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Intro



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



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



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



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



Richard is one talented guy: a professional musician, experienced recording engineer and a highly knowledgeable hifi enthusiast to boot. He's particularly nerdy about cables. It's probably freudian. yebrows may be raised by the mere presence of one of this month's group tests – our selection of high-performance DVD players on p40. These may be superior examples of the breed; they may also emanate from audio specialists with a strong hi-fi heritage. But some still insist that such beasts (rated for sound *and* video) have no place in a magazine embroiled in the pursuit of sonic excellence, a mag like *Hi-Fi Choice*.

Friends, I beg to differ. The modern hi-fi buyer faces fundamental choices – stick with two-channel stereo or choose multichannel surround; an audioonly music system or video playback too. As picture performance improves with technologies like progressive scan, there's no reason why the concept of high fidelity – playback that remains faithful to the real thing – can't also be applied to video.

Music is my first love, as it may be for you. But I also enjoy films and music videos, and expect similar levels of excellence. And if a piece of audio or AV gear hits the right note musically, it'll get the sonic fundamentals right with other media too.

At *Hi-Fi Choice* we apply the same stringent criteria to every piece of kit we test. And unlike other magazines, we won't recommend a product

until it has been subjected to our rigorous test routines. That's why we're number one for high fidelity entertainment, so stay with us through 2003. It's set to be quite a ride...



Tim Bowern editor

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"...the Eyris 2 goes for a controlled sound that is as dry as a Martini and as natural as breathing..."

EDITOR'S CHOICE

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S INDUSTRY & TECHNOLOGY NEWS

HYBRID CD/DVD-A DISCS

The DVD Forum is discussing the possibility of creating an SACD-style hybrid disc combining DVD-Audio and CD layers to increase the accessibility of the new format. There has been a lot of encouragement from the music industry – Paul Vidich of the Warner Music Group has said: "We believe that this flexibility is very important to the new format because it will permit content companies to put out dual layer discs".

Broader playability would have obvious benefits for the new format, which has so far had to rely on customers using their DVD players for music playback. Since the majority of buyers still associate music with CD players, this hybrid makes a lot of sense. Hideyuki Irie from the DVD Forum has conceded that the group "intends to study the creation of a specification for dual-layer multi-format support," but noted that the Forum "unfortunately has no rights (to the CD format)". In other words, this could take some time!

One thing the DVD Forum has managed is a finalised approval for digital transmission of DVD-A signals from a player to an amp/receiver. Which means that suitably equipped players such as the Pioneer DV-757Ai and Denon DVD-A1 will be able to transmit multichannel signals via a single digital connection, rather than five or six analogue cables as before. REARTER DEGREC DECENTRATION OF ANTIONNAL OF

DVD-AUDIO ON YOUR PC

You can now play back DVD-Audio discs on a PC, thanks to Creative Labs. The multimedia specialist has incorporated DVD-A playback into its latest Audigy 2 Sound Blaster PC soundcard, having licensed Meridian's MLP 'lossless' packing technology alongside Dolby Digital EX from Dolby Labs.

The card works with DVD-ROM drives on PCs to deliver 24-bit/192kHz stereo as well as 24-bit/96kHz multichannel DVD-A playback. Audigy 2 is also the only standalone soundcard with THX certification, delivering 7.1

channels from Dolby Digital EX encoded content. Multichannel 24/96 recording is an option too – providing you've got a suitable multichannel source you can record from. Prices for the Audigy 2 start at £100.

IN-FLIGHT DVD-AUDIO

United Airlines and Silverline Records have teamed up to give passengers on overseas 777 flights the opportunity to listen to multichannel DVD-Audio music discs using Dolby Headphone technology. Silverline will supply the 5.1 channel DVD-A software which includes tracks from Bob Marley And The Wailers, the Dubliners and Astrud Gilberto. Dolby's Headphone processing will be used to recreate the multichannel effect in the challenging confines of an airline seat.

EMI HIT BY PIRACY

Music piracy has been blamed for EMI's failure to hit its performance targets. The record industry giant blames online piracy and bootlegging for a



projected six per cent downturn in profits for its music division. Chief executive of recorded music, Alain Levy, will be cracking down on illegal music distribution and we can expect to see the company using more of the anti-piracy technologies that have been causing consternation among consumers wishing to play discs on their PCs. EMI hopes to tackle the online distribution issue by selling its material directly to the public in downloadable form.

SURROUNDED BY AWARDS



As high-res multichannel music's creeping momentum gradually gathers pace, US recording industry trade magazine *Surround Professional* has nominated its DVD-Audio and SACD surround discs of the year. Highlights include the nu-bluegrass album *Nitty Gritty Surround*, Queen's A

Night At The Opera and Herbie Hancock's *Headhunters*, with Rolling Stones' *Let It Bleed* featuring in the Best High Resolution Stereo-Only Programme category.

MINI CD-RW

The 8cm 'mini' CD is attempting to make a comeback thanks to manufacturer Verbatim. The Mitsubishi subsidiary has augmented its range of 8cm CD-Rs for the MP3 market with a re-writable CD-RW. The



discs hold up to four hours of data-reduced music and offer a more cost effective and collectable storage alternative to solid state MP3 players.



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X-TUBE[™] is a genuine breakthrough in loudspeaker cable design, the result of intensive research and development. All 3 models in the X-TUBE[™] range utilise QEDs' unique, high resolution 'tubular conductor geometry' and are designed with one simple aim – to produce the very best performance possible from your hi-fi or home cinema system.

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BEATS'N'PIECES

TIME MACHINE

FIVE YEARS AGO

Hi-Fi Choice, January 1998



CD-R deck, the CDR870 was raising industry eyebrows with its sub-£500 price tag and CD-RW compatibility. But it gave

Philips' new

consumers the jitters, quite literally, with questionable results from the lab. We challenged the Dutch giant to put the problems right before we could advocate buying the deck. Elsewhere, Audiolab was subject to a buy-out by the German TAG McLaren group. The Audiolab name remained safe for a short period before the new TAG McLaren audio products were laugched

TEN YEARS AGO Hi-Fi Choice, January 1993

MiniDisc was the buzzword of the day and a first generation unit from Sony

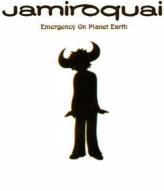


found its way to *HFC* Towers. By that time, the Philips rival DCC had been through the lab and back yet MD appealed both practically and

aesthetically before any testing had begun. Our show report from the Tokyo Audio Fair highlighted Kenwood's LZ-14 prototype CD-R machine, touted as the audiophile's preferred digital recording format. At the time CD-R was prohibitively expensive – Pioneer's RPD 100 cost £4,000.

SYSTEM BUILDER

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



JAMIROQUAI Emergency On Planet Earth sony

JOHN WATKINSON

Jamiroquai's acid-jazz funk debut album was hugely successful back in 1993, earning five nominations for Brit Awards that year and going straight to number one in the album charts where it remained for three weeks. Global youth went mad for the twelve funk-lite tracks – a foot tapping, stomping adventure that captivated dance floors and the imagination of those too young to remember the bands' artistic influences. Its bass-heavy studio mix can sound a little bloated and unengaging in warm, laid-back systems but our superb set-up should make JK's funking marvellous first album perform at its fresh and engaging best.



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Exposure 2010 £600

An entertaining machine that plays with both smoothness and enthusiasm. Its presentation won't exacerbate the occasionally over-warm production of the Jamiroquai disc.

SPEAKERS

B&W 603 S3 £600 Fine bass performance that starts from as low as 25Hz – perfect for capturing the depth of those prominent acid jazz bass grooves.





Arcam DiVA A85 £800 More engaging than prior Arcams, with 85 watts of power to keep the big, bad B&Ws happy with JK's energetic crew.

BOOK OF THE MONTH

Introduction To Digital Audio (2nd edition) By John Watkinson

Focal Press £25

CTION TO

• DVD audio

For most of us digital audio is at the heart of our hi-fi systems, but the deeper workings of the subject are often baffling and can be intimidating for the average audiophile. Audio consultant John Watkinson aims to explain digital audio technology in a highly readable way. This second edition book is bang up to date, covering contemporary digital issues such as hard disc recording and home networking. Generously laden with detailed line drawings, the book ideally requires some basic knowledge of physics or audio engineering to get the best from it, although it gently entices the reader in with early chapters on the basics of hearing and audio signals. All the essential aspects of digital audio are covered, making this an invaluable journal for anyone wishing to grasp this topical fascinating and rapidly evolving topic.

audiofile ⊗ BEATS'N'PIECES

CLASSIC DEMO DISCS



STING

Ten Summoner's Tales A&M More than a few hi-fi stores I've visited have this disc in their dem room. Whatever your opinion of Sting's music since The Police, this collection of songs is undeniably useful for assessing hi-fi. It's a strong vocal and acoustic album that's

clean, dynamic and detailed, capable of evaluating key characteristics in the performance of any readily assembled group of boxes. **Carl Chinnery**, via email

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

JIMMY'S TWEAKS #4

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



Evaluating upgrades and improvements Although first impressions are important, don't get too carried away by the excitement of the moment when you're ringing the changes. It's easy to be over-impressed by alterations that trade listenability for superficial 'improvements' in hi-fi terms. Your new sound may be more lively and exciting,

but is the music as communicative and accessible? When evaluating things like component changes, or a set of replacement cables, by all means take account of your initial reaction. But pay particular attention to your response a day or two afterwards. If, a few days later, you arrive home, switch on, and immediately think: "That sounds great!", chances are you've made changes that really are for the better. Every change has novelty value, and you need time for the novelty to wear off before being able to make a considered long-term judgement.

ON THE OFFICE STEREO MUSIC THAT AMUSED US WHILE CREATING THIS ISSUE

Ry Cooder/ Mañuel Galban Mambo Sinuendo Jurassic 5 Power In Numbers Beck Sea Change Sigur Ros () Nick Cave Nocturama Joni Mitchell Travelogue The Datsuns The Datsuns Johnny Cash American IV: The Man Comes Around



Black Rebel Motorcycle Club B.R.M.C. Fragile State The Facts And The Dreams

NEW MUSIC IN THE STUDIO ARTISTS WHO'VE BEEN VERY BUSY LATELY COOKING UP DELICIOUS MUSICAL TREATS LIKE LITTLE AUDIO JAMIE OLIVERS



IBRAHIM FERRER

Buenos Hermanos 3 Feb 2003 Ry Cooder made the biggest-selling 'world music' album ever when he travelled to Cuba to produce 1997's Buena Vista Social Club. The State Department fined him for breaching the US embargo against the island, but he was finally permitted to return to produce a solo album by veteran Buena Vista star, Ibrahim Ferrer. "Simply the best singer in the world," is Cooder's succinct judgement.

ASIAN DUB FOUNDATION

Enemy Of The Enemy Feb 2003 Britain's angriest massive of radical agit-rockers follow up 2000's *Community Music* with a collection of banging tracks combining tough, streetwise rhythms and Asian influences. Sinead O'Connor adds guest vocals to the Jamaican dub track, 1,000 Mirrors.

CERYS MATTHEWS

Title: tbc Mar 2003

Following a spell of high-profile rehab after Catatonia split last year, singer Cerys Matthews has spent the last three months in Nashville recording her solo debut. Produced by guitarist Bucky Baxter, who spent a decade playing with Bob Dylan and was most recently seen in Ryan Adams' band, it's being described by those who've heard it as, "by far the best thing she's ever done".

IAN McCULLOCH Title: tbc Mar 2003

After more than 20 years fronting Echo & The Bunnymen, Ian McCulloch has finished recording his debut solo album. The collection features Chris Martin and guitarist Johnny Buckland from Coldplay and actor John Simm, who appeared in the Factory Records biopic 24 Hour Party People. McCulloch was recently honoured with the lifetime's 'Inspiration' award at the annual bash organised by Q magazine.

FLEETWOOD MAC Title: tbc Mar 2003

The classic Mac line-up that made *Rumours* split 15 years ago, although they reformed for a tour and live album in 1997. Now they're (mostly) back in the studio finishing their first collection of new songs since 1988's *Tango In The Night*. Christine McVie has opted out, but Mick Fleetwood, John McVie, Lindsay Buckingham and Stevie Nicks are all involved.

ALSO COMING SOON... ROCK/ POP

Stereo MCs tbc (Island) 27 Jan, Pet Shop Boys London/Berlin 3 Feb, We're A Happy Family (Ramones Tribute) (Sony) 17 Feb, Beyoncé Dangerously In Love (Sony) 24 Mar

JAZZ/ CLASSICAL

Essential Anúna (Universal) 20 Jan, Angelika Kirschlager Bach Arias (Sony) 27 Jan, Shivanova Seventh Heaven (SNPP) 3 Feb, Giuliano Carmignola Vivaldi Late Concertos Vol 2 (Sony) 27 Jan

DVI

Koyaanisqatsi/ Powaqqatsi Box Set 13 Jan, 24 Hour Party People 27 Jan, T-Rex – EP 27 Jan, James Brown – Body Heat 27 Jan

New Gear

COMING First tests of essential new kit from hi-fi's front line

Cyrus 8 stereo amp £800

Cyrus has just produced what it considers to be its best ever integrated amplifier. It's called the Cyrus 8 and costs a healthy £800. It is the most powerful integrated Cyrus has ever produced, delivering a claimed 70 watts per channel. And in the process of upgrading the amp by ten watts over its predecessor, the 7, Cyrus suggests it has dramatically improved burst power, current delivery, damping factor and slew rate at the same time. Not small increments, either - the burst power is now suggested to be close to 340 watts, the high-current delivery and damping factor have both been effectively doubled and HF distortion is said to be reduced by 60 per cent.

This means an entirely redesigned power supply underneath, especially the preamplifier stages. This power supply is suggested to be 60 per cent larger than the one used in the Cyrus 7. There is also a brace of new capacitors included in the circuit. In essence, Cyrus has designed this as a separate pre and power amp in one box.

It looks identical to previous Cyrus amps, which is a good thing – the halfsize cast case and distinctive shape is one of the

UPGRADE PATHS

Like the Cyrus 7 before it, the Cyrus 8 integrated amp can be upgraded by adding a PSX-R power supply. This essentially acts as a very big battery power source. It can also be used as a preamp with the addition of a separate power amp.

There is also a stripped-down version of the Cyrus 8 called the Cyrus 6 at £600. This 40-watter can be upgraded to Cyrus 8 standard in the factory, but unlike the 8 it cannot be upgraded with a PSX-R. According to Cyrus, the new 6 outperforms the old 7 model, yet costs £100 less.

most identifiable designs in hi-fi. It's tightly packed, even to the point of having the headphone socket on the back panel. It also features bi-wired speaker terminals, but they're BFA samples instead of the handier 4mm sockets. Adapters are supplied, but these are not perfect and there needs to be some squeezing and grunting to heave banana plugs into place.

Cyrus has managed to continue the existing

sound of the

299

Cyrus 7 with all its musicality and dynamic range, but the increased power and headroom has smoothed out a lot of the rougher edges, especially in the treble. Where before it was a fraction steely and hard, especially with raw discs, the new 8 manages to make even the rough-as-a-bear's-backside lo-fi attack of The Datsuns sound large.

This clarity of high-frequency sounds is allied to the sort of dynamic range that sets the amp apart from most integrated designs. This has little bearing on most modern rock/pop discs, but plenty on live jazz and classical music, especially big choral or orchestral pieces. Suddenly, recordings like *Bach's Mass in B Minor* take on the sort of real-world scale that only highend pre/power amps usually produce.

Bass is well-controlled, too. Cyrus amps are noted for being slightly dry in the bass and this model is no exception. Don't expect big fat bottom end from the Cyrus 8 – it is clean, tight, precise and extends deep down, but there is no excess blubber to make the sound seem bassier. Once again, this suits jazz and classical perfectly, and works well with rock too, though it may leave bass-head dance fans a little out

Pioneer NS-DV1000 system



"Cyrus is claiming an evolution in amplifier design – and it may have a point."



in the cold. Mr Scruff's *Sweet Smoke* had a good sense of bass rhythm, but it wasn't as infectiously slammin' as it can be. There is more bass than the Cyrus 7 could muster, though.

What this amp has that was hitherto limited to bigger pre/power combos is a grip on the music. Yes, it has better transparency than previous models, it is more detailed than most integrated amplifiers and it has a wider, deeper soundstage. But it's the authoritative hold on the music that hits home first and foremost. It controls the music like a maestro conductor, bestowing upon the sound a sense of solidity, authority and visceral 'thereness' that makes even the vapid, ethereal Flaming Lips' vocals seem to be standing in front of you.

Cyrus is claiming an evolution in amplifier design – and it may have a point. It's not the first company to effectively put a pre/power combo in the same box, but to do it so well in a box so small makes the Cyrus 8 a little wonder. It's up there with the vert best below £1,000. Cyrus 01480 435577

www.cyrusaudio.com



Hi-Fi Choice is not big on mini and micro systems, especially ones that are firmly in the home cinema camp, but the Pioneer NS-DV1000 is a bit different. Pioneer has taken that universal play-everything mechanism used in its DV-656A and DV-757Ai DVD players to create the first 'style' system to combine DVD-Video, DVD-Audio, SACD and CD playback with amplification and speakers.

The NS-DV1000 is a clever system in its own right. It has a clever 'Organic Electro-Luminescent' screen which makes the display panel look more like a small TV screen than the usual LED or LCD lightshows. Then there is the natty powered front to the pizza-box main unit, which really looks the part. It even has a two-minute set-up system that may not be as accurate as using test-tones, but accounts for room size and listener's position.

The performance of multichannel sound is bigger, cleaner and more extended than the five fist-sized alloy speaker boxes would suggest. Even the bass is good, within limits – the onebox subwoofer/power supply/power amp is no match for a good REL, but

KEY FEATURES

Complete 'universal' AV system, plays DVD-Audio, SACD, DVD-Video, DVD-R, DVD-RW, CD-R, CD-RW, Video CD and MP3

 SACD, DVD-Audio, Dolby Digital, DTS, Dolby Pro-Logic II surround decoding
 Virtual 6.1 surround
 75 watts RMS per channel
 Easy room size and seat position set-up
 AM/FM tuner with 30 presets and RDS
 24-bit/192kHz Audio DACs goes deep enough when it has to. DVD-A and SACD are well catered for, too, even if they lack the insight of good separates. Stereo suffers from 'small speaker syndrome', but this can be improved by a touch of DPL II.

It's no match for a good separates system, of course, but its good looks, decent performance and playanything capability make it a unique proposition currently. As a neat, all-round solution for the bedroom, say, it takes some beating. Pioneer UK 01753 789500

www.pioneer.co.uk





Revolver R33 speaker £499

It's not often you get to review the first product of a company with an established reputation, but the Revolver R33 is different. The Revolver name is not a new one, but the bookshelf R33 is the first product from a new regime – expect a more upmarket R45 floorstander soon. Although this looks like a standard

REVOLVERAMA

Revolver is a name that just keeps coming back. In the late eighties, it was a turntable manufacturer. Times proved tough for record deck makers in the 1990s and Revolver failed to stay the course. However, a few years later, the name resurfaced briefly as a range of budget and mid-fi speakers, all named after famous guns (Colt, Purdey and so on). Now, the name has changed hands again and the R33 is the first speaker from Michael Jewitt, who has designed for Mordaunt-Short and Heybrook. standmount design, the R33 has a couple of unusual features – like the speaker grille cloth used to face the sides and rear of the cabinet, but not the drive units! Quite impressively, the R33 uses custom specified 165mm fibreglass bass/mid drivers. Also, the magnets of the bass driver are supported by an internal cabinet brace.

It's not a difficult speaker to drive, and needs relatively little running in to sound good. After 24 hours or so, the drivers loosen up and are soon fighting fit. Better still, the manual is thorough and tells the owner how to install and fine-tune the positioning for best effect.

The Revolver R33 sound is one that is entirely attractive, if a tad dynamically challenged. It is precise and detailed but doesn't draw attention to its benefits or its failings – it merely sounds neutral and easy to live with. The sound is nicely extended from the high treble (albeit with a slight HF ring) to deep bass (for a standmount design). Standmount loudspeaker
 Rear ported design
 Z6mm aluminium dome tweeter
 165mm woven fibreglass bass driver
 89dB sensitivity

Fight ohm

KEY FEATURES

impedance 20-100 watts suggested amplifier matching Bi-wirable Magnetically shielded Magnet/grey finish only It is a hard speaker to pin down musically, as it never gets in the way of the music. You can play almost anything through the R33 and it will give an honest portrayal of what was on the disc. Fortunately, it is not so well mannered that it hides the passion of music, but it is hardly the most vivacious transducer around either. This makes it ideal for Mr Scruff's breakbeat excursions, but can make it a bit dynamically squashed with the lo-fi rockin' delights of The Datsuns.

Stereo imagery, though, is a major plus point. The speakers present a very wide and deep image with almost any kind of music or movie material. There is a refreshing lack of box to the sound that overcomes many of the dynamic limitations and a great deal of this is due to a very open, lucid and articulate midband – which makes the distinctive voice of Bowie come alive on his new *Heathen* CD.

This is a fine effort from a new/old company, combining solid engineering with an easy-on-the-ear sound. Never raucous, if you want a high-class bookshelf with that detailed yet relaxed sound that traditionally typifies British speaker designs, this is a welcome addition to the line-up. Revolver 0870 047 0047 Www.revolveraudio.co.uk

NAD S500i CD player £1,200 EXCLUSIVE

The first Silver Series (formerly Silverline) CD player from NAD was launched in 1999 shortly after a chunky integrated amp heralded this smartly-cased upmarket range from the kings of the budget sector. Clearly the foray into the lower reaches of the so-called high-end proved profitable because the Silverline range has continued to expand with an ambitious AV processor spearheading the brand's invasion of territory formally considered the preserve of less accessible brands.

The S500i CD player is the first Silver Series component to see some form of revision. Whether this heralds further 'i-type' upgrades in the range or is a one-off response to changes in CD player technology is not clear – we will have to wait and see which way NAD steers the range. The differences between the S500i and its predecessor

"The balanced output not only delivers higher voltage but also produces greater low-level detail."

don't appear very dramatic and mainly concern a new CD-RW compatible transport, and the digital to analogue conversion and filtering stages, the elements of any disc player which are likely to be improved over time. The S500i uses a 24-bit Crystal DAC and combines it with a 384x oversampling filter before handing the signal over to the class A output stage, which drives both RCA phono single-ended outputs and genuine balanced XLR connectors.

The digital output can be extracted via an AES/EBU standard balanced socket or a coaxial BNC socket, which means that the output impedance can adhere to the preferred 75-ohm impedance for electrical digital transmission. The advantage of the AES/EBU (Audio Engineering Society/ **KEY FEATURES** Dimensions (WxHxD):

45x6 7x28 5cm Class A output stage DC coupled CD-R/RW compatible Digital-to-analogue conversion: Crystal 24-bit Delta Sigma Digital filter: 384x oversampling Analogue filter: fifth order Digital output: Coaxial BNC balanced XIR 🗘 NAD Link integration system

Remote control

European Broadcasting Union, in case you were wondering) output is that it is buffered and isolated by a transformer from the converter itself, a technique that should ensure the bane of digital connections – jitter – is minimised.

Listening to this NAD is an engaging and entertaining experience - it can reproduce the energy and vitality of music with some aplomb. What's more it does it without resorting to an aggressive or forward balance, which makes a nice change. Most of the listening was done using the player's regular single-ended outputs but we also gave its balanced outputs a spin as the Bryston BP25 preamp in use had the requisite inputs. The balanced output not only delivers higher voltage but it produces greater low-level detail and a more full-bodied sound that makes the phono-socketed output seem almost lightweight by comparison.

In fact, the standard output is merely slightly dry in the bass. There's good depth and the balance is nimble and agile, producing a full-size sound stage that is positively robust if the music demands it. Eminem's *Marshall Mathers* LP is such a disc and the dynamism and snap that the NAD extracts from it is something to relish.

It's tonally convincing as well. Anouar Brahem's *Thimar* was reproduced with the colour and intonation of the various instruments fully intact. John Surman's middle eastern soprano saxophone inflections sounded particularly in keeping with Brahem's lovely 'woody' oud (a variation on the lute theme).

Keith Jarret's *Paris Concert* is live Steinway writ large, the natural reverb of the hall and the occasional murmur from audience and player reproduced

Compact Disc Player \$500i

clearly but not so as to distract from the lyricism of the playing. You can hear the clangy nature of the instrument without it sounding hard and aggressive.

Timing is a key attribute. It has that classic foot-tapping quality that marks out the engaging from the merely well resolved. Missy Elliott's latest, Under Construction, may not be her best, but a couple of tracks stand out and this machine does an awful lot to let them shine. Low-level detail is likewise very good, with the reverb resolution on EST's Dodge The Dodo (on From Gagarin's Point Of View) positively striking, the power and energy of the band backed up by solid bass and strong imaging. The balanced output gives you more of the same coupled with a weightier bottom end that once heard will have you saving up the pennies for an amp with suitable inputs.

This is a capable and entertaining player, with beautiful bodywork and the full gamut of output options. The remote could be nicer, but it has all that's needed and helps keep the price down. And value for money is, as ever with NAD, extremely strong. 2 Lenbrook UK 01908 319360 # www.lenbrook.co.uk

BALANCING ACT

Balanced connections, so-called because they transmit an inverted version of the signal alongside the regular one and ignore the differences between the two, are increasingly common in expensive components. This is because they can be used to transmit signals over relatively long cable runs without interference. They don't have any intrinsic sonic advantage but are used as a standard in professional applications for their ability to deliver relatively clean signal through robust XLR plugs, which lock into their matching sockets and thus are not easily dislodged.

january 2003 www.hifichoice.co.uk HI-FI CHOICE 17

PAUSE T04 01m17s

New Gear

ATC SCM12 speaker £999

From its humble Gloucestershire base, ATC's (Acoustic Transducer Company's) monitors regularly travel the globe, collecting air miles and finding new homes in professional studio environments worldwide.

The company's success in the pro world also proves beneficial to domestic users, as tried and tested technologies and engineering practices are passed down to smaller, more lounge-friendly designs. A speaker that appeases the studio engineer's highly critical ear is likely to fare none too badly with the audiophile. The challenge however is to tailor the box to a home environment that is far from

THAT DRIVER

The jewel in this two-way speaker's crown is undoubtedly the hand-built cone/dome bass/mid driver that is shoehorned into its weighty cabinet. This proprietary unit uses a 75mm soft dome midrange transducer, mechanically coupled to a 150mm bass cone coated with a viscous damping material that makes it slightly tacky to the touch. The oversized magnet behind the cone is claimed to achieve absolute linearity and low distortion, plus ATC's own voice coil is employed to provide high dynamics and power handling. Claims of 'flat response 80-degree horizontal dispersion' mean stereo imaging for the majority not just those in the 'sweet spot'.

the engineered confines of the studio. This is made easier because all ATC's drive units are designed and built in-house, giving the brand complete control over manufacturing, an advantage that offers great consistency and flexibility within its range. One of the brand's most recent offerings is the SCM12, so-called because of its cabinet's 12-litre capacity. It's designed to meet the challenge of both professional and home environments, being both visually appealing and boasting a strong measured performance - a necessity for any professional work. Touted for the home as well as near-field monitoring in the studio, the Studio Control Monitor 12 (to give it its full moniker) is just one step up from the smallest model, the compact standmount SCM7, vet it flaunts the same soft dome midrange transducer as found in the heavyweight active SCM20 pro monitor, mechanically coupled to the bass cone. Not that the SCM12 is in any way a lightweight speaker - weighing in at 15kg, the speaker's medite enclosure houses a main driver with serious power handling properties. The suggested amplifier range is 50-300 watts perfect for ATC's own amps or the tinnitus-inflicted rock band mastering its latest album in the control room.

The tweeter of choice is a soft dome with a 25mm magnet that works harmoniously with the latest version of

KEY FEATURES 25mm soft dome tweeter Hand built 150mm polyester cone/dome bass/mid driver Available in cherry or studio black

 Bi-wirable
 Two-way sealed box enclosure
 85dB sensitivity

Dimensions (WxHxD): 22x39x25cm ATC's hand-built 150mm bass/mid driver (see box). This driver is squeezed into a pretty cherry-veneered enclosure, with a usefully small driver/baffle ratio – the visually plain black baffle is recessed slightly into the cabinet, leaving 5mm or so for a snug grille fit. Cosmetically, the SCM12 is not catwalk material, though the drivers do command your attention and respect – cover them for domestic harmony if you have to with the sturdy grilles supplied.

Hooking a pair of SCM12s onto the end of ATC's SIA2-150M integrated amplifier, among others, makes it instantly apparent that this box is exceptionally good. The balance is on



Rotel RA-01 stereo amp £250

Instant good amplifier recipe number one: take a popular product, strip it down, keeping the important bits and then drop the price by nearly 30 per cent. That's precisely what Rotel has done with the new RA-01. It removed the silver finish, remote control and 12-volt triggers of the £350 RA-02 (a Product Of The Year in last month's Awards issue) and in the process shaved £100 off the price tag. Everything else about the £250 RA-01 remains unchanged. This casts Rotel in a good light from both sides – it makes

KEY FEATURES 40 watts per channel integrated stereo amplifier Four line-level inputs, one MM phono input Tape monitor circuit A and B speaker terminals

Defeatable tone controls a good amp more affordable and shows just how much care the company puts into making the remote control circuit.

All the statements made about the RA-02 could be cloned here, unsurprisingly. It is extremely articulate, with a generous soundstage. The bass may not be cavernous and reach down to the lowest organ notes, but what's there is honest and chocolatey-warm. Best of all, though, is the liquid midrange and glare-free treble. It will not tame too-bright recordings – a live TV feed of *Celebrity Big Brother* was as sibilant as ever – but even on the brashest sounds, it allows the detail to get through.

At this price, all-rounders are rare – you will be hard-pushed to find an amplifier that can cope with *Bach Partitas* on a piano back to back with The Flaming Lips' *Yoshimi Battles The Pink Robots.* It was a bargain when it came with a remote control and cost £350 – this is the same amp with a built-in exercise regime. Buy it! **2** B&W 01903 221500 # www.rotel.com



the vigorous side of neutral and skillfully brings music to life in spectacular fashion. Most notable is the speed and accuracy of the midband and low coloration in the bass. This is a sealed box design giving a very clean and fast low end, and while it might not plumb the depths of some ported competitors, it's arguably more accurate and doesn't rely so much on position to achieve an even bass performance.

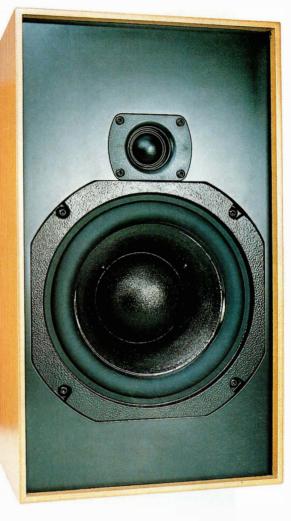
Low frequencies are well defined, solid and boom-free, a refreshing characteristic for anyone who suffers from room-induced resonance, while its rhythmic finesse makes for an extremely musical and engaging box. On test, Jeff Buckley's dynamic The Sky Is A Landfill was delivered with a solid 3D image, and when the band accelerated into frenzy the SCM12 kept its cool while flaunting its abilities. The wide dispersion tweeter means minimal toein is required for accurate imaging, but a little inward tweaking is rewarded with tight, focused vocals pinpointed within a wide soundstage.

The sealed box design makes the SCM12 less sensitive to rear wall positioning – give it a bit of space and the music opens up a treat. Standing at 39cm tall, the boxes are more suited to shorter stands, bringing tweeters closer to ear height – ATC offers a matching Atacama-made stand.

The tweeter almost seems to mimic good metal dome units on occasion,

resolving lots of information, albeit in a more fluid way than can be the case with metal dome designs. Its accuracy combined with the talents of the main driver offer deep insight into any recording, unsettling relationships built with favourite albums by exposing the mastering flaws and revealing hidden depths that some speakers gloss over through coloration.

Like most of ATC's loudspeakers, the SCM12 gives it to you straight, so if you



"The bass may not be cavernous and reach down to the lowest organ notes, but what's there is honest and chocolatey-warm."



Alphason Designs SS20 £35

With its slender vertical pillar, cranked and adjustable via a collet lock too, this stand is perhaps not aimed at the hair-shirt hi-fi purist – indeed it's sold as a 'surround speaker stand'. All the same, it has a well made and quite solid base plate and offers options in the form of moulded plastic adapters to attach various speaker models and configurations. Unless you want to add glue or some such assistance the collet lock is barely up to supporting much weight, but otherwise it's all quite neat and practical.

Expectations might not be the highest, but the sound is actually pretty reasonable. There's some 'quacky' quality in the midrange, very likely due to resonance in the pillar, and it's not really in the front rank for detail and imaging, but bass is surprisingly good, quite deep and informative, with good attack and drive. It's not brilliant, but given the price and marketing angle this stand offers decent value. Alphason 01942 885600 # www.alphasondesigns.co.uk

Apollo AZ6 £95

If you're really lazy about home assembly this is a good stand for you – the top and bottom plates are welded to the pillar, and the latter is even pre-filled with sand, so all you have to do is screw on the spikes (four per base). Construction is robust and the top is pre-tapped for spikes, although soft rubber feet are supplied too.

ROUND-UP SPEAKER STANDS

Don't waste your standmounts on the bookshelf - do the job right with one of these

The sound of each the speakers tried on this stand had pretty good bass, but somehow it lacked a little something when it came to impact and precision. A shame, because further up the scale there was consistent neutrality and some of the best detail in the group, not too far behind the reference – better with rubber feet than with spikes though. Stereo imaging was good too, with depth again as good as you're likely to find via a modestly-priced stand. Perhaps ultra-tight speakers would not mind the bass softness? Try it, with care.

☑ Apollo 0121 520 5070⊕ www.apollohifi.co.uk

Atacama SE6 £100 (silver)

This smart and substantial stand is part of the 'New SE' range, an updated version of the long-running 'Original SE'. The '6' refers to the 60cm height. The pillar is fabricated from sheet steel and as such is very resonant unless filled with something dead – Atacama recommends sand as the cheap option, or its own 'Atabites', steel chips (£20 per stand extra) as ideal. The latter were used for review. A concealed heavy-gauge bass plate carries four spikes.

If you have preconceptions about heavy stands giving good bass, this one won't change them. Actually there were times when bass seemed a bit too heavy and not quite agile enough, but with the smallest speakers used this was a positive advantage. Treble and midrange are clean and overall it gives positive assistance to good small speakers, though it ranks marginally behind the classleading Partington ANSA 60 and Kudos S50. Atacama 01455 283251 # www.atacama-audio.co.uk

Custom Design R/S200 £85 (aluminium)

The essence of simplicity, this stand consists of a round pillar to which top and bottom plates attach via a single screw each. The base spikes provided feature a nice aesthetic touch in the domed nuts that cap them, but the top plate is plain and undrilled. Materials used are medium gauge rather than heavy, but the top plate is actually Custom Design's 'acoustic steel' – a very dead form of construction which is made from two plates glued together.

Despite that, the pillar is really rather resonant and most likely as a result of that the sound is quite distinctly coloured. With each of the speaker types tried, there was some low-midrange boost in evidence coupled with a distinct loss of midrange detail, and bass seemed rather thumpy too. Removing the spikes and using the carpet to damp the base plate slightly alleviated this, but only slightly. Better to spend an extra tenner or so... Custom Design 0191 262 4646 www.customdesign.co.uk

IF Designs Colosseum £134

IF's speaker stands are modular, sharing top and base plates but differing in pillar design. The Colosseum features a large diameter steel column, finished here in a rather nice 'cloud' effect (check the website for other options – plain is a little cheaper). It's supplied with top and bottom attached, but they can be removed for filling with sand or other material. Do it – that pillar is resonant! Top and base spikes are supplied, and there's a spirit level in the top too, which stands slightly proud of the plate.

Unfilled, this stand has little effect on a good speaker's bass but does cloud the midrange a little. Filled, it is considerably less detrimental to midrange, though in turn the bass slightly thickens up and loses some kick. Either way, treble is clean and detail pretty good, and the imaging, if not ultra-precise is at least stable. A qualified recommendation, considering the fine looks. If Designs 0870 744 1382 www.ifdesigns.co.uk

IF Designs Tenchi Classic £145

Named apparently after a Japanese emperor, this stand is unusual in having a solid wooden pillar, flanked by steel rods which take the tension between top and base, in turn putting the wood in compression. It's an attractive design and mechanically sensible too, strong and not particularly resonant, at least in the midband. Price varies from £145 to £180 depending on the finish.

Is

The treble and midrange here are generally very nice, clear and crisp with good imaging and detail. Bass however has a distinct drawback in terms of a disconcerting liking for one note – the precise frequency depending on the speaker in use. Speakers with relatively little bass output work well, and larger, heavier models are not too affected, but don't put this stand under a lightweight but bassy speaker! However, if partnered with the right speaker this is a fine-sounding, as well as smart looking, stand worthy of serious consideration. IF Designs 0870 744 1382 # www.ifdesigns.co.uk



THE COMPONENTS



Musical Fidelity A308^{CR} CD player £2,000 A phoenix from the Nu-Vista

A phoenix from the Nu-Vista ashes, this CD player pays more attention to power supply than most power amps. Eschewing balanced operation and other luxuries, the musical and detailed MF has it where it counts – in sound quality.



Chord Integra CPM2600 stereo amplifier £3,500 (+ Integra barrels £600) Basically, two top Chord products in one box, this highend balanced and single-ended integrated amp is a one-chassis pre/power design that delivers a huge amount of juice due to its switch-mode power supply.



Infinity Prelude MTS loudspeakers £8,000

A very smart speaker/active sub combo, with proprietary drive units, clever set-up and optimisation concepts to bring a full-range sound into almost any room. Extremely accurate sound, but beware – these speakers need top-notch amplification.

System Test



CONTACT

This system was recommended and supplied for review by: Phase 3 Hi-Fi, 215 Tarring Road, Worthing, West Sussex. BN11 4HW. ☎ 01903 245577 ⊕ www.phase3hifi.com

MUSICAL FIDELITY CD PLAYER CHORD ELECTRONICS AMP INFINITY SPEAKERS £14,100

SYSTEM ADDICT

For studio-like insight into your CD collection, check out this adaptable set-up

o Quarter isn't just a song by Led Zep. It applies perfectly to this system. No quarter, no compromise, no frills... and no change from 14 big ones.

The most obvious budget buster is the £8,000 Infinity Prelude MTS speakers. MTS's main unit uses an array of custom CMMD (Ceramic Metal Matrix Diaphragm) drive units: four 140mm bass units, a single 90mm midrange unit and a 25mm tweeter all housed in a svelte alloy tower. Subwoofer boxes double as stands for the towers, with side-firing 300mm CMMD bass units and 850-watt amplifiers claimed to reach down to 30Hz or deeper.

One of the smartest parts of the system is its RABOS (Room-Adaptive Bass Optimisation System). Armed with a special CD, pen, paper, measuring thingy and a few hours, you have the power to fine-tune the low end to drastically reduce most of the bass anomalies that can beset most rooms.

By contrast, the CD and amplifier are almost conventional. The Chord CPM2600 is a pre/power amplifier (a Chord CPA600 pre and SPM600 power amp) in one box, albeit with a few tweaks included. The balanced and single-ended, line-only amp will deliver a hefty 170 watts into the four-ohm load of the Infinity speakers. It also comes with those distinctive Integra bars along the side panels. These are intended to lower resonance and allow the Chord kit to stack (at least in theory) and adds a healthy £600 to the basic £3,500 price of the CPM2600. Like all the models in the Chord range, this amplifier sports high-speed switch-mode power supplies.

Power supplies are a big issue for the £2,000 Musical Fidelity A308^{CR} CD player. This 24-bit Delta Sigma, 96kHz upsampling one-box player may not have balanced outputs or digital audio inputs, but instead sports huge over-specified choke-regulated power supplies that wouldn't look out of place in a power amp. The PSU has individually regulated feeds for every stage of the CD player. And, despite featuring a humble CD

transport and display, they are both buried within some of the chunkiest looks in CD players this side of Wadia. Like all good high-end equipment, this is very hard to pin down sonically. The adaptability of the speakers, though, makes this system even more of a moving target. Most full-range speakers

will ultimately be influenced by their surroundings, but RABOS minimises that influence to a significant degree. It's fundamentally neutral and offers an open window on the recording studio, allowing you to look back into the sound of the music as it came from the mixing desk. This is a system that maxes out on ultra-fine detail, soundstaging and information retrieval. *Bach's Mass in B Minor* in particular sounds wonderful – the listening room boundaries fall away and you are transported to the nearest cathedral, with voices rising up to the rafters beautifully. Dynamically, this is no sluggard either – even the slightest changes are registered and can dig out the dynamic swings on even the most compressed Dr Dre-style recordings.

There is a small deviation from absolute accuracy, which is probably attributable to all three products in combination. It's a lift in the upper treble which, while not big enough to make the system steely or bright, does make high frequencies a bit more insistent and forward. It suits raucous, raw recordings like The Datsuns though, making them seem a bit more fresh and in-yer-face.

The downsides are mild. This is a system that offers high-end insight and information. Better still, it brings true full-range sound to any listening room without sacrifice. And, in a country where living space is becoming so expensive, that makes a lot of sense.



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NEW MUSIC FORMATS



CONCERTOS FOR DOUBLE BASS Thorvald Fredin and the Oskarshamn Ensemble, conducted by Jan-Olav Wedin SACD (multichannel/stereo; CD/SACD hybrid) Opus 3 CD8522

Music: The double bass has a tiny repertoire, which is more than a pity as this excellent disc shows. The instrument has real charm and

warmth, and scarcely deserves its reputation for unwieldiness. The works on this disc are of variable quality: the two by Giovanni Bottesini being the most rhythmically and structurally interesting, though the musical language is easy and light, a zillion miles from the complexities and density of the Schoenberg, for example, which is also reviewed this month. The disc is only spoiled by some erratic intonation by the soloist.

Sound: Using Opus 3's favoured 4.0 format (ie, no centre, no LFE), the recording is warm, graceful and enveloping, and avoids using the extra channels for gimmicky spatial effects.



LINKIN PARK Reanimation

DVD-Audio (Advanced Resolution Surround/Dolby Digital) Warner Brothers

Music: Why make a whole new album when you can get a bunch of guys to remix your million-selling debut. This seems to be the thinking behind Linkin Park's latest album – it gathers the

talents of contemporary rockers Jonathan Davis from Korn, Aaron Lewis of Staind, producer Mike Shinoda, and rapper Motion Man among others to add variety to the originals. The result is inconsistent but effective, with some moments of serenity in between the heavy chops. The style is thick, grungy and occasionally reminiscent of old(ish) school rockers Faith No More. It's heavy metal for the gaming generation – if you're in any doubt, just check the sci-fi style of the impressive *PTS.OF.ATHRTY* video.

Sound: Thick, grungy, compressed and heavy. It's difficult to distinguish between the Dolby Digital track and the DVD-Audio Advanced Resolution Surround, but the steering is cinematic and the effect full-on.

CINEMA SELECTION

Because these days hi-fi doesn't just mean music



STAR WARS EPISODE II: ATTACK OF THE CLONES

Film: It was going to take a pretty hefty dose of the Force to banish the memories of the execrable *Phantom Menace* and restore the faith of anyone older than 12 in the *Star Wars* series. *Episode Two*, sadly, isn't quite strong enough. It's undeniably better, with more stunning set-pieces and less Jar Jar bloody Binks than the first instalment, but George Lucas still

seems unable to resist opting for spectacle over substance. Minor issues like convincing dialogue and decent acting are blithely cast aside in favour of ever more imaginative (and toy-tastic) vehicles and tedious plot-weaving to make way for *Episode III*.

Sound and Vision: Attack Of The Clones is a jaw-dropping technological achievement and anything less than perfection on DVD would have been an insult to Industrial Light and Magic. Fortunately, this disc delivers in spades. The picture is superb and the Dolby Digital EX sound is among the best ever committed to DVD. A technical purist's dream.

CD/ VINYL



SCHOENBERG: VERKLÄRTE NACHT OP 4, PELLEAS UND MELISANDE OP 5

Yoel Levi (cond), Atlanta Symphony Telarc CD-80372

Music: This is the young Schoenberg, before he set out on the twelve tone phase for which he is renowned - or reviled. Both works are firmly tonal. and can be broadly described as romantic, albeit closer to the worlds of Brahms and Wagner than Berlioz or Beethoven. But the music stretches the bounds of tonality almost to breaking point. Verklärte Nacht is Schoenberg's first important and popular work. Pelleas Und Melisande is darker, more decadent and searingly episodic, as well as being lavishly scored, and a draining experience. Sound: Inevitably under the shadow of classic readings from Karajan and Boulez, this is a gripping performance with very good access to the layered depths of the recording.



NICK CAVE & THE BAD SEEDS Nocturama Mute

Music: After over 20 years tunnelling into the shadowy recesses of the human heart, Nick Cave genuinely looks like the world-weary dark sage that his persona has always craved. Not that he's slowing down. His latest (his twelfth with the Bad Seeds) sees a return to the immediacy of some of his earlier works, marrying the piano-led songcraft he's developed over the blood and tearstained years with the rawness of his Birthday Party days, especially on the roaring 15-minute epic Babe, I'm On Fire. Sound: Producer Nick Launey last worked with Cave on 1981's Release The Bats, but this is no nihilistic punk fest, with clear balance, arching dynamics and oodles of mood. DO



MISSY ELLIOTT Under Construction

Music: Elliott and partner Timbaland's fourth excursion into the borderlines between hip-hop. R'n'B and soul is less sophisticated than Miss E... and a whole lot lighter than Da Real World, regarded by many as her best work. There are top-notch MCs but Elliott's tones dominate the disc to great effect. Unfortunately the music seems to have been restricted to beats alone the great segues and effects of past Timbaland tracks have been left off. Fine moments include Gossip Folks with Ludacris and the single Work It. but generally this is way mainstream and lacking in the visceral bite she's capable of.

Sound: Crisp, clear and punchy with some low, low bass beats, this is a slick production with no expense spared to get maximum shape and colour out of the mix.



FRAGILE STATE The Facts And The Dreams Bar De Lune

Music: Sometime Zero 7 keyboard tickler Neil Cowley and music journo Ben Mynott once had the not terribly original idea of creating a soundtrack album for a lifestyle, that would work equally well for building up to a night out or coming down from one. Sure enough, this spiffing blend of chilled beats, jazzy Rhodes-style keyboards, orchestral swathes and echoing vocals works equally well as sonic wallpaper for exquisitely decorated loft apartments or as delicate aural balm for a bruised soul.

Sound: The mix is tightly focused and contained, but with plenty of room for delicate effects and nuances, shuffling along nicely when quiet, luxuriously enveloping your brain when loud.

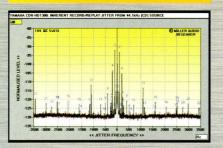


Yamaha CDR-HD1300 HDD/ CD audio recorder 2000

This highly capable low-cost disc editor has plenty to offer the home recording enthusiast

As the cost of high-capacity computer hard drives (HDD) continues to fall, their use in affordable sound-server systems makes better economic sense. Yamaha already has plenty of experience in the PC market with its high-end CDR/RW writers, so the combination of a generous HDD and flexible CD burner in one package was almost inevitable. And at just £600, the CDR-HD1300 with its convenient editing features, 130-disc storage capacity, swift 10x ripping and up to 8x record speed

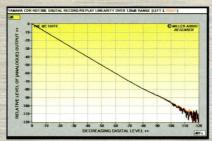
AUDIO TEST: JITTER



Jitter, highlighted here by pairs of blue markers, is quite high at 1,400psec but is endemic to the digital replay chain rather than the recordings themselves. Some added warmth is to be expected. (4x with CD-RW) should also serve any budding recording engineer on a budget.

The CDR-HD1300 was originally destined for shipment without its HDD, leaving the enthusiast to source and install a compatible IDE drive with a capacity between 20 and 137Gb. Realising this was a commercial non-starter, Yamaha UK has undertaken to equip each CDR-HD1300 with a pre-formatted 80Gb drive before it's delivered to the dealer. As a complete package, the CDR-HD1300 has wide

AUDIO TEST: RECORD/ REPLAY



This trace depicts the linearity of the record/replay chain over a 120dB range. Note how very subtle detail below -80dBFs is slightly boosted in level. appeal. The HDD can store 120 hours of uncompressed CD-standard music while the CD burner permits high-speed duplication of fully customised discs. Yamaha even provides free title-editing software that can add CD Text to tracks stored on the HDD and later burned onto CD-R or RW.

KEY FEATURES

Any variety of tracks from different CDs may be ripped and reorganised on the HDD according to the Copy Method (digital or analogue), Copy Level and Copy Speed (typically set to 'best effort') specified in the set-up menu. This menu, incidentally, is accessible in step-by-step fashion from the

AUDIO TEST: DISTORTION



Distortion always increases with decreasing signal level in digital systems, but this trace shows a *further* boost in distortion at -60dBFs and below. Is this partly responsible for the 1300's added colour?

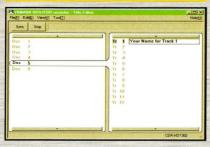
In-Depth



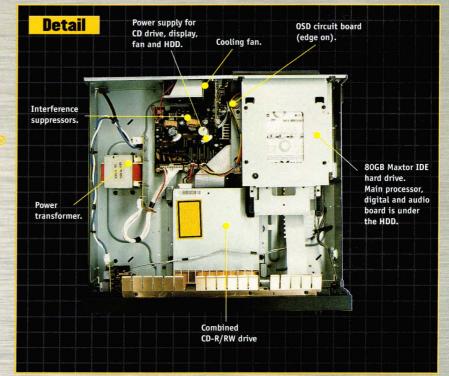
player's main display and also via an elementary text-based OSD. Whatever the route, data recorded on the HDD is still organised in a familiar way with up to 99 individual tracks being associated with a 'virtual disc'. Each of these 'discs' can be up to 100 minutes long while groups of tracks from different discs are classified as an 'album', rather like Philips' old FTS (Favourite Track Selection) scheme.

Individual tracks may be temporarily bookmarked for copying or editing, with a host of features including fade, divide, merge and even the ability to adjust the track *interval* being made available. Depending on the source CD, it's also possible to edit existing CD Text data before recompiling your own disc. The editing software is basic, but it's more than adequate for the task.





This basic PC program communicates with the CDR-HD1300 via a serial port, retrieving title names which may be edited and then uploaded back to the HDD. "The CDR-HD1300 has wide appeal – the HDD can store 120 hours of uncompressed CD-standard music while the CD burner permits high-speed duplication of fully customised discs."



In-Depth Yamaha CDR-HD1300 HDD/CD audio recorder

From its list of features, the CDR-HD1300 looks like a dream duplicator for the wouldbe CD pirate. But in fact, this machine adheres very strictly to the industry's SCMS (Serial Copy Management System) which blocks anything beyond a first-generation copy. This is how it works in practice. An SCMS-encrypted CD may be ripped at speed onto the HDD but may only be copied back onto a CD-R or RW in analogue mode (digital-to-analogue followed by analogue-to-digital). A digital clone is only permitted if the digital HDD recording is moved from the HDD to the target CD-R or RW. Legally, this is the same first-generation copy, albeit moved from one media to another. Thus, while it remains impossible for Del Boy to run off multiple, high-speed digital copies on cheap CD-R discs, legitimate users face having to re-record those tracks or discs 'moved' off the HDD. Copy-protection then, but at the price of added inconvenience.

By way of recompense, perhaps, is Yamaha's inventive AMQR or 'Audio Master Quality Recording'. As an alternative to the other digital copying modes, AMQR spins the target CD-R disc up to the maximum speed allowed by the Red Book spec (equivalent to 1.4m/sec). This ensures the various pit and land structures that represent the digital data on the disc are created as long as possible. Upon replay, these larger pit structures are claimed to assist the accurate recovery of data and, ostensibly, optimise its final sound quality. I would expect a difference, certainly, but not necessarily an improvement (see Digitalia, p75). Higher speed also reduces playing time, so expect maximum times of around 63 minutes with '74-minute' CD-Rs and 68 minutes with '80-minute' discs.

PERFORMANCE

Jitter is the bane of any digital copying device, so we were a little disappointed with the 1,400psec achieved with both direct 44.1 kHz and downsampled 48kHz digital data. However, a top speed (10x) duplication from CD to HDD yields a similar level of jitter upon replay. This, plus the fact that digital copies made at 'best effort' speed back from the HDD to CD-RW also suffer no increase in jitter, suggests it's Yamaha's digital replay chain and not the copy process itself that's the limiting factor. Jitter levels of recorded data on the disc itself are appreciably lower, promising better sound quality when replayed on third party CD or DVD players.

While the CDR-HD1300 has a laid-back



"It looks like a dream duplicator for the would-be CD pirate, but in fact, this machine adheres very strictly to the industry's Serial Copy Management System."

sound all its own, the quality of its digital copies also depends upon the route taken. Recording onto the HDD via an external CD transport (at 1x, obviously) and then from HDD to CD-R using the AMQR facility gives the best results. By contrast, copying at 10x speed from the internal CD drive to its HDD before moving the same data onto CD-RW at 2x is arguably the least satisfactory.

Auditioned via its HDD, the CDR-HD1300 is not especially light on its feet, but neither does it suffer a brightness that might send you spinning from the room. There's an added warmth and perhaps a little stodginess to the low end, that grounds the quickest of bass notes and probably relates to the supply-induced jitter. Either way, the piano from Ryan Adam's *Sylvia Plath* is imbued with an artificial resonance just as the bass guitar and Hammond from *Nobody Girl* sound a little heavier and leaden than they should.

Of course, while recognising this extra colour, I am bound to say the performance as a whole is easy enough on the ear, for I'd rather wallow in richness than endure a rough mid or high treble. The steel string guitar that punctuates Cassandra Wilson's *You Don't Know What Love Is* enjoyed the thrill of the original while her voice hung between the speakers to great effect, the breathy articulation helping to maintain a decent sense of atmosphere. Simple, well recorded material like this can benefit from a warmer, fuller and deeper bass in some systems as this often manifests in a grander sense of scale and acoustic space.

We were less convinced by more complex orchestral recordings, including Mozart's Sinfonia Concertante which, despite the typically spirited efforts of Boris Belkin's solo violin, tended to sound a tad subdued, or at least dynamically restrained, as the weight of the orchestra was commanded. Of course, once duplicated CD-Rs are finalised they may be played on most standard CD or DVD players where something closer to the original recording is realised. CD-R copies typically offer a more brilliant and transparent rendition of the original while those transferred to CD-RW were often less impressive in this trial, losing some of the music's spontaneity and freshness en route.

At the risk of antagonising the 'bits are bits' brigade, your choice of media also influences the 'colour' of the copy with the likes of TDK XG and CD Reference discs providing a smoother, warmer and unmistakably rounder sound than those afforded by various FujiFilm or HiSpace CD-Rs, for example. You might try the budget Traxadata TX Audio media, an ideal choice for the CDR-HD1300 particularly as it's available in 80-minute versions that will stretch the running time with AMQR.

VERDICT

Yamaha's CDR-HD1300 is hard to beat as a flexible, low-cost disc editor and sound server that never runs dry of music. Unless, of course, you regularly listen to 120 hours of music on the trot... Yamaha UK 01923 233166 www.yamaha.co.uk

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REVIEWS - Paul Messenger



Lots of variety in sonics and aesthetics from the latest batch of floorstanders

his interesting group test covers a wide range of sizes, prices and types, from the cute little £750 two-and-a-half-way Dali Royal Tower up to the tall three-and-a-half-way Polk at twice the price. Three are British, at least in design terms (manufacturing has long since gone global), one is Danish, and two American, though Infinity has research and development facilities in both France and California.

All are floorstanders on this occasion, neatly contrasting with the group of similarly priced luxury standmounts reviewed recently in HFC 233. Whereas standmounts are almost invariably two-way designs, these floorstanders – for good or ill – offer much greater opportunity for variations in configuration and complexity.

One might argue that all floorstanders are unavoidably burdened by an excessive amount of cabinetwork in relation to driver area – an observation that carries at least a ring of truth, for some models at least. However, there's no flying in the face of a fashion trend which has been running in favour of compact floorstanders for the past several years, partly because they appear, at least superficially, to offer superior value for money, but also because customers like their all-of-a-piece cosmetic appearance.

Variety is very much the word

EQUIPMENT USED

Naim CDS II CD player Rega Jupiter CD player Linn Linn LP12 turntable Rega RB1000 tonearm Linn Arkiv B, Dynavector XV-1 cartridges Magnum Dynalab MD 102 tuner Naim NAC52 preamp Naim NAP500 power amp Naim NACA5 speaker cables

MUSIC USED

Lambchop Nixon Lowell George Thanks I'll Eat It Here Alison Krauss + Union Station New Favorite Christy Moore Live At The Point Nitin Sawhney Beyond Skin Cambridge Singers/Rutter There Is Sweet Music LSO Live Shostakovich Symphony No 11 Nickel Creek Nickel Creek BBC Radios 3 & 4 were also used extensively here, the group as a whole tending to emphasise what large variations exist among floorstanders. Our six actually break down into two two-ways from Epos and Castle, the latter with twin main drivers. d'Appolito-style; two two-and-ahalf-ways, from Dali and Monitor Audio, the latter with twin bass-only drivers; and two three-ways from US brands Infinity and Polk, the latter technically a 'three-and-a-half-way' in the way its twin midrange drivers are organised. Each of these configurations has its own pluses and minuses, and this is invariably reflected in the sound quality.

One interesting observation concerns the sizes of the main drivers here. Traditionally these come in specific sizes, usually starting with a small 130mm frame size, moving up to the most popular 165mm units and then to the (increasingly rare) 200mm drivers. Designers find it difficult to choose between the 130mm's better upper midband, or the 165mm's superior bass and dynamics, which may be why some of our subjects have opted for an in-between size with 150mm frames.

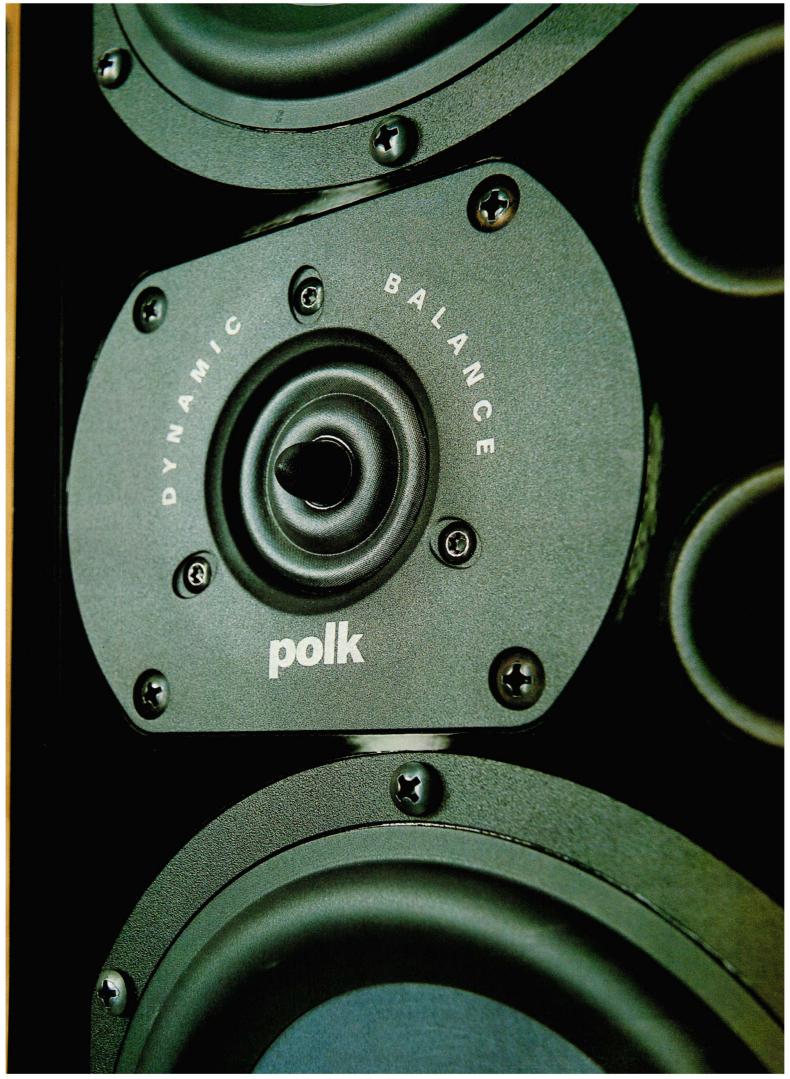


CASTLE CONWAY 3 £930

DALI ROYAL TOWER

EPOS M15 £799

INFINITY KAPPA 600 £1,300 MONITOR AUDIO SILVER S8 £800 POLK LSI15 £1,500



£930 a 01756 795333 (*) www.castleacoustics.co.uk **CASTLE CONWAY 3**

Beautiful to look at, and to listen to, with superb tonal balance across the range

C astle is known for producing some of the prettiest (and most competitively priced) real wood veneer speakers around. Such is the case with this new Conway 3, a relatively conventional port-loaded two-way.

It does in fact use two bass/mid drivers, mounted above and below the tweeter in a d'Appolito configuration. The port is concealed within the base, and because its output comes through a fairly narrow (and adjustable) slot between enclosure and plinth, a measure of adjustable resistive damping is automatically applied.

Build feels very solid, each speaker weighing a hefty 21kg. Our samples came in a tasty rich VERDICT SOUND SOUND SALE AND EASE OF DRIVE SALE AND BUILD SALE AND VALUE SALE AND

A great speaker at a sensible price, with lovely real wood finish and a beautifully balanced sound. Music has fine dynamic and transient expression, but the extreme top could have more 'air'. CHECKLIST

FLOORSTANDER / CLOSE TO WALL / WIDTH 22cm HEIGHT 91cm DEPTH 27cm BI-WIRABLE /



red mahogany veneer, though seven alternatives are available at the 'standard' price, with luxury options like yew and rosewood at a modest premium. The fiddly-to-fit plinth extends the stability footprint, but the 6mm spike sockets are weakly secured.

The twin main drivers are an in-between size, with 150mm cast alloy frames and 115mm woven carbon-fibre matrix cones. The tweeter here has a 28mm soft fabric dome, and is mounted offset from the enclosure centre line in a bid to 'spread' the baffle-edge diffraction effects; the two speakers of a pair are mirror-imaged to preserve symmetry.

First reactions of course only represent part of the picture one builds up when auditioning a loudspeaker, but they're an important part nonetheless, and in the case of the Conway 3 they



The Conway 3 uses two bass/mid drivers above and below the tweeter in d'Appolito configuration. Port output comes through a narrow (adjustable) slot between enclosure and plinth. The twin main drivers have 150mm cast alloy frames and 115mm woven carbon fibre matrix cones. The offset tweeter has a 28mm soft fabric dome. were very positive indeed.

The overall tonal balance is about as good as it gets, slightly laid back and avoiding mid-forwardness, while demonstrating a beautifully judged treble end. The only criticisms are mild, and concern a slight lack of output at both frequency extremes. The deep bass might have a touch more weight perhaps, and the extreme top end does lack just a little sparkle and 'air' too, though these limitations do seem rather trivial in the overall context of a very fine loudspeaker.

The simplicity of a two-way comes through strongly in the fine focus and coherence here, the explosive banjo-picking transients on *Nickel Creek* sounding very convincing indeed. The solid enclosure probably contributes towards a notably wide dynamic range, and dynamics themselves come through with considerable verve and enthusiasm, ensuring fine expression of musical intent.

One might perhaps criticise the speaker for some lack of image height – the tweeters here are positioned somewhat below seated ear height – but in other respects the stereo soundstages are very well formed, with good depth and perspectives. Above all, this speaker sucks you into the music, in such a way as to ensure your system will enjoy plenty of use.

MEASUREMENTS

The well damped port is tuned to a highish 50Hz, so it's no surprise to find the bass rolling off quite rapidly below 40Hz. Despite the modest ultimate bass extension, in nearly every other respect our far-field, in-room measurements gave excellent results.

Although there's some unevenness below 150Hz, the balance looks quite smooth and very well ordered above that frequency, and indeed is held within +/-4dB limits all the way up to 12kHz.

Arguably even more impressive, the sensitivity is a very generous 90dB, in the context of an easy load that stays very comfortably above six ohms throughout.

£750 ☎ 01482 212213 @ www.dali.dk

Very compact floorstander puts the emphasis on dynamics

ali's initials stand for Danish Audiophile Loudspeaker Industries, or some such, which explains where the company is coming from, and at whom its products are aimed.

The considerable success, in the late 1990s, of a luxury miniature called the Royal Menuet led Dali to launch its own Royal Family, a small group of models notable as much for their cute compactness and classy finish as any other attributes. The very compact Royal Tower is actually the largest of the Royals, and the only floorstander, standing just 85cms off the deck, and presenting a very slim front profile to the world.

Our samples featured very attractive real wood surfaces in cherry, with a highly polished 'furniture' standard of finish, though high gloss black, white or blue colours are also available. A couple of substantial steel bars are supplied to fit into the base, providing a secure spike location with an extended, stable footprint.

The configuration is a two-and-ahalf-way, using two small main drivers, each with a 130mm cast alloy frame and 95mm doped paper cone. Both these units operate together through the bass region, the lower one rolling off above 800Hz while the upper one continues up to meet the 19mm

MEASUREMENTS

The port is tuned to a lowish 38Hz, giving decent bass extension, down to below 30Hz in-room – a surprising result for such a compact loudspeaker.

Sensitivity is a generous 91dB, albeit compromised by a load that spends much of the audio band at around four ohms.

The far-field, in-room measurements are not particularly smooth, though the overall spectral balance looks pretty well judged, albeit with a tendency to peak up at around 1kHz.

Clear of walls, the balance is a little bass-lean and mid-forward; close-to-wall siting provides a better balance, but with some tendency to overemphasise 50Hz. soft dome tweeter at the 3.4kHz crossover. A front mounted port provides additional bass output. Experiment soon confirmed what

the measurements had indicated, that the Royal Tower was best placed reasonably close to a wall. This not only provided welcome mid-bass boost, but also seemed to smooth out some of the midband peakiness. There's still some mid-forwardness here, to be sure, though it's a far from unpleasant characteristic in a close-to-wall speaker (which will inevitably be further away from listeners than a free space design), because of the way it gives a little extra emphasis to midband detail.

Even with close-to-wall assistance, there's a slight lack of bass drive and authority – though not as much as one might expect, in view of the very compact dimensions.

But perhaps that's an acceptable price to pay for the Royal Tower's greatest strength – a lightness and

KEY FEATURES



Two substantial steel bars provide very secure spike location with an extended footprint. The two main drivers have 130mm cast alloy frames and 95mm doped paper cones, while the tweeter uses a 19mm soft dome.



Cutely compact close-towall floorstander has a delightful lightness of touch to match its luxury real wood finish. It could be smoother, but has a lively disposition with good dynamic expression.

CHECKLIST FLOORSTANDER / CLOSE TO WALL / WIDTH 17cm HEIGHT 85cm DEPTH 22cm BI-WIRABLE / delicacy of touch unmatched by the larger models here. Maybe it's because there's much less wood in its compact enclosure, or maybe it's because of those lightweight doped paper cones, but the lack of 'heaviness' or 'thickening' is both obvious and very welcome.

Dynamics are handled with enthusiasm, ensuring good musical communication and tension, while the fine low-level detail supplied good orchestral textures. There's little, if any, boxiness, and even the images seemed well formed, despite the close-wall proximity. A little thin and lightweight it may be, but this speaker's heart and soul are both very much in the right place.



£799 ☎ 0208 361 8864 ⊕ www.epos-acoustics.com

EPOS M15

Can this compact floorstander match its little brother, the excellent M12?

highly respected British audiophile speaker brand, Epos was run under the Mordaunt-Short umbrella through most of the 1990s, but is now owned and operated by hi-fi specialist Creek Audio, which seems to be taking great care to maintain the company's traditions.

Indeed, Hi-Fi Choice reviewed a standmount M12 - itself based closely on the earlier E12 - back in 2001, finding it a thoroughly impressive performer that merited a Best Buy rating (HFC 215). The portents would therefore seem very positive for this M15, which looks remarkably like a floorstanding

SOUND $\star \star \star \star \star$ EASE OF DRIVE $\star \star \star \star \star$ BUILD \star \star \star VALUE $\star \star \star \star \star \star$

VERDICT

Cute, pretty and classy compact floorstander, but at a price - the M15 has an engaging directness and simplicity, but lacks warmth and vigour, and can sound a tad nasal CHECKLIST

FLOORSTANDER **CLOSE TO WALL** X 20cm 83cm 25cm blanked-off section (for optional mass loading) is located in the base of the enclosure, but the M15's acoustically active volume is larger than the M12's. It was a surprise to discover that the M15 costs £800 a pair, whereas the M12 was priced at just £430 some 18 months ago.

The two-driver, two-way line-up looks very familiar, and other typical Epos touches are also evident. Probably uniquely, the Epos front panel is a plastic moulding which also incorporates the chassis or basket on which the main driver is built, ensuring immaculate mechanical integrity.

The main driver has a flared plastic cone 115mm across, and is fitted with a fixed phase plug. The tweeter has a 25mm metal dome under a mesh cover. The crossover network is deliberately minimalist, with just a single capacitor giving the tweeter electrical protection from low frequencies, while relying on the natural acoustic roll-off of the main driver.

KEY FEATURES

The main driver has a 115mm flared plastic cone, the tweeter has a 25mm metal dome under mesh cover. The enclosure measures 20x82,5x25cm and the whole is very solid, weighing 16kg and built from 24mm MDF.

Driver mounting panel apart, the rest is covered by a very classy real wood veneer with nicely rounded edges around the front and back. It's also remarkably solid, weighing 16kg and built from 24mm MDF. Beefv spikes are supplied, and pretty well founded they are too.

First sonic reactions here were decidedly negative, which came as something of a surprise given the fine results obtained with the M12. Suspicion points towards an initial warm-up/run-in problem, because the sound seemed to have got a whole lot better when returning to the speakers a few days later.

The sheer simplicity of this speaker is its own reward, bringing an immediacy and directness to the party which is very welcome. The slightly forward midband is probably a plus, for the way it projects the sound 'out of the box'. Certainly there's an impressive freedom from boxiness here, alongside fine coherence and impressive stereo image precision.

At the same time it's also true to say that the M15 doesn't have the most exciting sound around. It can sound a little 'small' and does lack a certain amount of dynamic vigour and drive. The mild balance anomalies, meanwhile, translate into the perceived sound both as some lack of warmth, and also a slight nasal coloration on voices.

MEASUREMENTS

The larger enclosure, in combination with a port tuned to a lowish 38Hz, ensures that the M15 goes significantly deeper into the bass region than the M12. Under far-field, in-room conditions, port tuning to 38Hz ensures plenty of output in the low bass region (28-55Hz), but the next octave up (55-110Hz) is decidedly lean. Elsewhere the frequency balance is pretty well ordered, if a little strong 900Hz-1.2kHz, and with a 3dB presence notch centred on 3kHz

The amplifier load is very benign, never falling below seven ohms, but the 'ease of drive' is compromised by a sensitivity rating that barely reaches 85dB - well below the specified 88dB.



£1,300 🕿 020 8731 4670 🏽 www.infinitysystems.com

A stylish contender, but this speaker looks more engaging than it sounds

nfinity is one of two major speaker brands (the other is JBL) that operate under the Harman umbrella, itself the biggest player in world specialist hi-fi by a comfortable margin. In recent times *Choice* has reviewed some very hi-tech Infinities like the RABOSequipped Prelude MTS and Intermezzo 2.6 models, though this Kappa represents a rather more conventional side of the company.

This 600 is one of two floorstanders and the largest of three stereo models in the mid-price Kappa range. It's a very stylish speaker indeed – comfortably the most interesting and fashionable among the half-dozen assembled for this test – with attractive real wood veneer around pretty 'soft' edges, a 'domed' top, clever use of plastic moulding trim, and a tapered shape, deeper at the bottom than the top, that promises exceptional planted-on-the-floor stability.

It has similar midrange and treble drive units to those used in the Best Buy Intermezzo 2.6, but the Kappa 600 is a regular passive three-way, unorthodox only in placing its bass driver on the side rather than the front – the only option if designers want to use a single bass driver, since a slim front view has now become an essential marketing tool.

MEASUREMENTS

The port is tuned to a lowish 35Hz, giving good in-room bass extension to 25Hz at -6dB. But in far-field, in-room conditions, output is strong at 40-50Hz, even with the speakers clear of walls. Furthermore, integration between bass and midrange is weak, with some lack of output between 70Hz and 200Hz, and a deep notch centred on 110Hz. Sensitivity is a healthy 91dB, if compromised by a load that dips to 4-5 ohms.

Although the mid and treble are quite smooth, they're not without character, being a little forward, 250Hz-1.5kHz, then slightly restrained through the broad presence zone, up to a mild 10kHz peak. The drivers have deep-anodised alloy (CMMD) diaphragms, the 250mm frame (190mm cone) bass driver operating up to a nominal 100Hz crossover before handing over to the 170mm frame (120mm cone) mid driver, and thence above 3kHz to the 25mm dome tweeter. Bi-wire terminals are fitted, and the whole weighs a substantial 32.5kg, supported on decent spikes.

The 600 has a very self-effacing sound quality, which at least has the virtue of avoiding introducing any unpleasant colorations to its reproduction. Indeed, there's an underlying smoothness here which ensures that the speaker simply gets on with its tasks without ever drawing attention to itself.

The other side of that particular coin, however, is that this is not a particularly exciting or invigorating loudspeaker either. To some extent it appears to suffer from 'three-way

KEY FEATURES



The 250mm frame (190mm cone) CMMD bass driver, mounted on the side, operates up to 100Hz. A 170mm frame (120mm cone) CMMD mid driver runs from 100Hz to 3kHz and the tweeter has a 25mm CMMD dome, Each speaker weighs a substantial 32.5kg and its shape gives excellent stability.



A great looking speaker with fashionably 'soft' edges, clever tapering and great physical stability, but the sound is a little too self-effacing, lacking in vigour and transient coherence CHECKLIST

 FLOORSTANDER
 ✓

 CLOSE TO WALL
 ✓

 WIDTH
 22cm

 HEIGHT
 95cm

 DEPTH
 35cm

 BI-WIRABLE
 ✓

syndrome', in that the overall coherence and transient integrity seems somewhat inferior to that obtained from a simpler two-way.

A three-way has its advantages, especially in power handling, but the difficulty lies in getting the three sources to work together, and this is where the Kappa 600 didn't quite succeed. Despite some forwardness, the midband seemed small and lacking in expressiveness. One could live with the sound happily enough provided the source material was undemanding, but when the going got tough, the 600 failed to hold the attention or enthusiasm, and seemed merely to be going through the motions. (



£800 🕿 01268 740580 🌐 www.monitoraudio.co.uk

MONITOR AUDIO SILVER S8

A superb all-rounder, particularly suited to the broad dynamics of orchestral music

long established UK brand with a thirty-year heritage and a strong penchant for metal cone drive units, Monitor Audio went through major changes in the late 1990s, from which it has emeraed with renewed strenath. That said, the original Silver series proved a little disappointing to our listeners, quite possibly because it was based around a rather small 130mm main drive unit. Which might well be the reason why the new Silver S series has gone for significantly larger main drivers with 150mm and 170mm frames, in various different configurations according to the model.

The range has five stereo pairs all told, this S8 sitting one rung below the top, and looking like fine value



over the previous Silvers and a fine speaker by any standards, the S8 is a thoroughly impressive all-rounder, notable for its wide dynamic range, excellent imaging and fine neutrality. CHECKUST

 FLOORSTANDER
 ✓

 CLOSE TO WALL
 ×

 WIDTH
 19cm

 HEIGHT
 90cm

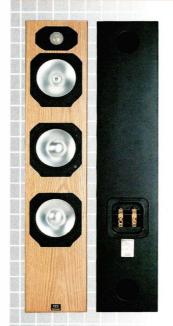
 DEPTH
 27cm

 BI-WIRABLE
 ✓

at £800 per pair. An attractive floorstander which comes in a choice of four real wood veneers, it comes with a separate, fiddly-to-fit plinth, giving a neat appearance and good stability, with modest 6mm spikes. There's extensive internal bracing, and twin ports are fitted to the rear, with bungs supplied for blocking these if sir prefers.

The S8 has no fewer than three shiny metal-cone drivers, all using 150mm polymer frames and 115mm diameter diaphragms, and operating in a two-and-a-half-way configuration. The lower two, with flattened domes covering their voice-coil gaps, are bass-only units, while the upper one has a pointy phase plug, and operates, in its own separate enclosure, right up to the 3.2kHz tweeter crossover point. Kept well clear of walls and with both ports unobstructed, the S8





Twin ports are fitted to the rear, with bungs supplied. Three shiny metal-cone drivers have 150mm polymer frames and 115mm diaphragms. The upper driver has a pointy phase plug, and operates up to the 3.2kHz tweeter crossover. The tweeter is a gold coloured metal dome. delivers an impressive combination of neutrality and authority, with excellent focus and a notably wide dynamic range. It does have tendencies towards a slightly 'heavy' overall character, leading one to experiment with the port-blocking bungs: we ended up bunging the lower port, and leaving the top one open, to achieve the best overall balance.

Voices are notably open and neutral, with none of the 'shut in' or nasal qualities regularly encountered elsewhere. Indeed, the S8 might prove to be a little too bright and open for systems with poor quality sources, amplification or ancillaries, but then that's not the speaker's fault.

The midband here is tidy, guite smooth and attractively coherent, while the bass is both deep and clean, and stays reasonably even too, even though it could sometimes have a lighter and livelier touch. Stereo images are particularly impressive in the way they avoid any tendency to over-projection, and deliver precise depth layering with good focus. Orchestral material with its wide dynamic range seemed particularly impressive through these speakers, though in truth they coped very well with whatever was thrown at them, always staying open and inviting with an impressive freedom from boxiness.

MEASUREMENTS

The twin port system is tuned to a lowish 38Hz for good in-room bass extension, down to 20Hz at -6dB, with the speakers clear of walls. Sensitivity is a respectable 89dB, if compromised by a load that dips to 4-5 ohms at low frequencies.

Far-field, in-room measurements are not particularly smooth, and do somewhat emphasise the low frequency decade (below 200Hz) with both ports left open. Overall spectral balance is a little laid back through the broad midband, but holds within close limits up to 15kHz, above which a strong metal dome tweeter resonance is seen.



£1,500 👁 BBG Distribution 020 8863 9117 🌐 www.polkaudio.com

POLK LSI15

An impressive looking US contender – but how does it stack up sonically?

t's been a few years since *Choice* reviewed a pair of Polks but, buoyed by the boost in speaker activity that has accompanied the boom in home cinema sales, this US brand continues to thrive, especially on its home market where it's one of the leading players.

The LSi-series first appeared in the States at the end of 2001, so they've taken a little while to arrive on these shores. Of four original stereo pairs, the largest (a 'power tower' with built-in powered subwoofer) won't be coming to the UK, but that still leaves two compact standmounts, plus this imposing LSi15 floorstander.

At £1,500 it's the most costly in this group, but also comfortably the tallest too. Mostly finished in high gloss black laminate, but with wood veneered side panels in 'ebony' or 'cherry', the enclosure looks very slim from the front. Perhaps uniquely, it's described as a three-and-a-half-way. There are four drive units in toto, the two midrange units mounted above and below the tweeter operating as a two-and-a-half-way above 150Hz, below which a separate bass unit does the business.

The 200mm frame with 160mm plastic cone bass driver is mounted low down on the outside of the mirror imaged pair, and loaded by a 'Power Port' in the base, firing

MEASUREMENTS

The port is tuned to 40Hz, though the in-room bass rolls off quite rapidly below this frequency. Even when well clear of walls, low frequencies at 40-300Hz are a little too strong overall, but at the same time rather weak through the 100-200Hz octave under far-field, in-room conditions.

Further up the band, output is quite smooth and well ordered, albeit with a mild notch centred on 1.6kHz, and perhaps a little too much around 4kHz.

Sensitivity is a respectable enough 89dB, though this is rather compromised by a load that dips below four ohms at around 110Hz and again at 3kHz. downward towards a separate, permanently fitted plinth. The midrange drivers – one operating up to 800Hz, the other meeting the tweeter at around 2.5kHz – use a new aerated polypropylene cone material, 95mm in diameter, within a 135mm cast alloy frame. Twin ports in the upper enclosure are tuned to cancel out internal standing waves. The tweeter is a popular newish type with a 25mm annular ring diaphragm. The US-type spikes seem a tad flimsy, and twin terminals are fitted.

The LSi15 has some engaging attributes, sounding notably clean and free from boxy effects, while the high positioning of mid and treble drivers gives the image useful extra height and adds to the illusion of large musical scale. However, perhaps because there's

KEY FEATURES



A handsome, tall design with lively dynamics and good image scale, but there's also some mid nasality here and a slight lack of top-to-bottom coherence and integration too.

CHECKLIST FLOORSTANDER / CLOSE TO WALL / WIDTH 33cm HEIGHT 116cm DEPTH 22cm BI-WIRABLE / quite a wide physical separation between the low-set bass and the high-set mid/treble, the two don't quite seem to glue together with total coherence. Rather it's more like the character found with separate sat/sub systems.

The dynamic range is very wide, and the speaker goes impressively loud without complaint. But the midband suffers some coloration, showing a nasal and pinched quality on spoken word especially. Furthermore, while the top end is undoubtedly clean and clear, it does perhaps draw just a little too much attention to itself. Promising though this speaker undoubtedly is, the problems of coherence that tend to afflict three-way designs are just a little too obvious here.



Described as a three-and-a-half-way, the 200mm plastic cone bass driver is mounted on the side, and loaded by a 'Power Port' firing downward in the base. The two midrange drivers use a new aerated polypropylene cone material and twin ports in the upper enclosure are tuned to cancel out internal standing waves. The tweeter has a 25mm annular ring diaphragm.



CONCLUSIONS

When it comes to speakers, it's often best to keep things simple

with six loudspeaker pairs priced between £750 and £1,500, all of them floorstanders, there's plenty of room for variations on several themes

The group here comprises one 'straight' two-way from Epos; a d'Appolito twin-main-driver twoway from Castle; Dali and Monitor Audio supply two-and-a-half-ways (two-ways with one or more extra

TRY THEM WITH THESE

£1.125

CD PLAYERS NAIM AUDIO CD5

At its best, this smooth, polished performer sounds dynamic, vivid and compelling. Can be upgraded with FLATCAP 2 (see Amplifiers, below).

CYRUS CD7Q £1,150 A subtle and musical sounding player, built into Cyrus' smart little shoe box size case. The 'Q' DAC upgrade makes a worthwhile improvement over the standard CD7

PRIMARE D30.2 £1,500 A well built player with a solid and engaging sound. Its dynamic qualities bring any kind of music to life.

AMPLIFIERS

ARCAM DIVA A85 £800 Original new circuitry and advanced topology delivers a more hard-hitting and engaging sound than earlier Arcams.

PRIMARE A30.1 £1,500 Smooth, detailed singing quality, elegant appearance and a healthy power output too.

NAIM NAC112/NAP150/

FLATCAP 2 £1,850 Clean simplicity, with Naim's rhythmic and punchy character, but an altogether sweeter sound than earlier generations.

HINTS AND TIPS

Floorstanders need good floor coupling arrangements. A generous fore-and-aft footprint is important for sonic reasons, but decent lateral stability is handy too.

♣ Floor-coupling spikes should be properly secured with lock-nuts, but take care not to over-tighten these or you'll strip the often weak socket threads. Finding the right place to put the loudspeakers acoustically is very important. Do take time and trouble experimenting.

Even small changes of position can have a big effect on the excitation of room modes.

All speakers need running in.
 Expect them to improve steadily over the first 100 hours or so.
 Always use decent speaker cable – check the *HFC Buyer's Bible*.

bass drivers); and Infinity and Polk have three-ways, the latter staggering its two midrange drivers as a 'three-and-a-half-way'.

The first four all fit within a fairly tight price band, from £750 to £930, but the two three-ways take a significant step up in price, to £1,300 for the Infinity and £1,500 for the Polk. And it has to be acknowledged that neither of the latter seems to justify its quite hefty price premium. Even their measured performance was in no way superior to the simpler designs.

Three-ways do offer potentially superior power handling to two and two-and-a-half-ways, because their crossover networks protect the midrange drive unit from the large cone excursions caused by high-level bass output. That might be a worthwhile advantage, especially for those who like their music loud and heavy.

But for most people and on most material, the plain observation that the simpler two and two-and-a-halfway designs offer superior coherence, timing and delicacy at normal listening levels, as well as costing rather less, will be an obvious no-brainer.

Three of our six stand out ahead of their rivals. Castle's Conway 3 follows the company tradition for excellent real-wood finish cabinet work. It has a simpler configuration than most of this brand's upmarket designs, and works very well indeed, its twin woven carbon-fibre cones delivering a beautifully voiced midband.

The little Dali Royal Tower scores highly for its cute compactness and lovely finish, with the extra bonus that it works well when sited close to a wall. Sonically it might not have the smoothest sound around, but it's lively, communicative and delightfully light on its feet.

Compared to the previous Silver series, Monitor Audio's new £800 Silver S8 proved a lovely surprise, providing excellent perceived value, plus a wide bandwidth and a lovely restrained neutrality.

STAR LOUDSPEAKER

CASTLE CONWAY 3

A great speaker at a sensible price, Castle's Conway 3 combines a lovely real wood finish with a tonal balance that's about as good as it gets. It's just slightly laid back, avoiding mid-forwardness, while demonstrating a beautifully judged treble, even though extreme top might have more 'air'. The simplicity of a two-way comes through strongly in the fine focus and coherence, and the solid enclosure probably contributes towards a notably wide dynamic range.

It could be criticised for some lack of image height – the tweeters are somewhat below seated ear height – but in other respects the soundstages are well formed. Above all, this speaker sucks you into the music, ensuring your system will enjoy plenty of use.





SPEAKERS AT A GLANCE

MAKE	Castle	Dali	Epos	Infinity	Monitor Audio	Polk
MODEL	Conway 3	Royal Tower	M15	Kappa 600	Silver S8	LSi15
PRICE	£930	£750	£799	£1,300	£800	£1,500
SOUND						***
EASE OF DRIVE		****		****		
BUILD						★★★★
VALUE						
CONCLUSIONS	Lovely finish and a well balanced sound; fine dynamics and transients, and a superb midband.	Cutely compact with a delightful lightness of touch to match its luxury real wood finish.	Classy compact floorstander has engaging directness but lacks warmth and vigour.	Fashionably 'soft' edges, clever tapering and great physical stability, but sound is a little too self-effacing.	Impressive all-rounder, notable for wide dynamic range, excellent imaging and fine neutrality.	Lively dynamics and good image scale, but some mid nasality and a lack of top- to-bottom coherence.



LEGACY

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*Touch-Screen Remote Controller included with Legacy AG-L800



Don't view the latest high-performance DVD-Video players as purely for home cinema – these are excellent machines for both sound and vision



PROGRESSIVE VIDEO

Interlace video, the technology in standard TV screens, works by tracing alternate lines of a picture on screen, producing a field of odd numbered lines, and then filling in with the even lines before moving on to the next frame. The idea dates from when the processing could not be performed fast enough to produce complete pictures in one pass without obvious flicker.

The problem is that this can result in unwanted artefacts because the new positions on screen are offset by time delays in the interlacing process. This usually manifests itself as jagged moving edges.

Modern electronics can now cope with non-interlace, ie progressive video, but so far this has only been mandated for DVD in the USA which uses the NTSC system. European PAL progressive has just been given the go-ahead, and two of the test players will be upgradeable to this new standard soon.

e return this month to a product type that some readers seem to regard as a betrayal of the ethos of any magazine with hi-fi in the title. Of course video is not and never will be the primary focus of Hi-Fi Choice, but to pretend that it is of no concern to most music lovers is a peculiarly ostrich-like stance to take. It's true that none of this month's group doubles as a DVD-Audio player or an SACD player for that matter. But neither of these formats has a viable body of recordings yet, though the position is improving. DVD-Video players can already cope with 99 per cent of music-bearing discs, including a rapidly increasing number of multichannel music titles on DVD-Video (the Rabih About Khalil recording used in this test offers pretty excellent sound despite being recorded in Dolby Digital but don't spread it around). And of course they all play compact discs.

In the real world, the market for component CD players is in free-fall, as the market for DVD players has mushroomed, and many people no longer distinguish between disc player types, or even disc formats, and expect their DVD players to play anything that is round and silver but doesn't carry computer data.

The other point to be made here is that multichannel music is – start again – *can* be a genuinely worthwhile musical exercise. Not to put the drums behind you, or to sit in the middle of an orchestra, but to draw the acoustic out of the speaker plane, which, when done sensitively can bring recordings to life in a way that two-channel audio never really can. There's another issue here too. Just as excellence in sound quality has always been *HFC*'s goal, there is no reason why excellence in picture quality – call it hi-fi video if you like – should not be a valuable complement to good sound. With progressive video just beginning to come on-stream, the time has come for picture quality to take the next leap into the future. Progressive video has so far only been available for US (NTSC) DVDs – but UK PAL progressive is coming soon. **©**

EQUIPMENT USED AMPLIFIERS

Krell Showcase processor Krell Showcase power amplifier Pioneer VSA-AX10 amplifier **LOUDSPEAKERS** B&W Nautilus 800 (main) B&W HTM1 (centre)

B&W Nautilus SCM1 (surrounds) CABLES

Nordost Valhalla and SPM Reference speaker cables, Transparent balanced interconnects (processor-power) Nordost Valhalla and TAG McLaren interconnects, Nordost digilink **VIDEO PROJECTOR** SIM2 Grand Cinema HT300DMF Plus

DISCS USED

Nora Jones Come Away With Me Eleanor McEvoy Yola Maazel/Pittsburgh Symphony Orchestra Respighi Pines Of Rome Tracy Chapman Tracy Chapman Cincinnati Symphony Orchestra Mahler 9 **DVD-VIDEO** Rabih About-Khalil: The Cactus Of Knowledge American Pie Lord of the Rings: The Fellowship... Star Wars Episode II Monsters Inc Saving Private Ryan (Region 1 DTS) DTS Demonstration Disc 6: Video Essentials







£1,000 ☎ 01480 435577 ⊕ www.cyrus.co.uk **CYRUS DVD 7+ CD/DVD-VIDEO PLAYER**

Strong British all-rounder benefits from recent upgrade

yrus is best known as a purist audio brand, and a major design aim in adding the '+' to the DVD 7 was to avoid compromising audio sound quality when playing CDs. The basic audio engineering of the player is fundamentally strong, and this is reflected in the results reported on below, as is the superb die-cast chassis.

Unlike its predecessor, the DVD 7+ can also be upgraded in two ways. The 24-bit audio DACs (identical to the CD7 CD player) can be dealer upgraded with the Q7 module (cost £350) which has four higher grade differential mode 24-bit Burr-Brown DACs. Additionally, the power supply can be augmented by the PSX-R (also £350) which assumes control of the servo and motor servo control circuits, allowing the 12 internal regulated supplies to concentrate exclusively on the audio stages. Both these upgrades are also available for Cyrus CD players - in fact, the DAC module is the same one that upgrades

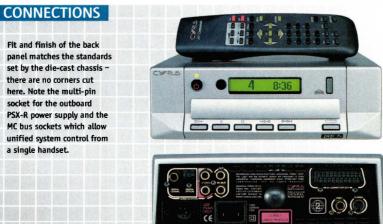
VERDICT SOUND $\star \star \star \star \star$ PICTURE $\star \star \star \star \star$ FEATURES $\star \star \star \star \star$ VALUE $\star \star \star \star \star$

The Cyrus magic shoebox is not compromised by its diminutive packaging Audio and video performance is strong and the promise of better sound through DAC and power supply add-ons makes this model particularly interesting CHECKLIST

PROGRESSIVE SCAN DOLBY DIGITAL DTS DECODING CD-R/ RW COMPATIBLE DVD+RW COMPATIBLE MP3 REPLAY

the CD7 to the CD7Q, a Product of the Year in last issue's Hi-Fi Choice Awards. Original DVD 7 owners can have their units factory upgraded to DVD 7+ status for £150. Other upgrades include a more comprehensive, easier to navigate on-screen menu system, new firmware which tackles some minor incompatibility problems and a more powerful zoom feature which can be used on still or moving images.

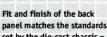
Playing CDs, the Cyrus is not as balanced as the best here, but it has some very particular strengths. Much of the midband and the treble especially are reproduced to a very high standard. The Mahler 9 excerpt (the tumultuous third movement) practically leapt out of the speakers, with bold, vivid tonality and a palpable sense of tension. What let it down slightly was that the bottom end lacked the lucidity of the mid and treble. It has a rather flabby feel, which to an extent undermines the structure of the sound. From prior experience,



"The Mahler 9 *leapt* out of the speakers, with bold. vivid tonality and a palpable sense of tension."

this is where the PSX-R is likely to contribute most, and the DAC upgrade is likely to add resolution all round to a player that is already notably strong in this area. Surround sound recordings (Dolby Digital and DTS) reproduced without a hitch and to very much the same broad standard as the other models in this group. No surprises there, as the player only has to get the information off the disc. Like other good processors, the Krell Showcase we used while testing these players reconstructs the data with its own internal clock, smoothing over many player differences.

The Cyrus also bowls a straight ball with DVDs, showing less temperament than the other players, Denon excepted. Visually it performs well on a conventional TV set, and linked to a specialist projector it only lags behind the players with a progressive output. The lack of progressive video is a factor of course, but perhaps not an overriding one. As PAL progressive is rolled out, it's a pretty safe bet that picture quality from many early exponents will take a dive until the system is fully debugged. The Cyrus has good colour and definition, moderately good shadow detail and very slightly higher video noise levels than the others - a good all-round showing.



set by the die-cast chassis there are no corners cut here. Note the multi-pin socket for the outboard PSX-R power supply and the MC bus sockets which allow unified system control from a single handset.



£750 ☎ 01234 741200 ⊕ www.denon.co.uk

DENON DVD-2800 MKII CD/DVD-VIDEO PLAYER

It may lack DVD-Audio, but this Denon player offers strong sound and excellent video

enon makes a range of DVD players based on this chassis, including the DVD-Audio-capable DVD-3800 and the flagship DVD-A1. Although the less costly DVD-2800 MkII lacks the high-tech audio features of the senior models, it comes close to matching them as a video player.

The main change from its predecessor. the DVD-2800, is the replacement of proprietary progressive scan by the high-tech and very whizzy Silicon Graphics Sil504 PureProgressive decoding engine (sic) also specified for the more costly models. The sophisticated Sil504 has more speed (6 billion operations/sec) and more memory (64Mb) than the one it replaces. Combined with a new 12-bit 108MHz video DAC for progressive video (up from 54MHz previously), and a separate 10-bit 27MHz part for interlace video, the video subsection is designed for high quality motion detection and accurate 3:2 pulldown (NTSC) film detection, even where the video has been inaccurately flagged. As we write, the progressive facility doesn't cater for UK-specced PAL discs, but eventually players will be upgradeable at no extra cost through dealers, who should also be able to help with regional coding hacks.

Other highlights include a powerful range of picture conditioning controls, and a 2x (DVD)/4x (CD) drive and 4MB buffer memory to eliminate the gap when changing layers on dual layer discs. Build quality is impressive, and the package is completed by a well laid out remote control.

This Denon doesn't just look good. It

looks good. PAL (interlace) films looked great through our SIM2 test projector, which has its own progressive processing, and there was no need for additional picture tweaking. Colour and resolution scored at the top end of this test's range.

NTSC playback via projector using the player's progressive component output suffered from a few artefacts, but colour fidelity and subtlety were even better, in part because the DTS sampler discs used for this test are particularly well mastered, but also because progressive processing is performed in the digital domain, without extra digital conversion. There's no perceptible line structure at normal viewing distances, and motion artefacts are notably less

"Colour and resolution on the Denon DVD-2800 MkII scored at the top end of this test's range."

CONNECTIONS

Standard set of outputs is supplemented by component progressive video sockets and a pair of minijack sockets which allows the player to be plumbed into a Denon system. RBG output is available from the Scart socket marked AV1 – so where's AV2?



Superbly engineered upper mid-market DVD-Video player that comes close to high-end standards, with firm, precise sound and clear picture quality in interlace and progressive trim – and it won't be redundant when PAL progressive arrives.

CHECKLIST

PROGRESSIVE SCAN DOLBY DIGITAL/ DTS DECODING CD-R/ RW COMPATIBLE DVD+RW COMPATIBLE MP3 REPLAY than those through a regular TV. Colour information subtlety (try *Moulin Rouge* or *Al*) is even more impressive.

Sound quality rates highly too. The DVD-2800 MkII is one of that select group of DVD players that doubles as a credible CD player. It has clean, open textures and good imagery, and despite a lean low-frequency balance, this is an essentially neutral, even quite a sweet sounding player.

The Eleanor McEvoy recording sounded rather dull and overcooked in the bass, but this is a disc problem. Tracy Chapman's disc reproduced with real power and conviction, and the same applied with Naxos's Sibelius recording, with just a hint of a mechanical edge by the best CD player standards at the price. With Dolby Digital and DTS decoding performed by the test Krell Showcase processor, the Rabih Abou-Khalil DVD-Video sounded expansive, stable and more detailed than you might expect from a data reduced codec like Dolby Digital. A strong showing all round.





£1,000 ☎ 01444 248873 @ www.primaresystems.com PRIMARE V25 CD/DVD-VIDEO PLAYER

Scandinavian brand's new player is a serious DVD contender

he V25 is a third generation DVD player from Primare which replaces the V20. The principal additions are on the video side: progressive scan (NTSC at present, PAL to come) and an X-VGA output which provides another connection option for projector users. The benefit of this interface is a shorter, more direct video signal path, but this is a non-kosher addition which is not part of the DVD specification. In fact we couldn't extract a signal from this output, even though the test player was deregionalised.

In addition, two sets of component video outputs provide interlaced and progressive outputs simultaneously, both of which work perfectly. Changes from the V20 mean that the video outputs are capable of closer to their theoretical best-case performance for the 10-bit 27MHz video DACs specified, according to Primare. Other changes, including shortened signal paths, have been made to the audio circuits, using ideas from the same pool that has been used to improve the latest generation of Primare audio-only components.

The Primare V25 has the advantage of versatility with an enormous range of outputs, and along with the promise of PAL progressive, this player looks like an excellent one-stop shop. CHECKLIST

PROGRESSIVE SCAN DOLBY DIGITAL/DTS DECODING CD-R/RW COMPATIBLE DVD+RW COMPATIBLE MP3 REPLAY The V25 is currently only progressive with NTSC discs. But it's been designed for PAL progressive, and the intention is that dealers will be able to upgrade existing players free of charge when the PAL modification has been approved. In the immortal phrase, that should be any day now.

Compared to previous Primare models, the V25 includes higher grade key components, and the S-Video output, which was identified as a weakness in our test of the V20, has been improved with lower noise on the drive circuits, and upgraded video buffers. The V25 also includes improved disc programming and FTS (favourite track selection) features, and the same solid build quality as its predecessors.

For the most part, the Primare is a very good CD player. Its bold, muscular musical architecture makes a strong impression, and its ability to paint a large image space for the music to inhabit – given a suitable recording of course – is also very striking. The bass is authoritative, and the treble reasonably refined. The only area that pulls it down



"The Primare V25's ability to paint a large image space for the music to inhabit is very striking."

slightly is resolution of fine detail, where it trails good dedicated CD players in the £600-£1,000 region. But at the same time the Primare is way ahead of early DVD players in this role. At least it is now competing on the same playing field.

Video performance is also very good, though not dissimilar to the Roksan. Colour is strong and subtle, and detail levels are good, though no better overall than other players in the group. Each of the four offers a strong video performance, though the Denon is marginally out in front.

But even without the benefit of a side by side comparison, the V25 clearly offers better picture quality than its predecessor. Colours appear brighter, cleaner and better differentiated, almost as though the contrast control has been turned up a notch, but without the negative side effects – namely compression or loss of tones at the full black or full white ends of the spectrum.

The Primare also proved adept at Dolby/DTS surround sound outputed direct to our test processor. Complex material was handled with assurance, but as has been noted elsewhere in this test, much of the real work in this instance is done by the processor. A strong showing nonetheless.

CONNECTIONS

Video is available from this player in more forms than many will know exist, including composite, S-Video, RGB (via Scart), component interlace, component progressive – and X-VGA, which is also progressive. Audiophiles will just have to 'slum it' with analogue (stereo line and Scart), digital optical and digital coaxial to choose from.



£1,195 ☎ 0208900 6801 ⊕ www.roksan.co.uk

ROKSAN CASPIAN CD/DVD-VIDEO PLAYER

Particularly strong audio performance from a respected hi-fi marque

nother manufacturer that started in the hairy wilds of turntable engineering – remember the Xerxes? – Roksan has long since widened its remit to include a full range of audio and AV electronics, including two DVD players.

The Caspian is a full-width, solidly built player with a 5mm aluminium front panel and 1.6mm zinc-plated steel chassis with a black textured finish. The standard interfaces include an NTSC/PAL component output, and an attractive on-screen menu system with a colour bar which can help with set-up. Close attention is also paid to reducing the performance damaging effects of noise sources, with a filter on the mains input and a screened transformer.

The Caspian player can be set to play all disc regions via a menu hack, but as usual the manufacturer is precluded from talking about this by the terms of the Macrovision licence agreement, so check with your dealer.

This is an 'interlace component' player when playing NTSC discs. The output delivers an interlaced signal from PAL discs too, once it's been deregionalised. Roksan tells us that there will be a progressive version of this player, but it is far from certain that there will be a progressive upgrade for existing owners because there is no pin-compatible processor which meets all their performance requirements.

In the meantime, projectors, LCD and plasma screens will perform their own progressive processing as a matter of course. Firmware upgrades will be available from time to time using Roksan CD-R discs, and a DVD-Audio upgrade is mooted, but not confirmed. Note that the player is available at a concessionary price as part of a complete system, including the Caspian AV processor, along with the matching video switcher and five-channel power amplifier – total cost £2,500.

An obscure, and apparently one-off fault forced the Sim2 projector into monochrome mode on its S-Video input when driven by the Roksan, and the tests were completed with the other outputs – RGB via Scart on the regular TV, and composite and component video on the projector. Composite is unsuitable for high-quality purposes, and the Scart output precludes viewing on the projector, but the component output is clearly first rate, and works with PAL and NTSC material alike.

"The Roksan impresses with real conviction that is very true to the music, from Mahler to Norah Jones."

CONNECTIONS

The power switch is on the back, which encourages the user to leave the player on standby. Socketry is standard enough, but includes three phonos which provide an interlaced component output from NTSC discs – and PAL once the region hack has been set.



If a progressive output is not a priority (and most projectors and plasmas do their own these days), this is a serious contender for audio and video alike. It's easy to use and makes an impressive CD player to boot.

CHECKLIST

PROGRESSIVE SCAN X DOLBY DIG TAL/DTS DECODING X CDR/RW COMPATIBLE X DVD+RW COMPATIBLE X MP3 REPLAY X Colour reproduction is subtle and complex, motion artefacts are well suppressed for a non-progressive player and picture clarity is excellent. Some unusual picture tweaking aids are available, including high-res and low-flicker settings, which can help reduce visible aliasing (staircasing of diagonals) for example. High-res off and low-flicker on was generally best.

In its legacy CD playing role, the Roksan came as a real surprise. It has a slight opacity when confronted by very fine detail which is reminiscent of the Primare, but it has everything else going for it in spades, including tight integration across the frequency band, a solid and propulsive bass, strong presence, and real conviction that is very true to the music, whether it's Mahler or Norah Jones.

There is nothing prissy sounding about this player, and it does nothing to glamorise or smooth over the rough edges. The Primare makes for a more relaxed and expansive experience, but when the chips are down, the Roksan is the more compelling. ()



CONCLUSIONS

It's a tough choice between these hi-fi wizards of CD and DVD-Video

Ithough the four players in this test paint a picture of a market in transition, straddling the cusp between the worlds of interlace and progressive video, some other rather encouraging findings fell out of the woodwork.

The first ray of sunshine is that the idea of the non-disposable DVD player has finally arrived at long last. Each of the players which we studied in this group has the benefit of an upgrade path, protecting your investment well

TRY THEM WITH THESE

AV RECEIVERS

ARCAM AVR200 £800 Updated entry-level Arcam with Pro Logic II, and an attractive all-rounder, even in stereo.

PIONEER VSX-D2011

Baby brother of the VSA-AX10 amp, this receiver boasts a slimmed down version of the latter's auto set-up routine..

£900

MARANTZ SR9200 £2,000 A beautifully built one-box multichannel solution, with strong surround sound and genuine hi-fi stereo.

MULTICHANNEL LOUDSPEAKER PACKAGES

TANNOY MX AV4 SYSTEM £500 Not a big sounding system, but smooth and neutral, and quite amazing value for money.

 MISSION M53, M5C, M5DS, M5AS SYSTEM
 £1,450

 Lucid, attractive system with a touch or warmth and grace – excellent value.

ACOUSTIC ENERGY AESPRIT SYSTEM £1,230 Although not the most exciting package around, the Aesprit scores for imaging, solidity and neutrality.

HINTS AND TIPS

Hever use composite video if you want to see what your player can do. S-Video, which is often best over short distances, or Scart, which scores for convenience, are the right choices for interlace video. Cable quality is as big a deal for video as it is for audio - the freebies in the box are not acceptable. Inexpensive LCD/DLP projectors and plasmas will have their own progressive circuits, but they probably won't perform well. All the usual hi-fi tweaks apply – separate shelf, running in and warming up at the start of each session etc.

into the future. With Cyrus, the path is strongly audio-oriented, underlining the fact that this is a music-first DVD player above all else (not to mention the substantial issue that this is the player which she-videophiles are most likely to a allow in the home). Roksan too is moving in a similar direction, with the prospect (as yet not confirmed) of a DVD-Audio upgrade.

The other two are 'progressive' players, which, while offering no immediate benefit, will certainly come into its own when PAL progressive becomes available. Both will offer a PAL progressive upgrade in the fullness of time, and at no extra cost.

The other gratifying finding is

that here at last is a generation of players that can hold their heads up as CD players that you don't have to apologise for. That doesn't mean they're great. In each case they vie with separate CD players costing, say, half as much, but that's a much better pact with the devil (video, that is) than was on offer even a year ago.

BEST BU

HI·FICHOIC

magazine

STAR DVD PLAYER

DENON DVD-2800 MKII

The truth is that there is no obviously outstanding player here that is head and shoulders above the others, but one clearly offers the best value. It is of course the Denon DVD 2800 Mk II, which is not just another anonymous Far Eastern box, but a well-equipped player with solid build quality, even a touch of panache, and fine video and audio performance alike.



DVD PLAYERS AT A GLANCE

MAKE	Cyrus	Denon	Primare	Roksan
MODEL	DVD 7+	DVD-2800 MkII	V25	Caspian
PRICE	£1,000	£750	£1,000	£1,195
SOUND	XXXX		****	
PICTURE			***	****
FEATURES				
VALUE				\star \star \star \star
CONCLUSIONS	Tiny and beautifully formed, excellent mainstream sound. Good video too – but unfortunately not progressive.	Impressively equipped (if bulky) prog scan player is a high achiever at a surprisingly modest price.	Will be upgradeable to PAL progressive in due course, and offers good performance and an enormous range of outputs.	Non-progressive DVD-Video player, but has excellent performance overall, and a particularly good CD player.

for those with eyes as well as ears



The Nucleus Micro is different.

A 4" diameter, all metal sphere, available in a choice of eight colours, Nucleus Micro's are capable of producing a level of audio performance that defies their physical dimensions.

When coupled with dedicated subwoofers, their unsurpassed dynamics and realism take movies and music to another dimension.

The Nucleus Micro is available through our network of approved retailers, a full dealer list can be found at www.anthonygallo.co.uk or call us on 01555 666 444 to find your nearest stockist.

If you have need of a system that is at once discrete and musically engaging, majoring on communication, clarity and transparency, then look no further. Indeed, if it's the latter qualities that you prize then the Gallo Micros could be your speaker of choice regardless of type. Don't confuse these with the six in a box toys that everybody and their wife seems to be offering these days. This is a genuine hi-fi speaker.

Discover why black speaker boxes are yesterday's news

ANTHONY GALLO A C O U S T I C S U N I T E D K I N G D O M

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Off-board DACs, or digital-to-analogue converters, are back in vogue. We explain how they work and why they make a difference, then test six of the latest designs

separate DAC is a bit of an odd thing, since practically all CD/DVD players (barring a few specialist transports) incorporate one and already have an analogue output. What's more, it can be quite capable of introducing more problems than it solves if not carefully designed.

A major reason behind the introduction of the first DACs in the 1980s was simply that small manufacturers couldn't build CD players – they couldn't buy transports and/or couldn't master the servo electronics to make them work. A DAC was the only practical way to bring audiophile electronics to a mass-market format. That changed, and although a few high-end DACs remained in production the breed almost disappeared from view for a while.

THE HEART OF A DIGITAL SYSTEM?

Now they are coming back. Once again, part of the rationale is to provide an audiophile converter for consumer DVD players, but designers are rediscovering facts learned in the first round of DACs, for instance that performing the conversion remote from the electrical noise of a transport can actually be a very sensible idea. And now there's a new justification – many hi-fi systems include several digital sources (CD, MD, DAB, DVD) and there's surely logic in having one dedicated, high-quality DAC dealing with all of these to the highest standards.

That being so, it's strange and unfortunate that so few DACs have a sensible number of inputs. It's not hard to do... but let's not whinge.

IT'S ALL IN THE TIMING ...

What must a DAC do? Basically, accept a digital input and tum it into analogue audio. The hard part of that 'accept' however is that the DAC must also recover a 'clock' signal from the input. This is where DACs can potentially make things a good deal worse than a one-box CD player, adding (rather than reducing) jitter which generally clouds detail. A measure of how well this is done is the extent to which a DAC 'notices' how good the source transport is. If sound is not consistent between two CD transports, the DAC is strictly 'broken', but in practice very few DACs have ever proved to be completely immune to incoming jitter.

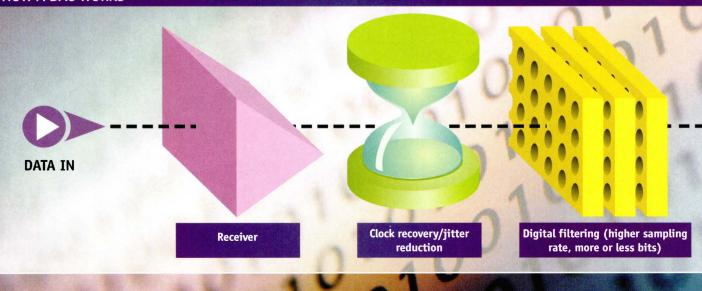
The next stage is usually digital filtering. There are a lot of myths and misconceptions about this. So-called 'upsampling' has become very popular lately, but there's basically little difference between it and 'oversampling', although it's true that in most applications oversampling means upsampling by an integer ratio (eg 44.1 to 176.4kHz) while upsampling is frequently an odd ratio (eg 44.1 to 96kHz). Confusion arises because of subtle differences in implementation that cause small audible differences and mislead people (including designers!) into thinking that something dramatic is going on.

...AND THE FILTERING

Up/oversampling is simply increasing the sampling rate and filtering the signal to prevent ultrasonic distortion from appearing in the output. It doesn't create any information at all, but it does confirm that the information

1

HOW A DAC WORKS



"Many hi-fi systems include several digital sources and there's surely logic in having one dedicated, high-quality DAC dealing with all of these to the highest standards."

contained in the digits relates only to the audio band. Without this filtering, there is uncertainty about which frequency band the information relates to – the better the filtering, the better the certainty. Conversely, poor filtering allows uncertainty which shows up as ultrasonic distortion ('aliasing').

Research I carried out in 1998 showed convincingly that even small amounts of ultrasonic distortion can become audible due to distortion processes further down the line, notably in dome tweeters. This is why the details of the digital filtering are more important than they at first appear – it's a two-stage distortion process which I call 'Alias-Intermodulation Distortion'. Insidious and hard to measure directly, there's probably a lot more of it around than we realise. Quite small changes in filter design can result in different amounts of AID, hence subtly different sound.

Digital filters can have other side effects, too. Pre-echo (not the same as pre-ringing) can occur, and also quite severe phase distortion, though the most common filter types avoid that. These things are documented, but you have to look hard to find them!

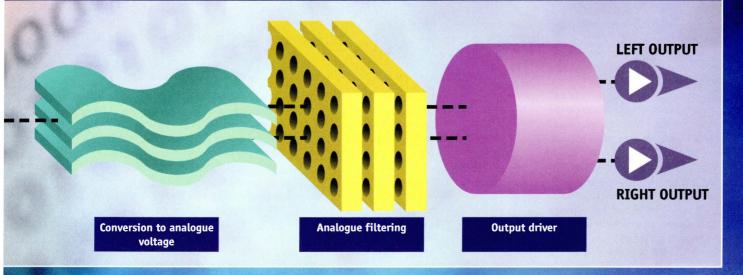
ANALOGUE AT LAST!

Finally there's the actual conversion of numbers to voltages in the heart of the DAC. There are basically three ways to do this. You can convert the entire 16-bit (or 18-bit, or whatever) digital 'word' in one go – this is called multibit conversion. Or you can upsample massively and reduce word length to one bit – often called Delta-Sigma conversion (also bitstream or simply one-bit). Or you can do something in between, upsampling by a large factor and using two to five bit words. These last two techniques work thanks to the wonders of 'noise shaping', a technique closely allied to dithering, both of which can allow digital processes to have much lower distortion than one might at first expect.

With all those variables it's not surprising that manufacturers' claims are sometimes a bit confusing in terms of number of bits, oversampling rate and so on. Trust your ears, ask for friends' and dealers' advice – and of course, read *Hi-Fi Choice*!

DAC TEST

If you've never heard a really good DAC you may be unaware just how good many of your CDs sound. Turn the page to find how a select group of six DACs from £395 to £2,500 fared on audition in a moderately upmarket system – EAR amplifiers, ATC SCM20 speakers, CD players (as transports) by Marantz and Rotel and a DVD player by Pioneer. If some of the results we found don't tickle your curiosity, it's probably because you already own a top DAC!



udio Note makes no secret about having an abiding distaste for all things non-analogue, to the disarming extent of apologising, in the user manual, for this DAC being digital. But the company's approach to making digital tolerable is unusual – instead of employing some form of oversampling (now universal from the highest to the lowest), the DAC One has no digital filtering at all, and only a fairly simple analogue filter, buffered with a valve.

The simplicity sounds superficially attractive, but the aliasing distortion of the DAC, coupled with the regular analogue distortion of the output stage, ensures that any signal passing through is afflicted with a perpetual haze of distortion, much of it not harmonically related. Low-level linearity errors cause distortion even at very low levels, and treble droops noticeably, too.

Construction is neat and tidy, with two inputs (BNC and XLR) and a rearpanel switch. Sample rates up to 96kHz are supported, and resolution is 18 bits.



excitement well and doesn't sound 'digital' in the hackneyed sense, but fails to deliver enough detail for really involved listening.



Is the distortion audible? Frankly, yes. This was easily the least detailed of the six DACs reviewed here, and is also quite coloured on clear, HF-rich sounds like triangle and soprano sax. Where it does score is in raw excitement, and it is quite adept at getting one's foot tapping along – but when you want to listen more closely and hear inner details it's very hard to do so. Dynamics seem quite constricted, too, with a gradual orchestral crescendo sounding rather flat and undramatic at its climax.

Stereo imaging is not bad laterally, but depth is not very clear and overall there's just too much veiling going on for a truly revealing hi-fi experience. This unit has its supporters, and its marked differences in approach make it worth hearing, if only out of curiosity, but it is too iconoclastic for general recommendation.

£1,900 201622 721444 (#) www.chordelectronics.co.uk

hord likes to project an image of a hi-tech company, and the design of this DAC certainly supports that. It is perfectly possible to make a DAC – a good one – with a handful of standard parts and a data sheet, and no more than a smattering of specialist knowledge. To its credit, Chord has dispensed with such conveniences and designed this unit from the ground up – with very good reasons too.

First, there is a unique input circuit which can buffer the incoming data for up to four seconds, effectively banishing any reliance on the data for deriving a clock. Then there is a unique digital (oversampling) filter, the 'Watts Transient Aligned' filter, which is claimed to offer better time resolution than conventional topologies (Chord's explanation is a little vague and unconvincing, but there is certainly much mileage to be had from improved filter designs). Finally, the conversion to analogue is performed by a proprietary circuit: so all in all there is a lot of

VERDICT SOUND * * * * * * FEATURES * * * * * BUILD * * * * * *

The looks will only match an all-Chord system, but the sound will complement the very finest partnering components of any brand. Top-notch detail, tonality and dynamics.



bespoke digital electronics in the DAC64's eye-catching case. All input flavours are catered for: two BNC, one each for Toslink and XLR. Analogue outputs are balanced and unbalanced.

There's little doubting the value of all that originality. This DAC combines the virtues of detail, lack of grain, bass and treble extension and assurance to create a very fine product of its kind indeed. It never throws audiophile tricks in your face and in some music can sound initially unimpressive, but it is the way it rises to any kind of challenge that marks it out. Sudden dynamic attacks, deep bass, complicated cross-rhythms, well-recorded image depth: it's all there, immaculately clear and admirably involving.

Cheap it isn't, but this DAC makes digital audio sound more natural and spontaneous than you may think possible – a must-hear if you're considering spending £2,000 on digital replay.

£395 ☎ 0115 928 4147 @ www.monarchyaudio.com

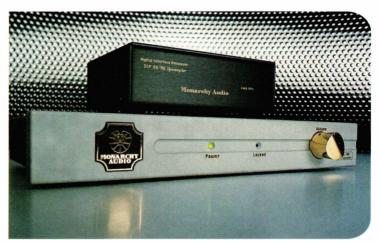
The main distinguishing feature of this DAC is its volume control. A sensible addition (though optional in use, since direct output sockets are also fitted), it allows the DAC to feed a fairly sensitive power amp direct in an all-digital-source system. Inputs are one each of XLR, phono and Toslink, so with luck that simplistic scenario could work well.

Immaculately built, this unit is well filled with good quality components and is certainly good value in that sense. It's actually quite an aged design (the DAC chip is technically obsolete), and that does in fact show up in measurements at low levels – distortion rises with falling level in the way of many early CD players. That apart, technical performance seems okay and there are no operational hiccups.

On audition, the 18B made quite a good impression with its strong and well articulated bass, but further up the band it was less impressive. It has no major flaws but it's basically just rather

VERDICT SOUND FEATURES BUILD XALUE

It's very cheap for what's inside. The problem is that it simply doesn't perform up to the mark and is bettered by complete CD players costing the same or less.



plain, lacking detail and insight. For example, the detailed layering of a good orchestral recording is not easy to 'dissect', while stereo image depth is rather compressed and lacking in credibility. At times there's a hint of coloration on voices particularly.

It seems uncharitable to complain when this DAC is so cheap, but then it's not necessarily going to outperform the analogue outputs of a CD player costing even less and so doesn't make a very strong case for itself. If you need a cheap DAC with more than one input and a volume control this is about the only one and it is certainly listenable, but as an upgrade it is not a particularly strong contender.

£799 ≥ 020 8900 2866 ⊕ www.musical-fidelity.co.uk **MUSICAL FIDELITY A3**²⁴

N ot only does this DAC accept inputs up to 96kHz, it upsamples lower-rate inputs to 96kHz, or if you wish, to 192kHz. Why? Upsampling is the hot topic of the moment and many folks claim quite magical properties for it. It's only another form of oversampling (as used since the Philips CD100 of 1982) but as such no bad thing, if well done. Interestingly, it proved impossible to find any differences between 96kHz and 192kHz operation, either technically or sonically.

Construction of this unit is very good and features such luxuries as two substantial chokes in the power supply. Analogue and digital components are good quality, mostly recent types and the output stage is meaty and capable. Inputs are one phono and one Toslink, and there's also a digital output, simply 'looped through' to facilitate

connection of a recorder, for instance. Sound quality can only be described as very good for the money. If there isn't quite the stunning detail of Chord's DAC64 there's also over a

SOUND

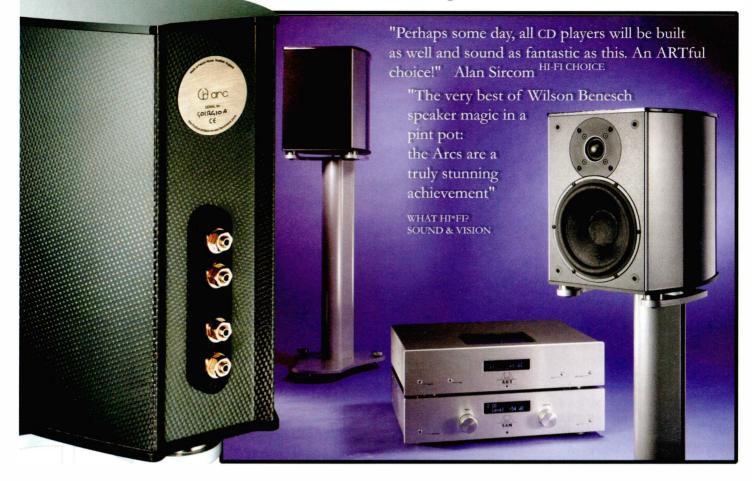
VERDICT

A generously-built unit at a sensible price that fulfils all reasonable expectations and more. Very fine sound that you'd have to spend big sums to better.



grand in change to justify it, and taking as a more reasonable guideline the performance of near-thousand-quid CD players, the A3²⁴ can fairly be described as an upgrade in most cases. It has full and immaculately controlled bass, neutral midrange and cleanly extended treble, with an effortless command of climaxes and some nice touches including particularly fine portrayal of acoustic space and the decay attendant on percussion instruments.

It's only in the densest music that it occasionally fails to resolve every last nuance, and even there one can often pick out details that lesser DACs and CD players would simply have left out or smudged beyond recognition. With just a couple more inputs and a volume control it could be the heart of a very nice digital system – as it is, it's a very good DAC and fine value. call 0114 2852656 or e mail info@wilson-benesch.com for more information



BeauhornTM



The Beauhorn Virtuosos simply manage to make music of all kinds more interesting and involving than conventional speakers. Paul Messenger Hi-Fi+

Once you get the location and toe-in right the B2 is very definitely a Beauhorn. It has the same tactile immediacy and directness that its more sophisticated elder brother possesses. Roy Gregory Hi-Fi+

get that Beauhorn sensation the feeling that you are there



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e-mail: infoc@beauhorn.com

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Telephone: +44 (0)1424 813888

£500 ☎ 020 8286 6661 ⊕ www.sonneteer.co.uk **SONNETEER DRYDEN**

here's nothing pretentious about this device - it has two inputs (BNC and phono) selectable via a front panel switch, and one analogue output pair. All its electronics are contained on a single small circuit board, and components used are mostly of decent commercial quality rather than 'audiophile'. The DAC chip is a fairly elderly one, a 'Delta-Sigma' (one bit) type of quite modest performance. Indeed, measurements on the review sample showed quite significant errors in low-level linearity on one channel and a higher noise level than is ideal, neither of which is particularly likely to aid its performance.

It may seem perverse to demand a noise floor substantially lower than that of a 16-bit source, but recordings with noise-shaped dither can benefit noticeably from noise figures below -100dB (the Dryden manages little better than -90dB). High sampling rates are not supported.

Be that as it may, the Dryden has

VERDICT SOUND FEATURES

With sound which is okay but not great, and unlikely to improve on most good CD players at its price point, it's not clear where the future for this unit lies.



some good points. Bass extension is good and there's a nice solidity to the lower octaves. At best there's quite good detail too, but all too often it seems a little forced and dry, without the mellow quality and overall cohesion that marks out the finest hi-fi. A notably tricky passage for female chorus in a familiar recording showed up a distinct lack of clarity and also a definite compression of stereo depth, and solo voices sometimes seem a little short on resonance.

Dynamics are fairly good, with good attack and gusto at climaxes, but even here it would be nice to have just a shade more 'hear-through' quality. Overall, this is not the improvement it should be on a good £300 CD player, and with the limited features and flexibility on offer it seems hard to recommend this unit.

£2,500 ≥ 020 8979 2155 ⊕ www.townshendaudio.com TOWNSHEND DAC REFERENCE MASTER

his item is not just a DAC – Townshend's name has become synonymous with equipment support thanks to the well-known 'Seismic Sink' range of isolation products, and this crafty model is a DAC built into a Seismic Sink platform. The idea of course is to provide optimised mechanical support for a CD/DVD player while simultaneously converting its digital output to analogue. Townshend is not alone in claiming great things for mechanical isolation of digital sources, though it's a hard point to prove technically.

As with the regular Seismic Sink, this unit provides up/down and side-to-side isolation down to low frequencies. The upper part is made of stainless steel, nicely finished but not very well damped – an area that could perhaps be improved slightly. The DAC itself uses high-grade industry-standard parts, carefully partnered, with an all-discrete output stage and with special attention to grounding and power supplies, giving very good

VERDICT SOUND FEATURES State State BUILD VALUE

A very fine DAC, built into an isolation platform for your digital transport – an intriguing idea which seems to work well. Sound is among the best, though another input would be nice!



measured performance. 96kHz digital inputs are accepted, and there's a pair of balanced analogue outputs. Only one (BNC) digital input, though.

Sound is generally very good in all areas. Balance is endearingly neutral, with plenty of bass but the admirable knack of keeping control so that it doesn't dominate proceedings unduly, and treble is open and sweet. Detail is good too, and it is possible to hear far into any good recording and find out what's going on in a way that lesser hi-fi simply doesn't allow. With excellent stereo imaging, very natural voices and plenty of life to the dynamics, this is clearly one of the better digital products around. It's expensive, yes, but it is well worth a listen if you are seeking fine D-to-A conversion, and the Seismic Sink part of it may prove to be the icing on the cake. (

The world according to... **PRIC**

Bridging the gap between professional and consumer loudspeakers is so notoriously difficult that few manufacturers even try. But PMC succeeded with a mix of talent, dedication and unflinching confidence

t's probably the best hi-fi ad there's ever been. Robbie Williams, trademark smirk, mug of tea, the hardest-looking studio monitor you've ever seen, and just 16 words: "*I've Been Expecting You*, the album: mastered then listened to in Robbie's front room on PMC".

Says it all, really. The Professional Monitor Company - weapon of choice for studio engineers and artists alike. Subliminal message? If you've got the discernment and notably deep pockets you can be part of the club, too. And here's the good bit. Even if you can rustle up only £599, you're in. That bags the Luton-based company's dinky DB1 (no really, DB stands for 'dinky box'), the newest, smallest and most affordable model in the 15-strong line-up, and which, in PMC tradition, easily bestrides the studio/front room divide.

Of course, there are plenty of speaker manufacturers who like to play the 'studio-approved' card. But few come close to challenging PMC. Around 70 per cent of new

Past Glories

PMC BB5/XBD

The design that put PMC on the map. A huge, ugly but sonically stunning transmission line tour de force with two 15-inch radial woofers (in stacked active XBD form – £36,000), threeinch fabric-dome midrange and one-inch silk soft-dome tweeter with double chamber. Goes very loud with finesse. Blows virtually all subwoofers away for bass grunt and extension.

PMC LB1 Reviewed in *HFC* 199 Designed to show that PMC could do comparatively small as well as absolutely enormous, the £1,150 LB1 has been around for a few years now but remains fully competitive. It's an odd size and not very pretty but its wide-open sound and neutrality make it something of a modern classic. CDs bought in the UK are claimed to have been mastered using PMC monitors. Hollywood can't get enough of them. Many of the biggest blockbusters over the last ten years – including the multiple Oscar-winning *Titanic* (one was for the soundtrack) – have benefited from the PMC touch. Stevie Wonder, Mariah Carey and even the Vatican are loyal customers.

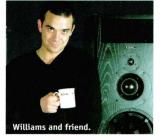
And the crucible of production talent that is London's Metropolis

TAKE THAT

Oh to be Robbie. I ask PMC's managing director Pete Thomas how the ad came about and if any money changed hands. "His album, *I've Been Expecting You*, was mastered with BB5s," Pete explains for what must be the millionth time but with relaxed good nature. "He liked the result and then suddenly wanted to have something at home. First he tried the IB1s but, after a few days, said

"Plenty of speaker manufacturers like to play the 'studio-approved' card. But few come remotely close to challenging PMC."

Studios has them virtually wall-towall in all eight studios, including the 5.1 surround mixing suite where the Titanic soundtrack was completed. The centre of this softly-lit room is arguably the planet's most impressive sonic sweet spot. Firing at it from front and rear are two pairs of active BB5 XBDs (claimed to have the widest frequency range and lowest distortion of any speaker system made), plus a fifth, centre channel BB5. How good does it sound? It's almost impossible to say. During my afternoon tour with Metropolis technical manager John Goldstraw, I assume the position and can't honestly hear the 'system' at all, just a musical presence that's almost tangible. The usual highend criteria don't quite reach - the performance is both an education and addictive. When John is ready to move on, I'm still rooted to the spot. At one point, it looks as if I'm going to have to be carried from the room.

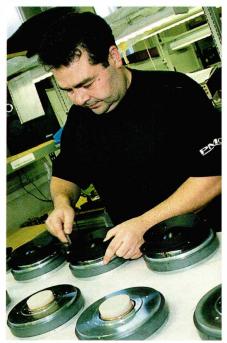


he wanted something that went louder, and the IB1s go bloody loud! I shouldn't imagine he's very popular with the neighbours. So he ended up with MB1s (the ones in the ad). The only money that changed hands came our way. We gave Robbie a ten per cent discount on the speakers.

"The trouble is that once you get used to hearing a good recording on a big pair of monitors, if that's your reference level, then most consumer products are going to seem second best. They might have the detail but not the life". It was Pete's dissatisfaction with **(**













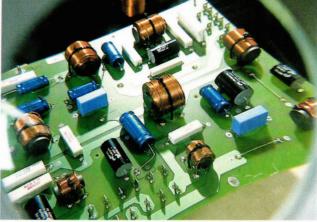
PMC's professional speakers may not be pretty, but their sound makes them a popular choice for studios. The consumer models offer similar properties, with domestic tailoring in the looks department.





Industry Profile PMC





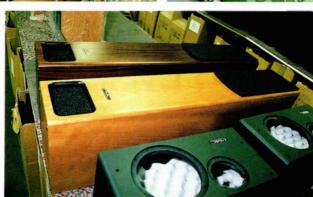
the gap between full-range pro monitors (loud but unsubtle) and the best domestic hi-fi speakers (subtle but not loud) while he was an engineer at BBC radio that sowed the seeds of PMC.

He wasn't the only one who recognised the dilemma. "My business partner Adrian Loader also worked at the Beeb. He was employed by a big distributor that sold high-end pro equipment – microphones, EMT turntables and Revox tape machines.

"Both of us had had quite serious hi-fi systems for about 15 years and we were earning good money at that time with about 50 people in our departments. So we thought we'd go out and buy the best speakers we could – this must have been mid-eighties. We got in all the top high-end speakers you could imagine, listened to them... and thought, well, yeah, they're all right. Different certainly, but we really didn't think they were an awful lot better considering how much they cost."

What helped focus Thomas and Loader's thinking was the BBC's growing need for a monitor in its music studios that had high-end hi-fi values but could also blow the walls down. Pete continues: "Because the Beeb, in its smaller studios, used Rogers and Spendors and were used to the hi-fi sort of sound, they wanted that in their big studios. So while I was there through the eighties we developed a prototype big system with two 15-inch woofers, a dome midrange and dome tweeters. This is what became the BB5. We'd basically developed a high-end, high-level hi-fi speaker, capable of 130dB but with true high-end standards of detail and imaging, even when played quietly."

Today, PMC exports to 25



PMC's acoustic foam offers more controlled damping than the conventional woolly materials used in some transmission line speakers.

countries all over the world. The biggest markets are the Far East and the States. It will have turned over 2.5m this year. The workforce of 20 is still relatively small but there's plenty of room to expand in the Luton factory. Pete says PMC's turnover is doubling every 16 months. "And that's without a huge presence in the US consumer market. It's just opening up for us now. We could triple our output at a stroke as that starts to grow."

LIVE TRANSMISSION

Thomas and Loader had long been big fans of the transmission line loading principle. Pete lists the main benefits as low distortion and excellent bass extension from a reasonable-sized cabinet. He also acknowledges it's not terribly fashionable these days. "Quite a few people have made a pretty bad attempt at it and given transmission lines a bad name," he sighs. "One of the keys to designing a proper transmission line, one with a very smooth response, is getting the damping material in the line perfect. And the trouble is everyone's using this bloody long-haired wool stuff. They drape it across the line and, of course, you can never build two

pairs of speakers the same. Foam – acoustic foam, which is very tightly specified – took about nine months to a year to get right."

At about the same time, Thomas and Loader decided to break free from the BBC. They formed PMC in 1990 and the BB5 was officially born. Next out of the PMC cage was the comparatively diminutive LB1. "Nobody really built transmission line speakers smaller than a box THIS BIG," says Pete holding his arms wide. "Everyone associated transmission lines with a box the size of a skyscraper.

"The other thing, arrogant I suppose, is that we didn't think the other floorstanders were very good. This is something that's driven PMC from the start. We get them all in, listen to them, and usually say 'surely we can do better than that'. Let's do something more adventurous. Like the transmission lines. I mean, for me to design a reflex or infinite baffle box on a computer in half a day, I'd put a gun in my mouth. It's not interesting. And, as a designer, you come up against a brick wall. You're not going to get past a certain level of performance because that's it. Whereas with a transmission line there are so

many variables.

"Take the DB1. Ten years ago it would have been twice as big; that's how we're getting to refine the technique. And there's still more to do, that's the exciting bit. The FB1 goes down so much lower than any other floorstander of similar size. Distortion is good, the image placement is great because of the care we take with tolerances. No, there's no tailoring for the consumer market. That's the best floorstander we can make for that price."

"Yeah, it's interesting to see how far you can push the limits," concludes Pete. "But even if you've got a speaker with four 15-inch drivers that will produce 130dB, if you go into a studio and you hear someone hitting a bass drum, the bass drum still wins. It's really how close you can get to it. It's good to listen to live music regularly because it makes you realise there's a long way to go. It's very easy to start to convince yourself you've done it all perfectly. And then you hear a real drum kit in a room, and it is hard to get those transients. That's the goal." (2 PMC 0870 444 1044 www.pmc-speakers.com Turn over for a review of PMC's new IB2 loudspeaker

Current Key Products

PMC FB1 Reviewed in *HFC* 204 PMC's first consumer speaker, the £1,410 FB1, offers a terrific blend of clarity, dynamics, bass extension and, in contrast to the company's brutallooking pro kit, elegant aesthetics. Not only do they dig deep but with fine speed and musicality, too.

PMC DB1 Reviewed in HFC232 The £599 DB1 is the world's smallest transmission line design, with an effective line length of 1.5m in a tiny, heavily damped cabinet. It's a little bright up top but strengths include outstanding dynamics, low distortion and bass depth that suggests a speaker of dramatically larger proportions.

MUSICAL FIDELITY



A3.2 Series. Machined, Mil-spec aluminium front panel. Platinum plated fittings. Remote controlled. Phono stage. Powerful, robust, built.

"The IB2s soak up a lot of power without giving the slightest hint of duress – in fact they positively encourage you to carry on pushing the level to unhealthy volumes."

PM



Take no prisoners

A no-compromise loudspeaker system that won't 'entirely' take over your listening room

familiarity with PMC's popular TB2 and FB1 loudspeakers leaves one totally unprepared for the uncompromising nature of the brand's larger models. The IB2 was designed to be a domestic loudspeaker yet it is the biggest standmount we've come across for aeons. But next to PMC's full-on professional models it does indeed look almost civilised what with the post-formed baffle edges and the lovely matched veneer. Nonetheless, those of you who can't resist its sonic charms may need to make a few alterations if you wish to ensconce a pair in the family living room - knocking down a few walls might do the trick! What could be required if you fancy going the whole multichannel hog we shudder to think.

The name IB stands for intermediate box, and there are two further ranges above it: MB (medium) and BB (big), the latter of which is available as a fully active rig with a separate bass cabinet acting as a stand, a snip at £36,000. Yet it uses the same midrange and high frequency domes found in the IB2. The less expensive IB1 achieves its price point by using less refined drivers in the same box. The IB2 was conceived to satisfy the requirements of JVC Japan, PMC's distributor there, which wanted a better speaker than the IB1 but not a larger one. The fact that diminutive Japanese

TRANSMISSION LINE TECHNOLOGY

The bass driver is placed at one end of a heavily damped 'tunnel' or transmission line (TL). This damping is designed to absorb the upper bass and higher frequencies which radiate from the rear of the driver, so that the lowest frequencies emerge from the large vent at the end of the line in phase, acting as a second driver.

One advantage is that rear air pressure is maintained, controlling the driver over a wide frequency range, which significantly reduces distortion. A spin-off from the lack of distortion is that the upper bass and midrange are not masked by low frequency harmonic distortion. A TL produces a higher SPL (sound pressure level) and lower bass extension than a ported or sealed cabinet of a similar size using identical drivers.

VERDI T PMC IB2 standmount loudspeakers £6,150 (inc stands)

O Bass extension, dynamics and transparency to compete with the very best.

• Rather dumpy aesthetics, reveals everything about the system that drives it.

CONCLUSION

Stunning in an understated way, this speaker creeps up on you and before you know it you're hooked on its transparency and power.

KEY FEATURES

• Cabinet: 25mm Medite box with 18mm internal partitioning creating a transmission line with an effective line length of 2.4m

Real wood veneers: black ash, cherry, oak

Size: (WxHxD)
 33x74x46.5cm
 Weight: 45kg

Tweeter: 27mm silk dome with double chamber, Ferrofluid cooled

Midrange driver:
 75mm fabric dome
 Bass driver:

250mm long throw, carbon fibre and Nomex flat piston

Crossover: 25 element, 24dB per octave, 4th order, Linkwitz Riley tri-wire terminals

Optional Bryston
 Powerpac
 amplification for
 pseudo active
 operation

Dedicated stand supplied with speaker homes are willing, nay dead keen, to accommodate these beasts suggests that they've got their priorities spot-on.

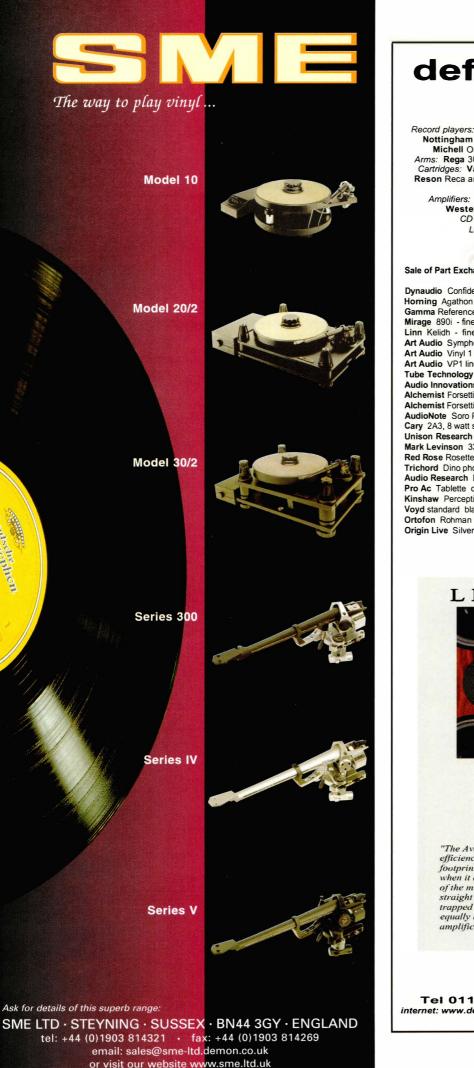
The IB2 is a three-way, transmissionline design with an unusual array of drive units in its weighty carcass. Starting at the top the tweeter is a 27mm silk dome, which makes it a little larger than the 25mm norm, but the next unit down, a 75mm fabric midrange driver is quite a scarcity. The only other company to use this unit so enthusiastically is that other pro-oriented British brand ATC, whose SCM50 has many similarities to the IB2. In this instance only the dome itself is shared, PMC builds the driver with a huge magnet that's wider than the short horn surrounding the cone.

By far the rarest find on the front baffle however is the flat bass driver. Made from carbon fibre outer skins with a Nomex honeycomb centre, this is a light, stiff structure that is designed for perfect pistonic action. Advantages include the

removal of deformations and edge distortions that affect cones, but the drawback is a loss of sensitivity due to the mass of the unit and its unusually long motor assembly. In this instance sensitivity is increased by the use of another enormous magnet driving a 75mm edge-wound voice coil for high power handling. The overall sensitivity of the box is quoted as 88dB/four ohms which is not high for the size and probably kept down by the bass unit. As an amplifier load however it doesn't seem to be problematic - we got good results with an integrated Moon I5 which is specced at 70 watts, albeit better ones with the 200-watt Gamut D200

PERFORMANCE

To those unused to the company of loudspeakers that go down to 25Hz with ease the most appealing element of the



definitive audio

Peddlers of fine wares, including:

Record players: SME models 10, 20 and 30; Kuzma Stabi, Stabi Reference; Nottingham Analogue Interspace, Space Deck, Hyperspace and Dais; Michell Orbe; VPI AriesScout; Avid Volvere, Sequel and Acutus. Arms: Rega 300/600/900; SME Series IV and V; Kuzma Stogi; Triplanar. Cartridges: VanDenHul Grasshopper and Colibri; Kuzma KC Ref; EMT; Reson Reca and Elite; Cartridge Man Musicmaker; Benz-Micro including Ruby Open Air; Kondo lo J. Amplifiers: Border Patrol; Canary; Sugden; Art Audio; Monarchy;

Western Electric; Icon; Tom Evans Audio Designs; SJS. CD Players: Wadia; Sugden; Primare; Resolution. Louspeakers: Living Voice; Vitavox; Lowther. Cables and Tables by Living Voice.

Sale of Part Exchange and Ex-dem Items	Sale	New
Dynaudio Confidence 3. Rosewood, perfect, boxed, giveaway.	£2750	£4800
Horning Agathon - 98dB 2 way horn, mahogany	£1500	£3400
Gamma Reference 5 speakers - gloss black - giveaway	£1000	£4500
Mirage 890i - fine condition - give away.	£200	
Linn Kelidh - fine condition - give away.	£200	
Art Audio Symphony (full chrome) 300 B SE 10 w. int.	£2250	£4000
Art Audio Vinyl 1 mm phono stage. Chrome	£1000	£1550
Art Audio VP1 line pre. Chrome	£1000	£2000
Tube Technology MAC mm and mc phono - as new	£900	£1400
Audio Innovations L2 line pre	£350	£750
Alchemist Forsetti ADP 15A integrated amp - remote control.	£700	£1400
Alchemist Forsetti ADP 20A stereo power amp.	£700	£1400
AudioNote Soro Phono integrated. Serviced, new valves	£700	£1900
Cary 2A3, 8 watt stereo with Cary pre amp. New valves.	£500	
Unison Research Feather One line pre-amp.	£800	£1400
Mark Levinson 334 Power amp. April '02 boxed perfect	£4000	£6000
Red Rose Rosette 1 integrated, perfect, boxed.	£1000	£2000
Trichord Dino phono stage and power supply. June '02	£450	£650
Audio Research LS2 B line pre	£1250	
Pro Ac Tablette cherry	£300	
Kinshaw Perception 2 box pre-amp - Give Away	£100	
Voyd standard black - perfect - collectable joy.	£1500	
Ortofon Rohman - June '02 <10hrs use	£600	£1000
Origin Live Silver 250 "	£500	£600

LIVING VOICE



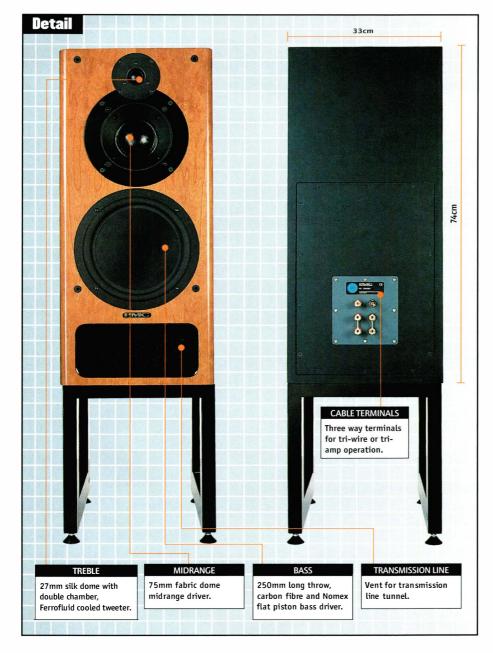
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MASTERCARD



IB2 will be its phenomenally deep and tight bass. I use a very decent REL sub-bass system to underpin my usual speakers, and though this gives gravitas it can't produce the three dimensionality and articulation on offer from these PMCs. This is combined with a V12-style unflappability that suggests they are merely cruising when the volume pot is nearing its end stop – they soak up a lot of power without giving the slightest hint of duress – in fact they positively encourage you to carry on pushing the level to unhealthy volumes.

I guess this is what you should expect of a company with such strong links to the professional world, where guys spend all day refining recordings in highly damped studios. Then mix them down so that they sound kickin' on a portable blaster – such are the pressures of the music industry!

But back to the bass, check out the double bass notes on *The Man Pt1* from Peace Orchestra's eponymous album – they're positively elastic, there's so much detail and shape in the sound. Don't get me wrong, the rest of the frequency range sounds pretty stunning too. You don't get low frequency speed without mid and high frequency transparency and these are very much part of the deal. It all adds up to a gripping musical experience – Massive Attack's *Angel* from *Mezzanine* is exposed in all its grimy glory, the dirty sound of the samples

"The IB2 was designed to be a domestic speaker yet it is the biggest standmount we've come across for aeons."

overlaid with depth-plumbing bass notes that are both round and tactile.

The midrange driver is a superior device, exposing all aspects of the performance and recording to scrutiny. Back on the Peace Orchestra disc the samples stand out a mile - and I used to think it was such a slick disc. Genuinely clean creations such as Missy Elliott's Danaerous Mouths from Da Real World yield phenomenal levels of detail and nuance of production. The bass on this track is frankly awesome - expansive and deep, filling the room and creating a stage for the voices and effects. This is a stunning example of the way that bass recording and mastering has been transformed in the last ten years - you won't find any pre-digital recording that can kick ass in such convincing fashion.

With a more sophisticated piece such as *Shostakovich's* 11th on *LSO Live*, the full terror of the first Russian revolution is reproduced in graphic detail. You can see why this is considered cinematic, one is left in little doubt about the scene being described and the bombardment of timpani sends a chill down the spine.

The PMC IB2 is a superb loudspeaker. Its considerable, sonically sensible proportions help it to reproduce the full dynamic and frequency range in an effortlessly convincing manner. This, combined with a character that hardly changes with level and an open, transparent and expressive mid and top end make it a speaker to die for. PMC 0870 444 1044 Www.pmc-speakers.com

ALSO CONSIDER

B&W NAUTILUS 802 £6,000 A blindingly good loudspeaker that looks

stunning as well. An outstanding example of the high-tech speaker builder's art.

ATC SCM50A SL £7,255

Active design with built-in power amplifiers uses similar midrange to the PMC and delivers an alarming level of resolution and grunt.

TANNOY DIMENSION TD12 £6,500 Art Deco-inspired style with magnificent

headroom that manages to deliver genuine monitoring neutrality.

Working Classé hero

Is the Canadian high-end company's entry level pre/power combo dated or feted?

anadian amplifier manufacturer Classé was one of the leading lights in the early 1990s high-end community. Now it's back, under the wing of B&W. The CP-35 and CA-101 are the entry-level preamplifier and power amplifier from the company, but you'd never know from the design. Thick front panels, balanced audio inputs and outputs, stonky terminals – you feel that if you chucked it out of a second story window in a fit of pique, the ground would crack first.

An elegant design, the £1,195 CP-35 is a line-only, four-source, remote controlled preamplifier which features both balanced and single-ended inputs and outputs. Classé's engineers strive to eliminate microphony in preamplifiers, and to this end they've chosen a design made completely of discrete components, in particular an oversized and screened toroidal transformer and plenty of small reservoir capacitors to boot. The preamp uses a combination of bi-polar, FET and MOSFET devices where they're appropriate in the circuit.

The 100-watt, £1,599 CA-101 balanced or single-ended power amp manages to combine the load intolerance and seemingly endless power

THE B&W CONNECTION

Loudspeaker maker B&W has been an importer of useful hi-fi electronics for many years (with the occasional break), but it has seldom had so slick a portfolio of electronics products as it currently sports. In the past, B&W was best known for its association with Nakamichi (now distributed directly through Nakamichi UK), but more recently Britain's biggest speaker company has taken on the well-loved Japanese brand Rotel for the mainstream hi-fi and home cinema systems while Canadian Classé handles the more high-end duties.

Both of these distributed companies produce source components as well as two-channel and multichannel electronics. More importantly, as both product lines are a fine match for B&W's loudspeakers, the combinations look set to be with us for many years of success.

Classé CP-35/CA-101 stereo pre/power amp £2,794

VERDICT

(£1,195+£1,599) ○ Warm, detailed, dynamic and fast sounding. Extremely natural and has good imagery too. Built to last and excellent value for money.

• Not so bassy and alive at very low listening levels, otherwise there's nothing worth niggling about.

You will wish we had long Canadian winters to curl up in front of this extremely honest amplifier combination.

KEY FEATURES

Four-source line-level preamplifier

 Remote control
 100-watt stereo power amplifier

Balanced and single-ended operation

 Screened toroidal transformers in both preamp and power amplifier
 Multiple small reservoir capacitor

designs
O Use of bi-polar and

FET-based devices throughout C Discrete components throughout



of American high-end designs with the quicksilver speed of smaller Brit-fi amplifiers. This is achieved by using the small reservoir capacitors concept from the CP-35, in place of the fist-sized caps which are seen in some Stateside high-end products. It maintains Class A in the first third of the output of the CA-101, which translates into Class A sound at times but without the attendant Class A heat.

It is hard to tell just how much running-in the amplifiers need from cold - someone had already done that for us with the test sample (and had even thoughtfully left the preamplifier box as a useful day bed for a ginger cat). However, the preamp needs constant power - it has no power switch on the front panel - and the power amp improves after being powered for half an hour or so. Fortunately, despite big rear-mounted fins on the CA-101, both products run cool and the CP-35 draws minimal juice. Unless you dim the display, though, you'll still get the bright red LED volume level on show at all

times, which can be a bit off-putting when not in use.

PERFORMANCE

This will appeal to British ears. That small caps idea really does work, combining the speed and dynamic shading of lower-powered Euro high-end with the bottomless pit of stern speaker-corrective measures that only a good Yank amp can provide. This, of course, makes these amplifiers ideal for B&W, which is successfully applying its own transatlantic sound of speed, dynamics and scale to loudspeaker designs.

Stick on anything from the lo-fi weirdness of The Coral, to a gentle slice of Chet Baker and you get a palpable sense of control over the music, but never to the point of sounding oppressive or stodgy. Instead, you get all the raw edge of the bad recording session or that almost-pained soaring voice and doleful horn sound rising out of the blackness. Better yet, it keeps time like a drum majorette who's swallowed a metronome. Even the difficult polyrhythmic structure



of *Bach's Partitas* or plain old jazz craziness like Ornette Coleman or Eric Dolphy is ironed out and decoded. And, if there is the slightest smidgen of imagery in the recording, this will dig it out. In short, it's a highly threedimensional, natural-sounding amplifier.

There is more than a hint of warmth to the sound, but fortunately that warmth doesn't come in a soggy wrapper. Stick on Dr Dre at full tilt and the room will be heaving, but it has a slight taming effect on the gritty street sound of the original version of *The Chronic*. That gives everything a very slight hi-fi sheen, but never to the extent that it destroys the detailing. If there is a bad edit, you will hear it readily, but it doesn't highlight the bad points in the music either.

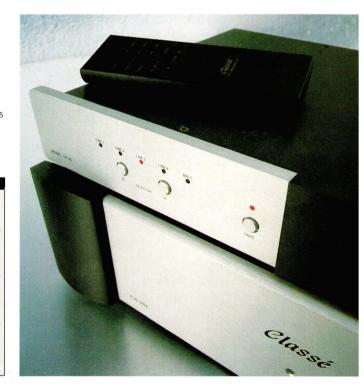
The only place it shows its entry-level status is at low-level listening. Play a disc in the background or late at night and the dynamic range gets flustered, pitching the midband and treble above the bass. It's not thin in the bass, just extremely controlled, but at low levels, that control becomes a bit too

ALSO CONSIDER

AUDIO NOTE M2PHONO/P2SE £2,698 The very antithesis of big transistor power designs and all the more dramatic for that! BRYSTON BP20/3B-ST £2,850 Yet another solid and powerful Canadian design that is unilaterally recommendable for any hi-fi setting.

MUSICAL FIDELITY A308CR £3,898 The big and bold design is augmented with an absence of musical coloration that is extraordinarily attractive.

PRIMARE A30.1/A30.2 £2,700 A smoothly powerful Scandinavian design that generally works well, but can sound a bit uneven with some speakers.



Silver surfer

EXELUSIVE Musical Fidelity has produced the first integrated SACD player from a British marque, rare valves and all. It's two-channel only, but it's truly a stereo superstar...

usical Fidelity has cornered the market in limited-run valve gear that features some of the more exotic triodes around. This began with the Nu-Vista range, using a military-spec screened triode valve called nuvistor. These garnered some of the best reviews on the planet, but are now history. Fortunately, Musical Fidelity had an even more obscure, better performing tube up its sleeve – the so-called 'Tri-Vista'. MF's latest flagship products – starting with this SACD/CD player and an integrated amplifier – use this ultra-rare triode valve, in this case in the output stage.

The big question is whether there really is such a thing as a 'Tri-Vista' valve at all. Unlike the well-documented nuvistor tube, the 'Tri-Vista' 5703 triode valve is little known. Like the nuvistor, though, the 'Tri-Vista' tube is a miniature military-

NEW TUBES?

Most companies replace their statement products no more than about once every five years. Companies like Naim Audio and Mark Levinson take this to extremes: although there have been changes, both companies' flagship digital products remained effectively unchanged for almost a decade.

By contrast, Musical Fidelity's limited edition Nu-Vista CD player was receiving its laurels back in late 2001 – and now it has already been superseded by the Tri-Vista. These products do have a trickle-down effect, making kit like the A308 range for example, but things at MF seem to be developing rapidly.

While this fertility has to be applauded, it poses a question – what's next, and when? Companies must continue to develop new and better products, as Musical Fidelity is clearly doing, but is this limited edition Tri-Vista range just another stepping stone to an even better digital audio product in a month or two called a Quad-Vista, perhaps?

Continuing down the mil-spec triode route must have finite limits – most of these tubes are out of the Cold War freezer, and that particular avenue of development thawed out almost 40 years ago.

VERDICT Musical Fidelity Tri-Vista SACD/CD player £4,000

• Excellent vinyl-like sound on SACD and CD, with a strong output that grips the amplifier and cables like a vice.

No on-board multichannel SACD replay and the lack of balanced outputs may hold this player back in some high-end circles.

CONCLUSION

There'll only be 800 of these wonderfully natural, musical masterpieces made – put your order in quickly. You won't regret it.

KEY FEATURES

CD/stereo-only SACD player

stage features unique 5703 'Tri-Vista' tubes

 24-bit/192kHz upsampling DAC
 Choke regulated power supplies

 Optical and electrical digital audio inputs and outputs

Single-ended stereo analogue output

O Unique feet that change colour to show warm-up specification triode from the late 1950s used in situations where the normal-sized triode tubes would be too microphonic and prone to vibration. Technically, the name 'Tri-Vista' exists in the Musical Fidelity world alone. Regardless, Musical Fidelity managed to secure the entire stock of 5703/'Tri-Vista' tubes for its products – enough for around 800 SACD players, 500 integrated amplifiers, 300 preamplifiers and 300 power amps, with enough spares left over to keep these products serviced long into the future (the life expectancy of the tube is Methuselah-like anyway).

Using the 5703 tube in the output stage bestows a significant advantage on the Tri-Vista player. It means the output stage effectively becomes a Class A amplifier delivering almost five watts. Allied to low output impedance and high damping factor, this means the SACD and CD output of the Musical Fidelity is powerful enough to drive any interconnect cable and preamplifier input stage, thereby minimising the deleterious effects these two sections can introduce. It also means the possibility of using a passive preamplifier design without too

much strain

The player itself hardly bristles with gadgets. It has just a pair of single-ended phono outputs for right and left analogue channels, a coaxial and optical digital input and a coaxial and optical digital output. In a world fast filling with multichannel SACD recordings, the absence of six-channel replay may seem like a major stumbling block. However, Musical Fidelity has plans to release a multichannel player in 2003, but also suggests this player is designed as the best two-channel player MF can make and the multichannel decoders are surplus to the requirements of a stereolover's needs. A fair point, but it would be nice to have the option anyway.

Under the hood, it is full of recent Musical Fidelity top-spec componentry, only this time featuring a bolstered-up, off-the-shelf SACD transport/stereo decoding system alongside the CD digital audio stages. It uses a dual-layer choke regulation power supply, giving best-quality juice to all sections of the player. This means the SACD and CD audio paths can be completely separated, right down to the power supply level. It has the same DAC circuit as the previous 3D Nu-Vista CD player, but this time with an improved digital filter and 192kHz upsampling.

PERFORMANCE

Warm-up is an issue with any player, but seldom has the process been quite so illuminating. The feet of the elegant silver and black player glow red when first powered up, then turn a softer shade of amber segueing finally into blue when the player is performing at optimum temperature about half an hour later. This is less garish than the description suggests. The glowy feet take no account of burn-in, however, and a good few weeks are needed to bring the player to its best potential.







"Imagery seems like nothing special, until you play an audiophile disc and then gasp as your listening room expands to Albert Hall dimensions."

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KRELL KAV-280P PREAMPLIFIER

New from Krell is the long-awaited entry-level preamp, the KAV-280P. The ideal partner for the KAV-2250 power amplifier, the 280P has a beautiful rotary volume control as well as full remote facilities, and sports some gorgeous WBT socketry at the back. Dynamic, open and subtle. Hear at Pinewood.

SONUS FABER CREMONA AUDITOR

Without any doubt, the sensation of the year - the decade, maybe - is Sonus Faber's beautiful standmounted Cremona Auditor. This is already creating a storm for us. What a speaker! We consider this Franco Serblin's finest-ever miniature. With looks and a finish to die for, the performance of this little jewel is beyond belief. If you love your music, this is a must-have - and at a price that surprises everyone. It's at Pinewood. Hear it YOU will not be sorry. If you prefer a floorstander, then naturally we have the superb Cremona.

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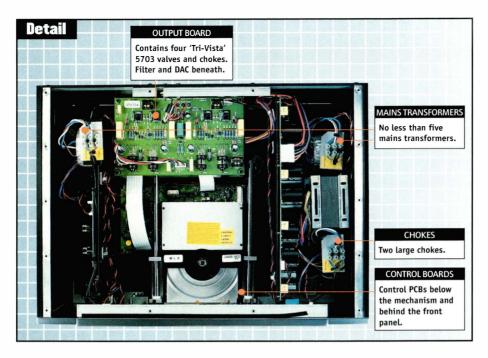
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"Whatever other gear is used, this player always sounds more like analogue than most CD players, in that all-important musical sense you get from vinyl."

The four feet all

glow blue when the

Distinctive, but not

player is running

on song.

unattractive.

There is a characteristic Musical Fidelity sound, which seems to apply to most components in the portfolio: very rich and with a good beat, perhaps a bit strident in the treble. That's no bad thing – it's a sound that's proved extremely popular. But it's a sound that just does not apply to the Tri-Vista player. The treble isn't strident any more – it's pure and clean and smooth. This is a very high-end sound, hugely attractive, extremely detailed and very ordered from top to toe.

How detailed? It can cope with the choral lunacy of The Polyphonic Spree without turning a hair, yet can also take hold of the simplest ancient harpsichord recording like Trevor Pinnock's *Bach's Partitas* with both enough delicacy and enough dynamic range to keep it firmly in the baroque. That sweet top end stays on the right side of high-end softness, as it doesn't planish the life out of more raucous material like The Strokes.

Sonically, it's a very hard player to pin down. It is not an overtly rhythmic machine, until you stick on Fat Boy Slim. It doesn't seem dynamic, and then you play Tom Waits' *Fall Of Troy* from the *Dead Man Walking* CD and prepare to be amazed. Imagery seems like nothing special, until you play an audiophile disc and then gasp as your listening room expands to Albert Hall dimensions. All this is on CD, but it does a great job with SACD too. It can't play the multichannel surround track available on most new and recent SACD titles, but discs invariably sport an additional two-channel SACD-spec version and this it plays with fluid majesty. Like many an SACD player, it is hardly the most upfront and attacking sound around, but for detail and precision, this player must rank as the *ne plus ultra* of SACD replay.

No-one would expect to use a four-grand SACD/CD player with a £500 amplifier and a pair of £100 speakers. But paradoxically that is where it best shows its worth. By having that powerful output stage, the player controls lesser kit beautifully, overriding some of the inconsistencies commonly heard with lower priced gear. Equally, in a high-end system the player performs expertly, especially partnered with a Tri-Vista amp.

Whatever other gear is used, this player sounds more like analogue than most CD players, in that all-important musical sense you get from vinyl. It is simply the best CD player MF has ever made and one of the finest available anywhere. 2 020 8900 2866

www.musicalfidelity.com

ALSO CONSIDER

AUDIO RESEARCH CD3 £5,500 It's 'only' a CD player, but this high-end toploading player is a paragon of musicality.

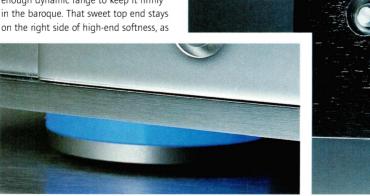
MARK LEVINSON 3905 £6,495

Built like a tank, this black stallion of a CD player is a musical masterpiece.

SONY SCD-1 £3,045 The first SACD player is still a tough act to beat. Like the MF, it's stereo only.

WADIA 301 £3,650

You might have to play CDs upside down, but you'll keep playing them with Wadia.





"Simaudio has gone back to basics and used a simple 8x oversampling rate to give the unusual 352.8kHz rate specified."

DE E CENTRE



Full Moon

Moon's integrated CD player with attitude proves there's life in traditional digital technology yet

he Moon range of electronics may not have a high profile in the UK but it's made by Canadian group Simaudio, whose history harks back twenty years. The name may be reminiscent of an oriental brand but Moon is Quebec based, which shows through in the unusual styling of the Nova CD player. This is one of its more modest offerings – the Moon range includes some very heavy-duty kit for stereo and multichannel set-ups.

Based on the brand's two-box player, the Eclipse, Nova uses a Philips-based transport mech with precision matched Burr-Brown 24/96 converters. It eschews the current fashion for upsampling and uses traditional 8x oversampling to achieve a claimed 24-bit, 352.8kHz resolution (see box). It has separate power supplies for digital and analogue sections each with their own toroidal transformer. These feed seven stages of voltage regulation to aid the signal down its capacitor-free path.

The casework is more elaborate than usual and reminiscent of early Alchemist products with its tubular heatsinking intersected with columns for legs. The latter taper to a thread which accepts spike tips – while not transforming the Nova into a weapon per se, they'll still give varnished surfaces the jitters.

It has all the usual connections plus an RS-232 port for use in multi-room style installations. The digital output is a BNC type which means that it has a genuine

TECHNOLOGY: UP OR OVER?

Simaudio doesn't have a lot of truck with the latest fashion for upsampling in CD players. Its take on the technology is that if you're not multiplying CD's fundamental oversampling rate by a whole number then you are in fact making life more complicated for the filtering that follows

The argument is that to upsample CD's 44.1kHz sampling rate to 96kHz involves an awkward mathematical operation (96/44.1 = 2.1768707...), ditto for 192kHz.

Simaudio has gone back to basics and used a simple 8x oversampling rate to give the unusual 352.8kHz rate specified for the player. This it claims offers higher resolution and allows the use of simpler filters to offer better sound at the output of the player. 75ohm impedance – but this is only an advantage if your DAC or digital recorder has a matching BNC digital input.

PERFORMANCE

This hefty player proved difficult to nail down. It was tried with several system combinations including the big PMCs (p58), and the Moon I-5 integrated amp through Eikos speakers. But every time they were switched to another player and back again the differences that had initially been there seemed to change.

Even so, it wasn't difficult to appreciate the Nova's more obvious plus points. Timing is certainly one of them - it's clearly sensitive to the tempo of the music and pronounces the beat with clarity. Fortunately it doesn't have the sort of hard-edged balance that emphasises timing. Such players can become fatiguing when you listen long and hard, but it does draw the listener into the groove should there be one there to dig. It has a fluency too which increases perceived musicality. Take the opening track on Anouar Brahem's Thimar (ECM), this is a natural and open recording of a few instruments whose sound can vary between so-so and utterly inspiring depending on the system. With the Nova reading, your attention is drawn to the lyrical nature of John Surman's saxophone and diverted from the slightly sparse nature of the overall presentation.

The Nova is not the greatest producer of sonic holography (or imaging, as it's known) – other machines seem to extract more depth from the sound but given an

VERDICT Moon Nova CD player £2,950

• Great sense of timing, good focus and precision, nice bass grunt. Unusually clear display, good quality system remote. Decent dynamics.

• Direct track access missing from remote. Imaging could be stronger.

A well built and attractively executed player, the Nova has timing qualities that draw you into the music and show you what really counts when it comes to top-notch home entertainment.

KEY FEATURESDimensions

(WxHxD): 10x43x38cm Digital Outputs:

S/PDIF via BNC & AES/EBU via XLR Faceplate Finishes:

Black and silver

function remote control

Extremely rigid

Chassis construction Precision matched 24-bit/96kHz Burr-Brown PCM1704-J DACs

Bi-directional RS-232 control port



Quebec-based Simaudio has it's own unique take on what a CD player should look – and sound – like.

expansive disc such as Peace Orchestra's eponymous album, the room is nonetheless awash with the music. There were other occasions when we were surprised to find good depth resolution but they weren't quite as common as one finds with some of the competition.

Detail resolution in the upper midband is unusually clear. Despite having had the Peace Orchestra disc for two or three years the male voices on *Who Am I* that seem to circle around the speakers had not been very obvious.

The voice of Shane Cattrall on the *Red Rose Music* acoustic sampler disc is an excellent reality check for any CD player and the Moon reproduced it with an uncanny sense of presence. Next to a Sony SCD-XA555ES SACD player it perhaps seems a touch dry, but there's no denying the atmosphere it extracts from a good recording.

Another voice that tells you more about a player than might be imagined is that of Eminem, a man who raps with remarkable musical fluency. A CD player that lets you hear every word of his diatribes is revealing indeed, and this one lets you understand pretty much all of them without constricting the flow of the track.

The Nova is a welcome addition to the slowly growing ranks of two to three grand players. It has just enough character to draw you in and low-level resolution that will keep you up at night discovering the fine details on your favourite discs. It also seems to work well with fairly diverse ancillaries and will be a welcome addition to systems in search of soul.

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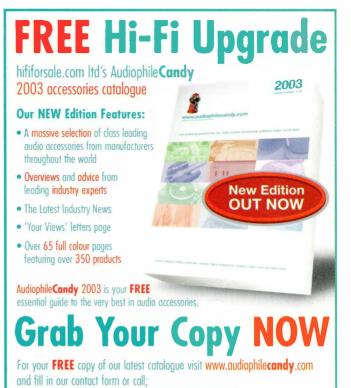
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This is the story of the Mission 770, a loudspeaker that wielded enormous influence in its day and which, far from coincidentally, was also the product that projected Mission to superstardom during the

heyday of the British loudspeaker boom. But it was a curious design, one that only makes sense with the benefit of hindsight.

The Mission 770 was a classic 200mm two-way, with a polypropylene cone bass driver and a soft dome tweeter. The enclosure was almost exactly the same volume and proportions as the Spendor BC1, which may have been, but probably wasn't a coincidence, and it was front-vented, with a relatively simple crossover. It was used on low stands, and away from walls, and it was pug-ugly, though its wood finish and contrastingly techie baffle gave it a certain credibility.

I was new to the industry when the 770 was launched, and well remember the late night sessions at the home of Paul Benson, the editor of *Hi-Fi Answers*, the 'it' magazine of the day, where a new, slightly revoiced version of the speaker turned up almost weekly. This was a speaker that reflected the personality of its creator – Mission's CEO Farad Azima – to a T. At the time, Farad was a driven man, with enough creative and nervous energy for ten men, and his exhaustive – and exhausting – brainstorming sessions fine-tuning products by ear at Mission HQ, were legendary. For a period which began in 1978, a year after Mission was founded, and which lasted maybe a year or so, the 770 went through an enormous number of related but not quite identical iterations. What this says about the consistency between models which went on sale is anyone's guess.

So why was the Mission 770 important, outside the contribution it made to Mission's balance sheet? Its significance was that it fired the first shot in a war that eventually saw the end of the pre-eminence of the monster dreadnought that defined the audiophile loudspeaker in favour of what has since become the classic compact two-way. Before the 770, speakers that were meant to be taken seriously were mostly three-way

"It saw the end of the monster dreadnought that defined the audiophile loudspeaker in favour of the classic compact two-way."

designs, invariably with ten or 12-inch bass drivers (yes, it was inches then), and fitted to big, unwieldy enclosures. The gold standard was set by designs like the IMF Reference, a traditional sideboard with transmission line bass loading. The Mission 770, which was based on a relatively lightweight vented enclosure and an eight-inch bass driver, offered more midband transparency, a lighter, more agile balance and more precise imaging. The cost was bass extension and maximum sound pressure levels. It was transparency that the Mission played on, but there were hints of the past in its design too, such as the enormous surround on the bass driver which from a distance made it look bigger than it really was.

Mission claims the 770 was the first commercial speaker to use polypropylene bass cones, though there may have been some prior art from Chartwell and others. The secret of its success was the fine timing that brought a purity and transparency that set new standards for moving coil loudspeakers at the time.

But the 770 did have a precursor, in the distinguished shape of the Spendor BC1 mentioned above. The Spendor preceded the Mission by several years, it was roughly the same size, and was notable for its thin wall and heavily damped enclosure. It even had a broadly similar driver configuration, the principal difference being its 'super-tweeter', used to plug a declining output response at about 14kHz. This was pure specmanship of course, included perhaps because the designer lacked confidence in the more purist two-way configuration. This was one of the things that was homed in on with the 770, and in doing so Mission set an agenda that has been followed to this day. *Alvin Gold*

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CLASSIC ALBUMS

MUSO

VANGELIS BLADE RUNNER ORIGINAL SOUNDTRACK



One of, if not *the* greatest electronic soundtrack in history, Vangelis's moody, erotic and melancholy score for Ridley Scott's dystopian future vision is probably more influential than a dozen Tangerine

Dream albums. Why? Well simply because for many forwardthinking Americans during the 1980s, its glistening, keyboard layered sounds were a route to the future – a way out of economic disadvantage and burnt-out inner cities. For Detroit's Derrick May and Kevin Saunderson it inspired them to create techno, a form of instrumental electronica which in turn spawned what we now term generically as 'dance' music. Today, thousands of musicians from Tricky to the Future Sound Of London cite *Blade Runner* as their seminal musical influence.

Vangelis Evangelos Odyssey Papathanassiou from Volos in Greece had arrived in London in 1974 to audition for Yes but instead built a studio in London's Marble Arch which he called Nemo, after Jules Verne. This was no ordinary studio. The 1,500-square-foot space had everything a prog rock architect needed in the early seventies – fountain, bed, hammock, plants, mobiles, silver horses and an array of instruments including a circular saw, Gamelan percussion and tubular bells. By 1978 he had installed a Quadrophonic Pacifica Mixer, 24-track Lyrec recording system as well as one of the first Yamaha CS-80 polyphonic synthesisers, the instrument which would create the trademark luminous keyboard sound for *Blade Runner*.

Vangelis's recording method was to look at a piece of film and then play keyboard passes. When one was good enough it would be overdubbed continually. He had miles of tape. During the recording of *Blade Runner* he used such techniques as a voltage-controlled octave changing foot-pedal to trigger synths, a Roland vocoder, a Yamaha GS1 FM synth to produce the lush piano sound on *Love Theme*, a metal thunder sheet for the main title sequences and on the soundtrack's most famous piece, the 'drunk piano solo' of *Memories Of Green*, he used a Steinway Grand distorted through an Electro-Harmonix guitar flanger pedal. Electronic clicks and hums on that track came courtesy of

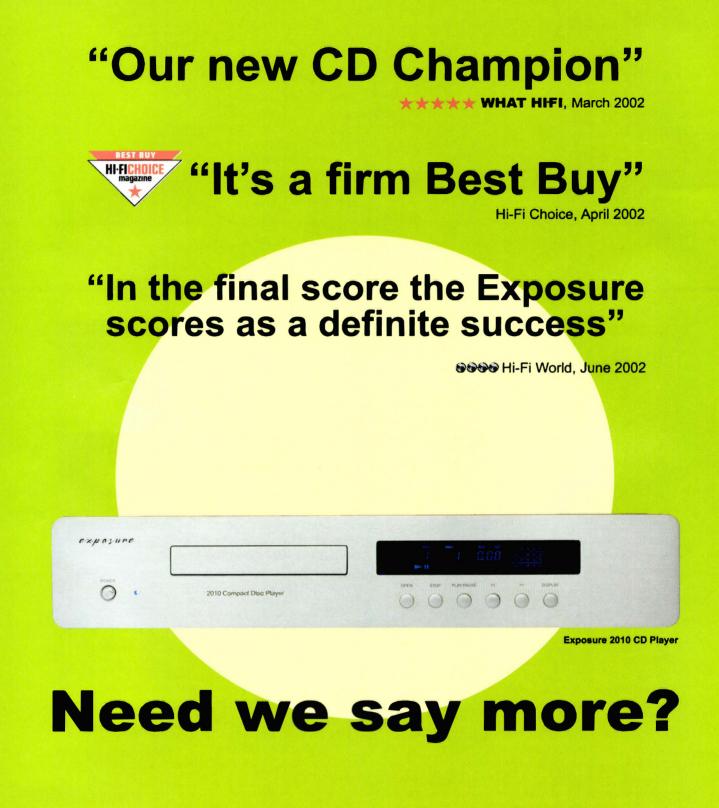
"Today, thousands of musicians from Tricky to the Future Sound Of London cite Blade Runner as their seminal musical influence."

a Japanese Master Blaster Station, a cheap toy he picked up on his travels. But the stars of the show were the Fender Rhodes and Yamaha CS-80 keyboards, the latter never more evocatively deployed than on the almost tearful, hugely atmospheric slice of genius that is *Blade Runner Blues*.

Surprisingly, this now iconic film wasn't a commercial success in 1982 and a proper soundtrack album wasn't released for 12 years. It was cited that director Ridley Scott and Vangelis fell out over the use of other source music in the film but the mystery continues to this day. But many were mesmerised by the score and the provocative *End Titles* in particular, with its Prophet 10 bass sequence and thunder-roll drums which would directly influence the birth of modern dance music.

From 1982 to 1994 there were several releases, orchestral versions and bootlegs but nothing near the sonic vision Vangelis realised in the film. After much persuasion by Warner, Vangelis released the soundtrack in 1994 (East/West 4509-96574-2) with added tracks like *Wait For Me* and *Rachel's Song* (either inspired by the film post-recording or recorded but unused at the time).

On the internet people will pay over \$1,000 for unofficial soundtracks. Online you will also find petitions to release an enhanced 20th anniversary edition and dozens of sites devoted to its fascinating history. Though he won an Oscar for *Chariots Of Fire* in 1981, Vangelis's reputation, not to mention those of Harrison Ford, Rutger Hauer and Ridley Scott, are forever bound to the originality of sound and vision that was *Blade Runner*. For here directors, actors and a composer created, in Brian Eno's immortal words, a "perfect nostalgia for the future".

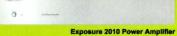


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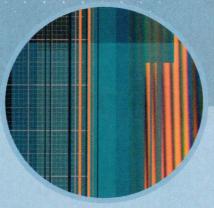
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DIGITAL TECHNOLOGY

DIGITALIA YAMAHA'S AUDID MASTER

QUALITY RECORDING





Yamaha's CDR-HD1300 CD recorder (*In-Depth* review, p26) includes a novel technology called AMQR or Audio Master Quality Recording, a scheme first introduced in its PC burners,

including the CRW3200 and CRW70. Indeed, Yamaha's latest PC writers now offer AMQR at 8x speed rather than the not exactly tardy 4x supported on the CDR-HD1300. In practice, the writing speed will depend on the CD-R substrate, so if the disc is rated at less than 4x then the duplication rate will be reduced accordingly.

Nevertheless, AMQR benefits from the fact that recordable media has evolved to accommodate high-speed PC data discs and, latterly, DVD-R. Data on all these discs is represented as pit and land structures, and the smaller the structures, the more data that can be stored. By DVD standards, the pit and land structures on a CD disc are positively chunky, but they are as small as was feasible with the technology of 20 years ago. The structures are either pressed (silver CD) or melted (CD-R) into the disc's spiral groove and are all exact multiples of the Master Clock in length.

This is known as 'T', with the smallest pit or land structure being just 3T in length and the largest stretching to some 11T in length. Transitions between the reflective land and largely unreflective pit structures represents a digital '1' while the 'T' intervals in-between are used to represent Os. You'll deduce that there will always be at least two Os coded between each transition, or digital 1, because the laser readback technique is simply not reliable enough to discern smaller structures. 2T or even 1T structures representing 10101 or 11111 data patterns are out of the question.

CD players use a solid-state laser with a wavelength of 780nm (nanometres – millionths of a mm), yielding a focus spot of about 1 um (micrometres – 1,000 millionths of a mm) which roughly corresponds to the smallest 3T pit structure of 833 millionths of a mm. This assumes we are dealing with a 74-minute disc revolving with a constant linear velocity (CLV) of 1.2m/sec. In practice, the *rotational* speed varies according to where the laser is on the disc radius and is adjusted to maintain the required CLV. The Red Book outlines all standards for CD and allows the CLV to vary between 1.2m/sec and 1.4m/sec, disc to disc. The more information you want on a CD, then the closer the CLV will be to 1.2m/sec.

Yamaha's AMQR trades total playing time for the fastest permitted CLV of 1.4m/sec, regardless of the CLV of the original CD. Thus, digital copies made via Yamaha's HDD (or the hard drive on your PC) will have longer pits and lands than the master CD. Bearing in mind that pits are formed on CD-R discs by its dye layer collapsing under the heat of a laser 'spot', the transition between pits and lands is not necessarily razor-sharp. Depending upon the choice of coloured layer (azo, phthalocyanine and cyanine dyes are most common), the transition can look more like a 'splodge' than a sharp 'edge'.

Nevertheless, assuming there's no increase in deformity about the pit/land edge by increasing the CLV to 1.4m/sec during the record phase, then the *relative* sharpness of the transitions will be improved. Bearing in mind that modern CD-Rs are designed to record at many times the playback rate, then a mere 15 per cent increase in speed should be accommodated with ease. Although perfectionists would not duplicate with AMQR beyond 1x speed, the fact that DVD-Rs playback at up to 3.84m/sec with minimum pit lengths under half that of CD, puts the technology into some perspective.

All CD players must handle discs recorded at 1.4m/sec, but the higher rotational speeds can bring added vibration which, in turn, makes the focus and tracking servos work that bit harder. Ideally, the improved 'legibility' of the pits and lands should improve the RF eye-pattern recovered from the disc by the laser, reducing jitter and, so the theory goes, maximizing its potential sound quality. Either way, it's good to see Yamaha using the advances of modern disc technology to wring that little extra performance from the granddaddy of them all. *Paul Miller*

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

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

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BUYER'S BIBLE CD PLAYERS

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

choice. And despite the fact that other sources will play CDs, if you want to hear your discs at their best there's little substitute for a dedicated CD player.

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

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



again before being amplified and sent to the output sockets.

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

SUPER AUDIO CD

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

0&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 44.1kHz 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



NAD C451i £330 Dynamic, tonally varied and confident sound combines with class-leading detail resolution. Excellent value and highly entertaining.



Marantz CD6000 KI Signature £500 An affordable high-end machine, this very impressive player has it all: brawn, finesse and class. Not to mention the full range of features.

CD PLAYERS BUYER'S BIBLE

			SROUP TEST BEST BUY 🔄 GROUP TEST RECOMMENDED 📧 EDITOR'S CHOICE 🚬 NEW GEAR REVIEW	SPECIFICATIONS								
	D PLA			SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DI	CD-RW COMPATIBLE		BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	ISSUE
Aud	io only CD and SAC	CD pla	ayers	MPATIE	OUTF	DIG OUTPUT	MPATE	CD TEXT)GUE (SOC	OUTF	ISSUE NUMBER
	PRODUCT	£	COMMENTS	BLE	Š	II	BLE	R	UII	Ē	ч	Ĥ
UP TO	£1,000 Arcam CD92	900	High resolution player people a taugh of spit and policity to be completely convicting		0	0		0				212
R	Cambridge Audio D500 SE	200	High-resolution player needs a touch of spit and polish to be completely convincing A really lively sounding player with good detail but just a hint of dryness		0	0						212
R	Cyrus CD7	800	New Cyrus player has strong all-round attributes to match its good looks		0	-						217
В	Exposure 2010	600	Undistinguished in the final analysis, but the 2010 nevertheless is a return to form for this famous margue		•	0						231
R	Linn Genki	995	Explicit, rather bright-sounding player with strong multiroom appeal			-					•	212
R B	Marantz CD6000 OSE LE	300	Detailed, well rounded, at home in any musical context – a real bargain			0		0		0	0	212
88	Marantz CD6000 KI Sig	500	Impressive mid-market player is an unusually accomplished all-rounder, and is also well built		-	0	-	0		0	0	231
B	Marantz CD-17 Mkl	800	Sophisticated player with a short but attractive feature set, and a new-found bounce in its step			0	-30			0	-	206
BB	NAD C 541i	330	High-octane player has the occasional rough edge, but is remarkable value for money		8	0	0	-	-	-		231
8	NAD Silverline S500	1,000	It sounds as good as it looks, which is notably refined and easy on the ear			0						195
8	Rotel RCD-02	375	Against some strong competition in the same price area, the new Rotel generally holds up well		0		0	-				231
6	Rotel RCD-1070	495	Technically sound and well equipped, if a little lacking in excitement or involvement		0		5829					226
6	Rotel RCD-991	825	Strong midrange player with switchable dither levels to provide some system tweaking ability		0							212
8	Talk Electronics Thunder 3	1,000	Clean, fast and the availability of a complete upgrade path makes this a good long-term proposition									195
	£1,000	1,000	orean, has and the availability of a complete upgrade pair makes this a good long term proposition									150
R	Arcam FMJ CD23T	1 200	Refined FMJ series player now boasts CD-RW and CD Text compatibility		0		0	0				226
EC	Audionet ART V2		Built to last forever, this CD has a dark natural sound with excellent bass and would be cheap at twice the price!		0		۵					231
	Classé CDP-10		Extravagantly detailed yet fluid sounding Canadian contender. A must-audition at the price		0		0		0			236
R	Creek CD53		Fine, assured and well-built player – balanced outputs too		-	0		0				226
88	Cyrus CD7Q		This refined and expressive addition to the top of the Cyrus range builds on the qualities of the lesser models									226
EC	Krell KPS 25sc		One of the finest CD players available, this is also a state of the art preamplifier with Cast interface technology						0			236
R	Marantz CD17 Mkll Kl Sig		Fabulously built player adds musical integrity to an already impressive basic model (the CD17 Mk II)		6	0						226
EC	Mark Levinson No390S		Superbly built and comprehensively equipped with genuinely high-resolution sound		0	0	0		0		0	231
	Meridian 507		Much of the refinement and subtlety of the brand's costlier equipment at an 'entry-level' price		-							234
EC	Musical Fidelity CD-PRE ²⁴	2,000			0	0						229
ā	Naim Audio CD5	1,150										212
EC	Naim NACDSII/XPS		Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results									188
BB	Primare D30.2		Superb high-resolution player gives a strong taste of musical structure and physicality						0			226
EC	Sony SCD-XA333ES	1,200		ø	0	0		0				224
EC	Sony SCD-XA777ES		Superb multichannel player that set the benchmark for the format at its launch	0	0	0		0	0			223
EC	Wadia 301		Insightful player with digital preamp options and good onboard volume control. Try it direct for maximum effect			0					0	228

SECONTAINED SACD COMPATIBLE Plays high-resolution SACD discs in two and multichannel modes. ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a DAC or digital recorder. OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a DAC or digital recorder. CD-RW COMPATIBLE Will play CD-RW (rewritable) discs, most CD players can cope with CD-Rs CD TEXT Will display album and track titles from inserted disc. BAL ANALOGUE OUT Balanced XLR output connections for similarly equipped amplifiers

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



Primare D30.2 £1,499

- **f** - - - -

- - -

A top-class player with a characteristically powerful and authoritative, but also a subtle and engaging sound. It works best in high-grade, high-resolution systems.



Wadia 301 £3,650

Revelatory player that gives new insight into everything it plays, can be used directly into a power amp to good effect and has an optional digital preamp function.

BUYER'S BIBLE DVD PLAYERS

DVD PLAYERS Disc players for audio and video

DVD has proved a phenomenal success in commercial terms and has virtually extinguished the market for budget CD players – you can't really beat a multiformat player when it comes to features. Early DVD players were not particularly good CD spinners because of the enormous amount of RF interference produced by video circuits, but as this problem has been identified manufacturers have begun to tackle it. Nowadays, most DVD players are competent CD players and a few are remarkably good – often as not they are the ones that play DVD-Audio discs as well.

The great advantage of DVD, apart from being the first digital video format for the home, is that it offers discrete multi-channel sound. In the case of plain DVD video discs, this music is encoded in either the Dolby Digital or DTS format, both of which use 'lossy' compression to fit onto the disc alongside the video data. You



can use a DVD player with your stereo system by connecting the stereo outputs, though this won't give the surround benefits that the format specialises in.

DVD-AUDIO

DVD-Audio is a high-resolution format that offers multichannel, stereo and Dolby



Digital tracks on dedicated DVD-A discs. The discs can be played on any DVD player, but the CD-beating high-fidelity sound can only be appreciated with a DVD-A player. While fering similar benefits to SACD, it has

offering similar benefits to SACD, it has the advantage of on-screen display for

DVD-Audio, SACD and CD.

information – lyrics, images and so on. To save you having to decide which format to go for, a few brands are bringing out universal players to cover SACD and DVD-A, and this would seem to be the best route if you want to enjoy high-resolution digital audio. If you're after a high-end model, look for one with a 'high bandwidth' digital audio output as well as 5.1 analogue outputs.

qualitatively between the two.

A&Q

WHICH AUDIO OUTPUTS GIVE THE BEST QUALITY?

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

WHICH VIDEO OUTPUTS GIVE THE BEST QUALITY?

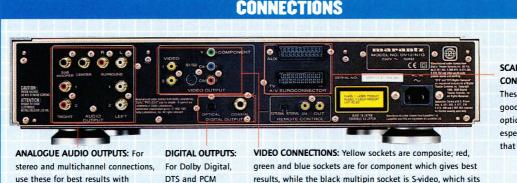
The best connection is component video closely followed by RGB Scart, which is clearly superior to S-video and the basic composite video option.

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

Only if you want to hear the benefits of surround sound. DVD players can be used with stereo amps to great effect, but you won't be able to decode the Dolby Digital and DTS soundtracks on movies.

DO I NEED PROGRESSIVE SCAN VIDEO?

Not unless you have a progressive scan/NTSC compatible monitor or TV – as yet there is no PAL version.



audio bitstreams

SCART CONNECTIONS: These are a good-quality option for video, especially ones that output RGB.

HEADPHONE SOCKE

ISSUE NUMBER

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Our favourite 📧 group test best buy 🗵 group test recommended 📧 editor's choice ≥ new gear review **DVD PLAYERS** DVD-A COMPATIBLE SACD COMPATIBL ELEC DIG OUTPUT OPT DIG OUTPUT Audio/Video disc players STATUS PRODUCT ç COMMENTS UP TO £1.000 Arcam DiVA DV88 1.000 Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player --BB Denon DVD-3800 1 000 High and progressive DVD-Video player with good CD and DVD-Audio capabilities, priced below its station 0 0 0 R • 0 Harman/Kardon DVD25 350 Reasonable video player is an excellent CD player, making this a good choice for buyers who put music first 0 JVC XV-SA72SI 350 Fantastic value for money from a player which makes good music with DVD-Audio and CD alike 4 63 ۲ ۲ • Pioneer DV-656A 400 'Universal' SACD/DVD-Audio/Video player does everything moderately well or better, and is an excellent buy 63 0 EC Pioneer DV-757Ai 800 Superb second generation 'universal' player equipped with next gen FireWire digital output - cutting edge disc replay 0 ø ٠ 0 0 **秋日** Sony DVP-NS905V 400 DVD-Video and SACD is a distinctly superior package, with above average performance 632 (1) 88 320 • 1 65 Toshiba SD-510E Great all-rounder DVD-Audio from a slightly idiosyncratic player at a new low price point for Toshiba R Yamaha DVD-S1200 700 0 • -Clean, agile sound quality, and decent, if unexciting, DVD-A performance round off a good, if costly, player ABOV £1.000 Denon DVD-A1 A convincing case for the DVD-A format, battleship construction combined with sonic and visual finesse EC 2.500 0 0 0 • 0 . 80 EC Marantz DV8300 1 400 'Universal' machine with a great sense of timing and comprehensive features EC 625 s Marantz DV-12S1 2.500 THX Ultra-progressive DVD-A player is a classy all-rounder, and absolutely top notch in legacy CD mode -EC Meridian DVD596 2.485 Very classy player with DVD-A upgrade potential, one of the few that is also a superb CD player ۲ EC Meridian 800 0 10.805 The ultimate in DVD replay, modular construction, buffered ROM drive, upsampling and high-res digital outputs 83 0 Pioneer DV-9394 0 dh. 0 1.200 Near state-of-the-art video and attractive, easy-on-the-ear music-making, from CD and DVD-Audio alike 65 BB Toshiba SD900E 3 0 0 1,299 Top class DVD-Audio player and also a superb DVD-Video player - in this context, pricing is competitive Townshend DV-747A 2,899 Major upgrade to Pioneer machine turns it into a giant slayer of a disc player, available as an upgrade to existing owners 0 . ۲ 0

SPECSICEY DVD-A COMPATIBLE Plays high-resolution DVD-A discs in two and multichannel modes. SACD COMPATIBLE Plays high-resolution SACD discs in two and multichannel modes ELEC DIGITAL OUTPUT Electrical coaxial output for digital connection to a multichannel amplifier or receiver. OPT DIGITAL OUTPUT Optical Toslink output for digital connection to a multichannel amplifier or receiver.

HEADPHONE SOCKET Quarter inch (6.3mm) headphone jack fitted to the DVD player





AVID 7 Yeomans Close, Catworth, Huntingdon, Cambridgeshire, PE28 OPL, England. 🗉 Tel: 01832 710370 🛛 Fax: 01832 710436 🛛 Email: info@avidhifi.co.uk 🖲 Web: www.avidhifi.co.uk



Five Stars for Value

Does the best price always mean the best deal? Ask the UK's top twenty specialist hi-fi dealers.

"I thought I had this buying hi-fi business sorted out. I bought all the hi-fi magazines and read them thoroughly, because I reckoned their experts knew exactly what they were talking about - at least a lot more than I did! It was reassuring to see the same product names cropping up regularly and I figured the writers' experience and guidance would steer me straight to the system of my dreams. The trouble is I've ended up more confused than when I started".

ne reviewer said a product I fancied was absolutely brilliant but another said it was nothing special at all. How can that be? Surely one CD player is pretty much the same as another? And how can a loudspeaker that's one magazine's top recommendation not get so much as a mention in any of the others? I don't mind admitting it, I'm completely lost."

Plan B - I'm going for a deal

"So, I've decided to adopt plan B. I'm sure there can't be any really dramatic differences between all this gear and it's all bound to work together properly, so I'm going to check the price lists and the adverts and shop around for the best deal. I know getting the right hi-fi is important hey, I'm as mad about music as anyone but if I can get close to the mark and save a few guid, I'm sure I'll end up with a good system and be happy. I know there are specialist shops out there that do demonstrations and reckon they've got all the solutions but, to be honest, I'm a bit scared of going to one. I'd really welcome some advice and guidance but I don't know all the technical jargon and I'd feel daft sitting there trying to 'hear the differences' if I couldn't. Anyway, a friend told me that these shops only sell the really expensive gear and that they're not interested if you don't have loads of money to spend."

And so another hi-fi buyer starts his journey down the road to dissatisfaction, endless upgrades and a permanent overdraft.

There is only one way to buy a hi-fi system that will prove satisfying, reliable and

deliver true value for money, and that's through a specialist hi-fi dealer. Let's face it, you wouldn't think about buying a car if you couldn't take it for a test drive. You wouldn't buy a house solely on the strength of seeing the estate agent's details and a photograph. Even if you're spending far less, say buying a jacket or a pair of shoes, you want to try them on to make sure they fit you.

Buying a hi-fi system is no different. It doesn't matter what the specifications say or what the 'experts' think: if it doesn't measure up to what you want from a system, then it's not the right choice. Knowing that you've bought a room full of five-star favourites or best-buys is no consolation when you can't bear to listen to them for more than five minutes. Even that ten per cent discount on the price won't make them sound any better.

Buying or being sold to?

Mind you, most of us are easily suckered when it comes to buying hi-fi. Given the choice of venturing into the unknown territory of a specialist dealer's shop and exerting some influence over what we buy, or taking what looks like the easy route having adverts and magazine reviews push us along a path sweetened with discounts and special offers - we opt for the latter. We don't buy a system, we allow ourselves to be sold one. We side-line our own ideas about quality and personal satisfaction and buy someone else's opinion of what's good for us and good value for our money.

Take control!

Now there's a group of long-established, independent specialist dealers who are



66 You wouldn't think about buying a car if you couldn't take it for a test drive. You wouldn't buy a house solely on the strength of seeing the estate agent's details. **99**

totally committed to putting the customer back in the driving seat. They're encouraging the buyer to take control with a little help and guidance provided where required. They know how difficult it can be to establish the true quality and worth of hifi and home cinema systems. They know that without experiencing the performance of the systems they offer, you can't possibly assess the value of them. That's why their idea of 'selling' is to play the systems for you and allow you to be the judge.

Listening to your choice of music in a peaceful, well organised demonstration room, you may be surprised and, almost

certainly, relieved to discover how easy it is to hear the differences between components and between systems. With the dealer's help and advice you will be able to make a clear and informed decision about what to buy. It comes down to trusting your own judgement rather than the opinion of a reviewer you've never met ... and who won't refund your money if you're not satisfied or be at the end of a phone to sort out any problems you might encounter.

The story doesn't end there. These shops won't abandon you once you've put your hand into your pocket. They won't leave you to set up the system you've selected as best you can. They'll install it in your home, make sure it sounds great, and make sure that you're entirely happy with the way it works.

Why bother?

There is, of course, one question that hasn't been answered: why should you and these dealers go to all this trouble? Well, from your point of view maybe it's because a good deal is about a great deal more than just price. unless you've got money to burn,

STAR QUALITIES

VALUE FOR MONEY	*	×	*	\star	*
SERVICE	*	*	*	*	*
FACILITIES	*	\star	\star	\star	*
VERDICT	*	☆	★	*	*

you'll be living with your new system for years - years during which most of those five star products will probably stop shining quite so brightly. As far as the dealers are concerned, maybe they believe that taking care of their customers properly is a nicer way of doing business than just handing over boxes.

Listed below are 20 of the best hi-fi shops in the country. They all have lots of stars. You'll find them on the shop floor: they're the people waiting to guide customers towards hi-fi that will give them years of musical enjoyment and total satisfaction.

TOP 20 UK SPECIALIST HI-FI DEALERS

LONDON

N1 GRAHAMS HI-FI 190a New North Road 020 7226 5500 SW11 ORANGES & LEMONS 61/63 Webbs Road, Battersea 020 7924 2040 W4 MARTIN-KLEISER 109 Chiswick High Road 020 8400 5555

SOUTH

Ashford, Kent SOUNDCRAFT HI-FI 40 High St. 01233 624441 Beaconsfield MARTIN-KLEISER 9 London End 01494 681300 Chelmsford RAYLEIGH HI-FI 216 Moulsham Street 01245 265245

East Grinstead AUDIO DESIGNS 26 High St. 01342 314569 Kingston-upon-Thames INFIDELITY **9 High Street Hampton Wick** 020 8943 3530 Lakeside Retail Park **RAYLEIGH HI-FI Dansk International Furniture World** 01708 680551 **Rayleigh**, Essex **RAYLEIGH HI-FI** 44a High St. 01268 779762 **Ringwood, Hampshire** PHONOGRAPHY Star Lane 01425 461230 Southend-on-Sea **RAYLEIGH HI-FI** 132/4 London Road 01702 435255

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

MIDLANDS Banbury OVERTURE

3 Church Lane 01295 272158 Birmingham SOUND ACADEMY 152a High Street, Bloxwich 01922 493499 Leicester CYMBIOSIS 6 Hotel St. 0116 262 3754 Northampton LISTEN INN 32 Gold St. 01604 637871 Shrewsbury CREATIVE AUDIO 9 Dogpole 01743 241924

NORTH Cheadle THE AUDIO WORKS 14 Stockport Road 0161 428 7887

Oldham AUDIO COUNSEL 12/14 Shaw Road 0161 633 2602 Sheffield MOORGATE ACOUSTICS 184 Fitzwilliam St 0114 275 6048 York SOUND ORGANISATION 2 Gillygate 01904 627108

SCOTLAND Edinburgh RUSS ANDREWS HI-FI 34 Northumberland Street 0131 557 1672 Glasgow STEREO STEREO 260 St. Vincent Street 0141 248 4079

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

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

TOP BUYS



Rega P3 £298 Latest version of a hi-fi classic is a very capable deck for a very modest price, with very little serious competition from other makes. A great turntable for the money and a very safe buy.



Audio Note TT1/ARM1 £594 Simple, unpretentious and relatively inexpensive, Audio Note's TT1 delivers a real taste of high-end performance at a realistically affordable price.



Michell Orbe SE £1,825 A fine example of the turntable art, the stripped down SE version of Michell's flagship now features a DC motor. Does justice to the best arms and cartridges.



Avid Volvere Sequel £3,500 A beautifully made turntable that delivers a high-end vinyl experience without costing the earth. Neutral, even-handed, detailed and frankly spellbinding.

VINYL BUYER'S BIBLE

SPECIFICATIONS

T	URNT/		LES		SUSP SUBCHASSIS	SPEE	SUPPLIED WITH ARM	SUPPLIED WITH CART	ISSI
Rec	ord players			SPEEDS	JBCHAS	SWITCHABLE SPEED CHANGE	WITH A	MTH C/	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS	DS	SIS	SEE.	RM	RT	Ĥ
BB	Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high-end performance at an affordable price	33/45	•		0		203
EC	Avid Volvere Sequel	3,500	Heavyweight turntable that will deliver more of what's in a vinyl groove than most of the competition	33/45	•	•			229
EC	Avid Acutus	5,000	Extremely capable design with no apparent shortcomings. Don't sell your vinyl 'til you've heard it on this!	33/45	۰	•			194
Б	Clearaudio Champion Level 2	1,955	Neutral balance, great looks, but only so-so detail. Benefits greatly from isolation	33/45			0	•	223
R	Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc are still top rank	33	۵		۰		103
Б	Michell Gyro SE	829	Stripped-down version of classic GyroDec, offering strong and lively sound	33/45	۲				223
EC	Michell Orbe SE	1,825	A superb turntable, able to mix it with the best at virtually any price. Now features new DC motor.	33/45	۲				235
	Pro-Ject RPM 6	500	Basic, very neutral turntable and arm combination that can take a very expensive cartridge. A high-end bargain!	33/45			۰		236
88	Rega P2	198	Updated Planar 2: just as much fun as ever and now even better value as the competition falls away	33/45			۲		214
R	Rega P3	298	Updated Planar 3, building on the strengths of the P2 with added subtlety and detail	33/45			0		214
88	Rega Planar 25	619	Great-looking turntable has a silky smooth sound with exceptional midband coherence	33/45		•			203
EC	Rega P9	2,248	Exceptionally elegant hi-tech player with complex outboard supply, ceramic platter and wonderful RB1000 tonearm	33/45		0	۲		228
EC	SME Model 10A	3,411	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	33/45	۲		۲		195
EC	SME Model 20.2A	5,274	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	33/45/78	0	•	۲		186
EC	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in clean, clear reproduction	33/45	۲		۲		205

Our favourite PHONO CARTRIDGES

ACEABLE STYLUS INSSI NUMBER MM and MC cartridges MN MC PRODUCT COMMENTS Allaerts MC1B 1.295 Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford -203 Audio Technica AT110E 29 . Excellent performance for the price, with little more than some mild coloration and a touch of hardness at high levels 0 214 Clearaudio Aurum Beta S 270 Clear improvement over cheaper Alpha, and good sound all round by any standards 68 223 Clearaudio Sigma 580 A nimble and revealing cartridge that is more at home in lower mass arms 235 Dynavector DV-20X L 350 0 192 Articulate-sounding with impressive treble resolve, though lightweight at times. Needs a high-quality turntable and arm Goldring Elite 250 A remarkably subtle and persuasive design that should tempt anyone 235 Grado Prestige Black 40 Offers admirable detail and treble extension, with good bass and ambience too 0 214 Grado Prestige Gold 110 ۲ 0 235 Produces rich open and expansive music with the minimum of fuss 0 l vra Helikon 1095 Highly capable and highly neutral, this is a cartridge for all seasons, albeit fussy about vinyl quality 215 Reson Reca 250 If you're after a high-quality moving magnet cartridge, they don't get much better than this ۲ 192 0 Reson Etile 485 223 Plenty of life and detail, and refined with it 1 250 Sumiko Blue Point Special A no-nonsense performer with engaging musical properties - one of the best around for less than £300 -192 Van den Hul MC One Special 699 A gorgeous cartridge that's worth the price every time you hear a familiar track in a whole new light -235

Our favourite PHONO STAGES

			PHONO	PHONO INPUTS	A	QJ. IMP	ISSUE I
Phono stages			INPUTS	INPU	ADJ. GAIN	IMPEDANCE	NUMBER
PRODUCT	£	COMMENTS	TS	TS	ž	Ĥ	55
Creek OBH-8SE	160	Neutral, relaxed and involving sound from this neat little unit	•				223
Lehmann Black Cube	275	Creates a well balanced sound that has few limitations and plenty of good qualities. Very flexible for the price	۲	۲	۲	0	234
Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	۲	0		•	201
Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	•	•			201
Tom Evans Microgroove	400	For dynamics and real bass extension alongside good tonal colour this is the one to beat, excellent value for the money		•			234
Tom Evans Microgroove Plus	700	Stunning detail, gives new insights into familiar discs		۲			223
Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for maximum information retrieval off any LP		۲			201
Trichord Dino/Dino+	498	Relaxed yet resolute with very good image depth and natural balance, not to mention great flexibility		0	۲	•	234

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

CARTRIDGESPECS 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.

MN MO

BUYER'S BIBLE TUNERS

RADIO TUNERS

FM and DAB hi-fi separates

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

DAB or FM?

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

cost of hardware and the greater reception

area. It can also provide higher sound quality if reception conditions are favourable. Absolute sound quality judgements are 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.



Arcam DT-81 £650 Highly professional implementation of DAB technology makes this one of the best options on the digital tuner market.

SPECIFICATIONS

	& DAB HI-FI SEPAI		6	WAVEBANDS	PRE		REMOTE CONTROL	SIG. STRENGTH METER	ROT. TUNING KNOB	ISSUE NU
STATUS	PRODUCT	£	COMMENTS	ANDS	PRESETS	RDS	TROL	ETER	NOB	NUMBER
FM TL	INERS	1.1.4.5				1				
R	Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM,M,L	64			0	•	193
R	Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM,M,L	64		۲	•	۲	193
8	Cyrus FM7.5	400	Beautifully made and presented, with sound that's a small but worthwhile advance over budget models	FM	7			۲	0	211
88	Denon TU-260L II	130	The return of the all-time favourite, now enhanced with RDS and sounding as fine as ever	FM,M,L	40	۲			•	193
88	Harman Kardon TU940	180	Good sound and particularly good signal recovery under tricky reception conditions	FM, M	30	0		•	•	221
88	Marantz ST6000	180	Another budget killer from Marantz, with sound well above its class and useful features	FM, M, L	90	•		0		211
R	Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29		۲	0		193
88	NAD \$400	600	One of the best around - bass and treble are both well extended and detail is excellent	FM	30	0		0		230
88	Primare T21	600	Identical to NAD S400 and likewise a very fine tuner	FM	30	•				230
R	Sony ST-SE570	130	Good, honest, budget tuner - loads of features, just a trifle bland	FM, M, L	30	۲		0	0	221
DAB T	UNERS	146.00				333				
R	Arcam DT-81	650	A very smart and polished DAB performer	DAB	16		8	0	۲	221
>	Pure DRX-701ES	250	An excellent introduction to DAB, fine value, simple to use and feature loaded	DAB	99		•		0	234
R	Pure DRX-601ESM	330	Cheap, small and capable, but with major tonal variations from neutral which confuse the issue	DAB	90			•	0	230
88	Pure DRX-601E	300	Cheapest DAB separate to date, and concedes little if anything to more expensive models	DAB	9			•	۲	211
R	TAG McLaren T32R+DAB	2,290	Classy hi-fi at its best: top sounds on FM and DAB, and a joy to own and use	DAB,FM,M,L	99			•	•	230

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



correct at time of going to press, E&OE All trademarks are acknowledged.

DIGITAL AUDIO RECORDERS

CD, MiniDisc and hard disc recorders

MiniDisc

MD's strength is versatility. You can record and then re-record many times over. Editing facilities are second to none - you can erase mistakes, name tracks and re-order a disc's contents with a few simple button pushes, making it ideal for building compilations. They're pretty robust too.

Sound quality is below that of CD-R/ CD-RW. The format uses a Sony-developed compression technology called ATRAC, which discards part of the data in order to squeeze it on the disc. If you're copying from CD to MD, the result tends to sound a little cold in comparison, lacking a degree of detail and ambience. But to most people it still sounds light years ahead of cassette - clean and hiss-free.

Recordable CD

With recordable CD you have a choice of two disc types: CD-R discs are the cheapest, but you can only record once; and CD-RW discs are a little more costly, but you can re-record on them ad infinitum.

Though the latest machines incorporate some useful editing facilities, CD-R/RW is not as flexible as MD. However, sound

quality is higher - if you're recording from a CD, the best models will give you a copy that is very close to the original. In terms of compatibility, most CD players will play back a CD-R disc, but older models might have trouble with CD-RW (though you can, of course, play the disc back on your own recorder). If you want to play a CD-R/RW on a DVD player, check for compatibility.

Hard disc

The latest contender on the digital recording scene is also the most flexible. Some HD (hard disc) recorders can store whole music collections if you use a compression format such as MP3. HD recorders are taking over from multidisc CD changers as sound servers in multiroom installations, where their ability to play more than one piece of music at a time is a great boon. HD also offers impressive editing facilities on a par with those of MD, and they can also record from CD (or to CD-R/RW) at high speed.

At present, sound quality isn't the driving force behind the format - flexibility and storage capacity being bigger issues - and a plain CD-R/RW machine will outperform an HD recorder in fidelity terms.



CDR-HD1000 £700 First of its kind - a CD player and hard disc audio recorder. Effective but pricev.

SPECIFICATIONS

ELEC IN/ ISSUE

OPTICAL IN HD CAPA

Our favourite 🗌 group test best buy 🗠 group test recommended 📧 editor's choice 🖻 new gear review **DIGITAL RECORDERS**

CD-	W RECORDERS		2		OUTPUTS	OUTPUTS	NUMBER		
STATUS	PRODUCT	£	COMMENTS	5	2	(GB)	SLD	SLD	BER
CD-R/	RW RECORDERS	Sec. 2		Section .				Land	
R	Denon CDR-1000	400	A respectable player and recorder, though some midband congestion was noted when recording	1			•	۲	218
88	Marantz DR6000	400	No frills, but in its fundamentals this is one of the finest CD recorders on the market	1			•	•	233
R	Marantz DR-17	1,500	Highly recommended, but with a jitter problem that, resolved, would improve sound quality	1			•		205
88	Philips CDR802	299	Tacky looks and build notwithstanding, this is a well-equipped and technically sound recorder at a good price	2	2		•	•	233
88	Philips CDR951	380	An improvement on previous models, it delivers the musical goods in some style	1			•	•	205
R	Philips CDR785	350	Ragged play quality, but a good record performance from this well-equipped, well-priced CD-R/RW deck	1			•	۲	218
88	Pioneer PDR-609	280	Classy single-deck CD-R/RW burner is also a good, if characterful, player	1			•	0	218
R	Pioneer PDR-W839	350	Good-quality twin CD burner makes recordings that can be hard to distinguish from the original. Good value too	1			•	•	218
MD RE	CORDERS						1		
R	Pioneer MJ-D508	200	Well equipped, but musically sleep-inducing player that receives its Recommendation owing to the price	1			0	0	205
R	Sony MDS-JE480	130	Straightforward and effective, but the three real killer features are price, price and price	1			•		233
HD REC	ORDERS	8 11 X 26 1							
R	Yamaha CDR-HD1000	700	CD-R and hard drive in one - save your music to hard disc, edit, then dump to CD-R for MiniDisc style flexibility	2	2	20	•	•	223

SPECS KEY DECKS Amount of drive mechanisms on board - twin-deck recorders use one to play while the other records. HD CAPACITY Amount of gigabytes of storage capacity, for HD only. OPTICAL IN/OUTPUTS Optical Toslink in and outputs for digital connection to a CD player or DAC. ELEC IN/OUTPUTS Electrical coaxial in and outputs for digital connection to a CD player or DAC.

oaks

Starts 14.12.02



evenoaks Sound & Vision

We stock a comprehensive range of DVD players, amplifiers, speakers, plasma monitors, televisions and projection systems from all the leading manufacturers. From starter systems to custom designed multi-room and home cinema installations, our friendly staff are available in all outlets to advise, demonstrate and guide you through the home entertainment jungle. If you're interested in home entertainment and want to avoid the confusion, contact your local Sevenoaks Sound & Vision outlet and experience more. 0% interest free option* is available on most products. *Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

MUSICAL FIDELITY Tri-Vista Series

Designed to celebrate Musical Fidelity's twentieth anniversary, the new limited edition Tri-Vista series offers both audio excellence and value for money. The first products released



are the Tri-Vista 300 Integrated Amplifier and the Tri-Vista CD/SACD Player, with the Tri-Vista Pre and Power Amplifiers following in 2003. According to Musical Fidelity the Tri-Vista "Produces stupendous performance... No stone has been left unturned in our efforts to make the Tri-Vista series absolutely the best it can be in

circuitry and physical layout, build guality and aesthetics."





By combining technologies from their Reference and Q Series, KEF have introduced the



new XQ speaker range. Featuring KEF Uni-Q® 'point source' arrays for unrivalled off-axis performance and 'super audio' Hypertweeters™, the XQ range fully exploits the wide bandwidth of digital formats like SACD and DVD-A. The range comprises the XQ one and three stand

mounters, the XQ five floorstanders and XQ two c centre speaker. All XQ models are available in a variety of finishes.



Outlets Nationwide 48

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New Outlets Now O

We are delighted to announce that we have opened new stores in the following locations. Poole 01202 671677 • Solihull 0121 733 3727 • Swindon 01793 610992 and Wolverhampton 01902 312225. See Page 7 for full address details.

www.sevenoakssoundandvision.co.uk experience more



PRO-JECT

Debut II Turntable (Black) £114.95

"The original Debut turntable romped away with a Product of the Year Award in 1999, and the MKII version continues the extremely good work. It's a simple affair, that's easy to set up, but don't let the price fool you - it sounds a whole lot more expensive than that. This

Turntables & Tuners

Arcam DiVA T61 Tuner	£249.95
Denon TU260L MKII Tuner	£99.95
Marantz ST4000 Tuner	£109.95
Michell Gyro SE/RB300 Turntable	£999.95
Project Debut Phono SB Turntable	£159.95
Project Debut II Turntable (Colours)	£129.95
Project RPM4 Turntable	£324.95
Sony ST-D777ES FM/DAB Tuner	£499.95
Videologic DRX-601E DAB Tuner	£229.95

is a fine turntable, and it clearly reveals the benefits of listening to vinyl, with a rich and detailed soundstage, and a good dynamic response.

It's available in six funky colours, so you should find one to suit your decor, and at just a smidge over £100, you can have no excuse not to keep that old vinyl collection in employment for a good few years yet."

**** Awards 2000

Best Buy 2002

Up to £150

Selected outlets are Project Turntable Centres. Colour Options are available at additional cost



Michell Gyro SE • £999.95

ee Interconnect Cable* Worth £80

CD Players

£369.95

£449.95

£899.95

£1199.95

£799.95

£129.95

£994.95

£99.95

£399.95

£1194.95

£2099.95

£1999.95

£3994.95 £494.95

£99.95

£1949.95

When Any Rotel CD & Rotel Amplifier Purchased Together

RCD-02 CD Player £379.95 £349.95 ROTEL RA-02 Amplifier

RCD-02 CD Player "Whether it's the raw, and sometimes just plain barking vocals of Tom Waits, or the stinging guitar stabs of Pete Townsend on some old Who tracks, the Rotel is one of those players that can't help but bring a smile to the face - it's a breath of fresh air."



Arcam DiVA CD62T

Arcam DiVA CD72T

Arcam FMJ CD23T ..

Cyrus CD7.

Denon DCD485

Marantz CD4000,...

Meridian 507...

Meridian 588.

Rotel RCD1070

Sony CDPXE570

Marantz CD6000Ki Signature...

Musical Fidelity Tri-Vista SACD,

Musical Fidelity A308°8,

Linn Genki

Linn Ikemi...

Arcam DiVA CD92T

► ★★★★★ September 2002

33300

Marantz PM4200 • £139.95

RA-02 Amplifier "The amp has a fast, detailed and yet satisfyingly full presentation. That allows it to make a fine job of the beats of Groove

Armada's Goodbye Century set without losing sight of the fine

details of the mix, and also husking out

Marianne Faithfull's deliciously smutty vocals on Kissing Time with real relish. Add in decent levels of equipment - and the convenience of remote control, and we reckon Rotel has a winner on its hands." HARDER **** August 2002

Aegis Evo One Speakers **£179.95** STIC ENERGY



"The original Aegis Ones were great speakers, to the extent that they were category winners in our 1998 awards. Since then a host of new models have raised the standards in the sub-£200 category, and the Aegis Ones soon went from stunner to also ran, AE's response to that is an EVO version



Up to £200

The Aegis Ones genes are clearly evident. The original's refinement and bass weight are preserved and backed up

with better openness and more free-flowing dynamic ability. The old speakers would have delivered a cool and calm version of Pink's Missundaztood set they'd be enjoyable, but would lack a little drive and excitement

The new speakers, however, address those limitations... Add authority and good stereo imaging to the list of plus points and it comes as no surprise to find these speakers at home

with classical, too. Indeed, running

genre that these AE's weren't happy playing." ■ ★★★★★ July 2002



KEF Q1 • £249.95

*From our se

through our test room's extensive CD library we couldn't find a



Please Note: Some products may not be available at all outlets Advertisement valid until at least 15th January 2003, E&OE ion available in-store - Not in conjunction with any other offer

Free Interconnect Cable* worth £60

with ALL CD Players over £300



experience more

Amplifier Selection

	Concession and some of
Arcam DiVA A65 Plus Amplifier	69.95
Arcam DiVA A75 Plus Amplifier	69.95
Arcam FMJ A32 Amplifier	49.95
Cyrus 5 Amplifier	49.95
Cyrus 6 Amplifier	99.95
Cyrus 8 Amplifier	99.95
Denon PMA355 Amplifier£1	99.95
Linn Kolector Pre Amplifier	94.95
Linn LK85 Power Amplifier	94.95
Marantz PM4200 Amplifier£1	39.95
Musical Fidelity A3.2 Pre Amplifier	99.95
Musical Fidelity A3.2 Power Amplifier£9	99.95
Musical Fidelity A308 Amplifier	99.95
Musical Fidelity Tri-Vista 300 Amplifier £39	94.95
Rotel RA-01 Amplifier	49.95
Sony TA-FE570 Amplifier	39.95





DiVA CD82T CD Player DiVA A85 Integrated Amplifier £599.95 £799.95

DiVA CD82T "Arcam's lastest sounds like a more mature version of its little brother. On an initial listen the increased solidity and refinement are obvious, but over time the subtler dynamic shading and more assured handling of transients come to the fore... The Arcam CD82T is one of the best CD players available at this price point."

DiVA A85 "You'll have realised by now that we rather like this amp. It took us completely by surprise, and further strengthens Arcam's already impressive product range... The A85 is superb, and we can't wait to put it up against its peer in a group test."



B&W Bowers & Wilkins DM602S3 Speakers £299.95

Free Speaker Cable* worth £50 with <u>ALL</u> Speakers over £280 "But the B&W 602 S3 are our winners. They're big and not particularly beautiful, yet if it were our money they're what we would buy. No rival can match the wide ranging dynamics or low frequency performance of these not so compact

standmounters. Add all-round sonic excellence and the choice is easy. Give them sufficient space to breathe, then sit back and enjoy the music." Supertest Winner August 2002

Also Available (Pictured Right) B&W CDM NT Series • Prices start from **£749.95**



Product

2002

EVERE DRX-701ES Digital Tuner £249.95

This new tuner from the recently renamed Pure is based on the 2001 Award-winning Videologic DRX-601ES, but under the lid is an allnew third-generation digital radio engine, in the form of Frontier Silicon's Chorus FS1010. Its biggest advantages are lower energy consumption and above all cost - it's the major reason why the

DRX-701ES is £100 less than last year's model.

The tuner uses 24-bit/192kHz conversion with 4x upsampling and data interpolation, and is powered by a low-noise toroidal transformer - such attention to sonic detail pays off. Digital outputs are provided

pricing policy



on electrical and optical feed, but most people will use the analogue out, and these sound very good indeed. As usual



analogue out, and these sound very good indeed. As usual the tuner is subject to the signal quality off-air, but when it's fed from a high-quality outdoor aerial and a good signal it's capable of a crisp, powerful and detailed presentation. Even more populist music stations like Radio 6 benefit from the mix of a neutral balance and fine weight, while speech is also neutral and easy to follow... If you want a quality home tuner for digital radio, you need look no further."

We always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.

Free Interconnect Cable* Worth £150 When Any Cyrus CD & Cyrus Amplifier Purchased Together

CD7Q CD Player **£1149.95** 8 Integrated Amplifier £799.95

Free Interconnect Cable* Worth £100

When Any Roksan CD & Roksan Amplifier Purchased Together

Cyrus 7Q CD "How it compares directly (with the competition) is a matter for a group test, but I can tell you now that it'll be a close one, because the CD7Q is a fantastic CD Player, offering all

you'd expect from a disc spinner at this price, and more ... The CD7Q's a major upgrade from the class-leading CD7. Its weighty, detailed sound puts it at the pinnacle of CD players at this price."

Cyrus 8 Amplifier The Cyrus 8 replaces the highly acclaimed Cyrus 7 amplifier. The 7 was described as "Fast and punchy with huge sackfuls of subtlety" by What Hi-Fi? Sound and Vision in November 1999. The new 8 has been further refined and upgraded to include more power



Best Buy

£501-£799

2002

ROKSAN Kandy KA1 MKIII Amplifier £544.95

"When we last reviewed Roksan's Kandy integrated amp in February it fought off serious competition to come top in a Supertest. This is its replacement, the MkIII Internal changes include an uprated power supply for the preamp section and identical mono modules for the left and right power amp sections. Roksan also LAT HI-FI?

claims 50 pecent lower distortion on line-level inputs and a whopping 150 percent less on the phono input. The rated power output is an impressive 120 watts per channel into 8 ohms, and this amp has a confident, muscular way with music that bears this out. But don't be fooled into thinking this amp is raw but unrefined. With Van Morrison's Down the Road the Kandy has the guts to render the performance exciting and dynamic, but also the guile to deliver subtle details.

The upgraded Kandy MkIII is an excellent amp; the Mkll version was

works well with all types of music. It manages to retain the good points of the MkII while adding extra resolution and subtlety. All the amps here have a place in the market. It's just that at £550 the Kandy really does set the pace. ₩₩₩₩ ★★★★★ October 2002



roduct

uad 11L

2002

page four

Best Buy

£1001-£2000

2002

Free Speaker Cable* worth £50 with ALL Speakers over £280

11L Speakers £379.95

"Quad is best known for its superlative electrostatic designs, which start at £3500. So any £379 pair of speakers that carries the company's name has to be going some to avoid tarnishing the family reputation. The first surprise is that the

11Ls come in real-wood veneers covered with piano-gloss lacquer. This type of finish is almost unheard of at the £1000 mark, let alone at this price. Has anything been sacrificed for such a luxury finish? Here's the second surprise: apparently not

The final surprise? Well, saving the best for the last, the sound guality of the 11Ls is phenomenally good. These are small speakers at just

33cm tall, but the scale and authority of their performance is terrific. The laws

of physics dictate bass extension limitations, but thanks to a clever dual rear firing port arrangement the 11Ls plumb the depths with the determination of a rottweiler, even when placed in free space.

If you're in the market for a pair of top quality standmounters these Quads are a must listen. Quite simply, they're good enough to scare the competition bia time



Speaker Selection

Acoustic Energy Aegis Evo Three	£349.95
B&W CDM 1NT	£749.95
B&W CDM 7NT	£1249.95
B&W DM303	£179.95
B&W DM601 S3	£249.95
Cyrus CLS70 (Black)	£799.95
KEF Q1	£249.95
KEF Q3	£399.95
Linn Katan (Maple)	£634.95
Linn Ninka (Maple)	
Mission 780	£249.95
Mission 782	£599.95
Mission m71i	£119.95
Monitor Audio Gold Reference 10	£799.95
Monitor Audio Gold Reference 20	£1499.95
Ruark Epilogue II	£344.95
Wharfedale 8.1	£99.95

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experience more

QUAD



6

impressive, but MkIII is a stunner. It betters all the amps here in the timing department, and has a wonderfully robust character that





MUSICAL FIDELITY A3.2 Series

A3.2 CD Player£999.95A3.2 Amplifier£979.95

Replacing the **WHAT HI-FI? SOUND AND VISION** Award Winning A3 CD and Amplifier, the new A3.2 models have been further refined and re-styled. The A3.2 CD Player now incorporates the same DAC, filter assembly and control mechanism as the highly-acclaimed Nu-Vista CD Player. The A3.2 Amplifier draws on experience gained through the development of the Nu-Vista M3 amplifier and as such has inherited many of its qualities, producing a sense of ease and flexibility that is normally only associated with far more expensive designs.

Free Interconnect Cable* Worth £150

When Any Musical Fidelity CD & Musical Fidelity Amplifier Purchased together





D MONITOR AUDIO Silver S6 Speakers £599.95

British loudspeaker manufacturer Monitor Audio has introduced a replacement series for its acclaimed and award winning Silver Series speakers. "The aim

000

has been to offer real advances in performance and value", says technical director Dean Hartley. " New models include the S1 and S2 standmounters, the S6, S8 and S10 floorstanders.

"With a close-miked track such as James Taylor's Line 'Em Up from SACD they really deliver the character of the singer's voice and they're just as expressive with the cultured rhythms of Groove Armada's latest outing, having just the right mix of rhythmic control and fluidity... But amazingly the best is yet to come: these are simply beautiful speakers for classical music, once a few days' thrashing has tamed their initial rawness. With the latest release of Holst's *The Planets* on DVD-Audio, they thunder out *Mars* with true conviction.



These are rather magical speakers, with a poise and grace that belies their ability to turn on the power when required. Pair them with a good CD player and suitably accomplished amp, and you won't go far wrong."

Pioneer PDR609 CD-RW Recorder £199.95

"While it looks simple, the Pioneer has an impressive array of features, including the handy double-speed disc finalization and CD-Text compatibility. Internally, the PDR609 is a big step up from the Award-winning PDR-509 it replaced: the DAC is now a 24-bit/96kHz number, aided and abetted by Pioneer's Legato Link conversion technology, and it has 24-bit A-to-D conversion, which is ideal for copying your vinyl onto CD. If this is your plan, you'll appreciate that the Pioneer makes it easy to create first-rate copies from any source, helped by the manual recording-level controls. It was hard to tell our copy of Jim White's *No Such Place* from the original

While the Pioneer's replay quality can't match the Marantz, it costs £120 less, which would buy you a lot of blank discs. If you've already got a dedicated CD player, we'd go with this recorder."

Free

Speaker Cable*

worth £70

with ALL Speakers

over £500

Recorder Selection

0000

Also Available

Marantz DR6000

CD Recorder • £299.95

Marantz DR6000 CD-RW,	£299.9
Sony MDS-JE770 MiniDisc	£219.9
Yamaha KX393 Cassette Deck	£109.9
Yamaha KX580SE Cassette Deck	£179.9
Yamaha CDR-HD1300 CD-RW	£549.9



pricing point we always try to ensure our prices are highly competitive. In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention.





AV30R AV Processor £1799.95 **100x5R** Power Amplifier **£2994.95**

TAG McLaren's AV30R AV Processor is aimed at the home cinema enthusiast who is concerned with keeping up-to-date with the latest surround formats. When partnered with TAG's 100x5R Power Amplifier it makes an exceptional combination

According to What Hi-Fi? Sound and Vision magazine in their October 2002 issue: "In use, the AV30R, connected to TAG's 100x5R power amp, is superb. True, it can't quite match the clarity and power of the latest-specification TAG flagship, the AV32Rbp-192, but by any AV standard this is a very high-end piece of kit, with excellent impact and fine detail across a range of movie soundtracks from Once Upon A Time In America to the explosive actionfests. Channel steering is immaculate, and the sense of a soundfield wrapped around you - even in 5.1-channel mode - entrancing, with spine-tingling rear-channel effects The fine Pro Logic II implementation serves music as well as it does non-discrete AV soundtracks, and with an SACD machine hooked up via the 5.1 channel inputs, the lack of coloration and sheer bass oomph is extraordinary."





ACOUSTICS

Pro 50 Subwoofer (Black) £299.95 Pro 100 Subwoofer (Black) £599.95

MJ Acoustics is a new company based in Cambridgeshire. During the past year, they have received favourable reviews across their product range. The Pro 50 was awarded 'Best Buy' by What Hi-Fi Sound and Vision in their 2002 awards. "This is a black satin finished miniature sub that nevertheless packs in a 20cm long-throw driver and a 50w MOSFET amp designed for good power reserves even at high levels..., And it sounds great: whether with the floorshaking basslines of dance music, the slam of rock or an orchestral swell, when correctly set-up, the Pro 50 provides a subtle underpinning even of big loudspeakers. The bass it delivers is well extended and tightly controlled with both music and movies, giving a subjective impression of greater clarity across the frequency range, the added low-end complemented by better midband focus. It's truly thrilling stuff." Englished **** Awards 2002

laim £120 Off The Speakers* of your choice when purchased at the same time as the Linn Classik Music System - Minimum Value £200

250 📶 • The Speakers* of your choice when purchased at the same time as the Linn Classik Movie System - Minimum Value 5500



LINN Linn Classik Music System £999.95

The Classik Music System is an alternative to the sound and looks of mass market compact systems. Designed to be useful throughout the home, the

Classik is simple and stylish with all the advanced features needed to satisfy the most demanding hi-fi enthusiast or discriminating music lover.



"Since the Scottish company added a tuner to the amp/CD player, mouths have gaped even wider in appreciation. The addition of colour options panders to the public's taste for kit to match their interior design, but it doesn't just look lovely in the lounge: the Classik sounds simply marvellous. Boasting fine impact and drive, it retains its grip even as it thumps out rock and dance tracks. Ask it to play quiet acoustic music and its smooth, liquid presentation impresses still further. The Classik offers the performance you'd expect from high quality separates in one lovely package - this is a very superior product."

LINN CLASSIK

Please Note: Some products may not be available at all outlets. Advertisement valid until at least 15th January 2003, E&OE. *From our selection available in-store - Not in conjunction with any other offer

page

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who are sevenoaks?

Founded in 1972, Sevenoaks Sound & Vision are one of the largest and most successful hi-fi and home cinema retailers in the country.

Each Sevenoaks Sound & Vision outlet stocks a wide range of quality products, covering all categories of specialist home entertainment, from DVD Players to Widescreen Plasma Televisions and Projection Systems, all at highly competitive prices.

Friendly staff are available in all stores to advise, demonstrate and guide you through the home entertainment jungle.

new outlets now open

We are delighted to announce that we have opened new stores in the following locations. **Poole** 01202 671677 • **Solihull** 0121 733 3727 • **Swindon** 01793 610992 and **Wolverhampton** 01902 312225. Please telephone to confirm before travelling

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We are currently recruiting staff at several locations. If you are enthusiastic, knowledgeable, have good customer service skills and would like a career within the audio/visual industry, call Janys Ness on 01732 466214 for more information.

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There are regularly updated stock clearance lists with hundreds of products on offer and detailed pages to help you locate your nearest outlet.

For impartial advice and information, just click on sevenoakssoundandvision.co.uk

stock clearance

With 48 outlets nationwide, the Sevenoaks Sound & Vision group stock and display a wide range of products. As individual models and product ranges are changed or superseded, the preceding models are made available at a reduced price, for clearance. Visit our Website for an up-to-date list of the clearance stock, listed by outlet, within the Sevenoaks Sound and Vision group.

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Spread the cost of buying. 0% finance option is available on the vast majority of products we stock. ¹Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

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Whilst we do not claim always to be the cheapest, we try to ensure our prices are highly competitive. Take into account the expert advice, unrivalled product selection, demonstration facilities and excellent pre, during and after sales service and the lower price might not look such good value.

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Many of our stores will be open Sunday during December and January. Please contact your local outlet before travelling or vist our website for up-to-date information.



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HI-FICHOICE BUYER'S BIBLE STEREO AMPS

STEREO AMPLIFIERS

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 CINEMA STEREO

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



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.

amps tend to be better at reproducing music as they don't have the (electrical) noise-inducing digital processing of AV amps. AV amps cost three to four times as

much as stereo models of a similar quality.

Q&A

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

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

WHAT IS BI-WIRING AND BI-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



Rotel RA-02 £349

A terrific budget integrated from Rotel's latest line-up. Offers pace, guts and finesse, wrapped up in a prettier package than one might traditionally expect from the marque.



Arcam A75 DiVA Plus £470 One of the latest in Arcam's long amplifier lineage, and a sub-£500 star. Bass is more propulsive than Arcams of old, coupled with subtle attention to sonic detail.



Sugden A21a £899 Build quality is not very slick and it runs uncomfortably hot. But don't worry about the low power specification – sound is in the very top class.



A85/P85 £1,330 Bi-amp combo featuring Arcam's £800 integrated and matching power amp. The resulting sound is both robust and finely detailed across myryad music types.

Hi-FICHDICE BUUYERS BIBLE DUP TEST RECOMMENDED Image: Display and the property of the property

			ROUP TEST BEST BUY 🔲 GROUP TEST RECOMMENDED 🔃 EDITOR'S CHOICE 🚬 NEW GEAR REVIEW		S	PECIE	FICAT	IONS	
nte	grated amplifiers	υ ε	AMPLIFIERS	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (M)	ISSUE NUMBER
	D £1,000	£	COMMENTS	S	-		-	5	R
22	Arcam A65 Plus	370	Highly articulate and fluent, offers unusual insight for its price	5	•	۲	•	40	232
88	Arcam DiVA A75 Plus	470	Quick, lively and well-presented amplifier, bass is sharper and more tuneful than its predecessor	5	۲	۲	۲	50	22
88	Arcam DiVA A85	800	Much enhanced design topology gives a more hard-hitting, engaging sound than previous Arcams	7		•	•	85	21
R	Cyrus 5	500	An enjoyable amp that is assured and unflappable, although detail is unremarkable	7		0	٠	45	20
R	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best-sounding audio brick around	6		۲	•	60	19
88	Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high-fidelity operation	5			0	30	20
R	Exposure 2010	599	Neatly turned-out amplifier with mainstream appeal, but a bit on the bland side	6		0		50	21
R	Marantz PM8200	599	Warm, solid and likeable sound, with the occasional flash of steel when under pressure	5		0	•	60	22
R	Myryad Z140	450	Slimline beauty with genuine integrity and coherence, if relatively limited power	5		0	۰	50	23
R	NAD C320BEE	220	Spirited and enthusiastic amp with slight bass hump and a sound that will suit relaxed speakers	7		•	0	50	23
83	NAD C350	300	A typical NAD: refined, warm tonality, adequate detail and a strong power yield	7		0	0	60	20
8.8	NAD C370	450	Flexible, ultra high-power integrated amplifier delivers a real punch, but is not without finesse	6		0	۲	120	21
R	Naim Nait 5	825	As always with the Nait, less is more, and the Nait 5's 30 watts seem to go a lot further with some sources	6		۲		30	21
R	Primare A10	500	Beautifully made, smooth and easy sounding, and though not overtly detailed it is well organised musically	6		•		50	20
R	Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness	6		•	۲	120	20
R	Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6		۲		70	20
BB	Rotel RA-931 Mkll	189	Simple, non-remote amp majors on clarity and transparency, without sounding over-analytical	4			۲	35	20
88	Rotel RA-02	349	Agile and capable slimline design with an engaging sound that draws you into the music	4		۲	0	40	23
86	Sugden A21a	899	This single-ended, Class A transistor amp has exquisite resolving ability and presence - an authentic classic	5				25	22
ABOV	E £1,000								
68	Arcam FMJ A32	1,150	Remarkably flexible and well-featured, with excellent sound quality for the price	7	۲	٢	0	100	22
36	ATC SIA2-150	2,375	Starkly revealing powerhouse that eats most integrateds for breakfast	5		٨		150	22
R	Canary Audio CA-608	2,250	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4				24	20
EC	Karan KA-i180	3,900	Lean, sharp and articulate, this impressively constructed heavyweight is almost up there with the audiophile pre/power elite	4				180	23
R	Marantz PM-14 Mkll Kl	2,000	Highly sophisticated and well equipped, with a refined and relaxed sound quality that's hard to resist	7	•	۲	۵	100	22
38	Primare A30.1	1,500	Smooth, detailed singing quality, elegant appearance and healthy power yield	6		0		100	21
R	YBA Intégré	1,550	Careful system matching is essential, but this is definitely one of the good guys	6		0		50	21

Our favourite 🗆 group test best buy 🕤 group test recommended 📧 editor's choice 🖻 new gear review

	TEDEO					SPE	CIFIC	ATIO	NS	
		A	MPLIFIERS	PREA	POWER AMPLIFIER	LIN	PHON	REMOTE (POWER OU	ISSUE
	power amplifiers			PREAMPLIFIER	MPUFI	LINE INPUTS	PHONO INPUT	CONTROL	OUTPUT (M)	NUMBER
_	PRODUCT \$2,000	£	COMMENTS	æ	H	SI	5	2	3	ŦĦ
65	Arcam A85/P85	1,330	Integrated/power amp combo won't suit all systems, but delivers classic A85 virtues plus extra gravitas and range	۲	0	7		0	85	225
EC	Arcam FMJ A32/P35	1,980	One of the few correctly matched integrated/power combinations, the sound has real gravitas and sophistication	۲	•	7	•		100	227
EC	ATC CA2	750	Stripped-down version of ATC's range topper delivers considerable transparency and bandwidth. Excellent value	•		5		0		221
98	Creek P43R/A43	900	Great value, with a particularly impressive way with dynamics	0	•	6			140	212
89	Croft Vitali/Series 5C	2,000	Oddball retro style and ergonomics, but truly magical voice coherence and projection, great transparency	•	•	3			30	216
R	Cyrus aCA7.5/Smart Power	1,250	Great for classical, jazz, and existing Cyrus owners	•	٠	7			60	212
R	Densen Beat 200/300	1,985	Classy jet black cast boxes pack plenty of punch with good total musical coherence (remote £300 extra)	•	•	6	OPT	OPT	100	216
EC	Musical Fidelity A308CR	3,898	Bold-looking design with an absence of sonic signature that proves there is life after Nuvista	۲	۲	4	۲	•	250	231
R	Myryad MP100/MA240	1,600	Smart finish and impeccable manners, smooth, clean performance	•	۲	6		۰	120	212
R	NAD Silverline S100/S200	2,000	Beautifully built kit that sounds as good as it looks, with heaps of power	۲	•	7		0	200	200
EC	Naim NAC112/NAP150	1,425	Clean, clever simplicity, plus a very well-balanced sound that's much sweeter than earlier Naims	•	۲	6		0	50	213
88	Rothwell Indus/Rubicon	1,488	Quirky valve combo with passive pre-amp has a lovely neutrality and consistency across a wide dynamic range	0	•	6			10	216
ABOV	£2,000									
R	Audio Note M2Phono/P2SE	2,698	Wonderfully natural and inviting sound with great warmth and drama, but limited loudness capability	۰	0	4	۲		18	216

SECONTEXT 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

Our favourite 🖾 group test best buy 🕞 group test recommended 📧 editor's choice 🖻 new gear review

STEREO AMPLIFIERS continued

Pre/	power amplifiers			REAMPLIFIER	R AMPLIFIER	LINE INF	HONO INPUT	TE CONTROL	OUTPUT	SUE NUMBER
STATUS	PRODUCT	£	COMMENTS	FIER	FIER	INPUTS	IPUT	ROL	3	IBER
EC	Audio Research LS25/VT100	12,199	This is not so much a fine valve amp, as a fine amplifier, full stop (LS25 MkII/VT100 MkII)		٠	6	۲	•	100	216
EC	AVI S2000M	2,398	This preamp/monoblock pairing does most things very well and images better than most		۲	5		۲	150	221
EC	Border Patrol P20	6,750	Muscular 300B P-P design with fluidity and dynamics to match the best	۲	•				20	231
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application	•	۲	8		۰	120	212
8B	Bryston BP-20/4BST	3,375	Quick, articulate and powerful, this is an excellent all-round amp which controls difficult loudspeakers superbly	•		8			250	230
8.9	Electrocompaniet EC4.7/120DMB	3,448	Bulky Norwegian combo has wonderful transparency, wide dynamic range and fine musical tension	•	•	6		•	120	216
EC	Krell FPB 700cx	14,998	Reference class amplifier may represent overkill in many systems, but when no compromise is called for, this is it						700	234
EC	Mark Levinson No380/No334	9,490	Pre has precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	۲		6		۰	125	195
EC	Naim NAP500	10,995	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition		۲				140	208
EC	Naim NAC552	11,750	Extremely expensive preamp, but still solid value. Magnificent sound with fine flexibility and convenience	•		6		0		233
R	Primare A30.1/A30.2	2,700	Powerful, smooth, though slightly uneven with some speakers, but excellent control and separation in others	•	0	6		۰	100	225
EC	Steinhart DVP 2XR/Fidelio 102 DD	7,440	Brilliantly musical, making even difficult material enjoyable, but gets hot and has ergonomic foibles	۲	۲	7	0	•	100	236
R	TAG McLaren DPA32R/250MR	4,940	In a class of its own for extendibility and it's tremendously subtle, though it can sound constrained dynamically	•	•	6		۰	250	230
R	T+A PA 1520 R	2,400	Powerful, punchy amp that has many positive qualities, but sometimes seems to try too hard	٠	۲	8			260	230

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&/

POWEF

HOW MANY CHANNELS?

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

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

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

WHAT DOES THE .1 IN 5.1 STAND FOR?

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

HI-FI MEETS SURROUND SOUND

With DVD-Audio and SACD offering high-quality multichannel music, surround sound is no longer just a home cinema thing. An increasing number of people want to build a multichannel system that will do their music as well as their movie DVDs justice, and the number of AV products delivering sufficient quality is on the increase. But most aren't cheap – building a top-quality system with five or more channels is inevitably more expensive than sticking with stereo. There are some very decent integrated options below £1,000, though the best (and most costly) route is to buy a separate processor and power amp(s). Or you can add AV amplification to a stereo model you can't bear to part with.

AV AMPS BUYER'S BIBLE

TOP BUYS



Pioneer VSX-D2011 £900 A feature-packed receiver, and a great sounding one to boot. Currently the best AV amp below £1,000 for music and video.



Marantz SR9200 £2,000 Few AV receivers manage to sound as musical as this one. A top all-rounder and an excellent multichannel solution.



AVC-A1SR £3,000 Denon's AV behemoth is arguably the best integrated multichannel amp to date – superbly cinematic and one of the very few with genuine 'hi-fi' music credentials.



AV8/P7 £5,498 A fantastic achievement from this respected UK brand – an AV processor and seven-channel power amp *par excellence*.

SPECIFICATIONS

Our favourite Group test best buy in group test recommended to editor's choice in new gear review **AV AMPLIFIERS**

5-CHANNEL POWER (M) 7.1 COMPATIBLI ISSUE LINE INPUTS Multichannel amplifiers NUMBER STATUS PRODUCT COMMENTS INTEGRATED AV AMPS Arcam AVR200 800 Upgraded AVR100 with Dolby Pro-Logic II and some bass management. Great for stereo, a bit bass-light for multichannel 0 6 70 229 Denon AVC-A11SB 1.800 Feature-packed with superb spatial processing, combined with powerful, though slightly opaque overall audio quality 11 . 0 235 EC Denon AVC-A1SR 3,000 An AV amp with genuine high-res hi-fi credentials. Includes a ground-breaking 'wide bandwidth' digital audio link 8 0 170 232 Harman Kardon AVR 5500 749 Powerful-sounding receiver with come clever features, such as an automatic set-up, but a bit hard-edged 0 8 85 229 6 Marantz SR-5000 5 430 Something of a rough diamond, but a powerful and entertaining package . 105 198 Marantz SR9200 2,000 Powerful, cool-running UK-customised THX receiver with spacious, relaxed sound quality with music and movies alike 0 9 0 • 235 NAD T761 650 9 First-rate home cinema amp that sounds more powerful than its specs imply, and competes with specialist stereo amps ۲ 80 223 Onkvo TX-DS989 2.850 Authority personified, excellent AV signal processing, but sound quality a tad unsubtle 1 9 6 160 210 Pioneer VSX-D2011 900 Outstanding sonic performance for the price and a remarkable features list to boot 0 10 0 140 235 EC Pioneer VSA-AX10 2.700 Seven channel tour de force with automatic speaker set up and eq. excellent with music, movies and DVD-A/SACD 8 ۲ 150 229 9 Sony VA-777ES 100 210 1,500 Smart circuitry gives this model unusual precision and transparency, and it is a fine all-rounder AV PROCESSORS AND POWER AMPS Arcam AV8/P7 5,498 State-of-the-art processor (£2,999) and seven-channel power amp (£2,499). An excellent fusion of stereo and surround sound 180 235 7 EC 7,100 Bryston SP1/9B THX 6 OPT 120 219 Stripped-back 5.1 channel processor/amp combo reaches genuine audiophile heights EC Copland CVA306/CVA535 3,748 Tube analogue six-channel pre transforms multichannel audio from a novelty into a genuine advance for the high fidelity art 5 125 236 9 Cyrus AV8 1,100 A refined and listenable processor that will integrate into an existing hi-fi system with ease 235 Meridian 861 9.833 6 230 Powerful surround processor with flexible modular construction, marvellous versatility to drive any speaker configuration 0 Myryad MDP500/MA240/360 3,799 Superb three-box, five-channel AV amplifier. Great with movies and beats most multichannel amps hands down with music 9 OPT 120 215 Roksan DSP/5 champ/VSU 2,440 Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels 4 80 210 EC TAG McLaren AV32B EX 6 215 2,994 Flexible A/V processor, unusually good with music. Excellent for multichannel system in standard or seven-channel 'EX' form 0

SPECS KEY RECEIVER Integrated multichannel amp with built-in radio tuner. LINE INPUTS Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc 7.1 CHANNEL COMPATIBLE The amp either has seven-channel in and outputs or in some instances is equipped with seven channels of amplification 5-CHANNEL POWER (W) Power output in watts per channel of all channels driven by the amp.





Krell KCT Preamplifier

The Krell Current Tunnel (KCT) CAST stereo preamplifier holds the distinction of being the finest sounding, most technologically advanced, and most system friendly stereo preamplifier ever designed by Krell. It derives its name from the way the signal is routed from its input to its output. The signal is brought into the KCT in the current domain from a CAST source such as the Krell KPS 28c Compact Disc Player. The signal stays in the current domain as it travels through the KCT, protected from extraneous noise and unwanted signal interference as if it were in a tunnel. Using CAST technology and power supply regulation that is a direct result of the development of the Master Reference Amplifier, the KCT is able to deliver a usable bandwidth that extends to 1.5 MHz. The result is seamless, transparent musical reproduction of even the most dynamically demanding sources. Ease of operation is also accounted for in equal measure with features that include dual-zone operation, with independent volume controls, Theatre Throughput for integration into home theatre systems, and RS-232 controls for whole house omation. The KCT is a stereo preamplifier that delivers the ultimate eo performance today and the opportunity for continued growth into the future

Krell KPS 28c

The KPS 28c Compact Disc Player reveals the full sonic potential of the compact disc format. The KPS 28c is noted for its ability to resolve the finest musical details—many listeners boast of hearing their compact disc collections "for the first time" upon introducing the player into their systems. CAST, Krell's proprietary current-audio connection is featured along with Current Mode, Class A, and discrete balanced circuitry. The power supply, featuring several stages of regulation, is modelled after the Krell Current Tunnel preamplifier. The beautiful black anodised chassis is finished to complement the Full Power Balanced X Series Amplifiers, right down to the elegant convex centrepiece. A custom-machined remote control, hand finished and laser engraved, is included

MAX Midland Aud

www.midlandaudiox-change.co.uk

really are - call John Roberts for an appointment

Krell FPB400cx/700cx

The Full Power Balanced X Series Stereo Amplifiers offer the greatest performance possible from a stereo amplifier. All X Series amplifiers share the same circuit topology, from the 300 Watt Full Power Balanced 300cx and the mid-level FPB 400cx at 400 Watts, to the awesome 700 Watt FPB 700cx - the most powerful stereo amplifier ever offered by Krell. While the amplifiers have much in common, there are also some important reasons for investing in the additional power. Each amplifier houses a massive power supply, doubling in size with each step. When the power increases from 300 Watts to 400 Watts and 700 Watts, the power supplies increase from 2000 Watts to 4000 Watts to 8000 Watts, respectively. More power delivers more authority on the low end, greater ease through the critical midrange frequencies, and effortless highs. In short, with every significant increase in power, there is a palpable increase in the believability of the sonic presentation. We are pleased to announce that Midland Audio X-Change is the exclusive Krell dealer for the Midlands, and will be hosting a Krell musical evening within the next few months. To hear how good these amplifiers

Krell Current Turn

hotography & Design: Tom Foxall - 4952 7278

Midland Audio X-change MAX

Sonus Faber Cremona Auditor

In the best of Sonus Faber tradition: precise timbre, state-of-the art components, and a superb finish combine to create the heir to the history of creating compact, versatile speakers. The Auditor meets the most demanding listener's insistence on superior sound. Please book for your demonstration of this fine loudspeaker



Building on the worldwide success of its prestigious products, Verity Audio is pleased to introduce a new high-quality loudspeaker - The Tamino. It sets new standards of sonic excellence at a sensible price of £3999.

The Tamino is a unique reduced-size floor-standing loudspeaker that incorporates the same attention to detail, exquisite lacquer and level of execution, which granted the Verity Audio

loudspeakers an enviable notoriety.

The Tamino definitely answers a growing need for a system that offers a fine musical experience to more music lovers while being a luxury piece of furniture Book now to hear this amazing loudspeaker.



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Suppliers and installers of High Quality Audio Systems 47 Laboratory Accuphase ATC

Audio Physic Audio Research **Avalon Accoustics** Avid bel canto **Benz Micro** Cardas Clearaudio **Conrad Johnson** dCS Densen DNM/Reson Electrocompaniet **Finite Elemente** Graaf Gryphon

J M Labs Krell Kuzma Lavardin Mark Levinson Martin Logan Michell Nagra Primare ProAc Rega Siltech Sonus Faber Spectral Nordost Sugden Verity Audio

Transparent Audio Wadia

bel conto

Bel Canto eVo2/4

The Bel Canto eVo2 represents the true potential of modern digital amplification --- providing a transparent and musical path to the original performance for stereo and multi-channel systems. The eVos present a naturally sweet and extended sound quality that transcends older amplifier technologies in both efficiency and sonic quality. With the advent of new and emerging digital technologies, this is an amplifier design whose time has truly come. Guided by the musicality of Bel Canto design, the eVos mark a remarkable step forward in digital stereo amplification.

STEREO SPEAKERS

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

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.

STEREO SPEAKERS BUYER'S BIBLE

TOP BUYS



Tannoy Mercury MX3-M £230 Could be more dynamic, but beautifully balanced and voiced floorstander that offers low midband coloration and good transparency at a very modest price.



Dynaudio Audience 42 £400 It might be expensive for a vinyl-covered miniature, but it's an aristocrat among the breed, and we'd be surprised if there's a better small speaker around for the price.



PMC FB1 £1,410 A well-built floorstander that delivers the goods sonically, with the sort of subtlety and delicacy that's likely to have strong audiophile appeal.



B&W Signature 805 £2,250 You won't get this degree of resolution out of a wider bandwidth speaker at anywhere near the price, and most of your music will sound considerably better through them.

2	TEDE		CDEAVEDO		SP	ECIF	ICATI	DNS		
			SPEAKERS	Size wxhxd (cm)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FRE	CLOSE TO WALL	ISSUE NUMBER
	eo speakers			XD (0	TAND	OF DR	NOW (FREE SPACE	TO W/	NUME
	PRODUCT	£	COMMENTS	M)	9	M	Ø	R	F	5
UP TU 88	£1,000	180	As usually place, and applicitizated performer for the price, laid back sound and conditions to	19,36,24		Α	30	0		2
R	Acoustic Energy Aegis Evo 1		An unusually classy and sophisticated performer for the price; laid-back sound and good looks too	20.37.28		A	28	0		2
R	AR S20	150	Might not have the most dynamic sound around, but it's an honest and effective musical communicator		0	A	30	-		2
n R	Audio Note AZ One	449	Delivers music with great gusto and enthusiasm, but also more than its fair share of coloration	23,83,29		A	30		0	2
	AVI Biggatron Red Spot	599	Good bass coherence and timing, but the lean and decidedly forward balance won't be to every taste	19.5,37,30						
8	B&W DM303	180	Chunky looking and lively sounding, with deep bass, a fine midband and a restrained top end	20, 33, 23		A	23	-	•	2
B	B&W DM602 S3	300	Old-fashioned size/shape, but this timeless design has a rare combination of grip, authority and headroom	24,49,29		A	25	۲		2
	B&W DM309	330	All the grace and punch of the smaller DM303 – a suberb floorstander for the money	20x91x30	0	A	60	۲		2
8	B&W DM603 S3	600	Excellent all-rounder, smooth for its price with fine bass and mid, though top might be more refined	20,91,29	۲	A-	25	0		2
2	B&W CDM-1NT	750	An uncommonly stylish and sonically self-effacing standmount that should be very easy to live with	22,40,29		A	30	•		2
	Blueroom Minipod	249	Wonderfully blobular styling aside, it's hard not to fall for the Minipod's openness, expression and detail	18,34,17		A	50		۲	2
	Castle Durham 3	399	A very attractive near-miniature wallmount with a lively and communicative disposition – lots of fun	19,37,22	•	A	45	۲		2
	Celestion A Compact	600	Provided the room isn't too large and your tastes not too heavy, this is a charming little number	17,24,21		A-	45		۲	-
8	Dynaudio Audience 42	400	An aristocrat of the vinyl-covered miniature breed. A terrific small speaker for the price	17,29,24		A	40	۹		2
	Dynaudio Audience 62	729	Pricey but cute vinyl floorstander that is a class act sonically - lightweight, but clean and dextrous	20,86,26	0	A	30	۲		2
2	Elac JET 205	650	Sweet, smooth, clean and delicate tweeter justifies hefty price tag, but a little lacking in warmth and body overall			A	40	۰		2
3	Energy e:XL 25	400	Neat slimline design delivers a fine all-round performance for the price, but could sound smoother	15,87,31	0	A-	25	۰		2
8	Epos M12	499	Retains the beguiling midband coherence that made the ES12 such a favourite. A genuine class act	20,38,26		Α	40	•		2
B	Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	0	A+	30	٥		
8	Heybrook Heylios	269	Classically styled standmount has a fine balance of smoothness and dynamics, plus real wood veneer	24,36,27		A+	25	۲		2
2	Heybrook Duet	750	Looks slightly old-fashioned and sounds a bit coloured, but its fine timing and liveliness serve music well	23,43,30		A+	27	0		1
в	Infinity Alpha 30	300	Some sharpness and nasality, but fine musical literacy plus a good measure of dynamic expression	22,86,29		Α	30		0	2
1	Jamo E 850	400	A tad bright perhaps, but a cleverly conceived and good-looking speaker at a very reasonable price	18,87,34	۲	A-	30	۲		2
8	JBL Xti40	430	Real wood and a cute shape, with a punchy driving bass and a restrained overall balance	23,82,31	۰	Α	40	•		2
8	JMLab Chorus 715	529	A fine all-rounder, this compact floorstander is lively and well balanced with good dynamic drive and grip	20,94, 28	۲	A-	22		۲	2
R	JMlab Cobalt 816	899	A little lean, cool and bright, but has righteous dynamic expression and lively communication skills	22,99,29	٢	Α	22	۲		2
ł	KEF Q1	250	Stylish if slightly small-sounding stand-mount with fine midband coherence; works well close to a wall	22,35,30		А	30		۲	2
2	Mission m71	129	Neat-looking and very discreet-sounding at a very nice price; experiment for best placement	17,29,28		Α	40		0	2
B	Mission m73	199	Good-looking floorstander. Dynamics are a little limp, but it has a good overall balance. Excellent value for money	20,88,31	•	А	25	۲		2
2	Mission m51	300	Distinctive and dynamic - not the last world in subtlety but enjoyable with both music and video sources	21,32,34		A+	58		•	2
3	Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	17,82,28	۲	Α	25		۲	1
8	Monitor Audio Bronze 2	180	A real corker, which combines solid material value for money with a fine all-round sonic performance	19,35,27		Α	30		۰	2
R	Monitor Audio Bronze 3	270	Good value with better dynamic expression than most of its ilk	19,87,24	۲	Α	30		۰	2
>	Monitor Audio S1	300	Super quick acoustics thanks to the C-CAM metalised drivers. Resolution and speed - a great value box	18.30.24		A	45		0	2

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



STEREO SPEAKERS BUYER'S BIBLE

SPECIFICATION

Ster	reo speakers	£		SIZE WXHXD (CM	FLOORSTANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
	Mordaunt Short MS914	300	An even and open loudspeaker that is both detailed and precise. A budget gem	21,90,27		A	50	•		234
R	Neat Petite III	845	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,31,20		A	30		•	211
R	Opera SP-1	525	A strong case for serious hi-fi with curves. Sound is clear, crisp and detailed	16,29,23		A	50		0	225
88	PMC TB2	700	A worthy successor to the TB1, which sets a high standard in its size/type for neutrality and transparency	20,41,31		A	30	0		211
R	Sonus Faber Concerto Home	999	Looks good and sounds better. Great midband communication skills, well aligned for close-to-wall siting	24,36,34		A	40	-	0	233
R	Spendor S3	600	Beautifully voiced, unboxy, lacks some dynamic and loudness capabilities. Best suited to small rooms	17,31,21		A-	30		0	224
BB	Tannoy mX2	150	Surprisingly refined considering its very modest price: very communicative with outstanding midband delicacy	19,33,25		Α	45	۲		207
88	Tannoy Revolution R2	400	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24	0	A-	20	0		193
R	Tannoy Eyris 1	600	Pricey but very cute wallmount miniature; oddball, but has marvellous midband subtlety and delicacy	17, 35, 26		A+			۲	227
R	Tannoy Eyris 2	999	This super-slim and cutely different-looking floorstander is very communicative, despite weak treble	17,91,26	0	A	20	0		231
88	Tannoy Mercury mX3-M	229	Beautifully balanced and voiced, with low coloration and good transparency, but could be more dynamic	19,87,25	0	A+	45	0		234
BB	Triangle Antal XS	875	Ugly duckling has a rather tasty sound, with plenty of vigour and excitement	22,108,30	۲	A-	40	0		219
R	Wharfedale Diamond 8.2	150	Sonically a bit crude and in yer face, but neat styling and plenty of speaker for your money	21,37,25		A-	30		۲	226
ABOV	E£1,000	al and a second								
R	Arcaydis Concept 2	1,199	Solid oak floorstander is a little lazy sounding, but is well balanced and smooth with modest coloration	19,90,26	۲	A-	25	٠		211
R	ATC SCM20 SL	2,051	Not too transparent, but has great dynamic grip and bass to die for. Needs a powerful amp	24,44,33		A-	65		۰	219
EC	ATC SCM10A	1,269	Stylish, active powerhouses with plenty of subtlety when required (balanced connection only)	23,39,31		А	45	0		221
EC	ATC SCM50A SL	7,255	350W of power combine with superb drive units and a 48kg cabinet to provide alarming resolution	35,72,48		Α	38	0		218
R	Audio Note AN-E/D	1,520	This classic large standmount might have throwback aesthetics, but it delivers an exceptional all-round sound	36,79,28		A+	20	0		204
R	Audio Note AN-J/SPe	1,675	Retro styling, but a vigorous and dynamic performer that creates fine musical tension	33,59,25		А	38	0		219
R	B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31		А	28	۲		199
EC	B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art. Needs real power, but gives real sound	39,111,55	•	A-	34	۲		183
R	B&W Nautilus 801	8,500	The 801 is a magnificent loudspeaker in nearly every respect, but it is one that likes to play loud	52,111,69	•	A-	34	٥		186
EC	B&W Nautilus 800	11,000	Unequivocal challenge for world domination. One of the most revealing speakers around	45,120,65	۲	A-	<20	۲		231
EC	B&W Signature 805	2,250	Staggering transparency and resolution for the money, one of the best standmounts money can buy	24,42,34		A-	42			232
R	BC Acoustique Araxe	1,300	Neat compact floorstander is a very lively communicator, if a little short on deep bass grunt	21,92,30	۲	A-	40	0		204
88	Castle Harlech S2	1,000	Improved Harlech is slightly aggressive, but lots of fun, and very good-looking too	20,96,33	۲	А	50	0		219
R	Castle Howard S3	1,350	A solid all-rounder with uniquely spacious imaging, bit pricey compared to some though	21, 99, 32	•	A+	38	0		229
8	Dali Noble	1,059	Easy on the eye and the ear, but unerringly musical. Some might prefer harder-hitting dynamics and bass	18,117,23	۹	Α	41		0	225
R	Dali Evidence 870	1,249	A real heavyweight, sonically and physically, and good for movies as well as music	25,106,36	•	A-	20	6		204
88	Dynaudio Audience 82	1,460	Bulky, with vinyl finish, but offers exceptional neutrality, bass extension, power handling and loudness potential	22, 106, 36	•	Α	30	•		229
R	Dynaudio Contour 1.3 Mkll	1,198	Outstanding performer among compact standmounts; neutral, with fine punch and dynamic range	20,38,29		A-	45	۲		219
R	Excel 202A	1,795	Very pro-styling, a compact active monitor in the BBC tradition - neutral, unboxy and laid back	15,21.5,36		ACT	25	0		214
R	Harbeth Super HL5	1,699	Looks old-fashioned, but classic monitor combines authority and transparency with good neutrality	33,64,31		А	30	0		233
59	Infinity Intermezzo 2.6	1,600	Bi-amp speaker sounds laid back and 'disappears' acoustically; highly enjoyable, looks and sounds great	25,38,29		A+	27	0		233
EC	JBL Ti-2K	1,250	Solid standmount with boat-tail rear end and highly detailed, spacious sound alongside weighty bass	42,28,42		А	45	۲		230
88	JMlab Cobalt 826	1,279	Big three-way French floorstander is lively, informative and mostly neutral, if a tad bright	22,103,34	•	A-	35	0		219
EC	JMIab Micro Utopia	3,349	Superb top-of-the-line standmount with magnificent powers of analysis and communication; no deep bass	26,43,41		A-	50	۲		220
я	Linn Katan Aktiv/LK140	2,325	Too small to have much grunt or loudness, but bright top is very sweet, clean and detailed	17,34,23		ACT	40		۲	214

BANDOR Luxury Drivers



New Swindon office and lab opening soon!





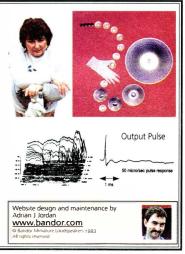


BANDOR loudspeakers - the specialist product of an Englishwoman with 36 years experience in the field - embody numerous features which ensure excellent performance. Cone, voice-coil former and voice-coil are formed from aluminium alloy, providing good heat dissipation and low thermal compression. **Bandor** originated the use of a thin, curvilinear, anodised, spun

CONC. C DOREEN BANCE JORDAN 1982

Posessing outstanding ability to reproduce transients faithfully, and reproduce a wide frequency band, the 50mm unit covers 100Hz-20kHz, allowing flexibility in the choice of crossover frequency for multipledriver loudspeakers: e.g. 200Hz (or lower for modest power handling) may be chosen, thus avoiding the critical zone 1-4 kHz where phase errors are most audible, and assists in securing good imaging. In the bass drivers, generous Xmax values allow the realistic reproduction of the pedal organ and bass drum, when correctly loaded. A manufacturer who uses **Bandor** exclusively, advertises that his sales are mostly to professional musicians.

For full brochure please contact **BANDOR MINIATURE LOUDSPEAKERS** 11 Penfold Cottages, Penfold Lane, Holmer Green, Bucks. HP15 6XR Tel: 01494 714 058 Fax: 01494 715 903 Email: bandor@netcom.co.uk



Ste	reo speakers			SIZE WXHXD (CM	FLOORS TANDER	EASE OF DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
	PRODUCT	£	COMMENTS) (CM)	NDER	DRIVE	M (HZ)	SPACE	WALL	MBER
EC	Living Voice Avatar	2,700	Dynamic and highly resolved, yet physically discreet design with a relaxed balance	22,104,27	•	A+	40	0		218
EC	Living Voice Avatar OBX-R	4,000	Discreet, but extremely fine design with external crossover and an affinity with great amps and sources	22,104,27	۲	A+	45	0		196
BB (Meridian M33	1,560	Compact active wallmount packs remarkable dynamic vigour into a very discreet package	15,38,22		ACT	45		0	214
R	Naim Allae	1,990	Chunky little floorstander has a 'cold' overall balance, but remarkable powers of musical analysis	24,94,28	۲	Α	40	0		229
EC	Naim NBL	6,925	Elegant, large floorstander is exceptionally informative, with an awesome dynamic range and dry, forward balance	29,116,47	۲	A-	20	0		200
EC	Naim SL-2	4,995	Delivers magnificent musical analysis and communication skills in a notably discrete physical package	28,103,33	0	A-	20		•	232
EC	Neat Ultimatum MF9	8,500	Superb musical communicator with splendidly deep and agile bass and fine open neutrality	22,150,40	۲	A-	20	•		228
R	PMC LB1	1,150	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic	17.5,53,26		A-	40	۲		199
88	PMC FB1	1,410	Has the lively coherence of a simple two-way, alongside impressive bass weight and extension	20,105,31	•	А	20	۲		204
R	PMC AML1	3,700	Sparkling active Pro monitor with serious attitude, 'in yer face' balance and great dynamics	20,40,32		Α	25	۲		214
EC	Royd Revelation RR2	1,199	Pretty little floorstander delivers genuinely deep bass without 'thump'; lovely clean, open midband too	19,89,18		A-	20	۰		221
R	Ruark Prologue II	1,250	Attractive shape with a punchy and unusually open and neutral sound that's impressively free from harshness	22.5,96,24	۲	A+	40		0	229
R	Ruark CL20	1,650	This punchy rock'n'roller has plenty of drive and enthusiasm, but can sound aggressive	23,93,34	۲	Α	38	۲		219
88	Snell E.5 Mk2	1,520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30	۲	Α	20	۲		211
R	Spendor SP2/3e	1,295	Large standmount is polite to a fault, but has beautiful 'hear-through' transparency – a genuine classic	28,55,33		A+	50	0		219
R	Spendor S8	1,700	Classic midband neutrality and transparency, the S8 has great subtlety and fine bass grunt too	23,92,32	0	A+	40		۲	229
EC	Spendor S9	2,500	Meaty three-way with superb bass and explicit mid - one for detail fans	24,99.8,38	•	A+	37	•		223
EC	TAG McLaren F1	17,995	Oddball aesthetics with accurate, unflappable, controlled and consistent sonic neutrality	40,127,48		A-	25	•		202
EC	Tannoy Dimension TD10	5,000	Extremely competent and rhythmic speaker, a futureproof supertweeter and detail to die for	35,101,37	•	A-	38	•		215
EC	Tannoy Dimension TD12	6,500	Art Deco-inspired style, plus magnificent headroom and genuine monitoring neutrality - a tour de force	42,126,41	•	A-	23	0		225
R	T+A Talis TLS3	1,799	Super-slim and beautifully engineered metal towers deliver marvellous musical results with superb imaging	15,130,17	٥	Α	30	0		225
R	Vandersteen 2Ce Sig	1,990	Very superior midband neutrality, impressive freedom from boxiness and splendid stereophony. A classic	41, 109, 26	۲	A-	30		0	229
EC	Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	۲	A+	50		69	191
R	Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid back, but also very charming and musical	17,97,30	۲	A-	25	0		199
R	Waterfall Victoria	1,500	Glass enclosures go with any decor. The Victorias make music in a confident and involving way	21,100,21	0	Α	45	۲		225
EC	Wilson Benesch Chimera	15,000	Elegant with lovely sonic delicacy and plenty of weight too. Works best at low levels, but a difficult load to drive	24,145,55		A-	20	۲		234
EC	Wilson benesch Discovery	5,500	Innovative three-way with built-in stand, combines great subtlety with weight and headroom	23,47,38		A-	45	8		212

AV SPEAKERS

Speaker solutions for multichannel surround sound



Multichannel speaker systems have a front left/right (L/R) stereo pair, a centre or dialogue channel, two (5.1) or four (7.1) surround speakers and often a subwoofer. For best results, each of these speakers bar the sub should be identical. The problem is that few surround systems are dedicated to music and perform a home cinematic role as well, meaning the centre speaker has to sit above or below a video monitor. Centre channels are usually wide and short for this reason.

This should not be a barrier to great surround for music and movies however, as many brands make centre channels with a very close sound to their L/R designs.

Music vs movies

High-resolution SACD and DVD-A music recordings tend to be mastered with

SET-UP

Ideally you should set up surround speakers with as much care as you would stereo systems, but practical issues tend to have a significant bearing on surround and centre speaker placement. Surround channels can be floorstanding or wallmounted, and centres usually have to perch on the TV or underneath it. Given these limitations, adjust your L/R front speakers to give the best tonal match with the centre. If there's more than just you listening, 'toe in' the speakers so that their axis crosses in front of the listening position – this gives a wider stereo image. And if there's a subwoofer it should be placed near the front speakers. Use a sound pressure metre (available from Tandy among others) to accurately set levels. surround speakers in the ITU standard position which is as far behind the listener as the front channels are in front. 5.1 movie soundtracks tend to place surround channels not so far behind and to the side of listeners. Usually, practical limitations will dictate a limited range of placement options, but if you are a dedicated music fan, check out the ITU set-up regulations in the booklet supplied with SACD discs.

SPECIFICATIONS

SUBWOOFERS

Subs start working where stereo speakers run out of steam at low frequencies. The idea is to create deeper, better-controlled bass rather than more of it. They usually have onboard amplification (active) and connect to either the LFE (Low Frequency Effects) channel in a home cinema set-up or the speaker terminals in a stereo set-up.

AV SPEAKERS BUYER'S BIBLE



B&W 600 S3 package £750 Incorporates 602s, 601s and an LCR 600 centre speaker. Great in both stereo and multichannel surround modes.



KEF Q AV7 £1,300 With the latest Uni-Q refinements, this system is astonishingly accomplished and amazing value.



JMlab Cobalt package £1,797 There's no avoiding this package's fine underlying sound quality - both stereo and multichannel are reproduced with aplomb.



Mirage Omni 2 £2,650 Dark tonality but superb imagery makes this an excellent all-round choice for music and movies alike.

NUMBER OF SF

SPECIFICATIONS

SPECIFICATIONS

Our favourite 🗆 group test best buy 🗌 group test recommended 📧 editor's choice 🖻 new gear review **AV SPEAKER PACKAGES**

Multichennel encelor

Mult			EASE OF DRIVE	ABER OF SPEAKERS	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER	
STATUS	PRODUCT	3	COMMENTS	M	RS	ΗZ	Ŕ	F	Ĥ
BB	Acoustic Energy Aegis	650	High-value package with deep bass and smooth neutrality	A+	5	22	0		198
BB	B&W 600 S3 package	900	Unquestionably delivers the sonic goods. High-quality drivers in standmount enclosures (uses 602 S3s at the front)	A-	5	22	۲		224
R	Castle CAV Sterling	1,250	Lovely real wood veneers. Sound has fine dynamic drive and expression, but can sound a little hard	А	5	28		0	224
88	JBL Xti-series	980	Hexagonal boxes all round, this package has decent authority and all-round tension	А	5	40		0	210
R	JMLab Cobalt	1,797	A little lean and bright, but with righteous dynamic expression and lively communication skills	А	5	22	0		224
R	JMIab Electra system	3,017	Bold, solid system, tremendous consistency and easy to expand with an added subwoofer	А	5	50	۲		232
88	KEF Q AV7	1,300	With latest Uni-Q refinements, this system is astonishingly accomplished and amazing value	A+	5	35	0		232
R	Mirage Omni 2	2,650	Dark tonality, but superb imagery makes this an excellent all-round choice	А	5	30	۲		232
R	Mordaunt-Short Declaration 500	1,600	Good value vinyl THX Select package with Power Towers. Good authority, but must be 5.1-connected	А	5	25		۲	210
R	PMC FB1/TB2	2,485	Classy, if bulky and pricey, package has good transparency, coherence and weight	А	5	20		۲	210
R	Rega Jura/Ara/Senta	938	Classy real wood package does a good all-round job, but sounds bright and might have more surround weight	А	5	25		۲	210
R	Spendor S-Series	1,650	Ultra-tinies lack some dynamic and loudness capabilities, but beautiful voicing and freedom from boxiness	А	5	30		0	224
BB	Tannoy mXAV4	500	Lacks some grunt, but smooth and refined with seamless surround coherence. Excellent value	А	5	20		۲	210
R	Wharfedale Pacific	700	Plenty of speaker package for the money. Balance is somewhat wayward, but unquestionably entertaining	A-	5	25			224

SPECS KEY EASE OF DRIVE How much power the amplifier needs (approximately) to drive the loudspeaker effectively: A+ 25 watts plus A 50 watts plus A- 100 watts plus NUMBER OF SPEAKERS The amount of individual loudspeakers in the package. BASS FROM How low the speaker goes, the smaller the number the deeper the bass. FREE SPACE The speakers work best away from wall(s), CLOSE TO WALL The speakers will work best when up against a wall (but avoid corners)

Our favourite 🗆 group test best buy 🗌 group test recommended 📴 editor's choice 🖻 new gear review IDW/AAFI

3	NRM	UF	FK2	SIZEV		BASS	ISSUE
Bas	s speakers			WXHXD (POWER (W)	S FROM (HZ)	UE NUMBER
STATUS	PRODUCT	£	COMMENTS	(CM)	S	(HZ)	BER
R	Acoustic Energy Aesprit 308	650	Tuneful and dynamic sound with music or movies from this compact sub, which comes with a handy remote	41,37,30	200	35	225
R	Monitor Audio ASW100	300	For the price, this compact subwoofer performed well	32,32,34	120	27	225
R	REL Strata III	700	A little more bottom octave might have been preferable, but in terms of agility and coherence, this is a fine hi-fi subwoofer	42, 52, 33	100	20	210
R	REL Storm III	900	Excellent sub with powerful, detailed and deep bass. Comprehensive facilities, including flexible filter adjustment	42,62,33	150	18	225
EC	REL Stadium III	1,500	It's a bulky piece of furniture, but offers superior filtering as well as an ability to delve deep into the bass nether regions	59, 56, 39	200	16	217
88	Ruark CL300	2,000	Shows what a good subwoofer can do: controlled, detailed and dynamic. A delight with music and movies alike	60,52.5,40	300	30	225

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



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The Hidden Hi-Fi Store

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

Getting the best from your cans

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

Our favourite **HEADPHONES**

REAUF		UNES	ELECTROSTATIC	SUPR	CIRCL	OP	CLOS	×	MM JACK ADAPTOR	ISSUE
STEREO HEADPHON	ES		ROSTAI	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK	WEIGHT (g)	DAPT	NUMBER
PRODUCT	£	COMMENTS	TIC	₽	₽	R	R	(g)	R	
AKG K44	20	Lively, enjoyable and remarkably detailed: a bargain			0		۲	190	•	219
AKG K100	36	Leather-clad groover with bags of power and clarity, for a respectable asking price		۲		۲		190	۲	205
AKG K270 Studio	129	Pro oriented design which is very transparent and great with acoustic material			۲		æ	270		230
Audio Technica ATH-D40fs	105	Detailed and involving sound with a professional 'studio' quality appeal					•	250		194
Grado SR60	90	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste		•		۲		200	۵	194
Grado SR80	110	Not perhaps as neutral as some but they communicate well and that's the point of the exercise.		۲		۰		200	۲	230
Philips HP890	70	A remarkably sophisticated and very comfortable headphone			۰	0		330	۲	219
Sennheiser HD590	160	Assured and confident player with very low coloration and great comfort			0	•		270	•	205
Sony MDR-CD480	40	Generally neutral and nicely detailed - comfortable too			۲	0		250	0	219
Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics		0			•	160	۲	205
Stax System II	400	Luxury option at its price, but the sound delivery is five-star quality all the way	۲		•	۰		295	۰	205
Vivanco SR222S	30	Not that subtle, but high fun factor compensates				0		250	0	219

SPECSING 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



HI-FICHOICE BUYER'S BIBLE CABLES

CABLES

Wires to hook your system together

Hi-fi cables come in two varieties: \ge interconnects and speaker cables. Interconnects come in preset lengths, generally with RCA phono plugs attached, though some equipment uses XLR connectors for balanced connection. Speaker cable is sold by the metre and can be used without plugs or can be fitted with screw or solder-on types.

Choosing the best cables is not quite as

Our favourite

straightforward as it might seem. One problem is that components interact with the cables you use and this often results in audible effects, but there are few cables that are fundamentally incompatible with any components, and we recommend the advice of a good dealer. In any case, you should look to spend as much as you can afford.

Digital cables come in two flavours: electrical and optical. In most instances

electrical varieties sound better than optical, but if you are after a smoother sound the light carriers have the advantage, as they do if long lengths are needed (10m+). Optical outputs tend to have Toslink connectors (around 99 per cent), but some electrical digital outputs are of the superior BNC type, which uses a bayonet-type socket. Check which type your digital component has before buying a digital interconnect.

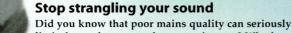
CABLES		cables	STRANDED	SOLID CORE	COPPER	IS	DIGITAL CABLE TYPE	ISSUE NUMBER
PRODUCT	£	COMMENTS	DED	ORE	PER	SILVER	NPE	1BER
AMALOGUE INTERCONNECTS				A Sale		1723	63	
Acoustic Research Master	50	Decent performance all round and good interference rejection	0		•			224
Cable Talk Advanced 3	35	Good sound and great detail, but a slight brashness in the treble			۰			211
Chord Calypso	30	Informative, clear sound at a decent price	0		۲			211
Ecosse The Composer	30	A high degree of realism and delicacy, and a fantastic price (0.8m)	•		۰			211
Ecosse Reference Diva	100	Very good performance in all areas, with particularly fine, tuneful, bass (0.8m)	•		0			224
Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness						211
Monster Interlink 400 Mk2	70	Really lively and enjoyable sound	۲		•			224
Profigold PGA4201	5	No pretensions, but sound is perfectly listenable with fair detail and extension			•			211
Prowire VHQ	10	This crisp cable lacks a little refinement, but it's great for the price	۲		۲			211
QED Qunex 1	20	Well balanced and easily rivals more expensive cables			•			211
Townshend Isolda DCT	300	Unusual construction and cryogenically treated too: whatever the reason, a remarkably capable wire		•	٩			234
van den Hul The Bay C5	45	Terrific detail, nice balance - a great cable	۲		٠			224
van den Hul D102 Mk III	79	Hybrid conductors (carbon and copper) and intelligent construction give strong bass and excellent detail			•			234
Vivanco Prowire SHQ	30	Good performance all round, with just a hint of bass congestion. Very good value			0			224
DIGITAL INTERCONNECTS				122				
Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound			•		Е	207
QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced			0		Е	207
QED Qunex SR75	50	Lots of bass and good clear midrange and treble at a sensible price	۲		٠		E	234
Ross OP004	20	Sounds much like most other Toslink leads: slightly lacking detail, but good value					0	207
van den Hul Optocoupler Mkll	49	Noticeably has the edge over other optical leads, but still second best to electrical types					0	234
SPEAKER CABLINS PRICE PER METRE	1203							
Black Rhodium Aero Space S130x2	20	Bi-wire cable with great kick in the bass, though the treble can sound dry and recessed			•			227
Ecosse Reference MS2.3	23	Favours excitement over refinement: can be slightly bass-shy, but plenty of life			•			227
Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere - one of the best cables available all round		•	٥			203
Ixos Gamma 6003	3	A little midrange dryness, but bass is among the best at this price; strong and consistent			•			203
Kimber 4PR	5	Considering the price, this cable's very slight dryness is forgivable when everything else is so right			۲			192
Kimber 8VS	18	Beautifully full, open and transparent sound right across the board. Price for 1m terminated pair	8		۲			227
Kimber 8TC	39	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	•					203
QED Silver Anniversary	5	A few minor flaws, but overall performance is very assured for this price			•			192
QED XT300	10	A natural and well controlled sounding cable that's cost effective for mid-priced systems		•	•			234
QED Profile Silver 12	15	Very slightly laid back, but good tone and detail – wears its achievements lightly			0			215
Supra Ply 3.4/S	8	Good in all areas, with rich bass and just a touch of treble roughness	•					203
Tara Labs Prism Nexa	10	Slight tonal softness affects both bass and treble, but the overall sound is very listenable	•		•			215
Townshend Isolda	50	Superb sound all round, and amplifier compatibility enhanced by included stabilising inductor		8	0			203
van den Hul The Snowline	5	A hint of high-end civilisation with a few rough edges and a slightly warm balance						215

SPECS KEY STRANDED Cable has a number of (usually) twisted strands to conduct the signal. SOLID CORE Cable has one or more individually insulated strands to conduct the signal COPPER Material used to form the conducting element of the cable. SILVER Alternative material used to form the conducting element of the cable. DIGITAL CABLE TYPE E - electrical, 0 - optical Cables are one metre length unless otherwise stated.

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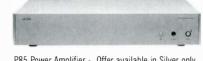
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STANDS AND SUPPORTS BUYER'S BIBLE

STANDS AND SUPPORTS

Equipment racks and speaker stands

In hi-fi there are two types of stand. One is a rack that holds turntables, amps, CD players and so on and is described as an equipment support, and the other is a speaker stand. The latter comes in three basic varieties, two for stand mount speakers: lightweight, multilegged types; and heavy designs with fewer legs and the ability to be mass-loaded for extra solidity. The lighter variety is said to have a quicker sound, while heavyweights give deeper bass and a calmer sound. The third speaker stand type is a platform that sits under floorstanding speakers or speaker/stand combinations, the pneumatic Townshend Seismic Sink being an example.

There are two speaker-to-stand interfacing options: spikes or Blu Tak in each corner of the top plate. Try both and take your pick.

NUMBE

SPECIFICATIONS

Our favourite **EQUIPMENT SUPPORTS**

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Equipment supports		HEIGHT	SIZE (CM)	WELDED	: SHELVES	SHELF TYPE	NUMBER	
PRODUCT	£	COMMENTS	크	3	9	S	R	38
Aavik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47		4	MDF	193
Atacama Equinox	280	Stable, modular design with style. Excellent bass transients and a fresh design concept	81	50,50	•	4	Glass	217
Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities - a worthy upgrade	82	43		4	MDF	193
Avid Isoschelf	1,100	An enthusiast's equipment support stand free from coloration, if a little fiddly to set up	87.5	48		5	MDF	193
Clearlight Audio RDC Aspekt	550	Stunning neutrality and detail from a well-damped design. Its performance makes the price tag good value	75	53.5,45		4	MDF	217
Custom Design Aspect650	270	Smart looks and practical thanks to adjustable shelves. Sound is fair with some loss of detail	66	46	۲	4	Glass	206
Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49	۲	4	Glass	193
Naim Fraim	1,825	Pricey but very classy looking and sounding, with modular flexibility	96	45x34		5	Glass	232
Quadraspire Q4	280	Simple, but modestly effective and very attractive	52	49		4	MDF	206
Quadraspire Q4 Reference	480	Excellent performance from the school of wobbly racks. Natural sounding and plenty of detail	51.5	49,39.5		4	MDF	217
Sound Organisation Z560	195	Excellent value rack, five shelves too! Well balanced and under 200 quid!	92	50,40		5	Glass	217
Standesign Design 4	190	An all-in-one support at a budget price, with good sonic performance	88.5	50.8	0	4	Glass	193
Towshend Seismic Sink Stand	900	Serious resolution and stunning isolation from air decoupled self-levelling design. If you have the cash, buy one	61	53,39.5		4	MDF	217

Our favourite SPEAKER STANDS

SPEAK	EF	R STANDS		TOP PLATE			NUMBER	ISSUE
Speaker stands		HEIGHT	SIZE (I	FILLABLE	WELDED	R OF LEGS	NUMBER	
PRODUCT	£	COMMENTS	H	(CM)	BLE	ē	GS	Ĥ
Atacama Nexus 6	60	An excellent all-round performer and a genuine hi-fi bargain	60,50	14.5,18	۲		3	202
Cyrus CLS50 Stand	200	Unusual combination of style and performance, and a definite contender in the right environment	64	17, 19			1	220
Custom Design R/S300 Mkll	100	A solid stand improving on the original, with better focus and detail	61,56,51	16.5,18	0		2	202
hne Cableway	399	Looks great, sounds great, so start saving! Clean and sweet, and neutrality is exceptional with orchestral material	63	17, 20	0		1	220
Kudos S50	115	Formidable bass with real authority, and a wide dynamic range across a broad bandwidth	61	15, 20	0		1	220
Partington ANSA 60	90	Elegant flat-packer 'disappears' sonically; restrained but neutral and coherent	62	18X15	.0		4	232
Partington Dreadnought	100	Fully welded high-class engineering gives a very clean, open sound at a sharp price	61	17, 15	۵	0	5	220
Partington Dreadnought Ultimate	299	Super heavyweight stand that is an open window to the speaker placed on it	63	21,24	۲		1	202
Sound Organisation Z522	95	Very hefty build for the price helps to deliver a solid sound with good authority and drive	60	16	۲		4	220
Townshend Seismic Sink	499	Unique inflatable plinth that works wonders with decent floorstanders, as well as standmounted speakers	4	38,48			0	202

EQUIPMENT SUPPORTS SPECS KEY HEIGHT Of complete stand. TOP PLATE SIZE (CM) Width by depth of the supporting platform(s). Single figures indicate a square platform

WELDED As opposed to bolt-together construction. NUMBER OF SHELVES To put your kit on. SHELF TYPE Material that shelves are made of.

SPEAKER STANDS SPECS KEY HEIGHT Of each stand, not including spikes. TOP PLATE SIZE (CM) Width by depth of platform. Single figures indicate a square platform. Speakers generally overhang top plates. FILLABLE The stand can be mass-loaded with sand and/or lead to stop ringing. WELDED As opposed to bolt-together construction. NUMBER OF LEGS That support the stand.

TRIANGLE

Triangle loudspeakers continue to amaze the world's hi-fi press. Stereophile's Sam Tellig – probably the world's most respected hi-fi reviewer – had this to say about the Celius 202. "One of the finest speakers I have ever heard in 17 years of reviewing and 40 years involvement with hi-fi. It's that good." Find out for yourself why top reviewers rate Triangle so highly. Contact us today for the brochure, review copies and dealer list.





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TECHNICAL & DESCRIPTIVE TERMS BUYER'S BIBLE

GLOSSARY

TECHNICAL TERMS

S.1-CHANNEL AUDIO Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer.
 BALANCE Most loudspeakers have a characteristic frequency balance resulting from emphasising parts of the audio range and/or de-emphasising others.
 BASS The lowest three octaves of the audio band – hence 'low bass' refers to the bottom octave (20-40Hz); mid-bass' the middle octave (40-40Hz); and 'upper bass' the 80-160Hz octave.

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

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

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

CD-RW Re-writable or re-recordable CD, incompatible with older CD players. **CLASS 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 band 217.5 - 230MHz. Broadcasters use varying degrees of compression and offer a broad range of programming. DAC or Digital-to-Analogue Converter. The stage in any digital component at which incoming digital data is used to reconstruct a recognisable analogue (music) waveform

DOLBY DIGITAL DD (AC3)

A compressed digital audio format that typically contains five or more entirely discrete channels, eg 7.1 EX where side and rear channels are used. DOLBY PRO-LOGIC, DPL Forerunner to DD that 'steers' information to the front UR, centre and mono surround channels via an analogue matrix. DRIVE UNIT/DRIVER A transducer

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

DSP or Digital Signal Processor. Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

DTS or Digital Theatre Sound Competitor to Dolby Digital with a reduced 41 compression ratio that, ostensibly, promises higher quality. DVD-A High-resolution variant on DVD offering up to 192kHz bandwidth and 24-bit dynamic range. Discs are compatible with standard DVD players.

ELECTRICAL DIGITAL Any digital

connection that uses an electrical cable rather than optical. Includes the balanced ('AES/EBU') interface.

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

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

complex electrical load that a loudspeaker presents to the amplifier which is driving it.

JITTER An insidious distortion specific to digital audio caused by the clock, used to regulate the conversion of data into analogue audio, being imprecise. KBPS (Kilobits per second) Digital data rate measurement system used primarily with highly compressed formats such as MP3, DAB etc. The higher the amount, the better the quality.

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

LOSSLESS COMPRESSION A method of reducing the number of data bits (density) without corrupting the original description of the musical signal. LOSSY COMPRESSION Reduction in data density by recourse to a psychoacoustical model that predicts what is,

and what is not, 'audible' within a sequence of music.

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 wave forms used for CD and DVD. Quality is limited by the oversample and bit rates used – CD is 44.1kHz/16-bit while DVD-A is capable of 192kHz/24-bit.

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

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

SACD (super audio CD) was launched in 1999 and is a Sony/Philips format based on DSD coding that offers high resolution stereo and multichannel sound from hybrid discs that can also be played on ordinary CD drives.

SAMPLE RATE The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

SENSITIVITY The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dRW).

THX Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra is more stringent than THX Select.

TOSLINK The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

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

TWO/THREE-WAY Loudspeaker crossovers split the signal into two or three frequency bands, a two-way speaker can have more than two drive units.

WATTS (per channel) The watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifer output.

DESCRIPTIVE TERMS

AGGRESSIVE Forward and bright sonic character.

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

ANALYTICAL Highly detailed. ARTICULATE Intelligibility of voice(s) and instruments and the interactions between them.

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

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

BODY Fullness of sound, with particular emphasis on upper bass. Opposite of thin.

BOXY The sound of a loudspeaker with audible cabinet resonances.

BRIGHT A sound that emphasises the upper midrange/lower treble. **DARK** A tonal balance that tilts

downwards with increasing frequency. Opposite of bright.

DECAY The fadeout of a note, it follows the attack.

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

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

the original recording. **DETAIL** The most delicate elements of the original sound and those which are the first to disappear with lesser

equipment. **DRY** A sound that is devoid of 'juice', which usually comes across as finegrained 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. HLUSSARY



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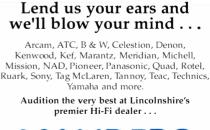
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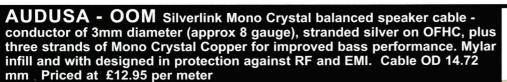
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PLEASE PHOTOCOPY

Groan cinema

David Vivian likes to keep his home and cinema experiences separate

ome cinema. What a clunking contradiction. The tantalising juxtaposition of two words has fuelled one of the most remarkable consumer electronics booms of recent times. But, well, I guess it's all just a grand exercise in self delusion. Because the one thing even truly mighty home cinema rigs fail to capture is the essential character of the real thing.

Say you go for broke and build your own cinema room, complete with DLP projector wall-filling screen. Many have, the more extravagantly-minded with meticulous attention to detail – tiered floor, vaguely uncomfortable flip-up seats, popcorn sprayed artfully over dull but hard-wearing carpet and, presumably, tailor's mannequins positioned so that their heads take silhouette bites out of the bottom of the screen.

Curious. Home cinema removes us from all these 'irritations' yet, on a deeper level, we seem to crave them. Anything to get closer to that authentic vibe. By comparison, most of us seem to be tragically off pace. We get by with a widescreen telly, DVD player and the best deployment of five speakers and a sub our awkwardly-shaped lounges will allow. Enjoyable certainly, occasionally thrilling even. But it's not the flicks.

But then neither are six-figure, dedicated room systems with their cod movie-house touches. They're just very superior home surround systems. Indeed, almost certainly too good. In the sense that what you tend to achieve is simply 'higher-fi' if you throw enough money at it. In America, some enthusiasts who admit to spending upward of a million bucks have allowed their rooms and systems to be featured in magazines. It's a safe bet there are plenty more who haven't. Any of them might well claim that what they have is better than the best cinema.

Doesn't mean it'll capture that very specific cinema magic, though. About time we tried to nail the slippery sucker. It isn't just that,



"The one thing even truly mighty home cinema rigs fail to capture is the essential character of the real thing."

unless you drag people in off the street, you'll be laughing, cheering, weeping or wiggling towards the edge of the seat with, at best, a few friends or family, though the absence of mass emotional ambience is part of it. It isn't just that only real cinema seems to get the size of the picture and the size of the sound in correct proportion. I can only imagine what the psycho-acoustic implications of this are, but it must be less fatiguing for the brain than having to compensate for a soundscape dislocated in scale from what you're seeing. But most crucial of all is the sound itself.

High-end hi-fi it most certainly ain't. But then with such effortlessly visceral volume, wholly believable dynamics, shocking immediacy and, of course, that sensation of being completely enveloped in sound, it doesn't need to be. Okay, a modern cinema system's processing electronics are vastly sophisticated and can be fine-tuned to offer convincing 3D from every seat in the theatre. The test tone set-up routine on your typical AV receiver doesn't really compare.

And the speakers. Often tri-amped with digital crossovers and signal alignment and equalisation, they're barely recognisable as even distant relatives of what we expect to deliver our silver screen jollies at home. Take JBL's awesome, big theatre 5674. Frequency response is only 45Hz to 12.5kHz, but oh, the efficiency and power. Bottom enclosure: four 15-inch woofers, 2,400 watts power handling 103dB 1W/1m. Midrange horn: four-inch voice coil, 300+ watts power handling 115dB 1W/1m. High frequency horn: four-inch voice coil, 200+ watts power handling 112fB 1W/1m. System output 117dB at ten metres.

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