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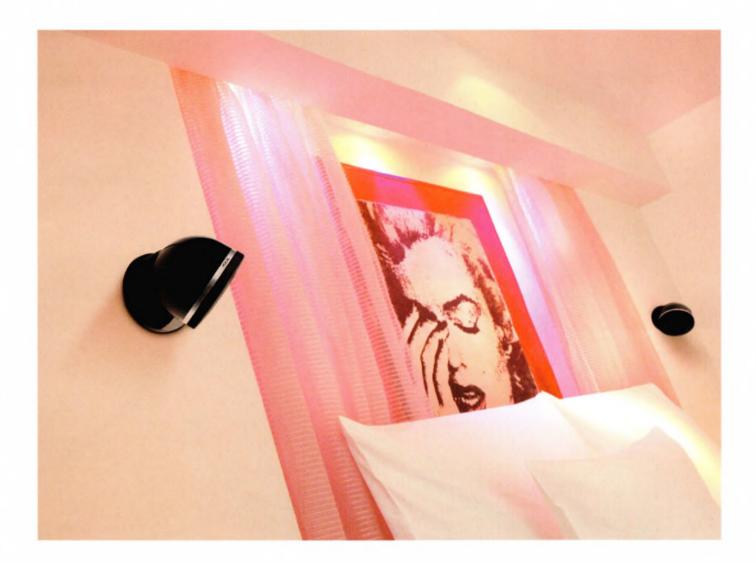
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WELCOME... CHOICE NOT THE 2008 ISSUE 312

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This month sees the welcome return of two classic bits of hi-fi, the Sonus faber Minima Vintage (on p50) and the Linn Classik (on p46), both of which are fine examples of the very best hi-fi money can buy. The timing of Linn's one-boxer couldn't be better, as it offers incredible value in these tougher times. Speaking of value, Richard Black has been

testing a £100 USB cassette deck, for those wanting to archive

their old tapes, with some surprising results. And at the other end

of the scale, our cover star, the Audio Research CD5 proves that occasionally pushing the boat out really can pay sonic dividends. Read Jimmy Hughes' fascinating, in-depth review on p42.

Dan George Editor

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

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

The Essential Guide To Audio Excellence In The Home













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



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

PAUL MESSENGER



JIMMY HUGHES

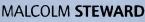
With more than 40 years as an enthusiast under his belt, Jimmy is one of the country's best known hi-fi experts. His knowledge of system matching, hi-fi tweaking and record collecting is unmatched in the industry.



Richard is a professional musician. recording engineer and a highly knowledgeable hi-fi analyst to boot. He has a knack for writing about complicated

writes for Hi-Fi Choice.

RICHARD BLACK



subjects in a readable way - and he only



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

ALVIN GOLD

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



ALAN SIRCOM Alan began his journalistic career in the

early 1990s. He brings his extensive hi-fi knowledge to Hi-Fi Choice in his role as Operations Editor and is always on hand to help with your questions and hi-fi related queries at hifisub@futurenet.co.uk

JASON KENNEDY

Jason Kennedy was a former editor of Hi-Fi Choice and spent an incredible 17 years on the title. Now a freelance hi-fi journalist with a system that'll blow your socks off, he remains a key player in keeping Hi-Fi Choice great



A highly experienced journalist, Dominic's sharp ears and retail experience are a valuable mix for Hi Fi Choice Each month, Dom dispenses priceless second-hand buying advice that will save you time, money and a lot of legwork.

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













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TURN TO P84 FOR DETAILS

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HIGH DEFINITION CO PLAYER

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CAMBRIDGE AUDIO DACMAGIC

At an incredible £200, Cambridge Audio's new DAC could be the saviour of ageing CD players

Cambridge Audio is no stranger to budget-breaking digital technology. When the company first resurfaced in the 1990s, one of its early successes was the DacMagic of 1994. It offered the sort of performance usually found in stratospherically high-end digital components for a real-world price. With changes in the hi-fi market making the digital converter less of a viable prospect, the DAC's popularity naturally waned in the late 1990s. However, the move from CD to downloading and the proliferation of high-quality gaming options has rekindled interest in the off-board converter and a slew of new, PC-ready digital products have recently emerged.

The Cambridge Audio DacMagic joins them. Once again, the product offers champagne performance on a beer budget. The new converter eschews high-end connections (such as ST optical or AES/EBU balanced digital inputs), but adds USB connection to the conventional S/PDIF and Toslink digital inputs. This allows the DacMagic to improve the sound of PC-based and networked music devices. Given the sudden proliferation of digital sources, the DacMagic also offers two switchable digital audio inputs and the USB socket connects to a PC without the need to upload driver software.

The processing itself is distinctly high end. It takes full advantage of Cambridge Audio's chumminess with Anagram Technologies, by featuring the Swiss company's Adapted Time Filtering system, which allows asynchronous upconverting of any datastream with a 16-24-bit word length and sampling between 32-96kHz, to full 24-bit precision and 192kHz sampling frequency. It does this thanks to twin Wolfson WM8740 converters in dual differential mode, hooked to a 32-bit Texas DSP. Claimed to be especially useful at reducing the effects of jitter from hard disk playback on PC sources.

Rare at any price – but certainly unique for the money – the DacMagic allows the user to select one of three filters – linear phase, minimum phase or 'steep' – to help the unit blend into a wide range of audio systems. The DacMagic also allows the user to invert or reinvert input phase to minimise recording problems. It outputs both single-ended phono and balanced XLR analogue audio, as well as pass-through S/PDIF and Toslink outputs for digital recorders.

The small, slimline DacMagic sits in a rigid, acoustically damped chassis and can be aligned vertically (in its plinth) or horizontally. And, we have one lined up for an exclusive first review in the next issue of *Hi-Fi Choice*.

Price £200 Due now 🕿 08709 001000 🏶 www.cambridgeaudio.com





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Edinburgh	James Morrow	0131 229 8777	james-morrow.com
Exeter	Gulliford Hi-Fi	01392 491 194	gullifordhifi.co.uk
Gateshead	Lintone Audio	0191 477 4167	lintone.co.uk
Guildford	P J Hi-Fi	01483 504 801	pjhifi.co.uk
Huddersfield	Huddersfield Hi-Fi	01484 424 000	huddersfieldhifi.co.uk
Islington	Bartletts Hi-Fi	0207 607 2148	bartlettshifi.com
Manchester	Practical Hi-Fi	0161 839 8869	practicalhi-fi.co.uk
Nottingham	Nottingham Hi-Fi	0115 978 6919	nottinghamhifi.co.uk
Pinner	Music Matters	0208 420 1925	hatchend.co.uk
Saffron Walden	Chew & Osborne	01799 523728	chewandosborne.co.uk
Sheffield	Moorgate Acoustics	0114 275 6048	moorgateacoustics.co.uk
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York	Vickers Hi-Fi	01904 629 659	vickers-hifi.co.uk



"It's a revelation. Quite simply this player is astonishing. Not astonishing for the price, you understand, but astonishing: full stop " What Hi-Fi Sept 2008 CD6 SE



"A stunning product for the money, offering performance startlingly close to what one would expect for a player three or four times as much." - Hi-Fi Choice Sept 2008 CD8 SE



"The CD 6SE is a landmark product that redefines the performance level at its price point. If we could award more than five stars, we would." What Hi-Fi Sept 2008 CD6 SE

"Timing, a traditional Cyrus strong suit, is immaculate here – each strum, pluck or hit starts and stops with great precision and easy fluidity, making light work of testing tempos or sudden changes of emphasis. There's an eye for detail the most nightmarish Sergeant-Major would be proud of, and the ability to lay the minutiae of a performance bare without ever losing sight of the performance as a whole. What Hi-Fi com Sept 2008 CDXT SE



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NEWS

SCD-XA5400ES .::

It has been four years since Sony's flagship SCD-XA9000ES, enter the new SCD-XA5400ES

The SCD-XA5400ES is Sony's latest flagship CD/SACD player, the first of its kind to support HDMI and HATS (High Quality Digital Audio Transmission System), allowing unsullied DSD directly to a suitably equipped amplifier. HDMI is commonplace on DVD and Bluray players today, but is virtually unheard of in audio-only products. However, the connection allows for extremely high-resolution, copyprotected multichannel audio along pure digital lines. This has been a long time coming, because Sony has been waiting for an HDMIcompatible amplifier to match.

Everything has been designed with best-possible audio in mind; even the chassis is a work of art, with a lot of design (and designer) DNA taken from the classic SCD-1. The player itself is both stereo and multichannel in design. Used as an analog player, it is purely stereoonly, with balanced XLR and single-ended phono sockets for left and right channels. Through the HDMI connector, though, it can deliver either a stereo or multichannel output.

Sony's HATS concept has been used on several occasions prior to the SCD-XA5400ES, but to date has relied on the i.Link (also known as FireWire or IEEE 1394) connection. HDMI is a considerably wider bandwidth digital connection than the 'antiquated' i.Link (created in

1995, the connection has a capacity of 3.2 gigabits per second, where HDMI takes that figure up to 10.2 gigabits per second). Running HATS on HDMI allows high-resolution multichannel datastreams to be passed from product to product without a problem and it even has enough capacity to allow comms and clock signals to be sent back and forth, which is why Sony claims industry-leading jitter reduction when this player is used in partnership with suitable amplifiers. It also allows a handshake to confirm the amplifier is capable of supporting a pure DSD datastream; if the link 'sees' an amp without that level of decoding power, the SCD-XA5400ES 'guesstimates' a 176kHz digital signal in place of pure DSD.

Remarkably, in a world where the Internet turns the tiniest leak into a torrent of disinformation, this product has remained a closely guarded secret. Precious little information has made it out of Sony and these specifications – although likely to match up with the end product – are subject to confirmation.

The ink may still be drying on the spec sheet, but we have managed to get one of the first players out of Japan. Watch out for a full review in the next issue on sale 16 October.

Price £1,200 (approx) Due Sept/Oct 208705 111999 @ www.sony.co.uk



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PURE EVOKE FLOW

Two-and-a-half years in the making, Pure's Evoke Flow is the first truly 'connected' radio, covering DAB/FM and Internet radio. Unlike many such radios, Flow can filter and navigate through the potentially tens of thousands of Internet radio stations, thanks to an intuitive user interface on the radio itself and a seamless link to Pure's new 'Lounge' online Internet radio portal. The radio – and the Lounge web page – can also seamlessly cope with Listen Again material from the BBC. The WiFi Flow connects to your wireless internet router automatically and does not require an Ethernet link or a computer to access Internet-ready features (signing up to the free Lounge service is optional). Expect an in-depth review in the next issue. **Price £150 Due September @ 08451 489001 @ www.pure.com**



TANNOY REVOLUTION

Taking key elements from the Revolution Signature range, these new speakers feature the company's distinctive Dual Concentric drivers sitting in a new, ultra-rigid cabinet. Its non-parallel trapezoidal construction helps retain a cool exterior finish, while also keeping internal resonance low. Aside from the cabinet, the big differences between these and the Revolution Signature models is the move to a rear-firing port and driver chassis grounding circuits.

Along with a centre channel speaker and subwoofer for home cinema, the Revolution series

comprises a DC4 standmount, featuring a single 100mm Dual Concentric titanium dome tweeter and a paper-pulp cone bass driver. This is joined by the DC4T floorstander, which adds a supplementary 100mm bass driver using matched paper-pulp cones. **Price** (DC4) £350 per pair; (DC4T) £600 per pair m 01236 420199 # www.tannoy.com

DALI LEKTOR

The new Lektor range by DALI features elements filtered down from the successful middle-market Ikon series of loudspeakers. Designed in collaboration with the DesignNord agency, there will be seven models in the budget range, although only the entry-level standmount and two floorstanders will be available at launch. All feature a 28mm softdome tweeter with a powerful magnet, together with lightweight wood-fibre bass cones and laminated MDF cabinets.

Price (Lektor 1) £250 per pair; (Lektor 8) £1,000 per pair Dun October ☎ 08456 443537 ⊕ www.dali.dk



SENNHEISER MX WIRELESS 1

Wireless 1 System are not new, but none have the potential audiophile credibility of the Sennheiser MX Wireless 1. The earphones are entirely independent (like a Bluetooth headset), feature neodymium magnets and receive signals over a 2 4GHz wireless digital link from the transmitter. This unit can connect two people to the same wireless music source and supports on-themove recharging. Optimised for iPod devices, the MX Wireless 1 system will work with any product that accepts a 3 5mm stereo headphone pluq.



DENON RCD-CX1/SC-CX101

Denon's latest all-in-one stereo system comprises the DCD-CX3 player and PMA-CX3 amp of last year in one box. The new RCD-CX1 two-channel receiver supports CD and stereo SACD and features Denon's exotic AL24 processing, an AM/FM tuner and a 75-watt per channel stereo amplifier in one. A digital output and iPod dock control are also included. A two-way standmount SC-CX101 loudspeaker joins the SACD receiver. The new reflex speaker design sports a 25mm soft dome tweeter and a 120mm mid/bass driver. **Price** (CX1) £1,299; (CX101) £599 **Due** now **a** 01234 741200 **b** www.denon.co.uk



AUDIA FLIGHT PHONO

Italian high-end hi-fi company Audia Flight has announced a new MM/MC two-box phono stage featuring a separate box for the twintransformer power supply, while the main amplifier circuits in the phono stage itself are claimed to sport a new generation of amplifier module known as MCF NG1 technology. The RIAA network is fully passive, however, and allows the user to tailor the phono to the cartridge, thanks to sixteen step adjustments for both capacitance and impedance.

Price: £2,750 Due now ☎ 01235 511166 @ www.audia.it



MORDAUNT-SHORT MEZZO 8

The Mordaunt-Short Mezzo range, has grown a new floorstanding loudspeaker. The Mezzo 8 is a true three-way loudspeaker design, featuring two of the company's 165mm bass units and one 133mm midrange, all using the Continuous Profile Cone system. These are partnered with a 25mm Aspirated Tweeter Technology high-frequency unit. Available in walnut or oak finish, the Mezzo 8 uses similar midrange isolation as found in the Performance 6 design. It also features a curved cabinet and highgrade components throughout. Price £1,199 per pair Due autumn O1753 680868

@ www.mordauntshort.com

AUDIO RESEARCH DAC 7

Following the success of its one-box CD players (see our in-depth CD's review on page 42), Audio Research has announced a digital to analogue converter, the DAC7. The new converter includes a USB port (alongside more conventional AES/EBU, phono coaxial and Toslink optical convertors) and features phono and XLR outputs. The Burr-Brown chipset and ARC-designed output stage can support compressed MP3 files as well as PCM. This means the DAC7 is designed to help raise music servers and computer audio products to Audio Research levels.

Price £2,545 Due now 2 020 8971 3909 @ www.audioresearch.com



Soundbites

- REVO'S Pico RadioStation is the go-anywhere version of the company's Blik range. That makes it the world's first portable DAB/DAB+/ Internet radio 'hybrid'. The £170 Pico can access more than 11,000 Internet radio stations wirelessly, without need to connect to a PC. 20 01555 666161
- AUDIO-TECHNICA'S ATH-ES55 is a lightweight portable headphone system. It features a swivel, lock-folding mechanism, hairline finish aluminium housings and soft leather feel pads. The 40mm neodymium magnet drive units feature the company's CCAW bobbin-wound voice coils, to deliver a claimed frequency response from 10Hz-25kHz. Price to be confirmed. # www.atheadphones.com
- TANGENT'S Trio is a high-quality £160 CD/ DAB table radio that can also act as an alarm clock. The Danish clock radio system is designed to be easy to use, features a fivewatt amplifier, a single 75mm drive unit and comes in a special

limited edition finish... two natty shades of yellow or green, all wrapped in a wood cabinet. © 01494 551 551



CLEARER AUDIO'S CopperLine Alpha mains cable is the entry-level model from the range. Despite costing from just £35, it is still entirely handmade and features ultra-high-purity copper conductors and a twisted geometry with cotton filler rods to overcome RFI problems. It also sports the company's new triple-layer 'triangle shielding technique' to help prevent RFI and EMI contamination. ☎ 01702 543981

SIGNET by the Chord

Company is said to be the world's first truly upgradable cable. For example, a one metre cable (£495) can be returned to



Chord's HQ and be fully rebuilt to the specification of the one metre Signature Plus cable (£725). This upgrade includes a secondary silver-plated Teflon-insulated return connector and acrylic plug surround, which is claimed to markedly increase dynamics and coherence.

🖶 www.chord.co.uk

ERRATA Due to an oversight, the Best Buy badges were left off our review for both the PMC FB1i and OB1i speakers in *HFC* 311. Similarly, the Ed's Choice badge is also missing on our review of the Monitor Audio PL100 speakers in *HFC* 310.

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🛇 Hi-Fi Diary

OCTOBER

- 3-5 High End 2008 Show Iris Congress Hotel, Moscow, Russia www.hifishow.ru
- 12 Audiojumble 2008 The Angel Leisure Centre, Tonbridge, Kent www.audiojumble.co.uk
- 31-02 Stuff Live/What Hi-Fi Show ExCeL London www.bestofstuff.co.uk

JANUARY/ FEBRUARY 2009

31-1 Smartlife North Radisson Hotel Manchester Airport www.chestergroup.org

20-22 Sound & Vision: The Bristol Show

Marriot City Centre Hotel Bristol BS1 3AD www.bristolshow.co.uk

MARCH

28-29 London High Fidelity Show Park Inn Heathrow Airport www.chestergroup.org

JUNE

13-14 Northern High Fidelity Show Radisson SAS Manchester Airport www.chestergroup.org

SEPTEMBER

18-20 London Sound and Vision Park Inn Heathrow Airport www.chestergroup.org

NOVEMBER

14-15 Smartlife Scotland Thistle Hotel Glasgow www.chestergroup.org

Sony absorbs BMG

Sony has bought out partner BMG in a move that makes its new Sony Music Entertainment the second biggest player in the global music business. BMG, or Bertelsmann, sold its 50 per cent stake in the company to Sony for \$900million, which, given this year's 16 per cent decline in CD sales, seems



like a good price for the German company. Sony BMC itself posted a \$49million loss in the second quarter of 2008, down from a profit a year earlier.

00

Sony's chief executive officer Howard Stringer, said the move will "provide a deeper integration between the music company and Sony products," which makes the likelihood of Sony becoming a competitor in the download market very high. The buy-out follows years of in-fighting between the two companies and will see artists including Bruce Springsteen, Beyonce and Justin Timberlake falling into the new company's roster.

Big guns

PMC is going on the road, taking its 'big guns' on a tour of dealer's demo rooms around the country. If you have ever wondered what serious loudspeakers, such as the "new and phenomenal MB2XBDi", sound like in the flesh, now is your opportunity to find out. The new i series range will also be demonstrated at the following dealers with a music evening kicking off each week, where you can quiz the PMC boffins. The dates and dealers are: 26 Sep-01 Oct, Home Media; 02-08 Oct, Audio Excellence; 09-15 Oct, Audio T; 15-22 Oct, Billy Vee;



22-29 Oct, Audiofile; 29 Oct-5 Nov, Basically Sound & Vision; 05-12 Nov, Soundcraft. See the www.pmc-speakers. com website for information on how to receive a free gift when you attend one of these events.

SACD ups and downs

Hyperion's Simon Perry cites declining sales as the reason for its abandoning SACD production in the UK, whereas company's like Reference Records in the US are embracing the audiophile format. Reference has been offering downloads on its HRx format, which are 176.4k PCM files but has joined the SACD fraternity with a print of its popular *Tutti! orchestral sampler*. This is accord in Japan by Sony.

This is pressed in Japan by Sony in co-operation with Naxos and is a hybrid disc with HDCD encoding of the CD layer. Reference plans to release a collection called *Mephisto & Co* by the Minnesota Orchestra as its next SACD. The label claims that its recent technical advances allow it to transfer high-res PCM material to DSD without the usual compromises in sound quality.



Pure hits two million sales

Pure has sold two million DAB radios. The digital radio pioneer claims to be the first to reach the milestone – an achievement made only 18 months after it hit the one million mark (and that took six years to achieve). According to Tony Moretta at the DRDB (Digital Radio Development Bureau), Pure has "pioneered DAB in the UK and have consistently produced innovative, high-quality products creating a new and trusted consumer electronics brand in a short period."

General manager at Pure, Paul Smith commented: "Pure's drive in the growing DAB digital radio market continues with a number of new products announced recently. We also have a number of very exciting and groundbreaking products coming out this year and next, combining DAB with wi-fi technology, which is sure to accelerate the take up of both DAB and connected radios."

RIP Jerry Wexler

The man credited with coining the term 'rhythm and blues' has died at the age of 91. Jerry Wexler was a journalist at Billboard in the 1940s, but went to MCM in 1951 before moving onto Atlantic Records as a partner. There he worked with Ray Charles, persuading him to abandon attempts at sounding like Nat King Cole in order to make hits like *I Got A Woman*. He also



signed Aretha Franklin and produced her first hit single *I Never Loved a Man (The Way I Love you)*. Wexler also heard the potential in Stax records, signing a distribution deal that resulted in work with Booker T & the MGs and Otis Redding. In the rock era he signed Led Zeppelin, Cream and the Allman Brothers and produced Dr John's classic *Gumbo*. Asked to write his own epitaph he kept it short and to the point: 'More Bass'.

Lost and found

Universal Music is attacking the download market from a new angle. Its Lost Tunes online store will make available music that has been hard to find. It intends to cater to enthusiasts' desire to hear the most obscure and rare recordings by their favourite artists. The roster will include previously unreleased albums from the Trojan, Fiction and Decca labels alongside bands including the Comsat Angels, The Walker Brothers and the La's. The material will be available at 312kbps and is DRM-free.



Azi Eftekhari at Universal Music Catalogue commented: "We wanted Lost Tunes to replicate the experience of going to a favourite local record shop, where browsing and discovering music is a real pleasure and an adventure. We only include music that we love." To make browsing more interesting, the site offers 38-genres including progressive, dub and spokenword.

Insider comment

Downloading genius

The announcement that Sony is busy buying out the BMG part of Sony BMG (see announcement on opposite page) may at first seem to have little real impact on the hi-fi market, but it might just cut to the very quick of what we will be listening to and listening on in the future.

In some respects, it's not the Bertlesmann Music Group deal that's the clincher, even though it represents a billion-dollar transaction for Sony. It means one of the biggest names in recording is wholly owned by a company that supplies the complete chain from artiste to loudspeaker – and at a time when traditional methods of making money from music are failing to work.

Why is this important to our end of the market? Well, think just how ubiquitous the Apple iPod has become in the last half a decade or so. Much of its popularity comes down to style, ease of use and sheer chic... but these are product characteristics that Sony is no stranger to, as attested to by the original Walkman and the PlayStation line. But it's also that Apple's iTunes dominates the download market; today, if a music company wants to break into the business, they have to be best buddies with Apple. But the fickle nature of both the music business and the consumer electronics market means that could change – two less thanwonderful iPod years coupled with a legitimate rival armed with a good product could see Apple's staggering lead stumble.

By the end of the year – when the BMG buyout is concluded – Sony will be the only company with enough clout in both the consumer electronics and music biz to take on Apple with such a robust assault. And, as evidence from the gaming market shows, when Sony puts its collective mind to control a market, it can often succeed.

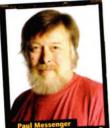
Sony needs to find intelligent methods of making music profitable again and, perhaps, the future lies in a combination of content and hardware. Sony could effectively deliver a unique Sony product loaded with Sony content delivered down Sony channels and – if it got the sums right across the board – this could provide the first real challenge to the iPod. Imagine a product that came preloaded with your choice of key albums by Sony artists at the time of purchase. A product that allowed you to unpack and save those albums on smart and secure home Vaio servers and still offered the option to download whatever music or video content you wanted (whether from Sony or not) through Sony Music's portal. If such a product were keenly priced and designed with the same intrinsic simplicity as demonstrated by the iPod, who wouldn't be interested?

Of course, no such convergent product formally exists today, although there are many products that can supply some or all of these aspects. There also seems to be an infrastructure being built up by Sony to better facilitate a stem-to-stern solution. Sony is now very friendly with social networking sites and has been making deals that allow hosting of streamed video and extra content on Sony artist pages. Perhaps it's only a question of time before Sony turns this into something more fiscal.

audiofile



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Cable Guy

The Vicar of Tonbridge might seem an unlikely individual to inspire a column in a hi-fi magazine, but the Reverend Mark Brown – a serious music and hi-fi enthusiast in his leisure hours – was, to my knowledge, the first to import some very interesting and inexpensive cables from the US Midwest.

The company concerned calls itself Anti-Cables and principals Paul and Judy Speltz set out the philosophies and rationales clearly and succinctly on their website (www.anticables. com) and their point of view makes a lot of sense. But the theory can come later.

I first heard the speaker cables when some guys from the New Ash Green hi-fi club (NAGfi) brought a set when they came over to visit. I immediately e-mailed America and soon an 18ft set of Anti-Cables speaker cables terminated in Eichmann Bayonet 4mm banana plugs arrived, along with a pair of (Eichmann Bullet) phono-terminated interconnects.

"The Vicar of Tonbridge – a serious music and hi-fi enthusiast – was, to my knowledge, the first to import some very interesting cables from the US Midwest."

Sonically and musically speaking, the speaker cable fully lived up to my expectations. The sound has excellent focus and coherence, very clean tonal neutrality, a wide dynamic range, and lovely spacious, airy stereo imaging. The only downside – typical enough of a solid-core type cable – seems to be that the bass end is a little dry and weak.

The actual speaker cables I received cost a remarkably reasonable \$248 (plus a bit extra for the Eichmann plug option), yet their excellent performance can comfortably match cables at many times that price.

The reason they're called Anti-Cables is that they're very different from the usual cable stereotypes and therein lies the reason for both their fine performance and their inconvenience. Instead of a sheaf of wires wrapped in some sort of plastic insulation, this is a solid-core type cable based on a length of substantial continuous cast-oxygen free copper. The unusual bit is that the wire is then coated by an ultra-thin (unspecified) red coloured layer – either enamel or more probably some form of varnish one suspects – which provides insulation and also prevents oxidation.

By removing nearly all the insulation, the undesirable dielectric effects that adversely

affect cable sound quality are also removed, ensuring a very 'fast' and coherent sound. While I wouldn't call it particularly userfriendly, it does offer exceptional sonic value for money, and the rationale behind it makes a whole lot of sense too.

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



Bargains Galore! How reliable are price comparison websites?

f you use the Internet then you're probably familiar with price comparison websites. Indeed, most of us will probably have benefited from them at some time, even if it was just to sort out some home insurance. Yet, have you ever used such sites when buying hi-fi separates? Despite the potential being there, there's a good chance you haven't. The reasons for this are three-fold. First off, most price comparison websites charge retailers a fee to show their prices. Most hi-fi separates are still bought through small, independent retailers who simply can't afford the fees charged by comparison websites.

There are, of course, sites who claim to show all prices, whether or not the retailers pay them. But some retailers have complained that 'free' sites offer little or no support for when a price is not showing or incorrect. The 'spiders' they use to check websites can also be notoriously fussy meaning that many smaller retailers' sites are incompatible. You can understand the business sense in supporting sponsors and offering limited support to others, but it's of little use to the consumer who, if they really want the best price, still has to search independent retailers' websites individually.

What is perhaps most surprising to see is that it's not just high-end equipment that's neglected by price comparison websites, but high-selling budget gear too. The Marantz PM6002 and CD6002 are top-selling separates available from literally dozens of retailers. Yet, check them on some comparison sites and you'll get just a single result for each – hardly the point of a price comparator. Do a bit of your own online research and, all of a sudden, comparative deals begin to appear.

The final reason that price comparison websites have perhaps never really taken off with hi-fi, is the widespread presence of so many hi-fi enthusiast websites such as our very own. In addition to subjective opinion, much price information is freely passed around on these sites. It's from forums such as these that I suspect most buyers get a good idea of where the best prices are, especially at the higher end of the market.

As ever, price is only half the story. Some of the best 'bargains' turn out to be anything but. Hi-fi separates are not like home insurance or even a TV. They relate to each other and room acoustics in a way that makes every combination sound unique. Whilst the Internet can be extremely useful for making shortlists, there's still no substitute for the good oldfashioned demo.

> Dominic Todd began his hi-fi career in the retail business and has been a freelance hi-fi reviewer and columnist since 1993

MARTINLOGAN CLS LOUDSPEAKER

HI-FI REVISITED

ETR

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This seems an opportune moment to reprise the illustrious history of the MartinLogan CLS, which is now deceased, and is to be replaced imminently, by the 25th Anniversary CLX. The new model will have the same USP, but is very significantly developed from the historical model. What always set the CLS apart and which will also distinguish the new model from its peers is that it is a full-range electrostatic. The first and, to date, the only non-hybrid loudspeaker in the MartinLogan arsenal. It is also a direct counterpart to the seminal Quad Electrostatic.

The CLS was always a purist product, which was never intended to plumb the extremes of the tonal or dynamic range envelope, but it was the one intended to appeal most directly to the enthusiast after the most consistent and seamless performance available even if this meant less bandwidth and less bass. The CLS uses a single drive electrostatic dipolar drive unit for the whole of the audio band, with no attempt to extend the bass using a separate moving coil driver.

All versions of the CLS looked much the same, in each case the diaphragm curved laterally to spread the sweet spot and the transducer was fixed inside the wooden outer frame using Velcro. The diaphragm coatings were refined and improved through the model's lifetime and the drive electronics were also changed to make the speaker an easier, less punishing electrical load, which was almost as challenging as the infamous Apogee Scintilla. Sensitivity was also quite low (83dB on average) and performance tended to deteriorate over time, though they could be revived, with a strategic application of a hair drier, or if necessary a drive unit transplant.

So how did they sound? First and foremost, they were – are extremely sensitive to positioning. Sound bounced off the side walls of the listening room had little effect, as usual in a dipole. But back radiation tended to generate a



"Sound bounced off the side walls of the listening room had little effect, as usual in a dipole."

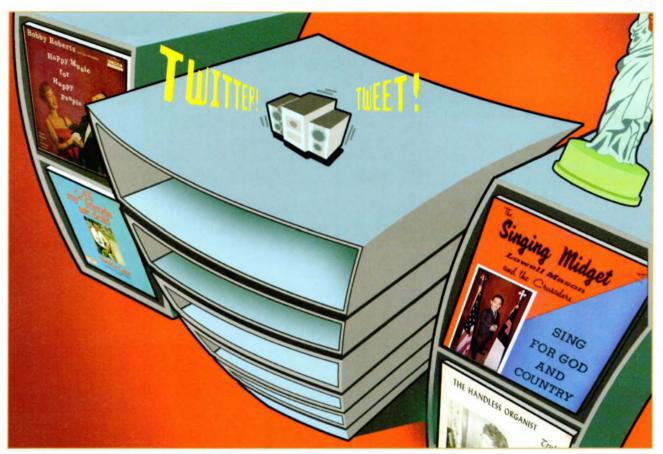
'comb filter' response characteristic as the reflected sound meshed, or (more likely) failed to mesh with the forward bound output. There was no real solution to this apart from the obvious, which was to pull the speaker well forward of the back wall – about two meters is ideal.

The CLS was never much good for whole families to listen to together and even on the correct axis there was a 'sting' in the treble which was difficult to ignore and some milder resonances at much lower frequencies. Bass is not well extended, so the speaker tended to sound dry to the point of brittleness.

The CLS has it faults, plenty of them, but it also has this wonderful consistency, with exquisite timing and lightning fast reflexes. When fully on song, it was one of the most engaging of all loudspeakers and, although, it eventually met its equal in the latest Quad electrostatics, the early Quads always sounded much more edgy and metallic than the CLS. The seminal CLS has also been excelled by the hybrid Summit and derivative in most respects, but the CLS was always the true classic and in some respects an unequalled tool for exploring the great musical repertoire on disc. **HFC**

Alvin Gold







Stand by me

Supporting your hi-fi

The demise a couple of years ago of Mana Acoustics left me in a bit of a quandary: where could I source really high performance system support furniture? While I will be the first to admit that Mana's stands were never going to win any beauty contests their performance was in such a totally different league to the majority of other options that it was easy to forgive their aesthetically-challenged demeanour.

After having been entirely Mana'd while I lived in London, I spent a few years using a mix of Hutter and Mana supports when I moved to pastures rural, which coloured my view of the latter stands. The spike count on multi-layer installations meant that regular

"I spent a few years using a mix of Hutter and Mana supports when I moved to pastures rural, which coloured my view of the latter stands."

maintenance was mandatory to ensure optimum performance in any system that was being regularly fiddled with, such as a reviewer's. The Hutter, on the other hand, was far less finicky and still managed to perform rather well. It also looked far less industrial, a benefit that did not escape my wife's notice.

Then I remembered Quadraspire whose longestablished Q4 tables I had reviewed long ago in *HFC* and considered their performance to be just a gnat's privates off that of the Mana designs. Three six-shelf stands were duly ordered, installed and are sitting in my music room bedding in as I write.

Because this involved a major upheaval of my music room, I decided to power down and completely remove my Naim active system from the vicinity for 24 hours. Nonetheless, the system sounds as though it is very content on its new supports as they settle down under its not inconsiderable weight. Initial listening has proved highly promising and I am looking forward to hearing the system playing in anger once it has completely bedded down.

However, I am finding the wait to be incredibly taxing because I am eager to assess a couple of new additions to the system and to try out a few tweaks that I was not able to explore with my previous supports. This time I was careful to leave some room for manoeuvres behind the new stand installation in order that I can investigate the effects of optimised cable dressing and routing, which can be highly efficacious in a Naim system. This, of course, is something that the non-ferrous construction of the Quadraspire supports positively encourages.

I strongly suspect that I am going to enjoy a long and happy relationship with these tables... they have already managed to revive my interest in tweaking!

Molcoim Steward was one of the country's best-known hi-fi reviewers of the 1980s and 1990s. He currently publishes the hi-fi industry trade bible, the British Audio Journal



Feeling Lucky, Punk?

Steam-powered hi-fi

here was a time when technology beat with hearts of steel and brass, steam pulsing through its veins. Only a century ago, coal drove the modern world ever faster into a future whose potential was freed, made unbound by the brilliance of science. At the opening of the second millennium, unmoving silicon and the tiny electron have usurped machinery in motion as the dominant forces in our everyday lives. The faceless beige of PCs fill homes and offices. Waging an aesthetic battle against the bland are the Steam Punks and their modded PCs. At a time when hi-fi is so very often devoid of genuinely fresh, iconoclastic design, should audiophiles join the Steam Punk ranks?

Steam Punks are rooted in a world of Victorian sci-fi written into life in the 1970s by authors like Bruce Sterling and Michael Moorcock, a world where our recent history collided with ultra-technology. Their PCs, laptops and monitors aren't dominated by beige plastic and brushed aluminium, but by brass and copper. Casework is often trimmed with wood and leather.

If one of the major manufacturers decided to produce a leather-bound pre-amp with wooden side cheeks and ball-and-claw feet, what a refreshing change it would be from aluminium, steel or even brass – Crivens! Is it too far a stretch of the imagination to visualise a transport whose spoked, flywheel platter is driven by cogs and gears?

Of course, the richest vein to be mined for componentry which would match a waistcoat and top hat Brunel-style is the venerable turntable. Although a range of companies has employed brass and wood, and complex, castmetal latticework in the past, none has really produced the 'full-monty' techno-archaic turntable. What this calls for is a small boiler, fed on a steady diet of coal (perhaps half a trowel for an LP, or a few teaspoons for a seven-inch). The steam would drive a brass turbine controlled by the sort of speed governor you'd find on a traction engine.

CLASSIC ALBUMS

CAROLE KING TAPESTRY

In 1971 the former Carol Klein was yet to make an impression on the public consciousness. Industry insiders were aware of her songwriting talent, both in her own right and with husband Gerry Goffin. And everyone knew the Brooklyn girl's songs from the height of the Brill Building era, made famous by the voices of others. Tunes like *The Loco-Motion*, *Pleasant Valley Sunday, Up On The Roaf, (You Make Me Feel Like) A Natural Woman*, and *Will You Love Me Tomorrow* were already classics even before the last two ended up on *Tapestry*. But the lady who'd written them was far from a household name.

That was all about to change, but few now remember that *Tapestry* was actually her second solo album. Her first, the rather more strident *Writer*, presented her as a bit of a rock chick and was virtually ignored on its release in 1970.

But for *Tapestry* the following year, a different approach was taken. Taking a nod from the emerging singer-songwriter movement, as well as his own smooth jazz collection, producer Lou Adler had the idea of capturing King's songs with as close a sound to her original demos as he thought he could get away with. "The demos that Carole made as a writer had a heavy influence on the sound. What I was trying to do was recreate their feel by staying simple, so that you could visualise Carole playing and singing. So it wasn't 'just a piano player', it was Carole."

Sure enough, though there is a full band, saxophone, flute, a string section and even guest appearances from friends James Taylor and Joni Mitchell (acoustic guitar and backing vocals respectively), King's vocals and piano are very much to the fore throughout, and the album holds on to the intimate feel that Adler was clearly trying to capture.

The arrangements complement the songs rather than make them, with the instruments often merely doubling or echoing King's piano parts. And her voice is close-miked and



"There are no duff tracks, absolutely no filler – any of them could have been a successful single..."

exposed, with no studio trickery to enhance (or detract from) it. There's little or no reverb, for example, so you get the full effect of sitting next to her as she sings her songs, unadorned, with a quiet passion and intensity that's impossible to fake.

There are no duff tracks, absolutely no filler – any of them could have been a successful single, and in fact, most of them have been. But not even King or her most fervent admirers could have predicted the runaway success of the album. It was number one for 15 weeks, stayed on the album charts for six years and won four Grammys. It's sold 24 million copies so far and it's still selling. Its combination of cracking tunes, subtly perfect arrangements and intimate vocal stylings mean it's well suited to background listening, but also richly rewards close attention, making it an ideal fit in virtually every household, from student bedsit to connoisseurs of 1970s rock.

A recent Legacy edition includes a second disc with live versions of the songs, all played in the original album running order. These are all solo versions and offer a glimpse of the songs as they were first heard by the woman who wrote them. **HFC**

Ian Harrison



■ To minimise the amount of vibration is reaching the record, the brass platter would topped off by a leather mat trimmed with gold-leaf. OK, it might weigh a couple of hundredweight and it would make your living room smell like an ashtray in a coal bunker, but just think of the envious looks from your audiophile friends as they wipe the soot from their faces. Even the reaction from the good lady of the house is sure to be, erm, strong, as you stand there and exclaim, "Smokin'!"

Jon Marks has been happily addicted to hi-fi for 20 years, especially since becoming a member of the hi-fi press in the mid-1990s



Endurance test

Surviving opera

he 1990 Football World Cup (*Italia '90*) unquestionably introduced many to the delights of listening to opera. It put Puccini's *Nessun Dorma* on the map. And also launched The Three Tenors. Well, you can't have everything...

Nonetheless, there's no escape: listening attentively to an opera lasting between two to three hours takes a lot of stamina. With many people today having short attention spans and low boredom thresholds (blame YouTube, MTV or Google if you like), listening to a full-length opera is potentially a bit of a trial.

Speaking personally, I've always had difficulties with long pieces of music. I often find I 'know' the earlier part of a long piece better than what comes later. Why? Because I'm fresher and more attentive when the music starts. As the work progresses, I find it harder and harder to concentrate and take-in what I'm hearing.

Mental exhaustion quickly sets in, making listening a strain. Of course, music is meant to be a pleasurable experience; it's not an endurance test. But, if you sit down to listen to Wagner's *Parsifal*, you've something like four and half hours of music to assimilate. Your ears need to be toned-up – the aural equivalent of a marathon runner.

There's no easy solution to this. But one way to increase your listening stamina is to break



"...there's no escape: listening attentively to an opera lasting between two to three hours takes a lot of stamina."

long works into sections. Obviously, that's why most operas are split into acts – it gives listeners and performers a chance to recharge their batteries and refresh themselves.

So, rather than listening to a long work in one hit, try (say) the first act one night, and maybe the second the following night. I always find that, once you start to assimilate a new long work, it seems to become shorter. Why? Well, when you're bored, time passes slowly; when you're enjoying yourself, time moves swiftly.

Listener fatigue has many causes. It may result if your hi-fi produces a forwardlybalanced, highly 'immediate' sort of sound. What initially sounds exciting and engaging, can swiftly become wearing. If the music is constantly being thrust in your face, you may wilt under the assault

Of course, the opposite can also be true; if your system sounds excessively bland and smooth, you may find yourself nodding-off after half an hour. There needs to be a balance between something that engages and excites, and something that's so relaxed and refined, its soporific.

Whenever you upgrade or tweak your hi-fi system, it's worth noting whether or not the changes-made enable you to listen more attentively for longer periods of time. Your initial impression (Hey - That Sounds Great!) is very important. But also take a long-term view. Notice too if the sound is comfortable as well as exciting.

That new amplifier might sound significantly more dynamic and crisper than your old one. But, if at the end of an hour or two, your ears are bleeding, you'll find yourself avoiding lengthy works – in much the same way you wouldn't go for a long walk in shoes that hurt your feet.

Jimmy Hughes is one of the country's best known hi-fi experts. His knowledge of tweaking and his record collection know no bounds



And all that jazz The future of jazz radio

n 25 December 2006, Classic FM gained a sister station, the Jazz, devoted to, er, jazz. Exactly a year and four months later, it closed, its small but loyal band of listeners re-directed to the Classic FM schedules for a much denuded 'fix' Ring any bells? Back at the beginning of the decade, a radio station called Jazz FM (nnnnice) bravely claimed its right to a slice of the airwaves. A year later the station's listening figures had tanked to a fairly tragic five per cent – or a little below that of Kent's far from inspiring independent station, Invicta Radio Jazz FM hung on a lot longer than theJazz, trying to find a formula that would ignite the listening figures. Jazz FM eventually re-invented itself in June 2005 as Smooth FM and this had a much broader playlist remit that, cleverly, didn't include much jazz at all. Meanwhile, Jazz FM became a website.

But, what's this? On Monday 6th October, on digital radio in Glasgow, London, the west midlands and north west England, Jazz FM rides again. This should be great news. I love jazz, have done for 40 years. But one of the reasons | love it is that it has a minority following. And, typically, commercial radio stations don't like minority followings. Question is, can jazz ever be made to appeal to the mainstream palate? One way is to stick with stuff that's easier to listen to - happy, tuneful, up-tempo material; big bands, modern combos; Harry James in the morning, David Sanborn in the evening - fare that clicks with the kind of audience major league advertisers are interested in. But I can't help recalling what Time Out's erstwhile radio columnist Sid Smith wrote many years ago. Smith was a jazz critic in the sense that he didn't like jazz. He called jazz a constipated, fiddly music form lacking the open-mouthed quality of rock - a bit like a fat man trying to eat spaghetti with chopsticks. He thought Jazz FM should have been strangled at birth because he believed it was founded on a fundamental misconception: that people don't like jazz because they don't know about it. He asked why should people like it more just because it's on radio? Fair point. Adopt a scattergun 'isn't all jazz wonderful?' approach and you run the risk of not even appealing to the people who like jazz. So, finally, Jazz FM gets a second chance, but will it get it's audience back? I hope so but, somehow, I doubt it.

The real problem with jazz radio, though, is that the more catholic it tries to be, the more people it alienates. It's a certainty that there isn't a single person who likes 'jazz' in its entirety – by it's very nature it's too disparate, even contradictory, to pull in the big numbers. David Vivian has been wallowing in gorgeous hi-fi and then describing its virtues and vices in Hi-Fi Choice since 1990

TECHNOLOGY EXPLORED

IT'S ALL IN THE CAN

Why is it so hard to find headphones with a truly flat frequency response? Surely it must be pretty easy to get a flat response from small drive units that

close to the ear? Funnily enough, it's not. The problem really hinges on the simple fact that the drivers are so close to the ear that at most audio frequencies the distance from drive unit to eardrum is a lot less than one wavelength of sound (at 1kHz the wavelength is one foot, an easy way to remember it, hence 300Hz corresponds to one metre, 12kHz one inch). In addition, the coupling path is very direct, the sound being fired straight into the ear. As a result, the coupling between drive unit and eardrum is good and for most of the frequency range there's a near-flat response relationship between the two.

That sounds quite encouraging, but two things mess it up quite badly. First, the response at the eardrum to natural sounds (originating from relatively far away) is anything but flat. The acoustic characteristics of the outer ear and the beginning of the ear canal make sure of that, so what our brain interprets as 'flat' response is acoustically something else entirely. Second, the fact that the distance between driver and eardrum becomes comparable to a wavelength at frequencies in the mid-kHz means that all sorts of standing wave resonances can and do occur, and with them extra peaks and troughs in the response curve

Acousticians commonly refer to two sets of conditions for sound propagation, 'diffuse field' and 'free field'. In the former, sound effectively swirls around from all directions, as happens in a small but highly reverberant space (think bathroom¹). By contrast, free field is the condition where there is very little reflection and sounds travel out from the source in a straight line, as happens in the middle of a grassy field. It's not surprising, if you think



"...the distance from drive unit to eardrum is a lot less than one wavelength..."

about it, that the ear's frequency response is different to the two conditions. What's more, it is different in the free field case depending on the angle from which the sound arrives – not vastly different, but easy enough to demonstrate simply by turning your head while listening to someone speaking.

Most headphone designers aim to achieve a response at the eardrum roughly the same as that from a loudspeaker at 30 degrees, free field, but it's arguably just as valid to aim for a response equivalent to that in a diffuse field.

Even if one does decide with conviction on a target response, meeting it accurately is very hard work. Just like loudspeakers, headphones have the usual problems of mass/spring resonsance at a relatively low frequency, driver breakup resonances at higher frequencies, and the awkward transition between piston behaviour and flexible behaviour at frequencies where the size of the diaphragm is comparable to a wavelength. Practical headphone design is equally science and art, a matter of judiciously juggling damping, masses and stiffness in an attempt to hit an inconveniently moving target. In many ways, good headphones are wonderful - but it's little wonder so many of them have some tonal issues! HFC

Richard Black

DENON

Stylish looks. Impressive sound.



DENON D-M37DAB Micro Component Stereo System. Introducing a stereo system that's small in size but big in performance. It features MP3/WMA compatibility, a front USB port and connections for the most popular MP3 players. With its compact, clean looks and new speakers the D-M37DAB will add a touch of sophistication to even the most stylish of rooms. To find out more visit **www.denon.co.uk** or call **01234 741200**.



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Designed to suit your hands: Lets you browse easily through your various sources.

COMPETITION

A Pathos Classic One Mk 3 amplifier worth £1,535!

Italian style meets stunning valve sound in the Pathos Classic One Mk 3 amplifier. Using small signal valves (for the sound quality) and MOSFETs (for the power), this hybrid amplifier design must rank among the most elegant models on the market today. The 70-watt per channel integrated amplifier is pure class, thanks to acres of chrome, acrylic and even a wood inset on the front panel, which is echoed in the elegant remote control.

But it's not just about aesthetic appeal; the Pathos Classic One Mk 3 amplifier sounds as good as it looks, too. In our Ultimate Group Test in HFC 305, we gave the elegant half-width amplifier a Best Buy for the way it manages to combine the smoothness of valves with the power delivery of solid-state designs. We were particularly taken by the big sound and extended, tuneful bass depth. It's even got a balanced XLR input alongside the single-ended phono inputs used by most products. The Pathos Classic One Mk 3 amplifier would cost over £1,500 in the stores. But you could win one at the click of a mouse.

HOW TO ENTER:

For your chance to win, go online to www.futurecomps.co.uk/ pathosc13 and follow the instructions, leaving your selected answer and details where prompted:

QUESTION:

A hybrid amplifier design, the Pathos Classic One Mk 3 uses valves and ...? A: MOS DEFS B: MOSFETS C: MASTIFFS

TERMS AND CONDITIONS

18 September 2008 and 15 October 2008. The prize winner will be selected at random from all correct entries received between the relevant dates and will receive a Pathos Classic One Mk 3 amplifier free of charge. The winner will be

Answers must be ideeved between 18 September 2008 and 16 October 2008. The prax winner will be selected at random from all concertentnes ideeved between the ideavant dates and will leceive a Pathos Classic. One NK 3 amplifier fried of harge. The winner will be notified within 28 days of the douing date and will be required to give details of a delevery address in the UK to which the amplifier should be vent. By taking part in a Competition you agree to be bound by the Competition Rules, which are summanised below but can be viewed in full at www.futurenet.com/futureonline/competitionrules asp. Late or incomplete entres will be disqualified. Proof of posting (if relevant) shall not be deemed pool of delevery. fintnes must be submitted by an individual (not wa any agency or similar) and, unless otherwise stated, are limited to one per household. The Company reserves the right in its oid discretion to substitute any praxe with erably not any party involved. In the competition of the double's the Competition so gene to all (le discretions of le discretions of le discretions of le asprise of company parts in a day apprise) on four advection to appressive three the competition of the rouseholds. The Company reserves the right in its topic discretions open to all (le discretions of la agency or similar) and, unless otherwise stated, are introdived any party involves the competition of the rouseholds. By entering a Competition on gene to all reserves of the agency or similar and any party involves the right in its competition of the rouseholds. By entering a Competition on gene to all reserves the agency or similar and the reserves the right in the competition of their households. By entering a Competition on gene to all reserves the right in a similar and the reserves the right in the competition of their households. By entering a Competition on gene to all reserves the right in the competition of their households. By entering a Competition on gene to all reserves the right in the competition of their households. By e you can be a paper of the source of the sour



Understanding: Music servers

Ripping your discs has never been easier and there's a wealth of equipment to choose from

n the last issue we looked at the general concept of hard disk players and music servers. Up to now these devices have mainly been sold on their convenience aspects, but there is a new breed emerging that is being targeted more towards the audiophile listener who is looking for another method of high performance replay rather than just a way to consign his CD collection to the loft and release some shelf-space.

On that topic, there is one rather important aspect to consider if you still want to be able to listen to those discs once the tidying-up is done: you need to copy them onto the new player or, at the very least, to a device that the player can access, such as NAS (Network Attached Storage). The obvious way to do this is to sit and feed disc after disc into the machine or your PC until the all your music is transferred. Depending upon the size of your collection this might take quite some time. Not only must the disc be ripped, but the player must interrogate an internet database to retrieve relevant data about the disc for its internal database. So if you say it takes ten minutes to rip each disc, you'll manage to copy 40 or 50 discs per

eight-hour day. That's hardly ideal if you want to rip every CD in a 3,000 disc collection in one mammoth session. Most people will take a more leisurely approach and rip a few discs at a sitting until they have the job done. (Do not be tempted by those 'fastest ripper in the universe' adverts. That claim might well be true,

(Developed by Imerge, XiVA produces software and hardware platforms that enable manufacturers to create hard disk audio players, multi-room audio servers and home media centres.) And should you not have a NAS drive or server, the company can supply one – many with SqueezeCenter software preinstalled (the server software for the popular

"Not only must the disc be ripped, but the player must interrogate an internet database to retrieve relevant data about the disc..."

but we doubt that the quality of such rips will be anything you'd care to write home about.)

Naturally, though, there are other options open to you: you might bribe your children to do the job for you, or you could have a commercial operation rip your discs. One such company, Reading-based ripcaster (www.ripcaster.co.uk) seems to have the process fully sorted for mainland UK residents: it will collect (and return) your discs, rip and convert them to the chosen file format (or formats) and deliver them on NAS or other suitable media, or load them onto your Xiva-compatible music server. Squeezebox and Transporter devices, see our review on page 62).

This is not, of course, the only company offering this sort of service: Essex-based CDlabs (www.cdlabs.co.uk) also claims to offer superlative sound quality on its transfers through using specialised equipment, such as dedicated CD drives with no caching and bespoke ripping software. FLAC files are sent on a portable hard disk along with your original CDs. Prices vary according to the number of CDs you are having ripped and the file format to which they are being ripped, but we reckon that if you budget around one pound for each disc you won't be too far out.



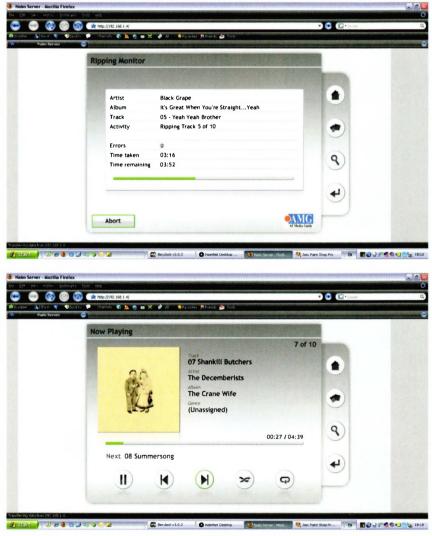
Above: Revox M57 multi-room server



Above: Designed to please the most discriminating audiophiles and music lovers, the Transporter from Logitech

Of course, CD ripping is just one method through which you can populate your digital music collection. Downloading content from the internet is becoming increasingly popular and more worthwhile to audiophiles as a growing number of sources release high-definition material whose quality is vastly superior to that of the run-of-the-mill MP3. Linn, as one example, offers five levels of downloads from its website: in decreasing grades of sound quality, these are Studio Master FLAC, Studio Master WMA, CD quality FLAC, CD quality WMA and MP3. Even the MP3s offered here, though, are 320kbps files, which are broadly acceptable for all but the most discriminating tastes. However, the FLAC variants will appeal most to earnest listeners. If the time it takes to download any quantity of these files is unacceptable for you, Linn will also supply its music catalogue, or parts thereof, already installed on external hard disks – either NAS or USB (Universal Serial Bus) devices.

Loudspeaker manufacturer, Bowers & Wilkins has also launched its Music Club where, for £33 a year, members can download a new, exclusive album every month. B&W has opted for the Apple Lossless file format, which means its downloads will be compatible with Apple's



Above: Naim online 'ripping' and 'playback monitor' screens

ubiquitous iTunes software. And then there's HDtracks.com, the online service started by the American Chesky audiophile label, which offers lossless AIFF and FLAC files along with 320kbps MP3s - with 96kHz/24-bit FLACs coming shortly. The best news is that the music is drawn from a wide variety of artists, genres and labels and not just the 'nice-sound-shame-about-the-music' school some might expect. Furthermore, HDtracks does not believe in DRM and so all its music will play with no restriction on any device that accepts the downloaded format. The only drawback is that, as of this writing, HDtracks is only serving customers in the USA, which is a situation that one can only hope will soon change.

You might have noticed that the term FLAC has appeared in this article several times already. FLAC stands for Free Lossless Audio Codec (enCOding and DECoding software) and apart from being the best- sounding format for home media systems such as a PC, Sonos DMS or Squeezeboxes, it offers a useful facility in that it acts as a future-proof archive (backup copy) of your music should your CDs be lost, stolen or damaged.

Because it is not lossily compressed it contains all the data from the original source should you wish to make another copy onto another storage device; and making an MP3 for your portable from a FLAC file is identical to making one from the original CD. Playing back FLAC files is not the problem that it used to be, now that so many high-quality hardware manufacturers – including Linn with its DS players, Naim with the HDX, and Slim Devices with its Squeezebox and Transporter players – provide native support for the format.

One aspect of Network Music Players that often drives people away from becoming involved with them is that scary word 'network'. In most homes the network simply consists of a DSL modem/router that connects to the internet with a couple of PCs plugged into it through an attached hub or switch or maybe through a wireless access point. There really is nothing to be afraid of here: Mrs Malcolm Steward who isn't blessed with any in-depth understanding of computers and networks managed to get a Squeezebox Duet from out of the box

[Feature] Understanding: Music Servers Part Two

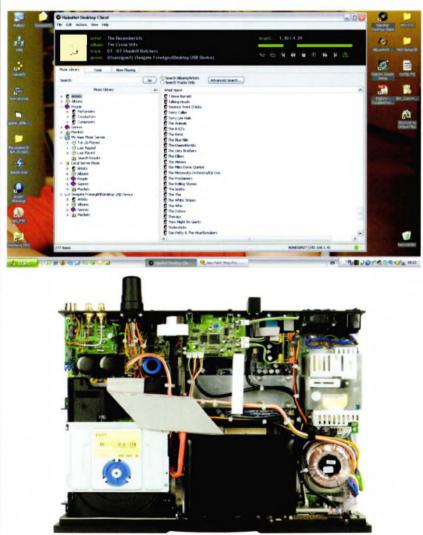
S to being fully integrated with our office network and playing music stored on my PC using just the supplied instruction manual in about ten minutes. So all you need to do to add music to your network is to plug the player into your hi-fi and connect it to the network – either through a CATSe cable or a wireless connection – and tell it where your music is stored. It's as simple as that.

One word of advice, however, is that while wireless connections are, perhaps, the easiest to set up, they are not the best sounding. If you are a discriminating (While we're on the subject of easy networking, how 'clean' do you imagine Ethernet over mains cabling is going to be?) We even noticed an audible difference when we temporarily switched our network cabling from a metal-cased switch into a plastic cased one. Digital data can be just as frail as any analogue signal so just because your music is travelling along a 'computer' cable doesn't mean that you should take any less care with it.

Ultimately we reckon the music server/ hard disk player concept will continue to gain strength and credibility so long as the

"What use is there in having 50,000 tunes on your hard disk, if it takes you twenty minutes stabbing on a screen to listen to one of them."

listener you'll find that wired is definitely the best way to go. This is one area in which convenience and performance do not travel hand in hand. Wireless is open to picking up all sorts of interference. industry approaches it appropriately, with thought and care. It has taken longer than it should for truly musical players to arrive because many companies have been eager to jump on the installation bandwagon,



Above: (top) Screen featuring the NaimNet Desktop Client and (below) inside the Naim HDX

where, being brutally honest, sound quality is not a major consideration. Others who have tried to make decent sounding players have, perhaps, succeeded to some extent, but have failed in the end because the software driving the player made the machine less than appealing to use. Buyers of such devices do not want some clunky, cobbled-together interface; they want something slick and effectual and not a concoction that looks and works as though it was built by a chimpanzee on drugs. What use is there in having 50,000 tunes on your hard disk if it takes you twenty minutes of frenzied stabbing on a screen or remote control to listen to one of them? We would ask that manufacturers provide IP (Internet Protocol) access to their GUIs so that the devices can be driven with a convenient laptop: techy interfaces have their place and are okay for those that want them, but a decently sized recreation of the player's front panel is ideal for many users and all that most will ever want.

If you enjoy the occasional tweak then servers, streamers and hard disk players do not mean an end to your fun. Knowing how to get the most out of audio signals does not seem to be knowledge that is widely spread outside the specialist audio community. We have been surprised at the performance gains that can be achieved by using the digital output on some of these devices and feeding that through a high-quality DAC. It is also interesting to try them on decent support furniture and see how better environmental isolation improves their sound. And, as we noted earlier, even changing a plasticcased network switch for one with a metal case influences the sound, so there's plenty of scope for all manner of DIY fun with this new machinery.

There is a certain irony, though, that Linn and Naim, the two companies that effectively established high-end hi-fi in the UK with their hard-core turntables and minimalist amplifiers, are once again pushing the boundaries with their domestic hard disk players and peripherals. These companies are not, however, alone in their forward-looking approach to audiophile media. Others from the computing realm are providing less costly products that enable users to sample an entry-level approach to networked music, such as the Logitech Squeezebox and Transporter. Although cheaper, these products can deliver outstanding performance from digital music stored on a PC or NAS and act as a tremendous introduction to 21st Century audiophile technology. HFC

Malcolm Steward

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CHOCECUTS This month's varied musical morsels Reviews by Alvin Gold, Jason Kennedy, Dave Oliver, Mark Prendergast, Phil Strongman and Nigel Williamson

AUDIOPHILE VINYL



SYNANON SEVEN

Sounds Of Synanon Pacific Jazz/ Pure Pleasure 1800 vinyl Music: This 1961 record marks the vinyl debut of Joe Pass, a legendary guitar player in the jazz world. Addiction brought the band together as all seven were inmates of Synanon house; a rehab centre in Santa Monica The theory that heroin makes great musicians better is not really undermined here, since the playing is top-notch throughout and, given the situation, remarkably upbeat. Sound: This dual mono recording is a little rough around the edges but even so it serves the music well. JK



KEB' MO' Keb' Mo'

Okeh/Pure Pleasure 180g vind Music: Established as an audiophile favourite when it was released in 1994 it's not surprising to see this back again. Keb' Mo' is a contemporary blues singer with a knack for the acoustic guitar and a great voice. The best tune is *Victims Of Comfort*, a state in which he includes himself and which ultimately keeps him from really opening up, which is a pity because he sounds great.

Sound: An extremely open and natural sounding pressing, PP has done a good job of revealing the depth and timbre of the recording. JK



These LPs were supplied by Pure Pleasure www.purepleasurerecords.com



CALEXICO

Carried To Dust Cityslang Music: Calexico again mine their core sound, mixing Spaghetti western south-of-the-border flourishes with twanging hardcore Americana and sounding more than ever like the soundtrack to a Cormac McCarthy novel. Close your eyes and you really can almost see the tumbleweeds and smell the saddle. It's all presented as a loose concept, but each song stands as an exquisite little gem in its own right. Sound: The lo-fi charm of earlier albums has been refined and finessed while carefully preserving the natural creaks and echoes that have always given their sound its organic warmth. NW

Music XXXXX Sound XXXXXX



VARIOUS ARTISTS Just Music Café Album – Acoustic & Beats Just Music

Music: Independent label Just Music, has been putting out some seriously good acoustic, ambient, beats and electronica for some eight years now so this 'greatest hits' package is long overdue. The rhythm CD features some intriguing grooves from Lou Reed's new pal Jon Hopkins, as well as some more pressing chilled beats from Future Loop Foundation and Honeyroot. Sound: Beautifully produced and mastered it's a real hi-fi treat throughout and one that consistently avoids slipping into ambient wallpaper mode and keeps the beat to the fore. PS Music \star \star \star \star

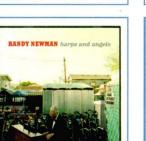


JOHN MCLAUGHLIN Floating Point Abstract Logix

Music: In the mid 1970s John Music: In the mid 1970s John McLaughlin turned his back on the jazz fusion success to steep himself in acoustic guitar and the Indian group Shakti. Now he's returned to India to make a jazzfusion record of intense improvisation featuring a stellar cast of young Asian musicians. Sensational stuff.

Sound: At first, it sounds like a record made through ProTools on a computer, but the way the keyboards, percussion and various stringed instruments keep up with McLaughlin's guitar/guitar synthesizer make for a satisfying new electronic/acoustic fusion. MP

 $\star \star \star \star \star$



RANDY NEWMAN

Harps And Angels Nonesuch Music: For his first album in nine years, Randy Newman dispenses with the escapist film soundtracks he's been making a living from in recent years and gives his inner grouch full vent. This being Randy Newman, of course, that grouch is possessed of much insightful wit and observational nous as he stands up for truth, justice and the American way.

Sound: Newman's on the piano throughout, backed by a club-style small combo, though a few tracks also show off his considerable skills as an orchestral arranger. **DO**





 \star \star \star \star

JOAN BAEZ

Sound

Day After Tomorrow Proper usic: Joan Baez's first studio album in five years is a bold attempt to break free from the shackles of her sixties folk queen past on a bunch of contemporary songs, including three especially written for her by Steve Earle, a modern-day troubadour who himself owes much to Dylan's pioneering spirit. In fact, Earle's the all-round key figure here, also acting as producer and directing a crack crew of Nashville musicians who clothe songs by the likes of Elvis Costello and Tom Waits in attractive new livery.

Sound: Baez's voice has lost its angelic purity and dropped an octave with age,

but the slightly frayed, lived-in patina she now exudes rather suits her. *NW*

Sound ****

Music





THIS MONTH'S CLASSIC HI-FI TEST DISC "The combination creates a sonic landscape of extraordinary resonance..."

JOHN SURMAN The Amazing Adventures of Simon Simon ECM

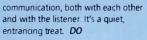
Music: The opening track on this 1981 outing from John Surman and Jack DeJohnette, *Nestor's Saga*, is one of, if not the richest sonic pageant in my record collection. It starts with Surman playing a bass clarinet and producing a deep, vibrant sound that simply transports the listener. It's not alone but underpinned by a deep bass line and higher synth arpeggios. The combination creates a sonic landscape of extraordinary resonance, one that gradually gets denser as a saxophone is added and then drums. It's the first of nine parts and the finest, although the rest continue the intriguing journey. Sound: Recorded in Oslo this is classic ECM fare. Its great on CD, but with its superb tone combined with wide open dynamics, the album is best served on vinyl... if you can find it JK





ROKIA TRAORÉ

Tchamantche Nonesuch This Malian singer-songwriter's trademark mix of traditional instruments with modern production that has made her the darling of the chin-stroking world music circuit. For her latest album, her inspiration comes more directly from the western musical tradition (specifically, the sound of an old Gretsch quitar) which is the starting point for most of the rhythms here, minimally fleshed out with local ngoni (the African originator of the banjo), western classical harp, human beat box and her own captivating voice. The sparse arrangements have the close, intimate feel of intense









HANDS ON HEART LIVE AT WIGMORE HALL Bartok, Kodaly, Piazzolla,

Rachmaninov, Paganini, etc Naim Classical CD117

Music: Given in his honour of his brother Steve Hugh, who died prematurely of heart disease, younger brother Tim (the principal cellist of the London Symphony) is joined by Russian pianist Olga Sitkovetsky in an eclectic programe that includes a stunning account of Rimsky-Korsakov's *Flight Of The Bumble Bee*

Sound: With about a third of the proceeds being donated to the British Heart Foundation, it was recorded by Tony Faulkner and as a performance and recording is near faultless. *AG*





SCHUBERT STRING QUINTET QUARTETTSATZ

Artemis Quartet Virgin 50999 502113 26 Music: On this disc are two of Schubert's finest chamber pieces, including the Quintet in C major for two violins, viola and cello, which in many ways is more orchestral than you might suppose from the relatively slight forces involved. It is a big-hearted work, which ranges over the full repertoire of musical expression. The performance is rapt and propulsive and is completely convincing as an account. Sound: The recording is as alive and alert as the performance, but always well ordered. It sounds as though it was well rehearsed and carefully considered. AG



HIGH-QUALITY AUDIO

YELLOWJACKETS Lifecycle

Heads Up

SACD (stereo/multichannel hybrid stereo plus stereo CD) Music: Yellowjackets is a contemporary American jazz band which has been playing since 1981, when three members of Robben Ford's group; Russell Ferrante (keyboards), Jimmy Haslip (bass) and Ricky Lawson (drums) decided their own fate. Lifecycle features Bob Mintzer on tenor and soprano sax, alongside guest guitarist Mike Stern. This is an extremely slick and capable band, they have a similar feel to late Weather



Report and make complex time signatures seem easy. At times they are a little too polished but if you appreciate high-quality playing that pushes but not too hard, give it a try.

Sound: Heads Up do a good job with SACD and this is a fine example of the art. Clean, smooth and taut, it lets you hear everything and at the proper level too. JK



GARDEN OF EARLY DELIGHTS Pamela Thorby, Andrew Lawrence King

Linn

SACD (stereo/multichannel hybrid stereo plus stereo CD) Music: Pamela Thorby is a one time recorder/player of the Palladian Ensemble (now the Palladians) which has a long history of recording on the Linn label, with considerable critical success. This recording is of a number of relatively short pieces in which she is accompanied by Andrew Lawrence-King on harp and psaltery. The programme is a 'mixed bouquet of diverse, joyous, unusual and eloquent pieces' of medieval and baroque origin.



Sound: This recording sets a very high standard for sound and has a wellcaptured acoustic without being obviously resonant. The early instruments need to be handled with some delicacy and that is exactly what they get, the multichannel SACD layer clearly offering more than the Red Book option. AC



HIROMI'S SONIC BLOOM Beyond Standard

Telarc

SACD (stereo/multichannel hybrid stereo plus stereo CD) Music: On her fifth album, 29-year-old pianist Hiromi Uehara augments her usual trio with guitarist David Fiuczynski, who adds some electric fire to proceedings. There are busy versions of standards such as *Caravan* (Duke Ellington) and *My Favourite Things*, plus revved-up take on Debussy's sensitive sound painting *Claite De Lune*. While it occasionally threatens to drift off into wayward noodling Hiromi comes to the rescue, launching

into another cascading glissando at thoroughly appropriate moments. Sound: All of Hiromi's recent albums have had excellent transfers to SACD and this is no exception. The surround sound format creates plenty of space and it really does sound like a live studio recording. DO







Geoff Barton, Classic Rock magazine's Editor at large, defines the 1970s Rock Top Ten

he 1970s was the time when rock'n'roll came of age... and musicians discovered that an amplifier's volume knob could indeed be tweaked up to eleven.

Budding players who had grown up listening to the poppy sounds of the Liverpool scene of the 1960s began to crave music that was less constrained and considerably louder. Cue the birth of the music genre known as heavy rock, pioneered by Deep Purple.

Additionally, the optimism that had surrounded the Summer Of Love of 1967 had given way to a time of cynicism and disillusionment. Hence the creation of an altogether darker, more aggressive form of music: heavy metal, as epitomised by Black Sabbath.

BLACK SABBATH

Master Of Reality (Vertigo)

While experts cannot agree on the precise origins of heavy metal, there's little doubt that Black Sabbath were the first band to popularise this most ear-splitting of music genres. Against the odds the Birmingham quartet achieved chart-topping success at the beginning of the 1970s with their second album, *Paranoid*. This 1971 follow-up didn't quite get to that peak, stalling at No 5, but it remains the jewel in Sabbath's twisted crown. The sound is brutal, stripped-down, primeval... yet it's also crisper and more professional than the band's previous studio efforts. *Ozzy* Osbourne's shrill, tortured-soul vocals are complemented by Tony lommi's uncompromising, unearthly guitar playing. By the time of *Master Of Reality*'s release, the peace-and-love ethic of the 1960s had turned very sour indeed. Sabbath's grim-faced legion of fans

embraced doomladen songs such as *Children Of The Grave* and *Lord Of This World* and propelled the band to superstardom. Elsewhere on the album, softer offerings *Embry*o and *Orchid* provided the calm before the storm.



In the 1970s, American bands, inspired by the success of the Brits, began to make their presence felt. From Boston came Aerosmith – the archetypal stadium rock band. From Detroit arrived Ted Nugent, his guitar like a smoking gun. The critics furrowed their brows, but the public welcomed them with open arms – and muffled ears.

The music that bands of this ilk produced during the 1970s – these days known as classic rock – has stood the test of time like no other. For example, Led Zeppelin's reunion show in London last December was the gig everyone, but everyone, wanted to see.

The following ten albums are all cast-iron classics, but in truth they barely scratch the surface.

DEEP PURPLE

Burn (Purple)

Having formed in 1968, Deep Purple had already enjoyed major success before *Burn*'s release in 1974. Their *In Rock* album of 1970 defined the heavy rock genre (heavy rock being a more musicianly version of heavy metal). Two years later Purple produced the milestone long-player known as *Machine Head*, which included their signature tune, *Smoke On The Water*. But *Burn* was no slouch, either. The album marked the recording debut of the band's so-called Mk III line-up, with vocalist David Coverdale (later of Whitesnake) replacing lan Gillan as frontman and bassist Roger Glover stepping aside in favour of ex-Trapeze man Glenn Hughes on bass/vocals. With mercurial guitarist Ritchie Blackmore pulling the strings as well as strumming them, Purple were revitalised. The vocal interplay

between Coverdale (deep-toned) and Hughes (highpitched) is superb throughout *Burn*. The songs vary from the blistering title track, through the moody and reflective *Sail Away*, to the classic howling blues monster *Mistreated*.



MONTROSE

Montrose (Warner Bros)

California's Montrose came out of nowhere in 1974, with an album that today is regarded as one of the greatest heavy rock debuts of all time. The band's leader, Ronnie Montrose, had previously exhibited precious little of the rampant guitar playing expertise heard here. Before Montrose, Ronnie had been a member of the Edgar Winter Group; prior to that he had been a session musician, most notably playing on Van Morrison's Tupelo Honey album alongside future Montrose bassist Bill Church. Whatever Ronnie's raison d'etre, his decision to create a turbocharged rock'n'roll band was an inspired one... as was his

employment of unknown singer Sammy 'Sam' Hagar, later to succeed David Lee Roth in Van Halen Montrose begins with a storming statement of intent - Rock The Nation - and keeps the pedal to the metal right up to closing track Make It Last. Sadly it didn't (last,



that is) because Montrose never again managed to match the raw intensity of their first release.

TED NUGENT Ted Nugent (Epic)

They don't make them like this any more. Coming straight out of The Amboy Dukes - a tortuous psych-rock band signed to Frank Zappa's Discreet label - quitarist Ted Nugent reinvented himself when he snaffled a major deal with Epic Records in 1975. The dippy Detroit-born guitarist behind songs such as Why Is A Carrot More Orange Than An Orange? was transformed into a mad-axe-hero of the highest order. With his career being manhandled by the mighty Leber-Krebs organisation, which also managed Aerosmith, Nugent became a whitehot property on both sides of the Atlantic. From Stranglehold to Stormtroopin', from Hey Baby to Just What The Doctor Ordered, this album sums up all that's best about star-spangled heavy music in the 1970s... and standout track Motor City Madhouse, a paean to Nugent's hometown, is tanked-up Yank rock at its finest.

ED ZEPPELIN

Physical Graffiti (Swan Song)

There are numerous classics in Led Zeppelin's oeuvre, but Physical Graffiti remains their pièce de resistance. Orginally released as a double vinyl album in 1975, it has a dark, brooding, mysterious ambience that reaffirmed many fans' faith in the band. Zep's previous album, 1973's Houses Of The Holy, had been a patchy affar and critics had turned on them for including half-baked attempts at funk (The Crunge) and reggae (D'Yer Maker). There are no such faux pas on Physical Graffiti. This is a sprawling offering with a dense, glutinous sound that showcases Zep's strengths to their utmost - notably Robert Plant's untamed singing, Jimmy Page's molten guitar playing and John Bonham's mountainous

drum work. The majestic Kashmir, packed full of sinister Middle Eastern sounds, remains the best track - all eightand-a-half minutes of it. But the spirit of Physical Graffiti is, perhaps, best summed up by Trampled Underfoot. Because that's how the listener feels, when the album ends.



KISS

Destroyer (Casablanca)

Kiss - the American comic-book superheroes brought to life - had never made a decent album before Destroyer. The songs might've been there but Kiss (1974), Hotter Than Hell (also 1974) and Dressed To Kill (1975) all sounded like they'd been recorded in cowsheds. That changed for 1976's Destroyer. The band brought in top-notch producer Bob Ezrin, who had made his name with Alice Cooper and the sonic results were astonishing. Ezrin (who also brought in outside songwriters to rework some of Destroyer's tracks) transformed Kiss from platformbooted wannabes into an all-conquering force. At last, the band had a sound as big as their egos. It's truly epic stuff. For example, opening track Detroit Rock City

relates the tale of a young fan killed in an auto accident on the way to a Kiss concert - you even get to hear the sound of the car as it crashes. Yet, ironically, the most successful song was the sparse ballad Beth, which got to No.7 in the US singles chart.



Ê Ê

AEROSMITH

Rocks (CBS)

Aerosmith mainmen, vocalist Steven Tyler and guitarist Joe Perry, became known as the Toxic Twins during their long battle with drugs. If you'll forgive the comparison, classic rock doesn't come any more addictive than *Rocks*. It's a big, brash, swaggering album that showcases the Boston band at the height of their stadiumshaking powers. Many British fans used to regard Aerosmith as mere Rolling Stones clones – primarily because of Tyler's poutylipped resemblance to Mick Jagger. *Rocks* shot that comparison to pieces with its combination of mutant blues (*Sick As A Dog, Lick And A Promise*) and bone-jarring funk (*Last Child, Get The Lead Out*). One listen to *Rocks* and you just knew Aerosmith were living

the rock'n'roll dream to the utmost – and patently failing to sidestep the dangers involved. *Rats In The Cellar* is about the death of the band's drug dealer; while *Combination* reveals how a rock star can get hold of hard drugs as easy as ordering a pizza.



VAN HALEN

Van Halen (Warner Brothers)

No one had ever heard guitar playing like Eddie Van Halen's before. When Van Halen's debut album hit the streets in spring 1978, Eddie immediately made every other sixstringer's efforts sound boring and slothful. His fleetfingered hammer-ons and all-round whammy-bar abuse inspired a generation of guitarists to 'shred' like never before. As if that wasn't enough, Van Halen also had an insanely flamboyant frontman in the form of David Lee Roth. The combination of flashy, technical guitar and testosterone-charged swagger was irresistible. Eddie gets to showcase his snazzy style on the instrumental *Eruption*, while Roth puts on the glitz on *Runnin' With The Devil* and *Ain't Talkin' Bout Love*. There's even an endearingly over-the-top cover of

The Kinks' You Really Got Me. This was no flash in the pan. To date, the California band's debut has sold over ten million copies in the United States alone.

LFO

Strangers In The Night (Chrysalis)

It's remarkable to think that UFO – the very classiest of British heavy rock bands – began their career playing psychedelic space-metal in the late 1960s. That all changed when teenage German guitarist Michael Schenker joined from The Scorpions in 1973 – and UFO came back down to earth. *Strangers In The Night* was originally released in 1978 as a double vinyl live album. A jaw-dropping distillation of the band's previous Chrysalis-label studio albums, tracks such as *Only You Can Rock Me, This Kid's, Too Hot To Handle* and *Out In The Street* sounded much more forceful, powerful and potent in a live context. Packed with unparalleled songwriting maturity, the songs bristled with electricity and pulsated with passion. Special mention must go to singer Phil Mogg's terrifically evocative lyrics: imagine a British Bruce Springsteen or

John Mellencamp. We kid you not. Unfortunately for UFO, Schenker left during the mixing sessions for *Strangers In The Night*. While the guitarist would rejoin UFO on more than one occasion in later years, it would never be the same again.



AC/DC

Highway To Hell (Atlantic)

AC/DC are another example of a band who needed a great producer to really inspire them. They initially approached Jimi Hendrix's producer Eddie Kramer, but when that didn't work out they turned to Robert John 'Mutt' Lange (later to inspire the career of Def Leppard... not to mention that of Shania Twain). Lange took AC/DC's rough edges and subtly sanded them down. He retained their raucous sound, but added a smidgeon of finesse. The result was AC/DC's biggest-sounding, biggest-selling album to date, hitting the Top 10 in the UK and the Top 20 in the States. From the sleaze-packed *Girls Got Rhythm* to the chest-beating *If You Want Blood* (*You've Got It*), each track is a masterclass in boogie-fied braggadocio. Originally released in mid-1979, sadly the album's title was to prove all too prophetic. Lead singer Bon Scott died seven months after its release, following a night of heavy alcohol consumption.





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LOCAL HI-FI FOR

I must object to your feature *Understanding Chinese hi-fi* (*HFC* 310). I am pleased to hear that the Chinese workers in audio factories are happy and that they are not subjected to sweatshop conditions. I'm impressed that the engineering facilities are second to none. I also understand why this helps lower the price and increase the availability of audio products. Even the performance of some Britishdesigned, Chinese-made products is not an issue, as I freely admit they deliver good bang for the buck.

My objection lies with the fact that we are killing off the last vestiges of the once-great British hi-fi industry and this seems to represent our attitudes to UK industry in general. Back in the 1960s and 1970s, the 'Buy British' campaign attempted to persuade us to buy locally produced products and not cheap Japanese imports. This campaign failed and as an ultimate consequence of this we more or less lost a once thriving automotive industry. And now we seem to be strip-mining our audio industry.

Local design and build should be the way to go. This is not xenophobia, we are in an environmentally mad place where scrap metal is sent to China to be turned into products that are sent to the UK, only to be scrapped in a few years, sent back to China and round it goes again. How can this not be contributing to soaring fuel prices? From an economic standing, we are creating a vast and evergrowing trade deficit, from which we will be unable to dig ourselves out from. It's probably not a popular option today – thanks to the



"...we are killing off the last great vestiges of the hi-fi industry..."

credit crunch – but maybe we should not just buy the cheapest we can afford, but save up and buy best and 'Buy British'? Perhaps if we still had a manufacturing base instead of focusing on the housing market to drive our economy, our credit wouldn't have been so crunched in the first place.

My own experiences are worth mentioning here. I have been using British-made Naim equipment for years. I have rarely had a problem with any of it and on those rare occasions of downtime, the equipment has been repaired quickly and surprisingly cheaply. I have - over the years - built up a very expensive system that I gain great satisfaction from. This is not because I am particularly wealthy, it was assembled through a series of upgrades and trade-ins (again at a good price, because the products have a reputation that extends beyond the first user) and selectively buying a combination of new and second-hand products. No small amount of the satisfaction I get from this hi-fi comes from the process of system building. Would I still enjoy the system – and process of building it – if I were 🔼

LETTER OF THE MONTH

BUCKING THE TREND

I read somewhere that there are just over 60 million people in the UK and we bought almost 140million CDs in 2007. That means every man, woman and child bought on average 2.33 CDs last year. If that's so, my personal CD buying means the rest of my town ain't pulling their weight I bought something like 80-100 discs last year and I'm sure many audiophiles did the same. And yet anyone like me over the age of about 25 seems sidelined by the music business, despite the recent downturn in CD sales Why? **HFC** It's a fair point. Although there are always stories of hi-fi fanatics with £24,000 worth of hi-fi and five CDs, most hi-fi enthusiasts also have a pretty decent music collection alongside their spanky audio rigs. And we still buy discs at a fair lick, too. But we are targeted by the music business – have you ever read Classic Rock or its competitors? That section of the magazine shelf is aimed fairly and squarely at a more mature music buyer.



The author of our 'letter of the month' will receive a free copy of Russ Andrews' excellent hi-fi book, Sound Solutions. This compact and invaluable tome is an excellent guide to getting the best out of the equipment you already own. So drop us a line, or email hifimail@futurenet.co.uk

'Rozzer' via email



dealing with a company based on the other side of the world? I don't know, but I do know that I would struggle to maintain a two-decade-long dialogue with the company in the way I have been able to do with the folks from Salisbury.

Once upon a time, we imported raw materials and goods and exported goods and services, now we import goods and export services. How long before we import goods and have nothing to export? What happens then?

M Ryan via email

HFC Do you prefer to save up for the 'right' product instead of buying the 'right now' product? Or does price help make up the 'right' product for you? Should we just Buy British irrespective of price or are cheap imports the ultimate manifestation of a free market? What about high-end American or Eastern European imports... are they 'local'? Let us know what you think.

DDE TO A TRIDDE

I bought my first valve amplifier recently (a Pure Sound A30) and now I see what all the fuss is about. It sounds wonderful, so rich and smooth and dynamic. I don't think I could ever go back to solid-state after this. It makes me wonder why anyone still uses transistor amps if they can afford the alternative?

Frank Rutherford Dorset

HFC We're glad you are so glad, Frank. Although to be perfectly, erm, frank, not everyone shares your opinion on valve

"Vinyl was phased out in the 1980s! And yet, you keep raking over the ashes of this format."

amplifiers. Some find their performance overblown and filled with too-smooth second harmonic distortion. Still more like the clean and fast bass and pace that comes with well-made transistorised amplifiers. But forget the tastes of others... you have clearly found your own path. Enjoy it.

WIFI CHOICE?

The hi-fi industry is always behind the times, but I was shocked to discover a complete lack of WiFi product in my local dealer. We are living in a WiFi universe and yet hi-fi is still obsessed with the sound of cables. Surely no cable sounds better?

I suspect high-grade WiFi audio products do exist, but they are being kept out of the stores and magazines because the cable companies want them out of the way.

Dan Fraser via email

HFC A few WiFi enabled audiophile products do exist and their numbers will grow in time. But there's a fundamental hurdle that needs getting over – where do you put the power amps? If near (or in) the speaker, you need power cables to drive both WiFi device and power amp; if the WiFi unit comes after the amp, how do you drive the speakers? We aren't convinced by your 'no wire' argument, either. Instead of lengths of copper and PVC, the signal has to pass through a collection of active electronics, a transmitter, a receiver and yet another box of electronic tricks.



Your recent vinyl issue (*HFC* 309) shows up just what's wrong with hi-fi. Vinyl was phased out in the 1980s, guys! And yet, you keep on raking over the ashes of this longdead format. You can't even get LPs in the shops anymore and those second-hand record stores (like the one in the film *High Fidelity*) are a thing of the past. Even CD is on its way out. What's the point in spending thousands of quid on a record player if you only buy scratched old discs from car boot sales and Oxfam shops?

Danny Martin via email

HFC A million LP sales a year say you are wrong, Danny. OK, that's small potatoes next to the total volume of CDs and downloads supplied every year, but it means an important sub-set of the music-buying public still enjoys vinyl. The products we put in the pages of *Hi-Fi Choice* reflect the products sold to hi-fi enthusiasts in the UK. If people stopped buying turntables, manufacturers would stop making them and we would stop reviewing them.

The fact that high-street vinyl is rare does not mean vinyl has disappeared from sale altogether. Specialist dealers exist, often as online or mail order companies and the market for new and used vinyl is stronger than might be imagined from first viewing.

GET YOUR TWEAK ON

Why did you get rid of Jimmy's Tweaks? I really enjoy Jimmy Hughes' writing and he obviously takes his hi-fi really seriously. I didn't agree with a lot of the stuff he wrote – especially the part about lining up your mains screws – but I always felt he meant what he said, no matter how left-field it was. Surely it must have been popular, or you wouldn't have made two supplements out of his old hits?

Sean O'Connell via email

HFC As Jimmy would be the first to admit, once you've lined up every screw, got the speaker cables in order, reversed the polarity of the neutron flow and mastered the mains, you begin to wonder what's left to tweak. If there comes a time when the tweakers of the world need a champion, The Mighty Hughes will be back – fighting for your rights, removing neon lights.





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SECOND SYSTEM UPGRADE Dear Alan,

I've been away from home for six months so I've put together a second system, comprising of an old Quad 77 Integrated amp, KEF iQ5 speakers, and a Logitech Squeezebox 3 as source, streaming a mixture of high-bitrate and lossless audio files. I'm now looking at upgrading this system to get some of the foot-tapping excitement of my system back home (Creek Evo amp and CD, Quad 12L).

I'm thinking along the lines of the new Naim Nait 5i amp, a Russ Andrews DAC-1 for the Squeezebox and maybe Focal Chorus 716V speakers. I can only afford to upgrade one component at a time, so the big question is which upgrade would give me the biggest improvement?

MH (Russel) Khan via email

HFC We'd recommend upgrading the amplifier to the Naim Nait 5i first and then the Focal Chorus 716V speakers after that. The reason for this is the Naim will work well with the KEFs, whereas a Quad-Focal combination will likely only make you want to upgrade the amplifier faster. Then – and only then – should you look to the DAC. Try models from PS Audio and Cyrus as alternatives. You may find the sound of the Logitech/Naim/Focal to be exciting enough and the sound of the Russ Andrews can appear slow in this context. You may even find the sound of the Logitech on its own is rewarding enough...



Got a burning hi-fi question? Ask Alan...

Send your queries to:

Alan Sircom, Hi-Fi Choice, Future Publishing Ltd, 2 Balcombe Street, London NW1 6NW. Or email your queries to hifimail@futurenet.co.uk

HIGH FREQUENCY, LOW CLARITY

Dear Alan,

My system comprises an Audiolab 8000A amp, Arcam 8SE CD player, KEF Q1 speakers on Atacama stands, wired with Kimber 8PR cable, Kimber Silversreak interconnects and various mains conditioners. It's getting on a bit, but so am I!

My problem is with softer female voices, which I have difficulty hearing clearly. Things are improved by turning up the treble control, but this sometimes affects the music too much. Musically I am reasonably happy, but I wonder if you can suggest what I need to alter to improve clarity of voices, mostly jazz CDs. **Eric Wilson** via email

HFC Some of the treble loss is due to age, Eric. Sadly, that treble loss is a function of both the listener and the system itself. The kit you selected was good in its time, but these were not the brightest-sounding components around even then and as they age, so this treble softness worsens. You can restore some of the original magic by tightening the screws that bolt the drive units to the speaker cabinets (these often shake loose over time) and plugging and unplugging all the cables a couple of times to help scrape away any oxidation. You might also find putting the conditioners out of the loop will help... the paradox is these can sometimes clean up the treble, at the expense of the treble (this depends on the conditioner, though).

If these free tweaks don't work, though, the next move is a radical one; change the system, either at a single stroke or in stages starting with the amplifier. You should check out integrated designs from Cambridge Audio (Azur 840A) and Naim Audio (Nait 5i). You could also include the same brands in the CD player and choose from myriad loudspeaker brands. The best bet would be to visit a demonstration room with your discs.

Then there's the in-head issue. More or less the moment after you are done with puberty, your hearing begins to decline. This is known as presbycusis, a gradual and progressive failure in the function of cochlear hairs cells. Women appear to have a few years advantage over men, but the effects still hit us all by middle age to a lesser or greater extent. Fortunately small, frequency-specific hearing aids exist that no longer cover the whole ear. If the problems do lie with your hearing more than the system, it no longer means turning up the treble or the volume to cope... there are better ways now.

BIG OR SMALL

Dear Alan. Until recently I've been planning to buy B&W 803s for their massive sound...but now I've heard a combo of Pathos CD player/amplifier with Audio Physic Tempo speakers and the level of detail was just incredible. However they didn't have enough punch and low range for me. Now I'm looking to find the best of both worlds where I don't lose any details (like with Audio Physic) but where the sound is still quite massive. I'm thinking maybe, more powerful amp with, perhaps, Audio Physic Scorpio might do the trick. Any ideas are welcome and I can't wait to hear your suggestions...

'Branislav' via email



KING OF THE CASTLE Hello Alan,

I sympathise with the poor soul with a driver problem in his old Castle speakers (*Rebuilding the Castle, HFC* 309.) I've been there: I use a pair of Castle Howard Mk II's (circa 1984). Just through recent experience I've found Wembley Speakers (020 8743 567) can just about resurrect any old speaker you wish to name. Coil rebuilds, re-alignment, cone rebuilds, etc. Wembley recently repaired a bass driver on a pair of B&W 802Ds. Great job, great price and one bloody quick turn around (less than a week in my case).

Not to say they are the saviours in all speaker cases, but I would recommend them in the case of those who wish to enjoy many more years with their reliable old friends.

Now, a quick tip to anyone with old drive units that appear to be becoming distorted. Try

HFC A big problem in audio that is yet to be fully resolved is how to get big speaker dynamic range and scale without losing small speaker detail and precision, or vice versa. The few speakers that have got close to combining these two strains of design invariably cost as much as a nice Mercedes and demand the sort of electronics that will leave your bank balance slimmer than a stick insect on a crash diet. As such, there's always a trade off and - from your feelings about the Tempo - you are probably the sort who would find sacrificing this side of the equation tougher than the other (if you said you wanted the B&W 803 sound with a little more transparency, instead of the Tempo sound with more heft, we'd be looking in another direction).

We've not tested the Scorpio (most of our exposure to Audio Physic stops at the nursery slopes end of the market, like the Spark 3), but it appears to be well received. We are extremely partial to the new Kudos Cardea C30, though, which manages to combine the oomph of big speakers with the finesse of smaller boxes. This would also work well with the Pathos equipment, even if they are more commonly associated with solid-state amplification.

KEEP IT CLEAN

Dear Alan,

I've recently bought a turntable (what a great investment!) and would like to use my parents' stock of LPs. However, some are dirty. Could you please suggest a brush I could use to clean off the dust and a liquid for the grease stains? In particular, for stains, could I simply immerse vinyl in a diluted dishwashing liquid?

Asher Uziel via email

turning the cones 180 degrees. It's usual for gravity to have its way on the coils over time, especially on the older heavier units. Give them a little time for the coils to fall the other way around. Works wonders.

David Camp via email

HFC Although most of the time, here in the pages of *Hi-Fi Choice*, you ask and we answer, sometimes the solution to a problem comes from other sources. If S J Clarke's Castle conundrum has not been resolved by the new owners of Castle, perhaps Wembley Speakers can help. We've also heard good things about Recone Lab (q www.richardallanaudio.com/ reconelab.new/index.htm) and there's always hunting through Audiojumbles and the backwaters of the electronic-Bay...

HFC Cleaning dust from records is easy. Just get a carbon fibre brush (Milty, Clearaudio) and sweep it lightly over the record while it is on the turntable. It's also worth investing in a stylus cleaning brush to keep the stylus free from crud.

The problem with wet cleaning a record is that unless you find a way of removing the 'wet', it will cause as much of a problem as the stains you tried to remove. The traditional method was to either invest in a cleaning machine or to find someone who offers a cleaning service. As the investment is large, buying your own machine is uneconomic, but they do offer a level of disc repair that no other record cleaner can provide, because they squirt cleaner into the groove and then vacuum the dirt and cleaning fluid out at the same time. The Disco-Antistat is a manual device that lacks the vacuum cleaning of the bigger machines but does provide some basic cleaning.

There's no point in deep cleaning an LP if you are then placing it on a filthy mat or in a staticcharged record sleeve. Clean the mat (an adhesive clothing roller found in pet stores is excellent for this) and invest in a set of Goldring or Nagaoka anti-static record sleeves.



ALAN'S TIPS

WITHOUT TEARS

There's a common misconception that running them under the tap or washing them using a diluted version of washing up liquid can clean vinyl records. Those who cannot afford the cost of a dedicated cleaning machine – or are not prepared to spend up to a quid per record to get them professionally cleaned – are often driven to such DIY techniques and are invariably upset by the result.

This is because tap or bottled water contain mineral salts that are perfectly fine for pouring down our necks, but leave a residue on the surface of a record. Instead, why not make up your own version of the cleaning fluid found in most record scrubbing machines. The formula is more or less the same throughout; three parts distilled water to one part lab-grade (if possible) isopropyl alcohol, a couple of drops of anti-static wetting agent (Ilford's Ilfotol is the popular choice, but chemical designed for black and white film - may prove hard to come by as everyone goes digital). If the photographic solution is not available, use a couple of drops of screen wash, glass cleaner or washing-up liquid. In both cases, 'a couple of drops' means one part wetting agent to 200 cleaning solution. This should not be used on shellac 78s though, because alcohol can damage them.

Here's how you do it yourself. Lay a clean, dry microfibre or well-used and clean cotton towel on a flat surface. Place your LP on this. Dunk a dedicated cleaning brush (once again, Clearaudio makes a brush for the task) in the cleaning solution until 'saturated'. Gently but firmly push this wet brush around the grooves of the record in a circular action. Let the LP rest for a few minutes, then dab the record dry with a cotton cloth or towel. Flip the LP over and repeat, then leave to dry, ideally overnight.

There's several schools of thought about the drying processes. Some let them airdry like plates in a rack, others use wellused, washed and clean cotton towels, stil others recommend microfibre cotton cloths, or gently padding the record dry with clean but plain cotton T-shirts.

Perhaps that's why buying a cleaner or getting someone else to clean your discs is better; you'd struggle to clean more than five LPs in an evening, while a machine could clean upwards of ten per hour!





EQUIPMENT REVIEWS

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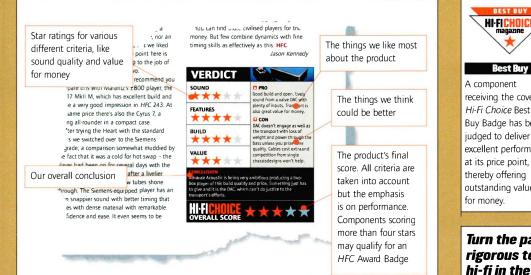
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PRODUCT Audio Research CD5

TYPE CD player

PRICE £4,500

KEY FEATURES Size (WxHxD): 48x13.5x311cm ♥ Weight: 11.8kg ♥ Digital outputs: 1x BNC (unbalanced) 1x XLR (balanced) ♥ Analogue outputs: 1x RCA (unbalanced), 1x XLR (balanced) ♥ Crystal 24-bit DAC ● Philips PRO2M transport ♥ Pure Class A analogue output stage

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ot everyone can afford to spend big money on a CD player (the recent Credit Crunch notwithstanding). But, if it's the music that matters and you appreciate quality, then there are certainly worse ways to blow the better part of five-grand. Mind you, the CD5 is not cheap, but then if you know anything about Audio Research kit.

15 4606

HIGH DEFINITION CO PLAYER

you know anything about Audio Research kit, then you'll know that it will last you a lifetime. And, if you ever do decide to sell it – well, you'll have plenty of willing punters fighting to take it off your hands.

000.00

audio re

The CD5 actually replaces the earlier CD3/II, but could be thought of as a scaled-down version of the £8,000 Reference CD7. Essentially it's a conservative product. It doesn't scream 'expensive' at you, because you're buying sound quality here; not glitz or



"In fact, only the most knowledgeable visitor, or a highly educated audiophile burglar, will realise how much it costs."

glamour. Or maybe, Audio Research has the laziest designers around. You choose.

Nevertheless, the Audio Research CD5 is certainly well-made and still manages to look quietly classy. The styling is classic 'ARC'; a simple rectangular black box with a brushedalloy front panel. There's a choice of silver or black for the fascia. Controls are fairly minimal and, like a number of CD players, you'll need the remote handset to access some of the features. The impression is one of quiet understatement, rather than flashy ostentation and weighing in at about 11.8kg (26lbs), it's no sylph. In fact, only the most knowledgeable visitor, or a highly educated audiophile burglar, will realise how much it costs. The CD5 is a top-loading player. This design allows for much better internal mechanical damping and jitter reduction than typical tray-load mechanisms. Audio Research developed its own proprietary damping disc (fitted over the drive spindle) which is specifically tuned (in materials, size, weight and so on) to the manner in which the laser transport is mounted within the chassis. So, essentially, the choice of a top-loading transport gives the CD5 much more design flexibility in achieving, what Audio Research refers to as a first-rate sonic performance.

Access to this disc transport is via a sliding panel on the top. The handle looks a bit cheap and reminiscent of a 1960s kitchen unit, but the whole panel arrangement is very practical and user-friendly.

Unlike other top-loading players, where the disc transport cover actually comes off, you don't have to find somewhere to put the cover when you load a disc. So there's no risk of accidentally dropping the transport cover, or 'losing' it. And being a top loader, it's also easy to clean the laser, if it becomes necessary.

Track access is fast, but not spectacularly so. Indeed, the CD5 has a 'relaxed' sort of feel about it. It invites you to take your time. You slide the disc cover back, put the disc on the motor spindle, fit the magnetic puck (which holds the disc in place) and close the cover. The player then reads the disc's contents and you're away.

The CD5 is not something that encourages you to keep changing discs – the 'manual' disc loading system sees to that. So you're going to start at the beginning and finish at the end, because it sounds so good.



Q&A

We talked to Terry Dorn, president of Audio Research about the design process that went into creating the new CD5.



HFC: What are 'digital servos' and can you describe

the benefits over hybrid analogue servos'? There are digital servos in the laser transport to control reading accuracy of data. We also use analogue servos in the output stage to inhibit the possibility of any DC offset.

Why did you choose the Burr-Brown chipset for the CD5?

We chose the two-channel, 24-bit Burr-Brown (now Texas Instruments) PCM1792 DZA package for its superior sonic performance compared to others we tried. It has lower noise, higher resolution and better musicality than the also-rans. It also allowed us some design flexibility in implementation – always an important factor.

Although an integrated CD player, Audio Research also describes the CD5 as a 'CD Transport'. But, could a CD5 user actually achieve any sonic benefit by using a good outboard DAC? Wouldn't you risk increasing fitter by doing this?

Theoretically, some improvements might be had because an external D/A would be relying on completely separate power supplies. But our experience shows that often these gains are offset by the extra jitter, noise and so on, introduced by the external digital cable and associated connectors

In terms of sound quality, are the biggest gains to be made in the digital domain or the analogue stages after conversion or are both equally important?

Both are critical to achieving accurate, yet lifelike musicality. In our design process, there is no single element that we see as the lone necessary factor for success – every component is important, and nothing can be taken for granted. The musical magic is in the detailed knowledge hard-won through many years of empirical testing and design.

Do you feel CD players like the CD5 are getting close to maximising the sonic potential of CD, or is there still a long way to go?

While we know we have made significant strides there certainly remains ground to be gained. Just how much, we can't be sure. We are at a point in the history of CD technology where it is wise to maintain a certain sense of humility and keep pushing ahead. As with any artisan maker of musical instruments, you never really reach the end of the road – the possibility of further improvements pulls you along.



■ The heart of the CD5 is a Philips Pro2M transport, mounted on a machined aluminium I-beam. The transport which reads CD, CD-R and CD-RW formats, also supports replay of the CD layer of a SACD, but not SACD itself. So, if you plonk a hybrid SACD in the transport, it will only be able to play the CD layer, in linear PCM. Audio Research isn't trying to claim the CD5 does something it cannot do, but the wording could leave people in some doubt as to the CD5's SACD replay.

The mechanism has a special damping system to ensure ultra-low mechanical jitter and the I-beam itself is bolted to a heavy aluminium plate, in a manner similar to that used in the Reference CD7. Audio Research has used the Philips mechanism in its CD players for several years and firmly believes it to be the finest device of its type available today – in terms of accuracy of performance, construction and reliability.

A Crystal 24-bit DAC is employed, but there's no fancy over-sampling. Instead, Audio Research has concentrated on getting its circuits right and paying attention to power supplies. The digital signal is also re-clocked for reduced jitter. Essentially, the disc transport and the digital side of things are similar to the Reference CD7.

The main difference between the new player and its bigger brother is in the analogue output stages. Whereas the Reference CD7 employs four 6H30 twin triodes and an advanced tubepower supply, the CD5 has an all-new directcoupled FET output stage with solid-state regulated power supply.

Apparently, the power supply used in the Reference player is very expensive, so Audio Research was compelled to take a different route with the CD5 to keep costs down. Instead, comparisons should be made with its predecessor; the CD3/II. The claimed result being a measurably better performance, as well as better sound.

Stereo separation is now 120dB (compared to the CD3/II's 92dB), while the signal to noise ratio is 114dB compared to the earlier player's 90dB. Interestingly, power consumption when idle, has been cut from 26 watts to just 14 watts with the CD5.

Apparently, the CD7 runs very hot indeed – comparable to some power amps – but the



CD5 barely changes temperature. Even after several hours use, it's not even warm to the touch and it's absolutely whisper-quiet during operation – with no discernible motor or disc noise or mechanical hum.

SOUND QUALITY

Audio Research suggests the CD5 will broaden your taste in music, encouraging you to listen to things with fresh ears. We would strongly concur with this statement, as the player has a very attractive sound that's engaging and involving. Tonally, it sounds very smooth and open, with a lovely clean top and deep firm bass.

It's a smooth refined-sounding player. Yet this is deceptive; it's also surprisingly assertive. While it can be very beguiling, it can also startle and shock. There's more than a touch of iron fists in velvet gloves with the CD5. It produces a very cultivated sound, but don't be fooled – the knockout blow will catch you by surprise.

The midband is very full and rich-sounding – unusually so for a CD player. This gives the sound a very 'analogue' sort of ease and warm tonality. The top end is beautifully clean. So dig out all your old harsh-sounding CDs and hear them transformed and rejuvenated!

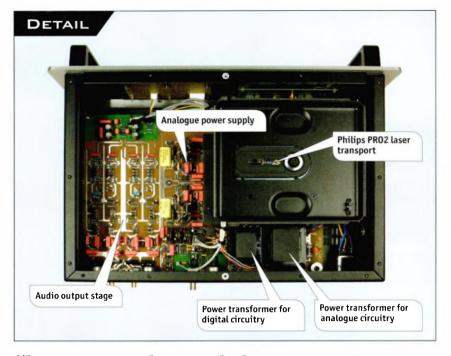
The bottom end is unusually powerful and deep, giving the music a proper sense of weight and fullness uncommon with CD. It's definitely a player with the ability to shock and surprise, as well as caress and beguile.

It presents the music in a very coherent manner that allows you to make sense of difficult, unfamiliar works. It's also very good on pitch definition and allows you to follow individual lines, without the loudest voice or instrument dominating. The presentation is attractive and pleasant, which encourages you to listen over extended periods.

Listening to the player first via its unbalanced analogue outputs, since this is (probably) how most CD5 owners are likely to use their player, we eventually switched over to 'balanced' and (as expected) heard a big improvement. The balanced option more or less doubles the output of the player from 2.6 volts to 5.2 volts.

This makes the sound 'bigger' and more assertive, increasing its scale and sense of power. The music seems to have greater depth and range and the loud passages appear to expand more. In fact, if your preamp has balanced inputs, then it's worth spending extra money to get a set of cables with XLRs to use the CD5's balanced output

You'll get a very big improvement in dynamics and overall sound quality – though check to make sure the extra output can be handled without overload The CD5 also offers



"It presents the music in a very coherent manner that allows you to make sense of difficult, unfamiliar works."

balanced and unbalanced digital outputs for those wishing to use an outboard DAC.

Stereo soundstaging is very vivid and unusually holographic for CD, although we're uncertain as to whether the CD5's increased stereo separation from 92dB to 120dB would actually be audible in itself. Certainly, the CD5 images well.

Audio Research seems unimpressed with the compromises involved with CD sounds on SACD and have optimised the CD5 for replaying the 'other layer' of this dual-layer format. Playing CDs on the Arcam DV135, for example, a player with the ability to spin virtually every type of silver disc known to man, the CD5 sounds a lot richer and weightier. The Arcam does sound smooth and open, but lacks the CD5's dynamics and attack; the audio is less colourful and the music has less personality. It was only when the Arcam played the SACD layer (leaving the Audio Research playing the CD layer, of course) did we feel the Arcam gained back some of this lost ground.

Whereas the CD5 made virtually every CD sound good, some SACDs showed noticeably greater focus and precision, but no consistent pattern emerged. A good SACD can and often does out-perform a CD, but there's no denying that the CD5 get cracking results from compact disc and given the limited number of SACD titles available, maximising CD playback has to be a number one priority. We've heard the CD5 stacked up against the flagship Reference CD7, in the context of an all Audio Research system. In this setting, you might expect the Reference CD7 to shine, and shine it did. Interestingly though, although distinctly better in many ways, it never once showed up the CD5. There's an additional sense of air, a more expansive soundstage and an added coherence that marks out the more expensive player, but not as marked as you might expect and the CD5 acquits itself very well. You could live very happily ever-after with a CD player of CD5's calibre. It doesn't get much better than this. **HFC**



Classik reborn

Linn is back with the all-new Classik and it's better than ever!

CLASSIE MUSIC

21228 X122813

PRODUCT Linn Classik Music TYPE One-box hi-fi system PRICE £1,250

BEST BUY HI-FICHOICI magazine

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202055

KEY FEATURES Size (WxHxD). 38x8x37cm ♥ Weight: 6.5kg ♥ Digital inputs: 2x digital (coaxial and Toslink) ♥ Analogue inputs: 2x stereo ♥ Outputs: Loudspeaker (BFA), 1x preamp (RCA), 1x recording (RCA), 1x digital (Toslink) ♥ Rated power: 40W (8 ohms) CONTACT ♥ 01413 077777 ↔ www.linn.co.uk

full Linn electronics kit for \pounds 1,250? If this is from the same stable as the company's standalone items, it has got to be one of the most attractive bargains of the a<u>ge. It does</u>

no harm, either, that Linn was one of the first of the UK audiophile brands to embrace the onebox concept a few years back. And with that knowledge to hand, we were certainly keen to get our hands on the latest version.

An unpretentious, near-square box, the Classik Music is a CD player, FM/AM tuner, DAC, preamp and power amp all in one, with a fair bit of multi-room capability built in as well. It lays claim to 75-watt output, though that's into a four ohm load and it even has 'green' credentials in the form of a high-efficiency switch-mode supply, not to mention a 'paperfree' manual supplied on CD-ROM. Just about the only thing it doesn't seem to have is a phono stage.

300000

STETE (

Getting all this functionality into a case this size is quite an achievement, even in this age of miniaturisation. The CD transport (actually a DVD-ROM transport, if we've understood the labels on it correctly) is mounted amidships, but there's already an additional circuit board underneath it. To the left is a heavily screened enclosure where the power supply resides, while on the right is another aluminium lump which turns out to be the heatsink for the power amp. A small fan, with a little air duct next to it, is mounted on the end of the heatsink: it's evidently temperature-controlled and must be a belt-and-braces inclusion as we never got it to come on, even when driving the amp hard and long in the lab.

Then at the back is another circuit board, mounted upside-down so that all one sees is circuit traces. Removing this, we found that the FM/AM tuner is a familiar device from Kwang Sung Electronics, the usual kind of package about the size of a pack of playing cards which does almost everything including RDS. Yet another circuit board is underneath it, with various connectors mounted on it.

One major space-saving has come from using integrated circuit power amplifier modules. Once reviled (with good enough reasons a couple of decades ago), these have improved over the years and now feature in some quite well-respected kit from a wide variety of manufacturers.



"Getting all this functionality into a case this size is quite an achievement, even in this age of miniaturisation."

They don't quite eliminate the need for external components, but they reduce the parts count considerably, especially when one considers that they include all sorts of fault protection. From them, the signal runs to BFA connectors on the back panel – those slightly bizarre 'inverted 4mm plug' connectors invented to avoid a feared ban on regular 4mm sockets which never materialised. They work perfectly well, just make sure your dealer sells you some suitably terminated cables!

Unlike other single-box systems we've seen (Arcam Solo etc.), the Classik Music has output sockets to feed as many as four other rooms in a home via Linn's 'Knekt' system. This uses cheap and relatively unitrusive cable between rooms, with power amplification carried out locally. Of course, this isn't a full server and there is no capability for playing different sources to different rooms, but it's a nice feature to have.

We've nothing but praise for the standard of build and finish of this unit. The CD drawer is

perhaps the most discreet we've yet seen, it fits into the front panel so well that one could easily miss it altogether. The rest of the fascia is very smart and other details, like the feel and consistency of the buttons, have been well attended to. The remote control is a little dowdy by comparison, though it does make life easier. The display is smart and informative, and is dimmable – but by default it adjusts its brightness automatically according to ambient light conditions. Other features include balance and simple tone controls, plus a host of user settings which most folks will never need to use, but could save the day in odd cases.

SOUND QUALITY

We'll get our one ergonomic quibble out of the way first: this is possibly the very slowest CD in terms of disc loading that we've ever encountered. Over 15 seconds feels like a very long time – indeed, it was long enough for us to wonder if it was time to get a replacement unit from Linn. But no, the machine was working and was worth the wait. This is a rather a tasty bit of kit.

If your expectations of Linn sound are based in the 1980s you'll, perhaps, only be partially satisfied. The famed Pace, Rhythm and Timing are pretty good, but they're not outstanding. Instead, Linn has made some concessions to the detail and polish school of hi-fi thought and, while that may disappoint some diehards, we suspect it's a sensible direction to take given the likely market for the present device.

Perhaps, we should have tried Linn speakers, but we used mainly ATC and Bowers and Wilkins models, both moderately thirsty for watts and, in the latter case, for current in particular. In both cases we were rewarded with some very energetic music-making. It seems the apparently modest output power is at least delivered willingly and though we could make the Classik run out of steam we were starting to get aurally overpowered before it did so.

So there's enough welly for normal applications. 'For normal applications' could be some sort of catchphrase for the Classik Music in a way, as it seems to have a very good grasp of what's required in all hi-fi areas without, perhaps, standing out in any of them.



Q&A

We spoke with Gilad Tiefenbrun, the Director of Engineering for Linn

HFC: Multi-stream servers seem to be popular for multiroom installations these days, but the



Classik Music is single-source. Doesn't that limit its market a bit?

GT: Linn was the first specialist manufacturer to demonstrate hi-fi performance from a fully integrated product. Classik Music is ideal for customers who want a simple life. You can play you CDs, or listen to the radio; you don't need to read a complex instruction manual to figure out how to use it. Everything you need for musical enjoyment – CD and Radio, preamp and power amps – is in one classic, compact, transportable unit.

We notice there's no digital radio. Did you consider that option?

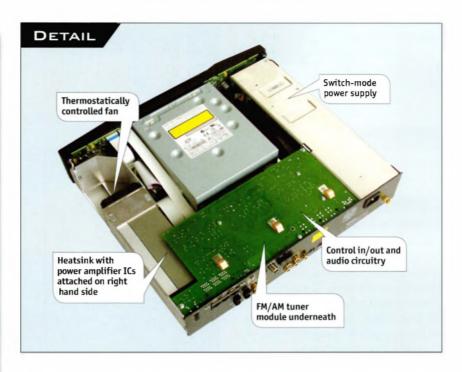
Classik Music's digital input lets you attach your preferred digital radio, be that DAB, satellite or Freeview, so the Classik Music is flexible and futureproof for radio listeners.

Like several makers, you've chosen a ROMtype transport: do you find this gives better performance in an audio application?

The challenge we faced was finding a drive where the high-speed retrieval was not so fast that the rotational noise of the disc became intrusive. The disc-reading solution we have implemented in the Classik Music combines really excellent performance on the data retrieval and reliability fronts, with quiet operation while the music is playing.

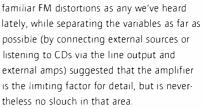
Linn seems to like switch-mode power supplies. Are these now on a par with linear supplies from an audio point of view?

We're delighted to introduce a switch-mode on the new Classik Music, because we get dramatically improved audio performance and lose the eco-unfriendly transformer from the last of our products. After a large bass note, the voltage rails on a linear supply dip and the secondary side capacitors can only be recharged on the next mains cycle. With a switched-mode supply, when a large bass note pulls energy from the voltage rail, the capacitors are recharged at the switching frequency of 50kHz, outside of the audio bandwidth. One of the challenges is electrical noise. In the process of developing our filters to remove the noise we have achieved noise figures as good as our older linear supplies.



□ That sounds like damning with faint praise, but consider this: not only by Linn standards but by anybody's, this is not expensive kit. Yes, £1,250 is a fair chunk of money, even in 2008, but for a CD player, DAC, tuner and amp it's reasonable in the extreme. And then it's pretty obvious that this device will not sell to the 'hi-fi nutter' who wants to tweak and tweak and optimise sound for some specific aural requirement. You buy a unit like this if you want decent sounds all round with the absolute minimum of hassle.

And decent it is. The clincher, though, is that the whole does seem to transcend the sum of the parts. Across all the sources and options, the sound of this unit is just very enjoyable, more involving than one might have expected at first hearing. We used the internal CD drive for about half our listening and it is probably the strongest suit (and by the way, it is mechanically one of the quietest transports we've used in a while, a welcome finding when so many emit annoyingly audible clicks and whirrs). The DAC is just a shade less clear, though strangely it seemed to have slightly more 'kick' to its upper bass. The tuner is very good, as free of background noise and the



We feel that Linn has made an admirably sensible set of decisions in designing the Classik Music. Its sound is good enough to stand comparison with any stack of separates one could assemble for a similar cost and, if it could be beaten in specific areas, we still doubt that many systems could rival its allround achievement and the general sense of 'being there' it manages to produce. Operation is pleasant, looks are pure class and the saving in real estate is significant. Multi-room expansion options are merely the icing on a rather attractive cake. **HFC**

Richard Black







Radio 1

MERIDIAN

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Meridian F8o. Listen closely.

The Meridian F80, developed in collaboration with Ferarri, represents 30 years of audio research and manufacture condensed into a small and beautiful shell. It's a complete system: a CD and DVD player with iPod connectivity and AM/FM/DAB digital radio. You'll be amazed that something so compact allows you to hear more of your music, recovering buried information from the recording and producing a sound full of detail and depth. But then it shares the same technologies as Meridian's flagship components and loudspeakers: sound systems so advanced that if a microphone can detect it, the system can reproduce it. Hearing really is believing. Call 01480 445678 to arrange a demonstration of the F80's outstanding performance.

- "a brilliantly designed and made compact music system" HiFi World
- "truly unbelievable performance" The Robb Report, January 2008.
- "there is nothing available elsewhere that compares" AVReview.co.uk

www.meridian-audio.com







MERIDIAN

A rare vintage

16

Classic speaker from Sonus faber is reprised in its original form

PRODUCT Sonus faber Minima Vintage

BEST BUY HI-FICHOIC magazine

TYPE Standmount loudspeaker

PRICE £2,150 per pair

KEY FEATURES Size (WxHxD): 20x33x27.5cm ♥ Weight: 6.9kg ♥ Drivers: 28mm soft fabric dome tweeter ● 120mm cellulose midrange © Sensitivity: 84dB ● Impedance: 8 ohms ● Enclosure: solid hardwood, leather coverings on baffle and rear CONTACT ☎ 020 8971 3909 ↔ www.absolutesounds.com

he Italians wrote the book on highclass compact loudspeakers, partly through availability of fine sustainable homegrown hardwoods, plus a particular affinity for high-quality craftsmanship in the design and build of loudspeaker enclosures. Last month (*HFC* 311) we looked at one excellent example, the Opera Callas, with its novel five tweeter arrangement. But Sonus faber is probably the most celebrated example of them all and the Minima is the model that started the trend. Indeed it was Sonus faber's first loudspeaker and it has been reintroduced to the market in its original form. Aficionados will be familiar with this model, but others are in for a treat. Although traditional in terms of technology, the voicing and attention to detail mark it out from others in its class.

Technically it is a straightforward two-way vented design intended for use on tall pedestal stands. The enclosure has a capacity of just six litres and is constructed from solid Italian walnut staves, which are grain-oriented and glued together. The baffle and rear are covered in leather, which is designed to help with dispersion of midrange energy (in the case of the front covering) and the enclosures have smoothly rounded edges to help control diffraction. The enclosure is heavy and solid, with almost no resonant signature when rapped thanks to the solid construction. The use of the word Vintage in the model name is particularly appropriate for the enclosure, which has what appears to be an oiled finish over a highly figured grain. In fact, Sonus faber use what is claimed to be a mediumgloss ecologically sensitive varnish. The appearance is very classy and luxurious, especially when offset by the leather coverings. The adjustable stands feel as solid as a rock and are designed to be adjusted according to your seating. In addition, the speakers can be tilted on their adjustable spiked feet.

The moving parts consist of a 120mm cellulose acryate cone driver with a vented basket and a 28mm ferrofluid-cooled, doped soft-fabric-dome tweeter, which are crossed unspecified reasons and the back is now dressed in leather, which probably has little effect, other than to provide some additional damping for the rear panel.

SOUND QUALITY

Although it bears the name of one of Sonus faber's most well-respected early models, we've actually had little experience of its namesake, allowing us to approach the Minima Vintage as a completely new model, without unrealistic expectations.

Despite which, it comes across as a typical high-class thoroughbred compact of the old-school, with a slightly shy lower bass and a matching roll off in the extreme treble.

"One curiosity of the Minima Vintage is that the design is virtually identical in both its original and current incarnations."

over by a first order (6dB/octave) network centred on 2kHz. Sensitivity is low at 84dB, which begs comparison with the BBC's LS3/5a. Impedance is 80hms and power handling (slightly optimistically) is rated at up to 100 watts, but the speaker does exhibit some signs of strain if pushed too hard.

One curiosity of the Minima Vintage is that the design is virtually identical in both its original and current incarnations. The new model has the same drivers and enclosure as the original Minima, which dates back to the early '90s. The only differences are that the basket for the mid/woofer has been changed for



Then the Minima Vintage is clearly at its most comfortable in the mid and upper midband – where a lot of musical fundamentals are placed – and also the main part of the voice region, 300Hz - 2kHz or so. Here it sounds expressive, subtle and unboxy, with a typical Sonus faber warmth and grace. The lowest couple of octaves are on the lightweight side, but not without a hint of muscularity. It does, however, require a subwoofer (see below) to develop further here.

On the whole, the slight loss of top end is no big deal: it merely underlines the quintessentially Italianesque warmth and grace of the design. Of course, there is some marginal loss of very fine detail, though not predominantly on the main (forward) tweeter axis and one consequence is that the new Minima (and presumably this applies equally to the original) is not as analytical as some.

It is more in BBC LS3/5a speaker territory than a modern studio monitor, though it is surely a much better animal overall, Where there is a noticeable loss, is in the reverberant field, which is driven by the tweeter's off-axis dispersion, which is not quite as broad as some. On axis it sounds sharp and precise at low to normal listening levels. But the tweeter doesn't have the headroom of some more recent designs. Push the speaker hard and the treble becomes rather peaky, keep pushing and eventually it generates some grain. But, at moderate levels, which should suffice for all but the most extreme situations, the tweeter is smooth and sweet.

Using the speaker with a subwoofer helps as its performance is limited by the air-moving ability of the diminutive 120mm bass/mid cone. The rear-facing port is tuned to cover the upper bass, centred around an estimated 65Hz. Given this, the bass is quite full and sonorous in balance with everyday material.

We did spend some of the review period, however, with a truly high-class subwoofer, namely the MartinLogan Descent i, which is as superb an advocate for music as it is for home cinema. The effect it has is to immeasurably increase the range of tonal colours, making organ pedal and low notes on the piano noticeable for the first time. It also greatly increases the depth and sonority of orchestral material, whilst more generally expanding the dynamics of the sound.

In one remarkable example, Anton Webern's Im Sommerwind's Idyl for Large Orchestra sounded, without LF reinforcement, emasculated and diminished in scale. The subwoofer also needs to be carefully set up, but when this is done, the match is remarkably good, with no obvious discontinuity in the sound across the audio band.

In no sense, other than size, is this your archetypal compact. In some respects its design priorities are somewhat old fashioned, but loudspeaker technology advances only incrementally on everyday timescales and there is little about the Minima Vintage that could be described as dated. Make no mistake, it is an absolute joy to use for any period of time. It is voiced to perfection, given the natural limitations imposed by its lack of cubic inches and limited cone radiating area. It images superbly too and the slightly romantic warmth of the design is welljudged in this context and works well with the superb aesthetics. HFC





Silver sophisticate

MERIDIAN

Eject

Display

on/of

G08.2 24-bit Upsampling CD Player

Meridian updates its popular G-series with a proprietary filter for enhancing CD quality

PRODUCT	Meridian	G 08 .2
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TYPE CD	player	
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PRICE £2,250

KEY FEATURES Size (WxHxD): 44x9x35cm Weight: 9kg O Analogue outputs: 2x balanced XLR stereo, 2x phono stereo O Digital outputs: 1x optical, 1x electrical O Upsampling to 176.4kHz/24-bit O Apodizing digital filter

CONTACT ☎ 01480 445678 ⊕ www.meridian-audio.com

hroughout a thirty year history, Meridian has ploughed its own furrow to very good effect, combining the creative engineering talents of Robert Stuart with those of industrial design guru Alan Boothroyd to produce some of the most original and beautiful 'high-end' hi-fi equipment on the planet. The company has been a noteworthy pioneer, responsible for a number of innovations in multi-room, multichannel and home cinema sectors, but especially in digital audio, where it was the very first company to introduce an 'audiophile' CD player, then later develop the MLC (Meridian Lossless Compression) system, before being deeply involved in the DVD-Audio format.

When the G-series was originally launched some five years ago, the components tended to reflect the company's preoccupation with multichannel surround sound. The fact that it included two standalone CD players (GO6, GO8) seemed almost like an afterthought, though both models proved rather more commercially successful than Meridian had anticipated.

Given the rate of change that goes on amongst electronic components and

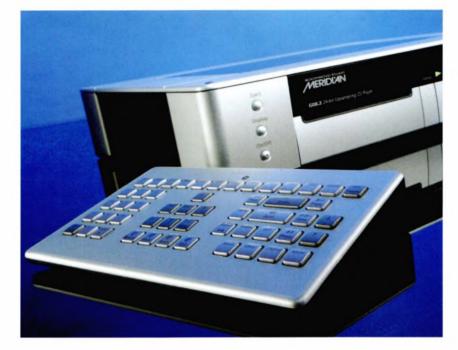
mechanical devices like disc drives, five years is guite a long time to keep a particular CD player design in production. Although this new G08.2 looks just like its predecessor, and carries exactly the same £2,250 pricetag, introducing it provides Meridian with the opportunity to incorporate the latest thinking and componentry and do so at the same time as its 'flagship' 808 model also graduates to Mk2 status. It's fair to assume that these two models will share a number of techniques and components, even though they are very different in terms of price, casework and internal architecture. The smaller, neater G08.2 features a slot-loading system for discs, rather than the 808.2's sliding drawer, fits most of its electronics on a single horizonal board and naturally involves some economies in components and power supplies.

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PS

It's a very attractive player. Finished in a mixture of silver anodised metal and black glass, it has just enough styling to make it look interesting and avoids over-egging the pudding and becoming fussy, though the fastidious might find the mix of fascia typefaces rather unnecessary. The player is fairly slim, but quite deep, the regulation 'full width' fascia mollified by nicely rounded vertical edges.

Most major functions are available from a row of five back-lit piano key buttons, assisted by a 'shift' or 'soft' key labelled 'more' which adds extra functions like scan, repeat, display brightness and track programming, identified on the clearly legible vacuum fluorescent display. The Atapi ROM disc drive has a slot-loading mechanism, like those used for laptop computers and dashboard in-car players, so all that's needed is an 'eject' button.



"...having the naked disc sucked from one's fingers might seem unfamiliar, but it's a fast and efficient means of loading a disc."

However, these controls are really just a back-up, as most operations will be carried out using the remote control unit – the term 'handset' is hardly appropriate for the quite bulky table-top device supplied here. Codenamed MSR+ and about the same size as a paperback book, this unit is willing and able to operate a complete Meridian system, may be programmed to control source components from other brands and even comes with its own instruction booklet.

The rear panel is well-stuffed with socketry, ensuring fine connection flexibility. Both balanced (XLR) and single-ended (phono) stereo outputs are available, as are S/PDIF digital outputs in both optical (TOSlink) and electrical (phono) form. Extras include an RS232 plus infra-red sensor reception and comms sockets for integration in Meridian systems.

The G08.2 uses a computer-style ROM drive to read the CDs and this allows high scanning

speeds so that data can be re-read if necessary to ensure accurate recovery and error avoidance. The associated buffering system uses re-clocking to minimise jitter. The player handles regular CDs, CD-Rs, CD-RWs and the majority of 'hybrid' discs and will deliver the data from DTS CDs via the digital output for external decoding.

High bandwidth/bit-rate (176.4kHz/24-bit) Delta Sigma DACs are used and a powerful 150MIPS (million bits per second) digital processor upsamples the regulation 44.1kHz/16-bit CD data to 176.4kHz/24-bit for feeding to the internal DACs, or to 88.2kHz at the digital output. Much of what we don't like about the CD medium is to do with the players' anti-aliasing filters and the steeper linear-phase digital filters that replaced analogue minimum-phase filters also generated pre-echo. Upsampling the data rate allows the digital filtering to take place well above the audio band, to minimise its in-band intrusiveness, and the considerable power of the DSP chip allows the use of Meridian's new 'apodizing' digital filter, which delivers a minimum phase output that is free from ripple or pre-echo. It is even suggested that CDs played back via this filter can sound better than they did at the mastering stage in the studio.

Discovering that the G08.2 had a slotloading mechanism came as a bit of a surprise. In the very early days of CD, some of the first dashboard slot-loading in-car players were accused of scratching discs. Such possibly hypothetical worries of twenty years ago might seem risible today, but probably explain why this approach is still uncommon amongst standalone CD players today. No such concerns raised their heads here, it should be stressed: having the naked disc sucked from one's fingers might seem unfamiliar, but it's a fast and efficient means of loading a disc.

Ergonomically the player itself is a delight to use and one couldn't help admire the intelligent way the main control buttons have been configured. The remote control unit is a rather different matter. While those operating a complete and complex Meridian system might well appreciate its considerable flexibility, it goes so far beyond the



Q&A

We spoke with Bob Stuart, Meridian's Chairman and Chief Technical Officer

HFC: It's nearly five years since Meridian introduced the original GO8. In comparison, it



would seem that the main difference in the new model lies in its use of a slot-loadingdisc drive mechanism. Was there a specific reason for making this change?

BS: There were several reasons. The prejudice against slot-loading has gone away (partly thanks to Apple's laptops) and we believe its inherent simplicity benefits sound quality. And because we use an automotive-grade mechanism, it's reliable, durable and good at vibration resistance.

Could you please describe and explain any other significant changes in the new model?

A different CD decoder gives greater error correction and the electronics have a lower noise floor because there are fewer clocks. But the most important change is the introduction of the apodizing filter. It's really exciting the way this removes CDs distracting 'edgy' quality, so that CD starts to sound very like the higher resolution digital formats. It can even correct for the pre-echo problems created by A-to-D converters during the original recording process. I now find I can do demonstrations with early 1990s DG recordings that previously sounded quite unpleasant.

Although I understand the G08.2 has the same 150MIPS capacity processor and apodizing digital filter as the 808.2, it's a little behind in sound quality. Can you explain the main compromises? The 808.2 has a superior implementation of the apodizing filter. An extra FIFO buffering stage means that it also has lower jitter. And the analogue stage is better separated

A number of the G08/ G08.2's features are oriented towards integration in a complete Meridian system. How are sales split between players bought as standalone items and those integrated into complete systems. This varies considerably from one territory to another. We certainly sell more CD than DVD players, especially in the UK, Europe and the Far East, where there seems to be a trend back to twochannel stereo. The US is more DVD and surround sound oriented However, the really crucial question has to be: can we avoid an MP3 future?



relatively simple requirements needed to operate a CD player that the words 'sledgehammer' and 'nut' come to mind. While the MSR+ will be difficult to lose down the side of the sofa, a much simpler, smaller and lighter CD-dedicated handset might perhaps be a worthwhile inclusion in the accessories box.

Connecting up is straightforward enough, though preamplifiers with balanced inputs are a rarity in Britain and none was available at the time the review was carried out. The G08.2 could, therefore, only be auditioned via its single-ended phono outputs, whereupon it delivers very satisfactory results indeed.

In truth the term 'satisfactory' is classic British understatement, as this is a very fine CD player indeed, with very few grounds for criticism. It's essentially sweet, with a wide dynamic range above an effectively inaudible noise floor. It delivers precise and well-focused stereo images with decent depth and plenty of air and ambience. The full, firm and positive bass delivery is, perhaps, its strongest suit, providing the solid foundation that underpins any musical performance.

However, don't assume that the G08.2 is an 808.2 on the cheap. It might share much of the same technology and cost less than one third of the price, but since the opportunity arose to compare the two players directly, it



was clear that the senior model has the edge on its less costly sibling. Good though the GO8.2 is, it doesn't quite match its senior rival in terms of total voice coherence – consonants and sibilants aren't quite as sweetly integrated in the whole, leading to a slight increase in artificiality and a sound that's a little less relaxing over the long haul.

The G08.2 handled everything on Laurie Anderson's 1989 *Strange Angels* disc with considerable aplomb, from the crisp, powerful echoing bass on *Monkey's Paw* via the atmospheric 'clubland' scenario on *Beautiful Red Dress* to the delicate vocal harmonies of *The Dream Before*. The impressive bass delivery stands out as its most obvious strength, but nothing really lets the side down and the price seems very reasonable for the overall package and standard of performance. **HFC**



Paul Messenger

Complex remote control particularly suits it to complete Meridian system operation. Advanced digital processing with special apodizing Iftuer gives a very dean sound that avoids the usual digital artefacts; the firm, deep bass is another plus.

VERALL SCORE

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PRODUCT Mission 790 TYPE Standmount loudspeaker PRICE £350 per pair CONTACT ♀ 01480 447700 ⇔ www.mission.co.uk

ack around the end of the last millennium, Mission produced its attractive and classily finished 78-series range of mid-price speakers. Nearly a decade later and operating under Chinese ownership (as part of IAG) the spirit of that range is being revived in a new 79-series of models.

One of four stereo pairs (which also includes home cinema extras) the 790 is the smaller of two standmounts, relying on a solitary 130mm bass/mid driver to do most of the work. The inflation-busting benefits of Chinese manufacture are very apparent in a pricetag which, at £349 per pair, is just £50 more than its 1999 780 predecessor.

Superior industrial design skills have long been a major reason for Mission's success and there's no denying that this is one of the smartest miniatures on the market. The pianogloss finish (white, black or rosewood) helps, of course, but the cunningly shaped enclosure and particularly the wraparound rubberised front baffle all come together to give a 'cute yet purposeful' impression.

There's much more to this speaker than meets the eye, however. The enclosure has a domed top and curved sides that taper towards the back, adding stiffness and avoiding parallel surfaces. What is particularly interesting is the way it's built up using thin laminations of three different densities of energy-absorbing particle board, bonded by an RF-activated resin

The main driver is loaded by the seven-litre enclosure volume and a reflex port that exits at the rear. The actual cone, made from a resinbonded woven aramid fibre called Parawave, is 90mm in diameter.

The 25mm tweeter is decoupled from the rest of the front by a close-cell gasket and surrounded by a shallow waveguide. It has an impregnated textile dome called Viotex, an aluminium chassis, neodymium magnets and ferro-fluid to assist voice coil cooling. The tweeter is mounted below the main driver, so in-phase output through the crossover region is angled slightly upwards. The network uses 12dB/octave slopes and twin terminal pairs allow the two drivers to be addressed separately if desired.

SOUND QUALITY

Auditioning began by placing the speakers on typical 60cm stands well clear of walls. This was not a success sonically speaking, as the upper midband was clearly too strong, giving voices a rather 'shouty' character.

The reason became clear enough once the far field room-averaged response trace had been taken. Although the port output was strong enough around 50Hz, output was at least 5dB too weak from 60-250Hz. The zone from 250Hz to 14kHz was much stronger, registering a sensitivity that matched the specified 87dB here, but then output dropped by 5-6dB again from 2 5kHz. The extra bass output generated by close to-wall siting was clearly indicated.

This certainly helped, boosting output 50-140Hz, but it didn't really solve the problem. 150-500Hz was still weak and the upper mid (700Hz-1.3kHz) remained exposed. So this speaker will never score well on basic neutrality Those measured balance anomalies clearly dominated the sound quality. But the lack of presence energy was probably the most serious limitation, as it left voices lacking in dynamic expression and vigour.

The sensitivity is pretty good for the type, however the pair match was rather disappointing and although close-to-wall siting helped the bass balance, it didn't negate the upper mid-colour and the lack of lower mid and presence energy **HFC**

Paul Messenger



Very styrsti, lovely missi and clevel encoure engineering. Decent sensitivity too, but a disappointing tonal balance and lack of neutrality. Bass was helped by close-to-wall siting, but there was a general lack of lower and mid-colour.



Ken's on form

New Ken Ishiwata-tweaked Marantz is an audiophile dream

PRODUCT Marantz SA8003

TYPE CD/SACD player (stereo-only) PRICE £700

FICHOIC

KEY FEATURES Size (WxHxD): 44x10 5x33cm • Weight: 7kg • Analogue outputs: 1x RCA phono • Digital outputs: 1x coaxial (phono), 1x optical (Toslink) S/PDIF • Input: USB • Compatibility: SACD, CD, CD-R, CD-RW, MP3, WMA

CONTACT ☎ 01753 680868 ↔ www.marantz.com

arantz has an enviable history of keeping on top of the audio separates game, which these days means a pretty active programme of new product development. Indeed, it doesn't feel like very long since we saw the SA7001 and now we're testing its replacement.

Well, sort-of replacement. If you've paid attention to past Marantz form, you'll have noticed that the company likes its 'Special Edition' models (that very nomenclature is believed to be a Marantz invention) and the ultimate expression of these was always the 'Ki Signature' range, reflecting the personal tweaking input of brand ambassador and noted audiophile Ken Ishiwata. There was an SA7001 KI, but it seems there will not be a corresponding version of the '8003 because this is already the 'Ken'd' model. In other words, it effectively replaces the SA7001 KI, not the base model: something less exalted will be along to fill the 7001 slot soon.

However, it seems that in terms of evolution this model has more to do with Marantz's premium range, the 7 and 11 series (components which sell for quite upmarket money). Like many firms, Marantz does its R&D at the high-end and lets the results 'trickle down' to lesser products as the march of technological progress makes them less expensive. Hence, for instance, the use of the Crystal Semiconductor CS4398 DAC chip inside this player, one of the highestperforming parts on the planet.

Before we get too deep into the insides, there's a more obvious external feature that demands comment: a USB socket. We haven't seen this before on any separates CD player, but immediately realised that it is an extremely useful and clever idea. Some manufacturers have provided digital inputs on CD players before, but the USB slot is even more useful. If you have high-quality music on a portable player of some sort, plugging it in to a socket like this makes it instantly available via your home hi-fi, with the considerable advantage of high-quality digital-to-analogue conversion. It won't turn low-rate MP3 files into miracles of high fidelity, but it will certainly extract the most from uncompressed audio.

That apart, the SA8003 continues the current trend among SACD spinners of offering stereo-only replay. It does seem to be something of an improvement over similar machines in terms of loading time (a frequent gripe) and loads a CD in about five seconds, which is just about bearable. In terms of build quality it's nicely done, the front a mixture of metal and plastic, but so well finished that it's not obvious which is which, while the whole of the main chassis tray is copper-plated. The top is thin and a little resonant. Good-quality analogue output

sockets are fitted and there are quite a few high-grade components internally.

That said, of course, circuit design is probably more important and here Marantz has a unique attraction in its 'Hyper Dynamic Amplifier Module', a configuration used in preference to the more popular op-amp, which certainly gives consistently excellent results in technical terms. Distortion from this player is down among the noise, though susprisingly there's a little jitter in evidence, just enough to be measurable.

SOUND QUALITY

We make measurements of aspects like distortion and jitter as much as anything out of curiosity, but the correlation between very low (but not vanishing) levels of such nasties and subjective performance is weak and uncertain. At any rate, the jitter certainly didn't seem to be enough to interfere seriously with our enjoyment of this player, which did nothing to dim our enthusiasm for either its maker, or any of the favourite discs we played on it. It is



subjective lift in roughly the region occupied by a male voice.

It would be a harsh judge who would proclaim that unpleasant, though. At worst, it leads to a very minor reduction in detail, but it does add a certain 'glow' to the sound and if that's helping Marantz shift players in

"Some manufacturers have provided digital inputs on CD players before, but the USB slot is even more useful."

lively, impartial in its musical tastes, detailed and frankly a delightful performer. If it gives any ground to high-end esoterica then it's in the very finest gradations of insight and, perhaps, also control. In general, though, it's really rather lovely.

It's always a little dangerous to talk about a company's 'house sound', especially in the case of CD players which, on the whole, show quite subtle personality traits, but we've had so much experience with Marantz in particular, that we're more confident than usual in saying that this player does indeed show some similarities to its stablemates. The sound in question is characterised by a very slight degree of added warmth, a small step from absolute neutrality in the upper bass/lower midrange region. Of course the frequency response is as flat as the proverbial, but our analysis is that the sound is not quite as precisely controlled in that region as it may be and the result is a small, but audible

comparitive demos we wouldn't be at all surprised. In day-to-day terms it's something one gets used to quite quickly and it doesn't grate or irritate in long listening sessions. Indeed, had we not been using some particularly high-resolution loudspeakers for the listening, we may hardly have been aware of the detail aspect at all.

Low bass is exceptionally well presented for a product in this price bracket, with extension, precision and generous helpings of tunefulness, which all goes to set up a particularly pleasing foundation for almost any style of music. In the high treble there's occasionally a hint of congestion, not a big problem, but something we've found before with Marantz players. We suspect this is due to the unusual digital filter the company employs. Ultimate treble cleanliness is possible in digital audio, but unfortunately, it is one of those things one tends to have to pay a lot for!



Most of all, what we appreciated in our brief listening sessions with the SA8003 was the ease with which it adapts to everything from funk to opera, folk to thrash. It has a terrific knack of not just coping with any style, but playing it as if it was the principal source used by the designers in the final stages of voicing the circuitry. It can be civilised in string guartets, soulful in ballads and mental in punk, one after the other and with complete conviction: that is perhaps nothing more than a statement of what hi-fi should be about, but it is notable how few components really shine in every area. Some seem a little polite in rock, others a touch harsh in classical, but this one just doesn't seem partial.

We're very impressed with Marantz's ability to turn out great disc players. There are many fine CD players around between £500 and £1,000, but they don't all play SACDs (and our comments above apply equally to both CD and SACD replay), nor are they all as smartly turned out as this one. The USB input is a clever and useful addition and the player is pleasant to use. Another winner! **HFC**

Richard Black

VERDICT	
SOUND (cD) SOUND (sACD) FEATURES	E PRO Excellent low bass and admirably clean treble and midrange, plus an unusually even-handed approach to different musical styles. USB input a nifty plus.
	CON A slight added warmth in the upper bass may not be to every taste and minutely compromises detail. Highest treble just a shade shut-in too.
CONCLUSION A welcome newcomer which sounds in a classy and attract thought-out features too. Sl oppressively characterised.	ctive package, with intelligently
HI-FICHOICE OVERALL SCORE	****

A SUPERBLY ENGINEERED LOUDSPEAKER MAKING THE MOST OF ITS TECHNOLOGY TO MAKE THE MOST OF YOUR MUSIC"

HI ELPI US / ISSUE 44 / ROY GREGORY / SUMM

NOT JUST A GREAT MARTINLOGAN, BUT A GREAT SPEAKER REGARDLESS OF TECHNOLOGY.

Through their sheer beauty, both aural and visual, MartinLogan speakers have established hybrid electrostatic technology as the obvious choice for those who want state-of-the-art sound without suffering a profusion of ugly boxes. The company's name is now a byword for elegance in audio.

Every MartinLogan speaker, from entry level and home theatre to state of the art, is immediately recognisable as a MartinLogan product: the peerless, oft-imitated, room-friendly appearance, the captivating see-through panels and furniture grade finish. Best of all, the sound is as clear as the panels themselves.

MartinLogan has raised the bar even higher with the sublime Summit, a speaker that possess all of the virtues of the brand in a disarmingly compact form. Its sonic strengths surpass even its beauty, and it has, in a very short time, endeared itself to the most critical of music lovers. To make its virtues available to a wider audience, the Summit has been followed by the smaller Vantage, and - for those with space or budget restrictions - the passive-woofer Vista. We have no doubt that they are the most satisfying MartinLogan speakers ever, magical blends of electrostatic openness and the kind of bass only available from a dynamic woofer. They can charm and excite in equal measure, dealing with everything from delicate, 'unplugged' music to massive corbestras, from funk to fusion.

To augment the Summit and its sisters, especially for home cinema applications, a new baby has been added to the range of MartinLogan subwoofers. The Abyss features a 12in woofer, and it provides a new form of convenience for true flexibility: driven by an internal 300W amp, it can beinstalled with either front- or downward-firing positions. It uses inverse mathematical equalisation, for sound to suit the environment.

New, too, for home theatre and environmental situations, are the 34 kin wide Stage hybrid centre channel speaker and the Ticket, a compact and affordable flush-mounted or in-wall model. Both are ideal matches for the new generation of wallmounted plasma and LCD displays, in bedrooms and studies, or that a secondary system is used.

From smallest to largest, every MartinLogan delivers beauty: aural and visual.



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Cassette conversion

Ion's new budget-priced deck lets you archive taped music to your computer

PRODUCT Ion Tape2PC	
TYPE Cassette deck (USB)	
PRICE E100	
CONTACT 2 01252 341400	📾 www.firebox.com

emember audio cassettes? They were all the rage once. People even took them quite seriously. But what we have here is a handy device targeted quite unashamedly at the more occasional taper, who probably has some interesting old cassettes floating around and nothing convenient to play them on.

So, says lon, transfer your cassettes to MP3 and you can continue to enjoy their contents from hard disk, CD or iThingie. With that express aim in mind, the Tape2PC is a cassette player with a USB output, allowing easy connection to any modern home computer. You also get some PC software to make things even easier, though you don't have to use it. Just plug the Tape2PC in and it is instantly recognised by the computer as an in/out device. If you already have audio software installed, you can use it to save MP3 or WAV versions of your treasured tapes.

Ion has gone for the full retro look, with mechanical 'piano-key' operation and two

transports. It does seem slightly illogical to feature dubbing and recording when the main point is copying from cassette, but it could be handy now and then. Tape type selection is manual and 'noise reduction' is included.

One extra control, hidden at the rear beside the USB socket, deserves attention. 'Gain' controls the signal level going to the A-D converter that precedes the USB output and we found that if it is set anywhere beyond halfway, distortion is guite likely to occur.

SOUND QUALITY

A hundred quid is not a lot of money and we weren't expecting anything amazing. All the same, the sound is basically decent. The biggest problems with cassette were always pitch stability, background noise and high frequency extension and this deck makes a reasonable job of all three areas. Hiss is pretty good and there is very little hum injected into the sound, too, though the mains transformer produced a prodigious amount of mechanical hum from our review sample.

Ion's own software is basic and facilitates making MP3s from cassette tracks. Audacity, a well-known audio editing package, is included too and offers rudimentary noise reduction and other signal-tweaking functions, plus the ability to save recordings as uncompressed WAV files. As MP3 wastes resources and bandwidth trying to accurately encode the hiss, there's a distinct drop in perceived audio quality. So we strongly recommend saving anything of the remotest importance in WAV form.

The Tape2PC does a respectable job of salvaging forlorn and forgotten cassettes. It does what's claimed without pretension and is, in the very best sense, both cheap and cheerful **HFC**

Richard Black



Not the only way of doing the job, but handy and a boon for the occasional user. Supplied software adds useful capabilities and with care, decent results can be achieved. You could even sell it on once the job is done. It's Mac compatible, too.



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The Squeezebox Duet's multi-format to multi-room entertainment is a winning combination

PRODUCT Logitech Squeezebox Duet

BEST BUY FICHOIC magazine

TYPE Network music player (receiver and controller) PRICE £279

KEY FEATURES © Weight (overall), 1.54kg (Receiver) Size (WXHXD), 10.6x2.9x10.6cm, ○ Analogue outputs, 1x Audio (RCA), ○ Digital outputs, 1x (optical, 1x Coavial ○ Compatible with PC, Mac or Linux computers 9 (Controller), Size (WXHXD), 5.8x1 8x15,6cm, ○ 2.4, inch colour LCD TFT display, ○ Recurrements, 10x 100Mbps Etherniet or Wi-FI (802.11g) nome network and proadband internet. ○ Supported formats, Include, MP3 AAC, Apple Lossies, WMA (Inc. lossiess), FLAC, WAV, pills internet radio.

CONTACT 🕿 01753 870900 🗰 🗛 log tech com

Suppose you store music files on a computer in your study, but you'd like to have access to those sounds while you're in the kitchen, bedroom or any other room in the house (without spending silly money on a whole-house distributed audio installation). The Squeezebox Duet provides a cost-effective solution: £279 buys a receiver and controller for the first room. That controller will also operate any other £99 Squeezebox Duet receivers — along with other models from the range including the audiophile-grade Transporter – that you may decide to add in other rooms. There's no need to have a hisfi in those secondary rooms: a pair of active speakers is all that you require.

Setting up a Squeezebox Duet consists of installing two components there's the receiver, which you connect to your system amplifier (or active speakers) and the wireless controller (along with its charging cradle) that acts as the user interface with the device. The third component, which isn't included in the box, is a networked computer on which you run the free SqueezeCenter software that acts as the brains of this outfit. The Duet will connect wirelessly through Ethernet, or in a hybrid network, mixing wired and wireless connections. This is the arrangement we used, with control being wireless and music travelling through reliable Cat5e cabling.

While the Squeezebox Duet plays music files that you have stored on your computer it will also, provided you have a broadband internet connection, let you listen to internet radio. As far as stored music is concerned the Squeezebox Duet and SqueezeCenter support a wide variety of formats, both uncompressed and compressed. Formats that the receiver hardware cannot support natively are converted to be playable through transcoding provided by SqueezeCenter. Transcoding is not an altogether good thing so stick to native formats whenever possible

Usefully, SqueezeCenter can also use the iTunes music library. However, it cannot play songs purchased from the iTunes Music Store if they are protected by Apple's FairPlay Digital Rights Management (DRM) software because Apple refuses to license that to other hardware manufacturers.

For what is an extremely high-tech piece of equipment, the set up procedure is a fairly straightforward affair, so long as you follow the instructions. If you don't, then it's a simple job to reset everything and go through the setup again...this time as instructed! And for what is not an especially expensive piece of equipment, it seems well thought-out and neatly put together. The controller is the star of this show, with its configurable 2.4-inch colour LCD screen and its iPod-style scroll wheel and straightforward controls.

We auditioned the Duet using an uncomplicated, but revealing system comprising a Naim SuperNait amplifier, Chord Company interconnects and loudspeaker cables and Neat Petite loudspeakers on Partington stands. The Squeezebox receiver provides both analogue and digital outputs, with the latter being either coaxial or optical. We used the coaxial option and fed it through the SuperNait DAC, which offered improved performance over the integral DAC in the Squeezebox.

We set up networking using a Cat5e cable connection — which suffers none of the noise and hash that mars wireless transmission and delivers better dynamics and low-level detail routed through a metal-cased Netgear Fast Ethernet switch to the PC.

SOUND QUALITY

Feed the Duet a good signal and it delivers a highly respectable performance that will wipe all thoughts of how little it cost from your



listener distinguish between the instruments but also clarify the situation when B.B. gets a little jazzy and vocally mimics the melody he's playing on his guitar. His duet with Etta James on the same album best demonstrates the system's musical empathy: its timing acuity emphasises the subtle interplay between B.B.,

"The sound isn't the finest in terms of transparency and openness, but it delivers a degree of insight with laudable dynamics."

mind. Do as we did and play it through a decent DAC and we reckon you'll be absolutely delighted with this sub-£300 purchase

The sound isn't the finest in terms of transparency and openness, but it delivers a reasonable degree of insight with laudable dynamics. Voices and instruments have credible character, realistic tone and timbre and they exhibit fine note shape, especially acoustic guitar. At its worst there is a slight veil hanging in between the band and the listener but musically, in terms of pitch, timing and coherency, the portrayal is very satisfying.

Albert Collins and B.B. King's marvellous reworking of *Stormy Monday* on *Blues Summit* is rendered beautifully with the duo's guitars and vocals cutting distinctly through the mix and standing proud of the orchestra playing behind them. Drums and cymbals have similar clarity and attack and even the bass, which isn't unduly prominent in the mix, makes its presence felt and contributes to the track's gentle, meandering rhythm. However, it's the guitars that stand out in both the literal and figurative senses. Razor-sharp leading edges and crystalline definition of the ADR envelope (attack, decay and release) not only help the the orchestra – in particular the drummer – and the singer.

A recording of the scherzo from Beethoven's *Ninth Symphony* confirms our suspicions that the Duet's soundstaging seems shallow, but in every other respect the box delivers a commendable performance. Regardless of its imagery, it portrays the orchestra with excellent dynamic expression and a fine sense of realism along with its musical fluency and timbral honesty: horns and strings exhibit bite when required, but display no unnatural 'digital edge.'

Playing a selection of high-quality, highdefinition FLAC downloads, whose purpose is to demonstrate the quality attainable with such material, including The Minnesota Orchestra, the Squeezebox turns in a sterling performance, sounding sharply detailed, fittingly dynamic, delightfully vibrant and musically rewarding. Instruments are rich in harmonic texture and the orchestra positively leaps from the speakers, apparently free of any constraint by the enclosures.

Toumani Diabete's Symmetric Orchestra album Boulevord De L'Independence

demonstrates the system at its most opensounding. Each of the 21 strings on the leader's Kora displays a wonderful vibrancy and a rich resonance. The system excels dynamically on this recording, in particular in the way it conveys the brass section's incisive stabs and the fierce percussion. Especially delightful is the way it renders transients with such completeness and solidity; not with just the high-frequency portion of leading edge, but with the whole weight and low-end content of the note rendered with full force.

Experimentation shows that the Duet, although not an ultra-revealing audiophile device, can be rather discriminating about the recordings you play through it, especially when it is connected through a suitably open- sounding external DAC. Although with that in mind, we recommend that you stick with well ripped WAVs and FLACs, if you're going to play the Duet through a goodquality hi-fi and want to hear it at its not inconsiderable best. **HFC**

Malcolm Steward



Kimber Timbre

TYPE Analogue interconnect PRICE £118 (1m terminated pair) CONTACT ☎ 08453 451550 ↔ www.kimber.com

imber's interconnects have generally followed a common pattern in recent years, with three conductors plaited together. Termination is done with two conductors for 'hot' and one for earth: Kimber's claims for the arrangement are more to do with the way the plaiting distributes electromagnetic fields around the cable, than anything related to ohmic resistance and there's no real reason why the resistance difference in each 'leg' of the circuit should matter. Within each conductor are copper strands of various thicknesses and the insulation is of transparent Teflon. In principle, a cable constructed like this is more open to hum and interference pick up than the more common coaxial arrangement, but we've yet to encounter any problems in line-level circuits, at least. Simple, but good-quality phono plugs with Kimber's 'Ultraplate' surface treatment are fitted as standard: XLR connectors are an option, for balanced working



We've vague memories

of hearing this cable before, but it was an analloyed pleasure to be reacquainted with it. Sound is beautifully solid and well-rounded, but also very delicate and highly detailed and there is a marvellous sense of stereo image in a large space between, beyond and around the loudspeakers. Only by trying direct comparison with some very fancy cables, were we able to identify any limitations: there is just the slightest hint of high-frequency congestion on the odd occasion, but by goodness it's small in this extent. This model is only halfway up Kimber's range, but its performance frankly belies that. excellent in every way. **HFC**



TCI Tiger II

TYPE Analogue interconnect PRICE £30 (1m terminated pair) CONTACT ☎ 02892 673024 ↔ www.true-colours.com

ery much the baby in present company, but sent to us in full knowledge of that fact and in all confidence by its maker, this is TCI's entry-level interconnect. It actually looks a good deal more upmarket than the price suggests, with some particularly handsome (and well made) phono plugs fitted. Beneath the soft jacket, it is apparently a simple twisted pair in design, an arrangement which minimises hum pickup, though under very low-signal conditions (a turntable connected to a phono preamp) the lack of shielding may possibly become an issue. The wire is straightforward stranded copper insulated in polythene, a low-loss dielectric whose properties are slightly compromised here by the fibre filler and the PVC outer sleeve were it not for that, Tiger would also serve pretty well as a digital interconnect.

Budget interconnects often struggle mainly in the treble, with a less open sound than



their dearer rivals can achieve. In this case, although that is still true to some extent, treble is really rather impressive. Just now and then one becomes aware of a slight lack of ambience and 'air' around the sound, but for the most part results are good and for the price, excellent. Bass is interesting, being to our ears a little short of completely neutral. Instead there is something of a lift to it, which makes for a fuller sound, but does on occasion detract from the tautness of a rhythmic bassline. In budget set-ups, with rather basslight systems, that may be no bad thing. Detail is good and imaging excellent with surprisingly good depth, too. HFC



REST RU

Townshend Isolda DCT100

 TYPE Analogue interconnect

 PRICE £99 (0.8m terminated pair)

 CONTACT 20 0208 979 2155 # www.milty.co.uk

he DCT in the model name refers to 'Deep Cryogenic Treatment', a field where Townshend was one of the pioneers. All the same, we aren't going to ascribe any definite portion of this cable's performance to that aspect, as so much else about it is different from the norm. For a start, each conductor is not made up of the usual round strands (multiple or single), but a flat copper strip. Townshend uses copper strip in its speaker cable, but whereas the aim there is to minimise inductance and the strips are mounted face-to-face, here it is more important to minimise capacitance and, as a result, each strip is placed inside a circular PVC tube which ensures relatively large spacing. Townshend asserts that this makes the dielectric '93 per cent air'! We can't entirely support that, but it's certainly a lot better than PVC alone. A nylon braid finishes off the construction and Neutrik phono plugs are fitted.

We've a sneaking suspicion that this cable's sound is very slightly coloured tonally, but as an



is so convincing that

we're not sure we care. Above all, it

seems to bring out the grand sweep of any piece of music passing through it, making one reluctant to listen for small specific foibles because the big picture is just so very convincing. If one does make the effort, one finds that detail is very good, imaging among the best in both dimensions and bass and treble both extended but, we reckon very subtly rolled off at the extremes. Never mind: the energy of rock, the architecture of a romantic symphony, the passion of a ballad all come through like never so. A subtly different sound from a physically very distinctive cable. **HFC**



van den Hul The Wave

 TYPE Analogue interconnect

 PRICE £100 (0.8m terminated pair)

 CONTACT ☎ 01235 511166 ⊕ www.vandenhul.com

ith one of vdH's less bizarre names, but a truly distinctive colour to its jacket, The Wave is a new model from the company's confusingly vast range. It uses silverplated copper conductors (the more upmarket ones use carbon strands), polythene insulation, coaxial construction and a 'Hulliflex' jacket. Apparently the green colour signifies the 25th anniversary of vdH's green mission to make cables that do not harm the environment. The central conductor is a generous 0.9mm diameter and the internal dimensions are such that the cable is also suited to video duty and indeed digital audio interconnection. It's a little thicker and less flexible than the other cables in this Round-up, but still perfectly practical and it is fitted with very nice collet-clamp phono plugs which, in principle, give better termination to coaxial wire than the usual types.

Despite the differences in construction, we found this cable fairly similar to the Kimber, with a full-bodied and clearly defined sound across the



registers. It has a very

slightly fuller upper bass, which

may tickle some tastes, but this does not seem to have any adverse effect on rhythm, which is lively and precise. Treble is cleanly extended and once again there is a lovely natural quality to the way delicate high-frequency sounds decay into ambience (given good recordings!). Imaging is very good, with perhaps a slightly longer perspective in the depth direction. That's something we've noticed once or twice before with vdH cables and we regard it more as a matter of taste than absolute right or wrong. Another highly capable and compatible interconnect. HFC Richard Black



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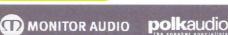
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INFORMATION

The design approach is certainly outside the box with the stand's column a clear glass cylinder and the base a clear glass teardrop with integrated spikes. The top plate is robust and the stand is held together with a central chrome tension tube which also doubles as a cable management system.

INFORMATION

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GROUP TEST & LAB REPORTS: RICHARD BLACK

HEADPHONES

Six of the very best for the ultimate experience in personal listening



eadphones are not everyone's idea of hi-fi fun, perhaps more an occasional convenience or emergency recourse. And yet they have so much to offer in terms of unsullied audio, with levels of distortion and coloration (in the midband at least) that most loudspeakers can only dream about, plus complete insensitivity to such imponderables as the listening room. They can play louder and cleaner than most speakers, their driving requirements are very modest and, of course, they are available at any time without disturbing the household or the neighbours.

There are less headphone manufacturers and models than among speakers, but there is still plenty of variety across the price range. You tend to get what you pay for, but decent hi-fi quality can be had for under £100. In this *Ultimate Group Test*, we are looking at some of the best that six manufacturers can offer and since the companies in question include most of the big names in headphones, this group is seriously aspirational – yet the dearest model costs £700, the cheapest only £230.

Designing a good headphone is not quite as simple as it may at first appear and, as a result, it took a few decades for really high quality units to appear. There may yet be unexplored design avenues that can yield further improvements, but the best of today's headphones are capable of producing very revealing, lifelike sounds. And even if you believe that the headphone experience is not for you, it's worth persevering. In our experience, the majority of listeners who don't care for it become accustomed quite quickly and while it may not divorce you from your favourite loudspeakers, it can definitely make a separation from them a pleasant, rather than tedious, experience.

When it comes to driving headphones, a dedicated amp is the way to go. Creek, Graham Slee, EAR Yoshino and Pro-Ject are just some of the better-known makers of these things, with prices ranging from under £100 to over £2,000. The improvement they bring can sometimes be quite surprising. **HFC**

EOUIPMENT USED

- Cambridge Audio Azur 640C CD player
 Pioneer PDR-609 CD recorder
 Sony A6 DAT recorder
 Pink Triangle PT TOO turntable SME309 arm
- S Highphonic MC A3 cartridge
- Cambridge Audio Azur 640P phono stage
- Chord QBD76 DAC
- © Creek OBH21 headphone amplifier
- Ocustom-made headphone amplifier

MUSIC USED

- Concertgebouw, Eugen Jochum, Bruckne Symphony 5
- Penguin Cafe Orchestra Concert Programme
- Ian Dury The Bus Driver's Proyer and Other Stories
- Dick Hyman Plays Fats Waller
- Pink Floyd The Wall
- 🕑 La Scala, de Sabata Tosco





Blind tests are basically impossible with headphones – you can do them literally blind, but listeners can tell by feel what they're wearing! As a result, we undertook a lengthy series of listening sessions of both short and long duration, with source material including familiar old favourites and newly made recordings where the live sound was still fresh in our ears. Every attempt was made to adjust listening levels fairly, though this is made difficult by the substantial tonality differences between most of the headphones.

LAB TESTS

These were mostly carried out using a Head Acoustics dummy head measuring system, the industry standard device which physically resembles a head and has a precision microphone where each eardrum should be. Each headphone was fed a test sequence and the output from the microphones was recorded on an audio recorder and taken away for analysis. Interpreting headphone measurement data is not trivial as the response measured at the eardrum is not ideally flat and there is no absolute reference. Correction for this was done using data obtained from Head Acoustics and various Audio Engineering Society publications.

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

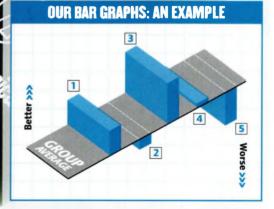
LAB REPORTS: THE BAR GRAPH

1) Frequency response: Obviously, the ideal response for a reproduction system is flat, i.e. frequency-independent. Unfortunately this is near-impossible to define for headphones (see above and also Techno in this issue). However, by use of best-approximation correction and extensive correlation between measurements, it is possible to give a sensible comparitive ranking to a group of headphones.

2) Distortion: Using the dummy head we measured this at various frequencies and levels and the rating for each headphone is a weighted average of the various figures achieved.

3) Impedance flatness: With loudspeakers, the minimum impedance is of concern as it affects driveability. With headphones, the impedance varies less, but there is typically a rise around the upper bass. The extent of this largely determines the extent to which the headphone sounds different with different sources.

4) Channel matching: Ideally both earpieces should be identical. In practice they vary in level and also, slightly in frequency response. This figure reflects both.



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AUDIO-TECHNICA ATH-W5000

Flagship model that sits at the top of the Audio-Technica range

udio-Technica is one of the world's most prolific producers of headphones, with a lineup that includes half a dozen 'audiophile' models. A closed-back design, the ATH-W5000 is the pinnacle with each earpiece backed in ebony and fronted in very soft leather. The headband is effectively a naked metal spring and is not adjustable in the usual way. Instead, two spring-loaded 'wings' support the weight of the headphone on the head, a system which seems to work well for a range of head sizes.

What isn't accommodated quite so well is variation in head width. The earpieces are not hinged (though they can swivel a little) and if you have an unusually narrow or wide head you may find that the earpieces don't sit quite flush. Since closed-back headphones rely rather critically on a decent seal to the head, this is a slight weakness. That apart, comfort is very good and we had no complaints after upwards of an hour of sustained listening.

As you might expect, the product literature lists an extensive range of technological advantages to the unit's credit. The drive units are 53mm diameter types with rareearth magnets and high-purity copper wire voice coils. A 'Double Air Damping System' is said to improve bass performance – we could find no details on that, but understand the point that careful damping of the rear chamber is another important factor in closed-back headphone design (if bass extension is not to be compromised by lumpy frequency response).

The connecting cable is pleasingly long, thin and flexible and relatively free of any annoying scraping noise against clothing as one moves one's head. A particularly tough and chunky quarter-inch jack plug is fitted.

SOUND QUALITY

Sensitivity of the W5000 is high and, as in any comparitive hi-fi test, it is important not to get carried away and mistake simple loudness for improved sound. In fact this model doesn't particularly encourage high-level listening as it is a little on the bright side and can become strident when played at high levels.

That much we could live with: what we really can't forgive in a model at this price is the degree to which the music sounds as if it has come down a long cardboard tube before reaching the ears. We struggled with every variable we could think of to ameliorate this and had partial success by forcing the earpieces to sit more snugly on the head – but who wants to sit squeezing headphones against their ears? No listener who tried the W5000 seemed unaware of this aspect of the sound, whatever the size of their head, so we can't blame the problems with fit noted above.

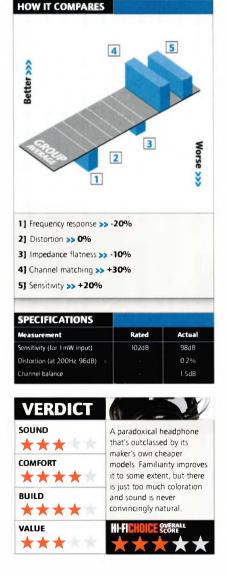
Basically, there is far too much coloration and unwanted resonance in the sound for a really neutral result to be achieved. With some music the result can be reasonably appropriate – high-energy disco is a case in point – but while we could live with the idea of a genrespecific headphone for a few tens of pounds, at £700 we want confident replay of anything we can come up with.

Despite that rather major quibble, there is some good detail to be found and the bright balance helps in revealing minute details (especially in quiet musical passages) that may have gone previously unnoticed. We may perhaps have missed something and headphone listening is very personal, but neither we nor any of the listeners we enlisted to help us test these headphones could get on with this idiosyncratic model. **HFC**



LAB REPORT

Given the subjective findings, it's no surprise that the frequency response of this model deviates more than a little from the sort of shape one hopes to find from a headphone Rather surprisingly, the bass rolls off quite sharply below 70Hz. That's not a disaster. but will limit the full impact of organ, bass drum and the lowest strings on an electric bass. More seriously, the treble has some very large deviations both up and down, suggesting resonances which almost certainly explain much of the sound. Distortion is good. but channel balance on our sample seemed a little weak and the impedance varies enough to give up to 2dB difference in upper bass output - depending on whether drive is from a voltage source or a finite impedance. The low impedance gives a good voltage sensitivity figure.



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Designed to be comfortable with a performance to match

nother of the big names in headphones, Beyerdynamic claims to have made the first stereo version back in 1950. Among its current lineup, this model sits one rung below the top. It's a classically simple design, technically open-backed though unusually well protected on the outside of the earpieces by a perforated metal screen. The circular earcups have just enough clearance for all the ears we tried, though some will end up contacting (gently) at top and bottom of each ear. There is plenty of depth, though, and despite the fairly springy headband the soft, velourcovered pads do a good job of ensuring comfort over long periods. In fact, this headphone sits securely on the head through all but the most vigorous headbanging movements. The very flexible lead, which transmits almost no mechanical noise to the earpieces, helps enormously.

Beyer refrains from giving much technical information in its promotional material, but does claim an exceptionally wide frequency range for the headphone, from 5Hz to 45kHz. The normal impedance is a middling 250ohms, but this and quite a few other parameters can be customised. In an unusual and clever step, Beyerdynamic has taken to offering user-specified versions of this and its other two top models (the DT990 and DT770) via the main website (dot com, not dot co.uk). For a fairly reasonable premium (updated as you design away on screen) you can have all sorts of aspects of the headphones customised in terms of colour and finish, rounded off in engraved text which of course makes for the perfect present for the proverbial audiophile who has everything.

SOUND QUALITY

The most immediately apparent characteristic of this headphone is its gratifyingly musical nature. It's not absolutely neutral in tonality, and it's not quite the most revealing in terms of detail (though it does score highly in that department), but it quickly forms a lasting impression of real live musicians. Its departures from neutrality are only obvious in the treble and its lack of internal resonance gives it a very natural presentation of complex, quickly changing sounds

Perhaps more than anything, there is a real knack for separating the various instruments within a recording, both tonally and spatially. Even when there are several similar instruments playing, it is surprisingly easy to distinguish between them and stereo imaging is both pinpoint-accurate and very stable. Bass extension is good without being excessive and tunes within the bass line are easy to follow.

Only in the high treble is one sometimes aware of some coloration. Sibilants in vocals and instruments with a lot of high-frequency energy (such as cymbals) sometimes sound a little artificial and processed. Similarly, high piano notes have a slightly unnatural attack. The ambience of the recording venue, when there is any, is clearly presented and this is one of the best headphones for listening analytically to recently made recordings.

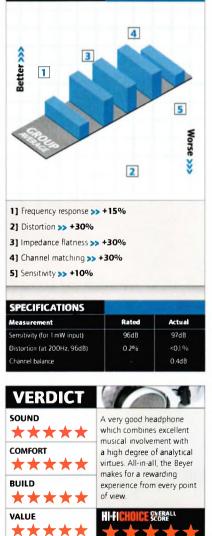
For most listeners, though, the winning element will be the ease with which one forgets one is wearing headphones. Find a realistic listening level, close your eyes and you can easily imagine you are listening to a very, very good pair of loudspeakers or indeed live musicians. That is surely the essence of good listening and we have no hesitation in naming this product excellent value for the price. **HFC**



LAB REPORT

This headphone's frequency response in many ways quite closely approaches the ideal, to the extent that any two authorities agree on what the ideal is. There's a little lift in the upper bass and then quite a lot more lift in the treble, as measured at the eardrum, which is the general shape of the ear's response to more distant sound sources. However, there is a little unevenness in the high treble, from about 7kHz unwards, which ties in with the comments on slightly artificial sibilant sounds. Channel matching is good across the frequency range, while distortion is excellent - hovering around the measurement limit of 0.1% at 96dB output and hardly any worse at 106dB. Sensitivity in voltage terms is low because of the fairly high impedance, but the variation in response flatness between sources is also low.

HOW IT COMPARES



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PowerMax Plus™, What Hi-Fi? Sound and Vision, April 2008.

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DENON AH-D5000

A decorative headphone with a subtle and natural sound

enon has plenty of headphones currently on offer: this is the rangetopper. It's a closed-back model with earcups made of natural wood – the Japanese love natural wood, of course, but apart from its decorative properties it is quite a useful material from an acoustical point of view. Inside the wood are the drive units, which use a microfibre material to counteract diaphragm resonance. Sensitivity is quite high, aided by the unusually low impedance of 25 ohms – we didn't find anything that had trouble driving it, at least at normal listening levels.

The earpads are covered in leather making this another comfortable headphone suited to long listening spells. Spring force from the headband is quite gentle and pressure on the top of the head is also modest. The cable is on the thick side, but not too instrusive, and its nylon braid covering does not generate too much friction noise. It uses high-purity copper wire, though in common with most headphone makers, Denon does not say whether the ground wire is common to each channel or separated right behind the jack plug (headphone diehards will soon tell you that the latter sounds better in a far more obvious way than the purity of the copper in the wire)

As a closed-back model, this naturally cuts out a fair bit of external noise. That can lead to a rather unnatural effect, but it's worth noting that Denon seems to have achieved an unusually frequency-independent attenuation of outside noise, which improves the situation considerably.

SOUND QUALITY

Historically, closed-back headphones have tended to be less neutral in their balance than

open models, but it doesn't have to be that way and Denon seems to have proved the point pretty conclusively here. Although the tonality of the D5000 is not completely beyond reproach, it is absolutely on the same general level as the best open-back models in this group. There is a little subjective lift in the treble (actually we can't think off-hand of a single Japanese headphone we've heard that doesn't have at least a hint of treble prominence), but otherwise the balance is mostly very even.

That said, the bass seems a little heavy. It's not exactly that it is boosted, but when there is a lot happening at low frequencies it seems slightly plodding and inclined to distract from higher-frequency goings-on. When the bass is simple, things are happier and we thoroughly enjoyed that old audiophile staple of the 'walking' plucked double-bass line, which invariably seemed full-bodied without excess, tuneful and immaculately timed. It's in dense orchestration and handfuls of low piano chords, that the problems seem to arise.

There is a good deal of detail on offer, too, with clear differentiation of instruments and pretty good stereo imaging. We felt that the Beyer model slightly had the edge in this last department, but Denon gives good lateral definition and about as much depth as one ever gets from headphones.

Voices, as often happens with headphones, show a trace of coloration on consonants, but are very well served in the vowels and remain distinctive in both speech and song. There seems to be no strong musical preference, but we felt that classical styles seem to be just a little better suited to this headphone's very civilised presentation. There's no fear of a little roughness now and again, though! **HFC**



LAB REPORT

This is a classic example of how headphone sensitivity specifications can be misleading. Driven from a voltage (low impedance) source, the AH-D5000 has a very high sensitivity, but its unusually low impedance translates that into an only average power sensitivity, which is more relevant to everyday use. The impedance is not very variable with frequency, so response is largely constant under any drive conditions. Distortion is low in general. And if that's not impressive enough, it's the same even when used with high sound levels. Frequency response is generally pretty good: there's a little more boost below 100Hz than might be ideal and a couple of rather sharp resonances above 10kHz which certainly play a part in defining the sound. Channel balance is a little below par but, at least, invariant with frequency.

HOW IT COMPARES





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GRADO RS2

High-performance headphones with classic styling

rado remains a dedicated specialist company, making headphones, cartridges and a small range of related accessories, including a rather natty-looking headphone amplifier. This model is typical of the range in looking somewhere between understated and seriously retro - at the very least we wouldn't want to accuse Grado of going overboard on the styling front. That said, the solid mahogany housing is not only practical, but good-looking. Our main concern on the design and styling front is with the foam earcups, which are quite hard and rough and sit on the ears rather around them. The resulting pressure is not always comfortable and we would certainly recommend any intending purchaser to spend at least 15 minutes wearing the headphones.

This model shares quite a lot of features with the next model up, the RS1, including 'Ultra-High Purity Long Crystal' copper in both the voice coils and the lead. As in most high-end headphones these days, the magnet in each drive unit is rare-earth type. Grado makes much of the process it uses to relieve stress in the diaphragm before each driver is built into a finished headphone and claims that this reduces diaphragm breakup and resonance and, hence, distortion. As an open-back design, the RS2 cuts out very little external noise, but at least it feels very unintrusive on the head. The fitted lead is very flexible and almost immune to friction noise.

SOUND QUALITY

As with the Beyerdynamic model, this is certainly a musically involving headphone. The first impression it makes is of solid, lifelike musicians and instruments with plenty of body and presence. The sound is not completely free of coloration, but that any departure from neutrality is never obtrusive.

As we've come to expect from Grado models, detail is very good, at least most of the time. Just occasionally we experienced something in the way of a thickening-up of sound, an effect that seems to occur when the upper midrange is particularly busy. Otherwise, though, there's a very high degree of insight into complex musical textures. We particularly enjoyed voices through these headphones, each one clearly characterised and (in cases where we've heard the original) very natural and recognisable.

Interestingly, the slight coloration in this headphone has a tendency to make sounds seem to originate from nearer the listener than one is accustomed to – it's a little lift in the high treble and of course high treble does tend to drop off quite fast with distance. Quite why it should be more noticeable here than with other headphones we can only guess, as it's a common enough characteristic. Sometimes we thought we detected a slight richness in the upper bass too, but if so it's minor and frankly, rather pleasant.

These are certainly very even-handed headphones when it comes to different musical styles. Classical symphonies and string quartets are treated equally and will clearly suit listeners with broad tastes. In fact the sound isn't ultra-civilised: there is just a trace of roughness which, if anything, rather compensates for the tendency headphones can easily have to sound too 'perfect'. In short, this is a well-rounded transducer with much to recommend it in many areas.

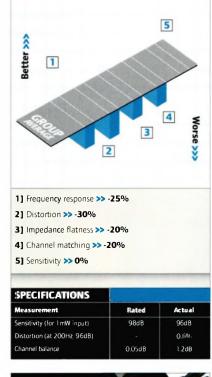
The price is on the high side, but we feel it can be justified, despite the rather basic look and feel **HFC**



LAB REPORT

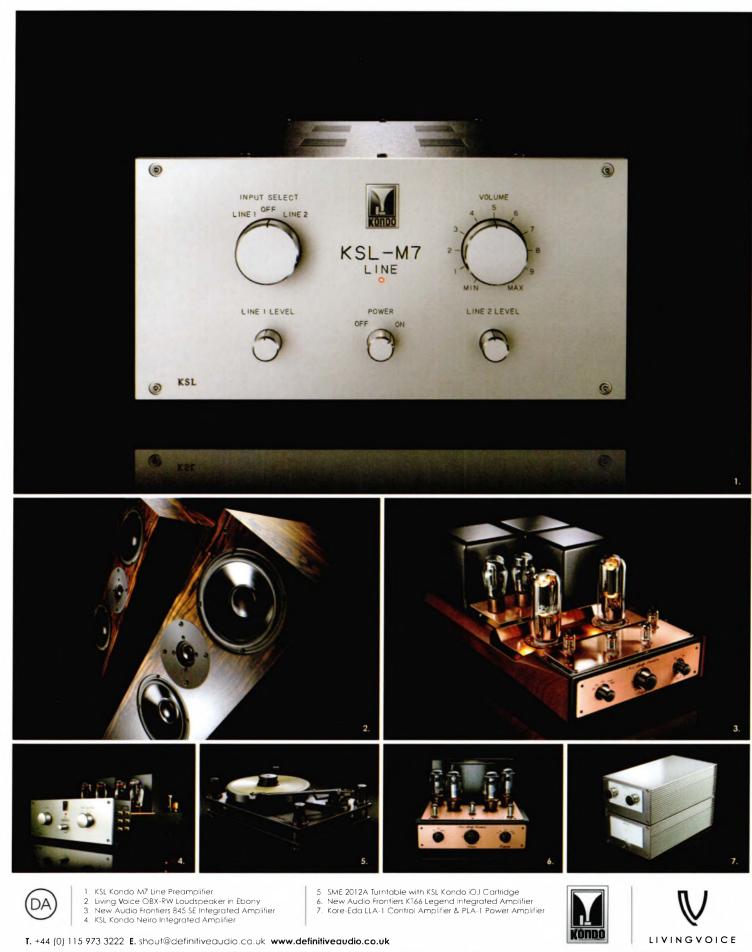
This is one of those cases where the measurements don't immediately seem to tie in with the subjective results. Some apparently poor figures can be explained away quite easily, such as the rather high distortion at low frequencies: the human ear doesn't seem to mind that at all. Anyway, the RS2's distortion is actually perfectly respectable at modest sound pressure levels, below about 90dB, and is particularly good at high frequencies. The frequency response is a little lumpy, to say the least: roughly corrected for equivalence with loudspeaker response curves, there's a distinct hump around 2.5kHz and a very pronounced resonance at 10kHz. Bass response is considerably nearer flat when voltage drive is used, while channel balance falls some way short of Grado's impossibly optimistic figure.

HOW IT COMPARES





DEFINITIVE AUDIO





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SENNHEISER HD650

A sound quality that loudspeakers can only dream about!

t may seem a little strange that Sennheiser, probably the world's most prolific headphone maker (at least in the audiophile market), has nothing in its range above £330 retail. Presumably the company feels that anything more esoteric would hardly be worth producing in sales terms – or is this really its ultimate statement? The '650 has been around for a while and has certainly achieved a high reputation among both domestic and professional users.

It's a smart, no-nonsense model with oval earpieces which seem to fit snugly on every head we tried. There's plenty of depth to clear prominent ears and the velvet-lined earpads distribute the spring force from the headband, which at first seems rather high, very comfortably. We had no discomfort over long listening sessions, though these do seem rather warmer on the ears than other models which give a less firm seal to the head and they sit securely enough to cope with sudden head movements. The lead is highly immune to friction noise, though the headphones sometimes squeak with facial movement, especially if one wears glasses.

Peering through the open-back of the HD650, there's a fine metal mesh, which is Sennheiser's way of damping the movement of the drivers and reducing resonance. Distortion is also claimed to be particularly low, thanks to improvements in the magnet structure, while high-frequency extension is aided by the use of aluminium voice-coil windings. Pair matching is claimed to be very good at ±1dB, a more plausible figure than some we've seen – bearing in mind that the smallest degree of misalignment on the head (or indeed on a test fixture) can easily contribute a few tenths of a dB of mismatch.

SOUND QUALITY

There is no question that this is a very fine transducer. Like quite a lot of really good hi-fi, it doesn't always leap out on first hearing as an oustanding product, though it's clearly highly competent. It takes a little listening to become aware of how good the sound really is, as its low-distortion nature shies away from loud or flashy display. As with every practical headphone, there is a little high-frequency coloration, but here it seems less obvious than is often the case, while the bass is warmly full but unexaggerated.

Above all, this is a very detailed transducer and it's possible to hear details which were previously unnoticed. A very familiar piano recording, for instance, suddenly showed up clearly where the instrument had a slight 'dead patch', the notes lacking some of the ring to be found across the rest of the range. We had almost forgotten this aspect of the recording but, hearing it again, were reminded of the piano tuner's comment at the recording.

At the same time, there is none of the unnatural emphasis of high-frequency detail which can sometimes crop up with cheap headphones and is simply a symptom of overbright balance. There is a little high-frequency unevenness in the HD650, which shows up mostly in cymbals and similar sounds, but one soon gets used to it. Transients are crisp and well defined, while decay into ambience is very natural. Stereo imaging is also very good, with very decent depth too, always a hard challenge for headphones since most of the cues are mangled in the absence of the crosstalk between loudspeakers which most recordings are created to rely on. Among a number of fine headphones on the market today, this is a particularly attractive one. HFC



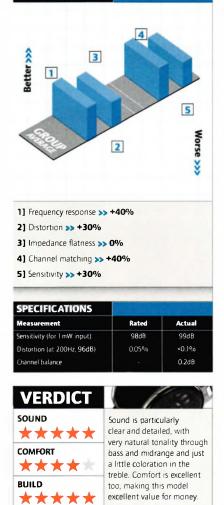
LAB REPORT

There is very little to criticise in this headphone's technical performance. The frequency response is nearly ideal, though there is still a sharp boost around 10kHz. Looking at the transient response, it appears that this is due to a well-damped resonance and overall there is very little resonance in evidence. Bass goes cleanly to 20Hz with only a little roll-off. Impedance is the highest of the group (just), but despite that, the voltage sensitivity is only moderately low, while power sensitivity is the highest here. Impedance variation with frequency is guite low and this headphone will be particularly insensitive to amplifier output impedance in terms of frequency balance. Distortion is low under all conditions, especially bass: 1% at 35Hz at an SPL of over 90dB is the sort of thing loudspeakers only dream of!

HOW IT COMPARES

VALUE

 $\star\star\star\star$





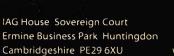


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ULTRASONE PR0750

German 'prosumer' headphone from a huge range

ot as familiar, perhaps, as the other brands in this group test, Ultrasone is based in Germany and, in the UK at least, markets its headphones principally at the professional user. Of its dozen current models, three-quarters are closed-back in construction, including this pair. Like all the other Ultrasone models, the Pro750 employs two unusual features: 'Ultra-low emission' and 'S-Logic Natural Surround'. The former refers to mumetal screening, which reduces the stray magnetic field reaching the listener's head there's no specific suggestion that this is a problem, but in principle the idea of reducing exposure to all sorts of electric and magnetic fields seems a good one.

S-Logic claims to recreate a natural spaciousness missing from most headphones, something it does by the simple expedient of mounting the drive units in each earpiece slightly off-centre so that they fire sound more into the outer ear, rather than straight down the ear canal. This is also said to reduce the level at which one listens, though it's a little hard to imagine exactly how that works.

As a 'pro' model, the '750 has quite a few practical features that we like, such as the choice of straight or coiled lead (either of which attaches via a screw-fastened 3.5mm stereo jack socket in the left earpiece). It's also less bulky than most high-quality headphones. The earpads are quite soft and seal well round the ears thanks to the fairly tight headband. The space for the ears is a little on the small side, but in a way that's not such a bad thing as it makes misalignment that much less likely.

SOUND QUALITY

Our first impression of this model was of a very direct and quite bassy sound, just the sort of

thing one could imagine going down well in a pop recording studio. From a domestic hi-fi point of view it's also quite appealing, the bass often seeming rather tame after many loudspeakers. The treble is less bright than some, but has some oddities to it which show up with the usual giveaway sounds – cymbals, brightly-recorded vocals and so on.

One area where this model certainly scores over the rest of the group is exclusion of external noise. This is considerably more pronounced than with the AT and Denon models and, of course, in a whole different league from the open-back types. It's still some way from what some in-ear 'phones can offer, but does mean for instance that one can have a pretty good listening session while a quiet conversation is happening in the same room.

Detail we felt to be only moderately good, by headphone standards. That's to say that it scores highly against most (affordable!) loudspeakers, but it doesn't quite have the insight of the best models here. Stereo imaging too is less good than some can offer.

As for the benefits of S-Logic, even with the benefit of listening out for it we were hard pushed to hear any real surround effect. Indeed, given the comment above about stereo imaging, it seems the aim has been missed by some distance, but it's hard to see how headphones could ever create more than the vaguest illusion of surround sound even if they were fed from more than two channels.

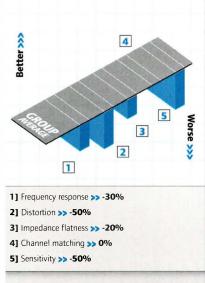
We also have to report that one driver failed during the lab tests (after the main bulk of listening, fortunately). As the drivers have voltage protection fitted, and we were driving them only moderately hard at the time, we're both puzzled and disappointed. Hopefully, our next experience will be more positive! **HFC**



LAB REPORT

Not only did one earpiece fail early in the lab testing, the other showed performance rather below par in some important ways. Most notable of these is distortion, which under all conditions was higher in level than the other headphones achieved. Its level was not significantly worse than many wellthought-of loudspeakers put out, so it's not astonishing that we still found much about the sound acceptable, but when headphones can show such an advantage in this area it's a shame to do without it. Frequency response has an odd overall shape, generally rising from bass to treble, but is also afflicted with an unusual number of humps and troughs, suggesting a lot of resonance which is confirmed by the transient response. Sensitivity is the lowest of the group by any measure, though to be fair most headphone outputs will still drive it to the maximum safe listening level.

HOW IT COMPARES



SPECIFICATIONS		
Measurement	Rated	Actual
Sensitivity (for 1 mW input)	94dB	88dB
Distortion (at 200Hz, 96dB)		2%
Channel balance		0.9dB



CONCLUSIONS

Although similarly designed, when it comes to performance, there are three obvious contenders

he differences between headphones are not hard to find and in performance terms, some models may repel some listeners. But, presumably, each pleased its designer, so one would expect to find some positive aspects in every case. And so it has proved here. Probably the least successful model was the Ultrasone, which had the least detailed sound and a relatively high level of coloration across the board. All the same, its strong and energetic bass (and the extent to which it successfully eliminates external noise) are both useful attributes

At the other end of the price range we found the Audio-Technica model disappointed us, not least in the light of other models from the same maker which we've heard recently. In this case, detail is excellent, but the coloration was more than we could live with.

Denon and Grado sell their models for the same price, but they differ about as much as headphones reasonably can. The former is closed-back and large, the latter open and quite small, a rarity these days as a 'supra-aural' model sits on, rather than around, your ears. Both, nevertheless, make very acceptable sounds, the Grado apparently defying some rather indifferent measurements in many areas with plenty of detail and subtlety alongside the undeniable life and musicality it brings to the party. The Denon is also very civilised and just as gutsy as the Grado. It was also involving with all kinds of music and notably better at cutting external noise, thanks to its closed design.

For this reason the Denon deserved a Best Buy badge and only fell by one star behind the two vintage German brands (Beyerdynamic and Sennheiser)

>> Most headphones can comfortably

exceed safe listening levels. Go easy on

who currently rule the roost. They aren't identical by any means, but we feel they do appeal in quite similar ways. Both have a largely neutral tonal balance with just a hint of sibilance, but nicely extended bass. Both have a very clean sound overall, the result, no doubt, of their admirably low distortion even up to the point where the human hearing mechanism itself starts to distort. Both are comfortable, well matched to a range of sources and great advocates for private listening. We are very confident in recommending both. HFC

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the volume control at first: it's easy to get used to over-loud listening.
Keep headphones boxed when not in use. Dust on the drive units can soon lead to annoying rattles.

 Ear pads on most models can be changed. It's worth doing this as old ones get hard and uncomfortable.
 Do remember you're wearing headphones – walking away from your precious hi-fi while wearing them can lead to expensive damage!

		A CONTRACTOR	HR			
MAKE MODEL	Audio-Technica ATH-W5000	Beyerdynamic DT880	Denon AH-D5000	Grado RS2	Sennheiser HD650	Ultrasone Pro750
PRICE	£700	£230	£500	£550	£330	£230
SOUND	*****	****	*****	****	*****	*****
COMFORT	****	****	*****	****	*****	*****
BUILD	****	****	*****	****	*****	*****
VALUE	$\star\star\star\star\star$	****	****	****	*****	*****
OVERALL	****	*****	****	****	*****	****
CONCLUSION	Improves with familiarity, but there is just too much coloration and sound never quite becomes natural.	Combines musical involvement with a high degree of analytical virtues, making for an all-round experience.	A headphone comparable with good open models. Comfortable, with useful isolation that's both inward and outward.	A little harmless treble boost: detail is very good, and the overall impression is of lively, energetic and involved music-making.	Clear and detailed, with very natural tonality through bass and midrange and just a little coloration in the treble.	Oddly unsatisfying headphone which never quite makes natural- sounding music despite a warm and rhythmic bass.
KEY FEATURES	and the second second					
WEIGHT	375g	2959	320g	150g	275g	335g
OPEN/ CLOSED BACK	Closed	Open	Closed	Open	Open	Closed
SUPRA-/ CIRCUMAURAL	Circumaural	Circumaural	Circumaural	Supraural	Circumaural	Circumaural
EARPAD MATERIAL	Leather	Velour	Leather	Foam rubber	Velour	Velour
LAB CONCLUSIONS	E = EXCELLENT · G = GOOD ·	A = AVERAGE • P = POOR		140 P 1984		
DISTORTION (960BA, 200HZ)	0.2% G	<0.1% E	0.1% E	0.6% A	<0.1% E	2% P
SENSITIVITY FOR 1V/ 1MW	112dB/98dB G	103dB/97dB G	112dB/96dB A	111 dB/96dB A	104dB/99dB G	102dB/88dB P
IMPEDANCE NOMINAL/ MAX	40/520hm	250/310ohm	25/30ohm	32/40ohm	310/400ohm	40/50ohm
CHANNEL BALANCE	1.5dB P	0.4dB G	1.1dB A	1.2dB A	0 2dB E	0.9dB A
OVERALL FREQUENCY BALANCE	165W/-	180W/1.5W	160W/62W	160W/-	37W/-	135W/-
RESPONSE SMOOTHINESS	-20% A	+10% A	+10% A	-30% P	-40% G	-30% P

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Samsung Series 6 'Rose Black' LCD TVs 080p H

Year Warranty

included with all Plasma and LCD televisions purchased at our normal selling price noose models from Loewe, Panasonic, Ploneer, Samsung, Sharp and Sony with a 26" screen or larger *Sevenoaks Retail Price (NICWAOO)



Panasonic VIERA PZ81 with freesat HD Panasonic's new PZ81, full 1080p HD ready Plasma TVs, are the first to include an integrated freesat HD tuner.

DLP Projectors

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Onkvo This impressive range includes the new TX-SR606 (pictured) and TX-SR506.



Home Cinema Separates



NEW Yamaha The DSP-AX863SE AV amplifier features full support for HD audio formats ensuring maximum enjoyment o all high definition sources. The flagship DSP-Z11 is also available at selected stores.



6)

NEW

includes the award-winning Denon DVD1940 DVD player and outstanding AV receivers including the new AVR-1909.

Blu-Ray Disc

Panasonic DMP-BD50 Conforming to BD profile 2.0 this new player delivers outstanding picture and sound quality.

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Hi-Fi Separates

Pro-Ject Turntables

excellent range includes the multi award-winning Debut, versions include Debut USB - ideal for converting your favourite tracks to your iPod and Debut colour available in finishes to suit any decor





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0

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Solo Mini

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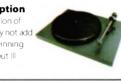
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System Option Got a collection of records? Why not add the award-winning Pro-Ject Debut III Turntable



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STARTER

Hi-Fi

ystem



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NEW

All Sevenoaks stores stock a wide range of products, have comfortable demonstration rooms, provide first-class customer service and can deliver and install your purchase. Stores with Cedia qualified staff can also provide a bespoke design and installation service. They have unrivalled expertise in all areas of home automation and can demonstrate a wide range of installation options.

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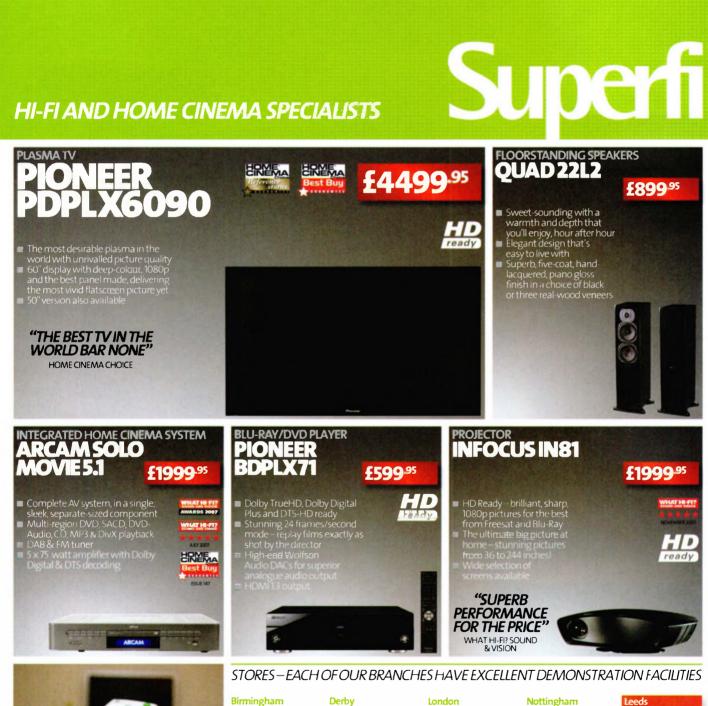
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INTRO BUYER'S BIBLE

BUYER'S BIBLE

Welcome to the *Hi-Fi Choice Buyer's* Bible – the ultimate guide to the very best high performance hi-fi and multichannel gear you can buy. Here, you'll find our favourite current products listed under easy to use categories, plus useful information on what to look for and how to get the most from your components.

Reviews you can trust

Our test results are the most reliable in the business. We employ the most experienced reviewers and use the most stringent techniques to ensure our ratings are the ones you can trust. All the equipment we rate most highly is contained within these pages, from CD and vinyl to the latest multichannel disc players. Whether hi-fi stereo or high performance surround and vision, these components will take you a step closer to reality.

How to use this guide

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

Products that score more than four stars overall are automatically considered for inclusion in the *Hi-Fi Choice Buyer's Bible*. Any Best Buy or Editor's Choice Badges awarded are also displayed.

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CD PLAYERS

Audio disc players for music only

Despite the emergence of new formats and the resurgence of an old one (vinyl), CD is still the king of formats if you require breadth of choice. And despite the fact that other sources will play CDs, if you want to hear your discs at their best, there's little substitute for a dedicated CD player.

It's also the most enduring format on the market. Despite high-resolution contenders like SACD and DVD-Audio, nothing has been able to undermine this universally popular format.

CD players work by reading a stream of 1s and 0s off a disc that spins at a constantly changing speed (to counteract the increasing length of 'groove'). This bitstream is then digitally filtered before undergoing digital-to-analogue conversion in the DAC (D-to-A convertor). Thereafter, the signal is filtered



again before being amplified and sent to the output sockets.

The processes of reading the disc and converting the data are sometimes split between a CD transport and separate DAC in so-called two-box players. A popular approach with very high-end kit, this separates the electronically noisy elements from the sensitive analogue stages, but can introduce timing errors known as jitter, therefore one-box players usually offer best results where budget is a consideration.

SUPER AUDIO CD

SACD or Super Audio CD is a relatively new audio-only format introduced by Sony and Philips. It offers higher resolution than CD in the form of considerably greater bandwidth and improved dynamic range. It also has the potential for uncompressed surround sound using up to six channels, and most new discs take advantage of this. SACD discs are usually hybrids and will play on normal CD players, but you won't be able to appreciate their highest quality or their multichannel capability without an SACD-compatible player. Some SACD players also play DVD and even DVD-Audio – these are listed in our DVD section.

Q&A

WHAT'S A DAC?

A DAC or digital-to-analogue convertor is a fundamental part of any CD player and converts the digits read from the disc into an analogue music waveform which is amplified to line level.

WHY HAVE SEPARATE TRANSPORTS & DACS?

Discs are read by a transport or disc drive, which creates radio frequency 'noise'. Separating the DAC means the conversion can be done with less interference.

CAN I USE AN OUTBOARD DAC WITH MY INTEGRATED CD PLAYER?

Yes, if it has a digital output - and most do.

DO I NEED DIGITAL CABLES FOR A CD PLAYER?

No. All analogue cables are suitable for connecting a CD player to an amp. Digital specific cables with 75ohms impedance are useful when connecting the player to a digital recorder or DAC.

WHAT IS OVERSAMPLING/UPSAMPLING?

Oversampling involves multiplying the sampling frequency by a whole number, usually between four and 32, but sometimes higher, and is designed let the DAC to work in a more linear fashion. Upsampling is where the data stream is stretched out by interpolation and is typically used to refer to large changes in sampling rate such as from 44.1 kHz to 192kHz.

CAN I PLAY SACDS ON A NORMAL CD PLAYER?

Yes. The vast majority of SACD discs are hybrids, with a CD layer that all CD players can read.

CAN I PLAY DVDS ON A CD PLAYER?

No, the same applies to DVD-As. But you can play CDs and DVD-As on normal DVD players.

TOP BUYS



Rega Apollo £498 Rega's latest entry-level player is a splendidly musical performer, given its modest price. Bass is good, midrange is great and high frequencies are truly exceptional.



Cambridge Audio Azur 840C £750 Sitting at the top of Cambridge Audio's Azur range, the 840C is a technically innovative player with a sound that belies its sub-£1,000 price – open, subtle and refined.

Our favourite est ev re entors choice

Aud	lio-only CD and SA			SACO COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	OD-RW COMPATIBLE	(1) TEV	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	ISSUE MUMBER
	PRODUCT	£	COMMENTS	BLE	J.	PUT	BE	D	UUT	Ē	D'L	ŝ
UPTO	£1,000	45.0								-	-	0.01
	Arcam DIVA CD73	450	Neatly built and well presented player that's especially good at bass and timing, with detail hardly less assured	-	10 10	0	999 11	-29				301
	Arcam CD37	1,000	Excellent detail and imaging, neutral tonality and above-average bass resolution do honours to CD and SACD alike	0	Star.	86	84					310
-	Cairn Tornado	850	The Tornado is a full-on experience that shuns compromise and delivers intensely real sound for its price		23	55. 10.					0.	305
	Cambridge Audio Azur 740C	500	Very flexible, this innovative upsampling player sounds exceptionally neutral and highly informative		84	**	-			2		293
	Cambridge Audio Azur 840C	750	Ultra-civilised sound is not to every taste: rhythm-lovers may find this player frustrating		*	25						306
	Creek Evo	495	A minute treble lift: otherwise this is a very capable player that offers fine value			26						285
1	Denon DCD-500AE	160	Cheap, well built and good, if slightly soft-edged sound quality			10	۰			in the second se		295
	Denon DCD-700AE	250	Excellent entry level quality CD player lacks for nothing. Musicians please note: even has variable speed replay				٠					284
-	Marantz CD6002	280	A hint of treble unevenness is the only specific flaw: performance is class-leading in most areas		0	67	۰	•		•		30.
	Naim CD5 <i>i</i>	850	Its strikingly competent musical performance comfortably exceeds the expectations of an entry-level player				0					307
-	Quad 99CD-S	650	Revels in big music thanks to fearless presentation: smaller-scale works can lack focus			*			ē.			291
	Rega Apollo	498	Unless you can't abide top-loaders, check this out: musically it's a highly praiseworthy performer		39.		79					285
-	Sony SCD-XA3000ES	800	A good, if not truly great, all-rounder with CD and fine multi-channel SACD performance	8%	σ_{in}	33			*			276
	Yamaha CD-S2000	999	Sophisticated, this is a beautifully controlled, high resolution player, although SACD is stereo-only	*	Z_{g}^{h}	*	6					309
ABOV	E £1.000									10	Boy (
ć	Bryston BCD-1	2,050	Not as open as some but rather more timely than most, it sounds a lot more gripping than it looks		Ŋ	6			-19			300
	Cairn Fog 3	1,995	Ergonomically challenged, high energy player with Gallic charm and digital preamp on board		8				3		13	302
C	Chord Red Reference CD	13,345	The definitive statement in Red Book CD playing, this player's look and sound places it at the top of the tree			٠	٠		•			299
**	Classe CDP-102	3,000	Rich, dynamic CD/DVD player with a full bottom end, impressive dynamics and a luxurious yet revealing balanced		۲	٠	0	R	9		0	286
C	Classe CDP-202	4,750	CD/DVD-A player with brilliant sound, if sophistication is your bag. Includes S-video and composite outputs		۲	0	-		2		2	284
	Cyrus CD 8 SE	1,100	A highly civilised player which can, nevertheless, deal convincingly with raw music.		Ø;	4						31
e.]	Cyrus CD8x/PSX-R	1,400	Lightness of touch is the key here, but there is also good bass and some very fine detail on offer too		0	0						295
C	EMM Labs CDSA	6,995	Classy, stripped down to basics SACD/CD player with some excellent engineering below decks	-	4	۲	0		\$			30
с	Gamut CD3	3,500	Superb resolve of fine detail combined with a perfectly judged balance and an ability to draw you into the music		۲		0		•			289
EC]	Leema Antila	2,495	Musically engaging player that will have you going through your CDs afresh. Balanced connection is best		23	6	0		9			291
	Leema Stream		The most timely disc player at its price point has tactile imaging and good dynamics, but unusual control system		6		•					306
	Linn Akurate CD		This highly engaging multiformat non-video player doesn't have huge transparency, but is musically addictive	d'	\$63				•			299
C)	Marantz SA-7S1	5,000	Something of a bargain even at this price, the SA-7S1 sets the benchmark for CD/SACD players of its ilk	ç,	*			•				297
c	Marantz SA-11S2	2.500	Superb value for money, this well-balanced player features various filter settings to customise performance	÷.	*		•		(a)			29
	Meridian G06		Highly refined player with a combination of analysis and self-effacing response to musical demands			0		8	8			29
с	Naim HDX	4,500	The HDX hard disk player represents an entirely new paradigm for high-fidelity replay. Who needs CD players?						-			31
	Rega Saturn	1,298	Good detail, lively natural bass, and good integration of musical strands without losing their individual character									29
	-		An exceptionally fine CD player that provides a high-end and musically rewarding performance		-		-					30
			Phi exceptionary me ob player that provides a multi-end and musically rewarding performation									501
	Roksan Caspian M Series-1 Shanling CD-T1000SE		Commendably committed player which gets right to the heart of a wide variety of musical styles									306

SPECS/LET SACD COMPATIBLE Plays high-resolution SACD discs in multichannel and/or two-channel mode, ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a DAC or digital recorder. OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a DAC or digital recorder. CO.RW COMPATIBLE Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs. CD TEXT Will display album and track titles from inserted disc. BAL ANALOGUE OUT Balanced XLR output connections for similarly equipped amplifiers. HEADPHONE SOCKET Quarter inch (6.3mm) headphone jack litted to the CD player. VARIABLE OUTPUT Player leatures both fixed level and variable, volume adjustable outputs



HI-FICHOLCE magazine Construction Constructi

Arcam CD37 £1,000

A welcome flagship newcomer, with sound that does honours to the venerable CD format, while also helping to prove the worth of SACD. Practical, unfussy and excellent value.

Marantz SA-751 £5,000 Stunning state of the art player aimed at the serious audiophile community, that offers remarkably transparent sound and CD quality on a par with SACD.

DVD PLAYERS Disc players for audio and video

Although players featuring both DVD-Audio and DVD-Video are thin on the ground, the universal disc player (that also supports SACD and CD alongside the DVD formats) continues to dominate the worlds of audio and video alike. In fact, it's rare to find a DVD player that doesn't support DVD-Audio and SACD these days.

So, what advantages do universal disc players hold over traditional CD players?

Put simply... choice. A DVD player or universal offer the listener the chance to use far more than just your CDs and build up a wider collection of music and video, all played through one device. The technology has matured now, and the performance of all formats played through these devices gets surprisingly close to dedicated players these days. The same cannot be said of Bluray or HD DVD players, many of which are not yet good enough to play CD well.



DVD-AUDIO, HD DVD AND BLU-RAY

DVD-Audio is a high-resolution music format that offers multichannel, stereo and Dolby Digital tracks on dedicated DVD-A discs. The discs can be played on any DVD player, but can only be appreciated at their best with a DVD-A or universal disc player. In fairness, the DVD-Audio format has not proved to be a resounding success, and SACD discs are more readily available. The two new kids on the block are HD DVD and Blu-ray. Both the same physical size as the CD and DVD disc, these formats offer even more data storage capacity than DVD (up to 50GB instead of DVD's 8.5GB). However, these formats are the exclusive domain of home cinema and gaming fans. Sadly, the possibility of super-high-resolution music-only Blu-ray or HD DVD discs remains distant at best.

Q&A WHICH AUDIO OUTPUTS GIVE THE BEST QUALITY?

Use the analogue outputs for CD, DVD-A and SACD, and the coaxial digital output for DTS and Dolby Digital movie soundtracks.

WHICH VIDEO OUTPUTS GIVE THE BEST QUALITY?

The best connection is HDMI, then component video, followed by RGB Scart. All these are clearly superior to S-video and the basic composite video option.

DO I NEED A MULTICHANNEL AMP TO USE A DVD PLAYER?

Only if you want to hear music and movie soundtracks in multichannel surround. DVD players can be used with stereo amps and just two speakers to great effect, but you'll only get stereo, not surround sound.

WHAT IS 1080P?

HDTV is defined by the number of lines the picture creates and whether it's interlaced (like old TV) or progressive scan (like a PC monitor).



Our favourite - BEST BUY CO EDITOR'S CHOICE **DVD PLAYERS**

LUVLL Audio/Video dise			(EK2	DVD-A COMPATIBLE	SACO COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	HEADPHONE SOCKET	ISSUE NUMBER
BADGE? PRODUCT	i		COMMENTS	BLE	BLE	PUT	PUT	Ě	IBER
UP TO £1,000									
Arcam DiVA DV13	35 90	0	Unchanged looks and stereo-only DVD-A/SACD, but the overall performance is great across all formats. Stunning picture, too	•	•	•	•		296
Denon DVD-1920) 25	0	Respectable (if unexciting) and flexible audio player, but something of a star from its HDMI equipped upsampling video subsystem	•	٠	٠	۵	8	276
Marantz DV7001	60	0	Enhanced model based on DV6001, but with various improvements, including superior CD replay capabilities	•	٠	٠	٠		296
Marantz DV7600	60	0	A mid-market cracker, with sound and picture quality that generally exceeds expectation	60	۰	۲	٠		274
NAD T585	80	0	Easy to live with universal player that shows clear signs of rejuvenation of the Classic range		۲				294
Onkyo DV-SP503	E 30	0	Budget Onkyo universal player is a straightforward Pioneer based implementation, which performs well with audio and video		۲	۲	•		275
Pioneer DV-LX50	45	0	Nicely built universal player for those who value finesse over speed and energy. Decent picture too		٠	٠	٠		306
Yamaha DVD-S25	00 70	0	Universal player, slightly stronger with video than audio, but well turned out with a wide range of analogue and digital in and outputs	-	٠	٠	۰		280
ABOVE £1,000									
Accustic Arts Sur	r Player 1 4,4	95	A very high-quality Pioneer-based machine, excellent sound from both hi-res and regular formats		۰				299
Arcam DiVA DV13	7 1,2	50	Good overall audio performance and excellent upscaling HDMI DVD-Video player, but stereo-only SACD playback at time of writing	•	•	•	•		285
Denon DVD-3930	1,1	00	Well engineered universal player, with useful bypass facilities for pure audio, and unusually powerful video image processing	0	•	•	•		287
Marantz DV9600	1,5	00	With excellent, next-generation picture and impressive sound quality on CD and SACD, this sets a very high standard to beat		•	0	۰	0	280
Meridian G98AH	3,6	25	Meridian's most widely compatible G-Series DVD player - groundbreaking DVD-Audio replay and a fine CD player too			•	0		265
Naim DVD5	2,5	65	Naim's first DVD player is a real success, notable for its class-leading sound with CD and (optional) multichannel DVD-Audio	0					263
T+A SACD 1245	R 2,0	00	Dedicated stereo only/SACD/CD player avoids the usual compromises. It does a limited job, but it does it with fine fidelity		.0		0		279
Townshend TA 56	5 CD 3,0	00	A universal machine that excels with music and is quite exceptional with good ol' stereo CD		•				270

SPECS KEY DVD-A COMPATIBLE Plays high-resolution DVD-A discs in two and multichannel modes. SACD COMPATIBLE Plays high-resolution SACD discs in two and multichannel modes ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a multichannel amplifier or receiver. OPT DIGITAL OUTPUT Optical Tosiink output for digital connection to a multichannel amplifier or receiver. HEADPHONE SOCKET Quarter inch (6.3mm) headphone jack fitted to the DVD player





Also available for audition the Linn Akurate DS and Klimax DS music players

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of songs from select online music and

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AMPLIFIER NAD C325BEE "Much to admire...effortless." - WHE? S&V magazine

SYSTEM USUALLY £529.85





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a demo

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YAMAHA MINI HI-FI SYSTEM

Press .

"Well designed

MODEL: CRXM170

BUYER'S BIBLE VINYL

VINYL Turntables, cartridges and phono stages

Record players or turntables offer the digital revolution serious competition when it comes to sound quality. Even a modest model can turn musical tricks that most CD players struggle with. Some call it vinyl warmth, but in reality it's a lack of digital hardness that makes the format so engaging. True, the software requires a bit more care, but even a knackered LP is more playable than a scratched CD.

Record players are made of three, perhaps four, fundamental parts. The turntable is the plinth and platter, usually also containing the motor and any suspension system. A tonearm sits on the plinth and allows the cartridge to trace the vinyl groove by pivoting or parallel tracking over the record. The cartridge contains the means of turning the mechanical movement of the groove wall into an electrical signal.

A fourth element is an amp dedicated to the delicate job of amplifying and equalising the cartridge's insubstantial output. This is called a phono stage and can be found in some integrated amplifiers and preamps, but is



increasingly purchased separately for use with line-only amps.

There are two types of phono cartridge: moving magnet (MM) and moving coil (MC), and with a few exceptions the latter outperforms the former. But MCs produce a lower output and require better-quality amplification to be heard at their best. As a general rule, MCs offer a broader bandwidth, greater dynamics and more detail, but the better moving magnets do most things well enough to distract you from your CD collection.

but the general principle is to level the platter by adjusting the suspension or, as with solid platters, the surface it sits on. Sprung suspensions sometimes require a bit of fine-tuning to sound their best, but the principle is to achieve a smooth, pistonic bounce. Cartridge set-up is even more critical, as the angles at which the stylus traces the groove affects its tonal balance and levels of distortion. A good alignment protractor is essential if you are intending to set up your own cartridge, as is a degree of patience. In essence, there are two angles you need to get right: the tracing angle as the cartridge crosses the record if you are looking from above, and the vertical tracking angle (VTA), which is adjusted by raising or lowering the arm base to bring the arm parallel with the record surface.

TOP BUYS



Rondo Red £300 Despite being the base model in the Rondo range the Red delivers detail, power and resolution and is very well priced to boot. A cut above its rivals. OBH-15 Plane Ste Any
 OEH-15 Plane Ste

OBH15 £220 Practical and highly compatible unit offering fine detail and a pleasing mellow balance. If you actually buy one, ask the supplying dealer what OBH stands for.



Funk Firm Saffire £1,900 Something of a gem the very individual Saffire is refined and pleasingly neutral with excellent dynamics and very strong timing ability.



Avid Volvere £2,750 Avid has been one of the most impressive exponents of the vinyl arts in recent years, and this mid-range deck is a stunning example of analogue engineering.

VINYL BUYER'S BIBLE

Our favourite Est for CE ENTOR'S CHOICE TURNTABLES

Rec	PECORD PRODUCT & COMMENTS			SPEEDS	SUSP SUBCHASSS	SPEED CHANGE	SUPPLIED WITH ARM	SUPPLIED WITH CAR	ISSLE NUMBER
BADGE?	PRODUCT Avid Volvere	£ 2.750		33/45	01	him	N	PT	± 298
_	Clearaudio Champion	1,365	Smart, practical and good-sounding, with impressively 'dead' arm. Isolation recommended	33/45					268
	Clearaudio Emotion			33/45			÷	-	309
		920	Beautifully built with open and clean sound emphasising mid and top, but delivering nice timely bass	33/45					
EC]	Clearaudio Performance	1,670	Ceramic-magnetic bearing spells a surprisingly uncolored performance. Good arm and cartridge			-	2		295
	Clearaudio Ambient	4,220	Innovative use of materials leads to a fast, precise and thrilling sound (tonearm extra)	33/45	-	0			271
EQ	EAR Disc Master	7,695	Combines new 'no contact' drive technology and high quality materials to bring state of the art resolution	33/45/78			opt		276
	The Funk Firm Funk	450	You won't find another turntable at the price that can touch the Funk for dynamics, tone colour or detail	33/45			opt		279
100	The Funk Firm Funk V	750	Vector drive brings a refinement to the standard Funk that increases resolution. For high-class analogue sound, it's a killer	33/45			opt	opt	284
EC	The Funk Firm Saffire	1,900	Individual design and a sound that's refined and neutral with strong timing and dynamics	33/45		۰	opt	opt	309
1	Goldring GR2	265	Nicely finished Rega-manufactured deck with RB250 arm and an open, engaging sound quality	33/45					266
	Michell Tecnodec	886	Needs careful partnering but can deliver a very sophisticated result for the money	33/45				•	309
	Pro-Ject Expression II	250	A smooth and engaging turntable with the ability to revel in the glory of vinyl, with upgradable arm cable	33/45			•		289
	Pro-Ject RPM 5	450	Great looks plus an on the ball, engaging sound that puts it in the serious league, needs good isolation for best results	33/45					279
	Pro-Ject RPM 6.1	600	With its minimal chassis and huge platter this is a steady design that's capable of fine results with a decent cartridge	33/45/78		.0	•		294
	Pro-Ject RPM 9 X	1,200	A gorgeous turntable that sounds as good as it looks - vital and transparent! Price includes carbon fibre arm	33/45			•		268
	Pro-Ject X-Pack	800	Combines some very strong elements (Ortofon Rondo Red) into a killer package with top sound and value	33/45			0		309
·~	Rega P3-24	398	Very competent, uncoloured and musical, much improved by £148 outboard electronic power supply	33/45		opt	0		298
	Rega P5/RB700	698	Combines a great sense of timing with market-leading resolution and a phenomenal tonearm - a hard act to beat	33/45			opt		257
	Rega P7/RB700	1,298	A highly capable player that could hold its own in the most exalted company - a vivid and natural performer	33/45		0	opt		257
	Roksan Radius 5/Nima	895	Sophisticated design with accomplished sound quality, excellent imagery and good isolation (acrylic version tested)	33/45	•	0			248
EC]	SME Model 10A	3,411	Elegant and extremely capable design, tested here with Series V/309 hybrid arm	33/45			•		195
EC	SME 20/12A	11,133	Brings a calmness and precision to vinyl replay that we have rarely encountered, build quality is second to none	33/45/78	•	0	0		293
EC	Townshend Rock V	7,000	If you want to hear everything that's on a record then there's no better machine for the job (includes Excalibur II)	33/45	0				307

Our favourite est BUY E ENTOR'S CHOICE PHONO CARTRIDGES

Γ	Πυπυ	J	AR I RIUGEJ			EFLACE	SLE NUV
MM	and MC cartridges			MM	MC	LUIS E	開
BADGE?	PRÓDUCT	3	COMMENTS				
83	Denon DL-103R	200	Adds refinement to basic DL-103, at a price. One of the best rock'n'roll cartridges around		ą.		285
-	Dynavector DV-10X5	250	A high- output MC with superb dynamics and fine timing that's difficult to mount, but well worth the effort		۲		307
5 m	Grado Prestige Gold	110	Produces rich, open and expansive music with the minimum of fuss			0	235
26	Ortofon Rondo Red	300	Delivers detail, power and resolution and makes a good case for its price				307
	Ortofon Salsa	200	Despite a touch of midrange coloration, this cartridge really involves the listener with good extension and a clean, agile sound		.0		290
	Sumiko Blue Point Spec Evo III	239	High output MC with refinement at high frequencies and a nimble, articulate and revealing sound		•		270
c (r)	van den Hul MC One Special	699	A gorgeous cartridge that's worth the price every time you hear a familiar track in a whole new light		•		235
EC	van den Hul Condor XCM	2,400	A stunning cartridge with stereo imaging, dynamics and detail resolution to die for		•		265
EC	Wilson Benesch Naked Analog	1,450	With its smooth clean highs, transparent midband and nimble bass, this is a lot of performance for the money		0		253

Our favourite EST BUY (C) EDITOR'S CHOICE PHONO STAGES

Phor	no stages			O INPUT	O INPU	ADLI GU	PEDAN	NUMB
BADGE?	PRODUCT	£	COMMENTS	to	12	ž	8	99
-	Cambridge Audio 640P	60	An outrageously good bargain that suits budget systems, but can confidently survive upgrades before and after in the chain	0				305
	Creek OBH15	220	Practical and highly compatible unit offering fine detail and pleasing, mellow balance	•				305
	NAD PP2 phono stage	50	A fine buy for turntable users on a tight budget - open tonality and clarity is distinctly impressive for the money	0	•			245
	Tom Evans Microgroove	400	For dynamics and real bass extension with good tonal colour this is the one to beat. The Plus version (£700) is even better!		۰			234
EC	Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for maximum information retrieval off any LP					201
11	Trichord Dino/Dino+	498	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility		0		•	234

INTRUMPLESTEESS CPUE Speeds offered in rpm SUSP SUBCHASSIS Turntables with a sprung or suspended support for the platter and am. SWITCHABLE SPEED CHANGE Some decks require manual lifting of the belt from one pulley to another to change speed, but not these ones. SUPPLIED WITH ARM Deck is supplied complete with tonearm – some require a separate purchase in this department, but the dealer will fit it for you. SUPPLIED WITH CARTRIDGE Some decks are supplied with a starter cartridge and this is included in the price shown.

CARTRIDGE SPECS KEY MM Moving magnet cartridge – see amp and phono stage features to match this type. MC Moving coil cartridge – see amp and phono stage features to match this type REPLACEABLE STYLUS Some cartridges have separate styli for ease of replacement, but it compromises sound quality

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RADIO TUNERS

FM and DAB hi-fi separates

Radio is a fantastic musical resource that's in danger of being taken for granted, but whatever your tastes there's someone out there catering for it. If you haven't got a decent tuner hooked up to your hi-fi already, you're missing out!

DAB or FM?

r fovourito

Digital Audio Broadcasting (DAB) is now said to be available to more than 80 per cent of the population and the long-term plan is to switch public broadcasting over to digital entirely, but hardware prices have yet to come down to a point where this would be acceptable. Its advantages over FM include hiss-free reception, the potential for a wider range of stations and the ability to display comprehensive programming information. FM's RDS system means that station name and occasionally track titles are displayed, but the range of information is fairly limited.

Where FM scores over DAB is in the lower

cost of hardware and the greater reception area. It can also provide higher sound quality if reception conditions are favourable. Absolute sound quality judgements are muddied by the fact that you are listening to different forms of compression and processing at the studio for each station.

What is clear, however, is that there are more and more radio stations broadcasting on DAB that aren't available on FM. So if it's variety of programming you're after, they have a lot to offer.

RECEPTION

The quality of signal you feed a tuner will dictate its sound quality. So serious FM listeners should get a decent external aerial and connect it with as few junctions and splits as possible. Every time you split the cable (ie take a feed for another tuner) you halve signal strength! With DAB the same applies but get a DAB-specific aerial. See www.bbc.co.uk/ digitalradio for details.



Denon TU-1800DAB £250 Combines DAB with FM/AM reception and good all-round design at a tempting price.



Creek Evolution £495 Classy tuner with a sound that's detailed, cohesive and extended tonally.



T+A T1210R £1,000 This FM tuner looks, feels and sounds top-notch – great detail and imaging.



T-4555DAB £350 A real radio bargain, this DAB/FM tuner is free from grain and tonal blemishes.

				SPECIFICATIONS							
	UNER	S		W			REMOTE	SIG. STRENGTH METER	ROT, TUNING KNOB	ISSI	
M	& DAB HI-FI SEPAR	ATES		WAVEBANDS	PRESETS		CONTROL	THM	ING K	SSUE NUMBER	
	PRODUCT	٤	COMMENTS	NDS	EIS	RDS	ROL	TER .	BON	BER	
	WIRS										
	Creek T50	550	Very fine results indeed with precision, polish and insight added to excellent basics	FM,M,L	128			•	•	2	
]	Creek Evolution	495	Sound is detailed, cohesive and extended both tonally and spatially - very classy	FM,M	80	۰			•	3	
	Cyrus FM-X	500	A classic no-nonsense FM tuner that achieves gratifying sonic results. Upgradable with PSX-R power supply	FM	7			۹	•	2	
	Denon TU-1500AE	130	Well attuned to the crowded modern FM band, this tuner produces clear, detailed sound with plenty of gusto	FM,M,L	100	•			۰	2	
	Denon TU-1800DAB	250	There's a little grain on FM, but the decent performance on both bands makes this a great dual-band choice	DAB,FM,M	200		.0		•	2	
]	Magnum Dynalab MD 90T	1,195	No remote or presets as standard, manual everything and valves but its sound is simply sublime	FM	opt		opt	0	-0	2	
	Marantz ST7001	300	FM reception could offer a little more detail and insight. DAB is fine, but near-identical Denon 1800 is cheaper!	200	0	•		0		2	
	NAD C422	180	Admirably free of roughness or other obvious nasties, with just a slight lack of clarity	FM,M	30			0		2	
	Pure DRX-702ES	210	Apparently good value is restricted by persistent veiling on FM: 'PAC' on DAB mellows sound a little	DAB,FM,M	99		0		2	2	
	Rega Radio 3	398	Strong bass, clear treble and a high enjoyment factor make this an appealing FM performer	FM,M	20		•			2	
	Rotel RT-02	279	A highly competent tuner which always sounds appealing and fuss-free	FM,M	30		•			2	
	T+AT1210R	1,000	High-end looks are matched by the sound, which is detailed and sophisticated, with useful features too	FM	100	•	Æ			2	
AB T	UNERS					17					
	Arcam DiVA DT91	450	Some grain at low levels, but sound is lively, large in scale and tonally very natural. Very smart!	DAB, FM	16	10	40	0		2	
	Cambridge Audio DAB500	150	Very good sound, plus optional response tweaks, and slickest operation yet	DAB	10			•	٠	2	
]	Denon TU-1800DAB	200	Very good detail and a highly believable impression of real musicians playing. Imaging can be a little constricted	DAB,FM,M	200					2	
]	Marantz ST7001	250	Mdband detailed and precise: treble can be thick but bass is extended, and sound generally energetic	DAB,FM,M	200	٠				2	
	NAD C445	300	FM is laid-back despite bright balance, but has good detail. DAB slightly livelier than most	DAB,FM	30				-0.	2	
1	Onkyo T-4555DAB	350	Admirably free of grain or obvious tonal blemishes, this tuner achieves a high standard in all areas on	DAB.FM	40					2	

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

STEREO AMPLIFIERS

Integrated and pre/power amps

Amplifiers come in two basic forms: integrated and preamplifier (pre) plus power amp combinations. Integrated simply means that both pre and power sections are in one box. There are definite advantages to separating the low level, delicate signals in the preamp from the radiations of a power amp, so the more ambitious designs come in two or more cases. In some cases, each channel has its own power amp called a monoblock.

Amplifiers use two basic technologies: transistors or valves. Transistors are popular because of their practical and technical advantages, but valves - aka tubes - live on owing to aspects of sound quality that trannies can't replicate. If you want to play your music loud, use trannies; if you appreciate acoustic music, try valves.

The fundamental of amp/speaker interfacing is power rating and speaker sensitivity. You can drive a high-sensitivity speaker with a ten watt valve amp, but it takes a 200W behemoth to get the best out of speakers which present a difficult load. As a rule, you can't have too much power.

How to choose an amp

The main areas in which amps vary are: timing, dynamics, stereo imaging and transparency. Timing is the ability to present the attack and decay of each note precisely; amps with strong timing have a snap and coherence that is very appealing

HOME CINEI IA STEREO

Stereo amps can be used in home cinema set-ups as well. You don't get the surround and centre channels, but well set-up stereo speakers do a remarkably good job of creating atmosphere for movies. Stereo amps



Dynamics is a general term for the ability to portray variations in level between individual notes and is different to dynamic range (the difference between the loudest and softest notes). Dynamically strong amps tend to have more life and energy.

Stereo imaging is how solid or three-dimensional an instrument or voice sounds. The point of having two rather than one speaker is to make it possible to recreate the soundstage of the original recording, thus amps that have strong imaging skills can create a sonic space that seems to extend the room.

Transparency of detail is the most obvious difference between amps. One amp will present more subtlety than another, but the drawback with using this as your main criterion is that a forward or 'bright' sounding amplifier will emphasise detail at the expense of overall musical coherence.

tend to be better at reproducing music as they don't have the (electrical) noiseinducing digital processing of AV amps. AV amps cost three to four times as much as stereo models of a similar quality.

A.S. A

SHOULD I LEAVE MY AMP ON **ALL THE TIME FOR BEST RESULTS?**

All audio electronics perform better when they are warmed up, and this is particularly the case when it comes to amplifiers. If there's no way that you can leave it on all the time, make an effort to switch it on at least 20 minutes before listening.

WHAT IS BI-WIRING AND **BI-AMPING?**

Bi-wiring is when you run separate cables to the treble and bass/mid terminals on the speaker. In most instances, this improves sound quality so long as identical cables are used. Bi-amping is using two stereo amps to drive one pair of speakers, using one amp to drive the treble and the other for the bass/mid sections of the speakers.

WHY DO VALVE AMPS HAVE **SO LITTLE POWER?**

Valve amps are inherently low powered in absolute terms - at least when you compare them to their transistor-based cousins. But when partnered with high-sensitivity loudspeakers, they are quite capable of producing perfectly adequate head banging levels.

TOP BUYS



If you thought the PM7200 was a great budget amp, just wait until you hear this! Its sound is so detailed and involving. you'll think it costs twice the price.



Russ Andrews HP-1/PA-1 £1.198 If you don't need lots of inputs or vast output power, this Russ Andrews combo offers solid sound pictures and is highly capable in a number of areas.



Classic One Mk3 £1.535 Gorgeous valve amp that gets close to bonding all the strengths of classic valve amp sound with solid-state. Beautiful musical presentation, highly recommended.



is hard to beat: all the effusiveness of a great valve amp and none of the stereotypical softness. Brilliant!

Our favourite BEST BUY EC EDITOR'S CHOICE **STEREO AMPLIFIERS**

inteç	grated amplifiers			LINE INPUTS	PHONO INFUT	HEMOTE CONTROL	ADPHONE SOCHET	OWER OUTPUT	SSUE NUMBER
	PRODUCT	£	COMMENTS	SIL	FUT	HOL	Ě	(W)	EER
	£1,000 Arcam DIVA A70	500	A smart and practical amo offering and press and pace, with natural dynamics and enod datail	G	MM		0	60	289
_			A smart and practical amp offering good snap and pace, with natural dynamics and good detail				-		
	Adv. Acoustic MAP305DA II	600	A lot of amplifier for the money and capable of revealing and exciting sound in the right company. Includes 4 digital inputs	5	•	0		100	300
	Arcam DiVA A90	850	Practical, affordable and impressively flexible amp with a laid-back approach but plenty of insight too	7	opt	0	-0	100	303
	Cambridge Audio 640A v2	300	Slightly cheap-feeling controls are the only real downside to this powerful and lively little amp	6		•		75	279
	CambridgeAudio Azur 740A	500	Ticks all the boxes for bass, clarity, imaging etc. and invites the listener into the music with uncommon grace	6		5	101	100	294
	Cambridge Audio 840A v2	750	A chunky powerhouse with features aplenty, this amp revels in loud music, but also offers detail and delicacy when required	8				120	311
	Creek Evolution	545	Dynamics can seem understated, but energetic bass and fatigue-free treble make it an enjoyable listen	5	opt			85	311
	Cyrus 6vs2	600	Spunky little amp that reproduces instrumental timbres and acoustic spaces well, with real musical involvement	7				40	293
	Denon PMA-700AE	250	One of a growing number of new low cost amps, it offers good timing and analysis at up to moderately high volume levels	4	MM	0	•	50	284
	Marantz PM7001 Ki	550	A self-effacing amplifier which serves the music admirably with fine bass, sweet treble and unforced detail	5	MM		۰	70	289
	Musical Fidelity X-T100	899	By separating amp and TRIPLE-X power supply, this deceptively powerful valve-sporting amplifier is both enticing and musical	3	0			70	288
	Naim Nait 57	725	More versatile than previous Nait's, the 5/ is a great all-round amplifier that offers vivid insights into all manner of music	4		•		50	305
	Onkyo A-933	500	Puts the music first, with sound that delivers the basics correctly but above all involves the listener	5	0	•	.0	80	278
-	Pioneer A-A9	600	Takes on the mantle of the legendary A400. Not as cuddly, but very resolute and revealing for the money Has USB input	4	0	•		80	296
	Unison Research Unico P	795	Sound belies indifferent measured performance with good detail, balance and flowing melodic quality	5	MM	.0		50	293
	Vincent SV-236	999	Valve hybrid whose sound is as idiosyncratic as its styling, short on neutrality but high on sparkle	6		.0		100	295
ABOVE	<u>£1,000</u>								
EC	AMR AM-77	4,400	A thrilling amplifier that brings you the dynamics of valves with the power of transistors in a substantial but well featured design	6			۰	180	299
-	Ayon Spirit	1,745	Pentode or triode operation is available at the flick of a switch with this muscular integrated	4				50	303
EC	Boulder 865	7,750	Extremely transparent to detail but less revealing of energy, high power, superb build but only balanced inputs	4				150	303
	Copland CTA405	2,498	A musical and involving amplifier, which also has incredible insight and is user-friendly by valve amp standards	5	MM			50	305
	Creek Destiny	1,100	A highly assured performer that doesn't superimpose its personality on the music	6				100	286
-	Densen Beat B110	1,200	Great bass provides firm underpinning for involving and enjoyable listening - real 'smile factor'	6	opt			60	292
-	Leema Pulse	1,195	An organic and revealing sound alongside good power reserves and superb features, including a great MM/MC phono stage	5	•	0		80	306
EC	Moon Evolution i-7	4,750	Sophisticated, with an elegant build and sound quality, very limited features, even by high-end standards	5		•		150	288
EC	Musical Fidelity A1008	2,999	With DAC, phono stage and built-in valve buffer, this powerhouse amp can really grab hold of a loudspeaker	4				250	295
	Mystère ia11	1,250	Small, deceptively powerful integrated valve amp with a crisp, pacy sound	4				40	302
_	NAD M3	1,899	Massive and flexible, it goes very loud with fine authority and dynamic range, but lacks some sparkle	7		•		180	285
_	Naim SuperNait	2,350	Serious communicative ability meets convenience in this sophisticated and powerful integrated design	6		•		80	294
	Pathos Classic One MK3	1,535	An attractive amp offering a beautiful musical presentation with good tonality and detail	5				70	305
	Primare I30	1,500	A smooth, sophisticated vet agile performer, and beautifully built too	6				100	267
101	Pure Sound A30	1,100	Valve integrated, with the accent on music rather than rhythm. Needs more inputs, though	3			-	30	298
_	Sugden A21aL Series 2	1,299	Lovely solid-state Class A amplifier, sweet as a nut and more powerful than its predecessor	5	oot			21	296
_	Unison Res. Unico Secondo		Very good detail and coherence. Tonality is natural, imaging precise and deep, and dynamics are wide and unforced	6	opt			110	290
_	Unison Research P70	3.495	Delightful valve amplifier with fine neutrality, sweet midband, impressive bandwidth and ample power	4	υρι	-		70	302
	UNISUN RESEAULT FIU	3,490	Deligniful valve amplifier with the neutrality, sweet miubanu, impressive bandwidth and ample power	4		-		10	302

Our favourite 🖻 BEST BUY 📧 EDITOR'S CHOICE **STEREO AMPLIFIERS**

Pre/power	amplifiers	
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3	IEKEU	AL	MPLIFIEK3	99	POWE		P	REMOTE	POWER	52
Pre/	PTD 82.000 PTD 82.000 Advance Acoustic MPP206/MAA406 900 This pair has good build and finish and a balance of qualities that's hard to beat for the price Cambridge Audio Azur 840E/840W 2,000 Enterprising technology delivers a pre/power combo that always sounds detailed, composed and controlled Croft Precession I/Polestar I 1,400 Compact pre/power combo with battery preamp and hybrid power, with freedom from timesmear, bass could be firmer Cyrus Pre Vs2/6 Power 1,000 Pre offers stunning resolution and feature count for the money and power is subtle, open and musical Naim NAC 122x/NAP 150x 1,575 Musically rewarding with outstanding sophistication, grip and insight for such a modestly priced design Rotel RC-06/RB-06 598 A capable and surprisingly powerful-sounding combination which offers real value		PREAMPL	POWER AMPLIFIEF	LINE INPUTS	PHONO II	TE CONTROL	OUTPUT (W	ISSUE NUMBER	
BADGE?	PRODUCT	ĩ	COMMENTS	FIER	FIER	SIDA	INPUT	ROL	T (W)	EBB.
UPTO	£2,000									
	Advance Acoustic MPP206/MAA406	900	This pair has good build and finish and a balance of qualities that's hard to beat for the price		•	4	opt		150	309
-	Cambridge Audio Azur 840E/840W	2,000	Enterprising technology delivers a pre/power combo that always sounds detailed, composed and controlled	0	۰	8	opt	0	200	30
-	Croft Precession //Polestar I	1,400	Compact pre/power combo with battery preamp and hybrid power, with freedom from timesmear, bass could be firmer	٠		6			25	29
-	Cyrus Pre Vs2/6 Power	1,000	Pre offers stunning resolution and feature count for the money and power is subtle, open and musical		۰		.0	•	50	29
EC	Naim NAC 122x/NAP 150x	1,575	Musically rewarding with outstanding sophistication, grip and insight for such a modestly priced design			6	opt	0	50	28
	Rotel RC-06/RB-06	598	A capable and surprisingly powerful-sounding combination which offers real value			5			70	28
-	Russ Andrews HP-1/PA-1	1,198	Simply featured, but sounds appealingly realistic and solid. Highly capable in all areas design	.0		2		0	50	303
ABOVE	£2,000									
10	Arcam C31/P38	2,050	Very civilised sound, in the best possible way. Well featured and smartly built			7	opt		100	308

SPECS KEY LINE INPUTS Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. PHONO INPUT input sockets and onboard phono stage for a cartridge Either MM (moving magnet) or MC (moving coil), occasionally both. REMOTE CONTROL A remote control is supplied with the amplifier HEADPHONE SOCKET to drive your cans with. POWER OUTPUT Manufacturer's rated output in watts per channel

SPECIFICATIONS

SPECIFICATIONS

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Our favourite rest Buy CE EDITOP'S CHOICE STERED AMPLIFIERS continued

Pre/	power amplifiers			PREAMPLIFIER	VER AMPLIFIER	LINE INPUTS	PHONO IN	IOTE CONTROL	ROUTPUT	SSUE NUMBER
BADGE?	PRODUCT	ž.	COMMENTS	FIER	FIER	SID	NPUT	RD P	(M)	野
1.1	Border Patrol Control Unit	2,995	Bluff looking valve preamp, with one of the most neutral yet dynamic sounds around			5	opt			277
EC	Bryston BP26 DA/2B SST	5,550	Bryston's top preamp is now a serious competitor. The power amp reveals a lot of signal and delivers serious grunt	.0	•	6	opt		100	278
	Bryston BP26/3B-SST	5,300	The epitome of the iron fist in a velvet glove school of hi-fi. Dynamically superb and very detailed		•	8	opt	.0	150	308
10	Chord Prima/Mezzo 140	6,100	Small, muscular, beautifully made and styled and sounds like a dream	۰	0	5			120	269
25	Classe CP-700/CA-M400	13,350	Pre plus mono power combo with superb build, huge power and enormous flexibility. Sounds stunning, too	۰		6	opt		400	293
EC	Cyrus DAC XP	2,200	A knockout DAC/pre with naturalness and resolution to die for and six digital inputs for signals up to 96kHz	۰		2		-0		266
100	Densen Beat B-200/B310	2,300	Lively, energetic combination that bring a great sense of scale to familiar recordings	۰	0	8		opt	80	276
tC	Densen Beat B-250/B-350	8,200	Upgradeable to surround, with sweet preamp and slightly coloured power amp, but sound is big and assured	۰		6		-0	125	270
10	ECS EA-1	6,000	Understated monoblocks with real transparency to the fine detail, passion and energy in your record collection		0				180	253
EC	Gamut D3	3,430	Creamy smooth, yet lets you hear all the fine detail that goes to making a tonally rich, dynamically strong sound	.0		5	opt	.0		265
EC	Gamut D200 Mk3	3,950	A great power amp that's now even better - one of the best regardless of price						200	247
(C	Hovland HP-100/RADIA	12,745	Uncommonly musical valve/transistor hybrid transcends stereotypes, one of the genuine high achievers	۰	.0	9	opt		125	250
EC	Krell FPB 700cx	14,998	Reference class amplifier may represent overkill in many systems, but when no compromise is called fcr, this is it						700	234
EC	Linn Klimax Kontrol	6,000	Beautifully executed example of Scots audio art, sounds as clean as it looks and is a lot more transparent than most	۰		4		.0		238
EC	Marantz SC11S1/SM-11S1	5,000	Preamp and power amp duo delivers high resolution and is consistent with different loudspeaker loads	۰	0	6	0	•	220	304
EC.	Naim NAP 500	11,875	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition		•				140	208
	Roksan Caspian M Series-1	2,245	A well-matched, powerful and enjoyable sounding amplifier combo that brings out the strengths of its CD player		٠	5		6	85	307

AVAMPLIFIERS Surround sound amps for music and movies

The multichannel, surround sound or AV amplifier is a popular option, thanks to the success of the DVD player and home cinema. Now you can buy five channels or more of amplification for the price of two. Now that multichannel music is also on the agenda, there's a lot to be said for a good AV amp or receiver (an amp with a radio tuner built in).

So if you fancy hearing what DVD-Audio, SACD or even music DVD-Video can do, then check out a multichannel amp and speaker set-up – they're stunning with movies and none too shabby with music.

AV amps are usually designed primarily for movies and come with digital processing for the various soundtrack formats – Dolby Pro-Logic (analogue), Dolby Digital and DTS, which offer discrete surround sound in 5.1 and 7.1 channel formats. More ambitious designs also offer THX post processing, designed to emulate the sound of the mixing theatre at home.

Processing in AV amps is needed because the surround formats on DVD-Vs are

compressed, limiting their high-fidelity potential. This is why new formats SACD and DVD-A, which don't use 'lossy' compression, were created for music.

All this processing power can take its toll on analogue formats. The best multichannel amps for music are often the simplest, but any that offer a complete bypass option with six-channel input are suitable. It's also worth looking at real power – five or seven channels of amplification are not easy to produce with a feeble power supply, and the cheaper amps in particular often fail to live up to the claims.

Q&A

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HOW MANY CHANNELS?

Depends on how many speakers you want. Multichannel music discs come with six or 5.1 channels, but for new movies, 7.1 is where it's at. 7.1 set-ups also mean you have speakers directly behind you – preferable for music discs.

WHAT'S THE DIFFERENCE Between a processor and an av Amp?

Processors don't have built-in amplification and you need separate power amps. AV amps and receivers have processing and amps in the same box.

WHAT DOES THE .1 In 5.1 stand for?

This is the LFE (low frequency effects) or bass channel that is reproduced by a subwoofer.

With DVD-Audio and SACD offering highquality multichannel music, surround sound is no longer just a home cinema thing. An increasing number of people want to build a multichannel system that will do their music as well as their movie

HI-FI MEETS SURROUND SOUND

DVDs justice, and the number of AV products delivering sufficient quality is on the increase. But most aren't cheap – building a top-quality system with five or more channels is inevitably more expensive than sticking with stereo. There are some very decent integrated options below £1,000, though the best (and most costly) route is to buy a separate processor and power amp(s). Or you can add AV amplification to a stereo model you can't bear to part with.

AV AMPS BUYER'S BIBLE



Yamaha DSP-AX759SE £550 If you're looking for an affordable multichannel amp that's good with music as well as home cinema, this is a top buy.

Aur favourita

HI-FI

Arcam DiVA AVR350 £1,500 Arcam's latest receiver offers a good helping of processing and connection options, with exceptionally musical sound.



AVC-A11XVA £2,500 A splendid 7.1-channel amp that packs in the latest digital links and processing formats without sacrificing sound quality.



Classé SSP-600/CA-5200 £11,900 Anyone seeking a high-end multichannel solution that's equally adept with music and movies should park their ears here.

	r favourite			1	SPE	CATIO	TIONS 310				
			IFIERS		LI I	7.1 COMPATIBLE	5-CHANNEL POWER (W)	ISSUE			
Mult	tichannel amplifiers			RECEIVER	LINE INPUTS	MPATI	OWER	ISSUE NUMBER			
	PRODUCT CHANNEL IN TEGRATED AMPS	3	COMMENTS	VER	57	BLE	3	SEH			
	Arcam DIVA AVR350	1,500	Sets the standard for music and movie performance at the price, although features count low and HDMI limited		7		100	28			
2	Cambridge Audio Azur 640R	600	Simple and elegant receiver. Attributes that reflect in good sound quality without the distracting toys you'll find elsewhere				100				
0	Denon AVC-A11XV	2.500	Sensible, real world derivative of AVC-A1XV, but still immensely flexible, and well endowed with digital i/o		11						
c)	Denon AVC-A1XV	4.000	Inelegant, but powerful and effective tool with excellent auto set-up and capable of driving two 5.1 systems simultaneously				170	-			
	Lexicon RV-8	5,000	Classy multi-zone receiver lacks high tech digital attributes (HDMI etc) but majors on very effective audio engineering		10		140				
	Marantz SR-12S1	3,000	A multichannel amp that can be taken seriously in stereo too. Resources are in the engineering rather than the dimmickry	0			160	2			
C	Pathos Cinema-X	4,750	No processing, just sexy Italian style, a sextet of valves and the chance of 450 watts in stereo! Cultured sound, too		5		110	2			
C	Pioneer VSA-AX10Ai	3,000	State of the art one-box amplifier with enhanced sound quality, auto set-up and other enhancements		10	•	150	2			
	Sony STR-DB798	250	Cheap but effective, and passably good with pure audio sources, but control system messy	•	7		100	2			
	Sony STR-DB795	300	A superb value little amplifier, well appointed technically and successfully tuned for UK ears	•	7		100	2			
(e)	Yamaha DSP-AX759SE	500	More a stereo amp with basic multichannel thrown in, but a great performer with music at this price	•	6	•	100	2			
MULTI	CH NNEL PREAMPS/PROCESSORS	AND POWE	IR AMPS								
2	Arcam A90+7.1 mod, P90/3	1,920	Add Arcam's multichannel module and a P90/3 power amp to the A90 stereo integrated and you've got got superb purist 5.1		8		90	2			
	Arcam AVP700/P1000	3,000	Cutting-edge processor/tuner with HDMI sounds great, but the matching Class H power amp lacks finess to match its power	•	8		135	2			
C	Arcam FMJ AV8/P7	5,750	High-quality preamp/processor (£3,150) and seven-channel power amp (£2,6CC) An excellent fusion of stereo and surround sound		7		180	2			
c)	Classe SSP-600/ CA-5200	11,900	Subtle, exacting sound, tremendous flexibility and high power audiophile standard amplifier - lacks hi-tech digital interfaces		11		200	2			
c]	Copland CVA306/CVA535	3,748	Tube analogue six-channel pre transforms multichannel audio from a novelty into a genuine advance for the high fidelity art		5		125	2			
	Linn Exotik	1,750	Is hi-fi ready to make the jump to multichannel music? Linn think so with this musical preamplifier		4			2			
Ċ	Linn Exotik + DA	3,245	Good analogue preamplifier with multichannel in/out up to 7.1 and a home cinema processor of quality combine to make a tempting package	1	8			2			
C]	Meridian 861	9,833	Powerful surround processor with flexible modular construction, marvellous versatility to drive any speaker configuration		6	0		2			
	Naim AV2/NAPV175/NAP150	4,175	First truly credible multichannel system from Naim is idiosyncratic but offers excellent basic sound with modest spatial steering		5	0	50	2			
нC	Parasound Halo C1/A51	7,500	Powerful and flexible processor/power amp combo with impressive sound. Excellent value - processor includes onboard screen		11	0	250	2			
	Primare SP31.7/A30.5	4,200	Great all-round system which brings the qualities of good stereo high fidelity to a multichannel world		5	0	120	2			

SPECSINGY RECEIVER Integrated multichannel amp with built-in radio tuner LINE INPUTS input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. 7.1 CHANNEL COMPATIBLE The amp either has seven-channel in and outputs or in some instances is equipped with seven channels of amplification

5-CHANNEL POWER (W) Power output in watts per channel of all channels driven by the amp.



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

'Never Connected' power supply technology virtually removes all incoming mains noise allowing only the music to be heard. Visit our website to learn more about this exciting product and the high performance Diablo phono stage.





STEREO SPEAKERS

Speaker pairs for stereo sound

While loudspeakers are relatively straightforward in construction, they have one of the most difficult jobs in hi-fi – turning an electrical signal into an acoustic one. Most consist of two or more drive units in a box that usually has a port in it to make life easier for the cone in your mid and/or bass driver. Alternatives to this arrangement include panel speakers, which use electrostatic or ribbon technology, and horns, which use drive units in complex cabinets that greatly improve efficiency.

Box speakers are either designed to stand on the floor (floorstanders) or on a stand (stand or shelfmounts). Floorstanders have greater internal volume which can translate into greater efficiency and/or bass extension, but less substantial designs also introduce cabinet resonance and thus distortion. But they don't need stands and therefore have the aesthetic edge. Standmounts have less cabinet to vibrate and often score in terms of imaging and timing, but need good stands to work well.

Positioning

The closer the speaker is to a wall, the greater the reinforcement of bass. As all rooms differ, there's no simple formula for placement and experimentation will yield the best results. Altering the angle at which the speakers face the listener can also make a difference to balance and stereo image.

Going multichannel

Many stereo speakers can be augmented with centre and surround channels from the same brand to create a multichannel system. The most important element is a centre channel, which needs to match the stereo pair as closely as possible. For the best musical results, surrounds should be as per the front left and right channels, but if space or funds don't permit, smaller designs can be used quite effectively.

Though some speakers have a power rating, this isn't as informative as a rating for how difficult they are to drive, nor does it indicate wattage extremes for the partnering amp. In practice, an amplifier cannot be too powerful. Our listings quote ease of drive to indicate how much power



Choosing speakers

Because speakers and the rooms they are used in vary so much, choosing a pair tends to be quite subjective. To find some that will suit you, try to listen to a good variety to hear how they differ, and if possible, audition some at home. Tonal balance tends to vary the most, but is less important than more subtle factors such as timing and dynamics. Finally, listen with your ears not your eyes – great-looking speakers aren't necessarily great sounding.

Spikes

POWER

Floorstanding speakers and stands have threaded inserts for spikes that allow rigid coupling with the floor. These have the advantage of draining resonance from the speaker and giving tighter bass, but can result in more vibration getting back to the electronics and often cause the floor to resonate as well.

your amp needs to avoid a mismatch. An above-average (A+) speaker will work with amps rated at 25W plus, while an average (A) speaker will need 50W or more, and a below average (A-) speaker could require 100W plus to sound its best. These are guidelines rather than rules.

Q&A

IF SPEAKERS ARE RATED AT 75 WATTS, DOES THAT MEAN I NEED A 75 WATT AMP?

No, see the box on power for the full story.

WHICH SPEAKERS ARE BEST FOR SMALL ROOMS?

Those designed to work close to the wall will be smoother in confined spaces. Speakers that have relatively dry, tight bass will also sound better.

WHICH SPEAKERS ARE BEST FOR BIG ROOMS?

Big, efficient, easy-to-drive designs are more likely to be able to fill a room better than compact models.

DO I NEED TO BUY CENTRE AND SURROUND CHANNELS FROM THE SAME BRAND AS MY STEREO SPEAKERS?

Yes, assuming that you're wanting to create a homogenous surround sound experience, where voices don't change when they move from one channel to another.

BUYER'S BIBLE



Tannoy Mercury F4 £350 Tannoy's Mercury speakers have a long history of 'quality' sound at low prices, and the latest range is no exception - this floorstanderisthoroughly engaging.

Our favourite BEST BUY (C. EDITOR'S CHOICE

995

200

400

Monopulse 42A

Monitor Audio BR2

Monitor Audio BR5



Ikon 6 £899 Complete with a ribbon super-tweeter, this is an exceptionally capable floorstander for the money, delivering a highly detailed and truly engrossing sound.



8055 £1,600 A superbly well-engineered standmount that's capable of delivering magnificent musical communication, alongside superior subtlety and delicacy.



Mordaunt-Short Performance 6LE £4,000 This extraordinary speaker stands at the pinnacle of Mordaunt-Short's current range. State of the art resolution and imaging are among its many attributes.

-					SP	ECUFI	CATI	DNS (y seer toorad	
			SPEAKERS	SIZE W.H.D. (CM	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FIX	CLOSE TO WALL	ISSUE
Stereo speak	ers			H.D (0	STANC	OF DF	ROM (FREE SPACE	TO W	ISSUE NUMBER
BADGE? PRODUCT		ĩ	COMMENTS	CM.)ER	IVE	ΗZ	Ê	Ē	ġ
UP TO £1.000 Advance Aco	ustic LIM20	200	Classy styling and finish, with solid build and fine overall balance when sited close to a wall	18.30.21		٨	43			307
	gyAegis Neo 3	370		20,90.5,24		A	43 24	0	-	294
Acoustic Ener		750	Pretty, neutral floorstander sounds open with wide dynamic range and good bass weight	20,90.3,24	-	A	24			294
			Wood-veneered all-rounder has exceptional neutrality with deep smooth bass		-					
	gy AE1 Classic	845	Sharply priced classic replica has a beautifully balanced midband, wide dynamic range and little boxiness	18,295,255		A-	45	-		283
Amphion Ion ATC SCM11	L	750	Sharp styling, fine mid/treble coherence and a sweet treble, but less happy bass alignment in test room	162,326,26,5		A	40	0		310
		849	A very fine little speaker that's at its best with good, natural recordings where it adds little and reveals much	21,38,25		A-	55	0		293
Aurousal A1		450	Single-driver system is coloured but wonderfully coherent and very effective at communicating emotions	20.5,36,27		А	40	•		299
AVI Neutron I	V	499	A great example of what can be done with a genuinely small speaker, but the warts-and-all balance won't suit all	15,27,21		A-	65	۰.		260
B&W DM303	3	180	Chunky looking and liuvely sounding, with deep bass, a fine midband and a restrained top end	30,33,23		А	23			226
B&W CM1		500	Luxury miniature has neutral, laid back sound, with low coloration, fine imaging but weak dynamics	16.5,28,28		A-	40	•		279
B&W 683		899	A fine all-round performer with high-class drivers at a very realistic price	20,99,34		Ρ	20	٠		304
B&W 705		900	Deft, delicate and delightful, if a little bass light, with clever enclosure and driver engineering	22,42,29		А	35			253
DALI Ikon 6		899	Needs care with setup, but rewards you with impressively transparent and almost obsessively detailed sound	19,100,33	0	А	37	0		271
DALI ikon 7		999	Bulky vinyl floorstander has high sensitivity and a bright sound with superior coherence, delicacy and transparency	20,114,34	3	A+	22	۰		275
DALI Monitor	1	1,000	Beautiful miniature with advanced drivers sounds marvellously coherent with fine vocal expression	16,32,24		А	40	•		296
Dynaudic DM	12/10	775	Unfashionably bulky standmount has fine dynamics, grip, bass and headroom and is delicate and well mannered	27.5,45,35		А	22			299
Epos ELS 303	3	399	Midband is impressively smooth, even and coherent, but the sound lacks some dynamic grip and top end detail	18,85,20	•	A-	28			273
Epos M5		349	Gorgeous miniature works well close to wall. Could be smoother but communicates with authority	18,33,21		A-	40			269
Epos M12.2		449	A true classic stand-mount with lovely presentation, fine sound balance, superior coherence and low coloration	20,37,25		A-	40			265
Focal Chorus	706V	369	Advanced drivers deliver a smooth, even, overall balance with healthy dynamic expression and tension	22,39,25		А	30			307
E Focal Chorus	816 V	1,000	Fine, warm balance, superior dynamics, and a sweet top end, but could be smoother	28,100,37.5		A+	20			288
Heco Celan 3	800	595	Does tone colour, dynamics and detail with aplomb and communicates superbly in its +2dB mode. Sensitive, too	23,36,33		A+	40			301
JBL Studio L8	880	700	Good value floorstander with neutrality, massive headroom and plenty of punch. Could be more transparent	22,99,37	18	А	25			275
KEF IQ3		280	Shapely, vinyl-covered stand mount has lively dynamics and fine imaging, but could be smoother and sweeter	22,37,33		A+	40	•		284
KEF iQ9		800	Shapely and solid floorstander has wide bandwidth and dynamic range with superior neutrality and sensitivity	22,94,33	5	А	25	0		273
Mission élan	e34	400	A return to form for Mission with a pacey, vibrant sound matched to good looks	35,96,34	-	A+	48			298

Monitor Audio GS10 800 More neutral tonally than some recent MAs. Quality stereo design which take's up little room and is easy to drive 20, 36, 27 A-40 . -Monitor Audio Silver RS8 800 Bold, dynamic sound marks it out from the crowd, and it's an easy load that works well in larger rooms 90, 18, 27 0 А 33 . ٠ 200 PMC DB1i 825 Could be more neutral, but a very effective musical communicator with fine warmth and sweet treble 15.5,29,23.4 30 A+ SPECS KEY SIZE WXHXD (CM) Width, height and depth of one cabinet in centimetres FLOORSTANDER Speakers that don't require stands EASE OF DRIVE How much power the amplifier needs (approximately) to drive the loudspeaker effectively. A+ 25 watts plus A 50 watts plus A- 100 watts plus A- 100 watts plus ACT Active – the speaker has its own in-built amplifier. BASS FROM How low the speaker goes – the smaller the number the deeper the bass,

Uniquely different in style and sound, midband time-coherence is magnificent but treble is too restrained

Not the best dressed in its class, but detailed, bold sounding, good value and an easy electrical load

Good looking standmount has a muscular sound with superior coherence

FREE SPACE The speakers work best away from wall(s) CLOSE TO WALL The speakers will work best when up against a wall (but avoid corners)

26,110,25

18.5,35,25

17 85 25

A+ 28 .

A-

Α-36

30

.

271

294

284

276

310

. 293

Our favourite estew enterschole STERED SPEAKERS continued

	PRODUCT	3		SIZE W.H.D. (CM)	FLOOPSTANDER	EASE OF DRIVE	ASS FROM (HZ)	FREE SPACE	LCSE TO WALL	ISSUE NUMHER
	PMC TB2+	795	Classy transmission line stand-mount has superior midband, restrained presence and a bright clean top end	20,40,30		А	28	•		275
	ProAc Tablette Ref Eight	699	Stunning standmount with electrostatic-like imagery. Its Signature brother costs £200 more and is even better!	15,27,23		A+	40	•		267
	Q Acoustics 1010	99	Neatly styled miniature has limited bass and power handling but fine midband voicing at a very sharp price	15,21.5,19.5		А	48		•	286
10	Q Acoustics 1050	330	Great value, the sound lacks smoothness but has fine dynamics and impressive transparency	19.5,97.5,30	0	A+	28			284
-	Quadral Pico	849	Could be more muscular, but neutral and open with spacious imaging and little coloration	19,34,26		A-	30			292
-	Rega R1	298	Cute baby sounds busy, coherent and involving, if a touch thin. Sweet and delicate treble with even bass	15,32,24		А	50			269
4	Russ Andrews SP-1	399	This tweaked Focal 705V RA has a sound that is immediate, engaging and, most importantly, great fun	19.2,31.5,24.8		A+	65		0	309
	Spendor S3/5R	725	Lacks dynamic muscle and loudness potential, but lovely smooth neutrality and good bass extension	16.5,30.5,190		Ρ	25	0	0	310
	Tannoy Mercury F4	350	Floorstander has an engrossing sound with good dynamics and a warm, restrained output	20.5,97,29	0	A+	24			294
*	Tannoy Revolution DC6	800	Pretty compact standmount likes wall loading, delivering a lively even bass and smooth coherent midband	23,36.5,23		А	40			307
	Triangle Antal Esw	995	Smoother than its predecessors, with a beautifully balanced bass and midband, though the top end is uneven	20,108,34	•	А	20			288
	Wharfedale Diamond 9.1	180	Superior shape and finish at an exceptionally sharp price. Sound is laid back, but free from boxiness	19.5,30,28		A-	45			307
	Wharfedale Opus2-M1	1,000	Elegant mid to compact three way, a new direction in recent years for Wharfedale	23,51,36		A-	42	•		302
ABO	VE £1,000									
8	A2T Mezzo	2,000	Seamless overall coherence, with persuasive monitoring capabilities. Sounds a little mid-forward. Top could be sweeter	27.5,40,26		A+	40			281
	Amphion Prio 520	1,600	Gorgeous styling and a lively sound with good voice band integrity and a sweet top end	16,104,22		А	40			302
	ALR Jordan Classic 5	1,200	Slim, laid back floorstander has sweet sound with fine coherence, imaging and dynamic range	17,99,26	9	А	28			275
	ALR Jordan Note 3	1,350	Costly but clever; adjustable ABR gives much of the weight of a floorstander with the agility of a standmount	24,5,37,31.5		А	26			288
7	ATC SCM16A	2,203	Makes a great case for the active speaker. Good value, including built-in amps, and fuss-free	27,45,33		ACT	42	0		300
4	ATC SCM19	1,499	Super linear motor system, heavy weight construction and fabulous veneer that makes the ATC a pro favourite	22,44,31.5		A-	54			285
··	Audio Physic Spark 3	1,499	Classy and discreetly laid back floorstander has delightfully neutral balance and surprising bass weight	15,98,22	0	A+	27			271
	AVI ADM9	1,000	Active mini-monitors that are exceptionally accurate and dynamic, and they give good iPod, too	20,30,26		ACT	60			301
	AVI Duo	1,299	Sophisticated floorstander, a natural partner for AVI's electronics. Unusually clean and honest musical presentation	19,77,28	0	А	50			280
53 33	B&W 802D	8,000	Great timing, superior dynamics and a sweet top end all enhance musical communication. Makes sweet music	37,115,56	0	А	<20	•		267
10 (n) 	B&W 805S	1,600	Classy standmount with excellent coherence and imaging. Can sound laid back but otherwise a real delight	24,39,33		А	25	•		271
Ę.	Dynaudio Focus 220	1,850	Cleverly tapered floorstander has a brilliantly smooth, neutral balance and very sweet treble. Could be more dynamic	20.5,98,29.5	0	A-	<20			281
22	Focal Chorus 816WSE	1,399	The W cone treatment makes some of the qualities associated with Focal's high-end models more competitive	99.8,28.2,37.5	0	A+	39	.0		308
	Focal Chorus 826 V	1,250	Times nicely, goes loud with ease and will produce precise imaging if appropriately set up.	28,104,37.5	0	А	45			287
22	Focal Chorus 836V	1,549	Bulky, sharply priced three-way could be prettier. Has good bass with genuine grip, but top could be sweeter	28,115,38	۰	А	28	0		290
EC	Focal Electra 1027 Be	4,000	Outstanding mid and top with fine delicacy and low coloration, but lacks some bass grip and drive	26.5,111,35	•	A-	25			276
	Free FS1	3,000	An elegant active design for anyone after the minimum of wiring. Wireless with Sonos or Airport Express	16,87,27	۰	ACT	35	•		301
	Gamut Phi5	2,550	Lovely and discreet floorstander has excellent sound and several very clever engineering touches	17,100,24	0	Ρ	20	•		305
EC	Jamo Reference R909	7,500	Top model (in a class of one) is open, full and easy on the ear, and surely a classic in the making	48,127,54	•	A-	25	•		280
EC	KEF Reference Model 201/2	3,500	Very classy but costly three-way stand-mount with much improved Uni-Q; could be more transparent	25.42.41		А	30			298
	Kudos Cardea C1	1,450	A very pretty compact standmount with a delightfully subtle and delicate sound quality	20,35,27		А	40			304
	Kudos Cardea C30	5,250	An absolute honey that fully justifies its hefty pricetag, lacking only a little dynamic tension	20,112,27	0	G	22	•		310
EC	MartinLogan Source	1,599	Careful install needed, but capable of remarkable transparency at an extremely competitive price	24,120,37		А	42			303
	Monopulse 42A	1,495	Oddball styling, fine bass-to-mid balance and dynamics, and superb voice coherence, but untidy treble	26,110,25	0	А	25			302
	Monopulse 82	2,495	Could be more neutral, but excellent coherence, lively dynamics, fine imaging and a wide dynamic range	27,110,25	0	A-	<20			281

MidRange Audio 077515 18404 info@midrangeaudio.co.uk midrangeaudio.co.uk Used by leading broadcasting organisations such as the BBC, Carlton Television and artists such as Pink Floyd, Mark Knopfler and The Rolling Stones, ATC speakers come with a first user lifetime warranty for the Premium Range and a six year warranty for all other products.

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BUYER'S BIBLE

LOUDSPEAKERS

or favourite				SPECIFICAT			NS		
DIEKE U tereo speakers	Ui	SPEAKERS continued	SIZE W.H.D (ICM	FI, OOPSTANDER	EASE OF DEME	BASS FROM HZ	FREI SPACE	CLOSE TO WAL	SSUE NUMBER
DGE? PRODUCT	3	COMMENTS	(UNI)	NDER	DEINE	M IHZ)	SPACE	WALL	MBER
Monitor Audio PL300	5,000	Completely new level of sophistication from a brand best known for mainstream, cost effective designs	41,111,47	8	A-	28			30
Mordaunt-Short Perf 6 LE	4,000	Striking moulded enclosure minimises coloration, while overall balance is smooth, neutral and open	24,115,43	0	А	22	•		3
Neat Elite SE	1,499	Smooth and natural performer with notably expressive midband. Fine voice articulation and unusual sweetness	20,90,18	0	А	25	3		2
Neat Momentum 3	1,745	Sounds a lot bigger than it looks, with good coherence and an impressively wide dynamic range	22,38,27		A-	23	2		3
Opera Callas	2,195	Technically innovative multi-tweeter system, this is a grown up and articulate performer	23x37.5x34		В	32	3		3
Opera Seconda	1,295	Classy cabinetwork plus beautifully judged neutrality with crisp, clean and deep bass	24,1025,31.5		A-	20	65		2
PMC Wafer 2	1,650	Clever 'hang-on-wall' speaker has minimal sonic compromises. Smooth midband delivers impressive stereo maging	33.5,57.5,10		A+	45			2
PMC FB1	1,950	A floorstander that boasts impressive bass extension and a smooth sweet top end	20x100x30	6	G	20	112		3
PMC GB1	1,275	Pretty little floorstander has great class with fine delicacy and sweet detailing	15.5,87,23.4	12	A	30			3
PMC 0B1i	3,200	This floorstander delivers a smooth overall balance with wide bandwidth and dynamic range	20x102.5x32.5		A	20	-		3
Quad ESL 2805	4,500	Uniquely wonderful natural realism, exceptional imaging, coherence and low level detailing	70,107,38.5	.0	A-	45			2
Rega R7	1,498	Super-slim and super-smooth floorstander has fine agility with a slightly bright overall character	27,98,35	6)	А	25			2
D Rega R9	2,498	This subtle, laid back but very informative performer has a very superior dynamic range, especially in the bass	17,103,39	0	А	25	<i>a</i>		2
Revel F32	3,200	Meticulously balanced, tonally neutral design makes for a taut, well disciplined sound	22,105,39	2	А	20	62		2
Revel M22	1,800	A remarkably clean and revealing speaker with superb tonal and microdynamic capabilities	22,37,30		A-	48	43	&	2
Roksan Caspian FR-5	2,000	Sharp looking speaker sounds exceptionally open and lively without aggression. Could be warmer and richer	20,100,25	•	А	22	-		2
Ruark Talisman III	1,499	No bass demon, but a sophisticated and agile speaker epitomising Ruark's design ideals	22,84,31	0	А	22	18		2
Sonus Faber Cremona Audit	2,690	Open, exciting and with surprisingly good bass this is 'The Little Speaker That Could' (stands £575 extra)	20,35,37		А	50	\$		3
Sonus Faber Grand Piano D.	2,498	The Grand Plano Domus has a fabulous physical appearance and delivers a clean, refined sound	21,106,31	٠	A-	32			2
Tannoy Dimension TD8	4,000	This stylish speaker is a splendid all-rounder, with fine dynamics, precise imaging and minimal coloration	31,86,30		A٠	25	•		2
Tannoy Glenair 10	2,999	With a 250mm dual concentric driver this is a generously proportioned, highly engaging speaker for a good price	36,100,35	3	A+	38	-		2
Totem Model 1 Signature	1,595	Expensive, but very seductive miniature delivers a beautifully smooth and balanced midband	17,31,23		А	35			2
Triangle Genese Quartet	1,895	Great material value and a solid all round sonic performance with great loudness potential	23,117,37	2	А	25			3
Triangle Celius Esw	1,395	Not the smoothest sound around, but has great vigour and enthusiasm, plus good scale and weight	20,117,34	0	А	22	-		2
Triangle Magellan Concerto	14,750	New 'sw2' version is less immediate than its predecessor, but it's easier to live with and remains highly enertaining	60, 160, 45	0	A-	32			2
Usher Compass CP-6381	2,500	Lots of speaker for your money, with plenty of deep bass, unusual styling and massive build	35,127,65		А	20	.0		2
Vivid Audio B1	7,750	Impressive cabinet design combined with hi-tech drivers to make truly world class speaker	27,110,38		A-	40	0		2
Wilson Benesch ACT	8,400	Superb enclosure gives uncanny freedom from 'boxiness'. Well balanced, but top end might be sweeter	23,108,36	0	А	20	•		1
Wilson Benesch Curve	5,000	Much (but not all) of the ACT's performance in a much more compact and affordable package	23,91,37	0	А	28	٠		
Wharfedale Airedale Neo	9,000	Expansive yet relaxed sounding, the Neo is a coloured but surprisingly musical and enjoyable speaker	52,115,45	0	A٠	25			ć
] Yamaha Soavo 2	1,200	Cunningly crafted stand-mount with a beautiful balance that always sounds lively, open and involving	22,38,35		А	28			2

Bass speakers

	Speakers	U	LNJ	SIZE W.H.D	POWER (W	BASS FROM (HZ)	SSUE NUMBER
BADGE?	PRODUCT	2	COMMENTS	(CM)	(M)	H	BER
	B&W PV1	950	Gorgeously styled sub shakes the air but not the floor, delivering a very clean sound with negligible coloration	29,34,35	500	20	259
EC	B&W ASW850	2,000	Does all the things subwoofers should do with music and movies alike, but transparently and seamlessly	53,56,52	1,000	18	246
EC	Eclipse TD725sw	2,700	Delivers solid meaningful bass, but with unusual tunefulness, speed and articulation	52,47,50	500	40	287
	Monitor Audio ASW100	300	For the price, this compact subwoofer performs particularly well	32,32,34	120	27	225
EC	REL 305	795	Landmark mid-price sub, works particularly well with low crossover frequency, looks great too	32, 36, 34	300	25	284
	REL Stampede	550	Few subs at this price match the Stampede's subtlety and ease of integration. Much more hi-fi than AV	28,40,29	100	18	257
	RELT1	595	Standard setter at the price: flexible, easily set up and packs quite a punch	36,40,420	300	25	291
	REL Strata 5	700	Highly musical sub that integrates well but the REL Stampede offers near-identical performance for less money	32,46,33	150	18	257
	REL Storm III	900	Excellent sub with powerful, detailed and deep bass. Comprehensive facilities, including flexible filter adjustment	42,62,33	150	18	225
	REL Storm 5	1,000	Well engineered, good bass depth, appropriate for mixed hi-fi & home onema/multichannel systems	34,52,37	200	15	267
	MartinLogan Dynamo	449	Refined, compact sub brings established MartinLogan virtues to a new price and size point	29,35,32	200	25	301
	Velodyne SPL-800R	699	Powerful, highly configurable sub with auto setup feature and attractive, compact packaging	26,27,33	1,000	28	286
EC	Wilson Benesch Torus	5,200	Amp and sub package built like a sophisticated pile driver, with deep, state of the art performance	45,33,45	1,000	10	290

SPECS KEY SIZE WXHXD (CM) Width, height and depth of one cabinet in centimetres. POWER (W) How many watts the onboard amplifier of active models delivers. BASS FROM How low the sub goes, the smaller the number the deeper the bass.

SPECIFICATI



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HEADPHONES BUYER'S BIBLE

HEADPHONES

For your ears only

Headphones come in several varieties and some are designed for particular usage. The majority of 'cans' use dynamic cone and coil-type drive units and can be used with anything from a personal stereo to a dedicated amplifier. Other types also exist, most significantly electrostatics that use a charged panel membrane to produce a distinctly refined sound. These are supplied with their own dedicated amplifiers, which tends to increase the price.

Cans are split into several types. There are open and closed-back designs, the latter being

Our favourite BEST BUY (E) EDITOR'S CHOICE

best for noisy (or noise sensitive)

environments as they minimise leakage and intrusion. Open-back types tend to have a more open, less 'in-head' sound. There are also three variants of earpad design: circumaurals enclose the ear and press on your head, supra-aurals press on the ear and intra-aurals sit in the ear and are particularly popular with personal stereo users.

Getting the best from your cans

Getting a good result with headphones is not

quite as straightforward as it should be. Merely plugging them into the output on your CD player or amp will not give particularly engaging results unless you are very lucky. If you are planning on serious listening, invest in a dedicated amp - the increase in dynamics is not in the least bit subtle. A variety of models are made and prices start at around £80 for a QED, a little more for designs from, say, Creek or Musical Fidelity. And if you're really into cans, look up the valve-powered Earmax.

	EADP eo headphones		DNES	ELECTROSTATIC	SUPRA-AURA	CIRCUMUAI RAL	OPEN BACK	CLOSED BACH	WEIGHT (g)	3.5MM JACK ADAPTOR	ISSUE NUMBER
BADGE?	PRODUCT	£	COMMENTS	TIC	₽	Ą	8	R	Ð	OR	Ħ
100	AKG K270 Studio	129	Pro oriented design which is very transparent and great with acoustic material						270		230
EC	AKG K1000	650	Neutral, analytical and completely out of the head sound, suitable for connection to speaker outputs only				۰		270		244
	Audio Technica ATH-W1000	400	Superbly comfortable and very revealing. Long listening sessions are a pleasure with new musical insights			•			250	0	304
	Beyerdynamic DT770	190	A touch coloured in the mid, but less than most closed cans: detailed and with excellent bass			•			290	٠	287
-	Beyerdynamic DT880	200	Informative, neutral and surprisingly close to good loudspeakers. Good for occasional and long-term listening alike			•	0		205		300
-	Denon AH-D2000	250	Among the best closed-back headphones we've heard and very fine by any standards.			•		0	350	0	309
	Grado SR225	180	Tonally shows the way to Grado's amazing GS1000 flagship, but detail and soundstage are not truly class-leading				.0		200		300
EC	Grado GS1000	995	One of the finest transducers on the planet, with detail to die for						250	0	288
-	Sennheiser HD485	65	A great all-round headphone for occasional or even heavy use, refined in sound and comfortable, too			0	.0		220	•	296
	Sennheiser HD595	150	Technology from upmarket HD650 model makes this a very revealing headphone that's also extremely comfortable			•	199		270	0	266
EC	Sennheiser HD650	300	Astonishing resolution and hardly less impressive tonal balance make this a true hi-fi experience			0	2		260	0	252
	Sennheiser PXC450	299	Noise-cancelling model: as good as it gets for making the most of listening in planes, trains and automobiles			۰		•	240	•	302
	Shure SE420	240	Expensive and no replacement for top conventional 'phones, but streets ahead of most in-ears with real refinement					•	15	۰.	295
	Shure E500PTH	420	Sophisticated in-ear design with three drivers, plus switchable 'voiceover' mic in the lead; high-quality stuff						20		285
	Stax SR-001 Mk II	239	Expensive and power hungry, but this electrostatic drags personal stereo into the world of high fidelity	•	.0		-10		280		268
EC	Stax SRS-2020 Basic Sys. II	349	Luxury option at its price, but the sound delivery is five-star quality all the way						205	•	295

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

Equipment Racks

www.standanddeliver.com



UYER'S BIBLE STEREO SPEAKERS

CABLES

Wires to hook your system together

Hi-fi cables come in two varieties: interconnects and speaker cables. Analogue interconnects come in preset lengths, generally with RCA (phono) plugs attached, though some equipment uses XLR connectors for balanced connection - this can be sonically advantageous, especially over longer runs. Speaker cable is commonly sold by the metre and can be used without plugs or can

Our favourite 🗉 BEST BUY 🚾 EDITOR'S CHOICE

be fitted with screw or solder-on types

Choosing cables is not quite as straightforward as it might seem. One problem is that components interact with the cables you use and this often results in audible effects, but there are few cables that are fundamentally incompatible with any components, and we recommend the advice of a good dealer. In any case, you should look to spend as much as you can afford.

Digital cables come in two flavours: electrical and optical. In most instances electrical varieties sound better than optical, given the choice, but optical cables may be a better bet over long runs (10m+). Optical inputs/outputs usually use Toslink connectors, while most electrical types use RCA plugs, but some opt for BNC connection instead - check your components before you buy.

SPECIFICATI

SSUE NUMBER

310

_	ABLES	_	cables	STRANDED	SOLID CORE	00	03	DIGITAL CABLE TYPE
	PRODUCT	£	COMMENTS	0E0		COPPER	SILVER	TYPE
ANALO	GUE INTERCONNECTS				-			
	Atlas Questor	70	Very open and informative at high and mid frequencies, with slightly dry bass. Imaging particularly fine			•		
	Audioquest Sidewinder	45	A lively and detailed cable, with fine tonality and excellent rhythm. Sight added upper-bass warmth does little to detract			0		
•	Black Rhodium Prelude	80	Practical and sensibly priced all-rounder that seems happily compatible with a wide range of kit	17		•		
	Black Rhodium Coda	150	Superb bass and excellently neutral and detailed midrange, treble generally sweet with occasional slight constriction	ک				
EC	Black Rhodium Concert	255	This DCT cable from the Polar range gives a distinctively dark timbre, rich in detail, with low subjective noise	•				
	Cambridge Azur Reference	50	Performance wouldn't shame a cable at twice the price: especially adept in the treble with no trace of dryness					
	Clearer Audio Copper-Line Aipna	50	Sounding like something a good deal dearer, this cable offers near high-end detail and seems highly compatible too	-		0		
	Clearer Audio Silver-line	244	Complex, well-screened cable which offers good sound all round with exceptional bass - at a price!	•				
EC	CrystalCable Piccolo	260	Thin cable, but tougher than it looks, Piccolo has some qualities of a solid core type generically - notably resolution, focus and articulation		.0		•	
	Ixos ixotica IX1	200	Notable for its relaxing sound, this cable still presents plenty of analytical detail	13		•		
	Monster M350i	45	Few cables at this price reveal so much about the recording space. Clear treble, too					
	Monster M1000i	200	Very capable, with only a hint of bass dryness to set against excellent results elsewhere	樹		0		
-	Nordost Wyrewizard Dream	95	Slight lack of precision in extreme treble, otherwise detailed and neutral with authoritative bass		-25	0		
	Oehlbach NF214	63	The bass is a matter of taste, but suits many smaller speakers. Very good mid and treble	0		4		
	Profigold PGA3000	60	Not the ultimate for lovers of clinical precision, its character is engaging and detail and extension are good	۰				
	Supra EFF-1X	77	Lively-sounding cable which maintains a high level of detail and neutrality. Musically, a great all-rounder			۰		
	Townshend Isolda DCT100	99	Silky-smooth treble, with remarkably good detail too: midrange and bass also very fine		•			
-	van den Hul Integration Hybrid	125	Bass is nothing remarkable, but mid and treble are outstandingly open and clear: very transparent					
<u></u>	Wireworld Luna 5	30	Authoritative bass and clear treble outperform many cables at twice the price	۲				
DIGITAL	INTERCONNECTS							
12	Atlas Compass	50	Slight improvement in detail over giveaway cables, plus distinctly more tuneful bass and more open treble, make this fine value	۰				Е
EC	Clearer Audio Silver-line	125	Very satisfying performance with finely-etched detail and sweet treble	0		.0		Е
***	Supra AnCo	80	This cable can give a useful fillip to a good transport/DAC combination, even in a high-end context	.0				Ε
EC	Wireworld Starlight 5	90	Clear gains in detail and imaging precision are this cable's main strengths good value and near-high-end performance					Е
SPEAKE	R CARLES PRICE PER METRE							
1	Atlas Hyper 1.5	10	Don't look to this cable to beef up the bass, but its performance at higher frequencies is revelatory at the price	26		2		
-	Atlas Ascent 2.0	55	A highly analytical cable, with more bass extension than at first appears and very fine detail across the board	0		٠		
14	Chord Silver Screen	14	Screened speaker cable with excellent treble, but just a little light in the bass at times					
EC	CrystalCable Piccolo	1,480	Tougher than it looks, Piccolo has some of the qualities of a solid core type generically - notably resolution, focus and articulation		0			
•	Kimber 8PR	12	A cable that really enjoys the music, also admirable for the levels of analytical detail it allows through. Excellent value			\$		
	Monster MCX-1s	8	Notable for its bass, which is perhaps a touch overdone at times but could be a good foil to small speakers. Good mid and treble	0		ø		
EC	Nordost Heimdall	162	Alternative to Valhalla, silver plated, micro-monofilament construction, low colouration, hi-res and suitable for exacting systems	•				
	QED Silver Anniversary XT	5.50	Full bass and nicely detailed treble combine with good imaging - a budget bargain	0				
	QED X-Tube XT300	10	A natural and well controlled sounding cable that's cost effective for mid-priced systems		105	100		
EC	Supra Sword	116	Zero inductance construction, medium resolution cable that has an excellent midband and is fundamentally musical					
EC.	Townshend Isolda DCT	50	Cryogenically treated 'impedance matched' cable with stabilising components added. great sound all-round		•			
	van den Hul The Bridge	6	Better bass than treble, with good detail though a touch of constriction at times	٠		٠		

45 Rather bulky and awkward, but performance amply justifies it with superb bass solidity SPECKEY STRANDED Cable has a number of (usually) twisted strands to conduct the signal. SOLID CORE Cable has one or more individually insulated strands to conduct the signal

COPPER Material used to form the conducting element of the cable. SILVER Alternative material used to form the conducting element of the cable. DIGITAL CABLE TYPE E - electrical, O - optical. Cables are one metre length unless otherwise stated.

Wireworld Solstice 52

STANDS AND SUPPORTS BUYER'S BIBLE

STANDS AND SUPPORTS

Equipment racks and speaker stands

If you want to get the most from your source and amp components, it's important to consider good quality support. Dedicated equipment supports are racks and tables made specifically to hold hi-fi gear, and the best can have a profoundly positive

effect on sound because, for example, they can help to isolate kit from ground-borne vibrations and mechanical or electrical interference. Equally, if you own a pair of small 'bookshelf' or 'standmount' speakers, it's important to place them on good quality, purpose-built speaker stands.

NUMBER

SPECIFICATIONS

COLDFIELD 873 5TD

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Our favourite 🗟 BEST BUY 📧 EDITOR'S CHOICE **EQUIPMENT SUPPORTS**

Equi	ipment supports			HEIGHT CM)	E SIZE (CM)	WELDED	OF SHELVES	SHELF TYPE	JE NUMBER
BADGE?	PRODUCT	£	COMMENTS			0			
	Alphason A5-G	399	Nice looking, very solid and practical with a pretty well balanced sound, but lacks a little detail	80	66,46		5	Glass	247
	Atacama Equinox	280	Stable, modular design with style. Excellent bass transients and a fresh design concept	81	50,50	۰	4	Glass	217
22	Audiophile Base Std Supp't	900	Not cheap and quite bulky, but it's all worth it as sound is unusually detailed and resonance-free	57	46,35		3	MDF	302
	Custom Design Icon Signature	330	Gorgeous wood and glass looks: sound lacks a little detail but is nicely lively	75	56,37		4	Glass	286
	Custom Design XL4	380	Simple construction pays off in smart looks. Sound contribution is minimal and largely harmless	65	60,42		4	Glass	293
(19)	Custom Design Icon 400	600	Beautifully built, conveniently adjustable and with little sound of its own, a very classy rack	75	57, 41		5	Glass	263
88	Custom Design Inert Matt	70	Isolation platform that can improve the sound of hi-fi components, but is a bit small for most kit		40x25			Metal	311
	Custom Design Milan	449	Respect is due to any stand that looks this good with nothing more to complain of than slight muddying of detail	57	48,39		4	Glass	302
33	Milty Foculpods	19.50	A set of four isolation pads that are amazingly useful for damping vibration and improving sound	2	5			Polymer	311
	Partington Minim	420	Adds its own character to the benefit of rock most particularly, but slightly to the detriment of acoustic sounds	78	45,37		5	Glass	302
	Quadraspire Q4 Reference	480	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5		4	MDF	217
	Russ Andrews Torlyte Rack	988	Attractive modular system made of very light Torlyte: a touch of added warmth is its only vice	68	54,49		4	Torlyte	240
193	RA Torlyte Platform	130	This unassuming platform can be a godsend, cleaning away mid/treble muddle from the sound	8	48,36		1	Torlyte	302
EC	Townshend VSSS	1,300	The Seismic Sink goes all glassy and attractive, yet retains the same excellent vibration-killing sound quality	76	35,50		4	Glass	273

Our favourite 🔙 BEST BUY 📧 EDITOR'S CHOICE

3	PEAKI		{ 2 IANUS	H	TOP PLATE			NUMBER OF	ISSUE
Spea	aker stands			HEIGHT (CM)	SIZE (CM)	FILLABLE	WELDED	OF LEGS	ISSUE NUMBER
BADGE?	PRODUCT	£	COMMENTS	M)	,M	Ē	8	GS	\$
	Anvil Sound Display Stand	226	A variety of smart looks available - sound is clear and precise	50	20,17	۲		1	293
88	Custom Design RS300	110	An attractive stand whose lack coloration and ringing makes suits it to high resolution systems, at a tempting price	56	16.5,18	۲		1	281
	Custom Design SQ402	100	More a range than a model, capable of fine results especially with Acoustic Steel top plates	62	18,16.5	•		2	299
EC	Custom Design SQ404	200	Robust four-pillar design gives very low coloration and maximises performance of speakers great and small	61	18,16.3	۲		4	283
88	Partington Ansa 60	99	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18,15	۲		4	232
86	Partington Dreadnought BS	295	Sound is better defined in almost all areas than cheaper, slimer stands can offer	62	17,23			5	309
EC	Partington Heavi II	399	Robust to the nth degree, this stand helps produce very taut, precise bass and detailed upper frequencies	53	31,22			6	287
EC	Russ Andrews Torlyte	299	Very relaxed sound from this metal-free design, with excellent imaging too	60,50	15,21			3	280

Our extensive range of products includes ● Arcam ● Apollo ● Anthony Gallo ● Atacama ● Atlas ● Base ● Bose available at SOLIHULL ● Bowers & Wilkins

Rega and Nautilus Diamond available at

EQUIPMENT SUPPORTS SPECS KEY HEIGHT Of complete stand. TOP PLATE SIZE (CM) Width by depth of the supporting platform(s). Single figures indicate a square platfor WELDED As opposed to bolt-together construction. NUMBER OF SHELVES To put your kit on (different configurations are often available). SHELF TYPE Material that shelves are made of EVENUES STATUTE STATULE ST

FILLABLE The stand can be mass-loaded with sand and/or lead to stop ringing. WELDED As opposed to bolt-together construction, NUMBER OF LEGS That support the stand

MUSIC MATTERS HI-FI & HOME CINEMA



GLOSSARY

TECHNICAL TERMS

S.1-CHANNEL AUDIO Six discrete channels, typically front left and right, centre, surround left and nght, 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 – 'low bass' refers to the bottom octave (20-40Hz), 'mid-bass' the middle octave (40-80Hz) and 'upper bass' the top octave (80-160Hz).

BI-AMP (sometimes tri-amp). Loudspeakers equipped with separate access terminals to each drive unit can be driven by separate (matching) power amplifiers for each driver.

BI-WIRE (sometimes tri-wire). Loudspeakers with separate access terminals to each drive unit can be driven by separate cable runs between the amp and each driver.

CD-R Recordable CD that cannot be erased, though discs that have not been completely filled can have tracks added until the disc is finalised.

CD-RW Re-writable or re-recordable CD, incompatible with older CD players. CLASS A The operation of an

amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to have the advantage of offering lower distortion, while Class B tends to generate less heat.

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

CLIPPING An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever-increasing power levels. Distortion increases dramatically at this point.

CLOCK Any electronic oscillator that is used to generate a timing reference signal. Used to synchronise the data being taken from a disc.

CROSSOVER A simple electrical network which divides the full bandwidth signal received from the power amplifier, apportioning appropriate parts of the spectrum to the various drive units.

DAB (digital audio broadcasting). Digital radio using frequencies in the

217 S-230MHz band. Broadcasters use varying degrees of compression and offer a broad range of programming. **DAC** or Digital-to-Analogue Converter. The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform.

DOLBY DIGITAL A compressed digital audio format that typically contains five or more entirely discrete channels, eg 7.1 EX where side and rear channels are used.

DOLBY PRO-LOGIC, DPL Forerunner to DD that 'steers' information to the front L/R, centre and mono surround channels wa an analogue matrix

DRIVE UNIT/DRIVER A transducer which converts electrical energy into acoustic energy, eg bass driver, tweeter. DSD (direct stream digital) The coding format used for SACD offers a frequency response of over 100kHz and a dynamic range over 120dB. It has over four times the data capacity of CD.

DSP (digital signal processor), Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors, it separates the left from right and front from rear, while managing the various

bass options. **DTS** or Digital Theatre Sound. Competitor to Dolby Digital with a reduced 4:1 compression ratio that, ostensibly, promises higher quality.

DVD-AUDIO High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range. Discs are compatible with standard DVD players

ELECTRICAL DIGITAL Any digital connection that uses an electrical cable

rather than optical. Includes the balanced ('AES/EBU') interface. **FILTERS** Filters are intrinsic to digital

audio, both analogue and digital. These are often very sophisticated in design, and in total they probably have rather more to do with the 'personality' of CD player sound than most other factors.

FREQUENCY RESPONSE The range of frequencies, from low to high, which a loudspeaker will reproduce.

IMPEDANCE With speakers, the complex electrical load that a loudspeaker presents to the amplifier driving it

JITTER An insidious distortion specific to digital audio caused by imprecision in the clock, used to regulate the conversion of data into analogue audio.

KBPS (Kilobits per second) Digital data rate measurement system used primarily with highly compressed formats such as MP3, DAB etc. The higher the amount, the better the quality.

LINE LEVEL Practically every modern source component (except phono cartridges) gives an output in the region of 1-2V, referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are designed for this input level and are thus interchangeable.

LOSSLESS COMPRESSION A method of reducing the number of data bits (density) without corrupting the original description of the musical signal.

LOSSY COMPRESSION Reduction in data density by recourse to a complex psycho-acoustical 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.

MP3 (MPEG layer 3) Lossy compression format for digital audio that drastically reduces data content in order to squeeze music through internet connections or allow hundreds of CDs to be stored on a hard disc.

OUTPUT IMPEDANCE A measure of resistance to alternating current, a source with low output impedance (below 100 ohms) helps ensure compatibility with most amplifiers, even with long interconnect cables

PCM (pulse code modulation) The digital coding system for analogue waveforms used for CD and DVD. Quality is limited by the oversample and bit rates used – CD is 44. 1kHz/16-bit while DVD-A is capable of 192kHz/24-bit. PRESENCE BAND (ritical section of the audio band at the point where midrange and treble meet

QUANTISATION NOISE A form of distortion or noise resulting from errors in the description of the musical signal by

A state of the digital code. **SACD** (Super Audio CD) was launched in 1999 and is a Sony/Philips format based on DSD coding that offers high resolution stereo and multichannel sound from

hybrid discs that can also be played on ordinary CD drives. SAMPLE RATE The rate at which the musical waveform is sliced up into discrete chunks. For CD, this is 44.1kHz or

once every 0.023msec. DVD will also support 48kHz and 96kHz.

SENSITIVITY The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/ W), measured 1m from the speaker. THX Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. The latest THX Ultra 2 standard is more stringent than THX Select. TOSLINK The proprietary name given by

Toshiba to the optical fibre signal transmission system it invented for consumer applications.

TRANSISTOR/MOSFET The two main types of power semiconductor used in solid state amplifier output stages. TREBLE High frequencies, the top end of the audio band, ie above 3kHz. TWEETER Treble driver

TWO/THREE-WAY Loudspeaker

crossovers split the signal into two or three frequency bands, a two-way speaker can have more than two drive units. **WATTS** (per channel) The watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity vanations can make more difference than amplifier output. **WOOFER** Bass driver

DESCRIPTIVE TERMS

AGGRESSIVE Forward and bright sonic character.

AMBIENCE The impression of an acoustical space, such as the performing hall in which a recording

was made. ANALYTICAL Highly detailed. ARTICULATE Intelligibility of voice(s)

and instruments and the interactions between them.

ATTACK The leading edge of a note and the ability of a system to reproduce the attack transients in music.

BALANCE Essentially tonal balance, the degree to which one aspect of the sonic spectrum is emphasised above the rest. Also channel balance, the relative level of the left and right stereo channels.

BODY Fullness of sound, with particular emphasis on upper bass

Opposite of thin.

BOXY The sound of a loudspeaker with audible cabinet resonances.

BRIGHT A sound that emphasises the upper midrange/lower treble

DARK A tonal balance that tilts downwards with increasing frequency.

Opposite of bright. DECAY The fadeout of a note, it

follows the attack.

DEFINITION (or resolution) The ability of a component to reveal the subtle information that is fundamental to high fidelity sound.

DEPTH (of image) The perception of music being reproduced behind the loudspeakers and inhabiting a reproduction of the acoustic space of

the original recording. **DETAIL** The most delicate elements of the original sound and those which are

the first to disappear with lesser equipment. DRY A sound that is devoid of 'juice'.

DWT A sound that is devoid of juice, which usually comes across as fine-grained and lean. Also a loss of reverberation as produced by a damped environment

DYNAMIC The suggestion of energy

and wide dynamic range. Related to perceived speed as well as contrasts in volume both large and small.

EUPHONIC An appealing form of distortion that generally enhances perceived fidelity, often ascribed to the harmonic elaborations of some valve amps.

FAST Good reproduction of rapid transients which increase the sense of realism and 'snap'.

FOCUS A strong, precise sense of image projection.

FORWARD(NESS) Similar to an aggressive sound, a sense of the image being projected in front of the speakers and of music being forced upon the listener

GRAINY A slightly raw, exposed sound which lacks finesse.

GRIP A sense of control and sturdiness in the bass. GRUNT See grip.

HARD Uncomfortable, forward, aggressive sound with a metallic tinge.

HARSH Grating, abrasive. IMAGING (stereo) The sense that a voice or instrument is in a particular

place in the room. JUICY Sound that has joie de vivre, energy and life.

LOW-LEVEL DETAIL The quietest sounds in a recording.

MUSICAL or musicality. A sense of cohesion and subjective 'rightness' in the sound.

NATURALNESS Realism. OPAQUE Unclear, lacking transparency.

OPEN Sound which has height and 'air', relates to clean upper midrange and treble

PACE Often associated with rhythm, a strong sense of timing and beat.

PRESENCE A sense of an instrument or voice occupying a

place in the listening room. **PRESENCE RANGE** The upper

midrange. SEISMIC Very low bass that you feel rather than hear.

SIBILANCE An emphasis of the 'S' sound, often heard on radio. SNAP A system with good speed and transient response can deliver the immediacy or 'snap' of live

instruments. SPEED A fast system with good pace gives the impression of being right on the money in its timing. STURDY Solid, powerful, robust

sound. THICK A lack of articulation and clarity in the bass.

THIN Bass light. TIMBRE The tonal character of an

instrument. TIMING A sense of precision in

tempo. See speed and pace. TRANSIENT The leading edge of a

percussive sound. Good transient response makes the sound as a

whole more live and realistic. TRANSPARENCY, TRANSPARENT

A hear-through quality that is akin to clarity and reveals all aspects of detail.

TWEAK To tune a system or component in an attempt to get the best performance from it. TWEAKER Someone who enjoys

this process. VEILED Loss of detail due to limited

transparency.

WARM A fullness in the lower

midrange/upper bass. WEIGHT A sense of substance and underpinning produced by deep, controlled bass.



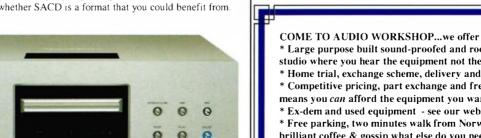
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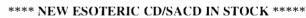
WORKSHOP NOTES 4: FORMAT FIST FIGHTS

Unlike in AV where format wars leads to one victor and one loser, audiophiles are happy with mixed formats. CD, SACD, Vinyl, FM..the more the merrier provided that it lasts and sounds good. This makes sense as great music does not always appear on every new format. True, SACD failed to replace CD, but has a lot to offer discerning audiophiles (it is faster, more organic and truer to the source). SACDs are dual layer, so buying a CD/SACD player can make musical and financial sense, except if downloads & servers are going trash everything in sight. But history suggests that they won't. We'll pick'n'mix as usual...

So while music servers may well be the next big thing in audio, they will not *replace* the original and CDs will always sound better on a good CD player rather than the ripped copy. So if your current CD player is more than, say, five years old take advantage of the rapidly improving sound of CDs from modern players, and look into whether SACD is a format that you could benefit from.

0







A new CD/SACD player, the **X-05** (below left £3500) and a new CD/SACD transport **P-05** (above) and DAC **D-05** (£8500 for both) set new standards at their price points. Both on dem - call us to hear them...

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B&W DM1800 speakers with stands	£193
B&W DM640 floor standers	£29.
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Acoustic Zen Adagio Junior speakers + stands, new	£2500
Acoustic Zen Adagio centre speaker + stand	£162:
Mission 753 speakers	£349
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Tannoy Westminster Royal SE (New version, ex demo)	POA
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Audio Note Mo pre-amp with phone/ remote	2/77
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Proceed FAV pre-amp	£49
Gryphon Allegro Sonata Mint/Boxed (£9000)	£350
Cambridge Audio Azur 640P-8 MM/MC phono stage Mint	£4

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Denon DVD A-11, DVD/DVD audio/SACD player mint/box	ed £695
Esoteric x-03 SE (NEW)	POA
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1	Winds electronic stylus gauge
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KSL-Kondo M100 DAC. Predecessor of KSL-DAC. Add a CEC transport		
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Western Electric Gotham type 39 mono amplifiers. 50 watts of 300B in Class A		
Beefcake with manners.	£4000	£10000
Audio Innovations series 300 MKII integrated amplifier. 12 watt Class A ECL86		
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Pure Sound CD player, valve output stage, ex-demonstrator, as new.	£500	£900
Art Audio Quintet. Shiny EL34 Class 'A' integrated. As new, ex-dem.	£2000	£3850
Art Audio Concerto integrated. Shiny triode 6550 integrated. Beefy sound. As new.	£3000	£4400
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Teac P700 transport. Bit scruffy but will do the job. Give-away at this price.	£200	
SJS Arcadia model 1 pre amplifier. AN Japan manque. Hard wired purist line pre-amp).	
Lots of serviceable quality, not much outlay.	£500	
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ive years ago, this quartet of floorstanders would have cost from £4,000 to £5,000 per pair. Now, thanks to the ravages of time and the fickleness of fashion they're all available for half that. Speakers generally make for the safest secondhand bet and these four are, at worst, probably only a quarter way through their working lives.

The first option is the Living Voice OBX-R2. This compact floorstander was a follow on from the original OBX-R. It was launched in late 2003 and is still a current line. The main upgrade involved the crossover and many owners of the original have since upgraded to R2 spec. If you're unsure whether or not the model is an R or R2 then Living Voice will happily give you the information.

Throughout its life the OBX-R2 has been continually upgraded with detail changes to the crossover, cabinet and drive units. The most significant change came in early 2007, when new woofers were introduced. Such models can be identified by a serial number above 1400. Living Voice told us that, although mechanically faultless, the real wood veneer can show signs of distress from careless owners. Sun can unevenly fade the cabinet, while veneer lifted by watered plant pots is not unheard of! And even though all speakers are finished in real wood, it's particularly worth searching out a set finished in ebony, rosewood, burr oak, cherry or satin walnut.

All five finishes were premium veneers and added significantly to the cost of a new pair of OBX-R2s. Second-hand, of course, the price premium is next to nothing. With conventional drive units, the cost of replacements is the most affordable here. Just £117.50 will pay for a replacement woofer – fitted. With a sensitivity of 94dB these are sensitive speakers and ideal for use with valve amps.

Launched in time for the new Millennium, the £5,000 Tannoy Dimension TD10 was the most expensive

Right: OBX-R2 Ebony speakers from Living Voice

speaker here. Although now eight years old, Tannoy told us that the model has remained unaltered throughout its life. This makes buying second-hand easy as there's no specific version to avoid or favour. In the best Tannoy tradition, the TD10 features a Dual Concentric unit with the treble positioned within the throat of the woofer. Added to this is a super tweeter that gives a wonderful top end extension. Like the others here the TD10 is inherently reliable, however with the cost of a new Dual Concentric driver coming in at £263, it's worth making absolutely certain that these are in perfect condition. Tannoy also told us that the standard five-year guarantee is not transferable and buying second-hand was very much at the purchaser's risk. But the TD10 is a very sturdy speaker and, with our budget, a five year-old pair should be within easy reach and possibly from a dealer with a limited quarantee. Like the OBX-R2s, these are efficient speakers and work well with valve amplification.

Right: Tannoy's ever-reliable Dimension TD10

rather more reasonable at £120 each. With regards to the finish, the majority are finished in a deep gloss black

lacquer. Whilst this looks very smart it is susceptible to scratching, and we've seen some very tatty examples of both this and the similar looking AE1 MKIII. Check for dented, broken or missing woofer grills.

Our final speaker is the KEF Reference 205. Of the four this is the only model that's now discontinued, although the 205/2 (launched in 2007) model doesn't differ vastly from the original. Of all the speakers here, it's the one that will probably take the most driving.

"Sun can fade the cabinet, while veneer lifted by watered plant pots is not unheard of!"

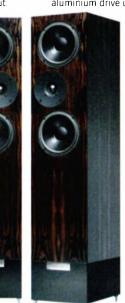
The Acoustic Energy AE3MKII has had no official modifications over its five year life and is still a current model. Famed for their use of aluminium drive units the AE3MKII uses no

> fewer than four per cabinet. A traditional woofer and tweeter are married to twin. side-mounted woofers. This makes the AE3MKII a proper 3-way speaker, but also a very expensive one to maintain should you have a big 'accident' with the volume control. Interestingly, although the woofer looks similar to the one in the AE1 MKIII, its cone is actually 33% thinner and slightly larger in diameter, making it more efficient. As with the TD10, the replacement cost of one of these is not cheap; at least £250 is required for a new one. Should one of the four woofers go they're

With it now having been superseded, we found an 18 month old pair for just £1,750 excellent value for a £4,000 speaker of that age. Incidentally, the main difference between the 205 and 205/2 was a rethink with regards to the high frequency units. The 205 has separate Uni-Q and super tweeters whereas the newer version combines them in one. This does give the newer version a simpler crossover and more cohesive treble, but fans of the original 205 will know there was never much wrong with its high-end performance in the first place. As with the AE, all those drive units could become expensive if abused, but in normal use the Reference 205 is extremely robust. The wood veneer is hard wearing, but watch for that vulnerable super tweeter.

Choose any of these and you're guaranteed an excellent speaker. The best bargain is undoubtedly the KEF but for all-round musicality we'd say the Living Voice just pips the others. Buy with confidence! **HFC**

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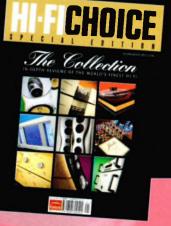


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