THE FINEST HI-FI MAGAZINE IN THE WURLD SEPTEMBER 2001

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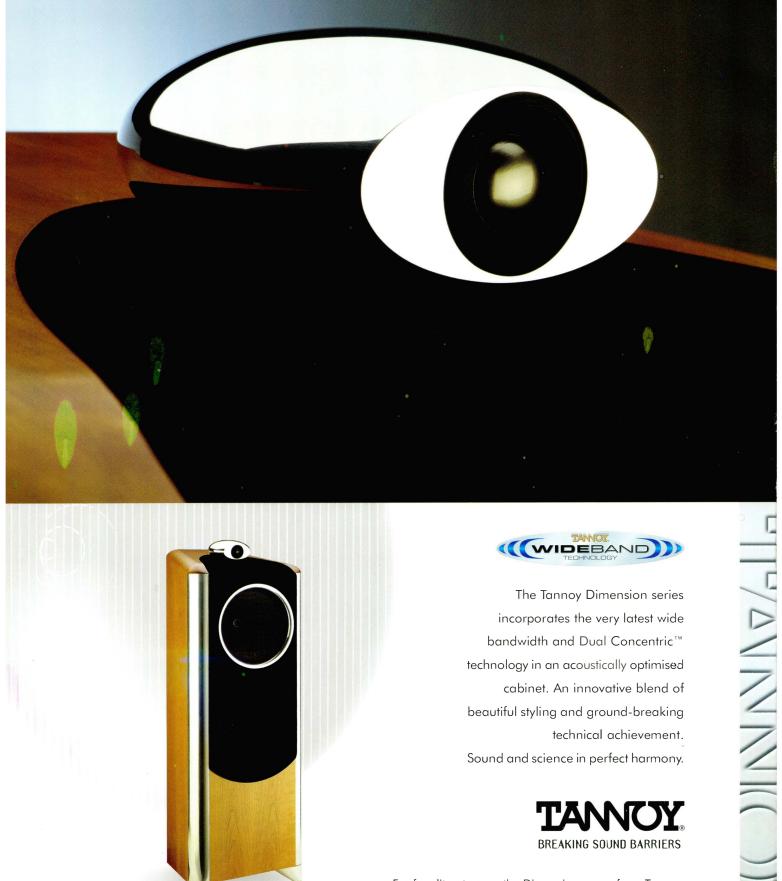
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## **HI-FICHOICE**

september 2001 | Issue 218

#### **CONTRIBUTORS**



Tim Bowern likes dance and indie music and plays it on an Arcam FMJ CD player, TAG amps and PMC speakers.



Dan George likes rock music and plays it on a Naim CD player, Bryston amps and B&W Matrix 801 loudspeakers.



Jimmy Hughes has more software than anyone and a pair of Impulse H1 horn speakers backed up by two REL Q50s.



Paul Messenger likes dance, folk, rock and classical music on vinyl and uses Linn, Naim and Rehdeko kit with gusto.



Paul Miller is the king of the technical world when it comes to hi-fi. He uses DPA amps and Audio Note speakers.



Alvin Gold prefers serious classical music and has a predeliction toward expensive amps and JM Lab speakers.

#### **HOW WE TEST THE PRODUCTS**

Our reviewing process is the most rigorous in the business. We focus on transparency and resolution, mixing traditional hi-fi values with the latest technological developments via a blend of subjective views and scientific analysis.

BENCH TESTS Our main group test each month concentrates on a key area, with products from across the separates market. The testing consists of three stages: 'blind' listening, hands-on subjective testing and scientific measuring. The latter phase is conducted by our Technical Editor using the QC Suite Functional Testing Station

- **GROUP TESTS** Each issue features a number of additional tests aimed at narrowing the field in a specific product area. Here the testing involves just the reviewer concerned with no lab or panel testing, but plenty of comparisons.
- SOLO REVIEWS As well as group tests we also review single components. In our First Impression section, you'll find brand new products that warrant early exposure, while High Performance concentrates on the latest aspirational, high tech components.

#### **AWARD TAGS**

BEST BUYS are considered to offer an excellent standard of performance at an attractive price.

RECOMMENDED products are first class components, losing out to Best Buys only because of a higher price or less competitive sound quality.

A third award, EDITOR'S CHOICE, is

reserved for those products reviewed solo and awarded where the Editor is convinced that a product offers exceptional quality for the price.

he quality of recording available to the hi-fi enthusiast has never been as good as it is today. Only 10 years ago, the fidelity we take for granted with today's CD-R was the stuff of dreams for most of us. Back then you could spend a fortune on a top-of-therange cassette deck or marginally less on a

DAT recorder (remember them?) and get pretty good results, but nothing near the virtual perfection that can be achieved with a £250 recorder and discs that can be had for as little as 70p a shot if you shop around.

Recording is also now unbelievably simple. Tape decks required a lot of pre-recording tweaking of bias and what have you to get the best results. Most CD recorders are simpler than VCRs: put the blank disc in, select 'make CD' and press play on the source. Analogue recording is marginally more fussy: you have to tell the disc to insert track numbers and pay attention when the source is nearing the end. Many people bought DAT or MD to archive vinyl collections, but if absolute quality and flexibility of playback are important then CD-R is unbeatable.

I set Jimmy Hughes the unenviable task of assessing a tangle of mains cables this month, but if anyone appreciates the difference these seemingly innocuous leads can make, it's a man who lives in the City of London. He has done a stirling job and dug up some great cables, most at reasonably sensible prices. If you have trouble believing that the length of the wire between the mains socket and your piece of kit can really make a difference, ponder the amount of RF noise that's being injected into the grid by computers these days. Specialist mains cables are designed to filter out this noise and often work more effectively the longer they are, the screening effect increasing with length. I have tried different mains cables at home before and found distinct differences.

Determining how much to spend on the things is not easy, some go for the 10 per cent rule – spend 10 per cent of the total system cost on cables – but I'm not sure that this is true of budget systems. Ironically the cheaper a system is, the more protection it needs from the vagaries that plague our mains supply. So it often pays to spend more than 10 per cent on decent mains, speaker and interconnect cables. After all, a hi-fi system, like a chain, is only as good as its weakest link. The signal may not come through the mains but it wouldn't get far without it.

"IF ABSOLUTE QUALITY AND FLEXIBILITY OF PLAYBACK ARE IMPORTANT, THEN CD-R IS UNBEATABLE."





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UK: £29.97. Europe: £43.00. North America: £49.99. Rest of world: £56.99. Call (01458) 271147, 8am-8pm, Monday-Friday.

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Pre-Press Bureau Westside, London W1 Printing St Ives (Plymouth)



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Every year EISA honours the finest hi-fi and home cinema products throughout Europe.

Hi-Fi Choice is the UK hi-fi magazine repre sentative of the European Imaging & Sound Hi-Fi Choice is published 13 times a year by Future Publishing Ltd, 30 Monmouth

Hi-F1 Choice is published 13 limes a year by Future Publishing Ltd, 30 Monmouth Sines, Bath Part 2001. All rights reserved. His publicationary on the e-produced or transmitted in any form in whole or in part without the written permission of the publishess. While every care has been taken in the preparable of this journal, the publishess cannot be held repostable for the accuracy of the information contained herein, or for any consequence arising. Overream Ricerding department or have consequence airsing. Part Choice is available to increase dublication overseas. For further details contact Chris Power, on 444 (01) 1225-402244, byfax 444 (01) 1225 732384, or by e-mail at chird powerful terms etc. us.



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## FIRST IMPRESSIONS

DAVID BAILEY, TIM BOWERN AND DAN GEORGE CHECK OUT THE LATEST KIT TO HIT THE HIGH STREETS...



## **B&W** CM2 LOUDSPEAKER



"YOU'LL STRUGGLE TO CRITICISE THEM. EITHER **SONICALLY OR AESTHETICALLY.**"

#### DATASTREAM

SIZE 20x32 5x28cm (WxHxD) 2-way design, 25mm alloy dome tweeter, 165mm woven Kevlar mid/bass cone, frequency response 65Hz -20kHz, sensitivity 89dB, finishes: maple or rosenut

B&W 2 01903 750750

EEEEEE £550.00

that size isn't everything.

&W's distinctive CM series returns to Choice towers this month in the form of a stand-mount model the CM2. Its larger brother the CM4 won praise back in the June issue (HFC 215), and now the smaller model has the chance to prove

B&W uses a tapered tube behind the tweeter, a technique designed to help dissipate rearward energy produced by the dome and said to cause treble distortion in the form of time delay. This is a technology inherited from the original Nautilus - a radical speaker that is conceptually assisting the design of B&W's more affordable models. Woven Kevlar provides the meat for the 165mm mid/bass driver, while the 25mm tweeter is a metal dome design. The bi-wirable, two-way CM2 is reflex loaded with a 'flowport' which has golf ball style dimpling said to aid to air flow by reducing turbulence.

Build quality and finish are excellent. The brushed aluminium baffle is visually inviting and you can have your CM2s in one of two real wood veneers: maple or rosenut.

An FS-CDM stand in silver is available for those wishing to extend the stylish statement made by the contemporary design.

We gave The Nutcracker Suite an airing through the B&Ws and were instantly rewarded with dynamic and authoritative bass presentation and sweet smooth treble that gave the xylophone a highly civilised tone. An effortless soundstage was produced with detail and resolution never failing to materialise in a relaxed and agreeable manner. They might not throw out as much low-end as the CM4s which you'd expect from the smaller cabinet size - but the bass that's on offer is solid and well controlled. Add the centre speaker and subwoofer with the CM4s and you'll have a very competent multichannel package. In twochannel form, as tested, you'll struggle as we did to find criticise them either sonically or aesthetically. DG

## **NAD** T751 5.1-CHANNEL RECEIVER

\*\*\*\* £499.95

iven that most multichannel receivers are aimed squarely at the all-singin' home cinema market, NAD's new entry-level baby is as typical as an English heatwave. Most cram their internals with sundry processing modes, an abundance of buttons and shiny casework. But the T751 remains true to its maker's long standing philosophy - build it simple, keep it frill-free and you'll reap your rewards in sonic heaven.

That means it's probably not an obvious choice for the average surround sound aficionado. While some of its rivals boast six channels at around 120 Watts a piece, the T751 gives five at only 60 Watts - no shortage of grunt in hi-fi terms but fairly restrained for home cinema.

However, its solid construction and minimalist approach to circuitry (in A/V terms) should pay dividends for those seeking a soupçon of hi-fi refinement for their surround sound applications. It sounds a little softer than a number of price competitors and some might translate that as shortfall in energy and dynamics, particularly when playing a spicy DVD: explosive action movies don't sear the air as they do through some of its more visceral counterparts. If, how-



ever, your aim is to create a multi-purpose system for both music and film content, you'll be grateful in the long-term. Its even-handed balance ensures all manner of CDs sound solid, substantial and relatively refined, comparable in quality to one of NAD's £200 stereo amps. Furthermore, its 5.1-channel audio inputs ensure that it's DVD-Audio/multichannel SACD ready. Though not of a standard to draw the highest resolution from these new music formats, its musical qualities make it a strong budget contender for forward thinking music fans.

If your priorities boil down to five audio channels, Dolby Digital/dts decoding and a strong sonic performance with music as well as film, this NAD is a top entry-level buy. TB

"A STRONG BUDGET CONTENDER FOR FORWARD THINKING MUSIC FANS ."

#### **DATASTREAM**

POWER OUTPUT 5x 60 Watts (claimed), Dolby Digital/dts decoding, AM/FM RDS tuner. Audio connections: 6 analogue inputs, 2 coaxial digital inputs, optical digital input, 5.1 channel analogue input/output. Video connections: 4 composite inputs, 3 composite outputs, 3 S-Video inputs, 2 S-Video outputs CONTACT 2 01908 319360





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## **CYRUS** DVD7 DVD PLAYER

**★★★★★ £1,000.00** 

f you're a die-hard CD user who's been disappointed by the invasion of Far Eastern DVD players displacing CD players, then you may find comfort from the latest British DVD evolution - the Cyrus DVD7. Cyrus is touting the new machine as a DVD player that is highly capable in the audio reproduction department. So serious is the claim in fact, that near-CD7 performance is alleged, and when you consider the £800 CD7 price tag, maybe £1,000 for the DVD7 isn't unreasonable?

After much auditioning Cyrus chose a Philips disc transport and placed it in the brand's familupgraded with an outboard PSX-R for an extra £500, which Cyrus claims gives better timing and resolution. Digital to analogue conversion in the DVD7 is achieved using the same 24/96 technology as the CD7, and further upgrades over the CD7 in the DAC

CD replay is admirable for a DVD player, you can hear the CD7's qualities in the DVD7's presentation with little difficulty. The midband is open and very informative, albeit with a balance that swings in the forward direction. The Cyrus portrays acoustic music very convincingly, and undeniably subtle ambient sound is ably reproduced, the machine has a remarkable ability to recover detail. Bass can be a

iar die-cast chassis. The power supply can

SUBTLE AMBIENT **SOUND IS ABLY** department are promised. REPRODUCED."

**DATASTREAM** DVD/CD PLAYER, DVD-V, DVD-R, DVD+RW, Video CD, CD Audio, CD-R, CD-RW playback, Composite video output, RGB (via Scart) output, S-Video output, Optical and Coaxial digital audio out, MC-Bus link, dual laser pickup, Dolby Digital & dts digital output.

CYRUS 2 01480 435577

"PORTRAYS

**MUSIC VERY** 

**CONVINCINGLY** -

**ACOUSTIC** 

bit lean, the emphasis being on quality of timing rather than abundance of weight.

As one might expect, picture quality is pretty good too. Out of the box images are sharp and motion is very fluid, colours lack a little depth, but nothing you can't adjust for through the screen. The discreet on-screen menus and indicators are unobtrusively simple and refreshingly minimal, as long as you're not sitting too far from the screen. An excellent remote called the 'AV commander' makes navigation easy in both CD and DVD modes. If you liked the CD7 sound as much as we did but feel the need to join the on-screen revolution, then this compact little unit will fulfil both roles with ease. DG

## PANASONIC SV-SD75 SOLID STATE PERSONAL

Panasonic

**☆☆☆☆** £299.99

#### **DATASTREAM**

DIMENSIONS: 5x4.9x1.5cm (WxHxD). Weight: 55g (inc. battery). MP3 and AAC audio formats supported. Supplied accessories: 64MB SD memory card, USB PC connection cable, RealAudio Jukebox installation CD-ROM, blue plastic wrist-

CONTACT 2 0990 357357

his personal stereo's most obvious attribute is its size. Music sources don't come much smaller than this - it's barely bigger than a box of matches, and it's wonderfully lightweight. It's actually the first concrete sighting of Panasonic's 'e.wear' concept, intended to create a range of 'wearable music players'. To that end, it comes supplied with a translucent blue wrist band so you can wear it like a watch, a concept we would imagine better suited to the Japanese teen market than more conservative UK buyers. Personally, I'd suggest you forget the wrist idea and slip it into a shirt pocket instead.

The SV-SD75 uses Panasonic-developed SD (Secure Digital) memory cards to store digital music files. These SD cards currently come in sizes up to 64MB, with sufficient capacity to store around an hour's worth of music at a decent quality level, but Panasonic reckons that a 1GB card (around 16 times the size) is due before the end of 2002. A 64MB card is provided with the player, and as there are no moving parts, your music won't skip - no matter how much the player gets shaken up.

Along with the widely used MP3 compressed audio format, this player also supports Dolby's AAC (Advanced Audio Coding). You won't find a lot of AAC music on the Net right now, but it's touted as an eventual replacement for MP3 because of its better compression rate - potentially better sound in a smaller space – and promise of greater content security, which obviously appeals to the music labels.

Music tracks can be converted from CD into AAC files or downloaded from the Internet and stored on the supplied memory card using USB connection and the supplied RealAudio Jukebox software. It's a doddle to use and at the highest quality setting the Panasonic treats music as well as the best solid state personals we have heard. It shares the usual rather cold sort of tone but it's also blessed with an enjoyably snappy, up-front character.

> Right now, solid state audio prices remain high - you could buy a satisfactory MiniDisc personal for half the price of this Panasonic, or a top-ofthe-range CD personal. But if your heart is set on the latest PC-based personal technology, this well specified little unit is well worth checking out. DB



"WE SUGGEST YOU SLIP IT INTO YOUR SHIRT POCKET INSTEAD..."





## **SONY** SS-LA500ED LOUDSPEAKER

tylish little speakers are all the rage these days. Not surprising really - if you're trying to rig up a multichannel system with speakers littered around the room, something small and sexy

might appeal more than a set that dominates half your floor space. Even standard two-channel hi-fi can look cute these days, so it makes sense for speaker designers to devise new and cost-effective ways of feeding our aesthetic obsessions. After all, if your living space is more Conran than Country File, you're not likely to be enticed by a square, vinyl-wrapped MDF box. Even if you regularly watch Changing Rooms...

Those who worship at the twin altars of hi-fi and contemporary design might find the sub/sat speaker systems tested elsewhere in this issue a reasonable compromise. Alternatively, park yer eyeballs 'ere because these new SS-LA500ED speakers from Sony are modish in the extreme. Their curved, die-cast outer shells are made from tough magnesium and adorned with one of a selection of crisp metallic finishes. At the front, a natty little white-coned mid/bass driver is sandwiched between a reflex port and a protected metal dome tweeter; the entire construction can be mounted on the supplied 'desktop' stand or an optional floor stand.

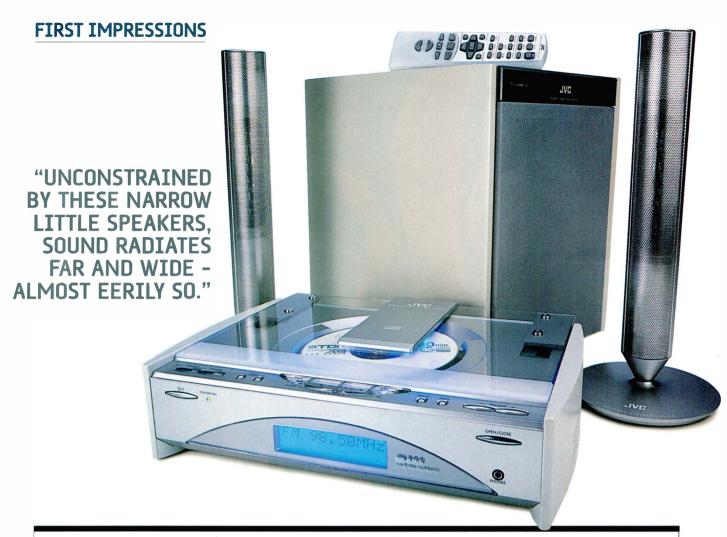
It's beautifully built, eminently eye-pleasing and practical too. It's sold singularly, so you can buy as many as you need for your own particular application - pick two if you just want stereo or, if you're venturing into the realm of surround sound, simply buy more.

Is it as impressive to the ear as it is to the eye? Hmm, not quite. There are praiseworthy aspects: it's notably free of 'boxiness', presumably largely due to its exceptionally rigid cabinet and curvy shape, which helps minimise internal standing waves. Consequently, music and soundtracks hang firmly in front of the speakers without obvious box resonance to colour the sound.

The overall effect is solid and punchy, with a boppy sort of character that seems to suit pop and dance stuff best. Bass isn't particularly weighty but has plenty of thump (largely through the port), negating any overt need for a subwoofer; there's a fair zing to the treble too, but not a great deal going on in the midband. Ultimately, music sounds firm but thickened, with a lack of space and air. An audacious little speaker then, but listenable nonetheless. TB

#### **DATASTREAM**

**DIE-CAST MAGNESIUM** cabinet measures 16x32x22cm (WxHxD), weighs 6kg, mid/bass driver with 110mm cone, 25mm metal dome tweeter, sensitivity rated at 85dB, impedance rated at 8 Ohms, front firing port, desk stand included, package deals for set numbers of speak ers are expected SONY 2 0990 111999





## JVC FS-SD1000R STYLE SYSTEM

**★★★★** £399.99

t's not enough for pre-packaged stereos to look good these days: manufacturers need a different angle, something to make their micro marvels stand out from the crowd. For its latest addition to the Lumirage range, IVC thinks it has the answer - get rid of conventional speaker boxes and use a couple of poles instead.

Like previous Lumirage models, the FS-SD1000R has a tiny low-slung unit at its heart. Within its silver-grey case lurks a CD player, three-band radio tuner and amp, along with a display oozing cool blue light from the front. Power it up and more blue appears like landing lights in the CD loading bay; hit open and the clear acrylic lid glides up, ready to accept whichever little silver disc you care to slip inside.

It's pretty natty, all in all, but IVC thinks the speakers really make the difference. Their poleshaped design contains a rather unusual rectangular diaphragm, 10mm wide and 90mm tall, in place of the usual cone and dome. JVC says it was developed to make a speaker that radiates sound from a single point source, because it claims "the smaller the point of radiation the higher the definition". Strictly speaking the last word in that

sentence would usually be frequency, but as this is a style system we won't niggle. This is coupled with a purpose-built voice coil and a pair of neodymium magnets, housed in a cylindrical enclosure. This promotes fewer internal standing waves and minimal cabinet diffraction. The result? Unusually wide directivity and a smooth spread of sound, says IVC. though you'll need to use the supplied powered subwoofer for bass.

Unconstrained by these narrow little speakers, sound radiates far and wide - almost eerily so. You can also walk around the room, from the front to the side, with relatively little change in perceived balance. This does have practical advantages in some scenarios speaker and listening positions are less critical, so if it's a compact system for the bedroom you're after, it might prove ideal. Indeed, for that kind of application it's really rather listenable, able to provide a spacious and inoffensive backdrop to whatever you're doing without the fuzz or brashness of many of its ilk. This kind of product is hardly built for serious listening it's a stylish little background system for that other room in the house. TB

#### **DATASTREAM**

#### MAIN UNIT MEASURES

30x7.5x21.5cm (WxHxD), CD and FM/MW/LW tuner, stick type speakers with polymer track diaphragm, active subwoofer with 160mm cone, amplification for pole speakers rated at 15 Watts (10% THD). subwoofer's amplification rated at 60 Watts (10% THD) JVC 2 020 8450 3282

## The Sony CHC CL5MD MiniDisc HiFi System









www.sony-europe.com

SONY



## **NEWS**

BROUGHT TO YOU BY TIM BOWERN AND DAN GEORGE

#### **NAUTILI GET NEW PATRIARCH**

**B&W PREPARES TO LAUNCH NEW SPEAKER** BASED ON THE SUCCESSFUL NAUTILUS.

B&W has unveiled a new £16,000 speaker, launched to celebrate its 35th birthday. The Signature 800 was developed from a design brief to refine the performance of the highly respected Nautilus 801, primarily by adapting the driver configuration and improving the quality of driver assemblies. It features two 250mm paper/ Kevlar composite bass cones, a 160mm woven Kevlar midrange driver and a 25mm metal dome tweeter. A cast aluminium plinth roots the cabinet to the floor and houses the crossover circuitry, for which it also acts as a large heat sink, Blemish-free Connolly leather and a special 'Tiger's Eye' veneer grace its limited edition cabinet; the acoustically identical but more soberly finished Nautilus 800 will be available this autumn at £11,000.

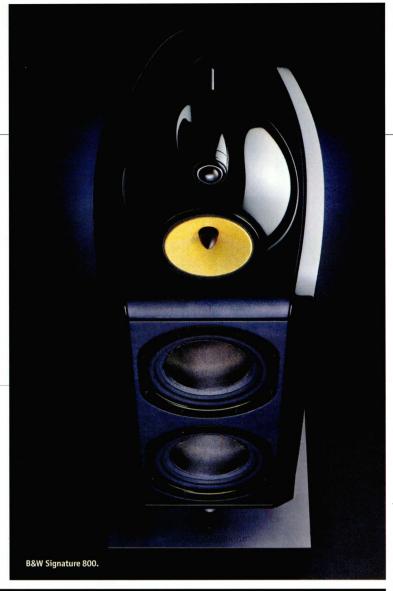


#### **PSION OF THE TIMES**

A VERY ORGANISED MP3 PLAYER...

The latest hand-held concepts from palm-top protagonist Psion could prove the shape of things to come for entertainment on the move. The all-singing, all-dancing portable 'device' is predicted to replace single-function personal stereos and mobile phones with full palm-top functionality and a fully-fledged Internet gateway, all kinds of entertainment media could be accessed within seconds, wherever you happen to be. Oh yes, it will happen. Eventually...

Psion 2 0990 143061





#### RECORDABLE DVD IS ALMOST HERE

GET READY TO CHUCK OUT YOUR OLD VCR.

Philips looks likely to win the race to bring recordable DVD to the UK. Company representatives have promised the DVDR1000 (pictured) will be on shop shelves across Europe by mid-August, a schedule chief rival Pioneer is unlikely to match. With a projected price tag of around £1,500, the DVDR1000 uses Philips' DVD+RW format – a re-writable form DVD which Philips claims offers unrivalled editing flexibility plus playback compatibility with existing DVD players.

A European version of Pioneer's DVD recorder is expected to hit UK stores later this year (two models are already available in Japan). It uses DVD-RW (not +RW) discs, for which the user may select one of two recording modes. The first gives full access to the machine's roster of editing facilities but the resultant disc can't be played back on an ordinary DVD-Video player. Discs created using the second mode can, but the editing options at your disposal are reduced.

Both the Pioneer and Philips machines record audio as data-reduced Dolby Digital 2.0. Anyone hoping to use either of these early machines as a CD-quality music recorder will be disappointed – they are intended as video recorders only. Philips says its format is more flexible, but Pioneer claims greater industry support. A third contender, Panasonic's caddy-encased DVD-RAM, is also expected later this year. Philips UK 2 020 8689 2166, Pioneer UK 2 01753 789789

## **NEWS**



harman/kardon DVD 10.

#### HARMONIOUS DVD

"MORE THAN JUST ANOTHER DVD PLAYER"?

Harman/kardon claims its DVD 10 is more than just another DVD-Video player. This new £319 machine is claimed to deliver superlative audio and video performance, with unusually sparkling sound when playing CDs. Burr-Brown's

respected PCM1716 digital-to-analogue converter lies under the lid and there's a good variety of audio and video output sockets round the back.

Harman Consumer UK 2 020 8731 4670

#### KABOOM!

NEW SOFTWARE LAUNCHES IN HIGH-DEFINITION FORMATS.

A new version of Tchaikovsky's 1812 Overture is the first new recording to be released simultaneously on SACD and DVD-Audio. Both formats feature discreet, high resolution six-channel surround sound; the SACD version is of particular interest because it's actually recorded using Direct Stream Digital (DSD), SACD's dedicated encoding process. In other words, it's produced exclusively from DSD masters, rather than re-mastered from an existing PCM recording like most SACD titles to date. Released on the Telarc label for £24.99

it comes with a warning: "The cannons of the Telarc Digital '1812' are recorded at a very high level. Lower levels are recommended for initial playback until a safe level can be determined". (New Note 2 01689 877884)!

Another software first comes from Welsh altrockers Super Furry Animals. Their new Rings Around the World album is claimed to be the first to receive simultaneous release on DVD, CD and vinyl. Employing the DVD-Video format, it includes 18 specially commissioned films and the entire album plus five bonus tracks in Dolby Digital and dts 5.1 surround sound, along with various extras. It's out on Epic on July 23rd.



Yamaha CDR-HD1000.



#### CD-R GETS HARDER YAMAHA PACKS IT IN...

Yamaha's latest CD recorder features internal hard disc storage as well as a CD-RW drive. The CDR-HD1000 allows users to store up to 30 CDs' worth of uncompressed music on its 20Gb hard disc. Tracks may be selected and compilations edited ready for burning to CD-R/RW at up to eight times normal speed. The result should be something akin to the editing flexibility of MiniDisc but with CD quality sound. Expect to pay £800 when it launches this summer. Yamaha 2 01923 233166

#### **LEND ME A TENOR**

THOSE ITALIANS ARE AT IT AGAIN.

The sumptuous SP range of speakers from Italian outfit Opera is now available in the UK. Consisting of the SP1 stand-mount and elegant SP2 floorstander, the range features a solid hardwood cabinet with a curved 'boat-tailed' back. The advantages are not merely aesthetic - this non-parallel sided design is also said to offer excellent rigidity and resonance control. The SP1 features a 110mm mid/bass driver and 27mm silk dome tweeter, and is priced at £500 per pair. Finish options include a choice of traditional wood -

mahogany, cherry and black & cherry - along with 'black lacquer and aluminium.

UKD 2 01753 652669

Opera SP1 standmount speakers.

#### IN BRIEF CONTINUED

**BASSLINE** speaker panels are designed to line the insides of your speaker cabinets to improve sound by eliminating internal standing waves. Price is \$50 for 25 panels. The Canadian inventor's Website is at www hasslinear com

**AMBIANCE ACOUSTICS** has released the HY-V, a five-channel loudspeaker system comprising of five Hyper Cube loudspeakers and three two channel processors. Each Hyper

Cube sports sixteen 115mm drivers - that's eighty drivers in all! Prices start at \$5,817 www.ambianceacoustics.com

NORDOST has unveiled its Valhalla Reference speaker and interconnect cables, said to use Monofilament technology. The Teflon microfilament is helically wound around a raw silver extruded group of conductors. Interconnects start at £2, 195 for a metre pair, with speaker cables starting at £1,250 for a

two-metre terminated pair **2** 01352 730251

SNELL'S XA 2900 centre channel speaker (pictured) costs a whopping £7.500! It employs two 203mm bass cones, two 127mm midrange units and a 25mm titanium dome tweeter **2** 01795 597590

KFF'S aluminium encased HTS 2001 satellite speakers are now available in pairs without a subwoofer, to expand existing systems or use as a stereo pair They cost £200.

THE CHORD COM-PANY has produced a new interconnect called The Calypso. It features an oxygen free stranded conductor, polythene insulation and a lapped screen

Specially built low-mass phono plugs terminate the cable ends and prices start at £30 for a one-metre pair 

OPTIMUM has a new range of speaker stands and equipment support racks. The speaker stands are available in six finishes and three heights starting at £99, modular equipment supports start at £449.95 with a steel or satin black finish 

#### TECHNO HYBRID HEAVEN

Panasonic and video game giant Nintendo are doing their bit for home entertainment convergence. Nintendo's next generation Gamecube console, due in the UK in early 2002, employs a version of Panasonic's DVD-RAM format for game storage. And Panasonic's parent company Matsushita has unveiled a Panasonicbadged "hybrid digital audio-visual product" that will pay CDs and DVD-Videos as well as Gamecube software – like Sony's Playstation 2 only much better, according to Matsushita's Managing Director. There are no details of a UK launch yet, but if it does comes to these shores expect to pay less than £350. Panasonic 2 08705 357357





#### **BOSTON'S BIG ONES**

NEW AMERICAN FLOORSTANDERS ON THE WAY...

Two new floorstanding speakers have hit Blighty from Massachusetts-based Boston Acoustics. The first is the VR-M80, a two-way design at £1,999 featuring twin 133mm mid/bass drivers and one of Boston's 'VR' tweeters. The larger VR-M90 is priced at £2,499 and employs a three-way configuration, which combines the tweeter with an 89mm midrange unit and a pair of 165mm woofers. Both speakers are clad in hand-rubbed cherry hardwood veneer and feature some serious engineering inside.

Boston UK 2 01423 359069

#### **SOLAR SYSTEMS**

MARANTZ LAUNCH A NEW RANGE OF STYLISH SYSTEMS.

Marantz's shiny new Eclipse range of designer hi-fi consists of seven pre-packaged system configurations, each named after the year of an actual Eclipse; three consist of slimline, full width components, the other four micro-sized separates.

The micro-sized models come with Marantzbadged speakers and start with the £500 Eclipse '19, sporting separate CD player and RDS receiver components. The Eclipse '22 adds a MiniDisc recorder for an extra £200, or you can swap the MD for a CD recorder if you opt for the Eclipse '25 at £800. If that's a bit steep, you could go for the £600 Eclipse '21, which keeps the CD recorder but eschews the CD player.

For those who crave a higher level of performance the full-width systems might tempt. The Eclipse '55 weighs in at £1,300 and combines an RDS receiver with a twin-tray CD player/ recorder. If you're into DVD surround sound the £1,500 Eclipse '70 might be more your thing, combining a DVD-Video player with built-in Dolby Digital/dts decoding and a five-channel receiver. Or if you're feeling flush there's the Eclipse '80, which adds the twin-tray CD player/ recorder to the '70's specification for a grand total of £2, 200. All the full-width systems are priced without speakers.

Marantz UK 2 01753 680868

## Marantz's new micro-sized Eclipse range.



#### IN BRIEF



PMC has launched a new range of speaker stands called Tube. All models feature 6mm thick laser cut steel top plates welded to a 100mm diameter steel column. They're powdercoated, acoustically tuned by pre-filling and available in a variety of heights, with prices starting at £200 **2** 0870 4441044

SHARP'S customer Information line can be reached on 0800 262 958. Please use this number for enquiries, not the one we published last month!

SONY'S new Digital Relay family of computer peripherals has spawned a PC/audio conver-

gence product called the CRX10U-RP: a portable CD-RW drive with a USB interface that plays CDs and MP3 encoded discs and doubles as a Walkman. **2** 01932 816000

ARC has licenced NXT flat speaker technology to produce The Sonare, a 5.1 channel multichannel.speaker package: five wall-mountable panels and subwoofer, and it costs £230. **☎** 01638 721237

MARANTZ has separated from former parent company Philips. According to Terrie O'Connell, MD of Marantz Europe, the company's new-found independence will give it greater freedom in choosing which formats to support in future. @ 01753 680868

ONKYO has upgraded its TX-DS989 receiver to include Dolby Pro Logic II, DTS-ES and THX Ultra certification. That makes it one of the first products on the market compatible with all current decoding standards. 

IN BRIEF CONTINUES ON P.16

#### "TONES 4 UR FONE"

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37549 - Boris Dluglosh	Never Enough
37238 - Nelly	Ride Wit Me
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37098 – Gabrielle	Out Of Reach
37240 – <b>Fragma</b>	You Are Alive
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## A BROADBAND CHURCH

WES PHILLIPS PAYS A VISIT TO THE BIGGEST AMERICAN TELECOMMUNICATIONS COMPANY AND FINDS HIMSELF PERCEPTUALLY ENLIGHTENED...

recently visited US telecom company AT&T's research campus in Florham Park, NJ, having received an invitation from Jim Johnston, technology leader of the Speech and Image Processing Center. Johnston has been developing 'Perceptual Soundfield Reconstruction', or PSR, a system dedicated to recreating the spatial cues that distinguish live music from the canned variety.

Johnston had invited us to his laboratory to experience PSR first hand. We briefly visited his laboratory, filled with measuring devices and other electronic gear, where he showed us the hardware side of his operation – a six-foot studio rack that contained a hand-built 10-channel balanced passive attenuator and five Hafler P7000 power amplifiers.

He then ushered us into a specially-built 'quiet' room. "This is one of the reasons I had to build that passive attenuator," Johnston explained. "It's so quiet, I could hear how noisy all the digital volume controls we tried were." The room was essentially empty, apart from five Snell C5A speakers arranged around several comfortable chairs. I sat down and the demonstration began.

#### **DOORS OF PERCEPTION**

Perceptual Soundfield Reconstruction begins at the recording stage. Johnston has designed a special holder that accommodates seven microphones. Five microphones are arrayed in a horizontal circle, at 72 degree intervals. A single microphone points straight up at the ceiling and another points straight down at the floor. According to Johnston, the vertical microphones were the last element to be added to the process – and are crucial to the illusion of real space.

The seven channels are recorded to a seven-channel ADAT machine and are then processed to five channels for DVD

playback. The processing, Johnston said, consists of only a few functions. "All that's involved is an addition, a multiplication and five additions – that's it."

First off, we were treated to an organ recital, which perfectly captured the primary sound of the instrument up front and positioned us solidly within the church's acoustic. We were able to change our seats without destroying the illusion and in fact, as the demo continued, we could make out architec-



Jim Johnston's Perceptual Soundfield Reconstruction seven-microphone array.

## "WE WERE IMMERSED IN A LARGE HALL ACOUSTIC. "THAT'S 320KBPS" JOHNSTON SAID."

tural details of the sound space, such as the front edge of the church balcony behind and above us, which tended to reflect certain frequencies right at us.

Musicians were reproduced within a spacious, but specific, acoustic in front of us, with none of the centre bunching that most Dolby processing, even discrete Dolby, seems to favour. The rear speakers almost never seemed to be the source of the soundfield that enveloped us.

#### **GET YOURSELF CONNECTED**

Then Johnston played a track and asked what we thought of the sound. We looked around, startled, but couldn't sense a trick in the works. We were listening to a Dvorak symphony and it sounded solid and dimensional – we were immersed in a large hall acoustic.

"That's 320kbps," Johnston said. I was slow on the uptake, but another witness wasn't. "So you could deliver this online?" he asked.

"With ADSL or any broadband connection, you can receive five channels of information over the Internet. That means you could subscribe to your favourite orchestra's Tuesday night concert series and listen to them in your own comfy chair every week."

I want this so bad it hurts. Don't get me wrong, 320kbps is a *heavily* compressed signal. The difference between full stream and 320kbps is a quite audible order of magnitude, but the effect of five channels of PSR encoded information is amazingly satisfying even then.

And how close is AT&T to developing PSR commercially? It's already done. All it needs now is for someone to license the technology to produce recordings. Since a PSR DVD or DVD-A will play back on existing five-channel systems (assuming the surround speakers are at the rear and not the sides), we don't even need to wait for new hardware. Simple.

Or it would be simple if somebody would only step up to the plate. And I'll make it even simpler. Here's the guy to contact for licensing: John Rudder, via email at jrudder@research.att.com.

As for the in-home delivery of live music? Well, that'll require a whole lot of work on the part of lawyers, accountants, and the musicians' unions, but I'm remaining hopeful. I think the concept of Concerts on Demand is too powerful to ignore – or at least I hope it is.

Wes Phillips is our US news correspondent, blues music lover and vinyl enthusiast.

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## AN EAR FOR MUSIC

FLOYD TOOLE. HARMAN'S VICE PRESIDENT OF ACOUSTICAL ENGINEERING, TALKS TO JASON KENNEDY ABOUT THE SCIENCE OF SOUND...



**"UNLESS YOU** HAVE THE SAME MONITORS IN THE HOME AS IN THE STUDIO. THERE'S LITTLE **CHANCE OF** REPRODUCING MUSIC **ACCURATELY.**"

ou don't interview Floyd Toole - vou listen to him. He achieves this, not by dominating the situation, but by having so much to say and by talking with such authority that the best one can do is nod at what seems to be the right moment and interrupt the flow when the subject gets too technical - which it often does. Floyd spent most of his career at the Canadian National Research Council (NRC) investigating psychoacoustics. He knows more about the measured and perceived sound of loudspeakers than anyone I've met in this industry. I suspect you could remove the "I've met" from that sentence without fear of reprimand as well.

#### **CLOSING THE GAP**

In the early 70s, Floyd discovered that nobody could draw an accurate correlation between the way a loudspeaker sounded and the way it measured, so he set about the daunting task of closing this gap. At the time the 'taste factor' was considered to be one of the main barriers to correlation. It was said that different listeners perceived the same loudspeakers in different ways and therefore there was no chance of getting consistent correlation. Another factor was the circle of confusion caused by the fact that loudspeakers are evaluated by using recordings which have been made using mics that are evaluated with loudspeakers. This means that unless you have the same monitors in the home as in the studio, there's little chance of reproducing music accurately. Accuracy is the cornerstone upon which Floyd has based his work - as, of course, have many others - but in his case the level of scientific investigation has been greater than usual. Another barrier that Floyd met in the early days was a dearth of accurate measurement techniques. So picking up where earlier workers (including Peter Fryer and the BBC) left off, he set about putting some science into the business of speaker design.

Floyd found that the great differences in

listener opinions were traceable to the effects of visual evidence (price, brand name, etc.), the acoustic effects of different listening rooms, and the hearing ability of the listeners. This in turn led him to a thorough investigation of how loudspeakers interact with the room, and thence onto which measurements most accurately correspond to how loudspeakers really sound. It was this wealth of knowledge that Floyd brought to Harman International some ten years ago. During this time, Floyd has been working with the Infinity brand - he uses Infinity Preludes in his seven-channel system at home. Apparently, seven channels is the minimum required if more than one or two people are to appreciate surround properly. He also uses five subs to minimise the bass cancellation effects of the room - it's nice to find a scientist who appreciates the technical and artistic results of his work.

#### I'D RATHER GO BLIND

At Harman, Floyd introduced blind listening to an engineering department that thought itself immune to the power of suggestion but which now realises that "humans have a proclivity to be influenced by ideas." He proved that not only does blind listening help overcome expectations based on appearance and previous experience, but it also lets us hear the effects of different materials and speaker positions more accurately.

He also brought with him the belief that in order to correlate measurement and listening results, the former must be done at as high a resolution as possible - "third octave measurements are not good enough", being a favourite statement. This of course is not the kind of thing that many medium-sized and small speaker companies want to hear: high resolution measurement costs high prices. He introduced a 72 (microphone) point anechoic measurement technique dubbed "Spin-o-rama" to provide enough data to allow design engineers to anticipate how the speaker might perform in a real



room. Things get extremely technical here, but his findings included the ability to identify different resonances in frequency response graphs and to analyse which were the most audible.

#### **ROOMINATIONS**

In practice, it turns out that a loudspeaker's offaxis response (everything that bounces off walls, floor and ceiling) is as important, if not more so, than the direct sound. Being a true scientist, Floyd appreciates that we don't know everything. If we did, there would be a room tuning device that, given the right measurements, could flatten or otherwise optimise the response of the speaker/room combination. One of the challenges is knowing what and what not to try to equalise. As it stands, even Floyd doesn't know how to completely overcome the influence that a room has on bass: apparently "the rest of the band we can handle, but the room dominates the bass". The RABOS powered bass system incorporated into high end Infinity speakers combines a specially designed level meter with parametric EQ to alleviate the worst effects of the room on bass performance. I'm intrigued to find out how well it works, but it looks like patience will be required, as the speakers don't get here until the end of the year.

## "SEVEN CHANNELS IS THE LEAST REQUIRED IF MORE THAN ONE OR TWO PEOPLE ARE TO APPRECIATE SURROUND PROPERLY."







REVIEW JASON KENNEDY

TC is one of those brands that is a fundamental part of the rich fabric of the British loudspeaker industry. While it seems to have been making professional monitors for ever, the company in fact started in 1974. What it calls domestic loudspeakers would pass muster in the average

small scale PA system, their only concession to domesticity being attractive veneers. But ATC has changed its image lately, aluminium has been employed in two ranges to great aesthetic effect and its bread and butter SCM series has benefited from a technological breakthrough with some impressive claims.

ATC's studio reputation is, it would seem from this side of the fence, second to none. Its list of high profile customers reads like a who's who of the recording industry over the past 25 years, including the BBC, Peter Gabriel's Real World, Pink Floyd, Todd AO (the biggest film scoring stage in the US) and Bob Ludwig's Gateway Mastering, alongside many of the biggest studios in the world.

I have been spending quality time with one of the more serious models in ATC's wood-encased range, the SCM50A SL, a circa seven grand active design that looks decidedly old fashioned yet sounds anything but. The difference between this SCM50A and its predecessors is the SL, for super linear, suffix. This reflects the incorporation of an iron oxide and resin compound, dubbed Super Linear Magnetic Material, in place of the usual steel rings that are concentric with the voice coil and focus the magnetic flux. This material is said to behave like steel magnetically but does not conduct electricity and is thus not inclined to that material's electrical non-linearities. In practice the technology is claimed to reduce third order harmonic distortion by 10 to 15dB across the midband.

What marks out ATC's loudspeakers, even at a

glance, is the use of a 75mm soft dome drive unit between woofer and tweeter. This covers the all important midrange from 300Hz to 4kHz and is driven by an edge-wound voice coil. The bass unit is a 180mm doped paper unit in a heavy duty cast chassis while the high frequencies are covered by a 30mm soft dome. The mid and bass units are made by ATC itself, which isn't a boast many companies can make.

The muscle behind the transducers is made up of an electronic crossover with separate MOSFET power amplifiers for each driver. Power ratings are 50 Watts for the tweeter, 100 Watts for the midrange and a generous 200 Watts for the bass. Should you feel inclined to wind the wick up from time to time, you won't find them wanting!

Other interesting specs include the rather conservative 38Hz (-6dB) bass cut-off and the difference in dispersion between horizontal (plus/minus 80 degrees) and vertical (plus/minus 10 degrees). Connections to an active speaker are necessarily rather different to the norm: in this case you'll need a balanced XLR interconnect leading from the preamp and an IEC mains lead plugged into the the nearest socket. I used both my usual NAD S100 preamp and ATC's SCA2, a more expensive and transparent unit that gave notably superior results.

#### **SOUND QUALITY**

The SCM 50As are pretty straightforward loud-speakers. They tell you precisely how it is – how big it is, how fast it is and how much bass extension its got. These are brutally honest to a greater extent than almost any other loudspeaker/amp combination that I've used. On the one hand, this means that charm is not on the agenda unless it's there in spades on the recording. On the other, you hear every transition, be it a studio effect or a chord change. There is none of the smoothing or sweetening that other speakers offer, this is warts and all resolve.

PRO-ACTIVES

LOOKING FOR THAT AUTHENTIC STUDIO SOUND? THIS ACTIVE SPEAKER FROM ATC WILL LET YOU HEAR EVERYTHING — WARTS AND ALL.



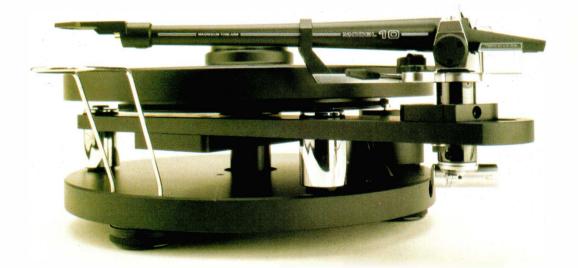
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#### ATC SCM50A SL ACTIVE LOUDSPEAKERS HIGH PERFORMANCE

In some respects they are quite restrained: there is a tendency not to produce a large scale image most of the time, but occasionally a recording comes along that stuns you with the size of the voice or the depth of the soundstage. On the whole, though, the ATCs are slightly conservative when it comes to imaging. This is presumably due to the dispersion characteristics specified, which says something for the recordings that manage to expand upwards. That said, you get a similar image whether the speakers are aimed at you, toed in, or placed parallel to the rear wall, so there's no shortage of off-axis dispersion on tap.

An active speaker of this size (50 litres) brings with it an expectation of serious bass extension and power, and it does not disappoint. This is the deepest rumbling I've heard in a good while. Being disciplined grunt, there's none of the boom that you get with many a big speaker, and in some respects it seems a bit dry, until a suitably endowed 'brown note' comes along and your trousers literally flap! Despite the Seismic Sink speaker bases on which they were placed, the ATCs were more than able to get the floor resonating, which makes me wonder how on earth you protect your system from that much air movement?

The other thing I expected from big active speakers was the ability to play loud without distortion, an area where the ATCs will never let you down. In fact I felt that I was letting them down by not playing at monitoring levels all the time. But the fact is, even though they can achieve realistic levels for most music (did I mention that ATCs were being used to play Wagner's *Ring Cycle* at the London Coliseum last month) they also work very nicely at civilised volumes. When it comes to absolute SPL (sound pressure level), the room and the quality of software would seem to have just as much influence as the limits of these speakers. Don't get me wrong, I did play a lot of superb music at a serious level, and achieved a degree of realism that I have not previously encountered outside the concert hall. Take Jeff Beck's classic Wired for instance - this is a stunning recording with a liveness and power rarely encountered. Likewise Radiohead's Paranoid Android is a welcome confirmation that rock can still progress artistically and technically. The latter, from the OK Computer album, is an odd recording: some high resolution systems emphasise variations in compression on the track while speaker systems like my Living Voice Avatars and these ATCs seemed to make light of such restrictions. Assuming the producer does-



n't want crescendos that turn into mouse squeaks, the uncompressed result must be right,

The SCM 50As put a whole new perspective on your music and shine a rather revealing light on the source and preamplification too. But if both of these factors are sorted you'll hear things that hadn't even been hinted at before. It's a degree of transparency that most recordings will welcome, but inevitably a few won't. There were a few surprises, though: on the one hand Keith Jarret's piano and jazz ensemble sounded extraordinarily real on Eyes of the Heart, but classic Decca recordings from the golden age of stereo (1957-62) didn't pull through so well, despite sounding so convincing with other set-ups.

There is a degree of dryness that occasionally seems to limit the fun factor - one visitor felt they sounded too cold - and the sound could be a bit more 'juicy', for want of a better word. But in terms of resolving power for your pound this amp and speaker combo is superb value, all the more so if you like to play music loud and long.

#### **CONCLUSION**

This is a loudspeaker and amplification system that is hard to fault, and despite the high price tag it represents excellent value for money. Some will inevitably find it a little matter of fact, but in the end if its the music you're interested in rather than the way in which a system presents it then transparency is the goal, and the SCM50A SL is bang on target.

£7,000.00 ATC 2 01285 760561

Current is supplied to the SCM50A SL's drive units by built-in power amplifiers, clearly visible to the speaker's rear (below).





"BASS SEEMS A LITTLE DRY, UNTIL A SUITABLY ENDOWED 'BROWN NOTE' COMES ALONG AND YOUR TROUSERS LITERALLY FLAP!"



PAUL MILLER

'Lossless Packing' technology that's now enshrined in the DVD-A standard and, if recent demonstrations are any guide, are also keenly developing DVD-A hardware.

Nevertheless, the £2,350 596 reviewed here will handle DVD-V, CD-R and some CD-RW, but neither DVD-A or SACD high resolution audio formats. Meridian hopes to launch its first commercial DVD-A player in the form of an upgraded 800/861 transport/processor combination, followed by the release of a new player, called the 598, which will handle all DVD-A, DVD-V and CD formats from the outset. The 596 featured here will eventually be offered a DVD-A upgrade, perhaps by the end of the year.

This is made possible by the modular architecture of the 596 which separates the key transport, processing and D/A sections of the player into upgradable 'blocks'. The DVD-ROM transport is sourced from DVS in Korea as, I believe, is

This concept extends to the digital output, which will not only handle 96kHz sampled data but also includes a proprietary MHR "Meridian High Resolution" facility which scrambles the data for decoding in matching Meridian ancillaries (reducing jitter en route). MHR can be disabled via the on-screen menu if the 596 is used with anything other than the latest Meridian equipment. Some older kit is upgradable by Meridian and your dealer will advise on the best course of action. System integrators and, frankly, anyone handy with a PC, will be pleased to note that the 596 can be remotely-controlled via an RS232 interface. Meridian even supplies a software protocol which is sufficiently transparent that I was able to knock-up a working interface in an afternoon.

Naturally, Meridian also specifies its own video processing circuitry, including a custom onscreen display. The Meridian title page even includes a PLUGE pattern - three successive regions of 'black' that enable you to set your TV

## MERIDIAN OF SUCCESS

WITH EVERYONE RUSHING TO GET THE LATEST BARGAIN DVD-A PLAYERS, IT'S WORTH REMEMBERING THAT A GOOD DVD-V PLAYER GOES A LONG WAY...

brightness level correctly. Composite and S-Type video outputs are provided with the choice of either three BNC component video outputs or a SCART socket, depending on your preference. The 596 certainly delivers a very bright and robust picture, free of obvious noise and confident in its reproduction of true-to-life colours. Meridian is currently fighting shy of features like Progressive Scan, but by sticking with established, high quality video engineering techniques the results are difficult to criticise.

Ironically, Meridian's DVD navigation software has the capacity to deal with DVD-A media if only it contained the requisite hardware. As it stands, the DVD-V mode will handle 5.1 channel encoded discs even if dts material is not decoded, just passed directly through the digital output. Dolby discs are decoded and downmixed to the two-channel analogue outputs. Meanwhile, the DVD-A 0-9 mode will play two-channel DVD-A discs up to 96kHz sampling and with no copy protection. Which, so far, is an extremely rare variant on the theme.

#### **SOUND QUALITY**

As a CD player, the appearance and operation of the 596 will be familiar to generations of Meridian users. Wafer-thin buttons cut through the moulded black fascia providing basic track access and display functions, leaving direct track access, program and other navigation modes to the substantial system remote control. There's nothing 'flash' about the 596 but it is reassuringly well-built. Nevertheless, my own experience of Meridian CD players and CD transport/DAC combinations has taught me not to expect a year-on-year improvement in sound quality. More than once, I've thought a new Meridian player represents a subtle sideways shift rather than a significant step forward.

Fortunately, the 596 is both a real eye and ear opener. Then again, the Analogue Devices DAC technology used in the 596 has a very different sonic hallmark to the Crystal-based analogue stages that featured so heavily in Meridian players for many years. In this regard, the 596 is arguably the most impressive DVD player I've

heard to date, with a bold, authoritative sound that's the perfect complement to its equally bold and brightly detailed picture quality.

Not that the 596 is heavy-handed, instead it seems to judge the weight, the range and impact of all types of music with great sensitivity. Favourite vocalists, including Carman Lundy and Cassandra Wilson, sounded breathy and alive and immersed in a fabulously realistic ambience. Accompanying strings and percussion sounded sweet but incisively detailed – transient sounds are slickly reproduced, free of artifice, hardness or emphasis but still quick off the mark.

Music that demands great weight and impetus, whether Leftfield, Massive Attack or a spirited rendition of Rachmaninov's Symphony No.1 is readily accommodated by the 596's experienced hand. It provides depth and momentum without excess, developing a deep and expansive sound that's still very easy on the ear. It sounds, quite simply, very *natural* without that feeling of restraint or caution that sometimes accompanies an expensive but 'over-developed' product.

#### CONCLUSION

The 596 is no whimsical purchase, but it does offer a sound and picture quality that's commensurate with the price and, with a following wind, the promise of an upgrade to full DVD-A specification later in the year.

£2,350 Meridian 🕿 01480 434334

Highly sophisticated – but not *quite* a DVD-Audio player...



## HEAVENLY VOICES

LIVING VOICE'S AVATAR SPEAKERS MAY LOOK A LITTLE ORDINARY BUT THE SOUND QUALITY THEY PRODUCE IS ANYTHING BUT.



t's three years since I gave the £1,500 Living Voice (LV) Auditorium a Best Buy badge (HFC 180), and a year later, Jason Kennedy was similarly complimentary about the £4,000 Avatar OBX-R (HFC 196). It's therefore high time we checked out the £2,500 Avatar, the middle model of a threesome which all share the same out-

line configuration, but which differ significantly in detail, execution and price.

LV's proprietor, Kevin Scott, is a valve enthusiast seriously obsessed with wringing the last milligram of musical message out of his systems. Realistic midband dynamic expression is the key strength of high end valve amps, and Kevin originally developed the very large Air Partner horns to provide the ultimate dynamic realism.

Although the Air Partner has established its own following, few are prepared to find both the considerable price, and the substantial space needed to accommodate such devices. For real people in the real world, real loudspeakers must fit into real lounges, so Kevin decided to develop something a little more practical.

As a dealer, he'd been very impressed by a Danish loudspeaker which he'd supplied to a lot of customers. The Dali 104B (HFC 152) was a budget, port-loaded floorstander with twin 6.5 inch frame main drivers mounted above and below a single tweeter. Kevin believed that this configuration worked very well. Clever port tuning and paper cone main drivers gave a healthy 92dB sensitivity with good bass extension, so the speaker made a pretty good match for low-power valve amps

At £400, Dali was fine for customers on a budget, but Kevin wanted something a little more refined to go with the more upmarket kit he sells (Wadia CD players, Canary Audio amps etc). The decision to base the Auditorium design on the 104B's basic configuration was, with hindsight, particularly smart. Several years of painstaking development have shown just how much extra performance and sophistication can be wrung out of an essentially simple formula. It seems an exceptionally good match for a typical British lounge, both aesthetically and sonically.

Similar to the standard Auditorium model in every superficial respect, but different in much of the fine detail, the Avatar is essentially a lounge-friendly design. It looks good and doesn't take up much space. Though finished in a fashionably-pale high class veneer, the enclosure is less fashionably sharp-edged and cornered. This is thanks to the coarse-grained chipboard of the wrap carcass. Sourced outside of the UK this was chosen on sound-quality grounds. It uses the highest density grade available, as opposed to the comparably fine-grained MDF. The back, however, is MDF.

The speakers are made as mirror-imaged pairs, with twin main-drivers mounted above and below the tweeter in straight d'Appolito mode. Additional bass reinforcement is provided by a generous rear port (tuned to 40Hz). The Vifa sourced drivers have 125mm doped paper cones, large magnets and foam surrounds, while the Scanspeak 'type 95' tweeter has a 30mm fabric dome, and is offset from the cabinet centre-line to spread baffle-edge diffraction effects.

Bi-wire/Bi-amp terminals feed a vibration-decoupled star-earthed crossover network which uses top quality components, including Hovland film and foil capacitors, non-inductive resistors, and low-temperature enamel wiring. The speakers are supplied with separate plinths made from the same chipboard as the carcass but painted black and secured with chunky 8mm spikes.

Far-field in-room measurement shows a very impressive 93-94dB sensitivity. True, the load spends some time down around 3 Ohms, but ultimate extension is a very impressive -11dB at 20Hz in-room. The frequency balance is very good through the bass and broad midrange, but there's a lack of presence energy, 1.5-4kHz.

#### **SOUND QUALITY**

Ideally, I should have liked to compare the Avatar directly with its Auditorium and OBX-R siblings. This was not practical, but might be if you visit a Living Voice dealer. According to

REVIEW PAUL MESSENGER

#### LIVING VOICE AVATAR LOUDSPEAKERS HIGH PERFORMANCE



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#### STAR SENNHEISER

I am writing having just read your review of the Sennheiser HD590. I decided to purchase them after serious listening at different hi-fi outlets. On the day they beat the close competitor Grado SR60. I payed £80 for the Sennheiser's and they sound so accurate, lush and so sepa-

rated..... Well words can't describe the quality of these cans.

Why am I writing? Thank you for your review, not five stars for these but good on acoustic material you said. I think you were a bit harsh on build quality but hey that's just my opinion. For £80 I dare any one to find a better set of cans than these. Grados come close but their sound is a little bright I found, they never wanted to stop partying.

#### **BANDWIDTH TOO FAR?**

I read with great interest the article about the Philips SACD-1000 in your July edition. Perhaps the author could explain in some more detail his comment, "Though the reproduction of ultrasonic frequencies is all part of the SACD/DVD-A remit, too much UHF can compromise the performance of amplifiers and speakers whose 'design vision' stopped short at 20kHz.".

Is UHF, which as far as I am aware is some 300MHz to 3000MHz, really so significant in this context?

Tim Tierney, via e-mail

The Editor replies... The term UHF was used in place of 'ultrasonic frequencies' for brevity and to avoid repeating the phrase in the sentence. And while it is technically not the same thing, I felt that HFC readers would understand the



LETTER OF THE MONTH WINS A TDK GOODIE BAG

Send us your views of the magazine and the world of hi-fi: Forum: Letters Hi-Fi Choice 99 Baker Street London W1U 6FP dan.george@futurenet.co.uk

"YOU COULD SPLIT AMPS INTO 'SMOOTH', 'BRIGHT', ETC AND CD PLAYERS INTO SIMILAR CATEGORIES."

PETER ADAMS - MATCHMAKE

"I HAVE PREVIOUSLY ENCOUN-TERED A LACK OF 'JOINED-UP' OPINION BETWEEN DEALERS AND AUDIO MAGAZINES."

JOHN KEGG – DISSONANT DEALERS

"I MUST TAKE ISSUE WITH ROBIN MARSHALL REGARDING TRANSMISSION LINE SPEAKERS."

MR RASHLEY-SMITH – RA-RA REGA!



#### LETTER OF THE MONTH

#### **DISSONANT DEALERS**

I have previously encountered a lack of 'joined-up' opinion between dealer networks and audio magazines, of which the following is just one example. I recently read an enthusiastic review in *Hi-Fi Choice* of the Sony SCD-555ES SACD player, the essence of which was that this machine was successful in its class as a CD player alone, even before taking into account its capability in SACD mode. This was echoed in other magazines, so when I saw that Sevenoaks Hi-Fi had the machine on special offer at a £200 discount, I rapidly requested an audition.

The branch I contacted said that they did not have one available, and on checking their computer database, it appeared that Sevenoaks did not possess a single SCD-555ES throughout the whole company. OK, so if it was a special offer, maybe it was sold out (although the press offer was in a June issue)? Would they be getting some more? Probably not, Sevenoaks replied, because they had listened to the Sony SACD range, and had concluded that

"the CD performance was below that of the comparable priced competition", and that SACD wasn't selling on its own merits.

I felt that it would be unproductive to point out that this seemed to contradict the views of at least three eminent press reviewers, because I have encountered this approach so often before dealers seem threatened by views quoted in magazines. Perhaps they conflict with the training or product loyalties they have developed, even to the extent of discouraging customers? I'm quite willing to listen to an argument that I could find better synergy elsewhere, but I'd like to judge for myself, too! Perhaps other readers have experienced this obstacle? John Kegg via e-mail

The Editor replies... It's odd that your dealer liked them in the first place but is now so negative. We continue to find the Sony's CD playback very impressive and would suggest you persevere in your quest to find a sample to audition. Word from Sony is that production will continue till the end of the year.











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| March | Marc

#### **COMPETITION TIME**

We've got a set of top-notch **Ecosse-Reference interconnects** and speaker cables worth approximately £280 up for grabs. For your chance to win, head to our Website at www.hifichoice.co.uk



#### **POLL NEWS**

The results of our latest poll are in! We gave you the chance to vote on the group test you'd most like to see in next month's magazine. At the time of writing, the overwhelming response was in favour of headphones: 50% of you voted for them, 27% opted for serious loudspeakers and 13% wanted to see highresolution software. Trailing somewhat behind were systems with 5% of the vote, and surround speakers bringing up the rear at 4%. OK - your wish is our command... Check out our next issue (October) for reviews of both headphones and serious speakers!

## SHARK ALER

#### WHAT'S ROCKING THE BOAT DOWN AT THE *HFC* FORUM...

erhaps the hottest Forum topic of recent weeks has been the use of Maplin's interconnect cable, the Shark. Available as a twin-core unterminated run for a mere £3.49 per metre, this screened OFC cable has been winning the affections of a great many Forum users so much so that at one point Maplin had completely sold out! One of our Forum users, CJ Ross, gave his verdict:

"They are excellent. In fact, when putting them into my system a couple of weeks back, I didn't think they needed running in. Bass response is sharp and as full as I require, but treble performance is the star quality of this cable. I can't praise it highly enough - lovely mids and highs are achieved." It sounds like Maplin might have a hifi bargain on its books...

For more Maplin news, check out page 70 of this very issue - a low-cost RF shielded mains block from the mail order electronics specialist goes up against more costly units from specialist hi-fi brands. Another hi-fi bargain perhaps?





#### friend or colleague via e-mail. Although the theme is generally person al criticism, you can make fun of someone's dress sense, sense of humour etc, you can also profess your fantasies. Excellent fun - try ending one to the person you sit opposite in the office!

#### **WEBSITE HI-FIVE**

THIS MONTH'S SELECTION OF HI-FI RELATED WEBSITES...

#### www.maplin.co.uk

Unbeatable for tweakers on a budget! The ultimate hangout site for engineers and DIY enthusiasts. Home of the aforementioned Shark interconnect cable. You'll need plenty of online time to get round this one!

#### www.strachan.ndirect.co.uk

Another useful site for all you DIY types. A good selection of electronics is available from this Scottish company, as well as loudspeaker drivers and a nice range of speaker stands.

#### www.ex-dem.co.uk

Interesting site for all the bargain hunters out there. If DIY seems like too much of a chore, have a look at the wealth of ex-dem stuff around. You can buy in confidence from a network of dealers around the country.

#### www.hifijunkies.co.uk

New site from a division of Audio T that offers quality hi-fi at a competitive price. See it cheaper elsewhere and these guys will do something about it! The advice section looks like a good idea, and the home install option is very welcome too. We understand there is more to come from this site.

#### www.hi-fiwebsites.co.uk

Great on-line directory from new UK search engine www.uk250.co.uk Clear and easy to navigate with a mixed selection of hi-fi related sites. If you like what you see, check out the main search engine (address above).

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DOMESTIC HARMONY

#### DOWNSIZING

My wife has been on at me for ages about getting rid of my separates system and getting a smaller stereo instead. She wants a micro system, and though I believe some of the Denons can sound quite good, I'm really not keen. One possible compromise would be to get a sub/sat speaker system like KEF's KMS 2002 or Bose's Acoustimass 5. What do you think? They'd certainly take up less space than my TDL RTL 3s! My amp is an Aura Evolution 2. Chris Cleverley, Somerset

Woah! Timing! This issue is the one for you, Chris. More and more serious speaker manufacturers are getting in on the sub/sat thing, offering a very decent level of sound from truly tiny packages. The best of the bunch are really quite startling given their diminutive size, whilst discrete and stylish enough to satisfy even your wife's taste in interior decor. See our review starting on page 58 for recommendations.

For a matching system Denon is a safe bet but look at alternatives from Marantz or even Audio Note.

LOUDSPEAKERS

#### VERY METAL

I used to be happy with my system's sound, but now my music tastes have changed. These days I'm into heavy rock and nu-metal, which leaves my set-up lacking dynamics and pace. I'm still very fond of my CD player (Marantz CD-63II KI-Signature) and amp (Arcam Alpha 10), but I'm keen on changing my speakers (KEF Q35). How about B&W CDM1 NTs, Dynaudio Audience 52s or something from the Monitor Audio Gold Series? My room is on the smallish side.

Peter Adams, South London

Good though they are, the B&W's you mention aren't really what you're looking for they're more refined and laid-back than fast and dynamic. You might find Monitor Audio's Gold Series speakers offer a little more in that area, but our top dog from your list would be the Dynaudios

beautifully crisp and punchy with a tight and weighty bass, sure to give Limp Bizkit more backbone. You should also consider Rega's Jura and Triangle's Zephyr II at the same price point.

dience 52





#### **SPECIFICALLY**

Two questions about loudspeakers. First, I've seen reviews that refer to speakers as "mass fillable". What does this mean? Second, do biwirable speakers have to be driven by a special dual output amplifier? Howard Galloway, Bedfordshire

"Mass fillable" means the speaker has an opening into which material can be poured to add weight. The most popular materials are dry sand, lead shot or metal particles. Mass loading in this way can increase a speaker's sense of control and authority, though over-filling can rob a little life and soul.

If your amp only has one set of speaker terminals you can still bi-wire. Either buy a bi-wire cable which splits from two wires at one end to four at the other, or simply double up your cables and combine them at each terminal.

#### **OZZIE SIGNATURE**

I'm planning to upgrade my CD player to something that'll squeeze a little more from my music. I've got a budget of around £500 and based on your reviews I'm leaning towards the Marantz CD6000KI, a player not yet available in Australia but due to arrive shortly. But one of your rival mags rates Arcam's CD72 more highly - what should I do? Dianne Markey, Australia

The Arcam has a substantial and laid-back sort of sound, which some feel is unusually refined while others find a little too relaxed. In our recent group test, which involved extensive comparative blind listening, the Marantz came off the better of the two - a more focused and lively listen. Both are very worthy players and the only way to know which suits your music best is to audition them side by side through ancillary components much like your own.

Marantz CD6000Ki.



# JBL XTI.

#### MULTICHANNEL SPEAKERS

#### MIX 'N' MATCH

I'm using a Sony DVD player with a budget Yamaha A/V receiver and a Yamaha NS-P300 Home Theatre speaker package. The receiver and speakers came together as a set and I'm not happy about the speakers' sound, especially with music. I'm thinking of buying a

new pair of front speakers, with a budget of up to £1,000. Any suggestions? Also, will it make a big difference if I buy a dedicated CD player and stop listening to CD through my DVD? Emre Capar, Switzerland

If you simply buy a pair of £1,000 speakers and integrate them into your existing system you're likely to get a pretty obvious tonal imbalance. And while it'll undoubtedly make your CDs sound better, you won't get the best out of that kind of speaker with your current amplification.

Your best option is to split your budget across an entirely new speaker package like JBL's XTI. That way you'll get an integrated sound and improved performance with both music and movie sources.

Finally, a low cost CD player through your existing home cinema set-up is unlikely to improve much on your DVD player. But a more expensive dedicated player will be noticeably superior if you upgrade your speaker system.

**BUDGET LOUDSPEAKERS** 

#### TOUGH DECISION

I'm after a pair of sub-£200 stand-mount speakers and I'm torn between the Monitor Audio Bronze 2 and B&W DM601 S2, both of which are well rated by Hi-Fi Choice. I've listened to both myself and I love the Bronze 2's openness and detail, but I'm also keen on the B&W's punch and weight. Please help me decidel

"Southgate 7", via email

Both are good speakers with their own particular merits merits you've now heard for yourself. Which you choose will depend largely on your music taste and the style of reproduc-

tion you prefer. Which did you find most enjoyable with your own discs when you went for an audition? Actually, our number one choice in that ball-park right now would probably be a completely different speaker, reviewed in our First Impressions section in HFC 216: B&W's new and remarkably well-balanced DM303.





Toshiba SD900E.

#### RESISTANCE IS FUTILE

I'm thinking about buying Rotel's RCD-991 CD player, but I'm also tempted by the Toshiba SD900E DVD-A/V player. Which of these would sound better with CDs?

Joseph Borg, Australia

The Toshiba is probably the most impressive DVD-A/V combination player we've heard to date, part of which is down to its better than average CD replay. It's a clean and able performer, but you're likely to find the Rotel displays more bite and dynamic clout. If CD replay is the most important thing for you, we'd recommend the Rotel route. But if music and movies in surround appeals then the Toshiba is one of the best options going.

MULTI-ROOM

#### GETTING STARTED

I want to build a cost effective multi-room system stretching to three zones with individual control. Which route would be best?

Dave Dayes, via e-mail

One of the least expensive systems is QED's MusiQ. Attach this to an ordinary hi-fi and you can pipe music to multiple zones, each with their own independent source and volume control.



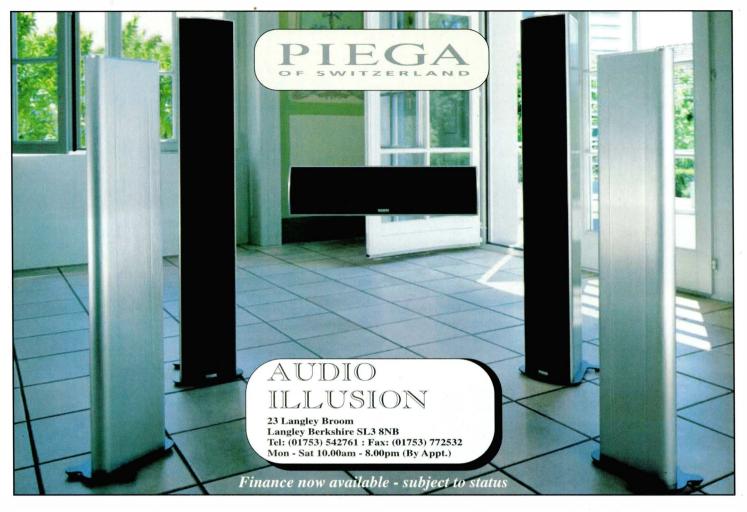
LOUDSPEAKERS

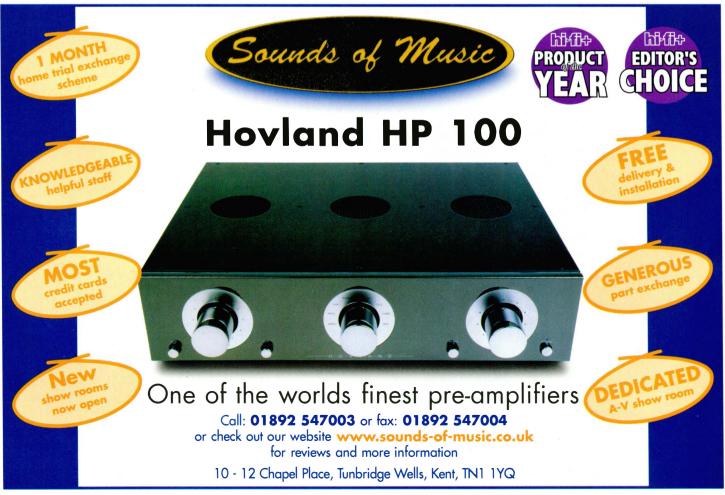
#### WEIGHT OR FINESSE

I'm trying to decide between the Celestion A2 and B&W Nautilus 805 to go with Audio Analogue electronics. What's your opinion? Daniel Guerra, via e-mail

They're both fine speakers - if you're after a big, weighty and enveloping sort of sound go for the Celestion. If you prefer a more cautious balance with fine midband resolution go for the B&W.







## What's the frequency, Jimmy?

HOW PURE IS YOUR SUPPLY? JIMMY INVESTIGATES WHETHER HAVING TOTALLY CLEAN MAINS REMOVES THE NEED FOR SPECIALIST POWER CABLES.



"MAINS TRAVELS
MILES AND MILES
THROUGH ORDINARY
CABLE, ONLY TO BE
TRANSFORMED BY
MAGIC AT THE END
OF ITS JOURNEY!"

oubtless, the more sceptical among you still find it difficult to accept that changing mains cables makes a difference to sound quality. And, to be fair, the sceptics have a point. It defies belief: the mains travels miles and miles through ordinary cable, only to be transformed by passing through a metre or two of magic wire at the end of its journey! But perhaps it's not so remarkable. After all, tap water can likewise be purified on arrival in the home. And no one thinks that's black magic...

But would such devices still produce an improvement if the mains were perfect? Because these things are supposed to work by cleaning up our dirty electricity supply, logic says there should be little or no difference given totally pure mains. So I was especially intrigued to try PS Audio's new P300 MultiWave Power Plant mains supply, which completely regenerates the mains, giving a supply that is both pure and specially tailored to improve efficiency.

#### **FREQUENCY FOIBLES**

The original P300 Power Plant offered uservariable mains frequency, allowing one to increase it from 50Hz/60Hz to 120Hz in fixed increments. Higher AC line frequencies mean enhanced power supply efficiency, because the reservoir capacitors are charged more frequently. Subjectively, however, many listeners felt that increasing the AC line frequency beyond a certain point was a doubleedged sword; added sharpness and transient attack being offset by losses of ambient depth and bass weight.

To combat this, PS Power Plants now produce multiple frequency AC power. Called MultiWaves, the frequencies are 'stacked' in combinations the maker claims more closely approximate the proper charging characteristics required by audio electronics. To suit different systems and individual

tastes, there are 10 selectable MultiWave combinations, plus pure sine wave.

PS Audio recommend you begin evaluating Power Plant using MultiWave setting SS1. This consists of what's described as Sequential Frequency Partial Square MultiWaves composed of 50Hz, followed by two 120Hz Partial Square Multiwaves. Second favourite MultiWave pattern is PS2, comprising a single 60Hz sine wave with a minute amount of 180Hz mixed in. This pattern is better suited to equipment with built-in cooling fans using AC synchronous motors that need to 'see' a clean basic frequency.

#### **CURRENT FUN**

Because my EAR 859 integrated valve amp has fairly low current consumption, I was able to use my entire system with the P300 – total power drain being around 240 Watts; just inside the P300's 300 Watt limit.

Subjectively, the P300 made a substantial difference. The music sounded louder, livelier, more focussed and more immediate, with greater power and increased dynamic attack. Separation between voices and instruments was enhanced, making even quite compressed recordings like Suzzanne Vega's *Solitude Standing* seem dynamic and detailed. Going through the Multiwave patterns, I felt that SS1

gave the most brilliant, up-front and dynamic musical presentation,

though some of the 'lesser' settings proved more comfort-

able to listen to.

With an LAT mains

cable in place, high frequency percussion sounded crystaline and silvery in its pin-point brilliance; going over to a standard

mains cable, this silvery brilliance turned a leaden grey, losing the sparkling immediacy noticeable before. Surprised? You bet! I felt the improved supply would've reduced such differences. But there you go. Inevitably, this throws up questions about mains purity, and what it is that specialised mains cables actually do.

Jimmy Hughes is the king of hi-fi tweaks, his quest for the absolute sound knows no bounds.

PS Audio's Power Plant, for the purest mains you could hope to get.



# LU RECORDERS

ALVIN GOLD AND PAUL MILLER ROAD-TEST NINE CD RECORDERS

ast time we looked at recordable compact disc, it was a new format locked in mortal combat with MiniDisc. Things have moved on now, and although the battle is not won, CD-R (write once) and CD-RW (recordable and erasable) are certainly in the ascendant. Even in the Far East, traditionally a MiniDisc stronghold, CD-R/RW is making inroads. Why? Recordable CD has two great overriding strengths: the end product *looks* like a compact disc and it *sounds* like a compact disc. Recordable CD is also enormously practical. Most of us have more than one CD player in our homes, so you can take compilations of your music wherever you go.

Although re-recordable CD-RW discs are also cheaper than they were, the cost of use-once blanks is now so low that, for many, the extra cost for a CD-RW is hard to justify. Meanwhile, there have also been developments in the hardware. CD recorders are no longer limited to functioning in real time, and the latest generation of recorders, sourced from LG, and represented here by a model from harman/kardon, manage 4x speed recording. CD Text is now virtually a standard feature: artist and track data is dubbed automatically from encoded discs, or text labels can be entered manually. One model, from Pioneer, even has a PC-type keyboard input to facilitate this. Compatibility is still an issue, however. Some older CD players won't play CD-Rs, and most won't look at low reflectivity CD-RWs at all, although the situation is changing and even personal stereos play them now.

The test group consists of two types of recorder: single-deck models and twins. The former rely on an external source for recording – commonly a CD player, though it could be an analogue source like a turntable or tuner. These models were tested using a Musical Fidelity A3 CD player as a source, and for the blind panel tests as a platform to play the completed and finalised CD-Rs. Finalising a disc is necessary before it will be recognised by most CD players, and as Paul Miller points out elsewhere, finalised discs usually have lower jitter and therefore sound better.

The twins have their own internal play mechanism which can and did function as a source in the tests. But again the same Musical Fidelity CD player was used for replay for consistency and to eliminate the intrinsic performance variables associated with the recorders when used for playback. In the hands-on sighted listening tests, the recorders were also auditioned as CD players.

#### ON TEST

DENON CDR-1000	£399.99
DENON CDR-1500	£449.99
HARMAN/KARDON CDR20	£499.99
HITACHI DV-W1E	£520
MARANTZ DR6000	£400
PHILIPS CDR785	£289.50
PIONEER PDR-609	£249.99
PIONEER PDR-W839	£350
YAMAHA CDR-D561	£449

#### OTHER EQUIPMENT USED

Musical Fidelity A3 CD player TAG McLaren 60i integrated amplifier JMlab Mezzo Utopia loudspeakers Nordost cables TDK CD-RXG discs

#### THE LISTENING PANEL

Keith Haddock (various)
Colin Hinkins (Energy, Mirage)
David Inman (various)
Terry Murphy (Yamaha)
Alan O'Rourke (Ruark)

#### MUSIC USED DURING TESTS

Brahms Clarinet Quintet, 4th Movement,
- Anthony Michaelson (clarinet)
Keb Mo - Just Like You
Dido - No Angel
Dvorak Symphony No. 8 3rd Movement
- Colin David (cond)/LSO



## **DENON** CDR-1000

SOUND \*\*\*

VALUE \*\*\*

£339.99 **CONTACT** 01753 888447 www.denon.com

**GUARANTEE** 2 years

enon has wide experience of digital recording of various kinds, through its studio and broadcast connections, in particular thanks to an early advocacy of MiniDisc, whose star is steadily fading in favour of recordable CD. The simpler of two Denon models in this group, the CDR-1000 has a single transport, and for recording must be used with an external source, usually a CD player, though it could be an MD player or turntable. In common with other CD burners, the CDR-1000 has an integral sample rate converter and will cope transparently with virtually any digital source connected to its optical

input or one of its two digital electri-

The CDR-1000 looks a little more like a conventional CD player than most, and as a result is simpler to get to grips with. Although operating procedures are close to standard, the Denon is helped by a clear display and an excellent twist and press jog control. All normal record modes single track, program selections, whole discs and manual recording, with manual and automatic finalisation - are supported, and a variable level headphone socket is fitted. CD Text artist and track information can be recorded, a feature that has taken off strongly in the last year.

#### **SOUND QUALITY**

Although it was a rather mixed bag from the listening panel's viewpoint, the CDR-1000 clearly has quite a lot going for it, not least because as well as offering good instrumental timbre (there is something in the make-up of certain players that militates against this, even where the frequency response is as accurate as you could ask for, and tonality ought to be assured), it was described as having a "delicate, decorous" sound. There was, however, some criticism of soundstaging seeming somehow "smaller than the original", and of dynamics, which seemed "restricted". The words "nasal" and "congestion" made repeat appearances in the panel's reports.

Bear in mind that, as a single mechanism deck where users can be presumed to have a separate CD player, the panel tests were based on comparing the sounds of the original discs and the recorded and finalised

The CDR-1000 has the look and ease-of-use of a traditional CD player.

CD-R played in the external Musical Fidelity CD player. The criticisms were relatively minor on the whole, and helped established quite early in the test programme that although CD-Rs may be accurate bit copies of CDs, the result doesn't usually sound the same as the original – though why this is the case is hard to say. Jitter may be part of the answer, but so could the convolution of servo effects or the laser eye patterns of the two player mechanisms involved, or a host of other factors.

#### CONCLUSION

The Denon CDR-1000 worked well. It is a moderately impressive CD player, and makes very good copies, which makes it an appropriate choice for those who already own a good CD player and are not bothered about high speed dubbing.

#### "THE CDR-1000 HAS QUITE A LOT GOING FOR IT. NOT LEAST BECAUSE IT OFFERS GOOD INSTRUMENTAL TIMBRE."



#### THE LAB REPORT

#### THIS IS A SOLID RECORDER

based on established Analog Devices 1855 DAC technology. The A-wtd S/N ratio is good at 104dB and errors in low-level linearity kept to within +0.0/-0.6dB over the full 16-bit range. Distortion is a little higher than you'd get with a traditional CD player, but not exactly 'high' at 0.003% (1kHz/0dBFs) though this increases to 0.014% at the highest frequencies (20kHz). Of course, one of the advantages of Denon's choice of DAC technology comes in the great reduction in

ultrasonic noise (noise above 20kHz) that might otherwise influence the performance of the partnering amplifier. This relates to playback on the CDR-1000 only, and is not a function of the digital recording process. It is possible, however, to boost incoming digital data by up to +6dB before recording. This should be avoided unless the source (CD) is inherently very quiet, otherwise gross distortion will result. HDCD discs will not copy correctly unless the digital gain is set to 0dB.



## **DENON CDR-1500**

SOUND 🔀 🔀 🖫

VALUE XX

F449 99

**CONTACT** 01753 888447

www.denon.com

**GUARANTEE** 2 years

he twin-deck counterpart to the CDR-1000 is still a relatively compact model, but significantly heavier and more sturdy than most. The feature set however is mainstream. The play-only mechanism handles one disc at a time, and there are two apparently similar set of outputs in optical and electrical digital and analogue flavours, one set handling CD data, and in dual play mode, the other handles the output of the CD-R mechanism only, so the two can in effect be used as two separate players, perhaps feeding separate rooms in a multi-room installation.

All the track, disc and programme dubbing modes of the CDR-1000 are available in this model, in addition to which the CDR-1500 will copy discs at double speed, theoretically with no reduction in performance, though sound quality does suffer to an extent in practice, and the system becomes rather more sensitive to disc condi-

tion. This is not rocket science of course: computer CD-R disc burners will cope with 4x, 8x or sometimes still higher speeds. The playback mechanism is HDCD compatible, the coding being preserved when dubbing, and CD Text can be entered using the remote control — a painfully laborious experience.

#### **SOUND QUALITY**

This player caused some confusion in the panel tests. On the one hand, it was described as "more open" than the preceding players in the Brahms and Dvorak tracks, but with a rather thin balance that was also lacking in weight and scale. It was the lack of power and authority in the dubs that marked the recordings out from the original, this and a lack of central focus and any real feeling of air and space in the hands-on testing with other source material. This said, there was a honed down simplicity about the CDR-1500 that made it very easy

to follow, if different to the original, and the gross musical features of the source were in effect laid bare on playback.

Not a dramatic result given the high measured jitter, but this was when using the external test CD player for all listening. Playing the recordings, or the original source discs, through the Denon itself showed clear losses, which were exaggerated when the record-capable transport was used for replay. In this mode the sound became thick and wooden in texture, and any of the clarity and detail that was apparent with the cheaper Denon CDR-1000 (see sepa-

A relatively compact unit, the Denon CDR-1500 is a sturdily built beast.

rate test) went west. Not to mention east as well

#### **CONCLUSION**

Proof that not all digital recorders sound the same, the Denon CDR-1500 makes recordings that are open and easy to listen to on an external player, but which fail to repay extended listening, especially on the internal record mechanism. As this test demonstrates, there are plenty of alternatives at a similar price which don't suffer comparable limitations.

#### THE LAB REPORT

THIS DECK IS effectively two players in one, allowing both replay-only and record/replay decks to operate simultaneously. The record/replay transport feeds through the CD/CD-R output sockets. Noise is higher here than if the same disc were played through the replay-only deck which, incidentally, feeds both the CD and CD/CD-R sockets. For example, midrange distortion increases from 0.002% to 0.007% while the A-wtd S/N ratio falls from ~97dB to ~94dB. The output level is also a little lower than

expected at 1.85V (2.0V is the nominal standard). Otherwise, response is as flat as you'll see and separation better than 95dB across the board. Sadly, although jitter is a low 270psec through the replay-only deck, this increases to 1890psec through the right-hand deck (record/replay) and to a vast ~23,000psec upon dubbing from the replay-only to the record/replay deck (at 1x speed). This is worse than the massive figures that blighted the first DVD players, and surely limits the 'hi-fi' appeal of the dubbing facility.

"THE LACK OF POWER AND AUTHORITY IN THE DUBS MARKED THE RECORDINGS OUT FROM THE ORIGINALS."





## HARMAN/KARDON CDR20

SOUND RED

VALUE

£499.99

CONTACT 020 8731 4670

www.harmankardon.com

**GUARANTEE** 1 year

arman/kardon (recently reintroduced to the UK) describes the CDR20 as a 'dual well' machine. Both wells handle one disc at a time, and they have been taught to co-operate in all the usual ways, which include single track, programme and whole disc copying, with audio and manual disc finalisation, and a wide range of play modes. Where the CDR-20 differs from the crowd is in the ability to dub discs at 1x, 2x or 4x speeds, currently the fastest on any domestic recorder, which means copies can be grown in 15-20 minutes. Even finalising is done at 4x speed, but do be

prepared for a higher percentage of failures at the higher dub speeds, and there is a performance hit in practice.

Unusually, the CDR20 can be operated in a dual play mode, with different discs playing simultaneously through different outputs for multiroom systems. Indeed the harman/kardon is awash with in- and outputs, both optical and electrical. including two electrical digital outputs, two inputs, one on the front panel, and two analogue outputs sets (see above). The front panel livery is in keeping with previous harman/kardon ranges, and the remote control is well above normal standards for

usability. If only the admittedly simple-looking native control set had been half as easy to manipulate. It would have helped if the author of the instruction manual had not decided that it be necessary for four pages be open at once in order to follow some command sequences through to their conclusion.

#### **SOUND QUALITY**

Although a high jitter player, there were not too many signs of this when playing back recordings on the outboard Musical Fidelity player. Although palpably not the best in group, the CDR20 was deemed "fairly accurate for image scale and tonality" (Brahms), "detailed and dynamic, with good presence and a clear bass" (Dido) and "orchestra a delight to listen to - ambience excellent, violins sweet", and these comments were representative rather than out on a limb. There were however some generalised comments, not related to

This 'dual well' affair can play two discs at the same time - great for multi-room use.

specific pieces of music, to the effect that there was a loss of separation and a 'shut-in' quality.

These findings were broadly mirrored in the hands-on testing (again using the outboard player), including the generally favourable prognosis which was leavened by a loss of openness and subtlety. But in a finding reminiscent of other players with high jitter levels, performance deteriorated significantly when the recorder was used for playback, becoming hard and lacking in air, delicacy and transparency, and with clear losses of instrumental separation.

#### CONCLUSION

Given that the harman/kardon model is a relatively costly player with some significant performance limitations, the CDR20, though good, doesn't really offer great value for money.

#### "ALTHOUGH NOT THE BEST IN GROUP, THE CDR20 WAS 'FAIRLY ACCURATE' AND 'DETAILED AND DYNAMIC'.'



#### THE LAB REPORT

#### **DESPITE BEING GRACED** with a

harman-styled fascia, gold livery and back-lit keys, this dual-transport CDR/RW player is very close indeed in both design, execution and performance to another LGsourced recorder, the Grundig RCD-45. All its functionality is shared by the RCD-45, though the CDR-20 uses its own IR handset. Otherwise, the high replay-only jitter of 1930psec is mirrored here, along with an increase to 2570psec (unfinalised)/2560psec (finalised) with CD-RW copies. Once again, this is

what dominates the technical, and subjective performance of the product and puts it some way behind the standard expected of modern, budget CD players. Principal among the differences between the Grundig and HK is the latter's use of a switch-mode power supply and the fact that the HK does not respond to pre-emphasised CDs correctly. Otherwise the slight reduction in distortion to 0.0008% and increase in S/N to 111dB could just as easily be explained by variations in production.



## **HITACHI** DV-W1E

SOUND COM

£520.00 **CONTACT** 08705 357357 www.hitachi-consumer-eu.com

**GUARANTEE** 1 year

he word unique is used so freely in technology fields like hi-fi that it often has no real meaning. This is an exception: a CD player that is also a CD-R/RW recorder capable of dubbing at normal or 2x speed, and a DVD-Video player to boot. In short, the DV-W1E comes close to being a universal disc player-cum-recorder, at a price little more than some of the other CD-only burners. But it won't copy DVDs, not even their audio content, which is missing a trick, perhaps to placate the notoriously mistrustful video software industry.

As a DVD player, the Hitachi includes a Dolby Digital decoder, but dts data is only available from the digital outputs. Unlike some DVD players, however, the DV-W1E has an RGB compatible Scart output, accounting in part for the slightly better than average picture quality, alongside a standard set of video outputs (S-Video and composite) and

electrical and optical digital audio in and outputs. There are some powerful video search tools too. As an audio recorder, the Hitachi has a short but adequate feature set, though it stops short of CD Text.

Ironically given the power of this model, the front panel of this dual transport player is the simplest of them all. Even the full-width front panel flap in 'reveal' mode fails to dent the impression, and this is indeed a relatively easy recorder to drive, assisted by the option of on screen menus for audio operation.

#### **SOUND QUALITY**

This player proved to have a characteristic sound quality in its recordings, that was perfectly audible through the external CD player, and was more obvious still when using the either of the Hitachi's own transports, which sounded similar, though favouring the play/DVD mechanism in most cases. One panellist noted that he "disliked

the loss of acoustic and presence", and described the Dvorak recording as "distant"; and that the Dido recording sounded "smoothed out [with a] loss of impact". Another noted a "loss of body... and edgy vocals" (Dido), while other tracks sounded "thin".

Other comments were along the same lines, and the view was backed in the hands-on testing, which clearly highlighted loss of clarity, constricted imagery and a muggy overall balance. Using an outboard player helped, but failed to resolve the situation, which was not in keeping with the other high jitter players. The high

Hitachi's combo of DVD-V player and CD recorder is unique in the hi-fi world

jitter of the source transport may be a contributory factor, and sure enough using an external source player did help make better recordings.

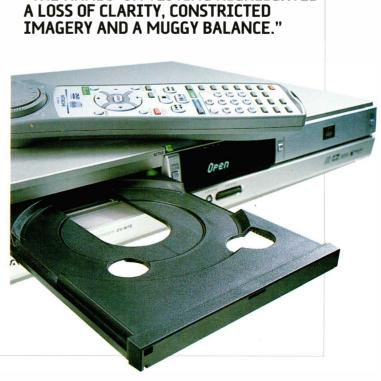
#### CONCLUSION

Although performance levels are modest - ruling out a blanket recommendation using Hi-Fi Choice's usual testing criteria – this is an intriguing model that will find a ready home where its genuinely unique combination of CD player, CD recorder and DVD-V player is required.

#### THE LAB REPORT

THE DVD PLAYER 'HALF' of the DV-W1E performs rather like the DV-P705 reviewed back in HFC 216. Specifically, there's a peak-level overload that gets worse with increasing frequency, so while THD is around 0.003% at 1kHz/0dBFs, it increases to a high 0.7% at 20kHz/0dBFs along with a commensurate increase in noise. Below peak output, both THD and noise fall away to more respectable levels, though the final A-wtd S/N ratio of 94dB is still sub-16bit. This DVD drive provides lower distortion and

noise during playback than the CDR/RW drive (0.02% and 83dB, respectively) and is the preferred choice for listening to CDs or dubbed CD-R/RWs. There is no compromise in performance from dubbing at 2x between the DVD drive and CDR/RW unit, although the inherent jitter level of the DVD unit remains high at 1290psec. The CDR/RW drive suffers high datainduced jitter of 2390psec, but this drops to 1990psec for discs recorded on the DV-W1E itself. Overall, not great.



"THE HANDS-ON TESTING HIGHLIGHTED



## MARANTZ DR6000

SOUND \*\*\*\* VALUE \*\*\*\*

£400.00

**CONTACT** 01753 680868

www.marantz.com

**GUARANTEE** 2 years

uality rather than quantity is the name of the game here. As a player, the DR6000 is very similar to Marantz' CD6000 CD player. It is a single-transport model, and dependent therefore on an separate external source. The Marantz features a champagne gold aluminium front panel and generally solid, low resonance construction, quality controls, and an excellent CD Text-compliant display. The audio DAC is a dual differential mode Bitstream device, and the discrete HDAM (Hyper Dynamic Output Module) op-amp is used, which ensures better performance and uniformity of output with level than the

integrated circuits usually roped in for the purpose. Recording is in real time only, but CD Text can be recorded along with the music, either from the original disc, or manually programmed. The control system is particularly easy to get to grips with. thanks in part to a limited set of well engineered controls, including a twist-and-press jog control, and a well designed remote control. Headphones can be connected via a volume control.

#### **SOUND QUALITY**

On its first outing, at the beginning of one day's listening, the Marantz was greeted as sounding "smooth but

slightly congested", but by the end of a day spent learning the sound of other CD recorders, the CD600 suddenly seemed a much more satisfactory bet. "Keb Mo sounds great... there's a robust structure to the music" and the Dido track "times well", as one put it. Another noted that the Marantz was "slightly laid back, with some loss of absolute resolution", which taken with some of the other comments appears to be a recognition of the mild loss of very high frequency output. In the Brahms, one panellist wrote that the Marantz delivered a "lighter and more laidback sound than the original... but the interplay between instruments was well maintained with good soundstaging", while the Dido track was "well reproduced with much of the original attack and ambience maintained".

In the hands-on testing, the easy superiority of the Marantz became clear, not just when making test

The Marantz sports stylish, solid, low-

recordings, but also when used for playback, where the Marantz was the only model to demonstrate its ability to double as a high class CD player, and a viable competitor to the Musical Fidelity test CD player. This is a fast, fluid player, capable of coping with subtle and complex material, and not fazed by densely scored and complex recordings. Some slight losses of fine high frequency detail were apparent, but the muscular quality and excellent timing of the Marantz in play mode was more than adequate recompense.

#### CONCLUSION

This top-class CD player is almost as impressive as a recorder, and is an obvious choice where an existing CD player is available for use as a source.

#### "THE MARANTZ WAS THE ONLY MODEL TO DEMONSTRATE ITS ABILITY TO DOUBLE AS A HIGH CLASS CD PLAYER."



#### THE LAB REPORT

#### IN PLAYBACK MODE, the

DR6000 looks and performs very much like the CD6000 upon which it is based (see HFC 207). Output is a smidgen under par at 1.9V but the overall S/N ratio is respectable at 106dB and distortion low at 0.001%. Even at very high frequencies (~20kHz), Marantz's discrete HDAM op-amp modules ensure that distortion is held in check. Indeed, figures as low as 0.004% at 20kHz are close to state-of-the-art for the best CD players, let alone a record/playback hybrid. Good circuit layout keeps channel separation beyond 130dB through the midband and >100dB at the highest frequencies. Low-level linearity is good to +0.0/-0.4dB over a full 16-bit range while the player's response has a gently 'engineered' HF roll-off that's -0.5dB down at 20kHz. Pre-emphasised CDs are handled correctly, I might add. Jitter, meanwhile, is not increased beyond the player's inherent 430psec. Indeed, CD-R and CD-RW copies made on the DR6000 suffer no appreciable increase in jitter.



## PHILIPS CDR785

SOUND ME ME

VALUE \*\*\*

£289.50

**CONTACT** 020 8689 4444

www.philips.co.uk

**GUARANTEE** 1 year

he CDR785 is anything but impressively screwed together. It is simply constructed, and even rather flimsy. The controls are generally poor and the disc mechanisms wheezy. The rotary jog control is particularly stiff and unresponsive. But there is little missing from what turns out to be a well equipped recorder, and the CDR785 has an unusually well thought-out control system, which makes it easy to understand what you're doing wrong and how to put it right. You won't have to venture too often into the rather fearsome instruction manual.

This is a twin deck, the playback (CD) side being a three-disc carousel, which allows compilations of tracks from up to three discs to be programmed for dubbing (at normal or 2x speed, with 2x finalising) in one operation. A sample rate converter is fitted, though it is bypassed with 44.1kHz sources, allowing HDCD and dts data to be transferred intact. CD Text editing can be performed, and uniquely in this group, the CDR785 even has a microphone input. The Philips is well equipped with disc, track and A-B record and play modes, and the playback mechanism will even play unfinalised recordings. something most non-Philips and non-Pioneer players will balk at.

#### **SOUND QUALITY**

A mixed bag on audition, the reception to recordings made on the CDR785, and replayed separately, was generally positive, though it came in for some stick as a player a familiar story in this test. The panel tests concentrated on the ability of the players to copy discs accurately, and when replayed on the external player, the Philips clearly did its job well. "The most musical yet, with a strong sense of acoustic," enthused one panellist, who also described the Keb Mo track as "vital and [having]

gusto". The Brahms orchestral track was less favoured, though, the same listener commenting on the "weak bowing of the basses", while another described the extract overall as "slightly muted and sat-upon".

But as usual, the big differences were between the Philips when used as a CD player, and the replay quality of the external player, and here the use of the word "untidy" in PM's lab report is particularly apt. The Philips does indeed sound a little rough and ready with a range of material, The bass has a weak quality, and the player also sounded rather compressed – or rather, the external one

Not the best build quality here, but it houses a truly impressive recorder.

sounded dynamically more convincing, and therefore more vital and engaging.

#### CONCLUSION

One of the better twin decks, the Philips is modestly priced and capable, with good ergonomics and the benefit of a three-disc carousel mechanism to boot. Build quality is not the best, however, and as a player it is a tad rough and ready. But if you are after the sort of facilities on offer, this is a good value all rounder.

#### THE LAB REPORT

#### **PLAYBACK ON EITHER THE**

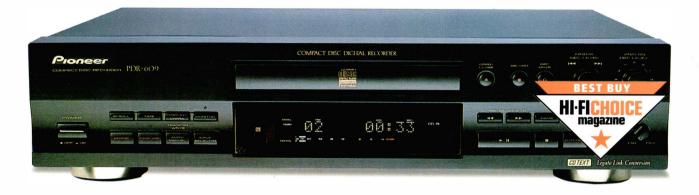
fixed or carousel decks is dominated by Philips' choice of DAC technology. There's some peak-level stress evident by the increase in THD from 0.001% at -10dBFs to 0.0025% at 0dBFs and compression at low levels (linearity error of +1.6dB at -90dBFs/1kHz). The Awtd S/N ratio is also a little underpar at 98dB while the noise floor itself is populated with a deal of digital interference (non-harmonic distortions) both in and, especially, outside of the audioband. This lends

the spectrum a generally 'untidy' appearance.

It's important to distinguish between this player's performance as a CD player and its ability to churn out bit-perfect CD-R/RW copies. Tthe player's inherent iitter amounts to just 195psec, a good figure that increases almost imperceptibly to 215psec after highspeed internal dubbing to CD-RW (finalised or unfinalised). This is a good result and the only one to come close to matching the best Pioneer recorders.

#### "RECORDINGS MADE ON THE CDR785 WERE GENERALLY GOOD. THOUGH IT CAME IN FOR SOME STICK AS A PLAYER."





## **PIONEER** PDR-609

SOUND \*\*\*

VALUE \*\*\*\*

£249.99 **CONTACT** 01753 789789 www.nioneer.co.uk

**GUARANTEE** 1 year

he PDR-609 is a modestly well equipped singletransport recorder, building on the feature set of its predecessor, the PDR-509. The new model includes CD Text, which it picks up automatically from the source disc, though artist and track information can be programmed manually is you wish. This is a task that, even with the new remote control and dot matrix front panel display, designed to make it easier, is still about as trauma free as adding telephone numbers and names to a mobile phone – that is, impossible

unless you're under 12 years old. Double speed finalise is now also part of the mix, as is a new 24bit/96kHz compatible A-to-D converter. The usual sample rate converter is built in, bypassed with 44.1kHz signals, preserving sound quality (conversion is not a loss free process) and retaining dts and HDCD data on the copies. Digital fades can be performed, and a digital level control allows sound levels to be normalised. Standard 1:1 bit copying is the default though, and there is a danger racing certainty is closer – that altering levels will result in peak distortion or less low level resolution.

#### **SOUND QUALITY**

Although described by one listener as "not engaging", and despite complaints of a loss of acoustic behind the voices of both Dido and Keb Mo. the PDR-609 made some excellent recordings which sounded clean, vivid and alive. The effect of the integral Legato Link digital filter however is a mixed one, and indeed different versions of Legato Link are known to behave rather differently. This one has the effect of making the player sound rather soft and lazy, though with a quid quo pro, as imagery seems more three dimensional, and with more depth than when the same discs are used on an external player.

The quality of discs burned on the Pioneer PDR-609 was initially prejudiced by noise and distortion that was picked up during the dubbing process as a result of factors that were not identified when originally

A simple build, but this player is quite complicated to operate, nonetheless.

noticed (though it happened with more than one of the models tested) or subsequent to that.

Certainly however, when the system was rejigged for the hands-on testing, the problem vanished, and the Pioneer quickly proved that it was able to make excellent bit copies which sounded all but identical to the originals when compared on the same player. The PDR-609 is no mean player in its own right, but it is no match for the Musical Fidelity, which is bolder and injects a much greater sense of occasion into its music making.

#### CONCLUSION

This classy single-deck machine is an acceptable CD player and an even better burner, with useful features and an attractive price for those prepared to shop around. Best Buy.

#### "THE PIONEER IS ABLE TO MAKE **EXCELLENT COPIES WHICH SOUNDED** ALL BUT IDENTICAL TO THE ORIGINALS."



#### THE LAB REPORT

#### IN COMMON WITH PIONEER'S

CD players, this CD-R/RW 'burner' also features a Legato Link digital filter (see Oasis, HFC 188, 189 and 203). Its gentle roll-off produces a -3.0dB droop at 20kHz and a minimal 6dB suppression of digital images immediately outside of the audioband, but the 'rippling' effect of the digital filter is far less violent than occurs with conventional types. Nevertheless, while this affects the sound of the player, these characteristics are not transferred digitally by recording onto

CDR or CD-RW. So copies sound as they should on conventional players.

Distortion falls as low as 0.0005% at -10dBFs while the Awtd S/N ratio of original or CD-R/ RW copies adds up to a good 104dB. Crucially, the inherent level of jitter on playback is just 200psec, a figure maintained by digital copies on both CD-R and RW, regardless of whether the discs are finalised. This is the arbiter of quality for any recorder and explains the superior subjective performance of the PDR-609.



## **PIONEER** PDR-W839

SOUND \*\*\*

VALUE \*\*\*

THE LAB REPORT

£350.00

**CONTACT** 01753 789789

www.pioneer.co.uk

**GUARANTEE** 1 year

ioneer's latest CD-R/RW recorder is an update on the popular PDR-W739, which differs from in two respects: it has some new features, and the price has been cut by around £50. The basics are familiar. On the right hand side is the CD-R/RW record mechanism. On the left is a three-drawer playback mechanism, a contraption fancifully described in the original PDR-W739 review as "manipulated by complex internal clockwork consisting of a series of winches, pulleys, a couple of wings and a prayer". Four discs means an abundance of record and play modes.

Extra features include CD Text, enhanced here with a front panel PS/2 style keyboard socket which is definitely the way to fly when adding artist and track information. PC keyboards are widely available for around £15. Double-speed recording is matched to double-speed finalising. One particularly cute feature on an

already ergonomically sound recorder is an instant record feature. Play a CD on the left-hand side, and if you hear a track that you'd like to clone, simply press the "REC THIS" button. The track immediately starts again from the beginning, and the recordable drive on the right-hand side burns the track automatically. How cool is

#### **SOUND QUALITY**

Good as it is (and this is one of the best CD burners in the test group), there were still criticisms from the panel of recordings replayed on an external deck when compared to the source discs played on the same deck. One pointed to a "distinct loss of acoustic and presence", while another highlighted a "thin tonal quality", though comments like "relaxed" and "competent" also figured. In the hands-on testing, however, the Pioneer acquitted itself well when recording from its own internal playback mechanism, and it performed better still when using a good external CD player as a source (in this case, the Musical Fidelity). More than any other single factor, it was the ability to rise to the occasion in this way that set the Pioneer apart from the run of the mill.

The PDR-W839 is not particularly inspiring as a CD player, and is certainly no match for the best in the group. It lacks weight and presence, but it has a clean, well-articulated midband and characteristically good, three-dimensional stereo imagery. Panel comments notwithstanding, I had some difficulty distinguishing

An update on the PDR-W739, this deck is a very useful and flexible design

copies on good quality CD-R and CD-RW discs from the originals, with the usual caveat that the same playback deck is used in both cases, and the conclusion has to be that this model is a good choice where a dual deck is desirable, and especially where the multi-disc facility is required.

#### CONCLUSION

Despite some disagreement between listeners, on balance this is probably the best sounding of the twins in this report, and is Recommended.

#### ONE AFTER ANOTHER, THE

dubbing decks in this Bench Test have seemed unable to produce digital copies without 'jittering' the data en-route. Until now, for the PDR-W839 has an inherent jitter level during playback that is only 160psec. Copies made at 1x speed suffer no increase whatsoever in digital jitter, resulting in secondgeneration discs that sound as close as possible to the original version on any CD player. This just goes to show that where there's the will, it is possible to create a dubbing

deck that creates uncontaminated copies. Even at double-speed dubbing there's no increase in THD (typically 0.0013% 1kHz/0dBFs, falling to 0.0005% @ -10dBFs) or deterioration in S/N ratio (~104dB), whether the copy is finalised or not. What you do need to bear in mind, however, when auditioning CDs or copies through the PDR-W839 is the effect of Pioneer's Legato Link digital filter (see PDR-609). Just for a change, this is one dubbing deck that really does live up to expectations.

#### "THIS MODEL IS A GOOD DUAL-DECK CHOICE, ESPECIALLY WHERE THE **MULTI-DISC FACILITY IS REQUIRED."**



#### **Monitor Audio Bronze Series**

What Hi-Fi Sound & Vision ★★★★★ Bronze AV1 'it delivers details cleanly, images superbly and captures the energy of fast-paced music with an alacrity few at the price can rival. So, yet another Monitor Audio success story. This Bronze package is simply terrific: Mission and KEF should take note.'

HiFi Choice 'Best Buy' Bronze 2

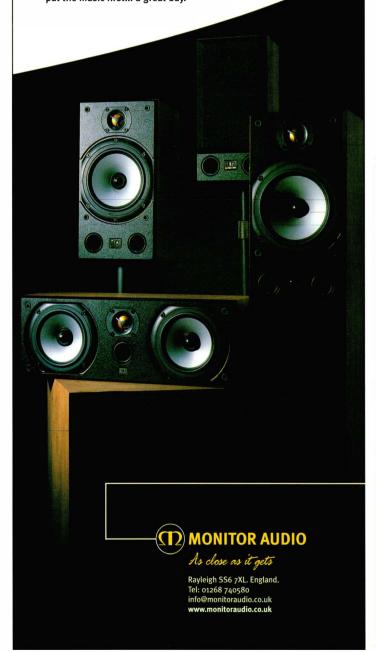
'A real corker, which looks good and combines solid material value for money with a fine all round sonic performance.'

Q magazine ★★★★★ Bronze 2

'the most fun you can have at this price...authoritative in both sound and appearance...just as happy belting out rock as picking out delicate acoustic tracks...sounds better the louder you go, remaining in complete control'

What Hi-Fi ★★★★★ Bronze 2

'Beautiful build and finish with both power and finesse... plenty of detail and bags of bass, the Monitor Audios put the music first... a great buy.'





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## YAMAHA CDR-D561

SOUND MARKET

VALUE 🔀 🔀

£449.99

**CONTACT** 01923 233166

www.yamaha.co.uk

**GUARANTEE** 2 years

his Yamaha twin is the quintessential mid-market CD-R/CD-RW recorder. with all mod cons. and relatively few unusual extras. It is a dual speed machine, capable of dubbing CDs from its internal play mechanism at normal or 2x speed, and fixing up discs at the same double-play speed. CDs can be copied and finalised in a single operation.

This is another of those models with a digital input level control. It is bypassed by default, but this is a risky tool, almost inevitably resulting in recordings with reduced resolution or increased distortion levels at one end of the dynamic range or the other. There is rarely a good reason for not copying bit-for-bit when dubbing discs digitally. Perhaps more useful for the creative user are features like digital fade and CD Text editing. Full marks also to Yamaha for the threestep display dimmer, but ergonomically the Yamaha is a little quirky, if

not actively difficult, and will need some care even by those used to the grammar of CD-R burners. Build and display quality are good, however. and the controls and displays are well designed.

#### **SOUND QUALITY**

Of all the models tested this time out, this is the one that for the panel showed the least correlation with the measurements. Notwithstanding the high jitter levels, they were impressed by a player that in the Brahms was deemed to offer a "solid, full performance" by one, and "a very clear, open sound" by another. Only the third listener pointed to what he described as "some loss of impact". The Keb Mo track was similarly described as "clean and detailed". and as having a "vocal line with really good definition", and it was remarks like these that set the pattern. There were occasional comments that pointed to a burner that

made "safe" sounding recordings. and which occasionally sounded "soft". But, paradoxically perhaps, this did mean that some musical landmarks stood out even more clearly than usual – the kick drum in the Dido track for example, and bass lines generally.

As a player the Yamaha is less satisfactory. The Yamaha was at its best making discs for replay through other players, and on its own it did reflect the higher than normal jitter levels by sounding a little wooden and mechanical, and for lacking some of the extremes of expression that other

Good build and well-designed controls still don't live up to a slightly high price.

models like the Marantz were able to reproduce.

#### **CONCLUSION**

Although the Yamaha is no great shakes as a CD player in its own right, recordings made on this CD burner have a strength and depth that might not have been expected from the numbers alone. What counts against it in the end is the price, which is considerably higher than the nearest direct competition.

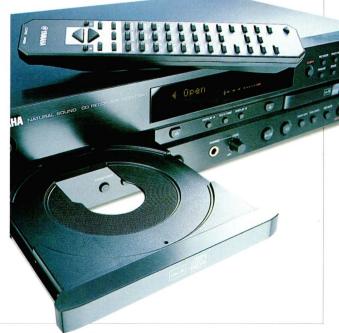
#### THE LAB REPORT

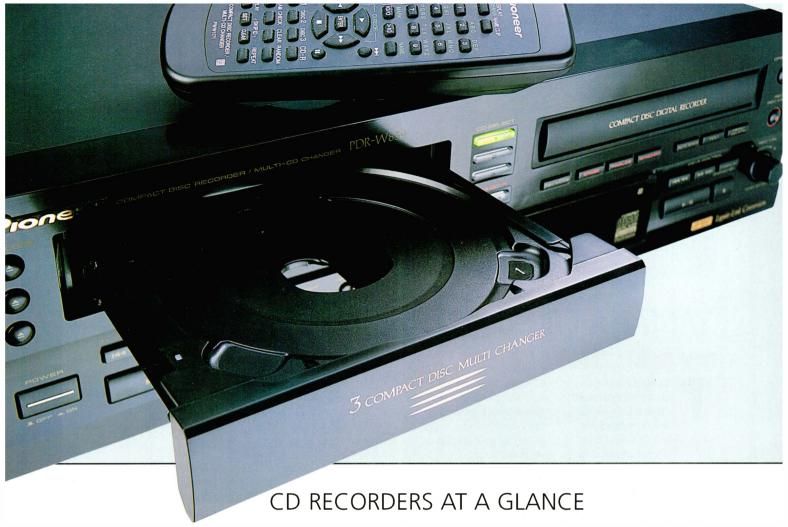
#### THIS 1X/2X DUBBING DECK IS

more conventional in that both transports share the same DAC stage, analogue filter and output. Its digital filter is a little crude (rejection of stopband images is just 38dB) and ultrasonic noise slightly elevated over most of the models in this test, though this is swamped by the substantial 2760psec of widely-distributed jitter inherent on playback. With synchronised 1x speed dubbing, the record jitter drops to 2215psec but changes to a type that's strongly

data-induced in nature. Once the disc is finalised, this drops further to 1605psec though the A-wtd S/N ratio also decreases from 103dB to 89dB. High data-induced jitter of this sort has been known to strip the life and vitality from recorded music, leaving a slightly pale, grey or colourless rendition in its wake. Finally, conventional harmonic distortion increases near the player's 1.92V peak output from just 0.0025% at -10dBFs to 0.014% at OdBFs through bass and midrange to 0.03% at HE









## CONCLUSIONS

#### ALVIN GOLD PUTS HIS FINAL JUDGEMENTS ON THE RECORD.

he key questions are these: how much do you need to spend to get a decent recorder; and what, if any, are the advantages of spending more? As so often with dilemmas like this, there are no simple answers. On the evidence of this test, it is not necessary to spend a great deal to get decent a disc burner. In fact two of the three least expensive models tested - the Denon CDR-1000 single and the Philips CDR785 twin – achieved Recommended status, and the third, the Pioneer PDR-609, another single-deck model, and the least expensive of the nine was one of the two Best Buys.

The other Best Buy is an interesting case that illustrates the other side of the coin. It is the Marantz DR6000, which at £400 hardly costs a king's ransom either, but which does cost a little more than the other single-deck models. In this case, you do get something a little extra, an excellent disc burner that also happens to also be an

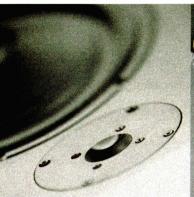
excellent CD player in its own right. Most of the models tested show fairly obvious signs of cost-cutting in areas like physical build, power supply design and so on, and there are wide variations between models in technical parameters such as jitter – which is known to correlate with sound quality (though the correlation is a loose one).

The other model that simply cannot be ignored is the Hitachi DV-WIE, a real tour de force, which though only modestly successful as a disc burner, is also a DVD-V player of some merit. This is a unique combination at the time of writing, and will prove hard to resist for those who are looking for a single machine that can do the job of two or three others.

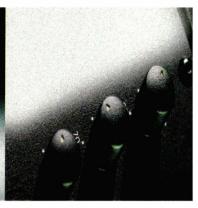
Note that all domestic recorders are equipped with SCMS copy management, which inhibits recording in the digital domain from first generation copies. You can't make digital copies of digital copies this includes the inability to make a MiniDisc recording from a CD-R.

#### CD RECORDERS AT A GLANCE









# Five Stars For Value

Paul Messenger explains why you should visit an independent specialist dealer if you are searching for real hi-fi satisfaction

Why use a specialist hi-fi dealer? The short answer is because he knows one hell of a lot more about hi-fi than you do. And if you've gone to the trouble of picking up a specialist magazine on the subject, you're obviously interested in something rather more than a mini system from the nearest electrical superstore.

STAR QUALITIES

value for money ★★★★
service ★★★★
facilities ★★★★
verdict ★★★★

You've probably bought this magazine for one of two reasons. You're looking for advice (presumably unbiased and good) on choosing and using your hi-fi system, and/or you're checking out the ads to decide where to go and buy it.

The independent specialist dealer doesn't know everything, and he doesn't know much about you, but if music's an important part of your life, he's the only guy around who's able (and hopefully willing) to help you choose the equipment which will give you the best long term satisfaction.

#### Power of the Press

Dealers sometimes moan to me about the power of the press, and the disproportionate influence of its 'Best Buy' and multi-star ratings. Well, I've been in the press for twentysomething years, and still feel more ignorant than powerful.

The more I mess around with hi-fi gear, the more I become aware of our lack of real understanding of the subtleties involved, and the more I appreciate the importance of the dealer's skills and experience, in bringing together components so that the whole is greater than the sum of its parts.

We hacks get paid to write words, often about components in isolation, because individual product reviews are still the staple diet of the press. They can sometimes provide a useful guide to the way a product performs, but only under the particular

circumstances in which the review was conducted.

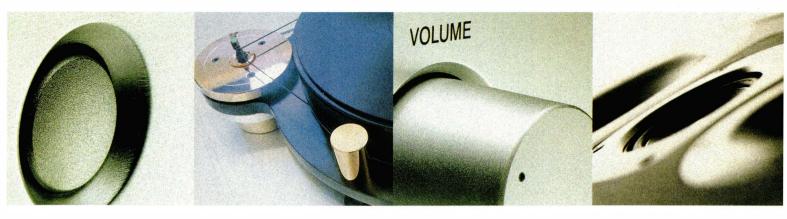
The hi-fi reviewer attempts, with varying degrees of success, to evaluate a particular component, and find something interesting (and hopefully positive) to say about it. That's about the end of it, and it's on to the next product.

The magazine prints the review, and that very process magically confers a measure of authority. Experienced hi-fi enthusiasts, who read reviews over a period of years and try out various products themselves, soon start to realise the limitations of that approach. Some reviews are better than others, but none can get to grips with the real heart of the problem - whether a given product will improve your musical satisfaction, in your system and your room.

#### The Role of the Dealer

The dealer's role is very different, and potentially much more valuable. He has the chance to talk one-on-one. If he's good at his job, he'll use that opportunity to find out what you as an individual are looking (or listening) for.

His motivation is very different too. Sure he wants to make a sale. That's the lifeblood of any shop. But he also knows that if something he sells really does deliver long term satisfaction, there's a very good chance you'll come back again to see if he can repeat the trick some time in the future.



If you go into a shop and demand a particular CD player, on the basis that it got seven stars (out of five) in last month's magazines, the shop will probably simply take the line of least resistance and sell it to you. (Or switch-sell you to a similar price alternative, if he's fresh out of stock of that particular flavour-of-the-month.)

If you go in and say you're looking for a CD player, and want his advice on what to choose, things are liable to become more interesting. The onus is now on the dealer to show what he can do. His first task is to ask the right questions to try and get some idea of what you might be after.

Asking the questions is the easy bit. The real skill comes in using the information to come up with a shortlist of likely contenders, and then conducting a demonstration so that you have a real chance to play a central role in the decision making process.

Putting together a successful hi-fi system might not be as difficult as it was twenty or thirty years ago, but it's just as easy to make a mess of things. Put the 'wrong' combination of components together and it'll still sound a lot better than any cute little mini system package. It might even rate a five star review. But it won't match the potential of a carefully balanced and properly installed system, and it

certainly won't cater for your own particular preferences and personality.

We British are notoriously undiscriminating consumers, at a mass market level at least. The majority of the population don't even bother to drive a car they're thinking of buying, never mind take the trouble to listen to hi-fi equipment.

The majority will therefore end up with hyperstore mediocrity, and hi-fi that's about as tasty as supermarket bread. But if music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority.

You know full well that your music collection is as individual as your wardrobe, and just as precious too, so it's worth taking the time and trouble to search out the dealer and equipment that will make that collection come alive, and give you a new buzz every time you play your favourite discs.

The independent specialist may not beat the chain store on price, but he continues to thrive in a hostile environment because real hi-fi is so much more than a matter of price. The people who work in these shops are themselves enthusiasts, often with many years of experience in meeting customer's needs, and the very necessary expertise to ensure that the whole thing is properly set up to deliver the best results.

The better the hi-fi, the more important it is to get the fine details right at the installation end of things, but even the least expensive equipment can be made to sound a whole lot better if good care is taken over the fine details - the support furniture, the cabling, the positioning of speakers and so on.

Without expert assistance even high class hi-fi can give mediocre results. With it you'll stand a very good chance of ending up with something rather more than a consumer durable - something which will be a source of considerable pleasure and genuine emotional satisfaction for decades to come.

I agreed to write this signed piece, irrespective of the specific sponsors, because I believe the independent specialist dealer plays a vital role in giving customers long term hi-fi satisfaction. The views and opinions expressed here are my own and not necessarily those of Hi-fi Choice.

#### Paul Messenger

The specialist Dealers listed here are professional and enthusiastic. Give your nearest a ring for a demonstration.

#### TOP 20 UK SPECIALIST HI-FI DEALERS

#### LONDON

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

**ORANGES & LEMONS** 61/63 Webbs Road, Battersea 020 7924 2040

MARTIN-KLEISER 109 Chiswick High Road 020 8400 5555

#### SOUTH

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**RAYLEIGH HI-FI** 216 Moulsham Street 01245 265245

**AUDIO DESIGNS** 26 High St. 01342 314569

INFIDELITY 9 High Street Hampton Wick 020 8943 3530

**RAYLEIGH HI-FI** Dansk International Furniture World 01708 680551

**RAYLEIGH HI-FI** 44a High St. 01268 779762

PHONOGRAPHY Star Lane 01425 461230

RAYLEIGH HI-FI 132/4 London Road 01702 435255

Uxbridge MARTIN-KLEISER 278 High Street 01895 465444

PHASE 3 HI-FI 213-217 Tarring Road 01903 245577

#### **MIDLANDS**

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SOUND ACADEMY 152a High Street, Bloxwich 01922 493499

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CREATIVE AUDIO 9 Dogpole 01743 241924

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## Oldham AUDIO COUNSEL 12/14 Shaw Road 0161 633 2602

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York SOUND ORGANISATION 2 Gillygate 01904 627108

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**RUSS ANDREWS HI-FI** 34 Northumberland Street 0131 557 1672

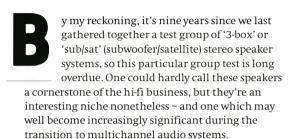
STEREO STEREO 260 St. Vincent Street 0141 248 4079

N. IRELAND LYRIC HI-FI 161 Stranmillis Road 028 90 381296



# SATELLITE AND SUBWOOFER SYSTEMS

PAUL MESSENGER GETS TO GRIPS WITH THE THREE BOX SPEAKER SYSTEMS THAT ARE WOOING THE HOUSE-PROUD ACROSS THE LAND.



Style and near-invisibility – which to some extent go together – are the key ingredients which separate these stereo speaker systems from their beefier cousins. The background theory is that the ear is insensitive to directional cues at low (ie bass, sub-c200Hz) frequencies, so these may be reproduced monophonically, by a single subwoofer placed more or less anywhere. Freed from the need to reproduce heavy bass energy, tiny satellite speakers are able to handle the midrange and treble duties, and can be positioned to provide good stereo imaging.

Although all follow the same 3-box outline, there are substantial variations in the aspirations and approaches of our various review samples. Most (but not all) may be used in either '2.1' or '5.1' (surround) configurations, and satellites are available separately so that stereo versions can be upgraded subsequently to multichannel formats.

One big change from a decade ago is that six of the eight subwoofers in our current test group have built-in amplification, rather than operating entirely passively. This follows a trend established in the standalone subwoofer market where passive designs have become extinct. Active operation should make life a little easier for your stereo amplifier, and also provides various opportunities for greater flexibility.

There are choices to make too. Purists might well prefer to connect the satellites directly to their amplifier for best possible quality. Those who like their music (and especially movies) loud should maybe look towards models where the satellite feed is high-pass filtered, to protect them from overload.

Generalisations are hardly appropriate when the packages show variations as diverse as those seen here, so check out the reviews themselves for a more complete picture on these very discreet and pretty speaker systems.

#### ON TEST

<b>ACOUSTIC ENERGY AEGO2</b>	£300.00
BANDOR TRIDENT II	£775.50
BOSTON MICRO 90	£650.00
CABASSE JUPITER/IO	£1,227.50
KEF KMS 2002	£499.00
MISSION FS2	£450.00
NHT SUPER ZERO/SUB ONE	£1,000.00
RUARK VITA 100	£900.00

#### OTHER EQUIPMENT USED

Linn LP12 turntable
Naim ARO tonearm
Linn Arkiv B cartridge
Dynavector XV-1 cartridge
Naim CDS II CD player
Naim NATO1 tuner
Naim NAC52 preamp
Naim NAP500 power amp
Naim NACA5 speaker cables
Kudos S100 speaker stands

Wyclef Jean - Carnival

#### MUSIC USED DURING TESTS

Mari Boine - Eallin Grateful Dead - Reckoning Cambridge Singers/Rutter - There is Sweet Music Strauss/LSO/Georgiadis - Sangerlust Dave Matthews Band - Before These Crowded Streets Basement Jaxx - Remedy BBC Radios 3 and 4



## **ACOUSTIC ENERGY** AEGO 2

SOUND \*\*\*

VALUE \*\*\*

£300.00

CONTACT 01285 654432 | www.acoustic-energy.co.uk

type floor stand is on the way.

G'TFF 1 year

"THE AEGO2 IS A WHOLE LOT OF FUN. I CAN THINK OF ALL SORTS OF **USEFUL ROLES** AROUND THE HOUSE."

coustic Energy's super-smart and super-compact Aego2 speaker system is a rather different animal to the others assembled here. It is significantly cheaper (at only £300 for our stereo version). significantly smaller too in both satellites and subwoofer, and comes complete with the power amps necessary to drive satellites as well as subwoofer. Indeed. Aego2 is not really conceived primarily as a main stereo speaker system. A major role is expected to be as a multi-purpose package that can be fitted into small spaces and driven from, say a PC, a TV set, a games console or personal CD player.

Our review looks purely at the stereo two-channel version, though its subwoofer actually includes a three-channel option, should you wish to add an extra £50 satellite. Two full 5.1 surround sound packages are imminent, with and without a

remote controllable processor at £600 and £450 respectively. The satellites are truly miniscule affairs, and any similarity to Bose's successful Acoustimass satellite is not entirely coincidental: for Aego2. AE used a Japanese design consultant who had been involved in the Bose project. The similarities are there, but the Aego satellite is a truly solid affair, housed in a zinc die-cast box, while its single driver has an unusual 'pearshaped' diaphragm, roughly 35x43mm. The casting is shaped so that the unit can be sat on a shelf facing directly forward or tilted back; wall mounting is via a supplied bolt bracket; and the input terminal is a phono socket (!). A £40/pair rod-

The subwoofer is small too, slim and very elegantly styled, with a pretty little volume control handily placed. Three phono sockets take left/right/centre inputs, and three spring clips provide corresponding outputs to supplied (phono-terminated) speaker leads. The only control is a switch providing high/med/low bass level adjustment.

The sealed-box satellites have no in-built high-pass filter protection, so should only be connected to and driven via the sub unit. The sub is too small to delve deep, which is maybe why it packs a little too much thump at around 50Hz, by way of compensation.

It goes on operating up to around 300Hz before handing over, not quite seamlessly, to the satellites. These start operating above their 400Hz fundamental resonance. Even on the minimum setting the sub is 2-3dB too strong, but the satellites deliver a rather impressive overall frequency response right up to 18kHz - not too smooth but holding within good +/-3dB limits.



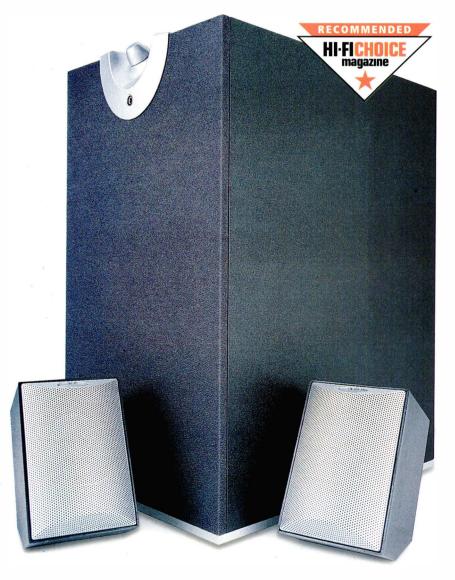
I hadn't been too impressed by the Aego2 at the original press launch, but getting it home under familiar surroundings changed my opinion.

Yes, it does thump a bit too much, it doesn't go particularly loud, and hasn't got very convincing dynamics. But against those limitations must be set the superb balance, coherence and focus of those little satellites, and the way that translates into a good measure of musical communication.

The bottom line is that the Aego2 is a whole lot of fun, and although I wouldn't choose it as the main speakers of a serious hi-fi system, I can think of all sorts of other useful roles around the house.

#### CONCLUSION

Perhaps the Aego2 doesn't quite qualify as a serious hi-fi speaker system, but it's a seriously fun product for all that, and at £300 deserves to be Recommended.



## **BANDOR** TRIDENT II

SOUND \*\*\*

VALUE ★★★★☆

£775.50

**CONTACT** 01494 714058

**GUARANTEE** 3 years

andor, run by Doreen Jordan, is a small but long established company that has long pioneered the use of small, full-range metal cone drivers. These are often found in multiple arrays from other specialist speaker builders, but the company makes its own packages too, amongst them this pretty little Trident II.

Simplicity is the keynote with this all-passive (unpowered) three-box combo. The base price with most of the system painted black is £775.50, though real wood fans can add an extra £60 for their favourite surface.

The satellites are small cuboid affairs, each fitted with one of Bandor's familiar gilt-finish two-inch aluminium drivers, plus a pair of three-way terminals. A slight tilt to the front panel will spread internal standing waves, and also provides flexibility in directing the drive unit towards listeners.

The subwoofer looks quite small, 30cm in section but 46cm tall, and cleverly styled so it makes a realistic occasional table, the inset glass top ensuring you won't get coffee mug rings embedded into the surface. Neither drive unit nor port can be seen as the solitary driver is hidden inside the box, and the sound output comes from a port in the recessed base. This is known as a 'bandpass' arrangement, in which the internal driver is loaded on one side by a small sealed box, and on the other by a reflex-ported enclosure. Such an arrangement requires no low pass crossover to roll off the higher frequencies, as this is done acoustically.

The subwoofer sides are shaped to provide little feet at each corner, and these keep the port and terminals clear of the ground. The hidden drive unit is unusual, indeed controversial, incorporating separate voice coils for each channel, and therefore creates what is effectively a summed monophonic bass. This is no problem when both channels are carrying the same signal, but left/right differences will presumably lead to one amplifier channel 'fighting' the other.

One might argue that there's limited flexibility here compared to packages with active (powered) subwoofers, but in hi-fi simplicity is its own reward, and there's absolutely nothing here to mar the purity of the signal feeding the drive units.

#### **SOUND QUALITY**

You do have to treat the Trident II with a certain amount of caution. This is not the speaker system for those who like their music loud and heavy, but if that's not a problem, there are some very real strengths, with a clearly superior overall sub/sat homogeneity.

Take care to sit directly on the satellite axes, or you'll lose out on the treble – the reward is considerable musical delicacy, precise focus and well developed stereo images with impressive depth perspectives.

Although dynamic expression is a little muted, the simplicity of this speaker system results in fine timing and convincing coherence, especially through the crossover-less voice band. There's a touch of pinched nasality here, and the bass end also sounds a little imprecise, but it integrates well and adds plenty of weight.

#### CONCLUSION

Loudness is limited, it's hardly inexpensive, and the twin voice-coil bass driver approach remains controversial, but the bottom line is the homogeneous coherence of this intriguing speaker system. Despite reservations over the bass, the Trident Il's holistic transparency and delicacy is unmatched in this group test.

"HOLISTIC TRANSPARENCY AND DELICACY IS UNMATCHED IN THIS GROUP TEST."



## **BOSTON** MICRO 90

SOUND \*\*\*

VALUE ★★★★

£650.00

**CONTACT** 0161 702 5000

www.bostonacoustics.com | GTEE 5 years \*

"FINE ARTICULATION **MAKES THE** SYSTEM EASY TO LISTEN TO **AND TO LIVE** WITH."

oston Acoustics is not one of the bigger players on the UK scene, but that probably has more to do with the distribution side of things than the products themselves, as the latter are invariably imaginatively conceived and cleverly executed, and the brand is a major force on the US market.

This three box sub-sat combo consists of two small but very chunky and solid two-way satellites (Micro90x), plus a relatively compact powered subwoofer (Micro90pv). The formal asking price is £650 for the set, but a rather attractive sounding special offer is expected to run until the end of 2001, in which Boston's new distributor is offering £200 trade-in on any pair of regular stereo speakers, so if you fancy following the three box route Boston style, it could cost you just £450. The satellites do come with a very basic wall-fixing bracket, but extras include a shelf-stand/bracket accessory for £30/pair, or a floor-stand for £40/pair.

Built with the solidity of a paperweight, the slate grey powder-coated satellites incorporate several clever touches. The rear of the casing is shaped to incorporate a port and

also part of the mounting bracket. The perforated metal grille is neat too, not only protecting the drivers but also including a little phase compensator to equalise the tweeter output.

The powered subwoofer is a boring 37cm cuboid black box, sharp-edged and -cornered and covered in vinyl woodprint. With an 200mm driver on one side and a pair of ports on the other, the back panel here has a refreshing simplicity, with just high (speaker) and low (line) level inputs and a volume control. The filtering is fixed (as indeed it arguably ought to be for a complete three box package), and a phase switch is hardly essential when the satellites have, as here, modest low frequency extension and built-in high pass filtering.

The satellites alone deliver a well balanced output from 150Hz upwards, though this is much smoother if the satellites are sited well clear of walls - the smaller the satellite, the greater its interaction with a large nearby surface. The subwoofer is reasonably competent if rather mid-bass rich, leaving a bit of a 'hole' between sub and sats.

#### SOUND QUALITY

The Micro 90 rather lives up to its name dynamically speaking. This is not a particularly exciting speaker, but it is broadly neutral, especially through the midband. Voices have a natural and very clean openness that provides fine articulation and makes the system easy to listen to and also to live

> with, thanks to the low coloration from those impressively hunky little satellites.

If there is a problem here, however, it's down to a rather 'thin' overall character, due to a basic lack of warmth in the upper bass. Upping the sub's volume can help. but only at the expense of rather too much bass 'thump', and an increased impression of 'detachment' here. Take time experimenting with the sub's positioning to try and achieve the most even room drive.

#### CONCLUSION

Boston's Micro 90 combo is a well sorted and pretty well executed three boxer, and deserves Recommendation especially in view of that trade-in deal. It doesn't set any new performance standards, and there's a definite lack of warmth and richness to the sound, but the midband in particular is smooth and impressively evenhanded.

\*(1yr subwoofer)



## **CABASSE** JUPITER/IO

SOUND \*\*\*

VALUE \*\*\*

£1,227.50 **CONTACT** 01483 575344 www.cabasse.com

**GUARANTEE** Life

Ithough the manufacturer has never had a huge presence here in Britain, France's Cabasse is one of the oldest speaker brands on the planet, and is well known for very classy drive unit technology that in many ways is closer to professional than domestic style, using large magnets and delivering unusually high sensitivities in consequence.

Selling for a substantial £1,227.50, this Jupiter/Io combination is the most expensive of our three box sub/sat combos by a comfortable margin. It also manages to look and feel more like a real hi-fi product than the others assembled here – as long as you can stop thinking 'elephant's eyeball' every time you look at the spherical los.

These £695/pair satellites are actually shipped already fitted to (and wired through) elegant stands for free-standing placement which bring the units up to seated ear height, keeping the terminals concealed within the base. Alternatively (or additionally), single satellites with a cleverly flexible magnetic bracket/shelf-stand are available for £296 each. Black and white are options to our supplied grey finish.

The business bit is a two-way co-axial driver, with the 130mm midrange driver set well back into the sphere, leaving just the central stalk-mounted 25mm tweeter with its short horn clearly visible.

The £532.50 Jupiter powered subwoofer looks a large and rather brutish affair, being an all-black real-wood veneered cube (40cm square), with sharp edges and corners. There's no visible drive unit, just an elaborately air-flowed double-action port, implying a 'band-pass' (coupled cavity) modus operandum. Power is 150 Watts, knobs adjust volume and filter roll-off frequency, and switches change phase and apply power. High (speaker) and low (line level) inputs and outputs are all provided. ensuring plenty of flexibility.

In complete contrast to the other sub/sat combos, Cabasse claims - and meets - an exceptionally high 93dB sensitivity rating for the lo. Sounds impressive, but there's no free lunch here, as the impedance is very low indeed (sub-3 Ohms) through the midband. Assisted by a built-in high-pass filter, the satellites operate only above 200Hz, but the subwoofer integrates rather well provided that the roll-off frequency is near its maximum (highest) setting. The net result is a fine overall balance, though one which is far from smooth, with some peakiness noticeable, but offering realistic bass extension to around 30Hz in room.

#### **SOUND QUALITY**

There's a slightly toy-like quality to many of the sub/sat combos assembled for this group test, and this was made all the more obvious when the Cabasse system was connected up. It may come with unusual packaging and presentation, but this is a real hi-fi speaker system which can comfortably hold its own with more conventional competition.

Its dynamic grip and authority is well ahead of the pack, bringing plenty of extra drama and excitement to the proceedings, and giving the music a real sense of scale despite some lack of deep bass grunt. There's some mid forwardness, sufficient to make the sound a little too aggressive at times, with a touch of harshness on some material, but by the same token low level voice articulation is very clear and explicit.

#### CONCLUSION

You can make your own decision about the 'eyeball' styling of the Io satellites, but there's no denying that this speaker system delivers the goods, and therefore goes a long way to justifying its price-tag.

"MORE LIKE A REAL HI-FI PRODUCT THAN THE OTHERS -AS LONG AS YOU CAN STOP THINKING 'ELEPHANT'S EYEBALL'..."



## **KEF** KMS2002

SOUND CONTROL

£499.00 CONTACT 01622 672261 www.kef.com

**GUARANTEE** 5 years \*

aunched at the Autumn shows towards the end of last year, KEF's KMS/KHT speaker packages are just about the most gorgeous looking sub/sat combos yet to appear, and as such are already enjoying very healthy sales, in both stereo-2-channel and 5.1 multichannel forms.

VALUE \* \* \*

The stereo package tested here is designated the KMS2002, and consists of two satellites plus a subwoofer, the combination carrying a retail price of £499. The 5.1-channel home cinema KHT2002 costs £799, while the subwoofer is available as a separate item for £300, and the satellites for £199 per pair. Matching 980mm stands are also available for the satellites, priced at £80 per pair.

The key to its striking appearance is the use of silver-finished cast alloy 'teardrop' satellites, which not only look good but also incorporate a neat unipod universal-jointed stand/bracket arrangement. Furthermore the shape inhibits internal standing waves and confer considerable structural rigidity.

The business end of the satellite is a new, nominally 100mm version of KEF's familiar Uni-Q co-axial drive units. Interestingly, this 100mm size Uni-Q driver was the original device to use this principle well over a decade ago, and a number of prototypes were built to undertake research into stereo perception at a Danish university. However, this is the first commercial product to make use of it.

A 32cm glass-topped cube sitting on four very prettily shaped feet, the PSW2000 subwoofer is less striking than the satellites, but shows similarly superior design flair, it's finished in mid grey and with nicely radiused edges. The bottom surface houses an 200mm driver and a pair of ports, while one side carries inputs and outputs, at both speaker and line level, and knobs to adjust volume, roll-off frequency and phase.

The satellites deliver useful output above about 130Hz. Sensitivity is around 88dB, partly because the impedance dips to around 3 Ohms through the bass and midrange, but unlike other Uni-Qs (eq Q15.2), the treble impedance here stays largely above 6 Ohms. This might explain why the treble output is generally depressed – on our far-field, in-room trace, the output 3-6kHz is roughly 10dB below that generated 1-2kHz. The subwoofer is effective over a rather narrow band,

> fortunately small, though the lack of genuinely low bass is disappointing.

#### **SOUND QUALITY**

Although the KMS2002 has a sound which is by no means unpleasant, it is very much a victim of its measured balance. The relative lack of presence and treble tends to suppress harmonics and fine detail, and make voices sound 'shut in'.

The plus side is that this KEF combo never sounds aggressive, and has a warmth that many of its brasher competitors lack. But you do have to turn up the wick a little higher than usual in order to hear what's going on, which might or might not be a good thing depending upon your personal taste and circumstances.

#### CONCLUSION

There's absolutely no denying that the KMS2002 looks the business, and is offered for sale at an attractive enough price. However, the combination of a lack of deep bass and an over-restrained treble

result in a sound that's less impressive in a comparative context.

\*(1yr subwoofer)

"YOU DO HAVE TO TURN UP THE **WICK A LITTLE HIGHER THAN USUAL IN ORDER** TO HEAR WHAT'S GOING ON."



### MISSION FS2

SOUND KEEP COMMENT

VALUE \*\*

£450.00 **CONTACT** 01480 451777 www.mission.co.uk

**GUARANTEE** 2 years

ission's FS2 system is unique amongst the sub/sat combos assembled here in using a totally different speaker technology, known as NXT, for the satellite units. NXT plc is actually a technolo-

gy licensing operation that originally came from Mission roots, but is now much larger than its parent. Meanwhile the Mission brand left the group under a management buy-out early in Y2K, and now operates as an independent entity.

A feature examining NXT technology in an FS2 combo context appeared in our July 2000 edition. Its unique approach, essentially exciting bending modes across a stiff, light panel, is sufficient reason to take another look in this comparative group test context.

This stereo version of the FS2 sells for £450 (the 5.1 multichannel version is £800). Essentially a two-way design, crossing over at around 400Hz, the package combines a powered stand-in-the-corner subwoofer, plus a pair of mount-across-acorner, sealed-back NXT satellite panels, measuring just 13x29cm, and finished in neutral grey plastic.

Exceptionally discreet installation was a key design requirement. A neat wiring approach involves running a single fat (multicore) cable from your amplifier to a multi-pin connector on the subwoofer, then using the supplied flat speaker cables along with very flexible mounting brackets and trim.

Although Mission favours fixing the satellites into corners, I preferred them flat against the wall; since they're only an inch thick, they look very unobtrusive.

The subwoofer is shaped to fit into a corner, with the connectors, controls and 200mm driver fitted into the outward face and covered by a detachable grille. A port fires downward, spikes acting as spacers to let the sound out. Knobs are used to set volume and roll-off frequency - but keep the latter at maximum to minimise any 'gap' between sub and sats.

There is a slight gap, but the overall in-room frequency balance holds within quite reasonable overall limits from 40Hz to 10kHz, though it's also rather uneven along the way. Sensitivity isn't great - around 87dB – but the amplifier load here is particularly easy to drive.

#### **SOUND QUALITY**

The FS2's NXT panel satellites sound rather different from conventional pistonic drivers, and it's not all good news. The treble has qualities that are rather inviting. It's notably free from 'hot spot' resonances, lacks any suggestion of strain, and seems to have ample reserves of headroom. And despite being placed close against a wall, midband colorations are kept pretty well under

However, dynamics are decidedly unconvincing, and while the system sound remains largely inoffensive,

it's also decidedly bland, and doesn't provide either the expression or focus that one associates with more conventional loudspeakers.

Although the FS2 initially sounded rather inviting, after a couple of hours its imprecision led to some irritation and frustration. When originally auditioned a year or so back, its limitations seemed much less obvious in multichannel 5.1 mode, and its ability to fill the room was altogether more impressive.

#### CONCLUSION

Mission's FS2 is intriguing in its use of a brand new speaker technology, and is a cleverly conceived to have minimal visual impact on the room in which it's installed. Effective enough with multichannel movies, it doesn't really have the dynamic precision to do full justice to stereo music material.

"WHILE THE SYSTEM SOUND **REMAINS** LARGELY INOFFENSIVE. IT'S ALSO DECIDEDLY **BLAND.**"



## **NHT** SUPER ZERO/SUB ONE

SOUND \*\*\*

**VALUE \$\times\$ \$\t** 

www.nhthifi.com

**GUARANTEE** 5 years

t's only a few months since we reviewed NHT's Super Zero as a standalone pair of stereo loudspeakers (HFC 215), and the perhaps inevitable conclusion was that this was a promising loudspeaker in urgent need of a subwoofer. It's no real surprise then to find it coming around again in this three box test accompanied by the company's Sub One.

NHT stands for Now Hear This, a name which betrays the company's Californian origins, although nowadays the brand is operating under the much more capacious umbrella of the Recoton group. Its speakers invariably come with shiny black laminate surfaces - not quite yer real piano lacquer finish, but smart, wipe-clean, and probably making a worthwhile contribution to the enclosure's stiffness and rigidity.

In a group context the Super Zero's £200/pair pricetag seems very competitive, but the Sub One subwoofer carries a pretty hefty premium. It's a big, solid beast no question, but at £800 it's also indisputably pricey, partly no doubt to cover the cost of its separate control box.

The 2-litre Super Zero is somewhat larger than most of the satellites in this group. A two-way sealed box design with a

95mm diameter paper cone main driver, the back panel has a single terminal pair and facilities for a mounting bracket.

Built for NHT by the Sunfire Corporation, Sub One is a substantial, sharp-edged and shiny-black 40cm cube that's equipped with a port-loaded

250mm driver. It has an IEC mains input, and connects via a special umbilical cable to an outboard control box that is designed to be sited near the amplifier. The controller is a complex and very flexible affair, with both line- and speakerin/outputs, and both high- and low-pass filter options.

The Super Zero is an easy amplifier load, and delivers a very good in-room frequency response above 120Hz, albeit at a lowish (c84dB) sensitivity. Under our conditions, however, the subwoofer tended to deliver over-enthusiastic midbass (50-60Hz) output, whatever the filter setting, and it wasn't easy to achieve good integration with the satellites.

#### **SOUND QUALITY**

The midband and treble are exceptionally well ordered and balanced here, if a little 'shut in' and lacking in dynamic expression on speech. However, getting the bottom end to 'glue on' properly proved rather more difficult. This system has a tendency to thump that's hard to avoid, yet it still sounds a little too lean and lacking in warmth and harmonic richness.

> ly in the bass, and a real ability - rare in this test group - to generate significant dynamic tension. This is a very 'clean' sounding speaker system with low coloration and a wide dynamic range alongside an effortlessness that makes it very easy on the ears.

The review of the Super Zero commented;

"this pair of speakers would just love to meet and make friends with a lonely subwoofer". Well, they've met, but I'm less sure about the marriage prospects. The Sub One is an expensive device that seems more likely to appeal to the home cinema than the stereo music sector. The end result is decent enough, but the package is neither the prettiest nor the best value around for decent music replay.

"THERE'S A REAL **ABILITY - RARE** IN THIS GROUP -**TO GENERATE SIGNIFICANT DYNAMIC** TENSION.'



## **RUARK** VITA 100

SOUND MAKE IN

VALUE ★★★★ 🗔

£900.00

**CONTACT** 01702 601410

www.ruark.net

**GUARANTEE** 5 years

uark has long been known as a maker of top quality real wood veneered speakers, and Vita is its new sub-brand introduced to distinguish lifestyle-oriented designs from the company's more traditional fare. The Vita 100 packages eschew tradition in favour of a strikingly contemporary look, with brushed aluminium (and painted MDF equivalent) providing the main theme for both satellites and subwoofer. The net result has a lightness and delicacy that's a very persuasive alternative to black.

This Vita 100 is tested as a stereo system, combining a £550 powered subwoofer with a £350 pair of satellites; just add two more satellites and the slightly larger centre-front if/when you upgrade to 5.1 multichannel. The satellites are a little larger than the group average, but 20x11x16cm is still pretty small, and they're chunkily built too, with thick (25mm MDF) front panels and 18mm sides.

Besides the aluminium top and base, our samples came with slate grey painted sides, though Beech is an alternative trim. One very neat touch is the good looking perforated plastic grille. Another is the way the baffle edges are shaped to accommodate the largest possible main driver — though the cone is a modest 72mm diameter. Both this and the 25mm dome tweeter are high class items, and a rear port will provide some additional help. A wall-mount bracket is supplied, and there's also an optional rod-type floorstanding stand. Three 4mm socket terminals are fitted: use black and red for full bandwidth input, or black and yellow to protect the satellite from deep bass and increase the power handling.

Roughly a cubic foot plus plinth (30cm), the compact sub-woofer is fetchingly painted silver and grey. It uses a 200mm downward-firing driver in sealed-box mode, powered by a 100 Watt amplifier. There are line- and speaker-level inputs, the latter via a Speakon input (for which Ruark supplies a lead as an optional extra). Knobs adjust volume and filter roll-off frequency, the latter with an LFE option, and switches

set on/off/auto and phase.

In practice the Vita 100 satellites start to develop useful output above about 120Hz, while the sub struggles to reach much above 100Hz, even at its highest filter setting. Happily, the gap is quite small. The satellites are smoother if kept clear of walls, and have a slightly forward presence projection. The total system in-room balance is not without some character, but does hold within pretty narrow limits 30Hz-20kHz. The satellitedefined sensitivity is a low 84dB/W, but the load facing the amplifier is benign.

#### **SOUND QUALITY**

I quickly grew fond of the Vita 100, mainly because of its beguiling openness, which made speech in particular very articulate and explicit. It works just as well with music too, bringing considerable expression to Eva Cassidy's beautifully recorded voice.

The bass end is very deftly handled too, and while it doesn't break any records for sheer weight and scale, it's agile and reasonably smooth, doing the business with commendable discretion and without drawing unwanted attention to itself. Ultimately, the sound might be just a little lacking in warmth and richness for some tastes, but that seems a fair price to pay for fine detail projection.

#### **CONCLUSION**

Recommended flag.

The Vita 100 isn't the cheapest three boxer around, but it's certainly one of the most accomplished, both sonically and visually, and as such clearly deserves a

"IT'S AGILE
AND REASONABLY SMOOTH,
DOING THE
BUSINESS
WITH
COMMENDABLE
DISCRETION."



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## CONCLUSIONS

#### SO WHAT COMES FIRST: LOOKS OR SOUND? PAUL MESSENGER ROUNDS UP.

ur exhaustive test programme made it pretty clear that cute and discreet presentation inevitably takes priority over sound quality in these style-oriented speaker packages, but on the whole they can still make music reproduction an enjoyable experience.

However, there are a couple of paradoxes in the three-box approach. For one thing, solitary bass units don't drive a room as evenly or smoothly as the twin sources used by regular stereo speaker systems. And if wall-bracket mounting seems the obvious place to put a tiny satellite speaker, it's also the location which will increase midband coloration and disturb the stereo imaging most.

It's clear enough that you pay a pretty hefty premium for the style and packag-

ing of sub/sat systems compared to a regular stereo pair, but despite this, the more expensive combos do seem to outperform the cheapies.

Once again there's plenty of evidence that regular speaker makers don't build subwoofers as well as the subwoofer specialists. The majority here struggled to reach up to the satellites, and none supplied serious bottom-octave energy.

Best Buys don't really seem appropriate for this group, but it would be churlish not to sprinkle around some Recommendations. The £300 Acoustic Energy Aego2 doesn't really make it as a full scale hi-fi speaker, but it's a cleverly conceived and executed package which

should find loads of uses.

Boston Acoustics' Micro 90 is a fine allrounder at £650, with a £200 trade-in from distributors this year on your regular stereo speakers. The Bandor Trident II (£775.50) is very different from the others – entirely passive with limited loudness potential but a beguiling homogeneity.

The £900 Ruark Vita 100 is a very expressive and involving sub/sat combo, which also happens to be very artfully designed and put together.

The eyeball-like Cabasse Io (£1,227.50 with the Jupiter subwoofer) looks quite extraordinary, and sounds rather fine too, setting a standard that goes some way towards justifying its high price.

"YOU PAY A PRETTY HEFTY PREMIUM FOR STYLE AND PACKAGING COMPARED TO A REGULAR STEREO PAIR."

#### SATELLITE & SUBWOOFER SYSTEMS AT A GLANCE

	HI-FI MILES	HI-FICHULE IMPROVED	HI-FICE Magazine	H-FICTURE INSTRUMENTAL INSTRUME
MAKE MODEL	ACOUSTIC ENERGY AEGO2	BANDOR TRIDENT II	BOSTON MICRO 90	CABASSE JUPITER/IO
PRICE	£300.00	£775.50	£650.00	£1,227.50
SOUND VALUE	**************************************	***	* * * * * * * * * * * * * * * * * * *	****
CONCLUSION	Cute super-compact multi- purpose powered sub/sat combo is plenty of fun.	Limited loudness but great homo- geneity and coherence from this all- passive system.	A fine all-rounder with great little satellites, and a pleasingly open and articulate balance.	The eyeball-like Io looks quite extraordinary, and the package sounds like a real hi-fi system.
GUARANTEE	1 YEAR	3 YEARS	5 YEARS (1 YEAR SUBWOOFER)	LIFETIME
	9,0			HH-FL
	KEF KMS 2002	MISSION FS2	NHT SUPER ZERO/SUB ONE	RUARK VITA 100
MODEL				RUARK
MAKE MODEL PRICE SOUND VALUE	KMS 2002	FS2	SUPER ZERO/SUB ONE	RUARK VITA 100
MODEL PRICE SOUND	KMS 2002 £499.00	FS2 £450.00	SUPER ZERO/SUB ONE £1,000.00	RUARK VITA 100 £900.00

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## MAINS CABLES

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ains electricity; the fuel that powers your equipment. No mains, no music! But mains *quality* is important too. You'd not expect a Formula One car to produce peak performance on contaminated two-star petrol. So why assume your hi-fi is unaffected by dirty mains? This

group test looks at a diverse batch of quality mains cables and power distribution boards. Diverse is the word; although similarities exist between certain products, it's clear from specification sheets and design background blurb that each manufacturer has its own concepts and ideas about the problems faced and how best to tackle them. Exotic theories are all very well, but for most of us it boils down to how much it costs, and how big the difference is.

To find out, I employed the services of Rotel's RCD-991 CD player, choosing it because it's a good solid but slightly unspectacular performer, and it has an IEC mains socket. It's a nice machine and I like it. Alas, having dallied with more exotic kit, I also know what's missing. The sound is clean and focussed, but just fails to expand; the openness and vivid musical involvement of more expensive players isn't quite there. Currently, my relationship with this CD player is one of platonic respect. Could spending £50+ on a better mains cable transform respect into burning passion? Let's see!

#### ON TEST

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AUDIOLINX BLUE MAX	£99.99
AUDIOSOURCE BBC	£45.00
AUDUSA EUPEN CSA	£48.00
LAT AC-2	£99.00
MAPLIN ASC 431	£49.95
OLSEN SOUND FANTASTIC	£74.26
RA KIMBER POWER KORD	£50.00
SONIC LINK SG POWER 25	£80.00
SYNERGISTIC RESEARCH	£238.33

#### OTHER EQUIPMET USED

Rotel RCD-991 CD player EAR 859 integrated amplifier Impulse H-1 horn loaded speakers REL Q Bass sub woofers (x2)

#### MUSIC USED

Suzanne Vega - Solitude Standing
The Mamas and the Papas - Best of...
The Notting Hillbillies - Missing,
Presumed Having a Good Time



#### **GROUP TEST MAINS CABLES**



#### **AUDIO NOTE** AN-MP

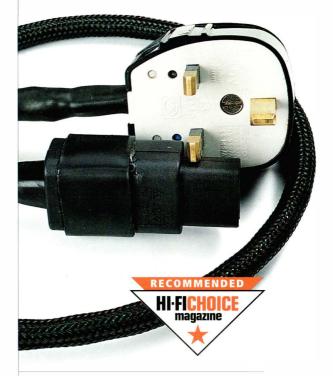
CONTACT: 01273 220511 www.audionote.co.uk GUARANTEE: 1 YEAR

SOUND VALUE £99.00

ucid, detailed, sharp - Audio Note's AN-MP cable uses 1mm diameter solid silver conductors with three strands per run, these being braided to cancel self-inductance and noise. Being made from solid core wire it's not especially flexible, but as the overall diameter is kept reasonably narrow it's not excessively unwieldy. Perhaps because of its use of silver conductors, this

cable needed more burning-in than most of the others, initially sounding a wee bit bright and glassy at the top-end. But things settle down with extended use, and the tonal balance eventually evens out, though presentation remains on the forward analytical side.

This cable certainly succeeded in opening-out the RCD-991's slightly closed-in treble. noticeably increasing lucidity. Presentation was very airy, but female vocals on Suzanne Vega's Solitude Standing were slightly less cleanly portrayed compared to some others in the test, while bass seemed marginally less firmly defined. I'd emphasise the words 'slightly' and 'marginally'; by any standards this is a very good cable, and had I simply tried it in isolation I'd have been very pleased with the improvement produced over a standard mains cable. But, being priced above many of the others in the group, a qualified rather than unequivocal recommendation would seem to be fair. If, however, you're after a cable that gives plenty of treble brilliance and sparkle, Audio Note's AN-MP is hard to beat and should certainly be auditioned.



#### **AUDIOLINX** BLUE MAX

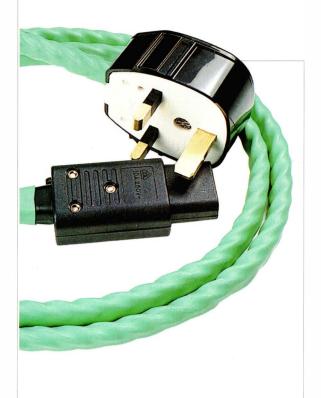
CONTACT: 02897 561348 audioduk@cs..com G'TEE: 3 YEARS

SOUND \*\*\* VALUE \*\*\* £99.99

eveloped by AudioLinx in conjunction with a Canadian Aerospace company, Blue Max is a fully screened noise-cancelling cable, having the conductors tightly wound in a spiral pattern for maximum shielding and better rejection of noise. So this is yet another cable that should improve as length

increases. Six pure-teflon insulated conductors are used, made from very high purity 20 gauge oxygen-free silver-plated copper, with a PVC outer jacket and protective nylon sheath. The cable configuration is described as a non-invasive passive anti-surge noise cancelling network, and is fitted with an MK 13a plug and Rendar 15a IEC socket.

Sonically, Blue Max proved to be one of the most impressive cables of the group, enhancing clarity and separation without adding harshness or glare. Rhythmic portrayal was very good indeed, and left to right separation improved too - very noticeable on Luka from Solitude Standing, which can easily sound dynamically flat, compressed, and lacking in presence. Yet there was no sense of graininess, despite the increased detail and brilliance. Using the RCD-991 with Blue Max largely silenced the criticisms I have of this player, improving soundstaging to the point where I'd have believed I was listening to a much more costly CD player. Although one of the more expensive cables in the group, prices are still fairly reasonable given the level of improvement offered. (The short version of this lead was tested, incidentally.)



#### **AUDIOSOURCE** BBC

CONTACT: 0141 339 9762 www.hi-fi.eu.com GUARANTEE: 5 YEARS

SOUND WWW VALUE WWW £45.00

n terms of appearance, this is one of the most distinctive cables in the group. And at just £45 (direct selling price - no dealers) the cheapest too. The makers describe the cable as a double-helix construction, wound to reject RFI by geometry. This creates a fairly stiff inflexible cord, so take care not to bend it too sharply. The conductors are made from oxygen-free copper, tensioned to give intimate field cancellation but without the increasing adverse capacitive effects which most AC cords suffer from.

Apparently the use of six conductors (rather than three) is an essential part of the design. Interestingly, the makers claim bbc cable is at its best with amplifiers because of the requirement for high current delivery and fast transient demands. Initially I used my review sample with the Rotel RCD-991 CD player, but later tried it with an EAR 859 valve amp. Results were generally impressive, with a crisp open tonal balance that was lucid and detailed. This sharpness ensures excellent detail, but means the cable is very revealing. Trying bbc on the EAR amp in place of the Kimber cable I normally use, there was an increase in airiness. But was the music now marginally less focussed and clean - the background less inky-black? How do you interpret this? Is the cable simply revealling limitations in source material and/or anciliary equipment, or are the faults outlined down to the cable? Only you can decide! Certainly, bbc is revealing rather than flattering, but at £45 it's very good value.



#### **AUDUSA** EUPEN CSA

CONTACT: 020 8241 9826 www.audusa.com GUARANTEE: 3 YEARS

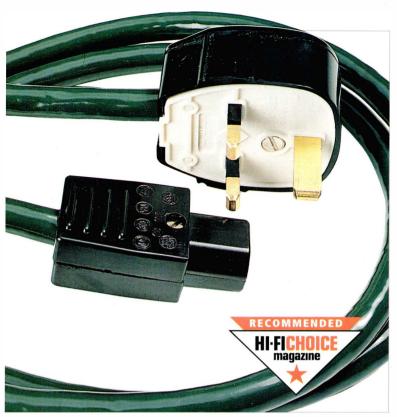
SOUND \*\*\* VALUE \*\*\* £48.00

erhaps the most intriguing cable in the group, Audusa Eupen is made from a polymer material mixed with a considerable quantity of fine ferrite powder. This compound is called EMC/COM and can be extruded around copper conductors to make a cable. Ferrite itself is non-conductive, but has interesting magnetic properties when subjected to an AC field.

As the magnetic field alternates, the material is magnetised and demagnetised, causing considerable losses of high frequency energy. The longer the cable, the greater the effect. Coating conductors with a thin layer of ferrite compound is said to absorb any high-frequency noise that might be present on the signal. The cable is fully shielded and a drain wire is included. It's fairly thick, but the use of stranded copper conductors means its reasonably flexible.

Subjectively Audusa Eupen proved to be very good indeed, sounding crisp and detailed, with good rhythmic cohesion and excellent pitch definition. Female vocal sounded slightly breathy, but it was a natural (rather than electronic) breathiness that avoided unpleasant smearing effects. Bass sounded firm and tuneful, and overall the music emerged clean and well-balanced. Given the supposed subjective limitations of the Rotel CD player, I have to say using it with the Audusa Eupen mains cable eliminated most of its sonic weaknesses. Given the very reasonable cost of this cable, and its outstanding performance, it deserves top marks and a strong recommendation.

#### **GROUP TEST MAINS CABLES**



LAT AC-2

CONTACT: 020 8241 9826 www.latinternational.com G'TEE: 3 YEARS

SOUND \*\*\* VALUE \*\*\* £99.00

his is another fairly high-tech cable that features a special weaving and shielding/filtering system that is said to protect against the mains garbage that adversely influences sound quality. The conductors are 10 gauge, making it quite difficult to terminate, and insulation is made from genuine PTFE. According to the manufacturer there are two kinds of PTFE, and many use the less expensive kind known as FEP which allegedly sounds

inferior to proper stuff. The cable is supplied in a heavy-duty outer jacket to prevent sharp bending of the internal conductors which might create small fissures that lead to reduced performance over time. A heavy duty Heil IEC socket is fitted, with a hospital-grade mains plug at the other end.

Subjectively LAT AC-2 proved itself among the best of the group, delivering a bright crisp sound with good firm bass. Unlike other bright-sounding cables, AC-2 seemed very focused, allowing one to hear deep into the mix without smearing or edginess. Clarity was excellent, and overall the music sounded clean and easy to follow with good rhythmic portrayal and crisp attack. Being of woven construction, AC-2 should increase in effectiveness with length. So, although it's possible to save money by going for the 0.9m version, it might not sound quite as good as the 1.8m version tested here. Despite being slightly more expensive than most of the cables in the test, AC-2 deserves an enthusiastic recommendation.



#### MAPLIN ASC 431

CONTACT: 0870 264 6000 www.maplin.co.uk GUARANTEE: 2 YEARS SOUND VALUE VALUE £49.95

trictly speaking, this is not a product intended for hi-fi enthusiasts. It's aimed at those wanting to protect sensitive electronic equipment from unexpected power surges and RFI noise. Outwardly, it looks like a fairly bog standard

mains distribution board with a cable terminating in a moulded 13a mains plug.

No details are given as to what's inside, and it proved tricky to open up. But the makers claim that around 50dB of noise attenuation between 1mHz and 30mHz. It certainly works effectively with mains noise. Using an Audio Prism Noise Sniffer I was able to hear a substantial drop in mains grunge. The ASC 431 mains board even eliminated the self generate noise by my EAR 859 valve amp. This is a loud buzz that's superimposed on the mains supply as soon as the 859 is switched on - normally, I use Russ Andrews' Silencer and Purifier boxes to get rid of it. So the ASC board has excellent mains purifying abilities; not only with noise already on the mains, but noise generated by the equipment itself – or other equipment used elsewhere in the house. From an audiophile standpoint, it would be nice had a specialist mains cable and plug been fitted, but you can't grumble given the low price. Incidentally, you don't actually have to plug components into this board to lower mains noise - you get considerable benefits just plugging the board into an adjacent socket.



#### **RUSS ANDREWS** KTMBER POWER KORD

CONTACT: 01539 825500 www.russandrews.com GUARANTEE: Life

SOUND MAN VALUE MAN 150.00

his is the simplest version of Power Kord, there being an improved performance, high-current version, plus a choice of standard or improved IEC connectors. The cable uses Kimber's special weave to reduce RF noise, and thus becomes more effec-

tive as length increases. So the usual hi-fi rule about short cables being best doesn't apply here.

Subjectively, Power Kord proved impressively detailed and crisp, improving imaging and reducing high-frequency hash. Rhythmic portrayal was excellent, and so too was clarity. Despite already having quite a bit of Kimber in my system, adding just one Power Kord improved things further. To get costs down, a new thinner outer sheathing has been used, making the cable slightly more flexible. Apparently, sales of the original standard Power Kord were a bit sluggish because the price differential between it and the high power version was insufficient. Costsavings made on new sheathing have allowed prices to fall. For those wanting something slightly better, without going to the High Current Power Kord, it's possible to buy Standard Power Kord fitted with a 320 Wattgate IEC socket. Believe it or not, this makes an audible difference, further enhancing the qualities of the standard version. Note pitches are slightly clearer and everything's more pin-point precise, sounding cleaner and more natural. The Wattgate socket adds an extra £25 to the cost of the Power Kord, and it's £10 per extra foot if you want a cable to extend beyond the standard 5ft length.

#### MAINS CABLES GROUP TEST



#### **OLSON SOUND FANTASTIC** DISTRIBUTION BOARD

CONTACT: 020 8905 7273 www.olson.co.uk G'TEE: 1 YEAR

SOUND STATE VALUE STATE £74.26

tylish it ain't. But most of us are able to hide our mains distribution boards behind equipment stands or cabinets. So looks aren't everything. The Olson Sound Fantastic board is available in four, six, and eight-way versions at reasonable

prices, and is well made and solidly built. It's fitted with a potted filtering network consisting of series inductors and parallel capacitors, plus a VDR (voltage dependant resistor) to clamp nasty mains spikes that might cause damage. The filter network is certain effective at dealing with mains noise, and using an Audio Prism Noise Sniffer I was able to hear a noticeable drop in mains buzz with the Olson board in line. However, it did not reduce the self-created noise made by my EAR 859 valve amplifier - unlike Maplins' ASC 431 which proved surprisingly

Because I already have quite a few mains widgets in my system, I put the Olson board first in line, so it filters the mains supply feeding one of the isolation transformers that powers my whole system. Surprisingly, given the amount of treatment downline, there was a small but noticeable improvement in cleanness and bass tightness. Which just goes to show how insidious the problem of mains noise is. So I'd expect anyone replacing a bog-standard plastic mains distribution board (especially one with a neon light) to find the Olson sounds quite a bit better. Given reasonable selling prices and superior build quality, I'd say this board's something of a bargain.

#### **GROUP TEST MAINS CABLES**



#### **SONICLINK** SG POWER 25

CONTACT: 01332 361390 www.audiocables.co.uk GTEE: 2 YEARS

SOUND VALUE VALUE £80.00

Ithough the type of conductor a cable employs is critical (solid, stranded, copper, silver, silverplated copper), of almost equal importance subjectively is the insulation material which is used for the cable housing. As is often the case

with hi-fi, there's a great deal of disagreement as to what insulation gives the best results. SonicLink advocate silicone rubber, believing this material to be vastly superior to PVC (which itself is generally frowned upon – though interestingly the excellent Eupen cable uses PVC), and preferable to PTFE because ambience portrayal is slightly enhanced. SonicLink designer Graham Nalty feels that, while you may lose a little punch and immediacy with silicone rubber insulation compared to PTFE, the sound is smoother and more natural.

SG Power 25 uses silver-plated stranded copper conductors without complex braiding or twisting, so there's no inherent noise cancelling properties with this cable. Indeed, silver-plated copper was chosen for its extended bandwidth properties, and its ability to handle extremes cleanly. This fits in with SonicLink's philosophy of simplicity and use of high quality materials, rather than fancy design. In use I found SG Power 25 sounded bright, open, and very detailed. Treble frequencies were tonally sweet and natural sounding, and although separation of voices and instruments wasn't quite as impressive as the very best of the group, it was still very good and far better than you'd get with a standard mains cable.



#### SYNERGISTIC RESEARCH MASTER AC LINE COUPLER

CONTACT: 020 8534 0134 www.ultimate-sonics.com G'TEE: 3 YEARS

SOUND \*\*\* VALUE \*\*\* £238.33

omfortably the most expensive of the group. Also the thickest, heaviest, and least flexible! Indeed, it's something of a minor miracle the makers were able to shoe-horn such a fat cable into the connectors at both ends. The cable is

said to eliminate RF interference through balanced cable geometry that shunts noise on the AC line to ground. Because of its size, the cable looks as though it's primarily intended for heavyduty power amps and other high-current devices, but the makers recommend using it everywhere, with particular emphasis on the front end. On a purely practical level, because the cable is so thick and inflexible, it may be difficult to use with components placed fairly close to rear walls - I had to pull the RCD-991 so far forward on its stand, it almost ended up on the floor!

So much for the width; what about the quality? Subjectively the Master AC Line Coupler proved to be absolutely outstanding. The sound was very sharp and open, with clean overtones and crisp transients. At the same time the presentation is clean and free from smearing. Musical incidents - like when the drummer plays off the beat on Luka from Solitude Standing - stand out clearly, making the music more interesting and eventful. Imaging was very precise; everything sharply delineated without seeming over-bright or etched. But oh, the price! What does one do? Spend £238 on four or five cheaper cables, or just buy this one? Actually, there's only one answer; buy four or five Couplers and have done with it!

## **CONCLUSIONS**

JIMMY HUGHES GETS DOWN TO THE MAIN BUSINESS...

first wrote about mains quality (specifically, the benefits of using solid core mains cables) way back in the mid 1980s – I've got the bruises to prove it. Even so, I'm still amazed at how sensitive equipment is to mains quality. You can use specialised mains distribution boards, noise-cancelling cables, filters, isolation transformers, plus parallel suppression devices, and (despite having all this) still hear a difference when just a single mains cable is replaced. In doing this test, I put myself in the position of someone who's got a good

system but nevertheless feels slightly dissatisfied with some aspects of its sound.

Rather than getting involved in costly component upgrades, I wanted to see if spending £50 and upwards on a better mains cable might turn a good CD player into an excellent one. Well, it did. So that has to be good news. Of course, mains treatment is not a panacea – nevertheless, sorting out this one element will ensure your system performs close to its very best.

Moreover, the nature of the difference itself is very satisfying, and doesn't relate to the absolute standard of your system. This means that a fairly simple/basic system powered by good mains will make more enjoyable music than something vastly better and more expensive that's running off a noisy, dirty supply. So, dip a toe in the water. Buy a specialist mains cable and see how you get on. Be warned, though – you'll be back for more.

## "I'M STILL AMAZED AT HOW SENSITIVE HI-FI EQUIPMENT IS TO MAINS QUALITY."

#### MAINS CABLES AT A GLANCE



## Dead Ringers

PAUL MILLER EXAMINES THE REAL GOINGS-ON BEHIND THE SCENES OF SUPPOSEDLY 'BIT PERFECT' CD RECORDINGS.

**"ONCE VIEWED AS AN AUDIOPHILE** ACCESSORY, THE CD **RECORDER HAS EVOLVED INTO AN EVERYDAY ITEM."** 



can well remember reviewing the world's first 'commercial' CD recorder. That was some 12 years ago and the unit, a massive multibox affair from Kenwood, came complete with a PC interface for proper operation. Despite lacking any sort of digital input, the DA-7000 CD Encoder (£7,500) and DD-7200 CD Writer (£5,400) was a genuine feat of engineering at a time when CD-R discs themselves were only being produced on a laboratory scale and for experimental purposes only. Kenwood may not have sold more than a handful of the system worldwide, but it surely represents the forerunner of the recorders featured in this month's test.

Once viewed as an audiophile accessory, the CD recorder has evolved - or devolved, depending on your viewpoint - into an everyday technological commodity. The fact that mainstream manufacturers now feel obligated to slot a CD-R/RW recorder into their ranges is reflected in the equally broad spectrum of results obtained on test. Few manufacturers have the resources to develop CD-R/RW recorders from the ground up, and more than a few are resorting to generic packages brought in from the Far East. Make no mistake, CD-R/RW recorders might now be an everyday hunk of hardware, but this does not mean they'll all produce copies of equal transparency.

Of course, along with increased commercial pressure come new value-added features. The most obvious is multi-disc replay, or at least the combination of a multi-tray or carousel loader with a single-disc CD-R/RW mechanism. Copying favourite tracks from multiple CDs is made all the simpler while the process is speeded-up by 2x and even 4x dubbing operations. The analogy with dubbing tape decks of a few years back is obvious, and while the quality of latter day digital copying is undoubtedly more

When the hi-fi industry needs the truth about technology, Paul Miller is its first port of call.

faithful, don't make the mistake of assuming that CD-to-CD-R/RW dubs are 100 per cent perfect.

#### SIX OF ONE...

Figure 1 (on page 77) shows the stupendous difference in digital record quality between two players from the same stable. The black trace shows little or no jitter (visible as additional sidebands or peaks in the spectrum) derived from copies made on Denon's CDR-1000 recorder. Compare this with an 'equivalent' digital copy made between the two decks of Denon's CDR-W1500. So, despite both machines carrying the same Denon badge, the fact that the machines are based on alternative technologies (from different suppliers) is reflected in the gulf in both measurements and sound quality.

Jitter has a powerful impact on sound quality but is not necessarily indicative of corrupted data. Copies made on both the CDR-1000 and CDR-W1500 may well enjoy bit-for-bit accuracy when compared to the digital source. Instead, it is slight variations in the interval or timing between successive bits of data that manifests as jitter and appears as the obvious sidebands on Fig. 1. As such, jitter may be introduced anywhere in the digital chain between the digital source (an external CD player or internal drive in the case of the CDR-W1500) and the point at which data is 'burned' onto the receiving disc by the CD-R/RW drive.

One potential source of jitter within a CD-R/RW recorder is the so-called 'sample rate converter'. Because the incoming digital signal could, in theory, originate from sources other than a CD player, the sample rate might be 32kHz, 44.1kHz or 48kHz. All CD-R/RW recorders use some form of sample rate conversion (SRC) to deal with this possibility and ensure the digital data that hits the disc during recording is running at 44.1kHz - the same rate as CD. SRC is also typically necessary when recording at 2x or 4x speed to ensure the finished CD-R/RW is compatible with standard CD players.

# **TECHNOLOGY** "JITTER HAS A **POWERFUL IMPACT ON SOUND QUALITY, BUT IS NOT NECESSARILY INDICATIVE OF CORRUPTED DATA."**

### **PENALTY TIME**

Obviously, SRC is superfluous where the incoming digital data originates from a 44.1kHz CD source, nevertheless some machines still perform this 1:1 conversion. Typically, the penalty is extra digital jitter which can only make your copies sound worse than the original. Recorders from Marantz, Philips and Pioneer, for example, have the good sense to bypass any SRC facility if the incoming digital data is sensed at 44.1kHz. This is just one reason why these products offered among the 'cleanest' digital dubs of the group. Fig. 2 (over page) compares the ~23,000psec, 2560psec and mere 160psec of jitter detected during record and playback on the Denon CDR-W1500, harman kardon CDR-20 and Pioneer PDR-W839 dubbing decks, respectively.

Subjectively, the large clump of low-rate jitter that afflicts the Denon will influence stereo imagery and bass quality while the more widely distributed jitter of the harman, despite being lower in level, will have a greater impact, encouraging a grey, gritty and generally coarse sound. Indeed, this prediction was largely realised during the course of Alvin's listening tests.
Furthermore, before handing over the recorders for their subjective appraisal, I made the point of ensuring all music recordings – on both CD-R and CD-RW media – were properly 'fixed up'.

### WHAT A FIX UP

With partially recorded blank discs, the numbers and playing times of tracks are stored on its Program Memory area, ensuring that the CD recorder begins new sessions at the end of earlier recordings, even if the CD-R/RW disc has been ejected and subsequently re-loaded. To prevent any further recordings and ensure the CD-R/RW disc is compatible with conventional CD players, it must be 'fixed-up' or 'finalised' by the CD recorder. This 2-3 minute automated process transfers the relevant TOC data (Table of Contents) to the disc's lead-in

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area. This corresponds to the same innermost area of a conventional silver CD, making finalised CD-R and CD-RW media indistinguishable from the 'real thing'.

Of course, the CD-R drive of a CD recorder will replay both finalised and unfinalised (or open) CD R/RW media. This makes for

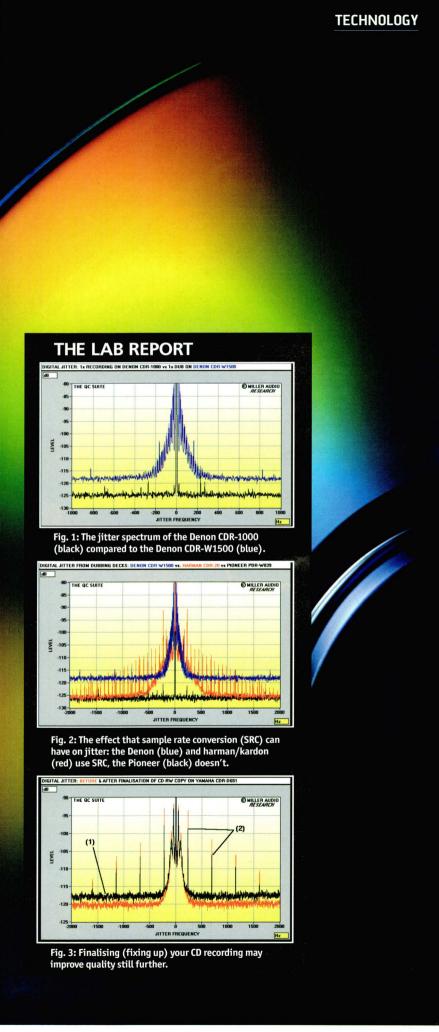
will replay both finalised and unfinalised (or open) CD-R/RW media. This makes for quick and easy demonstrations of recorded tracks either at a dealer or during the review process. But here's the snag. In some CD recorders, the data is clocked-off unfinalised discs using the 22kHz 'wobble' of the groove rather than the machine's crystal reference. All conventional CDs and finalised CD-R/RW media are read with reference to the master clock, so there's often a difference in sound quality between unfinalised and finalised media.

### **DIGITAL GAIN, OUR LOSS**

Fig. 3 shows the effect of finalising a digital recording made on TDK CD-RW media from Yamaha's CDR-D651. The finalised recording (black trace) clearly has a higher noise floor (1) than the unfinalised (red trace) recording, but the incidence of what is largely data-induced jitter (2) is reduced from ~2200psec to ~1600psec. While this is high by CD standards, it's not a bad result by any means when compared with dubbing decks from either HK or Denon.

Finally, there's one other value-added feature that should be approached with caution – the Variable Digital Record Level control. Some CD-R/RW recorders now incorporate digital gain to boost the level of digital data by as much as +12dBFs. If the source material never exceeds -12dBFs then such digital gain will optimise the dynamic range of the signal for playback purposes. If, however, the applied digital gain effectively forces the incoming digital data above 0dBFs (-5dBFs incoming with +12dB gain gives a notional +7dBFs level), then the record/playback chain will be plunged into instant and massive distortion.

Unlike analogue recordings, which typically overload quite gracefully as levels are pushed into the red, digital recordings offer less and less distortion as the digital level reaches its peak at 0dBFs but then 'crash' when this level is exceeded. Play safe, leave any digital gain control set to '0dB' and finalise your media before critical listening.





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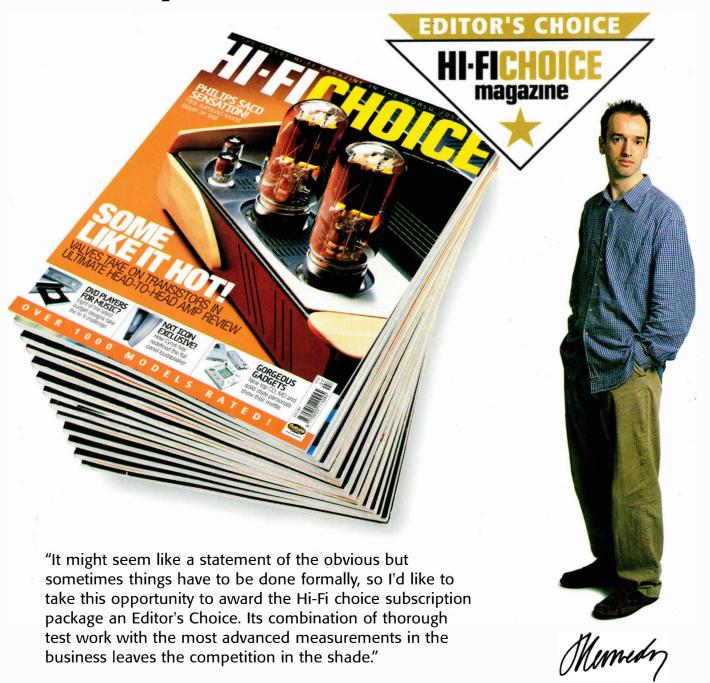


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condition, 10 months old, £500 new, offters to Alan. Call 01661 834557 / 0191 222 5960.

**HEADPHONE AMP** QED MB45 double with power suppy, £35 (£85). R'n'B and Blues CDs, all sorts, £4 each, as new Call 01278, 782622

NAD 370 INTEGRATED AMP, little used, boxed, £250 o.n.o. Rotel RA972 integrated amp, little used, boxed, £250 o.n.o. Call 01273 305176 (Brighton).

MARANTZ CD50SE, £80. Aiwa mini digital tuner, £20. Yamaha NSC110 centre speaker, £40. Denon 3020 A/V amp, offers. Call 01708 457691.

KRELL KSA50 Class A power amp, good condition, £865 ono, just bought new Krell. Can demo. Call 01625 585508 (Cheshire).

### **BUYING TIPS**

Buying secondhand 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 engineered down to a price. Do some research on which brands and products have a good service back-up, so if something does go wrong, you can get it fixed. Unless you purchase from a second-hand hi-fi dealer, you're unlikely to get any warranty. So it's up to you to ensure the fitness of any gear that you buy. Products such as speakers should be less prone to breakdown than amplifiers, and amps should be more reliable than CD players. But any abused component could be trouble-some – have a proper dem, and judge the seller as well as the goods!

# **THEDIRECTORY**

THE *HI-FI CHOICE* DIRECTORY ROUNDS UP OVER 1,000 PRODUCTS REVIEWED IN PAST ISSUES. HERE YOU'LL FIND OUR OPINIONS ON THE BEST HI-FI COMPONENTS, ALONG WITH GUIDANCE ON HOW TO ASSEMBLE THEM INTO FIRST CLASS HI-FI SYSTEMS.

# THE ART OF SYSTEM BUILDING

HOW DO YOU GO ABOUT BRINGING TOGETHER AN IMPRESSIVE HI-FI SYSTEM? IT GOES A LITTLE LIKE THIS...

hen it comes to getting together a great separates system, identifying decent individual components is fundamental, but it isn't the whole story. There is the business of system synergy to consider, which put simply means how well your components gel as a whole. The degree to which this can affect the end result tends to increase with price, thus budget components are relatively immune (a competitively priced Best Buy disc player, amp and loudspeaker pairing of almost any hue will combine to make a good system). When considering a purchase it's always good practice to listen to alternatives. It's the only way you can learn what different components sound like and find out which ones appeal to you.

So once you have shortlisted some components, the next step is to track down a knowledgeable dealer to take you through the options available. As well as getting the basic hardware right there is the question of which cables to use; should you stick with what comes in the box or pay extra for interconnects and speakers leads? We firmly believe that cables make a worthwhile difference, but if you are sceptical any dealer should be able to demonstrate this for you.

And don't skimp on supports. The temptation is to use any old shelf or sideboard for system and speakers, but it's worth the outlay for speaker stands and proper system support.

### **MAKING CONNECTIONS**

WIRING UP A SYSTEM IS REALLY QUITE STRAIGHT-FORWARD IF YOU FOLLOW A FEW BASIC GUIDELINES.

- When bi-wiring (see glossary) with speaker cable you will sometimes need to connect two plugs to one socket on the amp. If the amp has a binding post connection you can usually put one plug through the hole that goes across the post and one in the end. If this is not possible you may need to use spade connectors or have both pairs of cables soldered into single plugs at the amp end.
- If a cable has an indication of directionality, i.e. if there are arrows on the casing, use these with regard to the way the signal travels. If there are no arrows you can try it both ways and see if you hear a difference or just route the signal in the direction of the writing on the cable jacket.
- In multichannel AV systems you may have the option of routing video signals via the amp, or bypassing it. The former option gives easiest functionality if you use several sources, but by bypassing you are removing a switch and connection which should improve quality.
- $\blacksquare$  Try to avoid lying mains cables across or beside signal cables as the field they produce can have a negative effect.
- Try to keep all cable runs as short as possible (unless you use Naim).

### **AWARD TAGS**

Whenever HFC reviews a group of like components we have the opportunity to give the best products a Best Buy or Recommended award. Best Buys are considered to offer an excellent standard of performance at an attractive price.

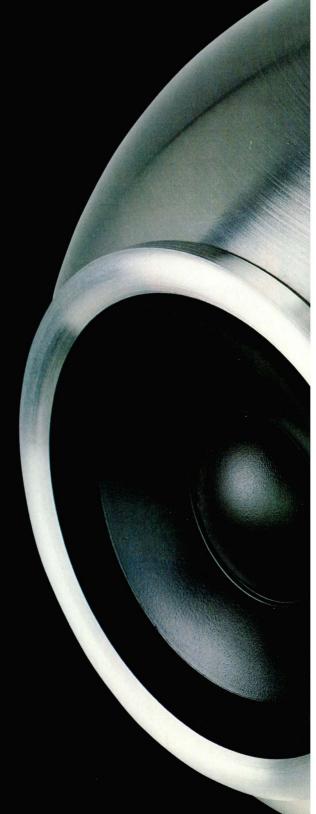
Recommended products are first class components losing out to Best Buy status only because of a higher price or less competitive overall sound quality.

A third award, the Editor's Choice, is reserved for those products reviewed solo, such as you see in the First Impressions or High Performance sections. An EC is awarded where the Editor is convinced that a product offers exceptional quality for the price











AMDI IEIERS

INTEGRATED PRE/POWER PHONO STAGES MULTICHANNEL	88 89 90 90
CABLES ANALOGUE INT. DIGITAL INT. LOUDSPEAKER CABLES MAINS CABLES	90 91 92
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### GLOSSARY

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 mplifiers 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: Recordable/erasable and rerecordable CD, discs must be unfinalised before they can be re-recorded.

CLASS A: 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 give lower distortion.

CLASS AB: Most practical amps oper ate in Class A for the first fraction of a watt and Class B thereafter.

CLIPPING: An amplifier's output wave form is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever increasing nower levels. Distortion increases atically at this point.

**CLOCK:** Any electronic oscillator that is used to generate a timing reference signal. 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

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) waveforn

DOLBY DIGITAL DD (AC3): A compressed (10:1) digital audio format that typically contains five or more entirely discrete channel, eg 7.1 EX where discrete side 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 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 reduced 4:1 compression ratio that, ostensibly, promises higher quality **DVD-A:** High resolution variant on DVD

offering up to 96kHz bandwidth and 24bit dynamic range, discs are compatible with existing DVD machine

**ELECTRICAL DIGITAL:** Any digital connection that uses an electrical cable rather than optical. Includes the balanced ('AES/EBU') interface

FILTERS: Intrinsic to digital audio is the extensive use of filters, 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

FINALISE (CD-R):The process of copy-

rary area on CD-R and RW to the final position where it will be recognised by

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 insidious distortion specific to digital audio whereby the clock, used to regulate the conversion of data into analogue audio, carries a degree of

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 thus interchangeable.

LOSSLESS COMPRESSION: A

nethod of reducing the number of data bits (density) without corrupting the al description of the musical signal LOSSY COMPRESSION: Reduction in data density by recourse to a psychoacoustical model that predicts what is and what is not, 'audible' within a sequence 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. **NETWORK:** see Crossover.

**OUTPUT IMPEDANCE:** A measure of resistance to alternating current, a source with low output impedance (say, below 100 ohms or so) helps ensure compatibility with most amplifiers, even when using long or unusual interconnect cables. A high impedance, especially in conjunction with an amplifier with a low input impedance (some are as low as eight kOhms, although the standard is 47 kOhms) can result in audible treble

PLL OR PHASE-LOCKED LOOP: A technique by which a clock of defined characteristics is used to generate a new clock at a different frequency from the

PRESENCE: Critical section of the audio band at the point where midrange and treble meet.

OLIANTISATION NOISE: A form of distortion or noise resulting from errors in the description of the musical signal by the digital code.

SACD: high resolution music only format developed by Sony/Philips and offering 100kHz bandwidth without digital filtering and its associated ills.

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 upport 48kHz and 96kHz.

SENSITIVITY: The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per

THX: Standards system for home cinema set-ups which includes amplifier power and speaker dispersion character istics. THX Ultra being more stringent than 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 amplifier output stages.

TREBLE: High frequencies, the top end of the audio band, eg above 3kHz TWEETER: Treble dr

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. WOOFER: Bass driver.

# AMPLIFIERS (6)



### **SPECIFICATIONS**

MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTRO	ADPHONE SOCKE	OWER OUTPUT (W	
INPUT	INPUT	ONTRO	SOCKE.	w) TUG	

### **STEREO AMPLIFIERS – INTEGRATED**

PRODUCT	£	COMMENTS	-		<b></b>				J
Affordable Valve Co. EL34	650	A real bargain on the face of it, but the sound is oh so soft, warm and old-valve. Too much of a good thing	4					40	
Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	•		•	•	45	
Arcam Alpha 8R	350	Workmanlike amplifier is well thought through, but is now beginning to show its age.	5	•		•	•	50	
Arcam Diva A65	380	Easy on the ear remote control amp, but not especially powerful.	5			•	•	40	
Arcam Diva A85	700	Much enhanced design topology give a more hard hitting, engaging sound than previous Arcams	7			•	•	85	
Arcam Alpha 10	800	Although not the best sounding in its class, the Alpha 10's modular nature demands it be taken seriously	5	1000		•		100	
Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7				•	100	
ATC SIA2-150	1,984	An impressive sounding integrated amp with a dynamic, open and detailed sound	4						
				-				150	
Aria S2	1,000	Glamorously packaged valve amp produces a real eyes closed, feet up kind of sound	4					12	
Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	•	•			40	
Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	•	•			40	
AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5			•		100	
Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5			•	•	60	
Cambridge Audio A500RC	200	Solid value, decent build and a surfeit of watts make this an attractive proposition, but it can sound slightly loose	6			•		50	
Canary Audio CA-608	1,495	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4					-	Ì
								24	
Chord CPM 3300	5,495	Very powerful yet compact amp with rather complex ergonomics and transparent sound. Oh, and a lovely blue glow	5	10000		•		220	į
Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	•		•		60	
Copland CTA 402	1,698	A unusually flexible valve amp with an attractive and textured sound	5	•		•		35	
CR Developments CR324	569	Solid and capable on paper, this is a bit of a blunt instrument when let loose on the music	5					150	
Cymbol CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6					40	
Creek 4330	279	Diminutive but classy amp will drive anything, and can be specified in various configurations	4	•				40	
Creek 4330SE	499	Somewhat perplexing, though always interesting, miniature audiophile amplifier, needs careful system matching	5			•		50	
					- 50000000			-	
Creek 5350SE	799	Smooth, open and articulate sound and quality build, but bass is a tad heavy handed	6			•	•	85	į
Cyrus 5	500	A enjoyable amp that is assured and unflappable, although detail is unremarkable	7			•	•	45	ļ
Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6			•	•	60	
Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high fidelity operation	5				•	30	
Denon PMA-355UK	230	Detailed, but rather inexpressive sound which doesn't quite live up to the claims.	5	•	200	•	•	50	
Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	•	•	•	•	70	
Densen Beat B-100 MkII	650	High 'air quitar' factor, and can punch above its weight, but check it will complement your system	5					60	
Exposure 2010	599	Neatly turned out amplifier, with mainstream appeal but bland with it	6			•		50	
Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6	1899		•		75	
Ezo Aria HE	449	Quick, detailed but aggressive and sometimes coarse sounding amp. Beautifully turned out, though	5				•	40	
Graaf Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6					25	
Holfi Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	•				65	
Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	•	1200	•	•	70	Í
Kenwood KAF-3030R	250	Kenwood's best amplifier for some years has a lean bass but excellent mid and treble.	5	•		•	•	50	1
Krell KAV-500i	5,000		5					-	
		More at home in background listening/home cinema applications than out-and-out audio maniac set-ups				•		250	
Linn Majik	845	Slightly rough and ready power amp modules, but capable preamp that can be expanded into a multiroom system	5	•		•	•	33	
Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5					23	
Marantz PM-6010 OSE	229	Good starter amplifier, with characteristic smooth, low key delivery	5	•		•	•	50	
Marantz PM7000	300	Lots of power for the price, but detail and subtlety seem to have been sacrificed	6	•		•	•	115	į
Marantz PM6010 OSE KI Sig	400	Well-made, but somewhat ill-balanced amplifier that doesn't slot into most systems comfortably	6	•		•	•	50	
Marantz PM-17 Mk II	999	Big, bold, but over-fruity balance – the 'fat uncontroller' as one put it	6	•	•	•	•	60	
			6		- Contractor			-	á
Marantz PM-17 KI-Signature	1,300	Full feature audiophile amp where the end results don't quite justify the fantastic ingredients		•	•	•		60	
Mark Levinson No383	5,500	Extremely versatile design that thinks and acts like a serious pre/power. Sounds superb	5			•		100	į
Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility	5			Land C		55	
Musical Fidelity X-A2	500	A chip off the old block; sounds very similar to the X-A1 and XA-100R	6					75	
Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some	5	•	•	•		85	
MVL A2	970	Curiously designed, and curious sounding amplifier with Sound Sentinel circuits to address perceived weaknesses	9	•			•	100	Í
Myryad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse	6				•	50	
				100				-	ĺ
Myryad MI120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle	6			•	•	60	ļ
Myryad MI 240	1,500	Big and powerful integrated amp sounds clean and neutral if a bit short on musical tautness and dynamic tension	8	OPT	OPT	•	•	120	
NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build	6			•	•	40	
NAD C340	270	A classic NAD amplifier copes with any speaker, delivers plenty of power, and does so with calm decorum	6	•		•		50	Í
NAD C350	300	A typical NAD: refined, warm tonality, adequate detail, and a strong power yield	7			•	•	60	ĺ
NAD C370	450	Flexible, ultra-high power integrated amplifier delivers a real punch, but is not without finesse.	6	•		•		120	
								-	
NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong	5		100000	•		100	
Naim Nait 5	799	As always with the Nait, less is more, and the Nait 5's 30 watts seem to go a lot further with some sources				•		30	į
Opera Aida	795	Low power (in practice) minimalist integrated amp, but the mahogany wings don't help it to fly	5	•	•			60	
Pathos Classic One	995	Unusual looks and even more unusual electronic design, but compromised musical potential	5			•		55	
Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build	5	•		•	•	45	
Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	•		•	•	60	i
Plinius 8100	1,450	Slightly rough and ready, but plenty of balls from this stripped down antipodean,	6			•		100	
		3 , 3 , 1 , 1		1000				-	į
Præcisa Acustica Sonoro	1,800	It is not often that transistor amplifiers are made to sound so palpably valve-like	5			•		100	
Primare A10	500	Beautifully made, smooth and easy sounding, and though not overtly detailed or dynamic, is well organised musically	6	12/2		•		50	į
Primare A20 MkII	799	Everything except packaging has changed in Mk II version: but ballsier model has lost none of its refinement	5			•		70	
Primare A30.1	1,500	Smooth, detailed singing quality, elegant appearance, and healthy power yield	6	E LOT		• 1		100	
Primare A30.1	1,499	Superb build and aesthetics, and undemonstrably musical down to its smallest screw	6	1000		•		100	j
Restek Fantasy II	1499	Muscular, but ultimately rather strident amplifier which needs careful system matching	6					100	- Company
	_					-		-	
Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness	6	•		•	•	120	
Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6			•		70	
Rotel RA-931 Mk II	189	Simple, non-remote amp majors on clarity and transparency, without sounding over-analytical	4	•			•	35	
Rotel RA-971 MkII	275	Improved RA971 is a chip off the old block: bags of power, but with added precision and clarity	6				•	60	
Rotel RA-972	400	Better in the treble than the bass, which is a little too rounded and woolly	6			•	•	90	
Sharp SM-SX1	3,300	Jewel like 1-bit digital amplifier with limited power reservers but offering glimpes of sonic magic	5					50	
				102120					
Sharp SM-SX100	10,000	The world's first stable, 1-bit digital amplifier is a technological milestone that should go from strength to strength	n/a					110	4
	200	Very open and clear sound, comfortable with a wide range of musical styles	5	•		•	•	60	
Sony TA-FB740R Sony TA-FB940R	-	Technically innovative amplifier fails to cut the mustard with complex material	5					70	ú

K.	BEST B	UY R R	ECOMME	NDED E	EDITOR	s'S CHOICE
LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER

### **PHONO STAGES**

ATUS	PRODUCT	£	COMMENTS			
	Clearaudio Symphono	740	Slightly inconsistent balance marrs the performance of this lively performer	0	•	201
R	Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character	0	•	189
	Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough	0	• •	189
	Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality	0	•	189
R	Electrocompaniet ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise	0	•	189
BB	Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage	0	•	189
	NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too	0		189
R	Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	0,	•	201
R	Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer	0	• •	201
R	Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	0	• •	201
R	QED Discsaver DS-1	35	It's cheap, it's cheerful, it's OK – perfectly adequate for use with a phono-less integrated, though not very refined	0		189
_	Roksan Artaxerxes X/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components	0	•	189
R	Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP	0	•	201

# **AMPLIFIERS**



### **SPECIFICATIONS**

HEADPHONE SOCKET MM PHONO INPUTS MC PHONO INPUTS POWER OUTPUT (W) REMOTE CONTROL

LINE INPUTS

### **MULTICHANNEL AMPLIFIERS**

7	PRODUCT  Arcam AVR100	800	A solid sounding and well-engineered A/V amp with an affordable price tag. Good with music and well suited to smaller rooms	6	0.000		•		70	215
_				5					110	19
	Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	7	-				-	- 8600
3	Arcam FMJ A22 DAVE/P25	2,850	Powerful, authoritative, great stereo, excellent home cinema - what more can you want?						100	21
	Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4					N/A	- 1000
,	Cyrus AV5/SmartPower	2,650	Refined, detailed and attractive, but ultimately lacking in balls.	3			•		60	2
4	Denon AVR-3300	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			•	•	75	1
_	Denon AVR-3801	800	Well-endowed, sharply priced receiver is also a musical high roller.	8	•		•	•	105	7
3	Denon AVC-A1S0E	1,200	State of the art sound quality, a strong feature set and reasonable pricing. What more could you want?	11	•		•	•	125	2
3	Denon AVC-A1SE	2,500	A powerful, articulate 7.1-channel integrated amp, loaded with features and equally and home with music and film soundtracks	12	•		•	•	170	2
	Kenwood KRF-V7773D	800	Bold, detailed presentation, but there are some technical limitations and a slightly mannered quality, especially with music.	10	•		•	•	120	2
	Kenwood KRF-V9993D	1,300	Complex amp that rocks with home cinema but loses out with music	7	•		•	•	110	2
3	Marantz SR5000	500	Something of a rough diamond, but a powerful and entertaining package	5			•	•	105	
3	Marantz SR7000	700	Excellent at the price, and almost equally effective with 2-channel music and multichannel AV.	9			•	•	100	1
	Marantz SR-14EX Mk2	3,250	A weighty beast, with 7.1 processing but only five channels of amplification as standard. Highly capable with both music and movies, but rather costly all-in-all	8			•	•	140	1
	Musical Fidelity HTP/HT600	3,998	A very well matched pairing with considerable musical talents	8			•		100	
	Myryad MDP500/MA240/MA360	3,800	Superb three-box, five-channel A/V amplifier. Great with movies and beats most multichannel amps hands down with music	9			•		120	
В	NAD T760	650	More than adequate home cinema receiver that unusually doesn't muck up the music	7			•	•	60	
	NAD T770	1,000	Lacks both transparency and subtlety while the omission of dts will be a drawback for some at this price	5			•	•	90	
	Nakamichi AV-10	1,000	A very powerful AV receiver that's easy to install and set-up with a civilised and subtle performance	4			•	•	140	1
1	Onkyo TX-DS787	900	Obstructive ergonomics and messy sound undermine basically well-equipped receiver.	7	•		•	•	100	
7	Onkyo TX-DS989	2500	Authority personified, excellent AV signal processing, but sound quality a tad unsubtle.	9	•		•	•	160	
-	Pioneer VSA-E08	1,300	THX circuitry gives home cinema material a boost, but this is not an obvious first choice for music.	10	•		•	•	100	
	Primare P30/A30.5	3,700	No 5.1 channel input for DVD-A/SACD but capable of almost uncomfortable realism with real solidity and drive	8			•		120	
٦	Roksan DSP/5 ch amp/VSU	2,440	Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels.	4			•		80	
	Rotel RSX-972	1,000	Not the brightest tool in the Rotel toybox, and pricing is surely rather optimistic too.	8			•	•	75	
٦	Rotel RSP-976/RMB-1075	1,700	A potent and enjoyable two-box beast that gets to the heart of both music and movie sound	8			•		120	
7	Rotel RSP-985/RPB-985 MkII	2,400	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3			•		130	
	Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5			•	•	110	
٦	Sony VA777ES	1,500	Smart circuitry gives this model unusual precision and transparency, and it is a fine all rounder 9	9			•	•	100	1
1	TAG McLaren AV32R EX	2,749	A flexible AV processor, unusually good with music. Would form the heart of a top-class multichannel system in standard or 7-channel 'EX' form	6			•			
The same	Technics SA-DA10	500	Lower mid-market AV amp has all the right ingredients, but fails to stir the soul	5	•		•	•	80	
2	Technics SE-A1010/SU-C1010 x3	1,350	A preamp plus three stereo amps provide a six-channel A/V solution without complex processing. Visually stunning but low on grunt and detail	6			•		70	2
90000	Yamaha RX-V1000RDS	800	Solid mainstream performer is more convincing as home cinema amplifier than for multichannel music.	8	γ	N	Y	Υ	100	
	Yamaha DSP-AX1	2,000	An anorak's delight, and one of the most flexible and effective soundfield creators ever conceived	11			•	•	110	

# **CABLES**



### **SPECIFICATIONS**

STATUS	PRODUCT	• £	COMMENTS					
	Acoustic Precision Eikos	89	Not entirely neutral: probably best suited to upbeat music. Very stiff construction		•	•	•	188
	Audioquest Sidewinder	40	Suppresses the sound. At this price it's a disappointment		•		• •	211
R	Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail	•		•	•	200
R	Cable Talk Advanced 3	35	Good sound and great detail, but a slight brashness in the treble	•		•	•	211
L.	Cambridge Pacific	30	Lacks subtlety and bass impact but is otherwise quite serviceable for the price		•	•	•	176

	STEREO A	MPLI	FIERS – INTEGRATED (CONTINUED)	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
TATUS	■ PRODUCT	£	■ COMMENTS				1			
	T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality	7			•	•	100	189
	Tact Millennium Mkll	7,000	This digital class D amplifier represents a bold declaration on the future expansion of digital audio in the home	n/a			•		150	194
	TAG McLaren 60i	500	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement	6	No.			•	60	189
	TAG McLaren 60iRv	1,000	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive	6			•	•	60	184
	Talk Electronics Cyclone 1	550	Much improved build quality and silver finish, but the sound lacks physicality and can sound strained	6			•		65	196
R	Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall	6			•		50	175
	Teac A-E2000	180	Has the potential to cause significant damage in the budget amp sector once the wrinkles are ironed out	6					50	195
	Technics SU-A660 Mk 3	200	Plenty of wellie for the price, but the sound can be a tad coarse and lacking in fine detail	5	•			•	37	186
	Technics SU-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat	6	•		•	•	55	196
	Thule IA60B	700	Dry, edgy and glassy sounding amplifier, though the balanced input may appeal to some.	6			•		60	214
R	Token Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic	5					50	186
	Tube Technology Unisis Sig	2, 400	A very attractive product which combines many classic valve attributes to good effect	5	•				30	202
	Yamaha AX-496	240	Lacklustre, if well equipped and powerful, amplifier shows some improvements over previous amps, but not enough	6			•	•	85	208
	Yamaha AX-596	300	Clean, agile and lean this amplifier isn't. Bold and powerful, however, it certainly is.	5	•		•	•	100	217
R	YBA Intégré	1,550	Careful system matching is essential, but this is definitely one of the good guys	6	4 13		•		50	214

### STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS

US .	PRODUCT	£	■ COMMENTS	_						
	Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent	5			•	•	50	187
-	Alchemist Kraken APD7A/8A II	1,098	Unusual looks and unusual sound too, rather rough and lacking detail	6					55	187
R	Arcam Alpha 9C/10P	1,000	Well specified and flexible preamp with sound only just lacking in greatness	6			•	•	100	187
BB	Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1					60	165
00	Audio Note M Zero/P Zero	998	Neat shoe box-size components. Able to impart music with real life and soul when partnered with P Zero power amps	5					8	191
R	AudioNote M2Phono/P2SE	3,198	Wonderfully natural and inviting sound with great warmth and drama, but limited loudness capability	4	•				18	216
EC	Audio Research LS25 /VT100	11,489	This is not so much a fine valve amp, as a fine amplifier, full stop (LS25 MkII/VT100 MkII)	6	•		•		100	216
EC	Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1					8.5	186
	Bow Technologies Warlock Walnus		Heavyweight dual mono pairing with superb build and rich, refined sound	5			•		150	216
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application	8	-		•	•	120	212
n	Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1					5	196
	Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear	1					410	202
	Creek P43R/A52SE	949	Excellent sound, remote control operation and upgrade options from fine value preamp.	6			•	•	100	187
88	Creek P43R/A43	1,148		6					140	212
88		875	Great value and a podium performance earning a best buy	The second second					50	181
	Crimson 620C		Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1	•					2000
R	Crimson CS610/CS630	1,250	Good, clear sound, including a decent phono stage, but flexibility is limited. Slimline monoblocks with grunt and finesse	3	-	•			100	187
96	Croft Vitali/Series 5C	1625	Oddball retro style and ergonomics, but truly magical voice coherence and projection, great transparency	3	•				30	216
_	Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1					50	183
R	Cyrus aCA7.5/Smart Power	1,250	Great for classical, jazz, and existing Cyrus owners, recommended	7				•	60	212
	Cyrus aCA7/aPA7	2,694	Low feedback power amp design that's a positive departure from the transistor norm, preamp is functional but not as impressive	5			•	•	150	190
1	Cyrus aCA7.5/PSX-R/aPA7	2950	Very stylish 4-box modular system, slight forwardness delivers oodles of clarity and detail	7			•	•	150	216
	Densen Beat B-200	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	•	•				191
R	Densen B-300	800	Expensive but highly musical. Colourful and and warm sound with strong timing and listener involvement	1					100	183
R	Densen Beat 200/300	1, 850	Classy jet black cast boxes pack plenty of punch with good total musical coherence (remote L300 extra)	6	OPT		OPT		100	216
88	Electrocompaniet EC4.7/120DMB	3250	Bulky Norwegian combo has wonderful broad-band transparency, wide dynamic range and fine musical tension	6			•		120	216
EC	Gamut D200	2,995	Single MOSFET pair per side gives tremendous resolution and timing (balanced only). Formerly Sirius	1					200	183
EC	Levinson No380/No334	9,490	Preamplifier combines precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	6			•		125	195
_	LFD Mistral Linestage/Power	898	Strong ergonomics, generally decent sound, but a little lacking in detail	6					60	165
	Linn Kolektor/LK85	990	Beautifully tuned out machine, yet slightly bland, aimed at an all Linn system	9	•	•			62	212
	Michell Orca/Alecto mono	3,600	Line-level design with a gorgeous remote and focused, spacious sound	6			•		100	187
[R]	Moth 30 Series Monoblocks	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1					100	155
	Moth 30 Active LS/60 Stereo	948	Excellent-sounding ultra-simple miniature preamp, power amp lacks finesse and control, however	4					60	165
	Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5			•			166
R	Musical Fidelity X-P100	800	Good long-term listening prospects; detailed and a little fruitiness (tested with X-A200 power amp)	6	•		•			200
	Musical Fidelity NuVista 300	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfil the demands of the most dynamic material	1					350	19
	Myryad MA120	450	Based on MI120 integrated – see latter for comments, but sounds significantly better when bi-amped with MI120	1	1000				60	16
R	Myryad MP100/MA240	1,600	Smart finish and impeccable manners, smooth, clean performance	6			•	•	120	21
R	NAD 114	270	Beer-budget preamp which sounds focused, detailed and consistent	6	•	•		•	120	16
	NAD Silverline S100/S200	2,000	Beautifully built kit that sounds as good as it looks with heaps of power	7			•		200	20
R	early and a second contract of the second con		Clean, clever simplicity, plus a very well balanced sound that's much sweeter than earlier Nalms	6	-				50	21
EC	Naim NAC112/NAP150	1,375	Adding a FLATCAP 2 brings a very worthwhile sonic upgrade to the basic NAC112/NAP150 combo	6		-		-	50	21.
	Naim NAC112/NAP150/FLATCAP2			6					-	20
	Naim NAC102/NAP180	2,122	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety						60	~- 2000
EC	Naim NAP500	10,000	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading edge definition	1	-			-	140	20
_	Quad QC-twenty four/II-forty	4,000	A classic valve amplifier in circuitry and sound, but with modern ingredients and gorgeous retro styling	7		-			40	21.
R	Rega Hal/Exon	2,194	Passive line stage dedicated to Exon monoblock power amps, bold outgoing, in-command sound	6	•	-	•		125	16
BB	Roksan Caspian Power	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1		-		Top comb	70	18
	Rotel RC-971	150	Low price is offset by rather coarse sound quality with certain types of music. (Tested with RB-971 power amp)	5				•	TOTAL V	17
BB	Rothwell Indus/Rubicon	1448	Quirky valve combo with passive pre-amp has a lovely neutrality and consistency across a wide dynamic range	6				-	10	21
	Samuel Johnson pca100	1,800	Stylish wood and metal facia - precise, clean sound with an emphasis on leading edges	6		-	•	•		20
	TAG McLaren PA20R/125M	1,500	Clean, detailed sound but limited thrill power	6			•	•	145	18
	Talk Hurricane 2L/Tornado 2	1,249	Design of integrity which gets to the heart, if not the soul, of the music	6					65	16
	Technics SU-C3000	2,997	Price includes SE-A3000, Supremely clean and even sounding combo, though it could be more musically involving	5	•					18
	Technics SU-C1010	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	•		•			20
	Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1					100	18
	Thule Spirit PR150B/PA150B	1,600	The limitations in the sonic performance mean that the competition has more to offer	6				Mariamore	150	21
	Unison Research S8	2,950	Outrageous Italian styling and an equally melodramatic sound, with splendid voice projection and tension	5			VOL		24	216
	5301154m.411 30	_,,555	J. Agaington and aquatry management and appendix force projection and tension			- Control		. COLUMN TO SERVICE STATE OF THE PARTY OF TH		

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	ANALOGU	JE IN	TERCONNECTS (CONTINUED)	MMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	CABLE TYPE	UE NUMBER
TATUS	■ PRODUCT	£	COMMENTS								
	Cambridge Silver Spirit 60	100	Good bass but a lack of detail and differentiation of instruments	•		•		•			188
R	Chord Calypso	30	Informative, clear sound at a decent price	•		•		•			211
	Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces			•		•			176
	Chord Chameleon 2	90	Deep bass is fine but despite that the sound can be a bit hard and lacking body and resonance	•		•		•			188
R	Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	•		•		•			160
R	DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried	•			•	•			200
BB	Ecosse The Composer	29	A high degree of realism and delicacy, and a fantastic price		•	•		•			211
	Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)	•			•	•			176
	Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness			•		•			176
R	Insert Audio Image 5.1	85	Very good detail and imaging: perhaps a touch bass-light		•	•		•			200
BB	Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness	•		•		•			211
	Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though	•		•		•			176
	lxos 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price			•		•			200
BB	Kimber PBJ	68	Assured sound, solid and natural bass and clear treble — excellent performance all round			•		•			188
R	Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	•		•		•			176
R	Moth Ley Line Black	100	Offers a full sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	•				•	•		108
	Moth Ley Line Grey	200	Detailed, but there's a sense of distance between music and listener: vocals are coarse rather than liquid	•		•		•	•		108
	Nordost Black Knight	60	Flat black cable that is distinctive but slightly coloured — but not in a wholly negative manner	•		•		•			160
R	Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music	•			•	•			188
R	Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	•			•	•			176
	Precious Metals SS35	50	Extended bass, but dry character suits electronic music better than acoustic			•		•			188
	Profigold PGA301 MkII	40	Mellow and well rounded, but can seem a little heavy					•			211
R	Prowire VHQ	10	This crisp cable lacks a little refinement, but it's great for the price		•	•		•			211
R	Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness			•			•		176
R	QED Qunex 1	20	Well balanced, and easily rivals more expensive cables			•		•			211
BB	QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value			•		•			176
R	QED Qnect 4S	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid	•				•			188
R	QED Qnex Silver Spiral	90	A great cable for lovers of big sounds	•		•		•			200
	Reference CS1	75	A moderate performer, with a little coloration and a tendency to lose bass at climaxes	•		•		•			188
	Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight		•	•		•			160
BB	SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. We're unsure about the flesh-coloured finish, though	•		•			•		160
R	SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	•		•		•			176
	SonicLink Lilac	65	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	•		•		•			188
	SonicLink Violet	85	Better bass than treble – a little dry in the upper octaves	•						7	200
R	Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss			•		•		11	76
R	Straight Wire Sonata	80	Tonal balance favours lower frequencies but despite this it's a very listenable cable		•	•	100	•			188
	Straight Wire Encore II	100	Slightly variable bass performance is a weakness in this otherwise capable cable	•				•			200
BB	Supra EFF-ISL	80	Excellent sound in all areas — nothing to criticise	•		•		•			88
R	Tara Labs Prism 22	64	Mild tendency to plumminess offsets some hardness in complex music with mixed results		•		•	•		COLUMN	188
	Tara Labs Prism 55-i	195	Good with laid-back music, but seems lazy with more exciting material	•			•	•		TOTAL STREET	200
88	TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	•				•		SECRETARIO	200
BB	van den Hul PB5	50	A highly neutral cable with fine dynamic and rhythmic performance too – excellent		•	•		•		Manager	188
	77-7,00	cr.					SCHOOL SECTION	-			

### **DIGITAL INTERCONNECTS** (PRICES PER TERMINATED METRE PAIR)

Price for 0.8m. Hybrid carbon-fibre/copper cable that is a paragon of naturalness

A fine cable, but the competition has crept up and it no longer leads the pack

van den Hul Source HB

van den Hul D102 MkIII HB

SIAIUS	PRODUCT	£	COMMENTS					
R	Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound	•	•	•	E	207
	Chord Optilink	40	Beautifully made, but performance is practically indistinguishable from other, cheaper, Toslink leads				0	207
R	Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz	•	•	•	E	131
	lxos 1051-100	39.95	Plenty of bass, and detail seems good, but there's a loss of involvement	•	•	•	E	207



DIGITAL INTERCONNECTS	(PRICES PER TERM	IINATED METRE PAIR)

	DIGITAL II	NTERO	CONNECTS (PRICES PER TERMINATED METRE PAIR)	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS			ىــــا					
	Moth Leyline Datalink	120	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive		•	•	•	•		E	108
BB	QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced		•		•	•		E	207
R	Ross OP004	19.99	Sounds much like most other Toslink leads: slightly lacking detail, but good value							0	207
	SonicLink Digital Optical	30	Possibly slightly more detailed than other opticals, but still no match for a decent electrical digital link							0	207
R	SonicLink Green	60	Spacious, positive and engaging if a bit over-crisp at times — very compelling, however		•		•	•	•	E	131
	Straight Wire Info-Link	300	A good cable, but bass seems a little light and detail suffers a little at climaxes		•		•		•	E	207
Я	van den Hul Optocoupler	49.95	Noticeably has the edge over other optical leads, but still second best to electrical types							0	207
BB	van den Hul The First	140	Exceptionally natural albeit slightly cautious compared to some. Plenty of subtle information and integration		•	•				E	131

### LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)

١	PRODUCT	£	COMMENTS					100000		
	ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative			•			•	
	Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical			•		•		
] [	Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel, which was happy to accept its foibles				•		•	
	Audio Note AN-SP	150	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity				•		•	
	Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable				•	•		
	Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings			•		•		
il	Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music			•		•		
1	Cable Talk Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained			•		•	100000	
Ĭ	Cable Talk Flat 2	5	Rather unexciting sound, with variable bass and dry voices			•		•		
1	Cable Talk Concert 2.1	8	Can make stereo images recede, and favours the upper bass	7		•	MINION SERVICE	•	-	
Ť	DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension				•	•		
1		17		-						
Į.	Chord Company Odyssey	10	Relatively vice-free cable with good detail throughout the range and generally neutral bass	100 CO			-		-	
, ,	Chord Company Rumour 2		Performance is listenable enough but fails to excel in any area	 -						
-	DNM LSCB500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire				•	•		
. 1	Ecosse Reference CS-2.15	12	Stereo and rhythm are good, but persistent dryness detracts significantly	Marin Servi			•	•		
	Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere - one of the best cables available all round				•	•		
Į	Gale XL189	1	Slightly bright and not too subtle, but a perfectly acceptable cable for any starter system			•		•	10000	
	Gale XL315	2	A little lacking in detail but plenty of life and excellent value			•		•		
	Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative			•		•	IEEE.	
Í	Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility				•	•		
i	Hitachi LC-OFC	7	Very crisp, very clear and very confident. In the right system would be very expensive to better	Manager (1900)		•		•		
i	lxos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price, strong and consistent	March - No.		•		•		
	lxos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant – though only slightly					•		
	Kimber 4PR	4.90		 SERVICE COLUMN	•		•	-		
		Record Control Control Control	Considering the price, this cable's very slight dryness is forgivable when everything else is so right		-					
-	Kimber 4VS	8.50	A good mix of virtues including particularly fine bass	STREET, STREET,	-	•		-		
	Kimber 4TC	18.80	A well-balanced cable with good performance in all areas	600 ALC	-	•		•		
ı	Kimber 8TC	348	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair		CONTROL SECTION	•		•		
The state of	Linn K20	4	Seems to work best with lively, unsubtle music – can be dry and edgy			•		•		
	Monster Cable Z1	12.50	Slightly bass-rich balance, and could do with a bit more detail			•		•		
1	Naim NAC A5	5.5	A 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems, where it works a treat			•		•	No.	
	Nordost Octava	3	Fair bass but confused treble and some coloration				•	•		
-	Nordost Flatline Gold II	9.50	Exciting sound but a bit too 'in-yer-face', and bass is not always even	-			•	•		
100	Ortofon SPK100	3	Grey-sounding — strips instruments of their natural richness and resonance. A bit bass-shy, too			•	MICH SHOP	•		
-	Ortofon SPK200	4.99			-		1		-	
	and the same of th		Good strong bass and fair detail, only slightly marred by a little dryness		-			ALCOHOL: N		
Į	Ortofon SPK300	8	Tremendously open and atmospheric, with robust, full-blooded bass — if slightly bright at times		-		•	•		
į	Precious Metals SL102	10	Unusual construction gives rather strained sound, only really cheering up with simple musical textures	-		•		•		april 1
-	Profigold Silverflex LC8258	4	A pretty-looking cable that does little to offend but is let down by some congestion			•		•		
	Prowire Out of Sight	1.99	Special-purpose cable for laying under carpets etc. Fair sound across the board			301	•	•		
J	Puresonic 7845	1.95	Big, weighty sound — but too messy and bloated for its own good			•		•		
J	Puresonic 7891	2.85	Chunky cable design; shame about the sound quality			•		•		
1	QED Qudos	2.25	Despite high-tech design and excellent Air-Loc plugs, its music-making failed to gel			•		•	1000	
1	QED Qudos Silver	5	A few minor flaws but overall performance is very assured for this price			•		•		
1	QED Profile 4x4	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding				-	Maria Maria		
	QED Profile Silver 12	15	Very slightly laid-back, but good tone and detail - wears its achievements lightly			•		•		
1		ACCUPATION OF THE PARTY OF THE		 	recin 650	66600	-			-
	QED Genesis Silver Spiral	30	Commendable bass, with a little dryness and mildly compromised imaging: good, but not the best at its price	986	norce and	•	-	•		
ļ	SonicLink S300	18	Happiest with simple music; tends to smudge detail in complex pieces		THOUSAND STREET	•	-	•		
1	SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced			•		•		
	SonicLink AST75	2.95	Unusual materials and rather unusual performance too, strong on excitement and with plenty of bass			•		•		
П	SonicLink AST150	3.95	Slightly plummy bass and a useful way of holding musical strands together			•		•		
ĵ	SonicLink AST200x2	5.95	At its best with exciting music, this cable seems shy of subtler details			•		•		
1	SonicLink Rebel	7.50	Plenty of bass, but without sacrificing upper frequency clarity or dynamics			•		•		
1	Straight Wire Duo	3	Not so subtle and lacking some detail, but sound is consistent with level and musical style			•	-	•		
-	Straight Wire Rhythm	6	Its major flaw seems to be woolly and indistinct bass, which pervades most types of music			•		•		
	Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience		-					
1	Supra Classic 6.0	4.95		B655			-			
100			It's all there, but a persistent lack of detail seriously mars the view	 						
	Supra Ply 3.4	6.95	Clean sound which stays together well at high levels, with full bass – perhaps a touch of treble restriction	 000				•		
	Supra Ply 3.4/S	7.95	Good in all areas with rich bass and just a touch of treble roughness	manus ever		•	-	•		
	Tara Labs Klara	2.95	A good budget cable with an even spread of virtues – and very minor vices – across the board			•		•		
	Tara Labs Prism Nexa	9.95	Slight tonal softness affects both bass and treble, but the overall sound is very listenable			•		•	1000	
1	Tara Labs RSC Prime 500	36	More suited to melodious music than anything with bite and drive, with only moderate detail				•	•		
1	TCI Python	7.99	No single major sin, but detail is not outstanding and rhythm isn't always completely solid			•		•		
1	Townshend Isolda	50	Superb sound all round, and amplifier compatibility enhanced by included stabilising inductor	0000-000			•	•		
1	van den Hul The Snowline	5.49	A hint of high-end civilisation with a few rough edges and a slightly warm balance	10000		•	,			
1	van den Hul The Clearwater	7.99	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable		-				•	
ł		A PRODUCTION OF THE PARTY OF		-			-	-	-	
J	van den Hul Royal Jade	10.99	Lots of technology, but sound suffers from dryness and woolly bass	MRR -100		•	-	•		
- 1	XLO Pro 600	16.50	Decent bass and good treble, but sounds confused with densely-scored music	MRR -100				•		

**SPECIFICATIONS** 

	MAINS CA	BLES	AND CONDITIONERS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS								
	Clearaudio Accurate Power Gen	1,090	Compact and beautifully finished unit that offers positive sonic benefits that justify the price								206
R	Lynwood Electronic Mega Power	295	Reasonable price model that improves focus while producing a sweet, tight and clean bass								206
R	PS Audio Power Plant	1,200	Power Plant improves the cleanness and separation of individual voices and instruments, giving an impressive 3-D quality								206
	GTA PHY-HP board	299	Oozing style and quality, the board generates an extremely natural and truthful sound								206
BB	Russ Andrews Kimber/Power Block	350	Improved version that elevates music to a cleaner and more three-dimensional experience with greater stereo imagery								206
	Russ Andrews The Purifier	250	More ambitious version of the Silencer that gives a cleaner, quieter background, allowing more low level detail								206
BB	Russ Andrews Silencer	40	A cost effect solution to noise-free mains supply that reduces 'hash' without losing brilliance and immediacy								206
	SonicLink S-Gold mains	225	Delivers a clean incisive sound with excellent detail, clarity and with no increase in noise								206
R	Trichord Research Powerblock500	300	Isolation transformer that bolsters clarity, openness and gives an increased refinement making for a purer and natural sound								206

	LAS	5	EIIE DECKS	DOLBY	DOLBY	DOLBY HX PRO	3-HEAD	AUTO REVERSE	AUTO CALIBRATION	ISSUE NUMBER  ADJUSTABLE BIAS
STATUS	■ PRODUCT	• f	■ COMMENTS	0					1 <sup>2</sup> 1	<b>ν</b> [ Β
31/11/03	Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design	•		•	•			140
	Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	•		•	•			• 164
BB	JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	•		•		•		• 158
BB	JVC TD-V662BK	270	Assured, clean and agile-sounding recorder, if not quite the most refined in its class	•		•			•	• 146
	JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable performance	•		•	•	•	•	171
R	Kenwood KX-W6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass	•		•	•	•		• 171
	Marantz SD455	170	Works well as a single deck, especially on replay, but dubbing at high/low speed compromises sound	•		•	•	•		184
	NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	•		•				• 158
	NAD 616	300	Twin deck with basic features. No Dolby setting memory, transport is too unstable for audiophile use			•	•	•		171
	Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD	•		•	•		550	• 195
R	Onkyo K-611	460	Cute drawer-loading mini-size component with 3 heads and dual capstan transport	•		•			•	• 146
R	Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	•	•	•	•		•	164
	Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended	•		•	•	•	•	171
	Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound	•		•	•			184
BB	Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head	•		•	•		•	164
BB	Technics RS-AZ7	270	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in state-of-the-art	•		•			•	• 158
R	Yamaha KX-580SE	250	Subtle, engaging and transparent deck, with a lightweight tonality, but stability and strong detail	•	•	•			•	• 171

			AN / E B G		S	PE	CIF	ICA	TION	
			LAYERS	ELEC DIG OUTPUT	AES/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	HEADPHONE SOCKET	MULTI-DISC VARIABLE OUTPUT	ISSUE NUMBER SACD COMPATIBILITY
	ONE-BOX	CD P	PLAYERS	TPUI		₫.	TUO.	CKE	-DISC	MBER SILITY
ATUS	■ PRODUCT	• £	■ COMMENTS							
BB	Acurus ACD11	899	First-rate if costly player, which combines a delightful transparency with an uncontrived naturalness	•						166
	Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass	•						165
	Advantage CD1S	3,995	A CD player of some stature – what it lacks in dynamics it makes up for in subtlety and flow	•	•	•		•	•	193
	Alchemist Kraken	1,249	Distinctive looking player likely to suit a Alchemist system, but will result in variable results elsewhere		•					190
R	Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation	•						169
	AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable			•			•	172
ВВ	AMC CD9/DAC8	200	Beer-budget two-box system (player plus DAC) is smooth, attractive and easy on the ear	•						179
	Anthem CD1	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy	•	•				•	178
ВВ	Arcam Alpha 7SE	300	Sharper, clearer Alpha 7 SE, and more affordable than before	•		•				207
	Arcam CD72	400	Easy going, slightly soft-centred reworking of Alpha 7 in new, svelte DiVA clothing	•		•				212
R	Arcam Alpha MCD	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer	•						178
88	Arcam Alpha 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder	•		•				176
R	Arcam Alpha 9	800	Refined, articulate player which employs new DAC technology to great effect	•						188
R	Arcam CD92	850	High resolution player needs a touch of spit and polish to be completely convincing	•		•				212
R	Arcam FMJ CD23	1,100	World class presentation allied with innovative technology to deliver an engaging standard of music making	•		•	•	•		206
	Audio Analogue Paganini	750	Basically good, but sometimes heavy-handed player	•	100					191
	Audio Note AN-CD1	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured	•			N/			188
	Audio Note AN-CD2	999	High output impedance makes performance unduly system fussy	•						195
	AVI S2000MC2	899	A chip off the old block. This model's in-yer-face balance obstructs an otherwise finely detailed sound	•						176
R	AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system	•						169
	Balanced Audio Tech VK-D5	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety	•				•	•	194
	Cambridge Audio D100	120	Hard, clangy and coloured sounding, and with suspect control logic			•				200
BB	Cambridge Audio D500	200	Clean and highly articulate player wears well in extended use	•		•				202
R	Cambridge Audio D500 SE	230	A really lively sounding player with good detail but just a hint of dryness	•		•				217
R	Copland CDA 266	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution	•						176
	Copland CDA 289	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000	•						194
R	Cymbol CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings	•					•	176
R	Cyrus dAD1.5	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality	•						191

	ONE-BOX (	CD P	LAYERS (CONTINUED)	ELEC DIG OUTPUT	AES/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBLITY	
Ī	PRODUCT	£	COMMENTS				_		•				•
- 10	Cyrus CD7	800	New Cyrus player has strong all-round attributes to match its good looks	•									
1	Cyrus dAD3 Q24	900	Bold, lean and lively player demands sympathetic system matching			•							
	Denon DCD-435	130	Good low cost player, and a step up from the DCD-425, its predecessor			•			•				MON
Ö	Denon DCD-655	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems			•			•	•			
Ē	Denon DCD-835	230	Refined sound with terrific bass extension. Some slight coloration	•		•			•	•			
1	Denon DCD-1550AR	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player	•		•				•			
-	Densen B-400	1,280	Bold, purposeful sound, but lacks subtlety, and has some ergonomic flaws	•									
-	EZO Fog Stage 3	1,170	Curious player is difficult to drive, and has sound quality that both enchants and sometimes confounds	•									
-	JVC XV-D723GD	500	Convincing DVD-Audio player that is ultimately let down by poor CD performance	•		•	•						
-	Kenwood DVF-3030	180	Solid CD player with straightforward features			•			•	•			
-	Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music — and has CD Text too										
***	Kenwood DP-5090	300	Disappointing senior brother to the excellent DP-4090, but surface interface is good										
-	Kenwood DVF-R9030	800	Kenwood's first DVD-A player suffers from a mild compression of dynamics resulting in a polite yet matter of fact sound	•		•	•				•		
-	Linn Genki	995								•			
-	Marantz CD5000	150	Explicit, rather bright sounding player with strong multi-room appeal  Well equipped budget player sounds thin and rough at times								100000		
-			111 211	•		•			•				
***	Marantz CC3000	150	Ragged sounding multidisc player, but it is cheap and well equipped	•							•		
	Marantz CD6000	250	Great package with all mod cons, and eminently listenable too	•		•							
-	Marantz CD6000 OSE LE	300	Detailed, well rounded, at home in any musical context – a real bargain	•		•			•				No.
-	Marantz CD6000 KI Signature	500	Excellent all rounder, a well appointed good value package	•		•			•				
-	Marantz CD-17 MkII	800	Sophisticated player with a short but attractive feature set, and a new found bounce in its step	•		•	•	•	•			-	
4	Marantz CD-17KI Sig	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland	•						•			
-	Marantz CD-7	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure	•		•		•		•			
-	Marantz SA-1	5,000	The brand's first SACD player is a stunning machine that's equally as strong with conventional CD	•		•		•				•	
-	Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics – but it's not cheap	•									
	Meridian 506	1,100	Revised 506 includes MSR remote and a new D/A chip, which makes it livelier and more detailed	•									
	Monrio Asty	695	Well built player has solid, propulsive sound quality that deteriorates towards HF	•									
	Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	•									
	Musical Fidelity X-RAY	799	Brilliantly packaged and clean but slightly antiseptic sounding player	•									
	Musical Fidelity A3 CD	800	Excellent player has few faults apart from a slight loss of EHF detail	•		•							
	Myryad T-10	400	Rather ordinary player fails to shine with good music recordings	•									
**	Myryad T-20	600	Matter of fact styling and sound quality, a tad bright for some systems	•									
-	Myryad MCD500	1,300	Well-built, attractive player, showing much promise, but can be a little heavy-going on audition	•									September 1
	NAD C520	170	Significantly improved entry level NAD is smooth and dynamic, if slightly dull										
2	NAD C521	200	Good timing and excitement, but not good at holding the listener's attention									SOURCE STATE	Solato
	NAD 523	250	Lacklustre musical presentation was disappointing on test; so was the absence of a digital output	2000		100					•		
-	NAD C540	330	Not cheap, and disc handling is pedestrian at best, but the C540 is smooth & elegant with just a hint of aggression	•					1000			53153	
4				CONTRACTOR OF THE PARTY OF THE								35533 8000	
-	NAD Silverline S500	1,100	It sounds as good as it looks, which is notably refined and easy on the ear	•	•	•		•					
	Naim Audio CD5	1,120	Recommended subject to audition, a dynamic machine, yet some physical minuses										
-	Nakamichi MB-10	400	Jewel of a multi-disc player, with crisp sound and superb fuss-free compact packaging	•		•			•		•		Service Control
	Naim NACDSII/XPS	5,625	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results										
-	Onkyo DX-7222	150	Competitive following recent price cut, and on the whole a strong performer musically			•	200		•				
	Onkyo DX-7511	300	Earthbound mid-price CD player fails to excite	•		•			•	•			
ź	Parasound C/DP-1000	499	Comes on like a high end player, but ultimately sounds a bit weak and soft-centred	•									
44	Philips CD751	150	Inconsistent and occasionally opaque and scrawny sounding cheapie	•					•				
N.C.S.	Philips SACD-1000	1,300	The first multichannel SACD on the market makes a good case for the format but doesn't match the 2-channel Sonys with CD	•		•						•	
Ě	Pioneer PD-S507	200	Low cost Legato Link implementation sounds gentle but slightly muddled			•			•				
	Primare D20	799	Well presented player doesn't quite cut the mustard, though it performs promisingly	•									
Ī	Revox Exception E426	2,250	Very stylish with a light, agile sound that extends superbly and has fine timing	•				•			1000		
Ī	Roksan Kandy	475	Slightly old-fashioned sound quality player available in various colour schemes	•				0					
ı	Roksan Caspian	895	Improved Caspian (retested for 2001) is still bold, dynamic player, but rather more subtle and expressive	•								100	
÷	Rotel RCD-951	300	Disappointing chopped-down RCD-971 – buy the original	•									
	Rotel RCD-971	450	Odd disc handling logic, but bold, detailed and refined sound make this a must	•								MIS	
-	Rotel RCD-991	825	Strong midrange player with switchable dither levels to provide some system tweaking ability	•	•						1000		
	Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	•		•							
÷	Sharp DX-SX1	2,700	Stylish player with a slightly forward but extremely nimble sound. Connects to matching digital amp via dedicated umbilical	•					•		•		
	Sony CDP-XE330	100	Unrefined, but lively, detailed and highly affordable			•							
	Sony CDP-XE530	140	Well equipped, but raw, scrappy sounding player lacks depth and weight						•				
÷	Sony CDP-XE930E	300	Yet another first rate UK optimised player with all the bells and whistles	•		•			1000 1000				
÷	Sony SCD-XB940	550	First mainstream SACD player that easily outstrips comparable CD players at this price										Total Park
				100000					•				
	Sony SCD-555ES	1,200	Fabulously built with superb sound using both CD and Super Audio software, you'll be hard pressed to find a better CD player at the price	•							10000		
÷	Sony SCD-777ES	1,700	Beautifully built SACD player that looks like a bit of a CD player bargain	•		•							
	Sony SCD-1	2,500	The first SACD player sounds fabulous but there's not much competition and limited software as yet	•		•	2000						
÷	T+A CD1210R	1,185	Intriguing player with rather pushy basic sound, but has switchable digital filters	•		•						3	
	Talk Electronics Thunder 1	550	Entry level upgradeable Talk Electronics player sounds slightly muted										
Ä	Talk Electronics Thunder 2	699	Fine player, slightly lacking in dynamics, but readily, if expensively upgradable in various ways		100								
ä	Talk Electronics Thunder 3	1,000	Clean, fast, and availability of a complete upgrade path make this a good long term proposition										
44	TAG McLaren CD20R	1,249	Dry and unatmospheric, but plenty of presence – recommended with caution	•									
	Teac VRDS-9	700	Well-presented. This Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	•		•				•			
	Teac VRDS-25x	1,000	Excellent, individualistic player with bold, colourful sound, but test sample had iffy CD-R compatibility	•						•			
*	Technics SL-PG390	90	It's very cheap. Very, very cheap									PASS IN	
ú	Technics SL-PS7	200	Strong, but ultimately rather opaque and hard-sounding, high tech CD player		•				•				
ë	Technics SL-MC7	300	Maximum storage capacity for a minimum price, and presentable sound too (multidisc)								•		
÷	Thule Spirit CD100	600	Definitely a try before you buy machine, but the bass and mid are excellent	•								3000	
	Trichord Genesis	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority	•					•		10000		
ë											1000	20000 20000	
	Trichord Revelation	799	Well-ordered and clean sound that may be a little too refined for some, images well						•				
	Tube Technology Fusion MkII	1,350	Improvements over the original model but still remains too inconsistent for its own good	•			•				200		
	Tube Technology Fulcrum	2,800	An imaginative two-box player with a smooth sound that lacks some lustre			100	THE RESERVE			- application	N. S.	225000	

	ONE-BOX	CD F	PLAYERS (CONTINUED)	ELEC DIG OUTPUT	AES/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBLITY	ISSUE NUMBER
				1	131	Ξ.	≒ .	≒ <u>"</u>	1 1 4	ľ	<b>.</b> ₹.	2
IAIUS	PRODUCT Yamaha CDX-496	180	COMMENTS  A rather splashy and approximate sound, further hampered by mechanical noise				-	٠.		•		21
	Yamaha CD-X993	400	A bit of a lush, though the sound is singularly free of grain, and equipment levels are strong	•		•						184
	YBA Spécial	695	There is nothing here to justify the pricing or the high-end parentage. Avoid									19
	CD TRANS	DOP.	TC									
		I OK										
-	PRODUCT	£	■ COMMENTS	STATE OF			-	_	-	-	_	_
R	Audio Note CDT Zero	550	Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with DAC1)	•	•							21.
	Linn Karik Roksan Attessa ATT-DP3	1,850 1,295	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing  Not the most detailed or refined but capable of sounding exciting with the right material			•						163
	Theta Carmen	3,299	A well equipped and extremely upgradable CD/DVD transport. Right now, the finest of its type									203
	Theta Data Basic II	2,397	Uses a Phillips CDM9 Pro mechanism and works a treat with more lively DACs	•								130
	Thorens TCD2000	999	Lively presentation not helped by rather loose bass and splashy treble. (Tested with TDA 2000 DAC)	•		•						163
R	Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	•		•						163
	DACs		<b>的</b> 是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个									
ATUS	PRODUCT	£	COMMENTS		ш		_		_			_
	Alchemist TS-D-1	300	24/96-equipped DAC sounds tidy but a little shut-in with both 16-bit CDs and 24-bit/96kHz DVDs									183
	Audio Note DAC Zero Audio Note DAC Zero1x	369 750	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)  Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with CDT Zero)									19
8	Audio Note DAC 2	18,500	Astonishingly natural and realistic in the right system, the only problem being the extravagant price									203
EC	dCS Delius	5,000	State-of-the-art resolution with considerably greater flexibility than anything else, hard to beat	•	•						•	201
	dCS Purcell	3,500	The first upsampler on the market adds significant depth and increased bass resolve with a suitable DAC	•	•		•				•	207
			PLAYERS	DIG OUTPU	TEC DIG OU	DIG OUTPU	PT DIG OU	OGUE OU	LE OUTPU	MULTI-DIS	MPATIBILIT	NUMBE
	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AES/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	VARIABLE OUTPUT	MULTI-DISC	DVD-A COMPATIBILITY	
ATUS R	PRODUCT Alba DVD103 Arcam DiVA DV88			DIG OUTPUT	LEC DIG OUT	DIG OUTPUT	PT DIG OUT	OGUE OUT	LE OUTPUT	MULTI-DISC		207 213
	Alba DVD103	<u>€</u>	COMMENTS  Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive	DIG OUTPUT	ELEC DIG OUT	DIG OUTPUT • • •	PT DIG OUT	OGUE OUT	LE OUTPUT	MULTI-DISC		207
	Alba DVD103 Arcam DiVA DV88	£ 150 899	GOMMENTS  Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive  A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player	DIG OUTPUT	LEC DIG OUT	DIG OUTPUT • • • •	PT DIG OUT	NE SOCKET • •		MULTI-DISC		207
R R BB R	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300	£ 150 899 300 400 999	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too.	DIG OUTPUT	LEC DIG OUT	DIG OUTPUT • • • •	PT DIG OUT	•			•	207 213 216 207 213
R BB	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700	£ 150 899 300 400 999 1,000	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with norbsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit.  Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound	•	ELEC DIG OUT	DIG OUTPUT	PT DIG OUT	•		MULTI-DISC •	•	207 213 216 207 213 204
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000	150 899 300 400 999 1,000	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device	•	LEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187
R BB	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700	£ 150 899 300 400 999 1,000 1,600 200	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring	•	LEC DIG OUT	DIG OUTPUT	PT DIG OUT	•			•	207 213 216 207 213 204 187 207
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450	150 899 300 400 999 1,000	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device	•	LEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 207
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701	£ 150 899 300 400 999 1,000 1,600 200 300 380 500	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality		LEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198
R R BB R R	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-523	150 899 300 400 999 1,000 200 300 380 500 280	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically — CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-515GD	£ 150 899 300 400 999 1,000 200 380 500 280 300	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-bosolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically — CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-515GD JVC XV-D723	\$\begin{array}{cccccccccccccccccccccccccccccccccccc	GOMMENTS  Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 209
R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-515GD	£ 150 899 300 400 999 1,000 200 380 500 280 300	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-bosolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically — CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202
R R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVM-3700 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-513 JVC XV-515GD JVC XV-D723 Kenwood DVF-R9030	150 899 300 400 999 1,000 1,600 200 300 380 500 899	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 202 213
R R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVM-3700 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-523 JVC XV-515GD JVC XV-0723 Kenwood DVF-89030 Kenwood DVF-89010	£ 150 899 300 400 999 1,000 1,600 200 380 500 280 300 500 899 1,000	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically — CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator DVD player with brilliant picture and clean, lively sound		ELEC DIG OUT	DIG OUTPUT	PT DIG OUT				•	207 213 216 207 213 204 187 207 216 207 216 207 217 207 207 218 207 207 219 207 207 219 207 219 207 219 207 207 207 207 207 207 207 207 207 207
R R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-523 JVC XV-515GD JVC XV-D723 Kenwood DVF-R9030 Kenwood DVF-R9030 NAD T-550 Nakamichi DVD-105 Panasonic DVD-RV40	\$\begin{array}{c} \textbf{£} \\ 150 \\ 899 \\ 300 \\ 400 \\ 999 \\ 1,000 \\ 200 \\ 300 \\ 500 \\ 899 \\ 1,000 \\ 500 \\ 600 \\ 350 \end{array}\$	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator DVD player with brilliant picture and clean, lively sound Soft-centred but likeable player in the classic NAD mould Well engineered, but lacklustre specifications, moderate performance – and overpriced. Modestly equipped, gives good pictures, but is musically unengaging		ELEC DIG OUT		PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 203 213 190 202
R R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVD-3300 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-D701 JVC XV-515GD JVC XV-D723 Kenwood DVF-R9030 Kenwood DVF-R9010 Nabamichi DVD-105 Panasonic DVD-RV40 Panasonic DVD-R400	£ 150 899 300 400 999 1,000 1,600 200 300 500 899 1,000 500 600 350 580	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator DVD player with brilliant picture and clean, lively sound Soft-centred but likeable player in the classic NAD mould Well engineered, but lacklustre specifications, moderate performance – and overpriced. Modestly equipped, gives good pictures, but is musically unengaging Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best		ELEC DIG OUT		PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 213 190 202 216 207 198
R R BB R R R K K R	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVD-3300 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-523 JVC XV-523 JVC XV-515GD JVC XV-523 Kenwood DVF-89030 Kenwood DVF-9010 NAD T-550 Nakamichi DVD-10s Panasonic DVD-RV40 Panasonic DVD-R440 Panasonic DVD-A7EB	£ 150 899 300 400 999 1,000 1,600 200 380 500 899 1,000 500 600 350 580 699	GOOM value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator DVD player with brilliant picture and clean, lively sound Soft-centred but likeable player in the classic NAD mould Well engineered, but lacklustre specifications, moderate performance – and overpriced. Modestly equipped, gives good pictures, but is musically unengaging Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best Chopped down Technics DVD-A10 retains most of the flagship's headline features with well balanced, but less refined and less articulate sound		ELEC DIG OUT		PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 202 213 190 202 213 207 198 213
R R BB R R R EC	Alba DVD103 Arcam DiVA DV88 Denon DVD-1000 Denon DVD-1500 Denon DVD-3300 Denon DVM-3700 Denon DVD-5000 Encore DV-450 Hitachi DVP-505 Hitachi DVP-705 JVC XV-D701 JVC XV-523 JVC XV-515GD JVC XV-5723 Kenwood DVF-89030 Kenwood DVF-9910 NAD T-550 Nakamichi DVD-10s Panasonic DVD-RV40 Panasonic DVD-RV40 Panasonic DVD-A7EB Philips DVD957	\$\frac{\mathbf{f}}{\text{150}}\$ \$899 \$300 \$400 \$999 \$1,000 \$1,600 \$200 \$300 \$380 \$500 \$899 \$1,000 \$500 \$600 \$350 \$580 \$699 \$400	GOOM value for money but not much of a CD player, crude and serviceable but remarkably inexpensive A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player Fine, stripped down player concentrates on the essentials, and scores a direct hit. Colourful and engaging (if lightweight) sound, with excellent picture quality Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too. One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound The first DVD-V player that ain't bad as a CD player. A fine musical device Superb value for money, though mainly of interest to the videophile on a shoestring DVD player has rather dark, unexpansive sound, but good picture quality Mild mannered player works best with Radio 2 music, and gives clean, well endowed picture quality to match, along with sharp pricing. Good video player, but rather undeveloped musically – CD Text is neat, though Looking impressive on screen, but lacks resolution and consistency when pushed hard Musically soft as a baby's bottom, and as surprising as yesterday's news The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator DVD player with brilliant picture and clean, lively sound Soft-centred but likeable player in the classic NAD mould Well engineered, but lacklustre specifications, moderate performance – and overpriced. Modestly equipped, gives good pictures, but is musically unengaging Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best Chopped down Technics DVD-A10 retains most of the flagship's headline features with well balanced, but less refined and less articulate sound Slightly ill-disciplined, but bold, enthusiastic player which engages even if it doesn't always convince.		ELEC DIG OUT		PT DIG OUT				•	207 213 216 207 213 204 187 207 216 198 207 202 203 213 190 202 213 216 207 198 217 218 218 218 218 218 218 218 218 218 218
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	DVD PLA	YERS	(CONTINUED)	UTPUT	UTPUT	OCKET BE OUT	JMBER IBILITY I-DISC
STATUS	■ PRODUCT	∎ £	COMMENTS				
	Technics DVD-A10	899	Well built, early generation DVD-A player with full in-board DVD-Video decoding and a more than workmanlike sound.	•	•	•	• 213
	Theta DaViD	4,650	A top-notch CD transport, that also plays DVD-Video discs well. Pricey for a DVD transport, but worth it	•			191
	Toshiba SD-100E	250	Mainstream player offers so-so features, performance and pricing	•	•		207
	Toshiba SD-3109	380	Defocused and soft-edged, this is more attractive for its picture than its sound quality.	•	•		202
	Toshiba SD500E	599	OK DVD-Video player, but lacklustre with music, especially when reproducing high resolution DVD-Audio material.	•	•		<ul><li>213</li></ul>
	Toshiba SD9000	800	Costly, high tech player with stunning pictures and crisp, slightly lightweight sound	•	•	•	198
BB	Toshiba SD900E	1,299	Top class DVD-Audio player and also a superb DVD-Video player; in this context pricing is competitive.	•	•		• 213
	T+A DVD-1210R	1,699	Ergonomically a mess, but detailed, dynamic and emphatic, though there is no guarantee of a DVD-Audio upgrade path	•	•		213

### DIGITAL RECORDERS ISSUE NUMBER **MINIDISCS** ■ COMMENTS STATUS PRODUCT An hidden keyboard is a great idea, but musically it sounds rather cool and strident MD 205 JVC XM-448 220 MD Kenwood DMF-5020 it may be high-tech but nothing conceals the caricatured sound 205 R Kenwood DMF-9020 One of the best MD decks yet for sound quality, and the first to make titling a practical proposition MD 191 Marantz CM635 CD player and MD recorder in one box: a practical idea but sound and features don't really match the asking price MD 191 Midi-sized deck that sounds slightly coloured at times, though immediate and lively MD 177 Onkyo MD-121 MD Pioneer MJ-D508 200 Well equipped but musically sleep inducing player that deserves its recommendation due to price 205 Pioneer MJ-D707 A handy set of features for the price, though sound is not outstanding MD 191 Nifty machine combining a 3-disc CD changer with a MD recorder. Sound on both is rather below par, though MD 184 Sharp MDR3H R Sony MDS-JA555ES Powerful demonstration of Sony's proficiency, it delivers the best MD can offer

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STATUS	■ PRODUCT	£	■ COMMENTS			
	JVC XL-R5000	450	Flexible, rattly build, and attractive sound, but it's a little expensive compared to other rivals	CD-R(W)	•	205
	LG ADR-620	350	A powerfully equipped machine with useful multi-room capabilities, but sound quality is rough and ready	CD-R(W)	•	205
	Marantz DR700	600	Dearer than Philips and Traxdata equivalents, with apparently only a smarter front panel to show for it	CD-R	•	• 191
R	Marantz DR-17	1,500	Highly recommended, but with a jitter problem that, resolved, would improve sound quality	CD-R(W)	•	205
88	Philips CDR951	380	An improvement on previous models, it delivers the musical goods in some style	CD-R(W)	•	205
R	Pioneer PDR-509	300	Straightforward design and excellent recording properties that are slightly dulled by the replay chain	CD-R(W)	•	205
R	Pioneer PDR-W739	400	Flexible multi-disc that has everything including respectable sound and pricing	CD-R(W)	•	205
	TEAC RW-800	350	Capable recording tool, but a little rough and ready as a player	CD-R(W)	•	205
	Travdata Travaudio 900	399	Identical to Philips and Marantz models: it makes hit-perfect copies of CDs and has perfectly acceptable replay	CD-R		191

			THURLS ( )	ELECTROSTATIC	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK	MASS	IMPEDANCE	JACK ADAPTOR	ISSUE NUMBER
	HEADPHO	INE		TIC	ĮΫ	Ã	Ś	Š	©	<u>Q</u>	S,	Ř
ATUS	PRODUCT	£	I COMMENTS				ب	ب				_
R	AKGK100	36	Leather clad groover with bags of power and clarity, for a respectable asking price		•		•		190	100	•	205
	AKG 301 -	70	Big 'phones with even and detailed sound but lacks sufficient bass weight			•	•		230	100	•	194
	AKG K 240 DF	100	Inoffensive 'phones that are very laid back, if lacking in grunt			•	•		240	600	•	186
R	AKGK1000	700	One of the best dynamics on the market, hooks directly into speaker outputs			•	•		270	120		99
R	Audio Technica ATH910PRO	80	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found		•			•	280	40		55
R	Audio Technica ATH-D40fs	100	Detailed and involving sound with a professional 'studio' quality appeal			•		•	250	66		194
R	Audio Technica ATH-M40	120	Incredible detail and honesty from these classically designed studio 'phone			•		•	250	60		186
	Beyer DT311	50	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone		•		•		124	40	•	133
	Beyer DT411	63	A reasonable but not very thrilling headphone that doesn't really offer enough at the price		•		•		120	250		111
	Beyer DT331	65	Clear and extremely detailed sound with rather thin bass			•	•		210	40	•	194
	Beyer DT431	81	Nice looking 'phones that may not be the best players on the field, but will always give 100 per cent			•	•		210	40	•	186
	Beyer DT531	105	Average performer from an established player. Lacks punch and bite			•	•		245	250	•	205
R	Beyer DT511	106	Superb midband clarity and speed slightly at odds with soft bass. Even so, high tingle factor			•	•		200	250		172
вв	Beyer DT831	140	These provide silky, smooth textures in abundance and we're not just talking about the velvet ear pads			•	1/2		295	250	•	186
	Beyer DT100	160	Rugged, modular professional design, but bass is woolly and treble lacks detail			•		•	350	600		157
	Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable		•		•		120	32	•	172
88	Grado SR-60	79	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste		•		•		200	32	•	194
	Grado SR-80	100	Open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes		•		•		60	8	•	157
R	Grado SR-125	150	What these 'phones lack in style they make up for ten-fold in musical quality		•		•		200	32		186
R	Grado SR-225	200	Warm, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music		•		•		200	32		163
_	Grado SR-325	300	Elegant sound across the frequency spectrum; let down by old fashioned ear-piece design		•		•		200	32	•	205
88	Jecklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness			•	•		400	200		55

CD RECORDERS

HEADPHONIES

	HEADPHO	NES	(CONTINUED)	ELECTROSTATIC	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	n JACK ADAPTOR	ISSUE NUMBER
TATUS	■ PRODUCT ■	£	COMMENTS									
	JVC HA-W60	49	Remarkable lack of interference and hiss ameliorates adequate sound of this cordless design		•			•	165	I/R	•	172
R	JVC HA-W200RF	75	Distinct lack of hiss from these FM cordless 'phones ensures that detail and depth are easily heard			•		•	280 2	20,000	•	186
R	JVC HA-DX3	200	Great headphone with a rich bass, careful mid-range and high comfort factor			•	-	•	340	90	•	205
	Koss TD/80	50	Oodles of bass but with a recessed midband; tiresome on the head with prolonged wearing			•		•	250	60	•	194
	Koss R/100	100	Rather cheap looking 'phones that supply good detail but are severely lacking in midrange excitement			•		•	215	60	•	186
	Precide Ergo Model 2	140	Still has much of the spaciousness of the Float from which it is derived, but coarse mid/top				•	-	380	100		163
	Philips HP910	80	Ergonomically good but suffers from a muffled mid-range and over excited bass			•	•		247	32	•	205
	Sennheiser IS 380	55	As close as you'll get to real hi-fi with infra-red phones at this price. Inevitable hiss spoils the illusion					•	192	1/R	•	172
R	Sennheiser HD 570 Symph	90	Comfortable, light-weight 'phones with a detailed and open sound but lacks bass depth on weightier music			•			210	64	•	194
Я	Sennheiser HD 545	125	Fine all-rounder that takes all styles of music in its stride. Ear-clamping headband						255	150	•	172
88	Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable						255	150	•	157
	Sennheiser HD590	160	Assured and confident player with very low colouration and great comfort						270	120	•	205
	Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with a pure midband, but top end is sibilant and edgy	•			•		260	N/A		163
	Sony MDR-V700DJ	100	Great looking fold-away 'phones with exceptional build quality. Kickin' bass					•	300	24	•	194
	Sony MDR-CD 2000	200	Large pads make for sweaty listening. Pure mid-tones, but weightless bass			•			300	32	•	205
88	Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics					•	160	40	•	205
	Technics RP-DJ1200	130	Function I design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof					•	230	32	•	172
R	Stax System II	400	Luxury option at its price, but the sound delivery is five star quality all the way	•			•		295	50	•	205
88	Stax Lambda Nova Basic	395	Refined, articulate, yet with real presence – and a notable bargain by electrostatic standards	•					347	N/A		163
	Vivanco SR322	30	Weak design and uncomfortable, but redeems itself with substantial sound quality						248	32	•	205
	Vivanco Cyberwave FMH3000	40	The only cordless 'phone to offer genuine walkabout freedom, but sounds like a cheap FM tuner						210	FM	•	172
	Vivanco IR5800	50	Consistently musical infra-red design. Doesn't reach for sonic heights so hiss can be forgiven		•		1/2		226	I/R	•	172
R	Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive		•				175		•	157
ВВ	Vivanco SR750	60	Cossetting physical design, attractive sound, though suffers overhang and lacks ultimate dynamics		•		•		188		•	157
R	Vivanco SR 950	80	Cuddly feel and sound make these an enjoyable pair of 'phones						252	32		194
	Vivanco FM7980	80	A fair amount of whine and crackle detracts from 'phones which are otherwise very listenable		•			•	280	9,000	•	186
	Vivanco FM8180	99	Well thought-out features and a better than average sound are, at times, marred by intrusive hiss					•	240	9.000	•	186

					SP	EC	IFIC	AT	101	IS	
	LOU STEREO SP		SPEAKERS SPEAKERS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
TUS	PRODUCT	£	COMMENTS								
R	Acoustic Energy Aegis One	150	At a new low price, this has a very natural and transparent midband, erring a little on the dull side	19,36.5,24	1	87	6	40			18
8	Acoustic Energy Aegis Two	250	Floorstanding variation on the Aegis One theme, with a neutral, even and detailed if slightly shiny sound	19,87,24	•	89	8	40	•		2
	Acoustic Energy Aegis Three	350	Clean and capable 2.5-way budget floorstander with fine dynamic range but some mid-bass excess. Mass-loaded	19.5,93,2	5 •	90	5	25	•		2
	Acoustic Energy AE120SE	500	Attractive styling and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load	18,97,28	•	89.5	10	25	•		1
R	Acoustic Energy AE520	1,000	Could be more neutral, but high-class build is reflected in a high-class sound. Very elegant too	21,98,30	•	91	3	25	•		1
	ALR Entry 2	250	Metal cone stand-mount has a generous performance envelope, but sound quality was controversial	20,33,29		90	4	22	•		2
	ALR Jordan Note 3	1,000	Very substantial, with tuneable ABR for better room matching. Sounds good but could be more neutral	24.5,37,3	2	89	5	30	•		2
	ALR Jordan Note 7	2,500	A beguiling Anglo-German collaboration delivers metal-cone precision with fine dynamic range	25,107,32	•	92	4	25	•		1
Я	AR S20	180	Classic stand-mount might not have the most dynamic sound around, but it's an honest and effective musical communicator	20,37,28		90	4	28	•		
	AR 15	275	Neat and chunky wall/stand-mount certainly knows how to rock and roll, less convincing on the delicate stuff	22,37,22		90	4	45	•		2
Я	Arcaydis Concept 2	1,200	Solid oak floorstander is a little lazy sounding, but is well balanced and smooth with modest coloration	19,90,26	•	86	7	25	•		
	ATC SCM10	1,000	A compact speaker with good transparency but lightweight bass	18,38,25.5	5	80	8	65		•	
	ATC T16	1,750	Compact active 'home studio monitor' in colourful cast box, with considerable loudness potential	27,45,33		Α	Α	45	•		
	ATC SCM70ASL	10,500	Stylish aluminium casework disguises dynamic grip, tracking and precision that equals the very best	127,40,46	•	Α	Α	20	•		
R	Audio Gem Emerald	540	Pretty, compact floorstander with lively if lightweight sound	18,94,21	•	87	6	40	•		1
R	Audio Note AZ1	449	A fine partner for low power valve amps, it delivers music with great gusto and enthusiasm, but also more than its fair share of coloration	23,83,29	•	92	6	30		•	2
R	Audio Note AN-E/D	1,520	This classic large stand-mount might have throwback aesthetics, but it delivers an exceptional allround sound	36,79,28		92	4	20	•		2
	Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47	•	88	8	28	•	•	1
R	Audiovector C2	799	Elegant two-and-a-half-way has a big, full bandwidth sound, but midband seemed a little underdeveloped	19,106,27	•	90	4	20	•		
R	Audiovector M2	1,399	High-class, smooth and slightly laid-back performer has driving bass. It's upgradable, too	20,102,30	•	89	4	22	•		
R	AVI NuNeutron	500	A smooth and subtle though pricey sub-miniature, albeit with the inevitable limitations of the breed	14,27,23		86	4	50		•	
R	AVI Biggatron Red Spot	600	Good bass coherence and timing, but the lean and decidedly forward balance won't be to every taste	19.5,37,3	0	88	7	30		•	
	AVI Positron	899	This 'mini-floorstander' is capable of great precision and delicacy, but in a rather small-scale way	17.5,74,24.	5 •	85	6	40	•		
R	B&W 601 S2	200	A smooth and sophisticated stand-mount combines good drive with fine neutrality	20.5,36,23		89	4	30	•		10
BB	B&W 602 S2	300	Large stand-mount has fine dynamic literacy and good communication skills at a very competitive price	23.5,49,29		90	5	28	•		
R	B&W 603 S2	550	Capable of being driven seriously loud, but the cautious balance seems less happy playing at low levels	23.5,87,29	•	91	4	22	•		
	B&W CDM-1NT	750	An uncommonly stylish and sonically self-effacing stand-mount that should be very easy to live with	22,40,29		89	7	30	•		
	B&W CDM-7NT	1,250	A very classy floorstander, in sound as well as looks, with fine bass drive, authority and overall neutrality	22,95,29	•	90	6	20	•		
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		89	12	28	•		
	B&W Nautilus 803	3,500	Classy looking three-way with impressively deep bass, wide dynamic range and a laid-back balance	29,108,42	•	89	3	20	•		
	B&W Nautilus 804	2,500	The prettiest Nautilus has tremendous clarity and imaging but lacks the welly of bigger models	24,101.5,24	.5 •	89	8	38	•		
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	•	91	8	34	•		
я	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	•	91	8	34	•		
R	Blueroom Minipod	249	The Minipod can show its competitors a thing or two about freedom from boxiness and looks fab	18,34,17		91	4	50		•	1
R	BC Acoustique Araxe	1,300	Neat compact floorstander is a very lively communicator, if a little short of deep bass grunt	21,92,30	•	94	3	40	•		2
Я	Cabasse Farella 400	950	Exciting but very upfront-and-in-yer-face sound. High sensitivity, fine build and good dynamic drive	26,92,32	•	92	5	28			
	Carlsson OA52.2	1,500	Ultra-discreet design integrates cleverly with the listening room. Impressively unboxy, but sounds a bit thin	41,54,37	•	90	8	20			
Ř	Castle Richmond	250	Tiny real-wood miniature has a lightweight but very coherent sound, a bit in-yer-face but plenty of fun	17,33,20		90	5	50			2
	Castle Inversion 15	425	This striking looking standmount is a good all-rounder, commendably free from boxiness	22,42,25		91	4	30		•	1
R	Castle Severn 2SE	700	Pretty little floorstander is lively and communicative, if a little coloured in the voice band	21.84.24	•	88	6	28		•	2

1	STEREO SE	FΔK	ERS (CONTINUED)	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPA	CLOSE TO WALL	ISSUE NUMBER
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	PRODUCT	£	■ COMMENTS	an exercises							
	Castle Harlech Castle Inversion 100	880 1,975	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	•	88	8	28	•		160
1	Celestion A Compact	600	Large semi-omni design with gorgeous Art Deco styling, sounds open but bass alignment is ill-tuned  Provided the room isn't too large and your tastes not too heavy, this is a charming little number	26.5,111,45	•	91 90	8	20 45	-		195 193
1	Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35		88	6	25	•		164
i	Celestion A2	1,500	Full-scale, big sound from ultra-elegant floorstander. Smooth and slightly laid back presentation	24,93,39	•	89	6	22		•	180
District	Chario Syntar 100	249	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27		87	6	45	•		170
	Chario Hiper 1000	300	Classy looking standmount has a sweet, easygoing sound with fine midband voicing	18,35,28		87	4	45	•		187
	Chario Constellation Lynx	550	Beautiful near-miniature is let down by a midband too laid back for its own good	20,36,26		87	3	40	•		190
	Chario Academy Millennium 2	2,100	Price includes stands. A showy speaker that lives up to its own hype	22,53,35		90	4	55	•		190
- Porton	Cyrus CLS70	800	Wonderfully striking styling, but presence is very laid back; likes playing loud	22,33,32		87	8	40	•		211
1	Cyrus Icon	2,500	First high end NXT speaker with huge omni-directional soundstage. But they have limited dynamics and unusual imaging	34,125,29	-	84	8	18	•		216
	Dali 606	400	A big bruiser at a tempting price. Sounds refined and polite, but also packs some punch	22,97,32	•	91	4	25	•		174
1	Dali Royal Menuet MkII Dali Evidence 870	429 1,249	Classy sub-miniature with a beautiful box and fine ingredients, but a little lacking in subtlety and excitement	16,26,18		87	3	50		•	190
1 000	Dynaudio Audience 42	400	A real heavyweight, sonically and physically, and good for movies as well as music	24.5,106,36	•	93 <b>87</b>	2.5	20	•		204
90	Dynaudio Audience 72	1,100	Expensive for a vinyl-covered miniature, but an aristocrat amongst the breed. Is there a better small speaker around for the price?	17,28.5,24	•	-	3	40			215
	Dynaudio Contour 1.8 MkII	1,842	Very competent in most respects, but doesn't quite grab the attention; could be more communicative  Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	20,97,26 21,95,29	•	89 85	4	20			167
1 0	Elac CL102 II	599	Chunky floorstander with classy drivers has a neutral, slightly 'shiny' character, and could have more punch	20,95,28	•	88	9	23			199
ł	Elac CL 310i Jet	800	It's pricey, and you can buy better performance for the money. Small speaker, good sound	12.3.20.8.28.2	-	86	4	42	•		191
	Eltax Liberty 3+	150	Bright, bassy, laid back and attractively evenhanded, but dynamically challenged. Big box for your dosh	20.5,38,34		86	4	25	•		187
The second second	Eltax Linear Response	249	A curiously dumpy shape, but smooth, laid-back performer is easy on the ears, with fine tonal accuracy	25,35,32		85	4	40	•		177
The state of	Eltax Chroma Front	300	Gorgeous shiny styling package at an ultra-competitive price, suffers from an excess of rather flabby bass	19,98,28	•	87	4	25	•		201
COOCA	Energy e:XL 25	400	Neat slimline design delivers a fine all round performance for the price, but could sound smoother	15,87,31	•	90	4	25	•		201
TO COMM	Excel 202A	1,795	Very Pro-styling, a compact active monitor in BBC tradition - neutral, unboxy and laid-back	15,21.5,36	inne	Α	Α	25	•		214
	Epos M12	429	Retains the beguiling midband coherence that made the ES12 such a favourite. A genuine class act, sonically and aesthetically	20,38,26		86	7	40	•		215
Desagn	Gale 2i	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27		88	7	40		•	170
(Accessed	Genelec HT206	1,400	Baby active monitor goes very loud for its size. Very neutral but a tad boxy	20,31,24		Α	Α	40	•	•	214
	Heybrook Prima 2	159	Great openness, speed and timing. Sounds fresh and vital, though sometimes lacks scale and weight	20,29,18		87	6	50		•	179
	Heybrook HB1	180	Good value but an uneven performer, the HB1 provides plenty of fun with the volume turned well up	21,38,25		88	3	50	•		207
00000	Heybrook Heylette	200	Attractive traditional-style near-miniature with classy main driver now has fine overall balance to match	19.5,30,22		88	4	45	•		18
2	Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	•	94	4	30	•		19.
	Heybrook Heylios	269	Classically styled stand-mount has a fine balance of smoothness and dynamics, plus real wood veneer	23.5,36,27		89	6	25	•		20
	Heybrook Ultima	649	Has the bass wallop to justify its dual hi-fi/home cinema roles, but doesn't excite	22,97,29	•	89	6	45	•		174
	Heybrook Duet	750	Looks slightly old-fashioned, sounds a bit coloured but its fine timing and liveliness serve music well	23,43,30		88	11	27	•		199
ļ	Heybrook Octet	1,800	Good-looking but pricey floorstander with novel drivers and a fine ceramic-enclosure midband	24,97,31	•	90	6	25		•	180
ļ	Indigo Three	500	Cute 'n' chunky standmount is an entertaining communicator. Great fun, despite some sonic weirdness	23,30.5,32		86	17	24		•	199
	Infinity Alpha 30	299	Some sharpness and nasality, but fine musical literacy plus a good measure of dynamic expression adds up to a great value floorstander	22,86,29	•	89	4	30		•	215
	Jamo E800	200	Nicely voiced, open midband but bottom end is a bit strong and amorphous	17.5,33,29		87	3	30	•		207
,	Jamo D830	1,400	Dynamically exciting and communicative, but lacks both smoothness and neutrality. Pricey too	24.5,38,32		8	5	30	:		211
J	JBL LX2 JBL Ti200	250 400	Invigorating, if a touch crude, this good-hearted speaker reproduces music with enthusiasm	22,40,27		87 92	8	40			170
	JBL 1200	700	Very substantial standmount knows how to rock and roll, but can sound uncouth on more delicate material  Pricey, heavy and a bit laid-back, but this is a fine rock n'roller which is dynamic and communicative	26,42,28		86	8	30			138
	JBL SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, with a fun sound, enlivened by a juicy bass thump	17.5,51,31		86	8	40			174
-	JBL L40	1,000	Classic, large, three-way standmount is full of vim and vigour, with a superb sense of balance	30,65,31		88	4	23	•		16
-	JBL 4312 II	1,000	Crude but startlingly effective dynamics. The original party animal knows just how to rock'n'roll	36,60,30		94	4	25		•	19
	JBL SVA 2100	1,250	Monstrously large and brutish styling, goes very loud as well as deep. Fine focus but some boxiness	37,114,52	•	91	8	<20	•		18
-	JBL L90	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a bit crude	24, 4,35		91	6	23	•		143
ł	JBL LX70	550	Bassmeister supreme, shame the rest doesn't match up. Fine sensitivity but an itchy, scratchy treble	26.5,94,30	•	91	4	33	•		18
Day and	JBL Xti40	500	Real wood and a cute shape, with a punchy driving bass, and a restrained overall balance	23,82,31	•	88	6	40	•		21
- Common	JMLab Cobalt 815	999	Hefty real-wood floorstander has a slight 'boom'n'tizz' character but delivers big speaker grip and dynamics	22,100,31	-	90.5	-	22	•		19
1	JMLab Electra 905	1,200	Compact but massively engineered, delivers a very classy sound with exceptional dynamic range	23.5,47,28		90	4	40	•		204
-	JMLab Electra 915	1,795	Fine headroom and bass, and classy engineering too, but also a tricky amp load which lacks delicacy	26.5,106,36	•	92	4	20	•		19
i	JMLab Mezzo Utopia	7,250	Looks good and sounds even better. A genuinely big speaker with fantastic coherence	35,115,47	•	92	4	30	•		18
	JPW ML510	130	Lots of good quality speaker for the price, but not an ideal match for cheap budget components	20,34,22		88	5	50	•		169
· Common of	JPW ML910	330	Loads of speaker for the money, plenty of headroom and loudness capability, but sounds dull	23,104,30	•	91	4	43	•		18
-	JPW ML1010	400	A seriously substantial speaker for the price, and an obvious choice for those who like their music loud	22.5,115,40	•	91	6	25	•		170
No. of Concession,	KEF Cresta 2	149	A good looking/value package but sonically disappointing, and no match for the Q15	20.5,37,24		91	4	40		•	19
-	KEF Q15.2	200	A vigorous and entertaining compact speaker that remains particularly well aligned for close-to-wall siting	20.5,31,27		89	3	30		•	20
Patrician	KEF Q35.2	350	A very decent and good looking compact floorstander, but a pair of stand-mounted Q15.2s is likely to have the performance edge	21,78.5,27	-	90	2.5	25	•		21
Princeton	KEF Q55.2	500	Beefy vinyl-finished UniQ delivers loads of bass, but might have more control	21,87,29	•	90	4	25	•		21
Constant and a	KEF Reference One-Two	1,350	Limited low bass but bags of headroom. Coherent and lively sound, but could be more transparent	22.5,87,35	-	89	3	40	•		21
	KEF RDM Three	1,500	Definitely a speaker aimed at long-term satisfaction rather than immediate impressiveness. Nice	24,100,27	•	90	4	40	•		18
1	KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass	23,103,34	•	89	4	30	•		16
AND DO	Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24		89	8	20	•		14
4	Keswick Audio Torino	999	Good value, lively contender with distinctive styling. Goes loud and deep but could be smoother	26, 93,28	•	90	4	20	•		16
	Linn Kan	295	Great bass discrimination from size, ensuring a very informative, if slightly shut-in experience	19,31,19		86	4	45		•	18
	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		A	A	40		•	21
ļ	Living Voice Auditorium	1,500	Pretty, compact floorstander has wonderful coherence, high sensitivity and fine dynamic integrity	21.5,98,29	Hilms	91	4	25	•		18
	Living Voice Avatar OBX-R	4,000	Discreet but extremely fine design with external crossover and an affinity with great amps and sources	21.5,104,27	1000	89	8	45	•		19
-	Magnat Vintage 320	350	Loads of speaker for your money, but the sound is thick, heavy and lacking in presence and authority	25,102,30	10000	90	4	20	•		20
-	Magnat Vector 77	450	Tall, dark and a lot of speaker for the money. Beautiful balance, but lacking in subtlety and transparency	22,115,29	100	89	5	30	•		18
4	Magnat Vintage 710	800	Very competent but didn't particularly stand out; distinctive styling and slightly shiny sound	20-27,42,3	-	90	5	25	•		21
-	Magnat Vintage 720	1,200	Slightly crude in some respects but lots of heart, fine scale, decent dynamic coherence and integrity	29,113,32	-	88	4	20	•		18
ļ	Martin-Logan Prodigy	8,967	Combines the finesse of an electrostatic with the grunt of cleverly engineered cone bass to good effect	42,179,71	•	91	4	28	•		20
	Meridian M33	1,495	Compact active wall-mount packs remarkable dynamic vigour into a very discreet package	15,38,22		Α	A	45		•	21
	Mirage FRX7	550 3,000	Neat slim floorstander has a heavy, laid back balance, probably better suited to movie than music reproduction  A most model that need level without distriction dies does with anlamb and creates plants of don't be image.	17.5,95,32	•	90	6	25 22	•		204
	Mirage OM-5 Mirage OM-10-1	2,000	A meaty model that goes loud without distortion, digs deep with aplomb and creates plenty of depth of image  Tall black omni-bi-pole has plenty of bounce and dynamic vigour, but is more room sensitive than most	133,30,42 23,118,30	•	90	4	20	•		200
1						- 88	4	731			- 11

	STEREO SE	PFΔk	CERS (CONTINUED)	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/)	IMPEDANCE (Ω)	BASS FROM (H	FREE SPA	CLOSE TO WALL	ISSUE NUMBER
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	PRODUCT	£	COMMENTS	10020001	SERVICE .						207
R	Mission 771e Mission m73	200	Beautifully styled miniature has a delightfully voiced midband, and real wood finish too  Sharply priced and good looking floorstander. Dynamics are a little limp, but it has a good overall balance. Excellent value for money	17,31,22 20,87.5,31	•	86 88	6	45 25	•	•	207 215
	Mission 780	299	Gorgeous miniature has a fine midband and clean, bright treble, slightly odd bottom end	16.5,28,27		86	6	40	•		201
R	Mission 773e	400	Beautifully designed slim floorstander could be more neutral but still delivers an all-round entertaining sound	17.5,88,26	•	92	4	30		•	193
R	Mission 774	500	Gorgeous floorstander is an entertaining communicator, despite some balance oddities (bright treble)	18,95,31	•	90	4	40	•		183
R	Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	16.5,82,28	•	86 93	9.5	25 25	0.3	•	199 204
К	Mission 775e Mission 783	1,000	Lots of speaker for the money, and musically involving too, if a little short of serious weight and authority  Plenty of bass weight, and a clean, articulate midrange, but the two don't quite seem to gel	23,115,30 20.5.97.33	man Parist in	87	5	20	•		211
ВВ	Monitor Audio Bronze 2	180	A real corker, which combines solid material value for money with a fine all round sonic performance	18.5,35,27		89	3	30		•	207
R	Monitor Audio Bronze 3	270	Very similar to the Bronze 2, though not necessarily better. Good value with better dynamic expression than most of its ilk	18.5,87,24	•	90	3	30		•	215
	Monitor Audio Silver 5i	450	Great looking, sharply priced real wood floorstander, but bottom end lacks drive and tension	20,81,21	•	87	5	30	•		210
	Monitor Audio GR20	1,500	Solid and confident design with all metal drivers and neutral if slightly uninspiring sound	20,92.5, 30 18,31,25	•	89 87	6	30 45	•		212
RR	Mordaunt-Short MS902 Musical Tech Kestrel Evolution	315	Gorgeous metal-finished budget stand-mount has a shiny sound to match its looks  Cutely styled, cleverly compact and a smooth, subtle and coherent performer, best suited to smaller rooms	20,85,19	•	86	4	40	•		207
R	Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	•	86	8	25	•		152
88	Musical Technology PM15	450	A subtle, understated but very involving example of the 'classic' luxury-finish compact standmount	20,41,27		88	5	38			183
BB	Musical Technology Falcon	680	Big speaker has a big but also surprisingly smooth and civilised sound. Fine material value too	33,117,30	•	89	4	22	•		190
R	Musical Technology Condor	1,000	Lots of clever ideas in a floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	•	85	4	28	•		174
88	Naim Intro	1,060	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	•	89 88	6 8	30	•		164
R	Naim Credo Naim SBL Passive	1,060 1,970	Involving sound, but rather forward and cold. Good clarity, but some coloration and a lack of richness  Lively and punchy – smoother but more upfront than before	24,89,30 27,89,27	•	88	6	28	•	•	143
EC	Naim NBL	6,648	Elegant, large floorstander is exceptionally informative with an awesome dynamic range and dry, forward balance	29,116,47	•	89	4	20	•		200
R	Neat Critique 2	445	Contemporary standmount has a clean, crisp sound with lovely natural midband voicing	22,32,24		86	6	50		•	183
88	Neat Mystique Mk2	575	This elegant package delivers a fine overall sound quality, some might find the top end too insistent	20,86,18	•	85	6	23	•		177
R	Neat Neat Petite III	795	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,30.5,20		86	5	30		•	211.
R	Neat Elite	1,195	A highly enter aining all-rounder, has a planar tweeter that sounds sweet, if not particularly smooth	20,88,18	•	88.5	6	25	•		195
00	NHT Super Zero NHT Super One	200 250	If tiny size is top priority, the Super Zero is worth considering. It looks nice and sounds articulate, but it definitely needs a subwoofer  A fine compromise between size and performance, sensitivity and hence loudness capability is modest	14,23,14 18.5,29.5,23		84 85	8	100	•	•	215 170
BB	NHT 1.5	400	This compact standmount sounds much bigger than it has any right to. Good timing and communication skills	18,42,26		85	6	40	•		177
R	NHT Super Two	550	Black and shiny compact three-way floorstander has marvellously even balance and good coherence	18.5,100,26	•	87	8.5	25		•	199
	Opera Prima	495	Good-looking hardwood enclosure, plus fine mid and treble, but less satisfactory bass	19,34,31		90	4	40	•		190
	Origin Live Conqueror	1,650	Chunky floorstanding three-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	•	88	8	30	•		167
R	Orelle Swing	1,200	A superb example of what an essentially small loudspeaker can do, with bags of brio and enthusiasm	18,101,28	•	87	8	45	•		195
BB	PMC TB2 PMC LB1	600 999	A worthy and prettier successor to the TB1, which sets a high standard in its size/type class for neutrality and transparency	20,40.5,31 17.5,53,26		88 87	8 6.5	30 40	•		211 199
R	PMC LB1	1,275	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic  Handsome floorstander has the lively coherence of a simple two-way alongside impressive bass weight and extension	20,105,31	•	88	6	20	•		204
R	PMC AML1	3,525	Sparkling active Pro monitor with serious attitude: 'in yer face' balance, with great dynamics	20,40,32		A	A	25	•		214
	Polk RT16	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	•	91	4	22	•		160
	ProAc Response 2.5	2,700	For aspirant high-enders looking for seriously good boxes, this speaker should be first por of call	22,107,25	•	86	8	30	•		149
	ProAc Tablette 2000 Sig.	899	Beautifully veneered compact stand-mount is classically balanced, if a little on the bright side of neutral	19,36,26		87	6	30	•		204
	ProAc Studio 125	1,000	Pretty if pricey compact floorstander with a beautifully natural and neutral midband, and some bass thump  Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	20,94,28	•	87 83	8	28 25	•		192 167
	QLN Signature Quad ESL-989	1,000 4,600	A very 'different' speaker experience, with magnificent midband transparency and imaging, but limited loudness capability	27,37,36 67,134,32	•	83	3	38	÷		213
R	Rega Jura	450	Beefy sounding, chunky floorstander sounds very 'direc coupled' to the music, if a touch 'boom'n'tizz'	22.5,92.5,26	•	90	5	25	•	DESIRE S	193
R	Rega ELA Mk II	498	Pret y and smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	•	87	8	40	•		139
R	Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic coherence	34,42,27		95	8	55		•	167
	RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	•	81	8	22	•		167
	Roksan ROKone	595	Large standmount is musically very communicative, if a little coloured	21,45,33		89	6	30			160
R	Roksan OJ3X Black Royd Doublet	995 485	Innovative low-line, two-way floorstander with decoupled tweeter; great bass and fine dynamic range  Great value compact floorstander: lively and very informative, if a lit le uneven	28,79,46 18,93,19	•	84 90	8	20	•		167 160
R	Ruark Epilogue	269	Beautifully finished miniature with a lively balance and plenty of charm; best suited to smaller rooms	17,29,23		87	8	47			183
. ت	Ruark Sceptre	599	'Traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by rather wayward sound balance	21,38,31		87	8	40	•		174
	Ruark Prologue One R	949	Strikingly contemporary compact floorstander is well voiced but a little lean in overall balance	17.5,93,28	•	88	5	25	•		204
R	Ruark Excalibur	7,000	A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom	30,125,53	•	90	4	30 4E	•		186
R	Sequence 400 Silverado Raider	329 695	Clever hang-on-wall panel is well voiced, though bass isn't too great  Beautifully built audiophile compact: neutral if bright, tough work for amps	25,100,7		86 83	8	45 30		•	164
<b>6</b> 10	Snell K.5	795	Beautifully built audiophile compact: neutral if bright, tough work for amps  Classy AV-ready stand mount is very solidly engineered. Sound is neutral but lacks excitement	20,40,25		87	6	25	•		190
88	Snell E.5 Mk2	1520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30	•	89	4	20	•		211
	Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration.	28,117,50	•	91	6	25	•		194
	Soliloquy SM 2A3	1,095	Fine match in balance, coherence, transparency and speed. Intended for use with Cary CAD 2A3SE	35.5,19,30		91	8	45	•		196
	Sonus Faber Concertino	599	A beautifully neutral loudspeaker in a beautiful Italian suit of clothes. Classy, if quite pricey	21,32,29		87	. 5	30	•		193
	Sonus Faber Grand Piano Home South Coast Speakers Lancelot	1,589 895	Classy walnut 'n'leather floorstander with fine engineering and lovely midband voicing  Pretty compact standmount has nice ribbon tweeter but sounds a bit soft and lacks dynamic vigour	23.5,29,108 19,36,26	•	90 84	3 8	25 <b>45</b>	•		214 199
R	Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	•	87	8	30	•		160
EC	TAG McLaren F1	15,000	Oddball aesthetics with accurate, unflappable, controlled and consistent sonic neutrality	40,127,48	•	87	8	25	•		202
BB	Tannoy mX2	150	Surprisingly refined considering its very modest price: very communicative with outstanding midband delicacy	18.5,33,25		89	4	45	•		207
	Tannoy Revolution 1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22		86	4	30	•		187
BB	Tannoy mX3	300	A great all-round compromise at a very modest price, combining good looks with fine midband voicing	18.5,87,26	•	90	5	40			201
	Tannoy mX4	350 350	Pretty 2.5-way has a clean and unboxy sound with respectable transparency, but lacks the dynamic grip and drive to make music really involving  Lacks dynamic grip and authority, but delivers great bass extension and a classy overall balance at a sharp price	18.5,96,26 18.5,96,26	•	89 88	3	20	•	•	215
R BB	Tannoy mX4 Tannoy Revolution R2	350	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24	•	90	4	20			193
00	Tannoy Revolution R3	550	Handsome real-wood floorstander does a decent job, but lacks the evenness of its smaller R2 brother	18.5,103,28	•	89	8.5	28	•		199
R	Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	24,85,23	•	87	6	26	•		167
	Tannoy ST-100	1,200	This supertweeter adds a subtle and delicate effect while also broadening the soundstage at a price	- Continues Continues (CC)	•	95	8	N/A	•		206
EC	Tannoy TD10	5,000	Extremely competent and rhythmic speaker, a futureproof super weeter and detail to die for	35,101,37	ments and	91	6	38	•		215
	Tannoy Kingdom 12	6,000	Something of a throwback, but great fun, with fine dynamics and authority, but a tricky amp load	54,106,46	more Si	92	3	28	•		213
	Technics SB-M500 Triangle Cometes	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	•	85	8	25 42	•		152 193
	mangle cometes	359 599	Communicative standmount has great midband dynamics, but the very bright top end might be intrusive  Loads of fun. Dramatic dynamics and righteous timing will give any hi-fi system a wake-up call	22,40,29 22,94,29	•	91 91	4	25	•		193

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STATUS	PRODUCT	— f	n COMMENTS								
EC	Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	•	104	4	50		•	191
R	Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid-back but very charming, and musically literate	17,97,30	•	88	7.5	25	•		199
EC	Wilson benesch Discovery	5,500	Innovative three way with built-in stand, combines great subtlety with weight and headroom	23,47,38	•		6	45	•		212
EC	Wilson benesch Bishop	20,000	Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too	23,161,561	•	89	4	S20	•		189
	Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29.5,23		88	4	45	•		169
	W'dale Diamond 7.2 Anniversary	200	Lively and exuberant, but a tad untidy with it; can sound a bit cold and hard	19,29.5,24		88	4	40	•		187
	Wharfedale Pacific Pi40	500	A lot of speaker for the money, but bass is unruly, even in a large-sized room. The smaller Pi30 might give a better bottom-end balance	22,113,36		89	3	25	•		215

### **SUBWOOFERS**

STATUS	■ PRODUCT	∎ £	■ COMMENTS ←							
100	Acoustic Energy AE108S	299	Lots of loud subwoofer for your money, though ultimately more film than music oriented	50,42,43			20		•	179
R	B&W ASW1000	499	Bulky heavyweight is a high quality item, able to generate more bass output than music is likely to need	54,47,50	•	Α	A20	•		198
	Jamo D8SUB	950	Pretty but pricey, the D8SUB packs plenty of punch (for movie fans), but doesn't delve deep enough for music replay	45.5,41,45.5		A	30			210
R	JPW SW60	349	A real heavyweight, sounds clean and transparent, if perhaps a little understated. Usefully flexible	55,47,39			20		•	179
	M&K MX70	795	Cutely compact and entertaining too, but lacks the ultimate extension to justify its high price	37,32,30	•	Α	25			210
	Mission 7AS2	399	Ugly if very effective at supplying very low bass, but filter could do with more flexibility higher up	56,30,31	•		<20	•		198
R	Paradigm PDR-10	150	Not much grip, drive or authority, but it doesn't get in the way and it is very cheap	34.5,36,42	•	Α	25			210
	Polk PSW430	400	A lot of subwoofer for your money, but lacks deep grunt and is more movie than music oriented	38.5,45,46	•	A	25			210
R	REL Q50	375	This good looking if bulky sub does the business with impressive flexibility and sonic self-effacement	42,53,31			20			210
R	Ruark Log-Rhythm	775	Adds weight and scale with commendable discretion, making a positive contribution to the whole musical exposition	43,43,43	•	A	<20			210
	Soliloquy S10	1,050	(Active) Pretty subwoofer, cosmetically matching SM 2A3 speakers, pricey and mid-bass a bit strong	51,30.5,46	•	A	25	•		196

# **LOUDSPEAKERS**



### **SPECIFICATIONS**

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ATUS	PRODUCT	£	n COMMENTS								
ВВ	Acoustic Energy Aegis Three	350	High value floorstander has deep and even bass and a smooth neutrality thereafter	19,90,25	•	90	5	22	•		198
R	B&W LCR6	349	Large, gutsy standmount intended for all-round AV use delivers fine performance as a stereo pair too	20.5,55,32		90	5	20	•		198
	B&W Nautilus package	6,500	This classy, laid-back package is arguably too good for current programming. Very bulky centre speaker	var	var	n/a	3	20		•	210
	Definitive Technology BP2X	595	Pricey but effective bi-polar surround speaker, with unusually high sensitivity	23,37,15		94	4	120		•	198
	Definitive Technology BP2004	1,700	Pricey bi-polar floorstander has a fine midband, let down by its built-in powered subwoofer	19,104,31	•	91	5	28	•		198
	Dynaudio LR/C 120	439	Slim centre and front standmount, has an evenhanded but rather laid back balance but lacks drive	16.5,57,31		89	5	25	•		198
	Jamo Concert package	2,500	Lovely main speakers sonically overshadow the centre, while surrounds are a bit obvious too	var	var	n/a	5	30		•	210
BB	JBL Xti-series package	1,100	Hexagonal boxes all round, this package has decent authority and all round tension	var	var	n/a	5	40		•	210
	KEF Q-series package	880	Cleverly designed, vinyl-finished UniQ package packs a goodly thump but centre and surrounds stand out	var	var	n/a	3	25		•	210
	Mirage OM-series package	2,000	Big black and bouncy package with omni fronts has plenty of vigour but some coloration var	var	var	n/a	4	20		•	210
R	Mission 77DS	199	Neat flush-mount surround speaker has no bass but a smooth midband and nicely restrained treble	34,26,12	1	92	4	120		•	198

Beautifully styled and cleverly designed package, but could have more grunt and drive for the price

Good value vinyl THX Select package with Power Towers. Good authority but must be 5.1-connected var

Great looking conventionally styled package lacks something in dynamic drive and tension

Lacks grunt, grip and authority, but smooth and refined with seamless surround coherence

A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver

Classy if bulky and pricey package has good transparency, coherence and weight

Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension

Tall elegant tower with built-in powered bass 'subwoofer' that needs using with discretion. Bright but engaging

Classy real wood package does a good all round job, but sounds bright and might have more surround weight

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TATUS	PRODUCT	£	COMMENTS							
R	Acoustic Energy Aegis Centre	140	Good value centre-front speaker but a tad shut in and with a slightly obvious top end (price per speaker)	46,17,20	89	5	50	•		198
	B&W Nautilus HTM1	1,500	Very bulky for a centre speaker, though very capable too - a little less laid back than its siblings	76,37,30	89	4	30		•	210
	Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,29	88	8	45	•		198
R	Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55.5,17.5,31	90	4	40	•		198
	Jamo Concert Center	550	A decent balance match but lacks the class and grip of the Concert 8s, and is bulky and pricey too	55,22,30	87	5	100		•	210
ВВ	JBL Xti10C	200	An elegant, cleverly designed centre and a good match for the 40s. Better value than most too	\$1,19.5,27	88	5	50		•	210
	KEF Q95C	200	This artfully designed UniQ centre looks much better than most on top of the TV set	40,17.17	89	3	120		•	210
	Mirage OM-C2	600	Large but discreet omni-bi-pole matches OM-10-1 well but lacks tight focus, and seems expensive	64,18.5,31	88	4	50		•	210
R	Mission 77C	199	A good centre-front match for 77-series, the triple tweeter might be a curiosity, but voicing is very good	42,17,21	91	4	100		•	198
	Mission 78C	350	Makes a good visual and sonic match for the 782, but quite pricey by comparison, given the ingredients	45,17,19	86	3	100		•	210
	Monitor Audio Silver Centre 10i	300	Neat and good looking partner to the Silver 5is, but a little more forward, and quite expensive too	50,17,21	87	4	100		•	210
R	Mordaunt-Short MS 504	200	Smart yet discreet and a good match for the 502. Sounds clean and expressive, and is well priced	50,19,20	88	3.	120		•	210
R	PMC TB2M/C	325	This bulky centre speaker is quite pricey, but it combines good transparency with some authority	40,20,31	87	6	50		•	210
	Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35	92	4	25	•		198
R	Rega Senta	185	The very compact Senta is sensibly priced, a bit bright maybe, but articulate and expressive	32,16,21	89	4	120		•	210
BB	Tannoy mXC	100	Could be more exciting, but a very impressive centre speaker at an unusually reasonable price	42,16,21	88	4	120		•	210
BB	Tannoy Saturn S6C	200	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	38,21,29	89	6	25	•		198

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Mission Cinema 8 package

**Monitor Audio Silver series** 

Mordaunt-Short Declaration 500

PMC FB1/TB2 package

Tannoy mXAV4 package

Rega Jura/Ara/Senta

Tannoy Saturn S6 **Tannoy Saturn S6LCR** 

Polk RTE 1000p

R

# PERSONAL/INTERNET

### **SPECIFICATIONS**

### **PERSONAL STEREOS**

STATUS	PRODUCT	£	■ COMMENTS				
	Aiwa HS-PX307	30	So-so sound but an impressive features roster. Decent value overall	Cassette		•	204
R	Aiwa AM-HX50	180	Neat play-back only personal with an impressively full-bodied sound, though short on detail	MiniDisc		•	204
	JVC XL-PG31	60	'Challenging' looks and frankly unpleasant sound add up to a player that's best avoided.	CD			216
	JVC XM-R700SL	250	The most expensive player here, but its in-yer-face sound and slab-like, heavy design make its value questionable	MiniDisc	•	•	216
R	Kenwood DPC-X517	100	Clean, funky bass makes for an exciting sound; an attractive proposition, if you can stomach the looks	CD	1000		216
R	Panasonic RQ-SX71	70	A sleek aluminium body, decent sound and superb features	Casse te		•	204
_	Panasonic RQ-SX91	80	A super-slick personal for well-heeled cassette users. Sound is rather bright	Cassette		•	204
	Panasonic SJ-MR100	250	Well built and nicely appointed, though performance is unremarkable at the price	MiniDisc	0	•	204
R	Philips ACT7582	115	A splash-proof body and an entertaining sound – the perfect CD personal for holiday japes	CD		and the second	204
R	Sharp MD-MT877H	230	Pleasantly up-front sounding player in a sexy little package, well worth your a tention if you like that kind of thing	MiniDisc	•	•	216
	Sony WM-EX404	35	Super-stylish but sonically flawed, with particularly uncomfortable earphones	Casse te		THE REAL PROPERTY.	204
BB	Sony D-EJ925	149.99	Beautiful design matched with a beguiling sound – a clear Best Buy	CD		•	216
BB	Sony MZ-G750	199.99	Light, simple to use, and with a relaxed and enjoyable sound, and with a tuner too!	MiniDisc	•	•	216
BB	Sony MZ-R91	250	A petite and sexy beast with good sound and excellent facilities	MiniDisc	•	•	204

### **INTERNET AUDIO**

TATUS	PRODUCT	£	<b>■</b> COMMENTS						1 1	6
	Aiwa MM-VX100	130	Aiwa's expertise in the personal stereo field is visible, but performance is only average	Solid State	•	•	MP3	PRL	32MB	204
	Audio ReQuest ARQ1	568	Full size separate containing CD player, hard drive and PC connection. Sign of things to come?	CD/HD	•		MP3/WM	APRL/USB	17GB	208
BB	Creative Labs Digital Jukebox	349	Smartly designed high-capacity portable with storage for over 1,000 tracks	Hard Drive	•		Agnostic	USB	5.7GB	208
R	DigMedia Music Store	350	Innovative CD/hard drive combo with optional solid state portable. MP3 with or without a computer	CD/HD	•		MP3	USB	5.4GB	208
	JazPiper MV32P	125	First wave player that looks good but sounds bright. Includes voice recording and phone book features	Solid State	•		MP3	PRL	32MB	195
	LG MF-PD360	130	Good looking and temptingly affordable, but features and performance are nothing special	Solid State	•		MP3	USB	32MB	208
	LG AHA-FD770	200	Cassette and solid state personal in one – novel idea, poor execution	SS/Cass	•	•	MP3	PRL	32MB	204
	Logix Evzone	219	Novell MP3 player that uses lomega Clik! discs for storage. Chunky but quite effective, and discs are much cheaper than memory cards	Clik! Discs	•		<b>МРЗ/ММА</b>	USB	40MB	213
R	Neo-25	420	Sparsely equipped but efficient hard drive portable with an exceptionally high potential capacity. Average in the sound department	Hard Drive	•		MP3	USB	10GB	213
R	Philips eXpanium EXP103	190	The best MP3-CD personal, at least at the time of writing An effective solution for MP3 on the move	CD			MP3			213
	Philips Rush SA126	250	Sound is a little thin and wishy-washy, and the fiddly controls and lack of remote make it difficult to use	Solid State	•		MP3	USB/PRL	64MB	216
R	Pine D'Music	120	Good build, solid sound and a voice recording mode make this a good first-time buy	Solid State	•		MP3	PRL	32MB	195
	Pontis SP504	158	Not the best aesthetically, but exceptionally good MP3 sound	Solid State	•		MP3	USB	32MB	204
R	Rio 500	190	Well featured and a strong performer, though new generation Rios have now anived	Solid State	•		MP3	USB	64MB	195
R	Rio 600	169	Neat design, strong future-proofing, good features and sound. Only its memory lets it down	Solid State	•		Agnostic	USB	32MB	208
R	Rio 800	300	If you're interested in solid state, this player's great sound and ease of use make it wor h a look	Solid State	•	•	Agnostic	USB	64MB	216
	Sanyo SSP-PD7	250	Cute but pricey with limited supplied memory, but sound is good and it's one of the first to employ AAC coding	Solid State	•		MP3/AAC	USB	32MB	213
	Schneider MPMan F20	99	The world's first MP3 personal. Basic but still good value	Solid State	•		MP3	PRL	32MB	195
	Smart Portable MP3 Disc Player	119	CD personal that also plays MP3 tracks burnt onto CD-R discs	CD			MP3.			208
	Sony NW-MS7	249	A gorgeous little personal using Sony's Memory Stick storage. Good but pricey	Solid State	•		MP3/ATRAC-3	USB	64MB	208
	Sorry NW-MS9	300	It's gotsize and simplicity on its side, but it's up-front, boomy sound issignificantly below par	Solid State	•		MP3/ATRAC-3	USB	64MB	216
R	Sony MDC-PC3	350	A MiniDisc deck which hooks to a PC Introduces chean and flexible MD media to the world of MP3	MiniDisc			MP3/ATRAC	USB		213

# RECORD PLAYERS



### SPECIFICATIONS

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STATUS	PRODUCT	£	■ COMMENTS								
BB	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
	Avid Acutus	4,995	Extremely capable design with no apparent shortcomings, don't sell your vinyl 'til you've heard it on this!	•		33/45	•	•			194
	Clearaudio Reference	3,990	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail, but can sound bold	•		33/45					144
R	DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table	•		33/45	•		•	•	144
	Dual CS 455.1	220	Neat record player with automatic convenience (and 78rpm), but doesn't match simpler manual rivals sonically		•	33/45/78	•	•	•	•	203
R	Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph			• 33/45	•		•	•	103
R	Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	•		33/45	•	•	•		91
R	Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc. still top rank	•		33	•		•		103
R	Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	•		33/45	•	•			91
R	Michell Gyrodec	875	Sweet and natural-sounding player, well matched to Rega RB300 arm	•		33/45	•	•			55
EC	Michell Gyro SE	775	A stunningly desirable combination of looks, solidity and sound make this a tempting turntable	•		33/45	•				190
ВВ	Michell Orbe SE	1,725	A Superb turntable, able to mix it with the best at virtually any price	•		33/45	•				192
88	NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	•		33/45		•	•	•	203
88	Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	•		33/45		•	•		159
88	Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound	•		33/45			•	•	164
	Pro-ject Classic Cherry	450	A great looking turntable with a generous and dynamic sound, but lacks something in overall coherence	•		33/45		•	•		203
	Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best	•		33/45	•		•		192
R	Pro-ject 6/Sumiko	850	Don't think of this as a deck with a good arm, but as a scaled-down Oracle Delphi — it's that good	•		33/45	•	•	•		138

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	TURNTABL	<b>EC</b> ((	CONTINUED)	MANUAL	AUTO	SPEEDS SEMI-AUTO	USP SUBCHASSIS	EXTERNAL PSU	PLIED WITH ARM	ISSUE NUMBER
CTATUC	PRODUCT	ا حا	• COMMENTS	P	. 7	J   Z	Š.	<u>د</u> ع	Ĩ,	작 ▮ %
SIAIUS	Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident			33/45				48
98	Rega Planar 3	274	Sounds musical in a balanced manner, needs decent isolation and suffers a little pitch instability			33/45			•	164
88	Rega Planar 25	619	Great looking turntable has a silky smooth sound with exceptional midband coherence	•		33/45		•		203
88	Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	•		33/45		•	•	159
R	Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	•	100	33/45	•	•		159
EC	SME Model 10A	3,333	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	•		33/45	•	•	•	195
EC	SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	•		33/45/78	•	•	•	186
88	Thorens TD166 VI/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget cartridges	•		33/45	•		•	• 103
	Thorens TD146 VI	550	Tonearm not quite up to turntable's potential; this semi-auto is much pricier than manual TD166	•		33/45	•	•	•	203
	Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled			• 33/45	•		•	159
R	VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	•		33/45	•	•	•	203
R	Well Tempered Record Player	850	Intriguing and challenging. Musically not ideal, but its limpid quality and lack of artificiality set standards	•		33/45	•	•		136
EC	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in a clean reproduction	•		33/45	•	•	•	205
88	Wilson benesch The Circle	795	A beautiful turntable with a sumptuous sound, all at a very reasonable price — a clear Best Buy	•		33/45	•			192

	C RTRIDGE	ES		MM	, M	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g	
JS • F	RODUCT	£	COMMENTS	_		O m			•
	Allaerts MC1B	1,295	Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford	50.00	•		0.5		
_ =	Audio Technica AT-95E	20	Clear and dynamic, though richly balanced	•		•	2.8		
100	Audio Technica AT-OC9ML	330	A well-finished cartridge with a sound that's smoothly detailed, but also rather unexciting		•		0.4	8	
-	Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy		•		0.55	11.5	
-	Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well		•		1.0	6	
-	Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail		•		0.1	6	
38 [	Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether, and a bargain at the price		•				
R	Dynavector DV-20X L	299	Articulate-sounding, with impressive treble resolve, though lightweight at times. Needs a high quality turntable and arm		•		0.25	8.6	
70.00	Dynavector Karat 17D2 mk2	450	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent		•		0.15	5.3	
R C	Oynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm		•		0.25	12	
1000	Oynavector Te-Kaitora	1,698	A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk		•		0.25	8.5	
100	Dynavector DRT XV-1	2,500	Capable of conjuring one of the most tactile , three dimensional sound stages on the vinyl planet. Extremely entertaining		•		0.3	13	
R	Soldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body	•		•	5.0	7	
R	Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency coloration apparent	•		•	6.5	7	
R	Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved	•		•	6.5	7	
R	Goldring Eroica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative		•		0.5	8	
	Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	•		•	6.5	6	
(	Goldring Elite	220	The basics are right, and it will cheerfully tackle any source material, but its sound is not the cleanest		•		0.5	8	
	Goldring Excel VX	525	Good bass drive but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end		•		0.45	8	
88	Grado Prestige Gold	149	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	•		•	4	6	
(	Grado Reference	995	Loads of tracking headroom but treble is limited. A prospect for mid-oriented valve amp users	•			1.7	6.5	
38	Linn K9	125	Linn improved this model by beefing up the Basik's bodywork and adding a super stylus	•		•	4.5	5	
1	London Decca Maroon	259	Now manufactured under the London brand name, this Decca cartridge is as iconoclastic as ever	•			5.0	6	
	London Decca S Gold	399	Immediate and detailed, but coloured and nonlinear, with a questionable effect on records	•			5.0	6	
ı	Lyra Lydian Beta	599	A thoroughly enjoyable cartridge – smooth, agile and dynamic in character		•		0.5	8	
R	Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed		•		0.3	7	
C L	Lyra Helikon	1095	Highly capable and highly neutral, this is a cartridge for all seasons. Albeit fussy about vinyl quality	•		0.5	8	215	
- 1	Lyra Parnassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak		•		0.22	10.5	
88	Ortofon 510/P	38	For the price, a good blend of virtues — weight, clarity and neutrality	•		•	3.0	5	
R (	Ortofon 520/P	65	Sensitive to load capacitance, but the 520/P has a lively, effervescent sound	•		•	3.0	5	
R	Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle – take it as it comes		•		3.3	4	
88	Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up		•		0.35	7	
	Ortofon MC25E	180	An excellent upgrade for a mid-price turntable		•		0.5	11	
(	Ortofon MC25FL	250	A bit too stark and honest, but faithful to what's on the LP		•		0.5	11	
88	Ortofon MC 10 Supreme	300	A full and cultured-sounding cartridge, with collective attributes far outweighing its shortcomings		•		0.5	10.7	
	Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings		•		0.5	10.7	
88	Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound		•		0.25	8.5	
R	Ortofon MC3000II	1,100	A real ear-opener. Nothing to criticise anywhere — one of the very best		•		0.12	10	
(	Ortofon MC5000	1,500	Limited tracking ability, bright and forward sound, but good stereo		•		0.12	10	
	Rega Bias	39	Difficult to mount in some arms due to its shallow body, but the Bias offers a gentle, refined sound	•	1	•	5	4	
R	Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	•		•	5.0	5	
R	Reson Reca	250	If you're after a high quality moving magnet cartridge, they don't get much better than this	•		•	6.5	6.3	
R	Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	•		•	6.5	5	
88	Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300		•		2.5	9	
-	van den Hul MM-1	250	If woody midrange could be tamed, imaging and security would pull it through	•		•	5.5	6	
	van den Hul DDT-II	600	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy		•		0.35	7.6	
R	van den Hul MC-10	750	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass		•		0.4	6	
R	van den Hul MC-One	900	This extends all the positive qualities of the 10, but adds greater authority and scale – worth all the extra money		•		0.4	6	
R	van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal		•		0.4	6	
R	van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals. This delicate and subtle performer has great charm		•		0.65	7	
R	van den Hul G' hopper IIIGLA	2,800	Undoubtedly one of the finest cartridges available. It has tremendous bandwidth, energy and finesse		•		0.4	6	
R	Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive		•		0.58	6	
R	Wilson benesch Carbon	1,573	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound		•		0.45	7	

	TONEAR	MS		EFFECTIVE MASS	PARALLEL TRACKING	PIVOTED	UNI-PIVOT	EFFECTIVE LENGHT (cm)	ISSUE NUMBER
STATUS	■ PRODUCT	£	■ COMMENTS						
R	Kuzma Stogi Ref	1,250	Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness	High		•			79
R	Linn Ekos	1,500	Superb, state-of-the-art design which builds significantly on predecessor's strengths	Med		•		229	67
BB	Rega RB250	109	The ultimate budget arm? Refined, sweet, detailed and natural	Low		•		237	60
BB	Rega RB300	174	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	Low		•		237	60
R	Roksan Tabriz Basic	350	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases — a touch bright though	Low		•		240	91
R	SME Series IV	983	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low		•		233	60
R	SME Series V	1,461	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low		•		233	60

					SPI	ECIF	FICA	ATIC	NS	
	STA		DS & SUPPORTS  UPPORTS	неіднт	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
STATUS	PRODUCT	£	■ COMMENTS							
3171103	Aavik C4	200	Attractive wood finish stand with a very large footprint but sound is a little coloured	77	47			4	MDF	206
R	Aavik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47			4	Wood	193
	Alphason GR 17/17-AS	275	Great looks but sound can be bettered for the money	36	60,39			4	Glass	181
	Apollo Symphony	245	Simple steel and glass stand which majors in excitement factor but lacks precision	73	46.5		•	4	Glass	206
	Apollo Soprano	275	Uninspiring looks and sonic performance that can be beaten at this price	68.5	45.5			4	Glass	193
	Apollo Mezzo Soprano	340	Heavyweight contender packing a big sonic punch. Looks cool, but can contribute a bit of character	68.5	53.5,44			4	Glass	217
R	Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6			4	Wood	193
R	Atacama Equinox	280	Stable, modular design with style. Excellent bass transients and a fresh design concept	81	50,50		•	4	Glass	217
BB	Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43			4	MDF	193
R	Avid Isoschelf	1,100	An enthusiasts equipment support stand free from coloration if a little fiddly to set up	87.5	48			5	MDF	193
BB	Clearlight Audio RDC Aspekt	549	Stunning neutrality and detail from a well damped design. Its performance makes the price tag seem rather good value	75	53.5,45			4	MDF	217
	Custom design E'lite E4	250	Fairly laid back for a glass/steel rack. Just loses out sonically to the competition	51	62,51			4	Glass	217
R	Custom Design Aspect650	270	Smart looks and practical thanks to adjustable shelves. Sound is fair with some loss of detail	66	46		•	4	Glass	206
R	Elemental Isotube x 4/Ref	1,199	Blockbusting size and build. Super sound quality	92	45,49		•	4	Marb	181
R	Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49		•	4	Glass	193
88	Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel — made a spectacular impression on audition	70	52,34		•	3	Glass	166
	Ixos Deadrock 704	250	Looks unassuming but sound is full and inviting		46,39			4	Resin	181
	Kestrel Furniture Nightingale	495	Well engineered furniture quality rack with thoughtful extras. Large with pleasing but not winning performance	The second	62.5,53.5			5	wood	217
	Mana 4-tier	500	The ultimate statement in steel and glass; adds resonance in a way you'll love or hate	87	45		•	4	Glass	206
R	Optimum Int 2000 OPT490	299	25kg stand with shelves between variable-height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass	166
R	Optimum Int 2000 OPT660	349	Glitzy style isn't reflected in sound, which is wholesome	82	60,52		-	5	Glass	181
	Projekt Furniture A4	215	An elegant support stand that blends in to any home environment with a laid-back sound	56	48			4	Wood	193
R	Quadraspire Q4	280	Simple but modestly effective and very attractive	52	49			4	MDF	206
R	Quadraspire Q4 Reference	440	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5			4	Wood	217
	Sonus System Elite	330	Rather ugly and seems to offer little over and above cheaper steel and glass stands	68	50		•	4	Glass	206
	Sound Organisation Z545	160	Budget price and great looks make this a great value stand	73	46		•	4	Glass	193
R	Sound Organisation Z560	195	Excellent value rack, 5 shelves too! Well balanced and under £200	92	50,40			5	Glass	217
R	Soundstyle X100	230	Looks lovely, sounds lively but slightly bright	64	49,28		•	4	Glass	181
	Soundstyle XS100	270	Less character than other similar strands, but sound is somewhat short on transparency	72.5	49.5			4	Glass	206 193
	Soundstyle Radius SR100	280	Stylish looks and a smooth sound	63.5	49.5			4	Glass	193
88	Standesign Design 4	190	An all-in-one support at a budget price with good sonic performance	88.5	50.8			4	A CONTRACTOR	217
88	Towshend Seismic Sink Stand Wilson benesch Asside	980 590	Serious resolution and stunning isolation from air decoupled self levelling design. If you have the cash, buy one  Sounds even better than it looks. And it looks wonderful	61 72	53,39.5 37.50			4	MDF Wood	181
RR	Alphason Akros II	65	Sounds even better than it looks. And it looks wonderful  A well-specified budget stand but the sound is as subtle as a house party		16.5	•		4	DOOM	202
	Alphason HDS	85	A reasonable stand with a smooth but rather bland sound balance. Good finish options	60,45 45-60						189
	Apollo Olympus	75	A reasonable stand with a smooth but rather bland sound balance, Good linish options  A popular stand and a decent performer, but unremarkable by today's standards	40-60	15.5,15.5					189
	Apollo A4/6	82	A proposal static and a decent performer, our differentiation of the crowd  A pretty and robust design that sonically fails to stand out from the crowd	51.40.5	-	•				202
	Apollo A4ro	62	A pretty and roodst design that something to stand out from the CFOWO	51,40.5	18			BEST ALL		202

	SPEAKER S	TAN	IDS					
STATUS	PRODUCT	£	<b>■</b> COMMENTS					
BB	Atacama Nexus 6	50	An excellent all round performer and a genuine hi-fi bargain	60,50	14.5,18	•		202
R	Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15,17	•	•	189
R	Custom Design R/S300 Mkll	100	A solid stand improving on the original with better focus and detail	61,56,51	16.5,18	•		202
R	Elemental Isotube SZse	599	Stands of distinction, able to free the speaker's sound from its box in a way budget stands simply can't	61	23,27	•	•	189
R	JPW HS1	120	A purposeful stand, a touch dry-sounding but particularly strong with bass. Great for rock and dance music	61	19,21	•		189
R	Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29,32			202
	Mission Stance	100	Detailed and open but needs a firm foundation to give its best	60	19,15	•		202
BB	Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than almost anything below £150	50-100	19,22	•	•	189
R	Partington Dreadnought Ult.	299	Super heavyweight stand that is an open window to the speaker placed on it	63	20.5,23.5	•		202
	Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33.5,24			189
	Sonus Systems Excel	110	Strong performance when filled with sand but design flaws let it down	65,45	20,22.5	•		202
	Sound Organisation Z524	69	A coherent-sounding stand with particular strengths in the midband, though quality drops at the frequency extremes	61	16,17			189
ВВ	Sound Organisation Z522	89	Easy going and likeable performer straight out of the box	59	16,17	•		202
	Sound Style Select	95	OK but not as good as its cheaper brother the Z522	59	16,17	•		202
	Target HM60	106	A solid and well-built stand laid-back to the point of coma	40-70	16.5,19	•		202
R	Townshend Seismic Sink	499	Unique inflatable plinth that works well with decent floorstanders as well as standmounted speakers	4	38,48			202



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# **TUNERS**



### **SPECIFICATIONS**

ISSUE NUMBE
ROT. TUNING KNO
IG. STRENGTH METE
REMOTE CONTRO
RD

### **ANALOGUE TUNERS**

STATUS	PRODUCT	£	■ COMMENTS		P					
Ř	Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM,M,L	64			•	•	193
A	Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM,M,L	64		•	•	•	193
A	Cyrus FM7.5	400	Beautifully made and presented, with sound that's a small but worthwhile advance over budget models	FM	7			•	•	211
BB	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
R	Denon TU-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM,M	40	•			•	184
	Magnum Dynalab FT11	499	All-analogue tuner: receives weak or tightly packed stations but loses out on noise and sonic neutrality	FM	3			•	•	184
88	Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance an'd good sound for the price	FM,M,L	30	•			•	166
	Leak Trough Line - GTA	300	A renovated classic with a style all of its own coupled with an emotive and gutsy performance	FM	0			•	•	206
	Linn Pekin	545	Smart and high-tech tuner which integrates well with Linn systems but offers less appealing performance out of that context	FM, M	80		•	•		211
Ħ	Linn Kremlin	2,600	Controversially good sound at a very high price	FM	80		•	•		142
88	Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM,M	60	•				184
	Marantz ST6000	150	Another budget killer from Marantz, with sound well above its class and useful features	FM, M, L	90	•		•		211
推	Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29		•	•		193
	Myryad T-10	530	A very smart unit which works well and offers good rhythmic drive and vitality, albeit at a price	FM	20			•	•	184
	NAD C440	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM,M	30	•				193
	Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM,M	40	•		•	•	166
	Roksan Caspian	595	Neat facia with great ergonomics, but sound is not really any better than models at half the price	FM	50		•	•	•	184
	Sony ST-SE500	140	A lot of features for the money, but sound lacks detail and has some coloration	FM,M,L	30	•		•	•	193
	Roksan Kandy KT-1	375	Well made but sound is a bit lacklustre and lags behind some budget models	FM, M, L		•				211
	Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM,M	20					166
	Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM,M,L	30	•		•	•	157
R	Sony STS-B920S	180	A little hiss and image compression don't detract from the clean performance of this feature-packed tuner	FM,M,L	30	•		•	•	184
	Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM,M	59	•	•	•	•	157

### **DIGITAL TUNERS**

STATUS	PRODUCT	. £	■ COMMENTS							1
R	Arcam Alpha 10 DRT	800	The first DAB tuner and arguably still the best, but the system's still not perfect	DAB	7	•	•	•	•	199
	Arcam FMJ DT26	1,000	Metal-cased version of the Alpha 10 DAB, not so competitive now DAB prices are dropping	DAB	7	•	•	•	•	211
	Cymbol C-DAB 1	1,000	The first 'high-end' DAB tuner, although format is the ultimate limitation. Gorgeous finish	DAB	8	•	•	•		199
	Psion Wavefinder	299	Bizarre-looking DAB tuner that requires a powerful PC to operate - great gadget, sound variable	DAB		•		•		211
	Sony ST-D777ES	550	Smart and useful with DAB and FM in one box, but neither band really shines	DAB, FM, M, L	99	•	•	•	•	211
R	Technics ST-GT1000	500	Handy tuner that combines DAB, FM and AM in one unit and substantially lowers the price bar for DAB entry	DAB,FM,M	97	•	•	•	•	199
	VideoLogic DRX-601E	299	Cheapest DAB tuner to date, and concedes little if anything to dearer models	DAB	10	•		•	•	211

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# NEXT MONTH...

### THE BEST IN EUROPE

Other UK hi-fi magazines hold annual awards, but only Hi-Fi Choice and sister magazine Home Entertainment can boast the European Imaging and Sound Awards (EISA). Uniquely, EISA Products of the Year are voted for not by a single magazine but by a raft of hand-picked representatives from across Europe, so you can be sure the winners really are the best products around. Which will triumph? Next month we reveal all...

SERIOUS SPEAKERS
Your choice of speakers is perhaps the greatest factor in defining your system's sound – tonally at least. Next month's huge group of serious speakers from £900 to over £2,000 is essential reading for anyone seeking to lift their system's sound from the sedentary to the sublime.

### ODACIOUS HEADPHON

Headphones are great. They let you to play your music without grief from grumpy neighbours. And they plug you directly into your own private sonic universe, which means a good pair can be incredibly involving. Next month's group tells you the best ones to buy for up to £100.

### PLUS

Linn's revolutionary Kivor sound server... Bluerooms' stunning sub/sat system... Audio Note's digital filterless CD player... Mark Levinson's Red Rose project... all the latest news and reviews from hi-fi's most reliable grapevine - only in Hi-Fi Choice.

### HFC 219 • ON SALE 9th AUGUST

All future contents subject to change



# Ich bin ein Frankfurter

PAUL FINDS OUT WHAT 'HIGH END' MEANS TO OUR GERMAN COUSINS. NO, IT'S NOT RUDE.

he annual German 'High End' show, held just outside Frankfurt, has built up a fine reputation over the years. This was my first visit, and boy, was I impressed! It's a huge event, essentially an upmarket stereo show, with a few AV multichannel dems, along with loads of vinyl. And it's absolutely stuffed with some of the weirdest and wackiest hi-fi on the planet.

B&W was using Frankfurt to launch its new Signature 800 flagship loudspeaker, and brought over some UK journalists for the event. This is an all new 'Nautilus evolution' model in B&W's line up, building substantially upon the continuing Nautilus 801 and 802 models, but incorporating a number of refinements arising from research during the two years since the original Nautilus 800 Series launch.

Using the familiar teardrop Nautilus 'head', but now mounted on a bass section housing a pair of 10-inch drivers, the new 800 has much better overall proportions than the tubby 801. It has flagship finish as well as technology, a lustrous top quality 'tiger's eye' real wood veneer combined with Connolly leather – going some way towards justifying a hefty £16,000/pair. (A more conventionally finished Nautilus 800 will be available at £12,000/pair towards the end of the year.)

### **ALL ABOARD THE ARC**

In wandering the show, I tried to concentrate on stuff with at least some relevance to the UK scene. Wilson benesch, for example, had lent John Franks at Chord Electronics a brand new, never-seen-before bookshelf two-way loudspeaker, to be called the Arc and due to sell for £2,000/pr.

Linn was well into high end country with its massive Komri speaker, a squat, compact design that features two actively-driven bass drivers (including the amps to drive them) as the foundation of a five-way driver line-up, the top three mounted on a metal 'bridge' across the upper bass driver.

I met Derek Hughes, son of Spen, who ran

Spendor for many years. He's still involved with Spendor, but is also working with a German company called Cicable (www.cicable.com), on a project to supply replacement 'no-compromise' outboard crossovers for 'classic' British speakers like the BBC LS3/5a and Spendor BC1.

Three decades ago, when those models first went into production, little was known about the sound quality of components. The new crossovers, with air-cored chokes and tight tolerances, are claimed to reduce measured distortion dramatically. As my examples of those old designs still sound good today, I'm looking forward to hearing what more modern audiophile grade network components can do.

### **STEP BACK IN TIME**

Nostalgia for classic British hi-fi seemed widespread. I saw and heard some wild-looking horns, closely based on the classic Lowther Audiovector design and drivers. I also kept spotting Garrard 301 turntables: Garrard does good business in Germany, and Terry O'Sullivan praised Britain's DTI for helping small brands like Loricraft handle the expense of exhibiting at a show like Frankfurt.

I then wandered into a Quad room – to find myself transported back 35 years, with original Quad II power amps driving the original Electrostatic loudspeakers. Ross Walker gave Dr Frank Hirsch the tooling for servicing that remarkable speaker a number of years ago – probably around the time that my aged examples started to lose their treble sensitivity. Now I've just got to find time for a trip to Koblenz, an attractive small city at the top of the Rhine valley, to get myself a rebuild.

A final mention for something quite extraordinary. A bizarre collection of tiny black boxes linked by special interconnects, it's a complete system that takes minimalism to a new level. It's very expensive, it's called 47 Laboratory, it's the creation of Japanese guru Junji Kimura, and it makes some of the most foot-tappingly involving music you're likely to hear. Looks like I'll have to go back to Frankfurt again next year, if only for another 47 Laboratory fix.

Paul Messenger likes nothing more than a hi-fi system that has him dancing around the room, even at high end shows.



"IT'S A HUGE EVENT, ESSENTIALLY AN UPMARKET STEREO SHOW, WITH A FEW AV MULTICHANNEL DEMS, ALONG WITH LOADS OF VINYL."



B&W Nautilus 800 Signature.

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### Sounds as good as it looks

One look tells you that this is a speaker that will enhance any environment. Finished in real wood veneers with a stylish brushed aluminium baffle, no other speaker in its class brings music to life with such realism yet fits so effortlessly into your interior. The CM doesn't only look beautiful, it sounds amazing too. Including audio technology derived from the ground-breaking Nautilus<sup>TM</sup>, the CM Series is the perfect solution for interior design-conscious music enthusiasts.

