a touch of treble roughness	●		●		203
Townshend Isolda DCT	150	Cryogenically treated 'impedance matched' cable with stabilising components added: great sound all-round		●	●		241

**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.



# "The Best in New, Second Hand and X-Dem Equipment"



**Choice hi-fi**  
you choose

Choice hi-fi make it easy for you to fulfill your sonic dreams. Quality hi-fi is not just about expensive brandnames. It's about aspiring to the very best sound, about choosing your ideal system from the widest selection in the country, in a unique no-pressure environment.

your choice

- Acoustic Energy
- Advantage
- ATC
- Audible Illusions
- Audio Physic
- B.A.T
- Boulder
- Bryston
- Cary
- C.A.T.
- Chord
- Clear Audio
- Denon
- DNEM
- Egglaston Works
- Electrograph Delphi
- Gamut
- Genelec
- Gryphon
- Graham
- Imerge
- J.M. Lab
- Krell
- Lexicon
- Linn
- Loewe
- Lutron
- Lyra
- Mark Levinson
- Michell Eng.
- Musical Fidelity
- Naim
- NEC
- Nordost
- Oracle
- Ortofon
- Plinius
- P.M.C.
- Primare
- Project
- Quadraspire
- REL
- Rockport
- Roksan
- Rotel
- Ruark
- Shahinian
- SIM2
- SME
- Straight Wire
- Sugden
- Tara Labs
- Teac
- Totem
- Transfiguration
- Trichord
- Trilogy
- Van den Hul
- VPI
- Wilson Audio
- Wilson Research
- YBA

H I - F I

HOME CINEMA

MULTIROOM INSTALL

BUY / SELL

## QUARTERLY sale items

Exposure VII pre + XII psu	£450.00*	£1,200.00
Magnum Dynalab P 200 Pre	£695.00	£1,900.00
dpa Enlightenment DAC	£295.00*	£ -
Kenwood L1000C Pre	£295.00	£895.00
Kenwood L1000M Power	£395.00	£1,295.00
Michaelson Audio Odysseus	£495.00*	£1,500.00
Sunfire 300 Power Amp (110 volts)	£695.00*	£2,400.00
Arcam Delta 110 pre amp	£295.00	£750.00
McCormack Line Drive	£395.00	£995.00
Thule Spirit CD	£495.00	£900.00
Audio Refinement Pre 5 "new"	£395.00*	£895.00

## New this month

<b>POWER AMPLIFIERS</b>		
Cello Performance 2 Monoblocks	£7,995.00	£20,000.00
Krell KSA 250	£2,750.00	£6,000.00
Bel Canto Evo 4	£On Dem	£3,895.00
Krell KSA 80B	£1,395.00	£3,600.00
Roksan Caspian Integrated	£On Dem	£895.00
Roksan Caspian Power	£On Dem	£645.00
Quad 33/ 303	£295.00	-
<b>PRE AMPLIFIERS</b>		
Audio Research LS25 mk II	£4,250.00	£5,995.00
YBA 2a Line	£1,295.00	£1,995.00
<b>LOUDSPEAKERS</b>		
Martin Logan SL3	£1,795.00	£3,400.00
JM Lab Mini Utopia + Stds Rosewood	£2,495.00	£4,899.00
Dynaudio Audience 50	£395.00	£577.00
JM Lab Nova Utopia	£On Dem	£19,999.00
Heybrook Sextet (new drivers)	£495.00	£1,200.00
Revel Studio	£7,495.00	£13,000.00
ATC SCM 10 Passive Black	£495.00	£1,100.00
<b>CD PLAYERS &amp; DACS/ DVD PLAYERS</b>		
Krell KPS 25sc 24/96	£11,995.00	£23,498.00
Roksan Caspian CD	£On Dem	£995.00
<b>TURNABLES, ANALOGUE, VARIOUS</b>		
Project RPM 6 "new"	£On Dem	£500.00
Musical Fidelity XLP Phono Stage	£75.00	£150.00
Project RPM9/ arm/ 25FL (Ex Dem)	£895.00	£1,350.00
VPI TNT mk IV/ Rockport 6000/ Flywheel/		
VPI Stand/ Clearaudio Accurate/ Pump etc. "new"	£8,500.00	£16,000.00
Roksan Radius (Acrylic) "new"	£850.00	£850.00
Roksan Caspian Phono se	£On Dem	£950.00
Ortofon Rohman (2 hrs)	£850.00	£1,050.00
<b>AV COMPONENTS/ PROCESSORS</b>		
Lexicon MC8 Processor	£On Dem	£5,000.00
Lexicon RT10 DVD Player	£On Dem	£2,300.00

## Power amplifiers

Krell FPB 600c	£6,500.00	£14,000.00
Krell FPB 700cx	£11,995.00	£15,000.00
Krell FPB 400 cx	£9,600.00	£12,000.00
Naim Nait 3	£475.00	£608.00
Rowland Model 12 (4 chassis)	£8,995.00	£14,500.00
Michell Alecto Monoblocks	£995.00*	£2,000.00
Cary 805 C Monoblocks "new"	£4995.00*	£8,250.00
E.S. Lab DX-5B	£On Dem	£2,995.00
Plinius SA50	£1,795.00	£2,700.00
Plinius 8200P	£On Dem	£1,550.00
Krell FPB 200	£3,995.00	£8,000.00
Krell FPB 600	£5,995.00	£12,998.00
Plinius SA 102 "new"	£On Dem	£3,750.00
Musical Fidelity P180	£395.00	£900.00
Musical Fidelity CRPS	£395.00	£900.00
Bryston 4 BSST	£On Dem	£2,350.00
Jadis Defy 7 mk III	£2,750.00	£6,000.00
Mark Levinson No 27	£1,750.00	£6,000.00
Linn Bass Active Card	£69.00	£120.00
Gamut D200 "new"	£2,250.00	£3,250.00
Musical Fidelity F15	£995.00*	£2,500.00
Audio Innovations S1000 mk III monos	£995.00*	£3,000.00
Krell MDA 300	£4,995.00	£12,000.00
Cary SLA 70 mk II Silver	£2,250.00	£2,250.00
Boulder 500 AE	£3,495.00	£5,500.00
Linn Klassik CD/Amp silver	£895.00	£1,030.00
Boulder 1060 Power "new"	£On Dem	£16,500.00
Primare 30.1 mk II Integrated	£1,350.00	£1,500.00
YBA Passion Stereo "new"	£3,995.00	£5,995.00
Plinius 250 mk IV "new"	£On Dem	£6,350.00

## Pre amplifiers

DNM 3c Primus Pre (3c psu)	£1,195.00	£2,000.00
Tom Evans The Vibe Pre	£On Dem	£2,700.00
Krell KRC	£2,495.00	£6,949.00
Graff 135 Pre	£1,495.00	£3,000.00
Chord D5C 1500E (dac/pre)	£3750.00*	£6,500.00
Audio Research LS7	£895.00*	£1,800.00
Audio Research LS1	£795.00*	£2,000.00
Audio Research L53	£895.00*	£1,997.00
Musical Fidelity F22	£695.00	£1,500.00
AVI S2000 MP remote pre	£395.00	£800.00
Cary SLP98L Remote Pre x-dem	£1495.00*	£2,794.00
Boulder 1012 (pre amp/ 24.96 dac/ Phono)	£On Dem	£13,000.00
YBA Passion Pre (inc Phono)	£3,995.00	£5,595.00
Boulder 2010 Pre	POA	£30,000.00
Plinius 16L "new"	£On Dem	£3,200.00
C.A.T.ultimate reference Pre Amp Inc/Phono "new"	£On Dem	£5,750.00

## Quality speakers

JM Lab Alto Utopia BE	£On Dem	£9,999.00
Wilson Witt mk I	£3,750.00	£9,000.00
Avante Garde Duo (White)	£4450.00*	£8,000.00
JM Lab Utopia	£8995.00*	£18,000.00
JM Lab Mini Utopia + Stand	£2,495.00	£4,700.00
B&W Matrix 805 (Walnut)	£295.00	£650.00
ClaraVox Magnifica	£5,495.00	£14,500.00
JM Lab Micro Utopia + Stand	£2,195.00	£4,349.00
Wilson 5.1	£7,995.00	£19,600.00
Reference 3A	£1,750.00	£2,250.00
Audio Physic Spark	£1,150.00	£1,795.00
Talon Kite Centre & Bracket	£795.00	£1,750.00
Ensemble PAI	£895.00	£2,000.00
Audio Physic Caldera	£4,995.00	£10,000.00
Aerial Acoustic SW12 Sub Woofer, Maple/remote	£2,995.00	£5,200.00
Mirage M3 si	£1295.00*	£4,100.00
Linn Kabers (Active)	£995.00	£2,500.00
Rel Q 200 E	£On Dem	£650.00
Rel Q 150 E	£On Dem	£500.00
Audio Physic Luna Sub (wood)	£On Dem	£1,799.00
Audio Physic Yara	£On Dem	£999.00
Vienna Acoustics Mahler	£On Dem	£6,000.00
Vienna Acoustics Mozart	£On Dem	£1,700.00
Vienna Acoustics 5.1	£On Dem	£3,500.00
CaBasste 10 5.1	£On Dem	£2,170.00
JM Lab Sib & Cub (5.1 spk sys)	£On Dem	£859.00
Blue Room Minipod (White)	£225.00	£298.99
Blue Room Minipod + Sub (Blue)	£625.00	£749.00
Blue Room Minipod Sub	£415.00	£468.99
SD Acoustics SD1	£595.00	£1,650.00
Genelec 705 Active Monitors	£On Dem	£298.99
Audio Physic Virgo III "new"	£On Dem	£4,000.00
Audio Plan Contrast 3	£995.00	£3,200.00
Audio Physic Tempo III "new"	£On Dem	£2,000.00
Naim SBL's	£995.00	£2,225.00
Rogers LS55 "new"	£260.00*	£430.00

## CD players DACS

Musical Fidelity NuVista cd	£2,495.00	£3,000.00
Sony SCD1 SADC	£2,495.00	£4,000.00
Theta Data Pro Basic IIIa	£1,795.00	£3,495.00
Bow Wizzard 24/96	£2,795.00	£4,000.00
Theta DS Pro Prime II a	£995.00	£1,800.00
Mark Levinson ML 31	£3,750.00	£9,000.00
Trichord PD-S 503	£295.00	£500.00
Pink Triangle Ordinal	£295.00	£600.00
YBA CD I Delta (Twin psu)	£3,995.00	£5,500.00
Audio Synthesis DAX	£1,995.00	£4,000.00
Krell KPS 20i	£4,795.00	£9,900.00
Linn Karik Numerik	£1,595.00	£3,300.00
Mark Levinson 39	£2,995.00	£5,000.00
Marantz 17 Ki Sig (Black & Gold)	£695.00	£1,200.00
Myriad MDV 200 DVD	£495.00	£995.00
YBA CD 3 Delta	£On Dem	£2,200.00
Audiomeca Damnation CD Transport	£750.00	£1,600.00
Primare V20 DVD/CD	£750.00	£1,000.00
Audio Aero 32/192 Capitulo CD (Ver. 4)	£On Dem	£4,500.00
Primare V25 CD/DVD	£On Dem	£1,000.00
Theta Pro Geny	£595.00	£1,295.00
Boulder 2020 dac	POA	£24,000.00
Theta Data II Transport AT + link	£1,995.00	£4,000.00
YBA CD Integre "new"	£On Dem	£1,195.00

## Turntables & analogue

Tara Lab Decade 8ft pair	£895.00	£2,000.00
EAR 834p phono stage	£350.00	£500.00
Transparent Ref 20ft Spk	£3,295.00	£5,000.00
Loricraft record cleaning machine	£On Dem	£1,100.00
Lyra Beta	£525.00	£595.00
Tara Labs The One Balanced Im	£999.00	£2,250.00
Earmax Pro	£On Dem	£425.00
Revox B160 Tuner	£450.00	£995.00
Decca London Gold (original Garrott Brothers)	£1,495.00	£ Priceless
SME 302/A "new"	£10,495.00	£12,289.00
Moth Record Cleaning m/c	£395.00	£ -
Project RPM4/ Ortofon 510 "new"	£On Dem	£325.00
Ortofon Rohmann	£On Dem	£1,050.00
Ortofon Kontrapunkt a/b "new"	£On Dem	£500.00/£750.00
Michell Gyro SE/ RB300 "new"	£On Dem	£1,100.00
Michell Orbel/QC	£1,495.00	£2,200.00
Audio Synthesis Phono Eq mm/mc	£795.00	£ -
Gryphon Phono Pre-Amp (dual mono) Head Amp	£795.00	£1,600.00
SME Series V Arm "new"	£1,350.00	£1,650.00
Pink Triangle PT Ext psu	£495.00	£ -
Plinius 14 Phono "new"	£On Dem	£2,750.00
Nackamichi DR 3	£195.00	£400.00
Nom Evans - The Groove "new"	£On Dem	£1,795.00
Clear Audio Reference Mc phono stage X-demo	£1,695.00	£2,065.00
Rega Planer 3 + Hi Fi News Out Board Power Supply	£320.00	£423.00
Clear Audio Symphono phono stage X-demo MMMC	£640.00	£740.00
Lavardin Reference Phono "new"	£On Dem	£2,500.00

## AV components

Lexicon DC2	£1,995.00	£3,500.00
SIM 2 HT 300	£7,500.00	£9,000.00
Primare P30 Processor	£1,295.00	£2,000.00
Linn Klassik DVD	£On Dem	£2,000.00
Lexicon MCI "new"	£3,000.00	£5,500.00
Lexicon MC12 / MC12B	£On Dem	£810.00/ £890.00
Loewe Xemix DVD "new"	£On Dem	£495.00
<b>PLASMAS</b>		
From NEC/ Panasonic/Pioneer/Sharp	from £4000.00	POA
Electrograph Delphi/Selec/Sony/Sanyo	-	POA
Panasonic TH-42 PWD5 "new"	£4,995.00	-

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# The EA Series of amplifiers by ECS

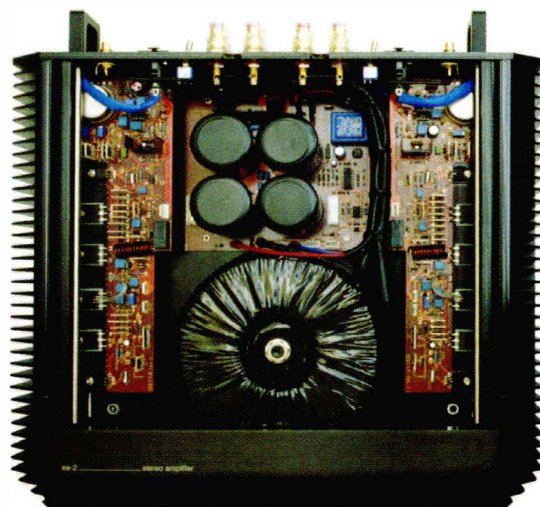
Whether it's music or film the EA series will enhance your passion.  
A range of amplifiers designed by enthusiasts for enthusiasts.

ECS is a bespoke PCB company based in West London, specialising in high quality hand assembled printed circuit boards. The company is run by music and audio enthusiasts, so the next logical step was to enter into the world of high-end audio utilising its expertise in PCB design and audio design amassed over the company's 6 year experience.

The culmination of 2 years of R&D brings us to the EA series' primary function, high quality audio reproduction.

The EA's dynamic capabilities strike a unique balance between exceptional musicality and drive allowing the attentive listener to follow the most subtle tonal nuances of the musical event.

- 1 or 2 channel version
- Transformer balanced inputs on 3 pole XLRs
- Unbalanced audiophile gold phono connectors
- Ultra low noise FET input stage
- Ultra low impurity PCB copper track
- Bespoke 1500VA power transformer
- Pre-driver, driver, output stage configuration
- Zero inductance components used in critical paths
- Ultra low tolerance and inductance components used throughout
- 8 parameter fully matched bi-polar output transistors
- Ultra short audio signal path
- 40000uf of bypassed reservoir capacity
- Multi-channel mode ID from rear
- Hand selected audio grade components
- 3 years parts and labour warranty



See the EA-2 review in the June issue of Hi-Fi News

	<b>model no. EA-1</b>	<b>model no. EA-2</b>
Power Output	200W into 8 ohm	2 x 180W into 8 ohm
Input Impedance	47k ohms	47k ohms
Frequency response	-3dB points @ 5Hz & 100KHz	-3dB points @ 5Hz & 100KHz
Inputs	Balanced XLR or Unbalanced RCA rear panel switchable	Balanced XLR or Unbalanced RCA rear panel switchable
Input connectors	1 x XLR-Pin 2 +ve 1 x RCA	2 x XLR-Pin 2 +ve 2 x RCA
Output connector	4 x 4mm sockets. Ability to accept Spade type connectors	8 x 4mm sockets. Ability to accept Spade type connectors
Power cable	Audiophile grade (type 1)	Audiophile grade (type 1)
Case dimensions (HxWxD)	112 x 438 x 428mm inc handles	112 x 438 x 428mm inc handles
Mains Supply	115v and 230v 50 or 60 Hz consult dealer	115v and 230v 50 or 60 Hz consult dealer
Weight unpacked	22 Kg ea	22 Kg
Weight packed	25 Kg ea	25 Kg

## Nearest Dealer

<b>Harrow Audio Ltd</b>	tel: 020 8863 0938
<b>Oxford Audio Consultants</b>	tel: 01865 790 879
<b>Kevin Galloway Audio</b>	tel: 01563 574 185
<b>Walrus Systems</b>	tel: 020 7724 7224



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web: [www.ecsamplifiers.co.uk](http://www.ecsamplifiers.co.uk)

# STANDS AND SUPPORTS

## Equipment racks and speaker stands



In hi-fi there are two types of stand. One is a rack that holds turntables, amps, CD players and so on and is described as an equipment support, and the other is a speaker stand. The latter comes in three basic varieties, two for standmount speakers: lightweight, multilegged types; and heavy designs with fewer legs and the ability to be mass-loaded for extra solidity. The lighter variety is

said to have a quicker sound, while heavyweights give deeper bass and a calmer sound. The third speaker stand type is a platform that sits under floorstanding speakers or speaker/stand combinations, the pneumatic Townshend Seismic Sink being an example.

There are two speaker-to-stand interfacing options: spikes or Blu Tak in each corner of the top plate. Try both and take your pick.

## Our favourite EQUIPMENT SUPPORTS

### Equipment supports

PRODUCT	£	COMMENTS	SPECIFICATIONS					
			HEIGHT	TOP PLATE SIZE (CM)	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
Avik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47		4	MDF	193
Atacama Equinox	280	Stable, modular design with style. Excellent bass transients and a fresh design concept	81	50.50	●	4	Glass	217
Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43		4	MDF	193
Avid Isosshelf	1,100	An enthusiast's equipment support stand free from coloration, if a little fiddly to set up	87.5	48		5	MDF	193
Clearlight Audio RDC Aspekt	550	Stunning neutrality and detail from a well-damped design. Its performance makes the price tag good value	75	53.5,45		4	MDF	217
Custom Design Aspect 650	270	Smart looks and practical thanks to adjustable shelves. Sound is fair with some loss of detail	66	46	●	4	Glass	206
Naim Fraim	1,825	Pricey but very classy looking and sounding, with modular flexibility	96	45.34		5	Glass	232
Quadraspire Q4	280	Simple, but modestly effective and very attractive	52	49		4	MDF	206
Quadraspire Q4 Reference	480	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5		4	MDF	217
Russ Andrews Torlyte Rack System	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54, 49		4	Torlyte	240
Sound Organisation Z560	195	Excellent value rack, five shelves too! Well balanced and under 200 quid!	92	50.40		5	Glass	217
Standesign Design 4	190	An all-in-one support at a budget price, with good sonic performance	88.5	50.8	●	4	Glass	193
Townshend Seismic Sink Stand MkII	1,140	multi-shelf air-suspension support which isolates like few others. Recommended	92	58, 45		5	MDF	240

## Our favourite SPEAKER STANDS

### Speaker stands

PRODUCT	£	COMMENTS	SPECIFICATIONS					
			HEIGHT	TOP PLATE SIZE (CM)	FILLABLE	WELDED	NUMBER OF LEGS	ISSUE NUMBER
Atacama Nexus 6	60	An excellent all-round performer and a genuine hi-fi bargain	60,50	14.5,18	●		3	202
Cyrus CLS50 Stand	200	Unusual combination of style and performance, and a definite contender in the right environment	64	17,19			1	220
Custom Design R/S300 MkII	100	A solid stand improving on the original, with better focus and detail	61,56,51	16.5,18	●		2	202
hne Cableway	399	Looks great, sounds great, so start saving! Clean and sweet, and neutrality is exceptional with orchestral material	63	17,20	●		1	220
Kudos S50	115	Formidable bass with real authority, and a wide dynamic range across a broad bandwidth	61	15, 20	●		1	220
Partington ANSA 60	90	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	●		4	232
Partington Dreadnought	100	Fully welded high-class engineering gives a very clean, open sound at a sharp price	61	17,15	●	●	5	220
Partington Dreadnought Ultimate	299	Super heavyweight stand that is an open window to the speaker placed on it	63	21,24	●		1	202
Sound Organisation Z522	95	Very hefty build for the price helps to deliver a solid sound with good authority and drive	60	16	●		4	220
Townshend Seismic Sink	499	Unique inflatable plinth that works wonders with decent floorstanders, as well as standmounted speakers	4	38,48			0	202

**EQUIPMENT SUPPORTS SPECS KEY** HEIGHT Of complete stand. TOP PLATE SIZE (CM) Width by depth of the supporting platform(s). Single figures indicate a square platform.

WELDED As opposed to bolt-together construction. NUMBER OF SHELVES To put your kit on (different configurations are often available). SHELF TYPE Material that shelves are made of

**SPEAKER STANDS SPECS KEY** HEIGHT Of each stand, not including spikes TOP PLATE SIZE (CM) Width by depth of platform. 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 LEGS That support the stand.

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# GLOSSARY

## TECHNICAL TERMS

**5.1-CHANNEL AUDIO** Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer.

**BALANCE** Most loudspeakers have a characteristic frequency balance resulting from emphasising parts of the audio range and/or de-emphasising others.

**BASS** The lowest three octaves of the audio band – hence 'low bass' refers to the bottom octave (20-40Hz); 'mid-bass' the middle octave (40-80Hz); and 'upper bass' the 80-160Hz octave.

**BI-AMP** (sometimes tri-amp) Loudspeakers equipped with separate access terminals to each drive unit can be driven by separate (matching) power amplifiers for each driver.

**BI-WIRE** (sometimes tri-wire) Loudspeakers with separate access terminals to each driver can be driven by separate cable runs between the amp and each driver.

**CD-R** Recordable CD that cannot be erased, though discs that have not been completely filled can have tracks added until the disc is finalised.

**CD-RW** Re-writable or re-recordable CD, incompatible with older CD players.

**CLASS** The operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to have the advantage of offering lower distortion while Class B tends to generate less heat.

**CLASS AB** Most practical amps operate in Class A for the first fraction of a watt and Class B thereafter.

**CLIPPING** An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever-increasing power levels. Distortion increases dramatically at this point.

**CLOCK** Any electronic oscillator that is used to generate a timing reference signal. Used to synchronise the data being taken from a disc.

**CROSSOVER** A simple electrical network which divides the full bandwidth signal received from the power amplifier, apportioning appropriate parts of the spectrum to the various drive units.

**DAB** (digital audio broadcasting). Digital radio using frequencies in the band 217.5 - 230MHz. Broadcasters use varying degrees of compression and offer a broad range of programming.

**DAC** or Digital-to-Analogue Converter. The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform.

**DOLBY DIGITAL DD (AC3)** A compressed digital audio format that typically contains five or more entirely discrete channels, eg 7.1 EX where side and rear channels are used.

**DOLBY PRO-LOGIC, DPL** Forerunner to DD that 'steers' information to the front L/R, centre and mono surround channels via an analogue matrix

**DRIVE UNIT/DRIVER** A transducer which converts electrical energy into acoustic energy, eg bass driver, tweeter.

**DSD** (direct stream digital) The coding format used for SACD offers a frequency response of over 100kHz and a dynamic range over 120dB, it has over four times the data capacity of CD.

**DSP** or Digital Signal Processor. Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

**DTS** or Digital Theatre Sound Competitor to Dolby Digital with a reduced 4:1 compression ratio that, ostensibly, promises higher quality.

**DVD-A** High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range. Discs are compatible with standard DVD players.

**ELECTRICAL DIGITAL** Any digital connection that uses an electrical cable rather than optical. Includes the balanced (AES/EBU) interface.

**FILTERS** Filters are intrinsic to digital audio, both analogue and digital. These are often very sophisticated in design, and in total they probably have rather more to do with the 'personality' of CD player sound than most other factors.

**FREQUENCY RESPONSE** The range of frequencies, from low to high, which a loudspeaker will reproduce.

**IMPEDANCE** With speakers, the complex electrical load that a loudspeaker presents to the amplifier which is driving it.

**JITTER** An intrinsic distortion specific to digital audio caused by the clock, used to regulate the conversion of data into analogue audio, being imprecise.

**KBPS** (Kilobits per second) Digital data rate measurement system used primarily with highly compressed formats such as MP3, DAB etc. The higher the amount, the better the quality.

**LINE LEVEL** Practically every modern source component (except phono cartridges) gives an output in the region of 1-2V, referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are designed for this input level and are thus interchangeable.

**LOSSLESS COMPRESSION** A method of reducing the number of data bits (density) without corrupting the original description of the musical signal.

**LOSSY COMPRESSION** Reduction in data density by recourse to a psycho-acoustical model that predicts what is, and what is not, 'audible' within a measure of music.

**MIDRANGE** The middle three or so octaves of the audio band, where the

ear is most sensitive, covering the approximate frequency span from 160Hz up to 3kHz.

**MP3** (MPEG layer 3) Lossy compression format for digital audio that drastically reduces data content in order to squeeze music through internet connections or allow hundreds of CDs to be stored on a hard disc.

**OUTPUT IMPEDANCE** A measure of resistance to alternating current, a source with low output impedance (below 100 ohms) helps ensure compatibility with most amplifiers, even with long interconnect cables.

**PCM** (pulse code modulation) The digital coding system for analogue waveforms used for CD and DVD. Quality is limited by the oversample and bit rates used – CD is 44.1kHz/16-bit while DVD-A is capable of 192kHz/24-bit.

**PRESENCE BAND** Critical section of the audio band at the point where midrange and treble meet.

**QUANTISATION NOISE** A form of distortion or noise resulting from errors in the description of the musical signal by the digital code.

**SACD** (super audio CD) was launched in 1999 and is a Sony/Philips format based on DSD coding that offers high resolution stereo and multichannel sound from hybrid discs that can also be played on ordinary CD drives.

**SAMPLE RATE** The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

**SENSITIVITY** The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/W).

**THX** Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra is more stringent than THX Select.

**TOSLINK** The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

**TRANSISTOR/MOSFET** The two main types of power semiconductor used in solid state amplifier output stages.

**TREBLE** High frequencies, the top end of the audio band, ie above 3kHz.

**TWEETER** Treble driver.

**TWO/THREE-WAY** Loudspeaker crossovers split the signal into two or three frequency bands, a two-way speaker can have more than two drive units.

**WATTS** (per channel) The watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output.

## DESCRIPTIVE TERMS

**AGGRESSIVE** Forward and bright sonic character.

**AMBIENCE** The impression of an acoustical space, such as the performing hall in which a recording was made.

**ANALYTICAL** Highly detailed.

**ARTICULATE** Intelligibility of voice(s) and instruments and the interactions between them.

**ATTACK** The leading edge of a note and the ability of a system to reproduce the attack transients in music.

**BALANCE** Essentially tonal balance, the degree to which one aspect of the sonic spectrum is emphasised above the rest. Also channel balance, the relative level of the left and right stereo channels.

**BODY** Fullness of sound, with particular emphasis on upper bass. Opposite of thin.

**BOXY** The sound of a loudspeaker with audible cabinet resonances.

**BRIGHT** A sound that emphasises the upper midrange/lower treble.

**DARK** A tonal balance that tilts downwards with increasing frequency. Opposite of bright.

**DECAY** The fadeout of a note, it follows the attack.

**DEFINITION** (or resolution) The ability of a component to reveal the subtle information that is fundamental to high fidelity sound.

**DEPTH** (of image) The perception of music being reproduced behind the loudspeakers and inhabiting a reproduction of the acoustic space of the original recording.

**DETAIL** The most delicate elements of the original sound and those which are the first to disappear with lesser equipment.

**DRY** A sound that is devoid of 'juice', which usually comes across as fine-grained and lean. Also a loss of reverberation as produced by a damped environment.

**DYNAMIC** The suggestion of energy and wide dynamic range. Related to perceived speed as well as contrasts in volume both large and small.

**EUPHONIC** An appealing form of distortion that generally enhances perceived fidelity, often ascribed to the harmonic elaborations of some valve amps.

**FAST** Good reproduction of rapid transients which increase the sense of realism and 'snap'.

**FOCUS** A strong, precise sense of image projection.

**FORWARD(NESS)** Similar to an aggressive sound, a sense of the image being projected in front of the speakers and of music being forced upon the listener.

**GRAINY** A slightly raw, exposed

sound which lacks finesse.

**GRIP** A sense of control and sturdiness in the bass.

**GRUNT** See grip.

**HARD** Uncomfortable, forward, aggressive sound with a metallic tinge.

**HARSH** Grating, abrasive.

**IMAGING** (stereo) The sense that a voice or instrument is in a particular place in the room.

**JUICY** Sound that has joie de vivre, energy and life.

**LOW-LEVEL DETAIL** The quietest sounds in a recording.

**MUSICAL** or musicality. A sense of cohesion and subjective 'rightness' in the sound.

**NATURALNESS** Realism.

**OPAQUE** Unclear, lacking transparency.

**OPEN** Sound which has height and 'air', relates to clean upper midrange and treble.

**PACE** Often associated with rhythm, a strong sense of timing and beat.

**PRESENCE** A sense of an instrument or voice occupying a place in the listening room.

**PRESENCE RANGE** The upper midrange.

**SEISMIC** Very low bass that you feel rather than hear.

**SIBILANCE** An emphasis of the 'S' sound, often heard on radio.

**SNAP** A system with good speed and transient response can deliver the immediacy or 'snap' of live instruments.

**SPEED** A fast system with good pace gives the impression of being right on the money in its timing.

**STURDY** Solid, powerful, robust sound.

**THICK** A lack of articulation and clarity in the bass.

**THIN** Bass light.

**TIMBRE** The tonal character of an instrument.

**TIMING** A sense of precision in tempo. See speed and pace.

**TRANSIENT** The leading edge of a percussive sound. Good transient response makes the sound as a whole more live and realistic.

**TRANSPARENCY**, transparent. A hear-through quality that is akin to clarity and reveals all aspects of detail.

**TWEAK** To tune a system or component in an attempt to get the best performance from it.

**TWEAKER** Someone who enjoys this process.

**VEILED** Loss of detail due to limited transparency.

**WARM** A fullness in the lower midrange/upper bass.

**WEIGHT** A sense of substance and underpinning produced by deep, controlled bass.

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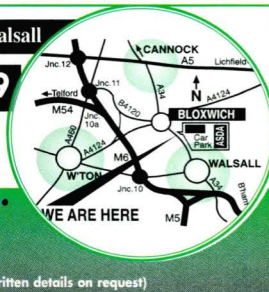
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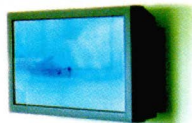
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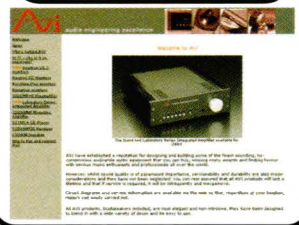
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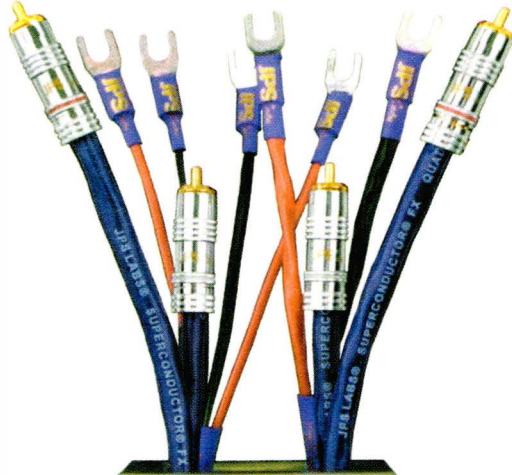
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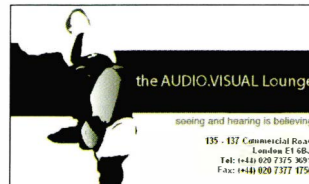


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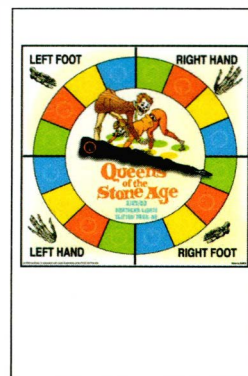
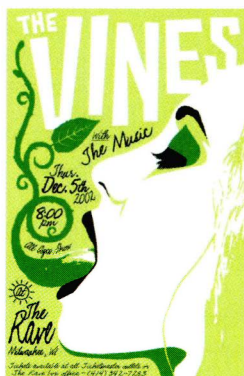
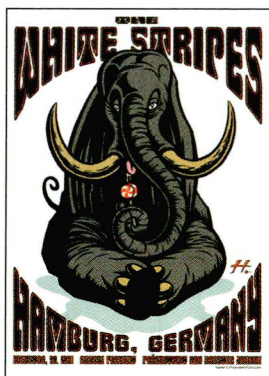


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# Five Stars for Value

**Does the best price always mean the best deal?  
Ask the UK's top twenty specialist hi-fi dealers.**

"I thought I had this buying hi-fi business sorted out. I bought all the hi-fi magazines and read them thoroughly, because I reckoned their experts knew exactly what they were talking about - at least a lot more than I did! It was reassuring to see the same product names cropping up regularly and I figured the writers' experience and guidance would steer me straight to the system of my dreams. The trouble is I've ended up more confused than when I started".

**O**ne reviewer said a product I fancied was absolutely brilliant but another said it was nothing special at all. How can that be? Surely one CD player is pretty much the same as another? And how can a loudspeaker that's one magazine's top recommendation not get so much as a mention in any of the others? I don't mind admitting it, I'm completely lost."

#### **Plan B - I'm going for a deal**

"So, I've decided to adopt plan B. I'm sure there can't be any really dramatic differences between all this gear and it's all bound to work together properly, so I'm going to check the price lists and the adverts and shop around for the best deal. I know getting the right hi-fi is important hey, I'm as mad about music as anyone but if I can get close to the mark and save a few quid, I'm sure I'll end up with a good system and be happy. I know there are specialist shops out there that do demonstrations and reckon they've got all the solutions but, to be honest, I'm a bit scared of going to one. I'd really welcome some advice and guidance but I don't know all the technical jargon and I'd feel daft sitting there trying to 'hear the differences' if I couldn't. Anyway, a friend told me that these shops only sell the really expensive gear and that they're not interested if you don't have loads of money to spend."

And so another hi-fi buyer starts his journey down the road to dissatisfaction, endless upgrades and a permanent overdraft.

There is only one way to buy a hi-fi system that will prove satisfying, reliable and

deliver true value for money, and that's through a specialist hi-fi dealer. Let's face it, you wouldn't think about buying a car if you couldn't take it for a test drive. You wouldn't buy a house solely on the strength of seeing the estate agent's details and a photograph. Even if you're spending far less, say buying a jacket or a pair of shoes, you want to try them on to make sure they fit you.

Buying a hi-fi system is no different. It doesn't matter what the specifications say or what the 'experts' think: if it doesn't measure up to what you want from a system, then it's not the right choice. Knowing that you've bought a room full of five-star favourites or best-buys is no consolation when you can't bear to listen to them for more than five minutes. Even that ten per cent discount on the price won't make them sound any better.

#### **Buying or being sold to?**

Mind you, most of us are easily suckered when it comes to buying hi-fi. Given the choice of venturing into the unknown territory of a specialist dealer's shop and exerting some influence over what we buy, or taking what looks like the easy route having adverts and magazine reviews push us along a path sweetened with discounts and special offers - we opt for the latter. We don't buy a system, we allow ourselves to be sold one. We side-line our own ideas about quality and personal satisfaction and buy someone else's opinion of what's good for us and good value for our money.

#### **Take control!**

Now there's a group of long-established, independent specialist dealers who are



“ You wouldn't think about buying a car if you couldn't take it for a test drive. You wouldn't buy a house solely on the strength of seeing the estate agent's details. ”

totally committed to putting the customer back in the driving seat. They're encouraging the buyer to take control with a little help and guidance provided where required. They know how difficult it can be to establish the true quality and worth of hi-fi and home cinema systems. They know that without experiencing the performance of the systems they offer, you can't possibly assess the value of them. That's why their idea of 'selling' is to play the systems for you and allow you to be the judge.

Listening to your choice of music in a peaceful, well organised demonstration room, you may be surprised and, almost

certainly, relieved to discover how easy it is to hear the differences between components and between systems. With the dealer's help and advice you will be able to make a clear and informed decision about what to buy. It comes down to trusting your own judgement rather than the opinion of a reviewer you've never met ... and who won't refund your money if you're not satisfied or be at the end of a phone to sort out any problems you might encounter.

The story doesn't end there. These shops won't abandon you once you've put your hand into your pocket. They won't leave you to set up the system you've selected as best you can. They'll install it in your home, make sure it sounds great, and make sure that you're entirely happy with the way it works.

#### Why bother?

There is, of course, one question that hasn't been answered: why should you and these dealers go to all this trouble? Well, from your point of view maybe it's because a good deal is about a great deal more than just price. unless you've got money to burn,

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you'll be living with your new system for years - years during which most of those five star products will probably stop shining quite so brightly. As far as the dealers are concerned, maybe they believe that taking care of their customers properly is a nicer way of doing business than just handing over boxes.

Listed below are 20 of the best hi-fi shops in the country. They all have lots of stars. You'll find them on the shop floor: they're the people waiting to guide customers towards hi-fi that will give them years of musical enjoyment and total satisfaction.

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**Choosing a good hi-fi dealer is the most vital step in acquiring the system that is right for you. This unique directory gives full information on dealers able to help in your area.**

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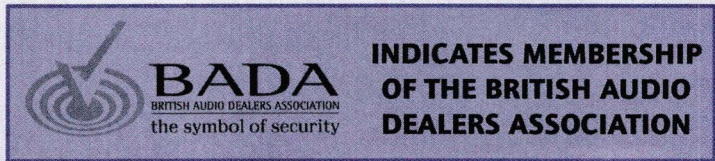
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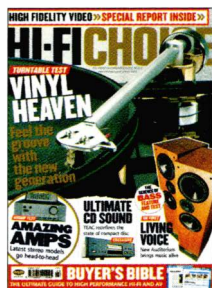


# BACK ISSUES



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- Group Test: CD players
- Group Test: AV amps and processors
- Test Feature: Mains cables & filters
- Ways to improve your listening room



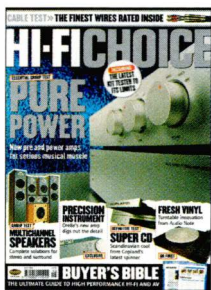
MARCH 2003/ISSUE 239

- Group Test: Stereo amps
- Group Test: Turntables
- Test Feature: Subwoofers
- Special Feature: high-fidelity video



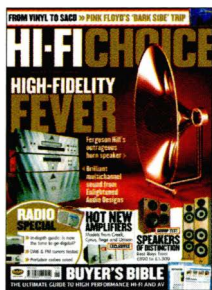
APRIL 2003/ISSUE 240

- Group Test: Speakers
- Group Test: Universal DVD players
- Test Feature: Equipment supports
- Round-up: headphones



MAY 2003/ISSUE 241

- Group Test: Pre/power amps
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- Test Feature: Audio cables
- Copland CDA822 CD player



JUNE 2003/ISSUE 242

- Group Test: Radio tuners
- Group Test: Stereo speakers
- In-depth radio feature
- Ferguson Hill FH001 horn speaker



JULY 2003/ISSUE 243

- Group Test: Digital audio recorders
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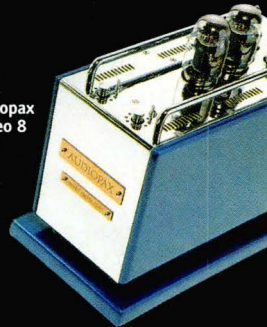
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# NEXT MONTH

Audiopax Stereo 8 amp



## SOUND DECISIONS

Summer's here and the hi-fi is sizzling hot. Heard about the souped-up Marantz CD player with valves? That's the Heart CD player, tested along with a superb range of amps and speakers. Martin Logan's Clarity electrostatics open eyes and ears, Arcam's new A80 amplifier flies the flag and B&W's mighty Nautilus sub loosens our fillings. What's more we take an exclusive look at the new JMLab Micro Utopia, play with some very special valves from Audiopax and plug in KEF's Reference 201.

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The very latest speakers queue up for audition in our definitive eight-way group test. New models from Mission, KEF, Tannoy and JMLab make essential reading for any summertime spenders.

## SUPER FURRIES

Not the chins of our esteemed reviewers, but a revealing interview with the Super Furry Animals.

## FROM STUDIO TO CD

Richard Black, professional musician and hi-fi expert, begins a new series taking you through the processes involved in turning raw music into the CDs that nestle on your shelves. The first installment looks at the recording process...

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# HI-FI EXTREME



The super-tweeter – only of use to dogs?

## Take you higher

David Vivian investigates the rise (and rise) of the tweeter

**R**opey treble performance is the tense, nervous headache of hi-fi. There's so much you can blame it for: sibilance, brittleness, cymbals that sound as if they're made out of reconstituted Brillo pads, an inexplicable urge to climb inside the sofa. You can have too little treble or too much – treble that's smooth but doesn't go high enough or treble that extends into the Scooby-Doo zone but has more spikes than a season of *Buffy The Vampire Slayer*. The paradox is that when it's right you can't hear it – all the artefacts that previously snagged your attention disappear.

If treble isn't the first thing I'm drawn to when reviewing a speaker, the tweeter's probably a good'un. And, encouragingly, the percentage of high-frequency howlers has fallen to single figures these days. But 'perfect treble' is still the Holy Grail of speaker design, especially at the high end, and attracts the most extreme technologies in its pursuit.

My first real hi-fi speakers as a teenager, a pair of bulky Richard Allen Pavanes, used small cone tweeters with lovely blue paper diaphragms. Typical of their type, they had the dispersion characteristics of a laser beam and probably went no higher than 14kHz. That said, they didn't sound bad so long as you

used a theodolite to nail the sweet spot. As my early speaker-buying habits tended to track mainstream trends, I progressed through numerous soft dome tweeters, a few with early aluminium metal domes (most of which sounded worse than the Pavane's cones, despite much-extended frequency response) and then, purely out of curiosity, bought a dirt cheap pair of miniatures from Tandy that had very exotic-looking ribbon tweeters perched on top, enclosed in a mesh cage.

The little things, made by US brand Gennexa, had hopeless bass but delivered the most open and naturally detailed treble I'd then experienced. I've heard better since, but never from a 'conventional' dome style tweeter.

Perhaps it's no coincidence that in the era of the super-tweeter – once denigrated as being only of use to dogs, and now marketed to take advantage of the upwardly extended bandwidth of SACD and DVD-A (though it's actually beneficial to all formats) – that cutting-edge luminary Max Townshend opted for ribbons when designing his Maximum super-tweeter. And I like its spec. It uses what Max describes as 'super-powerful' neodymium magnets and an ultra-thin, eight-micron pure aluminium ribbon which, apparently, is still

**“Even the tweakiest, souped-up ribbon has to bow before the plasma ion tweeter.”**

hanging in there at 100kHz and can soak up 350 watts of power. Oh, and they work too, easily breezing the forget-about-the-treble test.

But even the tweakiest, souped-up ribbon has to bow before the rarest, most radical and fabulously expensive of all high-frequency drivers – the plasma ion tweeter. Which, of course, is what they use on the starship Enterprise. Or, if they don't, they should. The history of ionic devices that create sound actually dates back to 1899 and William Duddells' 'Singing Arc', a musical instrument based on the antique carbon-arc lamps that were used to light the streets of London. The lonophone was invented around 1946 by Siegfried Klein and used the corona discharge effect to rapidly heat the air around it. Since air was both the sound-emitting medium and the sound-transmitting medium, there was no mass to accelerate which meant that the ion tweeter had theoretically perfect transient response.

Today, the main manufacturer of plasma ion tweeters is Germany's Acapella. When working they look like tiny, high-tech cigarette lighters with a reddish-purple arc discharge – which would be a cool enough reason to own them. And their sound? They don't. Not at all. Which is my idea of heaven. **HFC**



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