

HI-FI CHOICE

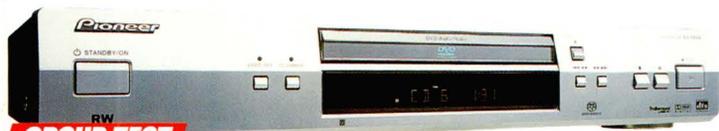
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WILD!

EXCLUSIVE!

Wilson Benesch's Chimera loudspeaker uncaged

MASSIVE INTERCONNECT CABLE TEST



GROUP TEST

DVD-AUDIO AND SACD EXPOSED

The latest players rated



SPECIAL REPORT:

CD R.I.P.?

The future revealed

NEW!
IN-DEPTH TEST
Sonneteer's extraordinary 'digital' amp



GROUP TEST

ESSENTIAL SPEAKERS

Top models under £350

GROUP TEST

PHONO STAGES

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www.nadelectronics.com

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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.



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



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



ALVIN GOLD

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



RICHARD BLACK

Richard is one talented guy: a professional musician, experienced recording engineer and a highly knowledgeable hi-fi enthusiast to boot. He's particularly nerdy about cables. It's probably Freudian.

Remember that track from the eighties, the one that went "...the future's so bright I gotta wear shades..."? Truth is, there aren't too many audiophiles donning their Ray-Bans right now. The threats to sonic purity seem to come from all sides – an unstoppable pincer movement as 'real hi-fi' is crushed by fashionable video and data-reduced digital sound.

But hold your horses, dear friends. The digital future is far more exciting than one might dare to believe. It's all about choice (apt for a magazine with a title such as ours). Sure, data reduced audio is here to stay – it's not the very highest fidelity, but the quality of compression systems will improve and if you want to carry your tunes on a card the size of a postage stamp, pump entertainment through the internet or store vast amounts of media on home servers, you can. Alternatively, if you demand the highest levels of performance, high-resolution formats exist to take you there. And they're getting better all the time.

That's where *Hi-Fi Choice* comes in, for those who crave a more vivid, more realistic experience than 'ordinary' systems will allow. In this bumper special issue you'll find plenty to peruse, from features on the future of hi-fi to more familiar hi-fi waters. We've got lots of new regulars beginning this month too – see pages 14, 48 and 87 for starters. Technology doesn't stand still, and neither do we.



Tim Bown **editor**

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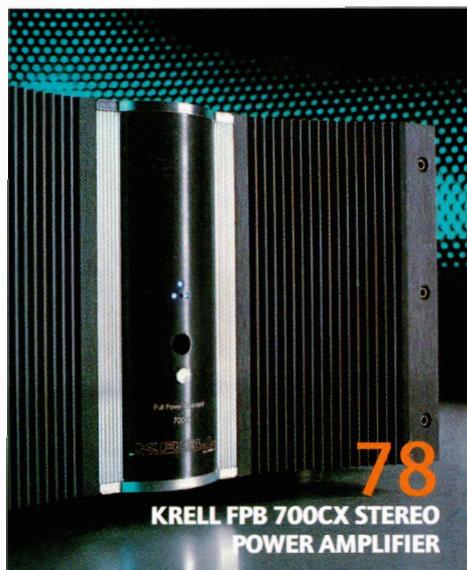
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STAR RATINGS

★★★★★ EXCEPTIONAL
 ★★★★☆ VERY GOOD
 ★★★☆☆ AVERAGE
 ★★☆☆☆ SOMETHING LACKING
 ★☆☆☆☆ RUBBISH

AWARD BADGES

<p>BEST BUY</p> <p>HI-FI CHOICE magazine</p> <p>★</p>	<p>RECOMMENDED</p> <p>HI-FI CHOICE magazine</p> <p>★</p>	<p>EDITOR'S CHOICE</p> <p>HI-FI CHOICE magazine</p> <p>★</p>
Best Buy	Recommended	Editor's Choice
<p>The <i>Hi-Fi Choice</i> Best Buy badge is only awarded to products found to offer exceptional performance and value for money in an <i>HFC Group Test</i>. Buy this kit with absolute confidence.</p>	<p>Awarded to outstanding products in our <i>Group Tests</i> that may not offer such exceptional value-for-money as a Best Buy, or may not be suitable for everyone, but still turn in a convincing performance.</p>	<p>Products in the <i>Statements</i> section that really blow us away are eligible for a special <i>HFC</i> Award badge. The coveted Editor's Choice recommendation is reserved for high-end products of exceptional quality.</p>

For 27 years, our unique tests have brought you the most accurate guide to buying hi-fi. Our mix of thorough *Group Tests* and in-depth solo reviews ensures *HFC* is the magazine to trust.



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GROUP TEST: STEREO SPEAKERS



THE COMPONENTS



Primare D30.2 CD player £1,500

Simple, elegant integrated CD player. The minimal style is bolstered up by minimal front and rear panel styling. But with a 24/96 DAC and both balanced and single-ended outputs on tap, it has got it where it counts.



Primare A20 integrated amplifier £750

A 70 watt dual mono minimal integrated design which is a perfect visual and sonic match for the Primare D30.2 CD player. Small with hardly any extra features, so not for tone control or headphone fans. A deceptively powerful little amp.



PMC TB2 standmount loudspeakers £700

This shielded, two-way speaker design has a professional audio heritage. Uber-thick cabinet construction and a transmission line design means it is more controlled and has better bass than you'd expect from a mid-sized bookshelf model.

PRIMARE D30.2 | PRIMARE A20 | PMC TB2 | £2,950

SYSTEM ADDICT

Scandinavian electronics and British speakers make a system with genuine synergy

This Primare/PMC system, suggested by Audio T of West Hampstead, costs just a shade under £3,000. But add decent cables, tables, stands and other accessories and it will take on a system costing thousands more.

Primare's top D30.2 CD player has both balanced and single-ended outputs, although the A20 amplifier accepts only single-ended phono inputs. The £1,500 D30.2 features a Burr-Brown PCM 1704 24-bit/96kHz digital-to-analogue converter with matching digital filtering. It's a minimal design, lacking even a Toslink optical digital audio connection. However, it has quality where it counts; top-notch build, with steel casing and more.

This is allied with the £750 Primare A20 integrated stereo amplifier. A dual mono 70 watt remote control design with just two line inputs and two tape circuits, it is every bit as minimal as the D30.2. There is a front panel LED screen showing volume setting and a little arrow pointing to which source is selected, but that's it. If you want a phono stage, headphone socket or even balance control, look elsewhere. You can only adjust the balance using the menu button on the C30 remote.

A perfect match for these two Scandinavian components is the PMC TB2. This rather small bookshelf design is a passive domestic version of the company's TB25-P actively powered professional studio monitor. It has a claimed sensitivity of 90dB with a nominal impedance of eight ohms, so should be an easy amplifier load. A two-way design with shielded speakers, the cabinet is deceptively thick and the transmission-line approach produces good bass from a comparatively small box.

This is an extremely good, honest-sounding package. There is no metaphysical magic surrounding the performance of this system; it won't make you understand the

thought processes of the second violinist, nor can you work out what kind of shoes the bass guitarist was wearing. Instead, it simply digs up information off the disc and presents it through the speakers with studio-like clarity.

It presents a close-knit, detailed and tidy soundstage. The room this system was installed in suffers from 'hole in the middle' soundstaging problems, because of a door with a storeroom behind it plumb in-between the two speakers. With the Primare/PMC system, that soundstage hole practically disappears. It is a full, rich sound; but not so full or rich that it undermines the detailing or the clarity of the system.

It is all about clarity: playing a blast of Sinatra's *Come Fly With Me* clearly defines and picks out fingersnaps and other subtle details many systems stumble over. Likewise, you can hear the key sounds of Sonny Rollins'

saxophone playing. But don't think all that detail leaves a dry and barren sound; the *Round Midnight* cut shows that although the system delves right into the recording, it also digs out the passion of the cuts to such an extent that you could almost join the band for an alternate take, a few shots of Jack Daniels and some extremely fine reefer madness.

It is also extremely good at getting past the MTV-chummy compression on modern CDs. Even Eminem's *Without Me* sounds like a keen and dynamic wall of sound, instead of the dull and even wall of sound presented by lesser kit. Only something with huge scale – such as *Mahler's Eighth Symphony* – shows where more power and larger speakers can help.

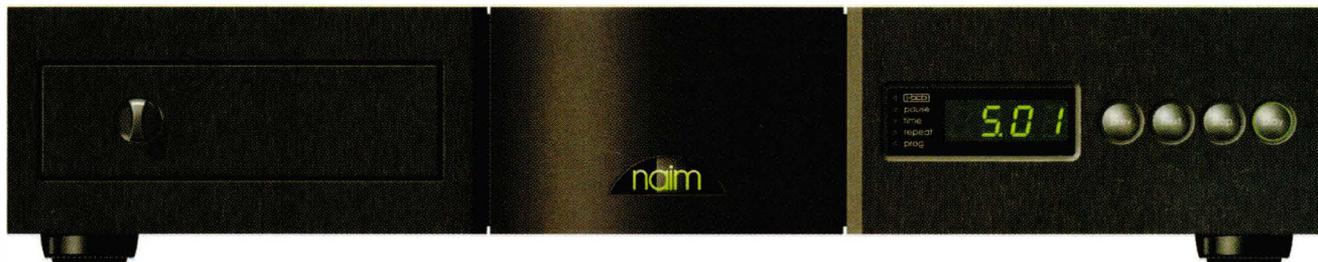
There are systems with wider or deeper soundstages, and there are systems with more accurate and deeper bass, but it is unusual to find systems that can do any better for the same money. 



"...you could almost join the band for some Jack Daniels and extremely fine reefer madness."

CONTACT

This system was recommended by Audio T, 190 West End Lane, West Hampstead, London NW6 1SG.
 ☎ 020 7794 7848
 🌐 www.audio-t.co.uk



Naim Classic CDX

NEWCOMERS NAIMED

NEW NAIM CLASSICS RANGE

➤ Naim has launched a deluge of new products under the Classic banner. Effectively replacing all but the entry-level 5 and top-end 500 series this tranche of amplifiers, power supplies and a CD player forms the core of the brand's broad portfolio.

Just to keep you guessing some names have been modified. The NAP 180 power amp is now the NAP 200, while others remain as before – the CDX CD player is still a CDX. What unites the Classic range is the distinctive styling that has been applied to all the full width components.

Fascias have been divided into three blocks with a backlit Naim logo in the centre, while fit and finish are smarter than before. There are also new connection options that ease use with non Naim components – preamps with phono input sockets and amps with RC5 wired remote and optional RS232 socketry for custom control.

The Classic power supply range consists of Hi-Cap (£765), XPS (£1,965) and Super-Cap (£2,293). There are three preamplifiers: NAC 202 (£1,170), NAC 282 (£2,276) and NAC 252 (£3,440), and as many power amps: NAP 200

(£1,142), NAP 250 (£1,914) and a stereo amp plus power supply replacement for the NAP 135 called NAP 300 (£3,910). Which, if we've got our sums right, means that Naim no longer makes monoblock amps. The last Classic is the CDX (£2,312) which continues to eschew a digital output on the basis that splitting transport and DAC is a bad thing. It looks like the day this Salisbury based company produces a digital recorder is still a long way off.

☎ 01722 332266

🌐 www.naim-audio.com

NEW IMPROVED UTOPIA HIGH-END GALLIC SUPER SPEAKER

➤ French speaker specialist JMLab's new Grande Utopia Be tops the brand's most prestigious range at £45,000. Seven years after the first Grande Utopia the Be version is so-called because it uses the world's first direct radiating pure beryllium tweeter, a drive unit which covers a phenomenal frequency range of 2.5kHz up to 40kHz.

The remaining drivers in this four-way design use 'W' technology cones made from a sandwich of glass fibres and foam. The 165mm midrange unit also uses a distinctive Power Flower motor system with multiple compact magnets in place of a single ring



for maximum flux density.

Other technologies include a high rigidity Gamma structure cabinet, an OPC or optimum phase crossover to give a super fast roll-off between drive units and Focus Time cabinet design for perfect time alignment at the typical listening distance.

At over 200kg it stands 1.74m tall and delivers bass down to below 20Hz from a 380mm (15-inch) bass driver. 500-watt power handling combines with 92dB sensitivity and a minimum five ohm impedance – you don't need a monster amp to drive it, but it would be a shame not to!

☎ Focal-JMLab
0121 616 5126

🌐 www.focal-jmlab.fr



THE HARMAN TRIO THREE NEW HK PRODUCTS LAUNCHED

➤ New products from Harman Kardon include a new twin-deck CD-R recorder, DVD player and AV receiver. The £400 CDR25 offers 4x speed recording and finalising and is claimed to offer exceptional sound quality with its AKM 24-bit/96kHz D/A and A/D converters. Despite its low price the £250 DVD21 includes comprehensive facilities like playback of CD-RW, DVD-RW and DVD+RW discs, MP3 decoding, a back-lit remote control and upgradable firmware (but no DVD-Audio playback).

The £500 AVR3550 multichannel receiver is equally well equipped, with an impressive list of decoding options, 24-bit/192kHz DACs, a high quality Crystal DSP audio processor and a quoted power output of 5x60 watts.

☎ Harman Consumer UK 020 8731 4670 🌐 www.harmankardon.com



INFINITY has a new based AV speaker package called the Oreus. Consisting of four satellites, a centre speaker and an active subwoofer, the £650 package features the brand's aluminium/ceramic composite cone technology. It's available now, along with optional £100 floorstands.

☎ 020 8731 4670

MAPLIN has just launched its new 2002/2003 catalogue, now in its 30th year. Promised to contain 2,300 new products, the new bumper catalogue also has a 50 page section of hints and tips and a 24/7 ordering service. Catalogues cost £4 and are available in the shop or online at www.maplin.co.uk

☎ 0870 264 6000



DENON'S new DVD-900 is the brand's most affordable DVD player yet, priced at £250. The new model has an aluminium fascia, 12-bit/54MHz video DACs and a 24-bit/192kHz DAC for audio. With audio circuits based on Denon CD players, the DVD-900 promises superior results from CD, and supports both MP3 and CD-R/RW discs. It's available in black or silver and it's in the shops now.

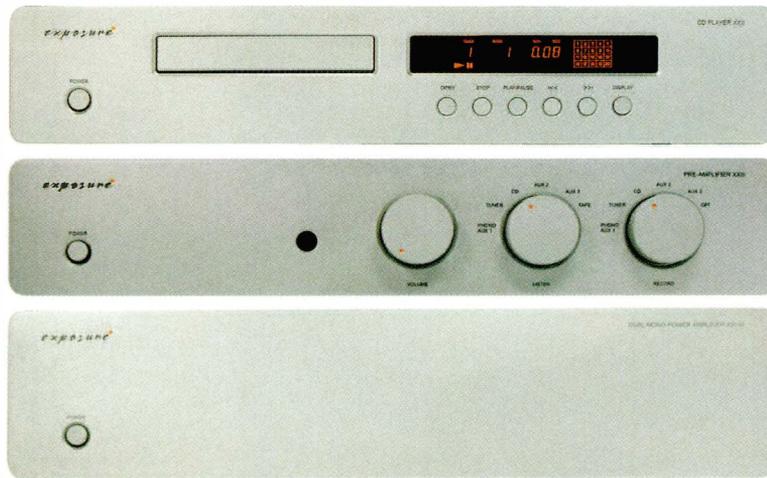
☎ 01234 741 200

DENSEN'S new £1,800 four-channel power amp, the BEAT B-340, is a scaled down version of the flagship B-300XS offering a lower power output of 120 watts per channel. It uses Densen's double-sided printed circuit boards and features adjustable gain and a switch for bi-amping.

☎ www.densen.dk

IXOS has a new high-performance Scart lead promising a clearer and cleaner picture over standard leads. The XHT601 uses 24kt gold plated pins and cast-alloy Scart plugs. Prices start at £35 for the 0.75 metre version.

☎ 01844 219 004



T-B: 22 CD player, 23 preamp and 28 power amp

ELECTRONICS EXPOSED

NEW CD AND AMPS FROM EXPOSURE

⊕ Sussex-based audio firm Exposure has announced a new range of electronics to supersede the Classic range of the late 1990s.

Although replacing the older models, the new range drops the Classic name favouring a simple numerical prefix. The series is headed by the 22 CD player, incorporating two mono Burr-Brown PCM1704 24-bit/192kHz DACs that are said to provide a very high resolution. Also inside the aluminium casework are double sided printed circuit boards, optimised output

circuitry and separate power supplies for the transport and audio stage.

The new 23 preamp has a plug-in MC/MM phono stage option, is fully remote controllable and shares the same aluminium casework. A matching power amp, the Exposure 28, delivers 70 watts per channel and boasts both RCA and balanced XLR inputs. The range is available in October, with CD and preamp priced at £1,175, and the power amp selling for £1,275.

☎ Exposure 01273 423877

☎ www.exposurehifi.com

KEY FEATURES

22 CD PLAYER

- ⊕ CD text display
- ⊕ Twin Burr-Brown PCM1704 mono 24 true multi-bit DACs
- ⊕ Large toroidal power transformer
- ⊕ High stability crystal clock reference
- ⊕ High quality double-sided PCB for optimum layout and screening
- ⊕ Full function remote control

23 PREAMP

- ⊕ Large toroidal power transformer for the audio stages
- ⊕ 6 line inputs, with the option to convert 1 line input to internal phono stage card, 2 main out (RCA) and 1 XLR.
- ⊕ Audio output stages utilising only discrete transistors

28 POWER AMP

- ⊕ High quality custom-made parts featuring two large toroidal transformers and power supplies for each channel
- ⊕ Sophisticated circuitry with non-invasive overload/overheat protection

CAMBRIDGE SCHOLAR

NEW BUDGET DAB TUNER REVEALED

⊕ Cambridge Audio's £150 DAB300 is the latest budget digital radio tuner based on new 'third generation' DAB technology. At its heart is the Frontier Silicon FS1010 chipset and it boasts Wolfson 24-bit/192kHz DACs with built-in 4x upsampling.

Other features include auto-tuning, ten station presets and a signal strength meter to facilitate aerial set-up. Scrolling text is also supported.

It's available from November through Richer Sounds stores.

☎ Cam. Audio 0845 090 2288

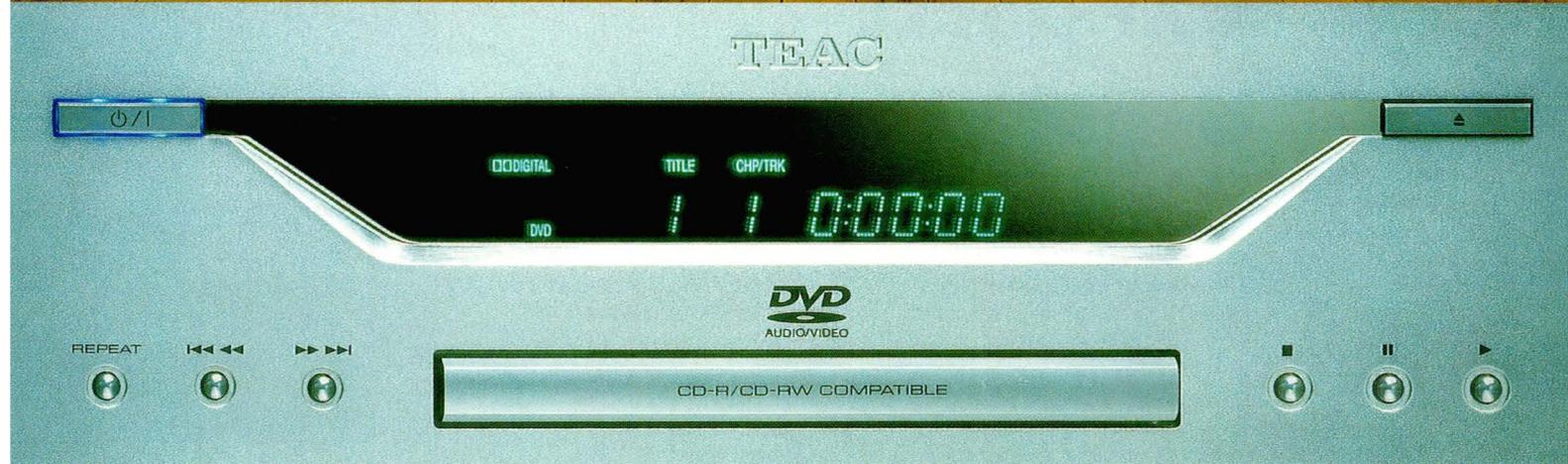


MINI MOVIES

SVELTE CYRUS 5.1 PREAMP READY NOW

⊕ Those looking for a discreet AV system will relish the new **Cyrus AV8 multichannel preamp**. With its traditional shoebox dimensions and die-cast chassis, the new model replaces the AV5 and is billed as "the finest AV processor on the market today". New features include Pro Logic II, new DTS mixdown options, enhanced bass management and an improved signal-to-noise ratio. Like its predecessor, set-up is eased by an automated program using room analysis to calibrate the settings for amp level and speaker distance using a supplied microphone. Audio performance is claimed to be compatible with high quality CD players - could this be the perfect cross-over product between hi-fi and home cinema? Find out when we test the £1,100 AV8 soon.

☎ Cyrus 01480 435577 ☎ www.cyrusaudio.com



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LEGACY



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

www.teac.co.uk

TEAC

For information, call TEAC on 01923 819630

Soundbites

PURE has added to its DigiTheatre home cinema range with the launch of the Platinum digital home cinema system – a 5.1 channel speaker and processor package. Priced at £550, the new system boasts “advanced” digital signal processing with Dolby Digital and DTS decoding and four satellite speakers, each with 10mm metal tweeters and 75mm midrange drivers. The subwoofer features a 200mm long-throw driver and the ported centre speaker has twin dual-concentric 75mm cones.

☎ 01923 260511



KEF has a new custom installation loudspeaker, the Ci100QR. Built for flush mounting into walls and ceilings, the speaker uses a Uni-Q drive unit comprising 100mm polypropylene bass driver and a 19mm tweeter. Its 0.7 litre enclosure is said to offer optimum low frequency reproduction and the unit can be fitted to walls varying in thickness from 6mm to 30mm. Expect to pay £100.

☎ 01622 672261

Hi-Fi diary

OCTOBER

- 3-6 **Stuff Live 2002**, London 020 8307 2300
- 12-13 **Home Entertainment Show** Manchester, 01524 36991
- 19-20 **The Scottish Hi-Fi and Home Cinema Show** Glasgow, 01829 770884
- 19-21 **The VAD Hi-Fi Show** Netherlands a.neve@planet.nl

NOVEMBER

- 9-10 **Dublin Hi-Fi & Home Cinema show** Dublin, 00 353 1 288 9449
- 16-17 **The Manchester Hi-Fi and Home Cinema Show** Manchester, 01829 770884

JANUARY 2003

- 9-12 **CES, Las Vegas, USA** 001 703 907 7041



Arcam DiVA DV88 Plus

WHAT A PICTURE
ARCAM'S PROGRESSIVE SCAN PAL DVD

Arcam's latest DVD-Video player can claim a world-first: 625p Progressive Scan video output from Region 2 PAL DVD discs. Up to now, any DVD player supporting Progressive Scan could only output this extra-high resolution form of video from imported NTSC discs.

This technology means that plasma and projector users can enjoy even higher picture quality from UK release Region 2 DVDs. What's more, using an add-on DAC board the DV88 Plus can be

upgraded in the future to support DVD-Audio playback – something Arcam is busy developing at the moment. Sporting some of the very latest processing from chipset manufacturer Zoran Vaddis, the new player has been built from scratch, rather than simply cloning a Far Eastern design. High performance audio from both CD and DVD discs is also claimed. Priced at £1,000, it's due to arrive in stores this month.

☎ Arcam 01223 203 203
 www.arcam.co.uk

KEY FEATURES

- ☉ Zoran Vaddis V SOC (System On Chip) DVD processor, complete with 32-bit 135MHz system microprocessor
- ☉ Improved video processor with built-in progressive scan and 32-bit audio DSP
- ☉ New main DSP and audio/video boards using 4-layer circuit boards
- ☉ Twin 24-bit/192kHz Wolfson audio DACs operate in dual differential mode for lowest noise and distortion
- ☉ Progressive Scan as standard – supports both 525p and 625p outputs with certified Macrovision copy protection
- ☉ Component, RGB, S-video and composite interlaced video outputs
- ☉ 6x10-bit/54MHz video DACs
- ☉ NTSC to PAL and PAL to NTSC conversion
- ☉ Separate video and audio master clocks improve jitter performance, markedly enhancing sound quality



TIVOLI GOES STEREO
DESKTOP RADIO DOUBLES THE FUN

The successful Tivoli Model One mono desktop radio (reviewed in *HFC* 225) has been joined by a stereo version – the Tivoli Model Two. It uses a separate speaker to give stereo reproduction, supplied with seven metres of speaker cable. Internals have been redesigned to allow for stereo and the new model features additional inputs for CD or TV connectivity as well as a low frequency output for a subwoofer! It's available now priced at £170.

☎ Ruark Acoustics 01702 601410
 www.tivolioaudio.com

AUDIO RESEARCHED
NEW 100-WATT VALVE POWER AMP

Prestigious US hi-fi brand **Audio Research** now has a more powerful version of its 55-watt VS55 valve power amp called the VS100. Rated at 100 watts per channel the new model uses an almost identical chassis, circuit layout and feature set to its smaller

brother in a scaled-up form. Two matched pairs of 6550EH output valves are used for each channel and it's finished in black with a natural anodised top plate. It's available now, priced at £4,000.

☎ Absolute sounds 020 8971 3909
 www.absolutesounds.com



PIONEER'S FIREWIRE DELAY

Because of delays in approval, Pioneer's first FireWire link-equipped player, the multi-format DV-757Ai will be launched with the ability to digitally transmit SACD, CD and DVD-Video signals but *not* the brand's preferred high-resolution format, DVD-Audio. That facility will be offered as a free aftermarket upgrade when it is finally approved – the FireWire link on subsequent Pioneers will then carry all four formats. Approval for the standard has to go through 4C Entity, the international forum on DVD technologies, but the green light has so far been slow in coming.

Elsewhere new format digital connections are taking their time to get off the ground. Phillips spokeswoman Tina Withington comments that: "There is no standard for outputting SACD in digital form. I think if there were, digital copying would immediately become an issue and reduce the push on software availability." Sony's Head of Research and Development (UK), Eric Kingdon said: "We are currently in the process of finalising the commands and protocol in order to provide a secure DSD output in the very near future. My guess is that it is likely to be based on the IEEE (FireWire) standard."

DAB GOES GREEN

Passion For The Planet is the first British radio station to focus on health and the environment alongside music of western and world flavours.

'Right-on' seems the only way to describe the station which will look at environmental and health issues, although it claims that there won't be any preaching. Interviews and features will reflect concerns for the planet and its burgeoning population, complementary medicine and ethical



consumerism. It's musical inclinations are of the cosmopolitan persuasion, combining-adult oriented hits with music from around the globe.

PFTP will start broadcasting in London and roll out to other parts of the country later in the year.

CYRUS WIRE



Electronics and speaker specialist Cyrus is branching out with its own interconnect cable. Based on the solid core topology developed by DNM the cable uses high purity copper and is terminated in Eichmann Bullet plugs. The latter adhere to the same philosophy of minimal metal content and are said to offer a significant upgrade over standard plugs with this type of cable. Cyrus has always used DNM cable when developing its components so it makes sense for its first branded connector to follow the DNM principles. Price will be £90 regardless of whether you opt for a 20cm, 50cm or 1m pair. Also in the pipeline from Cyrus are two new DVD players, one with high end aspirations, and new amplifiers – keep your eye on our product news pages for the full story when it breaks.



1 Digital's Digital Sound Projector

PIONEER DOES DSP

1 Digital has signed up Pioneer as the first licensee for its Digital Sound Projector technology. The Cambridge based company developed its single speaker surround sound technology specifically with the aim of licensing it to manufacturing concerns and it looks as though the investment is finally beginning to pay off.

The Digital Sound Projector (reviewed in *HFC* 232) uses phased array technology to bounce sound off walls to create the effect of rear and left/right channels from a single flat panel speaker located under the monitor. 1 Digital's own model costs £25,000, but presumably Pioneer will be able to bring prices down when they are launched later in the year.

Pioneer's general manager of AV products, Katsuhiko Omaru, said: "The Digital Sound Projector experience is stunning... this technology will perfectly complement Pioneer's wide range of high performance Plasma Display, DVD and other audio products".

WATERMARKING FAILS TO MAKE MARK

Following the revelation from a Warner insider that DVD-Audio disc watermarking can be heard, the requirement for its presence on new titles has quietly been dropped. Craig Anderson of DVD Development at WEA Studios Los Angeles admitted last month that the Verance copy protection watermarking system is, under some circumstances, audible. He qualified the remark by defining distortion as "a portion of an audio signal that was not captured during recording or added as an audio effect", and said that the occasions on which it was audible were extremely rare. But the fact that the 4C Entity made up of Intel, IBM, Matsushita/Panasonic and Toshiba has now suspended the need for a Verance watermark to be included on new DVD-Audio titles does raise suspicions given the organisation's previous enthusiasm for the technology. This also means that future hardware will not have to recognise the Verance mark.

marantz®



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The new Marantz Eclipse range is a stylish and versatile hi-fi system encompassing elegant, refined design and up-to-the-minute technology. The latest musical innovations, such as MP3 playback and rewritable CD, can be mixed and matched to form a sleek yet dynamic sound system. Proof indeed that you really can have beauty and intelligence.

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eclipse

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because music matters

TIME MACHINE

FIVE YEARS AGO

Hi-Fi Choice,
November 1997

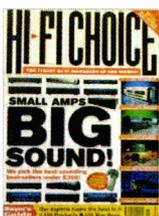


Back in 1997, Oasis were still selling records and Audiolab was still going strong, prior to its metamorphosis into TAG

McLaren. The respected Cambridgeshire company released four new amplifiers to add to the popular 8000 range that included the classic 8000A integrated. Mission had its 20th birthday, launching the 750LE standmount to celebrate, and cassette was still on the fidelity agenda as our six-way test proved.

TEN YEARS AGO

Hi-Fi Choice,
November 1992

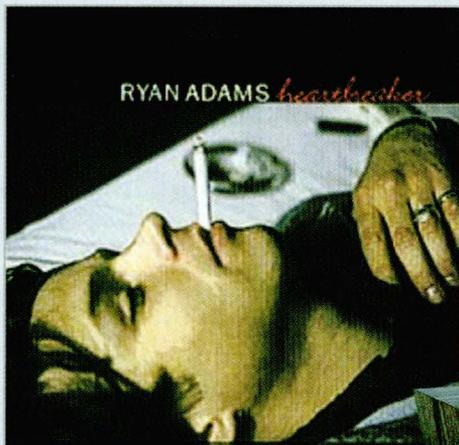


The big news in 1992 was the imminent launch of a new, recordable digital disc format – Sony's MiniDisc. The

Penta Hi-Fi Show saw a near-production player revealed to the public, only to be overshadowed by Philips' ill-fated Digital Compact Cassette. DCC was being heavily touted at the time, but we all know which format proved to have the longest legs. Back in the analogue world, vinyl lovers had a good month with the launch of the 'affordable' SME Model 20 at £2,500, a scaled down version of the existing £11,000 Model 30.

SYSTEM BUILDER

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



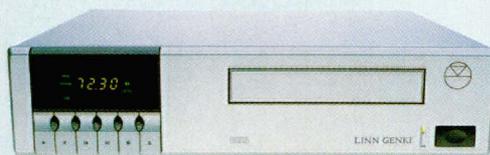
RYAN ADAMS

Heartbreaker

Cooking Vinyl

Debates rage among Adams fans as to the relative merits of last year's slick and successful *Gold* album and this, his first solo outing released in 2000. It's a simpler, more personal collection, and perhaps more emotive as a result.

Adams recounts his tales of love and loss with the voice of an angel stumbling from grace; his band plays with honey dripping from their fingertips and whisky sours swilling in their hearts. To capture this country-soaked power and grace you need a system with natural clarity and flow, a strong rhythmic foundation and a keen sense of timing.



CD PLAYER

Linn Genki £995

This explicit-sounding CD player has the detail, dynamic ability and leading edge definition to capture each steely pluck and strum. *HFC 212*



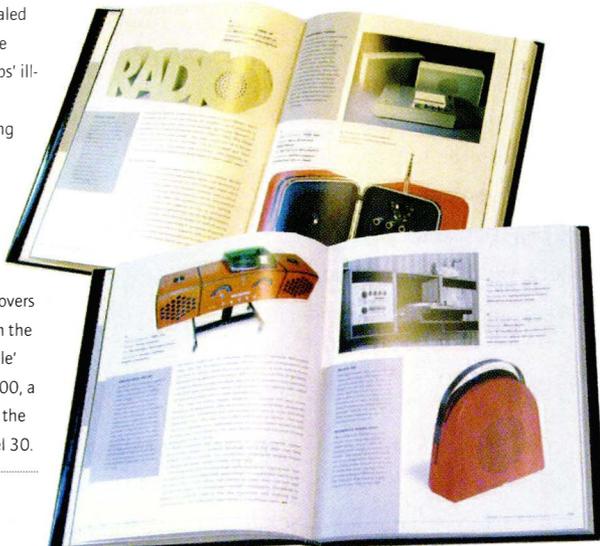
SPEAKERS

Neat Petite III £845

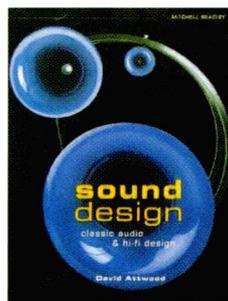
A brilliantly coherent and communicative speaker – a pair of these will ensure Adams' whisky-soaked visions tug even harder on your ears. *HFC 211*

AMPLIFIER Naim Nait 5 £800

Naim's entry-level integrated possesses the timing and rhythm required to ensure the music comes alive. *HFC 214*



BOOK OF THE MONTH



Sound Design

by David Attwood
Mitchell Beazley £20

This beautifully presented book traces the development of audio design decade by decade from the post-war era to the present day. Featuring over 130 products from all over the world, it superbly illustrates the story

behind the birth of hi-fi and its evolution through the last 50 decades. With the accent firmly on visual design, it's a real treat for the eyes – hi-fi of all shapes and sizes simply leaps from the page. Pure audiophile pom for the coffee table and thoroughly recommended.

CLASSIC DEMO DISCS

GREAT MUSIC FOR HI-FI AUDITIONS



KD LANG

Ingénue Warner

Now some ten years old, Miss Lang's luscious offering of dem-room delights makes a great test disc. Any hi-fi system worth its salt will uncover the many beautifully produced layers of instrumentation laid down in the studio and capture the silky vocals projected through the soundstage.

What's your favourite disc for hi-fi auditioning? Why not write in and tell us – 50 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 6PP.

JIMMY'S TWEAKS #1

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



Speaker placement profoundly affects tonal balance and stereo soundstaging. But – how to find the optimum width between the two enclosures? Increasing spacing maximises left/right separation. However, taken too far, the impression of instruments and voices being 'placed' at specific points between the boundaries defined by the speaker enclosures is lost.

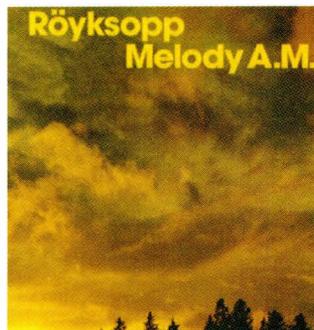
Subjectively, the stereo soundstage will only extend seamlessly from left to right if you achieve a good solid central image. Play a mono recording to test this. With everything working correctly, you should experience the music coming from a tight narrow point midway between the two loudspeakers. It doesn't? Check the cables between speakers and amplifier for correct phase/polarity.

Then experiment – angle the speakers towards your listening seat; move the speaker enclosures closer together or further apart. Your goal? A precisely defined central image. And a vivid integrated stereo soundstage with broad left/right extremes, a solid focussed centre, and everything in-between.

ON THE OFFICE STEREO

MUSIC THAT AMUSED US WHILE CREATING THIS ISSUE

- Röyksopp** Melody A.M.
- Ms Dynamite** A Little Deeper
- Raphael Saadiq** Instant Vintage
- Aim** Hinterland
- David Bowie** Station To Station
- Coldplay**
A Rush Of Blood To The Head
- Electric Soft Parade**
Holes In The Wall
- Doves** The Last Broadcast
- Nora Jones** Come Away With Me
- Clipse** Lord Willin'



NEW MUSIC IN THE STUDIO

ARTISTS RECENTLY SPOTTED EMERGING BLINKING INTO THE DAYLIGHT AFTER COMPLETING THEIR LATEST MASTERWORKS



David Gray

DAVID GRAY

A New Day At Midnight

EastWest, 28 Oct
The follow-up to *White Ladder* has been long delayed as that album refused to quit the charts. Perhaps the most eagerly awaited records of the year, tracks range from tender ballads such as *The Other Side* to the big production number, *Dead In The Water*.

RICHARD ASHCROFT

Human Conditions Hut, 21 Oct
The second solo album from the former Verve singer is full of epic, string-laden songs and looks set to mend his reputation after his much criticised debut. Brian Wilson sings harmony on *Nature Is The Law* and the percussion of Mercury Music Prize-winner Talvin Singh features on several tracks.



TRACY CHAPMAN

Let It Rain Elektra, 14 Oct
Producer John Parish (PJ Harvey/Sparklehorse) brings a vivid clarity to the dozen new songs on Tracy Chapman's follow up to 2000's *Telling Stories*. Titles include *Goodbye, You're The One*, *Hallelujah*, *Hardwired* and *In The Dark*.

TORI AMOS

Scarlet's Walk Epic, 28 Oct
A 'sonic novel', based on a journey across America, *Scarlet's Walk* is Amos's strongest-sounding release since 1996's *Boys For Pele*. The 17 song titles include *Amber Waves*, *A Sorta Fairytale* and *Gold Dust*.

SIGUR RÓS

'()' Fat Cat, 28 Oct
Sigur Rós's oddly (un)titled third album contains eight songs, each of which is also untitled. Reviewers regularly talk of the Icelandic quartet's 'cathedrals of sound' and fans of their epic grandeur will not be disappointed.

ALSO COMING SOON...

ROCK/POP

Santana Shamen (BMG) 21 Oct **New Order** Title tbc (London) 11 Nov **The Crescent** The Crescent 7 Oct **Cassius** Au Réve (Virgin) 7 Oct **J-Walk** A Night On The Rocks (EastWest) 28 Oct

CLASSICAL

Plácido Domingo Sacred Songs (Universal) 28 Oct **Angelika Kirchschrager** Bach Arias (Sony) 4 Nov **Bond Shine** (Decca) 4 Nov **Mario Frangoulis** Sometimes I Dream (Sony) 4 Nov **Philip Glass** Naqoyaqaqtsi (Sony) 7 Oct

DVD

Ocean's 11 14 Oct **Spiderman 25 Nov** **Star Wars Episode II: Attack Of The Clones** 11 Nov **The Office** 14 Oct **Wagner: The Ring, James Levine Special Edition** 14 Oct

Incoming

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

EXCLUSIVE ★★★★★

JMLab Sib & Cub sub/sat 5.1 speaker system £859

That dreaded contraction: 'sub/sat'. It's enough to send shivers down the spine of the most hardened hi-fi buff. But perhaps the times they-are-a-changing, because it seems that the much maligned practice of partnering small, restricted bandwidth satellite speakers with compact subwoofers could be entering its golden age.

Manufacturers of top-notch, audiophile loudspeakers are coming to realise that while demand for high performance multichannel music and home cinema systems is expanding, the size of the average UK room is not.

First, Kef impressed with its stylish

KEY FEATURES – SIB

- ▶ Splash-proof
- ▶ Dimensions: 14.2x24.7x16.4cm, including stand/feet
- ▶ Weight: 2.1kg
- ▶ Drive units: 19mm metallised plastic dome tweeter, 110mm synthetic cone bass/mid
- ▶ Sensitivity: 90dB
- ▶ Impedance: six ohms

KEY FEATURES – CUB

- ▶ Built-in 75W amp
- ▶ Dimensions: 30x33.3x30cm including stand/feet
- ▶ Weight: 11kg
- ▶ Driver: 200mm synthetic cone bass

egg-like KHT-2005 package; now, aiming at a similar market, comes Focal JMLab's Sib & Cub package. Based in St Etienne, France, JMLab is one of the world's top three manufacturer's of specialist hi-fi speakers, renowned for its highly impressive Utopia range, as well as an impressive selection of more affordable boxes.

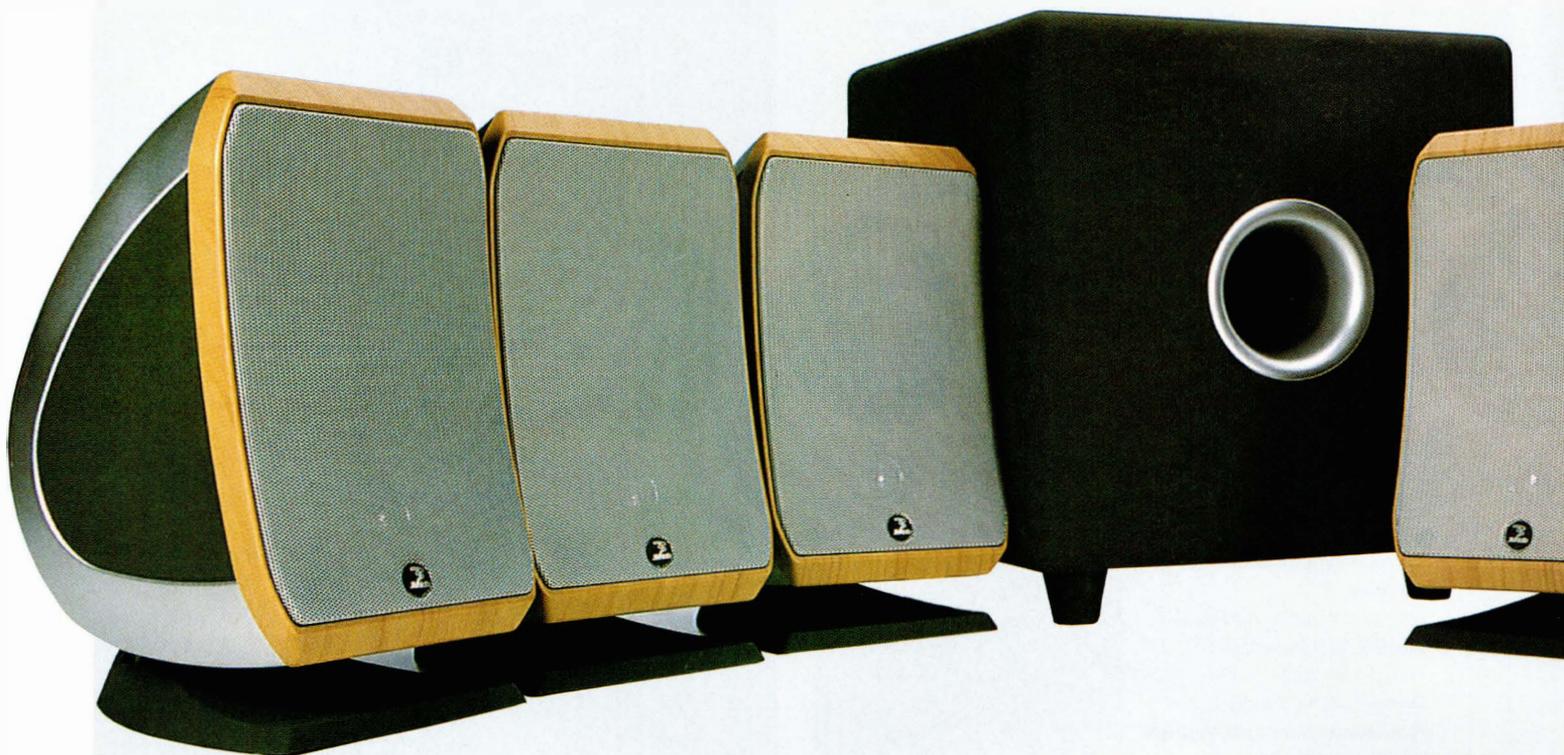
With JMLab's reputation for innovation, it's no surprise that the Sib & Cub is a bit different from ordinary sub/sat systems. Straight out of the box you realise you've got your hands on something a bit special. In fact, just as B&W makes much of having a little bit of its flagship Nautilus speakers in

many of its budget boxes, so the Sib satellites have a touch of the Grand Utopias to them: their C-shaped baffle is derived from the vastly more expensive speaker's 'FocusTime' shape, which aids coherence.

The 25cm tall Sibs look and feel great dotted around the room, with just the right balance of discreet charm and stylish design, but they are also versatile. Not only is the cabinet splash-proof, so that you can put them outside or in the bathroom, they also have an integrated stand that can be flipped over for simple wall mounting. We even like the innovative spring-loaded binding post terminals; they make it very easy to get a good connection with bare wire cables.

The Cub subwoofer may be a black box – around 30cm per side – but it

“Straight out of the box you realise you've got your hands on something a bit special.”



still manages to look classy, with its silver-ended reflex port and tactile covering. It's built around one of JMLab's own 20cm drive units, and is powered by a 150-watt amp. Connection options include both speaker and line-level options.

This flexibility is necessary because of the varied purchase options: you can buy a pair of Sibs, a Cub on its own or a full '5.1 Digital Home Cinema Pack' comprising five Sibs and a Cub. Although most of the testing was done with the full system, we thought it would be a good idea to start of with just the pair of Sibs, and then build from there – seeing as there is an option to buy it that way.

Starting off with just a pair of Sibs, we were immediately impressed with their performance with straight CD. They may be compact, but they do a fine job presenting a solid and listenable rendition of 16 Horsepower's *Folklore*. The midrange is open and informative, while the top end proves itself to be free of the grittiness that

many similar packages suffer from. Unsurprisingly, there's not quite the bass extension of a 'standard' £250 pair of speakers, but what is there is solid and punchy. That's only a minor criticism, though, because when the Cub is brought on board the problem disappears. The Flaming Lips' *Yoshimi Battles The Pink Robots* is delivered with power and precision. The Cub does an impressive job at filling in at the bottom end, and is discreet enough for you not to notice it working; the whole sound field just fills out, but without detriment to the good work the Sibs are doing.

However, the system really comes into its own when all five speakers plus the sub are wired up. The identical satellites are perfect for getting that vital tonal matching. Frankie Goes To Hollywood's *Welcome To The Pleasure Dome* on multichannel SACD really comes to life on this system, using Sony's budget SCD-XB780 SACD player as a source. The surround channels fill out the sound to an amazing degree, enveloping you in the sound in a way that stereo struggles to match.

Switching to film soundtracks, the Sib & Cub remains impressive. With *Mulholland Drive* on DVD, dialogue is firmly locked to the screen, and panning effects across the front and rear are first rate. There's not the differentiation between the DTS and Dolby Digital soundtracks you get with very high-resolution speaker packages, but it's still a very effective space-saving solution.

As a basic 2.1 system, the £519 price tag is perhaps a little steep. But as a surround solution that's discreet, stylish and can do a good job with stereo and multichannel music and movies, it's highly impressive.

☎ JMLab 0121 616 5126

🌐 www.focal-jmlab.co.uk



QED XT300 speaker cable £10/m (termination £40)



On the face of it, this is just another dull speaker cable of classic 'figure-8' construction. But there is a difference beneath the surface, because the conductors are not quite the usual mass of twisted copper strands. Instead, each is a hollow tube over a central core of polythene, hence the name for this range of cables: 'X-Tube'. XT300 is the budget version, with XT350 and XT400 (at £15 and £20/m respectively) adding silver-plated copper conductors and slightly more of them.

Each, however, shares the same *raison d'être*, which is to reduce 'skin effect'. This is an electromagnetic effect which makes current in a cable flow mostly down the outside, or skin, of a thick conductor at high frequencies. A solid (non-tubular) conductor will still have a lower resistance than a tube, for a given size, but the copper in the middle is expensive and of little use. But the actual difference this all makes is small because the construction of this cable gives it quite high inductance, different from skin effect but something that swamps it in practice.

So, as usual, ignore the technohype. What's important is that the XT300 performs well for its price. Against references in the £10-£20/m ballpark, it produced some very good bass and better stereo imaging than most figure-8 cables can manage. It can sound a little dry at times, but overall it has a natural and well-controlled sound, and with QED's high-quality banana plugs it is a practical and very cost-effective cable for mid-price systems.

☎ QED 01483 747474

🌐 www.qed.co.uk

KEY FEATURES

- ▶ Tubular conductors reduce 'skin effect'
- ▶ Conductor material is stranded copper, 3sq mm
- ▶ Figure-8 construction gives medium capacitance and inductance, and good compatibility
- ▶ Overall size 12x5.5mm; quite bulky, but lays well
- ▶ High-quality 'Aircloc' banana plugs (dealer-fitted)
- ▶ PVC insulation



★★★★★

Mordaunt Short MS914 speakers

£300

➤ The £300 MS914 floorstanding two-way speaker features Mordaunt-Short's own drive units – a 25mm aluminium dome tweeter and a clever, 165mm, dust-cap-free 'continuous profile' polypropylene-coated aluminium bass/mid cone.

Mordaunt-Short's floorstander digs into any recording like a surgeon. This is extremely detailed, clean and precise stuff, that only shows its low-priced standing at the absolute frequency extremes, where the bass gets a bit soggy and the treble a bit soft. But, compared to most speakers at the price, this removes the overblown sound and blankets over the drive units. It is even, open, light and fast – all properties you can spend hundreds of pounds more on and never properly achieve.

Stick practically any recording on the platter and the M914 throws out a big, fine soundstage, a good sense of pace and excellent dynamics. It even manages to get past the airplay-chummy compression of Eminem. However, some might prefer the more deft touch of the cheaper and similar £199 MS912 over the deeper, darker tones of the MS914. More importantly, don't even think of partnering this with similarly priced gear; it needs and demands top-notch kit.

Forget the price and snobby prejudices you may have – the Mordaunt Short MS914 is a high-ender's budget speaker wet

KEY FEATURES

- ▶ Rear-ported, two-way floorstander
- ▶ 25mm aluminium tweeter
- ▶ 165mm aluminium-coned mid/bass driver
- ▶ bi-wirable
- ▶ mass-loading cavity
- ▶ magnetically shielded
- ▶ Nominal impedance 4-8ohms
- ▶ Sensitivity: 89dB
- ▶ Dimensions: 20.5x90x27cm

dream. If you still subscribe to the top-down hierarchy hi-fi principle that was popular in the glory days of LP, this is the perfect transducer. Just make sure the rest of your system is up to the task.

📞 Mordaunt-Short
08451 283951
🌐 www.mordaunt-short.co.uk





Pure DRX-701ES Digital Radio (DAB) tuner £250

Pure and its parent Imagination Technologies have taken an active part in developing integrated circuits for DAB, and this 'third generation' tuner is by far the most compact unit yet, with all the audio electronics on a single board of about three inches by eight inches. The feature count, however, has increased slightly on earlier units. There are still analogue outputs and inputs (to loop an FM tuner through to your amp), plus optical and electrical digital outputs, Radio Data Interface – and now a USB socket to allow software upgrades to be delivered from a PC. Nice.

Front panel controls are enhanced, with an option to display error rate (the most useful indicator of signal quality), as well as the usual programme name and type. Dynamic Range Control can now be adjusted via the front panel rather than just the remote, and the remote itself is a much smarter unit than with earlier Pure tuners. There's even a headphone socket.

Operation is simple, with a neat option to load the most-often-tuned stations as one-touch presets. Tuning is faster than on most DAB tuners. The display can be

- KEY FEATURES**
- ▶ DAB tuner with full Band III reception
 - ▶ 24-bit/192kHz stereo DAC
 - ▶ Analogue & optical digital outputs
 - ▶ USB connector
 - ▶ 'Psycho-Acoustic Compensation'
 - ▶ Dynamic Range Control
 - ▶ Remote control
 - ▶ Headphone socket
 - ▶ S/N ratio: 103dB

dimmed or switched off, and the unit is available in silver or black.

That just leaves the sound. As usual with DAB, sound quality is dominated by the sound of the DAB system itself – the broadcast studio and its processing, followed by MPEG-2 data reduction – rather than the tuner. As it happens, Pure tuners have a distinctive sound owing to the 'Psycho-Acoustic Compensation' used, a simple and not very effective tone control built into the analogue outputs. But you soon get used to that, and DAB's strengths and weaknesses are shown up by this tuner in much the same way as any other.

The great strengths, potentially, are the freedom from interference and the vast dynamic range. On Radio 3, far and away the best DAB station for sound quality, the dynamic range is very impressive, and on the whole the sound is good, with a little 'tinkling' in HF-rich material (audience applause makes it most obvious, but it affects violins and trumpets, for instance, quite noticeably).

The most obvious weakness is largely a function of the data rate chosen by most stations. To squeeze more stations on the 'dial', most stations have chosen to use a rate of 128kbps (kilobits per second) – Radio 3 is 192kbps, the bare minimum for good quality – and this, plus studio practices mostly geared to

FM production rather than DAB, makes most kinds of pop sound crude. Hi-hat cymbals, for instance, are spitty and indistinct, voices are often aggressively sibilant and anything with background hiss develops warbles, twitters and disconcerting spurious tones.

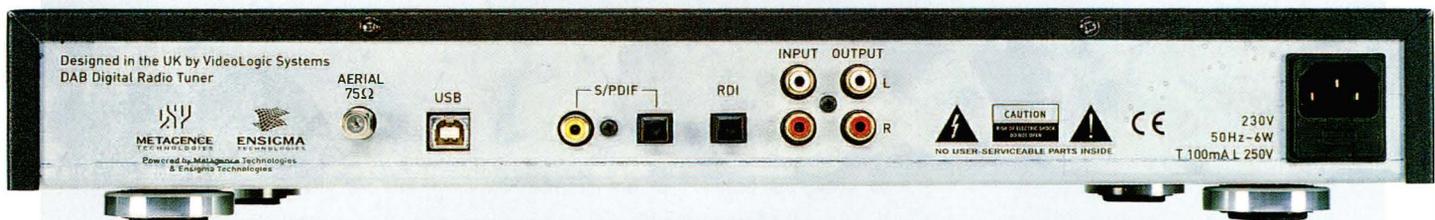
None of this is Pure's fault. This is a good tuner and fine value – an excellent introduction to DAB. But anyone who cares about sound quality should be concerned about the poor (and sliding) quality of the DAB system as a whole.

☎ Pure Digital 01923 277488
 🌐 www.pure-digital.com

DYNAMIC RANGE CONTROL

The temptation is for broadcasters to make theirs the 'loudest station on the dial'. DAB has a nifty system to avoid this, called Dynamic Range Control. Instead of compressing the hell out of the audio, broadcasters send compression parameters with the audio, which are used in the tuner to apply compression, the advantage being this can be switched off. Sensibly – and Pure has done this – tuners should have this switched on by default, so that broadcasters have faith in it and dedicated hi-fiers can switch it off and enjoy full dynamic range. Sadly, most stations already apply FM-style compression. Another opportunity wasted.

“As usual with DAB, sound quality is dominated by the sound of the system rather than the tuner.”





Meridian 507 CD player £1,195

Meridian has a highly impressive and well-earned reputation in the world of optical disc. In 1984 it produced the first 'audiophile'-quality CD player, and is still at the forefront of audio developments, thanks to the Meridian Lossless Packing technology that sits at the very heart of DVD-Audio. The company has not forgotten its two-channel roots, though, and is very keen to have a strong presence in the sub-£2,000 CD player market.

Meridian rather cheekily claims this CD player is 'entry-level'. Compared to the 588 CD player (£2,100) and 800 DVD/CD player (£10,000 plus) we suppose it is, but that doesn't disguise the fact that Meridian CD players enter the market at the point where the most manufacturers position their flagship models.

Initial impressions of the 507 are very good, though, and externally this player looks no different from the more expensive 588, or the 506.24 it replaces. It's solid and weighty to the touch, and is decked out in Meridian's long-serving industrial styling. However, there is one major change: rather than the CD drawer coming out as one brick-like unit the way Meridian CD players always used to, the front panel now folds down smoothly to make way for a far more conventional-looking tray affair.

But there's still a slab element to the player, as the 507 comes supplied with the company's comprehensive Meridian System Remote Control. So it's

KEY FEATURES

- 24-bit/192kHz DACs
- Double buffering reduces jitter
- Four separate power supplies
- 'Audiophile standard' output amplifier
- Optical and coaxial digital outputs
- CD-R/W compatible
- RS232 port for custom control/automation

something of a blessing for those without a complete Meridian system that the fascia controls are impressively firm to the touch. That said, the 507 does seem to take longer to respond to transport demands than many CD players; perhaps because Meridian uses its own propriety software.

On the well-spaced back panel, the 507 provides a single set of analogue outputs, both optical and coaxial digital sockets, two Meridian Communications connections – for linking up to other Meridian kit – plus a RS232 socket for custom integration and automation.

Inside are 24-bit/192kHz DACs, while internal trickery includes Meridian's 'double buffering' technique for reducing jitter levels – this technology has trickled down from the 508 – and the re-clocking of the signal from either of the digital outputs. The 507 makes extensive use of surface mount

technology and has four separate power supplies. It may be 'entry-level', but Meridian has obviously put a lot of time and effort into designing this player.

This attention to detail pays dividends, and the 507 is a very impressive player. It majors in authority and plays CDs with a real sense of power and passion that works well whatever roads your musical taste takes you down. Play the Flaming Lips' sublime *Yoshimi Battles The Pink Robots*, and the Meridian does a wonderful job of getting the best out of this eclectic bag of tricks. It renders the acoustic guitar that provides the beating heart for many of the tracks in a natural and believable manner – it really does hold everything together. But the 507 also has enough guts to get heavy when called upon. It presents a remarkably coherent sonic picture, and even manages to translate the occasionally bizarre (non-instrumental) noises into a thoroughly musical whole.

Joni Mitchell's vocals on *Blue* are rendered crystal clear and wonderfully natural, with excellent small-scale



"The 507 majors in authority and plays CDs with a real sense of power and passion."

★★★★☆

B&W ASW 675 active subwoofer £650

Subwoofers are seldom 'pretty', but at least the £650 B&W ASW 675 tries a bit harder than most. Remove the black grille and you have a silvery-plastic front with a single 250mm composite aluminium, paper and Kevlar long-throw bass driver in the same colour scheme. Behind this is the vinyl veneer wrap, finished in this context in a lovely shade of Sorrento/mid-to-light ash.

Inside the square sealed box is a beast of an amplifier. Its quoted delivery is 500 watts, where most subs at the price make do with a 100W-150W design. This means oodles of power in reserve. It also spells an extremely well-controlled, extraordinarily powerful subwoofer, one that is capable of shaking the rafters or keeping up with a pair of small bookshelf monitors. There is something truly wicked and

wonderful about sticking on Gorillaz vs Spacemonkeyz and playing dub till you puke. But then, your more level-headed side takes over and you turn the subwoofer down and down until it just adds a bit more air and solidity to Sonny Rollins solo sax sound.

There are two caveats. This is a subwoofer to be used at line level; fine for those with dedicated subwoofer outputs, but less handy for integrated stereo amp users. It also needs a deft touch to drive the controls – a hair's breadth in the wrong direction and the bass overpowers or disappears.

Regardless, this is one of the few subs with genuine hi-fi credentials alongside home cinema-style clout, and it comes highly recommended.

☎ B&W 01903 221500

🌐 www.bwspeakers.com

KEY FEATURES

- ▶ Sealed box subwoofer
- ▶ Single 250mm composite bass drive unit
- ▶ 500W built-in amplification
- ▶ Volume, low-frequency dials
- ▶ Switches for equalisation settings, phase and low pass filtration

dynamics and an amazing openness really letting the songs shine through. There's a real presence to the voice as it sits solidly centre stage, often with just an acoustic guitar for accompaniment. But the Meridian doesn't over-egg the stereo imaging pudding, and things remain impressively realistic and lifelike throughout.

Large-scale dynamics are also well catered for: the grandstanding finish to Beethoven's *9th Symphony* is delivered in an electrifying manner, and the Meridian plays the score with impressive degrees of headroom and atmosphere. It's also a very rhythmic piece of kit, and for a CD player at this price has impressive timing. Set it running with DJ Shadow's powerful new offering, *The Private Press*, and the mixed-up rhythms are delivered in a marvellously coherent and solid manner.

The 507 also goes one better than its predecessor by sounding just that little bit more alive and exciting. It's in no way lightweight – the solid bass attests to that – it's just got that extra degree of sizzle and fire that the 506.24 lacked. This works well with rock and classical, but it also does wonders for folk and pretty much anything else you play on it.

Meridian has done a fine job with this 'entry-level' player. It has much of the refinement and subtlety of the firm's costlier equipment, but with a slightly more forthright presentation that serves it well with a wide range of music. An exciting candidate to place at the head of your system.

☎ Meridian 01480 445678

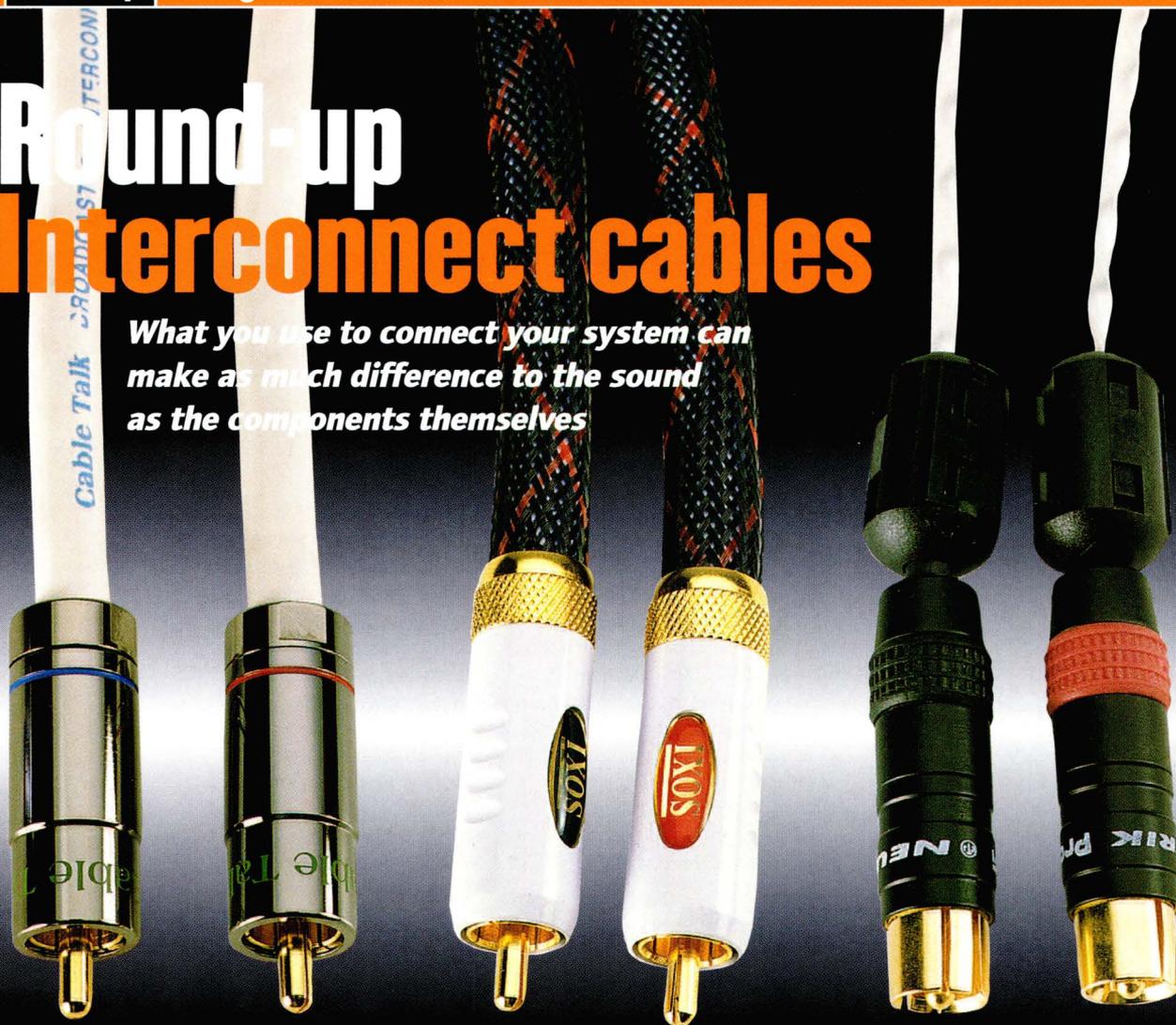
🌐 www.meridian-audio.co.uk



“This is one of the few subs with genuine hi-fi credentials and it comes highly recommended.”

Round-up Interconnect cables

What you use to connect your system can make as much difference to the sound as the components themselves



Prices for 1m pairs

★★★★★

Cable Talk Broadcast 3 **£100**

▶ This pseudo-balanced cable uses three conductors, one reversed in an attempt to balance the effects of wires' directionality – if any. But the overall cable is in any case directional because the screen (copper foil) is connected at one end in the usual manner. Unusually and usefully, XLR, DIN and BNC connectors are offered at no extra cost.

The sound is a little lacklustre. No area is particularly lacking, but none is outstandingly good either. Bass is at least full, but it lacks the insight into detail that the best interconnects can preserve. Treble is likewise a little indistinct and as a result can at times seem subdued, although its presence is more clearly felt when there is not too much activity at lower frequencies. Despite that, stereo imaging, typically the bugbear of cables, is good. This is not a bad cable, but it doesn't seem to give particularly good value for money.

☎ Cable Talk 0808 100 6868
🌐 www.cabletalk.co.uk

★★★★★

Ixos Gamma XHA806 **£100**

▶ The Gamma Geometry has been around a while and has gone undercover in this cable, with a solid case and outer nylon braid that doesn't give much away. Gamma is essentially an alternative to twisted pair construction, realised in this case with good-quality materials that happen to give this cable quite good characteristics for use as a digital interconnect too. It's well made, but a little on the chunky and inflexible side.

It has good qualities and a few drawbacks, none of them major. Chief among those is a tendency to tonal coloration: trumpet and some other bright sounds can become slightly 'quacky' and voices don't always seem quite natural. But the basic balance between bass, treble and midrange is well judged. Indeed, bass manages a very pleasing blend of strength, tunefulness and ultimate extension. Images can be a little forward, but possess good depth nonetheless. A good all-rounder.

☎ Path Group 01844 219000
🌐 www.ixos.co.uk

★★★★★

John Dory Analogue Spiral **£280**

▶ Who? A direct-dealing small company, whose cables are built to designs by noted audio maverick Allen Wright of Vacuum State. For lots of your pretty pennies, you get a neatly spiralled pair of pure silver foil conductors in PTFE dielectric, unscreened but with a ferrite clamp fitted as safeguard against interference. Phono plugs are the nifty Neutrik ones that make the earth connection first.

Again, this cable has coloration, but it also has some of the best midrange detail around. Its oddest effect seems to be extra overhang on isolated bass notes, which is rather hard to explain but is consistent. In truth it's also pretty subtle and not unpleasant, and doesn't seem to detract from the impact or the pitch of the bass. Couple those strengths with fine detail resolution, good imaging and particularly natural voices and the overall performance is good. All the same, the price is quite high: approach with cautious confidence.

☎ John Dory 01282 867819
🌐 www.jdhifi.co.uk



Prices for 1m pairs



Townshend Isolda DCT £200

DCT stands for Deep Cryogenic Treatment, which means the conductors in this cable have been subjected to treatment at very low temperatures – 190 degrees below freezing. This is claimed to improve the 'lattice structure' of the copper, giving near-perfect signal transmission. It's hard to prove or refute, since other construction details are unusual: thin copper strip conductors are insulated in PTFE tubes, giving very low capacitance (in complete contrast to the first incarnation of Isolda interconnect), and there is no screen. Again, Neutrik phono plugs are used.

The price may be high, but performance seems to justify it. Bass seemed the best in this group, in terms of both extension and control, and there is plenty of detail on offer. Treble and midrange are exceptionally clean, imaging is broad but detailed, and climaxes remain clear with full dynamics. Certainly one of the best interconnects around.

📞 Townshend Audio 020 8979 2155

🌐 www.townshendaudio.com



True Colours Industries Cobra £150

No particular technological innovations are claimed for this cable: it is a pseudo-balanced design with quite thick, PTFE-insulated conductors and a screen connected at one end only. Phono plugs are the highly regarded collet-locking types from WBT, which can exert a truly vice-like grip. Coupled with the stiffness of the cable, that can spell trouble for cheap sockets, so go easy.

Perhaps expectations were a little high, given the price and success of a much cheaper TCI cable (*HFC 200*), but Cobra seemed a little disappointing. It manages good dynamics and quite good imaging, but the bass is distinctly heavy and unexciting, and midrange is often rather veiled. Paradoxically, it seems at its best with complex musical textures, where it can sort out the different strands quite well, but in simple music – jazz trio, for instance – it is liable to make the music sound quite uninteresting. Try the cheaper Viper.

📞 TCI 07710 196949

🌐 www.true-colours.com



van den Hul D102 Mk III £85

This cable is an old favourite which has been revised, apparently, 24 times over the last 20 years. It now uses vdH's popular hybrid conductors, a mixture of Linear Structured Carbon and silver-plated copper, which hope to realise the advantages of both. High-quality dielectric is used and the cable is constructed non-directionally, with a second core simply connected to ground at both ends.

It's hard to find anything to criticise with this cable, unless one is to be really picky and say that its bass is possibly a shade less extended than one or two others. Or is it just less overblown? Frankly, it's hard to be sure, and most listeners are likely to find it excellent. Detail is very good and tonality is neutral across the board, while treble extension is exemplary. Similarly, image depth and width is about as good as it gets. All things considered, this is a first-rate performer. A bargain!

📞 Tannoy, 01236 420199

🌐 www.vandenhul.com



Prices for 1m lengths



**Acoustic Research
MS270 £30**

▶ Thirty quid is not much to pay when you look at the bill of materials for this cable: high-quality dielectric and conductors, with foil and braid shielding, plus a ferrite clamp for 'belt and braces' interference rejection. It even features locking RCA plugs with a split centre pin for best grip, and a pair of those from a leading brand will cost you more than this whole cable.

All that pays off in terms of performance. It's not the best digital cable ever, but it comes quite close to the dearer competition here, with good tonal balance and creditable resolution. It falls down slightly in the bass, not in terms of quantity – there's plenty – but more in the way percussion and low-lying melodic lines can become a little muffled at times. Stereo images are well presented, with just a small loss of depth. About as good as it gets at the price.

☎ Recoton 0161 702 5010
🌐 www.acoustic-research.com



**QED Qunex
SR75 £50**

▶ Certainly the prettiest cable here, this one also uses some very high-quality materials. The basic cable has a double braid, plus foil screen and low-loss dielectric over a high-purity copper conductor. The smart plugs are similarly well made and grip sockets well. Despite its size it is quite flexible.

It proved hard to determine any faults with this cable on audition. Perhaps it could be accused of very slightly excessive bass, but that's not much to worry about when that bass is both tuneful and well controlled. Midrange and treble are both very clear and open, with no feeling that bandwidth is constrained. Images are solid and real, with ever so slightly less depth than can sometimes be achieved – but it takes a careful comparison to spot it. It's hard to go wrong with this one, and it performs well above expectations for the price.

☎ QED 01483 747474
🌐 www.qed.co.uk



**van den Hul The First
Ultimate £245**

▶ The first audio cable to avoid the use of metal conductors (except in the plugs!). Instead, some hundred thousand strands of linear structured carbon do the honours. This gives much higher resistance than copper or silver, but is claimed to produce clearer sound with less harshness and less variation over the cable's life.

Be that as it may, this cable didn't quite seem to walk all over more conventional types. Detail is excellent, but balance seems a bit on the lean side, sometimes even a little dry – particularly with male voice. Dynamics are good but image depth isn't quite first rate, and instruments with a sharp attack such as guitar and harpsichord seem to develop a degree of unnatural 'twang'. The unusual electrical characteristics of this cable make it perhaps less suited to digital interconnect duty than to analogue: best try before buying.

☎ Tannoy 01236 420199
🌐 www.vandenhul.com



Prices for 1m lengths



Cable Talk Optical 3 Gold £35

▶ All Toslink cables are not the same! This one uses 'medical grade' plastic fibre, which claims exceptionally high-speed signal transmission capabilities (early Toslink leads were only just capable of the modest rates required for audio). As a result, Cable Talk is able to offer lengths up to 10m, making it a good choice where equipment has to be connected across a room – no hum loops!

Performance-wise, it doesn't match the best coaxial (electrical) cables, but still clearly better than the cheapest opticals around. Bass is well extended, though occasionally a bit tuneless. But detail is good, and despite a hint of midrange coloration the tonal quality is generally pleasant and believable. Stereo images are good, among the best yet from an optical cable, and dynamics are full. Similarly-priced coaxial digital cables are unlikely to better it substantially. A fine budget choice.

☎ Cable Talk 0808 100 6868

🌐 www.cabletalk.co.uk



First Base Crystal £90

▶ It may not be medical, but this optical cable is most unusual in using glass rather than plastic fibre. The pros and cons of the various materials are not obvious, but glass is the material of choice for thousand-mile undersea links – if you want to have your hi-fi on two continents! Plugs are good-quality metal-bodied types with sprung construction, which should help ensure best optical contact with sockets.

Results seemed to vary rather oddly. Bass extension is terrific and the whole balance tends towards the bass-heavy. But detail is not as clear as you might wish, so instead of a nice clear walking bass line, for instance, you tend to get a rather plodding and indistinct sound. Midrange detail is better and treble is quite open, but imaging is not too hot, with some ping-pong, side-to-side placement and compressed depth. Try this one carefully.

☎ Black Rhodium 01332 361390



van den Hul Optocoupler Mk II £49

▶ Another optical lead that claims vastly higher bandwidths than are needed for audio, something that can only be a benefit (would that the receiver and transmitter modules lived up to it!). The connectors seem an unusually tight fit in the sockets, which is all very well but means care must be taken to avoid damaging the not-very-robust sockets.

Still, a little care is a small price to pay for performance which seems to exceed, in practically every department, that of the other optical leads reviewed. One listening note seems a little bizarre, which indicates that this cable produced a louder sound than the others – impossible, but perhaps indicative of its greater clarity. Apart from that, it is tonally very neutral, with good strong bass and nicely rounded voices. Even stereo imaging is only just behind good electrical links. The optical lead to go for.

☎ Tannoy 01236 420199

🌐 www.vandenhul.com



A3.2 SERIES.
MACHINED, MIL-SPEC ALUMINIUM FRONT PANEL.
PLATINUM PLATED FITTINGS. REMOTE CONTROLLED. PHONO STAGE.
POWERFUL, ROBUST, BUILT.

ChoiceCuts



Our favourite musical morsels, old and new

Reviews by Jim Findlay, Alvin Gold, Jason Kennedy, Shaun Marin, Dave Oliver

NEW MUSIC FORMATS



MOZART: SINFONIA CONCERTANTE, E-FLAT MAJOR, CONCERTO FOR VIOLIN, PIANO & ORCHESTRA, D-MAJOR

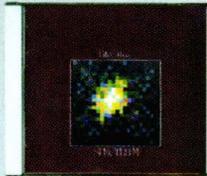
Midori (violin) Nobuko Imai (viola) Christoph Eschenbach (piano), NDR-Sinfonieorchester
Multichannel/stereo SACD

Sony SS89488

Music: The Sinfonia Concertante is one of the

staples of the classical repertoire. The slow central movement with its conversation between the two solo instruments, sometimes playing in octaves, at others playing question and answer, is a musical high spot that never fails to cause the hairs on the back of the neck to rise, especially when played as affectingly as here. The other concerto was reconstructed by Philip Wilby from the sole remaining fragment, and although it is not in the same class, it is clearly an ambitious and thoroughly enjoyable work. **★★★★**

Sound: For SACD users only, this recording is a particularly good one, with a strong sense of acoustic and an unusually expansive, open sound. In multichannel form, this is an excellent demonstration of what SACD can be capable of. **★★★★ AG**



BILLY COBHAM

Spectrum

DVD-Audio Warner

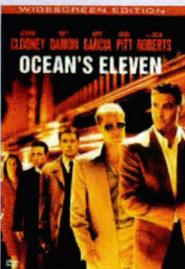
Music: Probably the greatest jazz-rock album ever made is resurrected with this DVD-A remaster. If you've not heard this 1973 classic, you've been missing out. The combined forces of drummer Cobham, keyboard player Jan

Hammer, guitarist Tommy Bolin and bass player Lee Sklar make a phenomenal high-energy sound. Combining groove and power in equal measure, Cobham's explosive style never overloads the superb compositions. Bolin and Hammer spark off of each other to produce some of their finest work, only the latter's Jeff Beck association coming close. The groove diggers among you might like to know that this is where Massive Attack got their most memorable bass line (*Safe From Harm*). **★★★★**

Sound: The first double-sided stereo and multichannel DVD-A to come our way sounds energetic and powerful. The surround mix is a little like 'Hall Effect', but at least doesn't place instruments behind you. Both heavier in the bass and harder in the mid than my old vinyl! **★★★★ JK**

CINEMA SELECTION

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



OCEAN'S ELEVEN

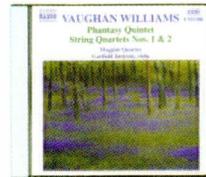
Warner

Film: George Clooney and Brad Pitt head up a super-smooth ensemble in this slick re-make of the 1960s Rat Pack heist flick. The plot, knocking over a ludicrously heavily guarded Las Vegas vault with little more than sharp suits, winning grins and a Chinese acrobat, is pretty risible, but it's great fun nonetheless. The reliable Steven Soderbergh directs with pace and verve which, combined with a cracking soundtrack and enjoyable performances from the leads, makes this film perfect, undemanding

entertainment. We'll overlook Don Cheadle's toe-curlingly dreadful 'Cockney' accent for the time being. **★★★★**

Sound and Vision: A film like this just wouldn't work without a crisp transfer and crystal-clear soundtrack. Fortunately, Warner delivers on all counts with a disc that lights up your screen and keeps your surround system busy. But it's slightly marred, by a mild lack of presence on some of the tunes. **★★★★ JF**

CD/VINYL



VAUGHAN WILLIAMS PHANTASY QUINTET, STRING QUARTETS NOS 1 & 2

Maggini Quartet, Garfield Jackson
(viola)

Naxos 8.555300

Music: The beauty of labels like Naxos is that you can afford to take a punt without taking a big risk. And this disc turns out to be a little gem. The main work here is the second *String Quartet*, written much later than the elegiac first *String Quartet* and the *Phantasy Quartet*, by which time he had thrown off the shackles of Ravel in favour of a more ambitious and direct musical language – a masterpiece in miniature. **★★★★**

Sound: Clean, open sound with a hint of understatement in the playing works well with the warmth of the Potton Hall, Suffolk acoustic, to bring out the best in the beautifully measured yet committed playing. **★★★★ AG**



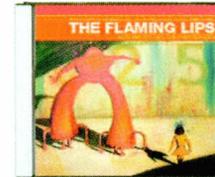
LAMBCHOP

Is A Woman

City Slang

Music: More a collective than a band, Lambchop's live shows reveal 14 musicians. Unless you really listen, the average track makes little impression. Pay attention, and the players' subtle contributions fall into place around the dry singing of Kurt Wagner. His unusual style forms the central character, while the guitars, keyboards, effects and drums pan out to form a distinctive soundscape. Combining aching beauty with dark undertones, this is powerful stuff that's wasted on those looking for sophisticated muzak. **★★★★**

Sound: The subtleties of this recording require a decent system, though you wouldn't necessarily use it to show off your hardware. With the right gear, it's atmospherically charged and spacious without being airy. **★★★★ JK**



THE FLAMING LIPS

Yoshimi Battles The Pink Robots

Warner

Music: The Lips had their work cut out after *The Soft Bulletin* was showered with 'Album of the year'-style riches. But they've have been creating great albums for nearly 20 years and if anything, *Yoshimi* is better – not bad considering it's part 'concept' album.

The Lips' approach to pop involves building up a track in layers of instruments and ambient noise. But strip back the veneer and there beats the heart of great pop tunes, with amazing melodies, evocative rhythms and bizarre lyrical trickery. **★★★★**

Sound: Yoshimi sounds dynamic and full, with lots of room for the instruments to breath. Wayne Coyne's vocals are also solid and centre stage, often sharing the spotlight with a natural-sounding acoustic guitar which battles to hold the plot together. **★★★★ SM**



FUTURE SOUND OF LONDON

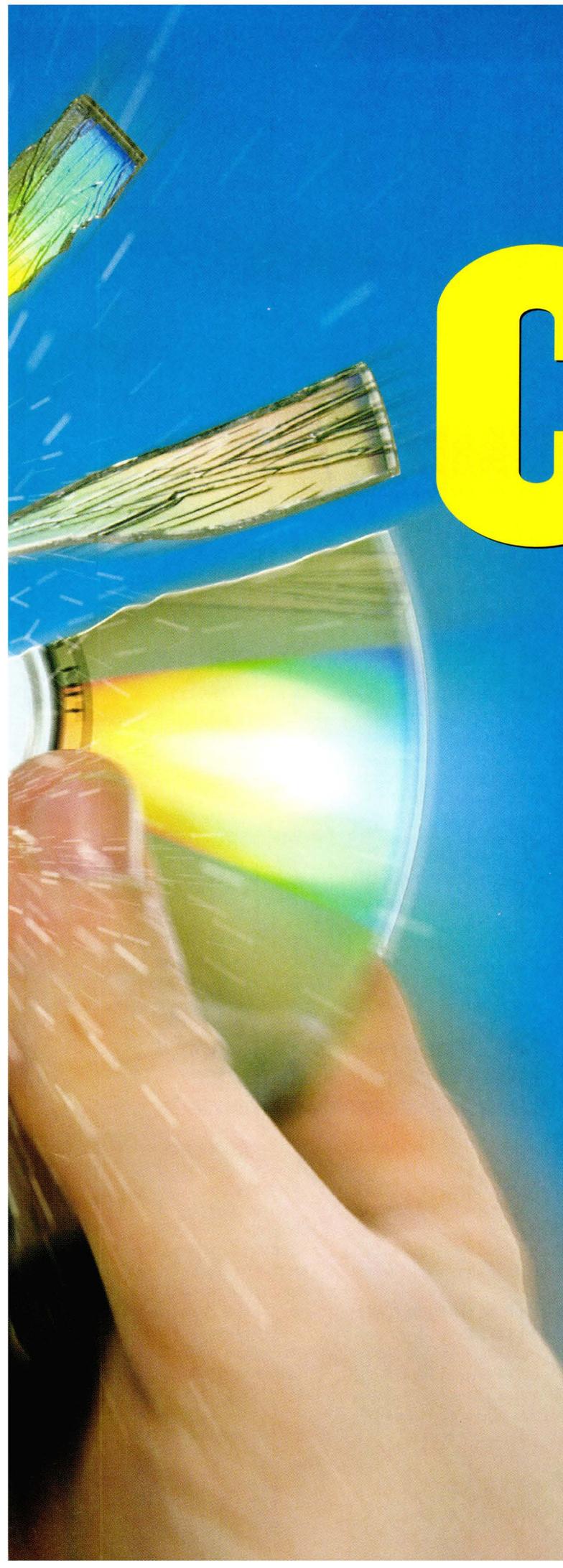
The Isness

Artful/Universal

Music: The one-time ambient techno masters return to expand our consciousness. With psychedelic references, singers and (gosh!) acoustic instruments, it's more of a retro sound of London at the fag end of the hippy scene than the futurescapes of old. The journey begins in Blaxploitation mode before crossing to a commune on the banks of the Ganges circa 1973, all droning sitars and trippy organ. The only thing missing is ready-made fag burns in the cover. **★★★★**

Sound: Holding together this pot-pourri requires careful attention to the instrument balance. *Divinity* impresses with its pizzicato strings sounding clear and whole, with choral vocals counterpointed by sitar glissandos. **★★★★ DO**





CD R.I.P.?

DVD-Video... DVD-Audio... SACD... even MP3. The future of music looks complex, but with Hi-Fi Choice as your guide you simply can't go wrong

These are changing times, with uncertain futures, not least for lovers of the recorded musical arts. CD might have usurped vinyl in the hearts and minds of most music fans, but where to now for digital music's unstoppable evolution?

The key word for the future is choice. Choice of formats, choice of media, choice of storage and of distribution. No longer are we faced only with the dilemma of which CD player, amp and speakers to buy – now we have to choose between stereo or multichannel, audio-only or video too. Which formats should we buy into if we're keeping an eye on the future? Will this increased choice come at the expense of sound quality, and what else lies around the corner as the pace of change continues to accelerate?

Many of the answers are provided across the next eight pages. In a nutshell: CD lives on, but DVD-Audio and SACD promise more for the music collector. Home networking and broadband internet will become central to the way we receive and enjoy general entertainment media (music included), and in two or three years blue laser technology will revolutionise DVD. Want to know more? Just turn the page...



MUSIC

THE NEXT GENERATION

It's no secret that CD has its sonic limits as a digital music carrier, but does the demand for something better really exist?

It takes a long time to establish a new music format. Just ask the guys behind CD. So while it's easy to get impatient in the face of the wrangling and procrastination that has dogged the birth of DVD-Audio and SACD, there is hope that these two 'new' high-resolution disc-based formats might yet give music fans a more vivid, more vital digital experience.

Hi-Fi Choice has tracked the progress of both formats since their inception several years ago, and despite a continued lack of software support there are reasons to be confident: falling hardware prices, a steady stream of rapidly improving kit and some encouraging noises from some of the larger music labels and retailers. What better time for a recap.

IS THE FUTURE REALLY DISC-SHAPED?

When MP3 and internet music downloads first burst into the public consciousness, many were quick to sound the death knell for disc-based formats. So where does this leave DVD-Audio and SACD? Well, the future will be all about choice. True, we'll be getting more of our home entertainment piped directly to our houses, with servers waiting to receive the content we request (see feature, page 36). But for those who demand the best quality, optical discs remain the most cost-effective way of distributing and archiving high-quality digital media. And for digital music, you don't get higher quality than DVD-Audio and SACD.

THE ESSENTIALS: DVD-AUDIO

WHAT IS IT?

A new type of DVD made specifically for music. Because a DVD has seven times the capacity of a CD, you can fit lots more on it. Exactly what you fit on it comes down to the artist, producer and record label, but all discs come with the promise of better-than-CD sound – be it two-channel stereo or multichannel surround.

All of the DVD-Audio discs so far released are 'premium' versions of albums that are also available on CD. All include an 'Advanced Resolution Surround' version of the album, giving five 'wide bandwidth' channels of sound – like a DVD movie soundtrack, but even more detailed and involving. You might also get a number of DVD-style extras, such as photo galleries and on-screen biographies.

HOW DOES IT WORK?

When CD was invented, a standard was established for the storage of up to 74 minutes-worth of audio data using a digital coding method called PCM (Pulse Code Modulation). The original analogue music signal is converted to binary code and stored in a sequence of 'words'; each of these words has a resolution or depth of 16 bits and a sampling frequency of 44.1 kHz.

DVD-Audio sticks with the same PCM coding method, but uses DVD's extra capacity to store audio data at a higher bit depth/sampling frequency. It's a flexible standard: if only two channels are required, maximum quality 24-bit/192kHz audio data can be applied. Alternatively, a surround sound disc can have up to six channels at 24-bit/96kHz, or a variety of options in between.

WHY IS IT BETTER THAN CD?

Greater bit depth and higher sampling frequencies mean greater dynamic range and a wider frequency response, extended well beyond the bounds of human hearing. Recorded music should

DVD-Audio discs, CDs and the now ubiquitous movie-oriented DVD-Video format. Prices are dropping and currently start at £250 (Panasonic's DVD-RA82).

You can't get full-resolution DVD-Audio on an ordinary DVD-Video player, but music labels are encouraged to include a Dolby Digital stream in the Video sector present on all DVD-Audio discs. This can be accessed by a DVD-Video player, so that you can play the disc's audio content, but in a lower-quality form.

DO I NEED ANYTHING ELSE?

Yes, a TV for start. Because all DVD-Audio players are also DVD-Video players, you need to be hooked to

"The simple promise of better sound is unlikely to get people upgrading their hardware in sustainable quantities."

retain more of the original sound's natural power and ambience, so your music sounds more like the real thing. And there's the prospect of hearing your music in all-engulfing surround sound, with photos and stuff to gawp at on your TV screen.

WHAT DO I NEED TO PLAY THE DISCS?

To access full-quality DVD-Audio you need to buy a compatible disc player. A number of 'DVD-Audio/Video' players are now available – these play

one to access the relevant control menus. Not to mention the discs' on-screen extras.

You could play DVD-Audio sound through the TV, but that would defeat the point. What you really need is a multichannel AV amplifier with a six-channel analogue input and five full-range speakers; none of those tiny rear surround jobs supplied with some home cinema packages. You *can* play discs through a two-channel system, and some surround sound discs also include an Advanced Resolution



Stereo version. But like DVD-Video, if you want to make the most of it you really need to go multichannel.

WHAT'S THE HARDWARE SUPPORT LIKE?

Every major manufacturer who sells a DVD-Video player has made, is making or will make a DVD-Audio/Video player. Some of the smaller specialist firms are biding their time, but if they're into DVD the chances are they'll be into DVD-Audio. Sony and Philips are naturally exceptions (see SACD), but even they won't categorically rule out a DVD-Audio product some time in the future.

THE ESSENTIALS: SACD

WHAT IS IT?

SuperAudio Compact Disc is an evolution of the CD produced purely on the grounds of improved sound quality for music – and the prospect of lucrative license fees payable to co-inventors Sony and Philips. It looks much the same as a CD and boasts the same storage capacity as a DVD, but the data that's applied to the disc is significantly different.

HOW DOES IT WORK?

Instead of relying on the PCM coding system used by CD and DVD-Audio, SACD employs a newly evolved method called DSD, or Direct Stream Digital. Sound is represented as a very high-speed stream of single bits, theoretically simpler to decode than a sequence of multibit 'words'. The result is claimed to be a purer transition from analogue sound to digital code and back again, with a wider frequency response and greater dynamic range, so you get a more accurate representation of an instrument or voice and hence hear more of the music.

WHY IS IT BETTER THAN CD?

It's been said that SACD is the way CD would have been invented had it been feasible back in the late 1970s/early 1980s. DSD is a notionally more elegant method of digital audio coding and storage, and though it's still early days the results speak for themselves. SACD discs seem more fluid and natural than their CD counterparts, with

clearer ambience and greater depth.

Most of the existing SACD catalogue are two-channel discs, but a rapidly increasing number of multichannel surround sound titles are now seeing the light of day. Good thing too, as the simple promise of better sound is unlikely to get people upgrading their hardware in sustainable quantities. This brings things more into line with DVD-Audio, but unlike that format the quality of SACD remains consistent no matter how many channels are employed.

It is theoretically possible for music labels to include DVD-Audio style on-screen extras, but SACD is presently an audio-only format and the discs focus purely on the music. Good or bad? Depends on your perspective.

WHAT DO I NEED TO PLAY THE DISCS?

A disc player that is SACD-compatible. There are various types

GREAT UNIVERSAL

The long-promised fully 'universal' disc player is now with us. It's a machine that can play DVD-Audio and SACD, along with the CD and DVD-Video formats. Pioneer launched the first in Japan two years ago, but this very costly model was only compatible with two-channel SACD and never made it out of its native land. However, this year has seen the birth of realistically priced, fully specced universal players, now available for as little as £400.

The first UK model was the £900 Pioneer DV-747A, launched at the beginning of the year. This has since been followed by Marantz's excellent DVD-8300 (HFC 233), Max Townshend's heavily tweaked version of the DV-747A (HFC 232) and Pioneer's own £400 DV-656A (reviewed on page 42). More are set to follow – the existence of such mutually inclusive hardware could theoretically mean *both* DVD-Audio and SACD might survive, given adequate software support and sufficient interest from consumers.

LANDMARK PLAYERS

TOSHIBA SD-900E £1,300 HFC 213
On arrival in 2001 this heavyweight was heralded by our reviewers as the first DVD-Audio player of real quality.



MARANTZ SA-1 £5,000 HFC 208
Complete with a super-serious price tag, Marantz's first SACD player was an audiophile tour de force. "The best CD player in the world" we said in 2000.



MERIDIAN 800 V3 £10,805 HFC 230
Arguably the best DVD player in the world from a major DVD-Audio protagonist. This year's V3 includes a 'wide bandwidth' digital audio link.



PIONEER DV-747A £900 HFC 226
Launched early 2002, this was the UK's first 'universal' DVD-A/SACD player. It's since been joined by the Marantz DV8300 and Pioneer's DV-656A.



DIGITAL LINKS

One of the most important recent developments in the 'wide bandwidth' music format scene has been that of digital links able to carry full-resolution DVD-Audio (or SACD) data. This means the data off the disc can be processed in the digital domain by an external processor or amp without conversion, and without relying on inferior processing in the player. Denon and Meridian have launched high-end DVD-Audio players and amps with proprietary wide bandwidth digital audio links, and Pioneer expects to be the first to incorporate a new, encrypted industry standard for such a link when it launches its DV-747Ai 'universal' player this Christmas.

around. If you just want music you can buy an SACD player with no video capability, so that it just plays CDs and SACDs. Some DVD-Video players from Sony and Philips are SACD-compatible too, although SACD playback quality can vary. An entry-level SACD-compatible machine now costs just £250, mirroring the current entry-level for DVD-Audio players.

A large portion of current titles will also play on ordinary CD players, thanks to their dual-layer 'hybrid' construction: an SACD layer and a CD layer sandwiched together. However, you only get regular two-channel CD sound from the CD layer, not super-quality SACD.

DO I NEED ANYTHING ELSE?

You don't need a TV, unless your SACD player also plays DVDs. You access tracks just like a CD, so no video display is necessary.

Even multichannel SACDs have a two-channel SACD track, so you can enjoy SACD sound with a good two-channel amp and a single pair of speakers. But if you want to experience multichannel SACD you'll need a multichannel AV amplifier with a six-channel analogue input and five full-range speakers. Buy the best you can afford – that quantity of channels doesn't come cheap if you want genuine hi-fi quality.

WHAT'S THE HARDWARE SUPPORT LIKE?

For a long time Sony was out on its own, and its SACD hardware portfolio is still by far the largest. But Philips has joined the race with a number of SACD/DVD-Video players. Marantz, Pioneer and Sharp also offer compatible machines, and digital audio pioneer DCS has a high-end transport called the Verdi.

Other manufacturers that have announced an intention to manufacture include Denon and Kenwood, along with hi-fi specialists like Linn and Krell. But the list of current manufacturers is shorter than that of DVD-Audio, perhaps because SACD is costly for manufacturers to buy into – hardly conducive to gambling on a new format.

WHICH IS BEST: DVD-AUDIO OR SACD?

The debate continues regarding the relative merits of these two new high-resolution music formats. Proponents of SACD have been happy to extol the elegance of DSD, while watching the DVD-Audio camp repeatedly shoot itself in the foot. There's been serious wrangling over Verance, the watermarking technology that forms part of DVD-Audio's copy protection system, with accusations that it could be detrimental to sound quality (Verance now appears to have been dropped – see page 12). There have also been problems with the quality of some DVD-Audio discs, in one particular instance traced back to a link in the production chain between recording and authoring.

"Given the emergence of universal DVD-Audio/SACD players, both formats could feasibly co-exist."

But SACD has its critics too. There has been talk of potentially damaging ultrasonic noise created as a result of the DSD process, and debate among sound engineers concerning the relevance of DSD, given certain digital signal processing techniques common in the studio. There's arguably little point in using DSD if you're going to turn it into something like PCM on the way to the master.

It is difficult to make sound judgements based on what's available thus far. As yet there are few recordings on both formats to compare – a re-issue of Deep Purple's *Concerto For Group and Orchestra* will be one of the first – and given the variety of hardware and differences in disc content, it's hard to compare like with like. But it's true to say that so far, SACD has had the qualitative upper hand – its discs are on the whole better produced and the hardware has been more consistent up to now.

While many DVD-Audio players are quite plainly video-oriented machines with DVD-Audio

compatibility bolted on, the audio quality of SACD players with both SACDs and regular CDs tends to shine through, even the ones with DVD-Video playback. But the DVD-Audio camp appears to be learning lessons and quality seems to be improving (see our group test on page 38 for evidence).

Given the emergence of universal DVD-Audio/SACD players, both formats could feasibly co-exist – two more logos on the front of the disc players of the future. Equally, the more pessimistic (some would say realistic) view is that neither has a mainstream future and that the sonically inferior, vision-oriented DVD-Video format – complete with data-reduced Dolby Digital or DTS surround sound – has the best long-term chance of bringing surround sound music to the masses. Ultimately, if one is to survive, it's true to say that DVD-Audio's family ties with DVD-Video – the most rapidly adopted home entertainment

of all time – stand it in good stead. The only thing we can say for sure is that Compact Disc will remain the most prolific music carrier for years to come. If one or both of these high-resolution formats survives, for the next few years at least it will be a premium-priced alternative to the regular, ready-salted CD. But the potential is undoubted – at *Hi-Fi Choice* we crave a higher fidelity digital music format and pray for the success of both. With the right backing and a following wind, your music collection could soon be taking a turn for the intense.

YET ANOTHER FORMAT!

DTS, of movie soundtrack fame, has developed another high-res multichannel format. 'DTS 96/24' is claimed to be a close match for 24-bit/96kHz DVD-Audio but may be transferred through the digital output of almost any DVD player to a DTS 96/24-ready amp or processor (most new mid/high-end AV amps are compatible). Both DVD-V and DVD-A discs may carry the format.

RECOMMENDED MUSIC ON DVD-AUDIO AND SACD

DVD-AUDIO


BEN ALLISON & MEDICINE WHEEL
Riding The Nuclear Tiger

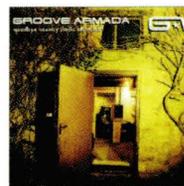
Hi-Res Music
 Contemporary
 American jazz that owes much to Frank Zappa. The sound is beautifully open and free-breathing – a great excuse to get into DVD-Audio.


BJÖRK
Vespertine

Elektra
 The most recent album from the pixie-like Icelandic chanteuse is a quiet and inventive affair. Multichannel DVD-Audio further heightens the atmosphere compared to the standard CD release.

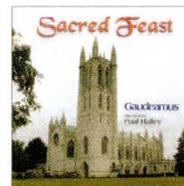

MISSY ELLIOTT
Miss E... So Addictive

Elektra
 The album that features last year's massive *Get Ur Freak On* single is now available on DVD-Audio. It sounds significantly better than the CD, with unusually imaginative use of multichannel.

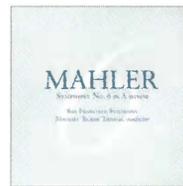

GROOVE ARMADA
Goodbye Country (Hello Nightclub)

Zomba
 The third album from these blissed-out groovers mixes upbeat house with chilled-out vibes. The multichannel mix is clean and spacious, with bags of energy and particularly juicy bass.

SACD


SACRED FEAST
Gaudeamus (choir), Paul Halley (dir)

dmp
 This has long been a reference multichannel SACD disc, an eclectic selection of choral music from baroque to contemporary. The acoustic is rich and enveloping but never overwhelms the music.


MAHLER
SYMPHONY NO 6
San Francisco Symphony Orchestra

San Francisco Symphony
 A violent and concentrated maelstrom, made all the more poignant by multichannel SACD. Fully displays the emotive power of classical music.

SOFTWARE SUPPORT

DVD-AUDIO

The birth of DVD-Audio was protracted and troubled, the emergence of marketed software delayed by music industry fears over content security and the potential for piracy. SACD got a head start, and even now DVD-Audio can only boast a fraction of SACD's gradually growing catalogue of titles. But DVD-Audio's saving grace was always the apparent support of the Big Five major music labels – Warner, BMG, Universal, EMI and, in theory, Sony.

Warner was the first to release titles in any quantity, its initial batch officially hitting the UK in the spring of 2001. It was an eclectic collection that ran from The Doors to The Corrs, from Fleetwood Mac to Stone Temple Pilots. Not a bad start, but then things dried up.

Recently, however, we've heard some positive rumblings, though most are still emitting from Warner. The multimedia giant has just re-launched its DVD-Audio catalogue in the UK, now running to 60 titles with some relatively recent albums such as Missy Elliott's *Miss E... So Addictive* and Björk's *Vespertine*. The company has also cut its trade price for discs to match that of its premium CDs, which will potentially mean DVD-Audio versions of

MUSIC IN SURROUND

Surround sound is nothing new, but unlike compressed surround formats such as Dolby Digital and regular DTS 5.1, DVD-Audio and SACD offer surround sound with CD-beating definition. This is important because of the way in which your senses work – you're more sensitive to sound quality when you're listening to music than when you're watching a movie.

It's still early days for multichannel music, and there are a lot of clumsily mixed discs out there. Artists, producers and engineers who've been working with two-channel stereo for years are only beginning to learn how best to use those extra channels. Quality will improve, creatives will learn how to harness a multichannel palette and surround sound will become a substantial part of music's future. Even now, when you listen to the best discs the effect can be staggering – intense and absorbing in a way that two speakers simply can't achieve. If the surround mix is subtle, it can feel much more like a live music experience, more solid and somehow more alive.

albums retailing for just £15 or £16, significantly lower than that of most SACD titles.

Beyond Warner things remain quiet. EMI has a handful of titles and the DTS music label has a growing DVD-Audio collection, mostly of the jazzy audiophile type. BMG has re-iterated its intention to support, but we still await firm news of any upcoming discs. Warner needs some company. And fast.

SACD

SACD's catalogue currently contains around 700 titles worldwide, with around 450 reportedly available in the UK. Many of these are two-channel only, but large slices of new and recent releases are multichannel and that's a trend that's set to continue. Until recently, SACD's software problem was one of obscurity.

Sure, Sony Music was supporting the format with a steady trickle of revamped back catalogue releases across various genres, including some pretty big names: Bob Dylan, Billie Holiday, Miles Davis, even some pop fodder from Mariah Carey. But other than that, things have mostly been left to a small clutch of audiophile-oriented indies releasing obscure, beautifully produced music that's often terrifyingly bland.

But things began to change late last year when Universal, the world's biggest label, announced its support for SACD, having been previously ensconced in the DVD-Audio camp. Around the same time, EMI confirmed that it had 17 titles in the offing, mooted a concoction of new releases and back catalogue titles from the likes of David Bowie, Coldplay,

Geri Halliwell and Fun Lovin' Criminals. Virgin, too, announced a number of high-profile titles – revamped versions of classic albums from artists such as Brian Eno, Human League and Roxy Music. Why this relative surge in support for SACD? Hard lobbying and production support from Sony come into it, but fears over copy protection stemming from the accessibility of the Dolby Digital stream on current DVD-Audio releases might also play a part.

New SACD releases are still more of a steady trickle than a flood, but at least some relatively cool and credible titles are now seeing the light of day. Groove Armada's recent *Goodbye Country (Hello Nightclub)* album is available on multichannel SACD, as well as regular CD and vinyl, while a staggering 22 remastered Rolling Stones albums and compilations are set for re-issue on two-channel hybrid SACD, including *Let It Bleed*, *Beggar's Banquet* and *Singles Collection: The London Years*.

WHERE TO BUY DISCS

Up until now, UK music consumers wanting to buy DVD-Audio or SACD discs have been mostly limited to mail order or the internet. A handful of enterprising retail outlets have been stocking a selection – Tower Records' flagship UK store in London's Piccadilly Circus has carried around 150 titles on both formats for some time – but

you've been highly unlikely to find any in your local Virgin or HMV.

But things are finally beginning to change, because as of 2 September, HMV began stocking all its larger stores with a comprehensive selection of DVD-Audios. This reportedly encompasses some 50 per cent of its outlets, each with a properly branded display housed within the music section. As yet there are no such major announcements on the SACD front, though you can find a limited selection in the largest London stores and order over the counter at any HMV or Virgin.

If you want to get a comprehensive idea of what's available in the UK or via import you can't beat the internet. Audiophile mail order specialist Vivante is a great place to look: visit www.vivante.co.uk or call 01293 822186. You can also order discs through the likes of Amazon.co.uk and Play.com.
 Turn to page 38 for a group test of the latest DVD-Audio and SACD players.
 See Hi-Fi Choice every month for all the hottest high-res hardware and software.

USEFUL WEBSITES

www.digitalaudioguide.com
www.dvd-audioworld.com
www.dvdangle.com
www.octipas.com
www.amusicdirect.com
www.vivante.co.uk
www.superaudio-cd.com
www.store.sonymusic-europe.com

ELECTRIC BLUE

The future of high quality AV is blue. No, not adult movies: blue laser, the disc technology that's set to make mincemeat of DVD

Last Christmas was the biggest to date for DVD, as players and movies flew off the shelves. This year promises to top that. Yet some of the world's biggest consumer electronics companies are already plotting a next-generation optical disc format that will put DVD in the shade.

Its name: Blu-ray disc. It was announced this February and backed by Hitachi, LG, Matsushita, Philips, Pioneer, Samsung, Sharp, Sony and Thomson.

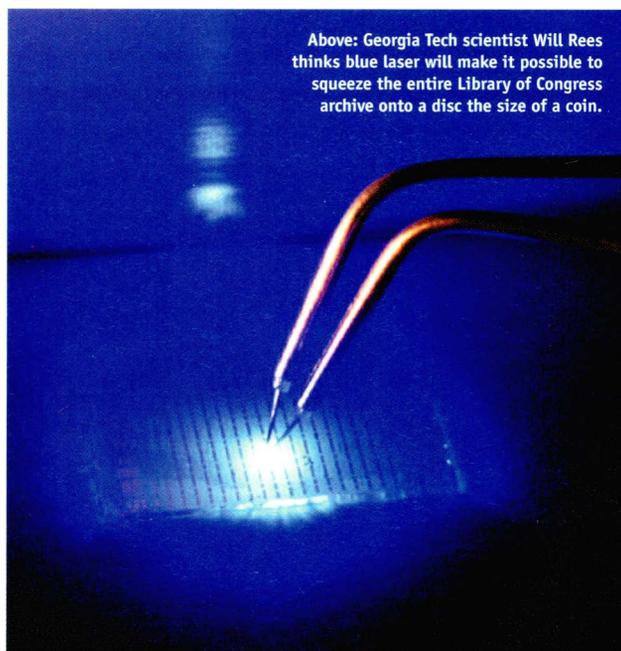
It's all down to blue laser technology, as opposed to the red lasers used in DVD and CD

players/recorders. A single-sided, single-layered Blu-ray disc will be able to hold around 27GB of data on it, compared to 4.7GB on a standard DVD or a mere 650MB on a CD. And it's thought this could rise to as much as 50GB on a double-layered disc.

To put that into perspective, 27GB is enough space for more than 13 hours of standard DVD-style AV content. But Blu-ray isn't really about squeezing more of the same on to one disc. It's as much aimed at Japanese and US consumers who own sets capable of receiving High-Definition TV (HDTV) broadcasts. This high-definition



Above: Georgia Tech scientist Will Rees thinks blue laser will make it possible to squeeze the entire Library of Congress archive onto a disc the size of a coin.



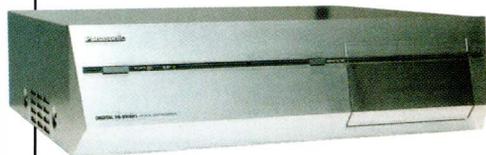
"A single-sided, single-layered Blu-ray disc will be able to hold 27GB of data on it."

BLUE LASER PROTOTYPES



SONY

This prototype Sony player was one of the first to be shown in 2001 and could store 22.5GB of data on a single disc.



PANASONIC

Using Panasonic's own technology, this prototype uses dual-layer rewritable discs with a claimed capacity of 50GB.



TOSHIBA

Though not part of the Blu-ray initiative, Toshiba has shown a prototype blue laser player with 30GB single-sided, single-layer discs.

content takes up too much space to be recorded onto DVD discs, but you'll be able to get two hours' worth on a Blu-ray disc.

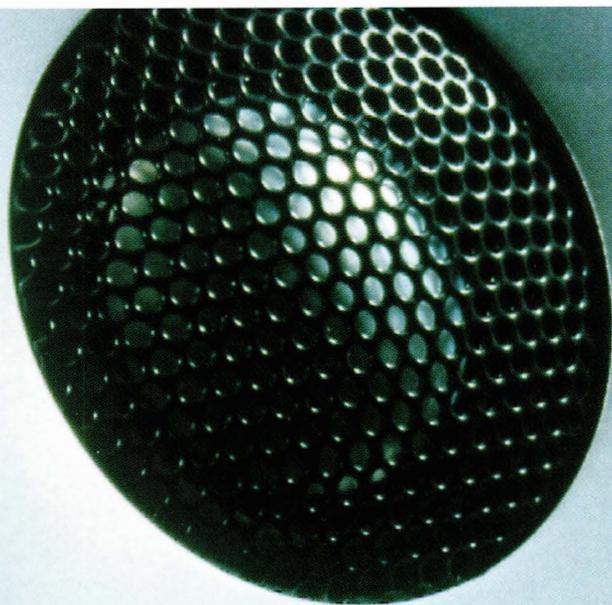
The firms behind the technology began licensing it in spring this year, but the first Blu-ray devices won't appear until late 2003 at the earliest – and that will be in Japan. Europeans will have to wait even longer, as things are complicated by the fact that we don't have HDTV.

With companies gearing up to push DVD recorders as mass-market technology over the next few years, they don't want to complicate things with talk of Blu-ray discs. The purpose in announcing it so early was to try to avoid the DVD format wars that have left consumers scratching their heads over the difference between the DVD-R, DVD-RAM, DVD+RW and

DVD+-RW recording formats.

So much for home cinema, but could Blu-ray have an impact on the hi-fi world too? A higher-capacity recordable format could have considerable potential for audio content – better quality sound or simply more music – though bearing in mind the slow take-up of DVD-Audio and SACD so far, any move to promote an even newer optical disc music format is clearly years away.

That said, the Blu-ray backers are looking at whether the technology could be used for PC file data storage, which could be used for MP3 files or whatever digital music format replaces it. If the thought of squeezing 5,400 tracks onto a single disc floats your boat, you'd be wise to keep an eye on how the Blu-ray disc progresses. ☺



Movie Stars

MS[®]
Mordaunt Short

WHAT HI-FI?
SOUND AND VISION
★★★★★

September 2002

"A great THX speaker package... worth waiting for."

HomeEntertainment
MAGAZINE
BEST BUY

"This is a real thoroughbred home theatre system that can also turn it's hand to music. Great stuff."

RECOMMENDED
HI-FI CHOICE
magazine
★

"This speaker impressed from the outset."



HomeEntertainment
AWARDS 2001
HIGHLY COMMENDED

The perfect balance between music and movies

Rarely, has a home cinema speaker package garnered such rave reviews as Mordaunt-Short's stunning Declaration 500 Series THX Select system. For once, the audio press has been united in its praise for a product.

What Hi-Fi? Sound and Vision could find, "nothing" against it, *Home Entertainment* "rarely recommended with such confidence", and *Hi-Fi Choice* was "impressed from the outset".

The 500 Series THX Select system underlines our commitment to engineering excellence. It also proves brilliance needn't be boring.

For more information visit our website www.mordaunt-short.co.uk/thx



For free literature on the 500 Series THX Select from Mordaunt-Short, call 01753 680868

www.mordaunt-short.co.uk

SMART-FI

Watch out for the worlds of the audiophile and the PC geek crossing over in the coming years – the home media networks are coming

These are intriguing times for audiophiles. Already debating the pros and cons of multichannel audio and digital radio, there are even more weighty developments on the horizon. Imagine a world where your hi-fi and AV kit aren't standalone systems within your house, but instead are elements in a wider home network.

Welcome to the connected future. Connected, because much

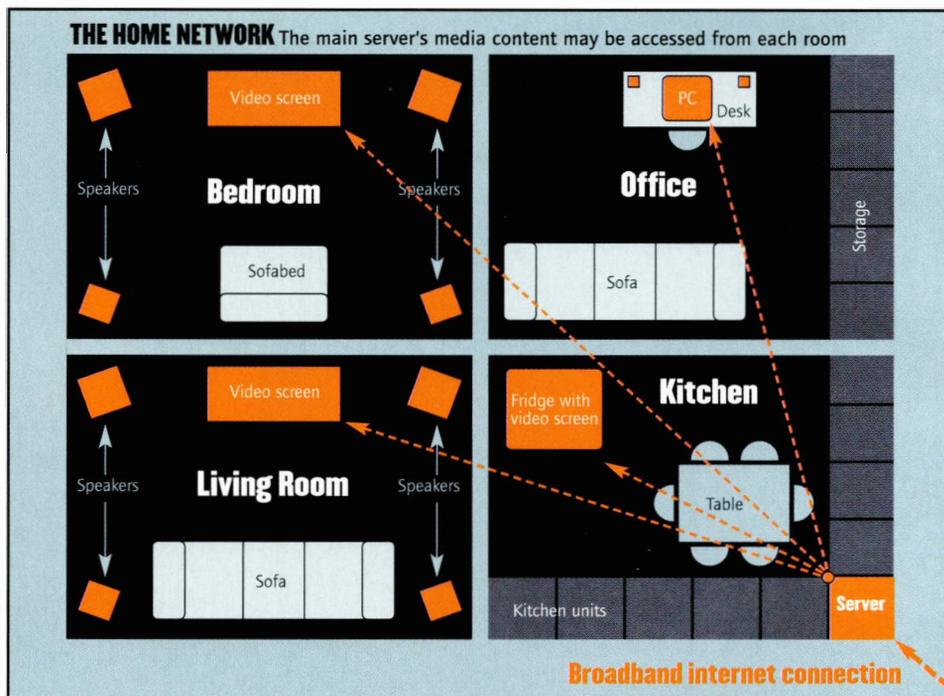
PVR

NEW TV TECHNOLOGIES HAVE SOMETHING TO OFFER AUDIO

If you're an early digital TV adopter, you might be one of the 90,000 or so people in the UK to own a personal video recorder (PVR). Currently, there are two in the UK: Sky+ and TiVo. They're basically hard disc recorders that let you store TV programmes, tied into sophisticated electronic programme guides (EPGs) that make it easy to find shows or even record entire series.

TiVo has some very interesting personalisation technology too. You can 'rate' programmes according to how much (or how little) you like them. TiVo then makes suggestions about other shows you might like.

So what, you might think. But imagine how this technology could be used in an audio context. If your hi-fi has a hard disc and an internet connection, couldn't it have some kind of PVR function too? If you've ripped loads of Black Crowes, Allman Brothers and Lynyrd Skynyrd tracks (for example) to the hard drive, it could go online during the night and, using a database such as CDDDB (www.gracenote.com), locate and download tunes from other similar bands you might like. It's not here yet, but the technology is – it's only a matter of time.



of your digital content will be streamed from a central home server to screens, speakers and monitors around the house.

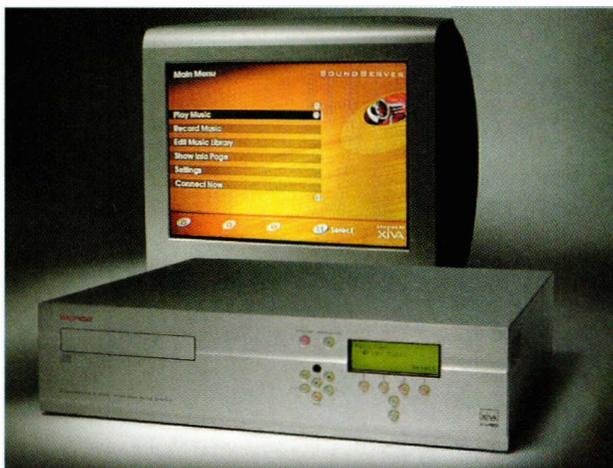
Connected, because that server will also be hooked up to a fat broadband internet connection.

The seeds are already in place, with the first generation of hard disc hi-fi gear. Think Linn's Knekt Kivor system, Imerge's SoundServer or Living Control's Music Box, not to mention existing systems from TerraTec and Yamaha, or upcoming kit from Sony, Marantz and Onkyo.

The common factor is hard drives, onto which you can record your music, and either direct internet connections, or a USB port, to connect to your PC. Some of them also support multiroom audio – a growing trend, if mainly in the custom install market.

This kind of kit is still for early adopters, yet the firms producing it believe this will change before long. "This technology will

Below: Imerge has developed an internet interface for home entertainment servers called XiVA, which it is licensing to firms like Linn (bottom right).



increasingly be utilised by manufacturers as web-based technology encourages more people to store music on hard drives," says Martin McCue, Linn's head of market development.

McCue is backed up by Imerge's





Home servers are already with us and more are on the way. Clockwise from left: Sony's bitPlay, TerraTec's C.A.R. and the Moxi Media Centre.



Chris Janes. "Over time, we'll see a wider market for convenient audio solutions involving multiroom playback and easy control. As this growth occurs, we should also see the off-the-shelf purchase evolve."

Janes sees wireless technology as a key factor in this growth. "Wired and wireless ethernet networks in the home will be more commonplace," he says. "The SoundServer will act as the central server for audio and audio-related internet services, including internet radio."

"It's the kind of convergence these devices represent that could revolutionise the way in which we consume media."

BIG IN JAPAN

Forgetting multiroom for a moment, hard drive audio has a number of issues to surmount before it wins over audiophiles. For many, the loss of quality during compression is a key issue. Luckily, the manufacturers recognise this.

"There will always be some loss from compression," says Janes, although he points out that new solutions such as VBR recording (Variable Bit Rate, which intelligently adjusts the recording bit rate depending on which parts of the music require it) ensure that the impact on the ear is minimised. "However, true audiophiles will probably want to store uncompressed music – the SoundServer can do that too."

McCue sees high-end customers' point. "We think audiophiles have a right to be concerned," he says. For its Knekt system, the company developed a PCI card which handles the transfer of digital data

to analogue audio, providing an uncompressed bit-for-bit format.

Yet these issues are the thin end of the wedge. To see the future for home entertainment, you can look to a couple of devices: one in Japan and one in the US. The former is bitPlay, which is produced by Sony and is as yet only available in Japan.

The package consists of a hi-res monitor, a pair of 50-watt tower speakers and a multimedia player – the S-Master – which is the core

of the unit. It can play CDs, DVDs and MiniDiscs, and has a slot for Sony Memory Sticks too. It includes a built-in digital power amp, a 40GB hard disc, an FM/AM tuner and a modem.

So, you can play music and movies through it, record audio tracks and TV shows onto the hard drive, surf the net via a wireless keyboard accessory and display slideshows of your digital photos stored on CD or Memory Stick.

AMERICA CALLING

Across the Pacific, the US device is the Moxi Media Centre, based around a software platform developed by a firm called Digeo. It's licensing the technology to various set-top box manufacturers – Motorola is one – who then make the boxes, which are in turn marketed by cable operators.

Digeo pitches these set-top boxes as "home entertainment hubs", which can share digital files

and services with an array of other devices around your home. They contain a dual-tuner cable receiver, computer processor and hard drive, 3D graphics engine, cable modem and an optional CD or DVD drive.

They basically pump whatever digital content you want to view or listen to around your home, while in the future, they'll also include PVR-type recording services (see PVR box) as well as videophone, telephony and gaming.

It's the kind of convergence these devices represent that could revolutionise the way in which we consume media – especially when you factor in the use of other devices such as mobile phones.

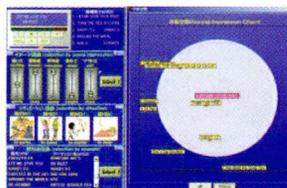
Imagine – on the way home from work, you'll listen to streaming audio samples through your phone, marking the ones you like. Send this data to your home network, and by the time you open the front door, your system will have downloaded a bunch of new tunes from those artists, ready for you to listen to once, and then buy

if you want to keep them.

Alternatively, you might access your home media network through your PDA or smartphone, constructing a detailed playlist of music or television for the evening. Or you could simply tell it what kind of mood you're in, and let the system dig out suitable tracks using analysis software such as Matsushita's Music Sommelier (see *Music Sommelier* box).

All of this will be possible through home networking. Although it will be enjoyed first by the early adopters rather than hi-fi purists, in the long term, this kind of technology will become mass market. All manufacturers in the audio or AV market will have to get to grips with it, and produce innovative products to make the most of it. "We have to be forward thinking," says JVC's audio product manager Simon Hedges. "Convergence is becoming more and more popular through many associated industries." Doors are opening, and it won't be long. ☺

MUSIC SOMMELIER



IN JAPAN, MATSUSHITA HAS BEEN WORKING ON AN INTRIGUING BIT OF AUDIO SOFTWARE

Here's a great way to manage your MP3 collection. The software analyses your digital music files, pulling out data such as tempo, beat and average number of notes. It can also extrapolate

their 'emotional feel' by comparing them to a database of feedback from thousands of Japanese music fans.

The result: a system which sorts your MP3 files by mood. You tell the system how you feel with five slider bars: Exciting/Quietly; Dynamic/Static; Soft/Sharp; Simple/Complex and Refreshing/Gloomy. When you've finished, hit the Select button and the system selects tracks from your collection to suit your mood

Matsushita is rolling out Music Sommelier in some of its Japanese audio products this year. But while an English language version has been worked on, we'll have to wait and see if the technology gets a commercial release in Europe.

REVIEWS - Alvin Gold

HIGH RESOLUTION DISC PLAYERS

High-res music formats are evolving quickly with the latest multi-format disc players - and they'll need to if they're to have any hope of succeeding

ON TEST



DENON DVD-3800
£1,000



PHILIPS DVD 763SA
£250



PIONEER DV-656A
£400



SONY SCD-XB780
£300



SONY DVP-NS905V
£400



TOSHIBA SD-9500
£1,999

Finally, there are stirrings of life back at DVD-Audio HQ. After a long period of inactivity, Warner has jumped back on the DVD-Audio bandwagon with some new titles. There's still nothing that looks like the kind of disc library any self-respecting music lover would give house room to, but it's a step in the right direction.

So far we've been mainly restricted to some not very wonderful mid and upmarket DVD-Video players with DVD-Audio compatibility added. At the top end of the market there are finally some quite exciting DVD-Video players with DVD-Audio, and we have two of them this month. But is DVD-Audio the real story or is it just along for the ride?

The promised tranche of low-cost DVD-Audio players hasn't yet happened, but the opposing SACD camp is on the move. This month we have a new low-cost dedicated SACD player which will appeal to those building an audio-only system. And we have two combination SACD/DVD-Video players, both surprisingly well priced.

We also have a real treat in the shape of the latest 'universal' player, the first at an everyday price that can play DVD-Video, DVD-Audio and SACD. Unsurprisingly, this model is brought to you by the enterprising folk at Pioneer, whose stock-in trade is to get there first, especially when 'there' has anything to do with optical disc technology. The Pioneer DV-656A is the second such model to go on sale in Europe, following the £900 DV-747A, but the new model is strategically much more significant. For the first time here is an affordable SACD/DVD-Video/DVD-Audio

player that promises to increase the market for high-resolution audio in a way that doesn't involve risking obsolescence by asking buyers to put all their eggs in one basket.

Note that most DVD players can be adapted for use with Region 1 (US) and other region discs, usually by or through your dealer rather than the manufacturer, for legal reasons. Any Region 1-enabled player will output component and sometimes progressive video from its component outputs (where fitted) with substantial improvement in picture quality, but DLP (and some other) projectors automatically de-interlace ordinary interlaced (that is, non-progressive) video. 

EQUIPMENT USED

AMPLIFIERS

Pioneer VSA-AX10,
KPS 25sc, Krell FPB 700cx

LOUDSPEAKERS

Stereo - Martin Logan Odyssey,
B&W Nautilus 800
Multichannel - B&W Nautilus 800
(main), B&W Signature 805 (centre),
Mission m51 (surround)

CABLES

Nordost SPM Reference, Transparent,
Krell CAST, TAG McLaren

DISCS USED

CD Nora Jones *Come Away With Me*
CD Allison Krauss and Union Station
New Favourite

CD Maazel/Pittsburgh Symphony
Orchestra, Respighi: *Pines Of Rome*

DVD-A Chie Ayado *Life*

DVD-A Ailyn Quartet & Minuet
Quartet, Mendelssohn: *Octet op 20 &*
Quartet op 44 no 1

SACD Marmot Henchmen/Netherlands
Philharmonic Orchestra, Mahler
Symphony No 5

SACD Chie Ayado *Life*

DVD-V DTS Demonstration Disc 6
Video Essentials

DVD-Audio/Video



014
195

OPEN/CLOSE



12bit 108MHz NOISE SHAPED VIDEO DAC





£1,000 ☎ 01753 888447 🌐 www.denon.co.uk

DENON DVD-3800 DVD-AUDIO/VIDEO PLAYER

New Denon bridges the gap between audio and video with expert precision

This model is second down in the Denon DVD hierarchy, which from humble beginnings some years ago with re-badged Panasonic models has taken a sharp upmarket slant. The DVD-3800 is beautifully made, with the physical integrity and power supply sophistication that would do credit to a comparably priced CD player. But it also has progressive scan, in effect the essential qualifying feature for what might be described as high-fidelity video. Though only of theoretical interest in PAL territories such as Europe, there are solid reasons for going progressive (see page 38).

It's a full DVD-Audio player, without the digital multichannel output of the flagship DVD-A1, otherwise not too dissimilar and with more than usually comprehensive onboard speaker management. The video feature set includes a 12-bit/108MHz video DAC (NTSC only – a 10-bit D/A is used for interlace) with a four times oversampling noise-shaped digital filter. Progressive

VERDICT	
SOUND	★★★★★
PICTURE	★★★★★
FEATURES	★★★★☆
VALUE	★★★★★

A high-end video player at the serious end of the middle market, combined with the sound of a good dedicated CD player and strong DVD-Audio to boot – a heady mix at the price.

CHECKLIST	
PROGRESSIVE SCAN	✓
DVI/OUT	✗
DIGITAL AUDIO IN	✓
SEPARATE STEREO/MULTICHANNEL OUT	✗
INTERNAL DD/DTS DECODERS	✓

processing and de-interlacing is performed by a high-speed Silicon Images SiL 504 motion adaptive video processor, which can deal with mixed film and video material, even with discs that are incorrectly flagged.

This powerful system is supported by useful picture tweaking aids to help optimise monitor settings, especially for those with video projectors. The audio side is looked after by a Burr-Brown 24-bit/192kHz D/A converter for the main channels, 24/96 on the others, with proprietary AL24 (Alpha) processing to suppress quantisation distortion associated with the least significant bit. The player is also HDCD-compatible, and two highly effective programmable 'Pure Direct' audio outputs modes are available.

Performance is excellent. The audio circuits have a particular voice, and the player can be criticised because of this, but it is also remarkable value for money, offering a type and style of music making with legacy CD audio

broadly on a par with good specialist players in, say, the £500-£800 range. It is an unusually organic and subtle-sounding player, not unlike the Toshiba SD-9500 in upsampled trim, but more detailed and apparently more neutral and transparent. As we discovered in our initial *Statements* test last month, the DVD-3800 is not the most physical-sounding player, there is a marginal loss of impact in the deep bass, but without the benefit of a direct comparison, the sound remains highly credible.

The voicing of the player holds with other formats too, notably DVD-Audio, which again displays the characteristic organic and finely detailed quality that is the Denon's hallmark with compact disc. But in this case it was the Toshiba that sounded on firmer ground, almost literally, with a more stable, solid and better projected performance. With both types of disc, however, the Denon reproduces music with air and space, a suggestion of acoustic that contrasts with the sterility of lesser players.

At this price level, the Denon proves itself to be a video player in a class of its own. It takes a projector fed from the progressive output to see what the player is really about, and the progressive processing is very impressive, with well-controlled motion artefacts and a picture that is deep and clear, with excellent contrast and detail at both ends of the brightness range.

So here's the bottom line: this Denon is a top-notch video player that can also be taken very seriously in the world of purist audio. 🎧

CONNECTIONS

There is no dedicated stereo output, but there are two Scarts for loop-through purposes – perhaps your TV has run out of spare inputs. An RS-232 connector is available for firmware upgrades, or for external system control by AMX or Crestron and similar controllers.





£250 ☎ 020 8689 4444 🌐 www.philips.co.uk

PHILIPS DVD 763SA DVD-VIDEO/SACD PLAYER

EXCLUSIVE *The least expensive SACD player yet and DVD-Video playback to boot*

The rollout of high-resolution audio continues apace, driven by two parallel trends that are well represented in this project. On the one hand is the introduction of affordable 'universal' players capable of playing both DVD-Audio and SACD discs (see Pioneer D-656A review, page 43). On the other is the plummeting price of SACD hardware, driven by increased integration and the falling prices of key components. The Philips DVD 763SA is an excellent example of the second process. It is an SACD player that can also play DVD-Video discs, and it costs a paltry, unprecedented £250. It also begs a rather obvious (if rhetorical) question: just how low can you go?

In addition to SACD/CD and DVD-Video, the DVD 763SA will play CD-R/RW, VCD and S-VCD discs. S-VCD is the Chinese version of VCD that may gain importance here owing to the introduction of DVD copy programmes that write to CD media (with quality losses, despite disingenuous claims to the contrary). The Philips will also play MP3 compilations. Unlike some previous generation SACD players, this model includes basic onboard speaker management for DVD-Video and multichannel SACD, and boasts integral surround sound decoders. The internally generated Dolby Digital and DTS sound is rather woolly by the standard of separate amp/processors, but the main limitations as always are the limited bass management, and the lack of genuinely useful mod cons such as Dolby Pro-Logic II.

Philips wasted few resources on the physical structure, which is lightweight.

The front panel controls feel flimsy, and the display is a far cry from its opposite number in the Sony and Pioneer players. Track access is painfully slow too, and the player feels unresponsive as a result.

Musically, this Philips budget player gives a rather bumpy ride. Sound quality lacks dynamics and air, and the midband has more than a suggestion of glare, which can make long-term listening an edge-of-the-seat affair. The coloration is apparent to a greater or lesser extent in both main audio modes, playing CD and SACD material, and so the music tends to sounds coloured and even rather mechanical. Orchestral strings are edgy, and female vocals reproduce with a metallic sheen. Nora Jones and Siolo Isokoshi recordings in their different genres showed the same effect. To some extent these qualities set a pattern that was not broken when used with the main test system, though it will be less apparent in lower-resolution systems.

Although there was a difference in sound quality between the SACD and

VERDICT	
SOUND	★ ★ ★ ★ ★
PICTURE	★ ★ ★ ★ ★
FEATURES	★ ★ ★ ★ ★
VALUE	★ ★ ★ ★ ★

Philips has gone full out to deliver SACD to the masses, but in the process has rather lost its way, we feel, with a player that simply spreads itself too thin.

CHECKLIST	
PROGRESSIVE SCAN	✗
DVI/OUT	✗
DIGITAL AUDIO IN	✗
SEPARATE STEREO/MULTICHANNEL OUT	✓
INTERNAL DD/DTS DECODERS	✓

CD layers of hybrid discs, and while it favoured the more involving, sweeter and more detailed SACD, these were not the 'night and day' differences that might have been expected, and neither format sounded especially organic, transparent or musical.

Finally, in its DVD video-playing role, and despite the component video output, the Philips is fairly basic. Colour reproduction is good, but blacks look grey and detail in dark scenes is relatively deficient. Fine detail is also rather soft, and the combination of these factors yields a picture with good stability, but which simply lacks impact. Performance is still not far short of prevailing standards at this price for a dedicated DVD-Video player, but a relatively small additional investment could yield considerably better picture quality. 🗨

"The DVD 763SA is an SACD player that also plays DVD-Video discs and costs a paltry, unprecedented £250."

CONNECTIONS

Socketry includes twin Scarts (RGB enabled), allowing another video component to be looped through the player, along with component video, two composite sockets and S-Video. Two and six-channel analogue audio outputs are available, and digital data is output from coaxial and optical sockets.





£400 ☎ 01753 789500 🌐 www.pioneer.co.uk

PIONEER DV-656A DVD-AUDIO/VIDEO/SACD PLAYER

A 'universal' disc player at just £400 – but does this Pioneer spread its talents too thinly?

Pioneer has already launched a 'universal' SACD/DVD-Audio player, the DV-747A, and this is a second-generation model – third if you count the original Japan-only machine that preceded the DV-747. It's one of two models that Pioneer is launching in the latter part of this year, along with the more highly specified DV-757Ai.

The list of compatible disc types is extraordinary: SACD multichannel, DVD-Audio & Video, CD, CD-R/RW (including unfinalised), MP3 and VR (Video Recording) format DVD-R/RW. Unofficially, it apparently even works with S-VCD discs and the Pioneer is also CPRM (Content Protection for Recordable Media)-compliant.

To meet the new price point, the chassis has been simplified as well as slimmed down, but the player still boasts a component video output (NTSC) and Burr-Brown 24-bit/192kHz DACs, PCM1738s in the case of the front main channel. The video circuits can be switched, and new user-friendly set-up and speaker management software with a much improved,

VERDICT	
SOUND	★★★★★
PICTURE	★★★★★
FEATURES	★★★★★
VALUE	★★★★★

Pioneer is treading a fine line between versatility and performance with this machine, but it has pulled it off with a player that does so much so surprisingly well. A multi-format bargain.

CHECKLIST	
PROGRESSIVE SCAN	✗
DVI OUT	✗
DIGITAL AUDIO IN	✗
SEPARATE STEREO/MULTICHANNEL OUT	✓
INTERNAL DD/DTS DECODERS	✓

higher-resolution on-screen display has been included, as have Dolby Digital and DTS decoders. Speaker set-up is a doddle, but is far from comprehensive. There's no setting for speaker distance, for example.

Assessment is complicated by the Pioneer's sheer versatility. One point of interest was the comparison between DVD-Audio and SACD, and there is no way that it is possible to give a definitive assessment. What can be said is that the only well-recorded title available during the test in both forms was Japanese jazz singer Chie Ayado's *Life*. The DVD-Audio was impressive, sharp and articulate, but the SACD was a clear winner. It was bolder and sharper in *New York State Of Mind*, with a presence and swagger in its gait that made the DVD sound pedestrian, good as it was. But one title is not enough to make a case. There are too many imponderables, not least about how the discs were mastered.

As a compact disc player, the Pioneer's behaviour is surprisingly solid with the video turned off. It has

something unusual in a player of this price level – a sense of light and shade, a dynamic integrity that makes the music stand out proud from the speakers and take up residence in the room. The Nora Jones recording, for example, was open, bold and up-front, and it was not an exception.

The high-resolution formats were also quite impressive for a relatively inexpensive player, and a considerable improvement on some of the other (admittedly, still cheaper) players in the group. The Pioneer only began to show its limitations with very complex material. Hilary Hahn's *Brahms' Violin Concerto*, for example, was a little lacking in clarity and articulation, and in common with one of the other players, the Mendelssohn Octet failed to sing out with the bell-like clarity the machine displayed when attacking simpler material.

The Pioneer DV-656A is also an acceptable mid-price video player, with good colour and low video noise, and decent, though not exceptional, colour reproduction. Unlike some relatively low-cost DVD players, blacks look deep and pure on screen, and there is a fair amount of shadow detail. Almost inevitably though, there was some minor fringing in areas of maximum detail, and some blooming around blocks of saturated colours, especially at the red (longer wavelength) end of the spectrum. The integral Dolby and DTS decoders did their stuff without attracting much comment either way, which on balance is a very decent showing at the price. Ⓞ

CONNECTIONS

The DV-656A's slim form is its most striking physical feature, but there is room – just – to include twin Scarts and a component video output, as well as two- and six-channel audio outputs, two standard digital audio outputs and doubled-up composite and S-Video sockets.





£300 ☎ 0990 111999 🌐 www.sony.co.uk

SONY SCD-XB780 SACD PLAYER

Audio-only multichannel SACD player makes its case for music fans

Replacing the (at the time) ground-breaking SCD-XB770, the SCD-XB780 has been painstakingly re-engineered, with a £100 price reduction into the bargain.

This model has a number of new components. The three two-channel DACs used previously have now been replaced by a single eight-channel chip, one of whose main claimed benefits is a much shorter signal path, and lower jitter. The front two channels – for CD and stereo/multichannel SACD – are reproduced by four DAC channels operating in differential mode, reducing common mode noise.

A new digital filter that operates on the DSD signal itself simplifies the task for the subsequent analogue filters, which has made it possible to design a simpler, better-sounding output driver.

A new smaller, simplified dual-wavelength, single-package laser requires less servo current, and the decoder, originally a two-chip design, is now implemented by a single LSI, again allowing a number of circuit simplifications, and reducing current demands, which has knock-on benefits.

Finally, the UK model is specially tuned, with a panel badge to this effect, with changes to the power supply, coupling capacitors, vibration damping and the inclusion of copper (non-magnetic) fixing screws. If you're offered an SCD-XB780 cheaply through a non-authorized dealer, it may have been parallel imported and probably won't include these modifications.

The useful, but limited, speaker management function missing from earlier SACD players operates directly

on the DSD datastream in its native form, another quality-enhancing measure. Controls are as you might expect on a CD player. You also get a menu selector that changes between stereo and multichannel playback, and selects CD and SACD layers on a hybrid disc. CD/SACD text is included, supported by an excellent display, and operation is generally very slick.

The Sony made good after a slightly rocky start. One of the tests involved playing a hybrid SACD in stereo on the player, and then from the CD layer on the Krell test CD player. This is a stiffer test than it sounds. The Krell system costs around £51,000 without the Sony, and with the Sony it still costs around £51,000. The question is, can a minnow of a player like the Sony overturn the cost advantage of the Krell given its presumed technological superiority?

The answer is no. The agitated storm-like opening of the second movement of the SACD *Mahler 5* recording simply proved too much for

VERDICT

SOUND



PICTURE

N/A

FEATURES



VALUE



This dedicated SACD/CD player makes a good case for inclusion in a stereo (or multichannel) audio-only music system, with particularly strong SACD playback. But there are even better outright CD players available at similar prices.

CHECKLIST

PROGRESSIVE SCAN N/A

DVIOUT N/A

DIGITAL AUDIO IN ✗

SEPARATE STEREO/MULTICHANNEL OUT ✓

INTERNAL DD/DTS DECODERS N/A

the Sony, which sounded rather aggressive in terms of tonal colour and expression. The Krell was more firmly disciplined and gave a broader, more focused view, and this from an inferior medium. In comparisons, the Sony also lost out to the Philips DVD 763SA in this piece, for much the same reason.

With more mainstream material though, the Sony makes the Philips sound dynamically and tonally flat. The Brahms violin concerto sounded richer and more vibrant, and it did a good job with Nora Jones' *Don't Know Why* (on CD), which is far too simple and direct a recording to escape without scars when the player doesn't perform. Textures were clean and open, and this pattern was repeated with a broad range of music, from Malcolm Arnold to Tom Waits. Yet its talent with SACD is notably greater than with CD, and with most of the multichannel SACD competition also sporting DVD playback (not least Sony's excellent DVP-NS905), some might question this audio-only player's value-for-money. 🗣

CONNECTIONS

As an audio player, the back panel is fairly basic, though socketry does stretch to separate stereo and multichannel outputs, and the standard digital audio output is repeated in optical and coaxial forms. A headphone socket and level control provides some flexibility.





£400 ☎ 0990 111999 🌐 www.sony.co.uk

SONY DVP-NS905V DVD-VIDEO/SACD PLAYER

Superb SACD-compatible machine shows that DVD players really can play music

The DVP-NS905V is a slim, well-dressed player which can play DVD-Video, SACD (multichannel), CD, VCD and MP3 compilations, and which is fully compliant with CD-R/RW discs. DVD-RW discs recorded in VR (Video Recording) mode are also playable. Replacing the successful DVP-NS900, the DVP-NS905V offers superior video processing, thanks to a new higher-specified 12-bit/108MHz video DAC.

There has been some subtle rejigging of the feature set, which is extensive and includes all manner of minor but potentially useful gadgets. A childproof drawer lock is one example, and there's also a CD Direct function, hidden in the onscreen menus, which presupposes access to a TV. Included is a wide range of picture-tweaking features, none of which do anything useful for most discs when shown on properly adjusted displays. Out goes the fiddly DVP-NS900V handset with its tiny LCD display, to be replaced by a more

VERDICT	
SOUND	★★★★☆
PICTURE	★★★★☆
FEATURES	★★★★☆
VALUE	★★★★★

This is a classy and comprehensively equipped player, which continued to improve in sound quality as it was used through the test period. It is currently unequalled at the price.

CHECKLIST	
PROGRESSIVE SCAN	✗
DVI OUT	✗
DIGITAL AUDIO IN	✗
SEPARATE STEREO/MULTICHANNEL OUT	✓
INTERNAL DD/DTS DECODERS	✓

conventional 'stick' remote. But this too is unlikely to evade criticisms of being artless in its disposition of controls and difficult to use in the dark.

More significant for some will be the omission of a component output. The DVP-NS900V didn't offer progressive scan, but the component output would have been preferred by projector users. MP3 compatibility has been added, including support for long file names.

The player includes internal Dolby Digital and DTS decoders, but with no distance setting for speakers when playing SACDs, and a poorly chosen 120Hz crossover for the subwoofer, presumably based on an unsafe assumption that it will be used with miniature sub-sat systems.

As a CD player, the Sony is a qualified success. Its clear, slightly lightweight sound has an occasionally brittle treble edge; for example, in the Nora Jones test track. The internal 'soft' filter solves the problem, but takes too much presence and life from the music to be

a realistic solution. In a well-chosen system, the edge shouldn't be a problem and the clear, open window the Sony offers to the music will be appreciated. Respighi's *Pines Of Rome* reproduced particularly well, with less power and authority than some, but a great sense of presence and internal tension.

SACD sound quality is significantly better. Using the same *Mahler 5* disc in two-channel mode, switching between CD and SACD layers, the SACD layer sounded smoother, with greater stereo depth and better-formed instrumental textures and colours. This is without the benefits of multichannel processing, which almost literally adds a whole new dimension and sense of involvement. SACD has more to give than this player provides, but the DVP-NS905V has no difficulty establishing itself as the best SACD-compatible player in this group, and in all modes it sounds punchy and alive, with strong detail resolution.

This is a well-above-average video player, which looks sharp, stable and clean on screen. Video noise is low, moving backgrounds are handled more smoothly and less jerkily than by many players at the price, and video noise levels are low. Dolby Digital sound quality using the internal processor is even poorer than usual, and though DTS sounds sharper and more alive, taking a digital feed to an external AV amp or processor is essential for good DVD-Video sound. There's no DVD-Audio playback, unlike the Pioneer, but otherwise audio/video performance is outstanding for the price. 🎯

CONNECTIONS

No headphone socket, but the Sony has a complete set of all the basic socketry, including loop-through Scart connections with RGB, coaxial and optical digital audio outputs, separate two and six-channel audio outputs, and composite and S-Video.





£1,999 ☎ 01276 62222 🌐 www.toshiba.co.uk

TOSHIBA SD-9500 DVD-AUDIO/VIDEO PLAYER

Toshiba's heavyweight flagship is a strong but pricey performer

This heavy and beautifully engineered flagship model is a DVD-Video-cum-Audio player with progressive scan on its Region One component video outputs, and is a replacement for the (much cheaper) SD-900. The rear panel has a distinctly US-centric feel. There is no Scart, for example, but there is a balanced analogue stereo output on XLR sockets. The software that drives the player is extremely powerful and flexible, and the range of facilities almost endless.

To give just one example, a stereo input is available, and the player can double as a D/A converter, with switchable upsampling. The upsampling algorithm converts all digital signals (except 192kHz or 176.4kHz) to 24-bit/192kHz, but it's worth bearing in mind when reading the listening notes that no such algorithm can recreate missing information. A 16-bit signal doesn't suddenly become a 24-bit one, it is simply expressed as a 24-bit number with some waveform smoothing that in the end is arbitrary. There has been a lot of good press for this generic type of circuit, but my own experience has been decidedly mixed. This doesn't mean it can't perform, of course, and reading between the lines there are clear parallels with Pioneer's Legato Link, which has a good track record.

When playing music the 'video off' switch helps, but its effect is very subtle. The upsampling feature is more promising on paper, and in contrast to the video bypass, the effect is *not* subtle. In fact, it sticks out a mile. Switch it on, and music typically

becomes sweeter; slightly more organic and fluid. If you prefer there is less edginess, less of a digital signature to the sound. The problem is that this goes hand in hand with some apparent loss of detail and presence. This observation was made in various forms, but to essentially the same effect with a broad range of music types, though female vocal (for example, Nora Jones' *Don't Know Why*) shows what's going on particularly well.

The SD-9500 is more impressive as a DVD-Audio player, but this is within the limitations of existing software, and as already noted in the test introduction there could be more of this to choose from. The upsampling algorithm works with this type of software too (multichannel only), and produces results that are completely consistent with compact disc. In a recording of the Mendelssohn *Octet* (on Tacet), the upsampled sound was clearly sweeter, but slightly coloured. The bass sounds smoother but flatter and less expressive,

CONNECTIONS

The loading mechanism is superbly slick and quiet, but the real surprises are around the back. There's no Scart, but you get separate stereo (balanced and unbalanced) and multichannel outputs, a digital audio input and DVI (Digital Video Interface) – but no promise of digital multichannel support.



VERDICT

SOUND



PICTURE



FEATURES



VALUE



Impressive if not exactly keenly priced, this is an ambitiously specified player with a long feature list that almost, but doesn't quite, deliver what it promises. The upsampling algorithm, in particular, didn't really work for us.

CHECKLIST

- PROGRESSIVE SCAN ✓
- DVI OUT ✓
- DIGITAL AUDIO IN ✓
- SEPARATE STEREO/MULTICHANNEL OUT ✓
- INTERNAL DD/DTS DECODERS ✓

and the mid/treble loses its neutrality in the Krell/Martin Logan system. Again, there is some loss of presence. It's not severe and some may prefer the upsampled sound, but neither version is in the top rank, and this was also the case with 24-bit/96kHz stereo recordings on DVD-Video, also known as DAD recordings. Incidentally, the Tacet disc sometimes ground to a halt with a 'protection' error during testing – hopefully a one-off.

Video performance mirrors audio sound quality. It looks great on a glass TV, but through the test SIM2 projector the NTSC progressive output (only available with Region 1 or all-region NTSC discs) is a revelation by conventional video standards, free of frame or field flicker, and with negligible MPEG artefacts. But it is not quite in the top class. The progressive process introduces some noticeable loss of picture impact and clarity, a kind of visual counterpoint to the upsampling observations with audio material. 📺

HIGH-RESOLUTION DISC PLAYERS CONCLUSIONS

Three Best Buys, each with its own exceptional set of attributes – the choice is yours

As a format, DVD-Audio is still crawling rather than walking, but the quality of DVD-A compatible hardware in this group is at least encouraging. That said, DVD-A isn't really the main story with the Denon DVD-3800 and the Toshiba SD-9500 – both offer exceptionally sophisticated DVD-Video performance. But while the Toshiba looks good on screen, its audio performance is not enhanced by the fashionable upsampling facility. At half the price, the Denon (Best Buy) is a more satisfactory CD player too. Philips' DVD 763SA shows its

commitment to SACD with the most affordable SACD/DVD-Video player yet, but it's hard to get excited about a basically pedestrian design. The Sony SCD-XB780 isn't a video player, but it performs its limited audio role better, though SACD outshines CD.

The other Sony in this test is the DVP-NS905V, an alternative to the Philips DVD-763SA, but more ambitiously specified and priced, and a better performer. It has limitations, but not in core areas so its Best Buy rating is well deserved. The same applies to the Pioneer

DV-656A, also Best Buy. It is not quite as high a flier the Sony DVP-NS905V, but for the same outlay you get a player that copes with almost every audio and video format disc, including, but not limited to, DVD-Audio and SACD. Have your cake, and eat it too. **B**

TRY THEM WITH THESE

AMPLIFIERS
MARANTZ SR-7000 £700
 Excellent near-budget price amplifier performs well with stereo and multichannel sources alike.

PIONEER VSA-AX10 £2,700
 Brilliant AV amp is also a genuinely musical choice, and has brilliant auto-setup feature.

DENON AVC-A1SE £2,500
 More powerful than the Pioneer VSA-AX10, with proprietary digital multichannel input.

MULTICHANNEL LOUDSPEAKER PACKAGES
MIRAGE OMNI 2 £2,650
 Dark tonality, but superb scale and imagery makes this an excellent all-round choice.

KEF Q7 £1,400
 With the latest Uni-Q refinements, this system is astonishingly accomplished, and amazing value.

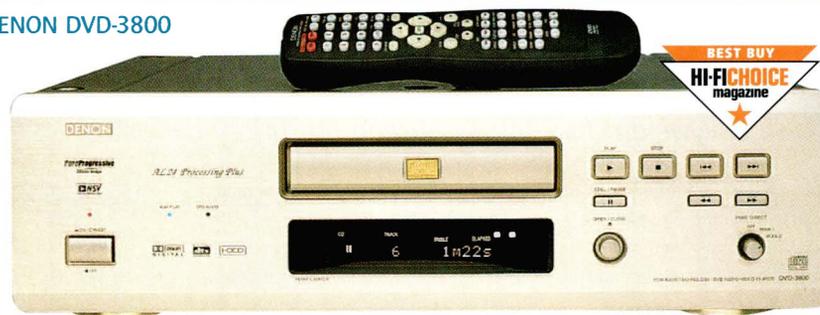
B&W 600 S3 £750
 Unquestionably delivers the sonic goods. A solid, cohesive sound with music and movies alike.

HINTS AND TIPS

- ⊕ If you must stack your player with other gear, never stack it immediately above an amplifier or other heat source.
- ⊕ Accessory Sorbothane feet (available under various brand names) filter out vibration and usually enhance sound quality.
- ⊕ A good budget alternative is beads of BluTack between the equipment feet and the platform.
- ⊕ Run in players for at least 20-30 hours.
- ⊕ In each session, allow half an hour or so for best sound quality.
- ⊕ Use all available bypasses (eg video bypass when using audio only).
- ⊕ Dim, or turn off display.

STAR PLAYER

DENON DVD-3800



Its Chinese manufacturing base probably explains how Denon, a medium-sized video producer in global terms, has managed to produce a player that can embarrass others at twice the price. No corners have been cut and it is a serious CD player, as well as being a more than competent DVD-Audio player and little less than superb in its video role.



PLAYERS AT A GLANCE

	Denon	Philips	Pioneer	Sony	Sony	Toshiba
MAKE	Denon	Philips	Pioneer	Sony	Sony	Toshiba
MODEL	DVD-3800	DVD 763SA	DV-656A	SCD-XB780	DVP-NS905V	SD-9500
PRICE	£1,000	£250	£400	£300	£400	£1,999
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
PICTURE	★★★★★	★★★★★	★★★★★	N/A	★★★★★	★★★★★
FEATURES	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
CONCLUSIONS	Excellent high-end DVD-Video player with good CD and DVD-Audio capabilities, priced below its station.	Entry level SACD/DVD-Video player has been trimmed a little too close to the bone.	'Universal' DVD-Audio/Video/SACD player does everything moderately well or better, and is an excellent buy.	Updated SACD player from the prolific Sony stable works well, if slightly unevenly.	DVD-Video and SACD in a distinctly superior package, with well above average performance.	Replaces the SD-9000, and offers high-end progressive DVD-Video with good but not exceptional DVD-Audio.
DVD-VIDEO	✓	✓	✓	×	✓	✓
DVD-AUDIO	✓	×	✓	×	×	✓
SACD MULTICHANNEL	×	✓	✓	✓	✓	×
PROGRESSIVE NTSC	✓	×	×	×	×	✓
SCART	✓	✓	✓	×	✓	×

The Quad L Series

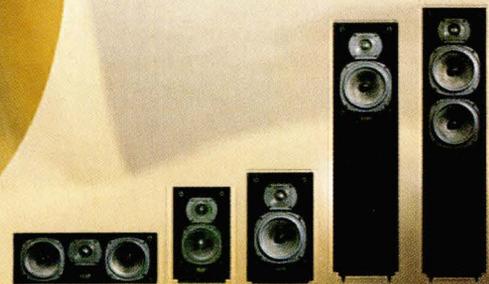
Since 1936, every Quad product has followed an underlying philosophy – to bring you 'the closest approach to the original sound'. This philosophy has earned Quad the respect of acoustic engineers, musicians, recording artists and music-lovers the world over and remains undiluted today.

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– Quad 11L – What Hi-Fi? (Aug 2002)

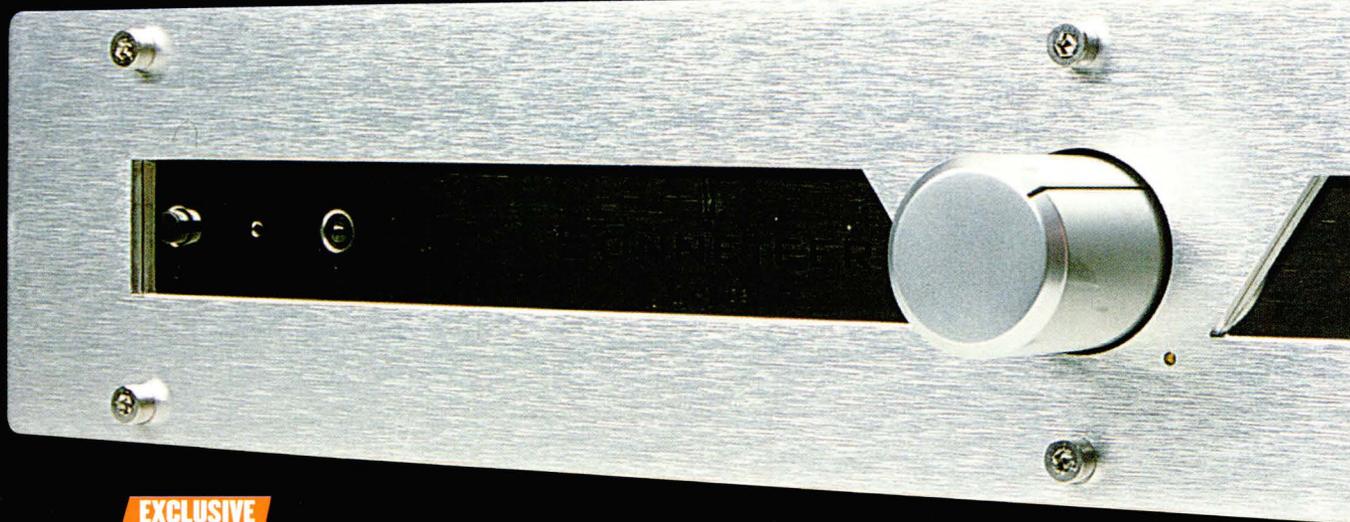
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QUAD

...the closest approach to the original sound



EXCLUSIVE

SONNETEER BRONTE 'CLASS T' AMPLIFIER

£800 THE BRONTE IS AN INTEGRATED AMP WITH A DIFFERENCE – 'DIGITAL' CLASS T OPERATION

"The Bronte exhibits many of the hallmarks of an 'audiophile' valve amplifier, despite incorporating up-to-the-minute technology."



Along with ES Labs and Veritas, Sonneteer is the latest in a short line of UK specialists to implement Tripath's Class T amplifier technology. This version, the Bronte, is not quite as powerful as its competitors but, to its credit, is both a fully integrated amplifier and more affordable at £800. Visually, there's little to distinguish it from more conventional solid-state designs. Remote control of its volume and six line inputs is a nice touch, but not exceptional at this price, while its overall aesthetic and build quality is robust rather than graceful.

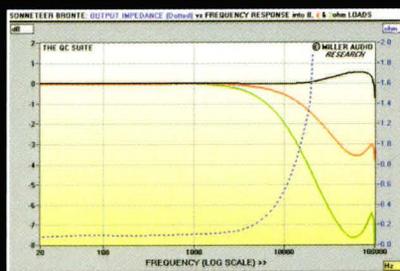
We only get a clue to the unusual nature of the Bronte from the message that's screen-printed beneath its 4mm speaker

sockets. The warning "do not connect right output terminals to left output terminals" sounds ambiguous but refers to the fact that, for reasons of efficiency and stability, the right *input* is inverted and the right speaker *output* not referenced to ground. Consequently, the 'black' right channel socket should never be hooked into a speaker that's got an earth terminal, including some recent models from Tannoy.

TECHNOLOGY

The real story behind Sonneteer's cool-running amp lies in its choice of Tripath's Class T technology. Unlike Class D 'digital' amplification, it tries to maximise

IMPEDANCE



The reactive (inductive) filter causes an increase in its output impedance at higher frequencies (dotted blue trace). In turn, this places greater dependence on the cable/speaker load impedance in determining the overall 'system response'. While it's pretty flat into 80ohm loads (black trace), there's a loss in treble output when driving lower impedance loads.

POWER OUTPUT



The amplifier will deliver 2x80W/8ohm and a full 2x125W/4ohm at 1kHz at less than 0.5% distortion. Nevertheless, because distortion increases quite markedly with frequency, there's progressively less 'clean' power available through the upper midrange and treble. At 20kHz, and the same 0.5% limit, power output is down to just 30W/8ohm.



efficiency while maintaining an equally high technical performance. At the other end of the scale, Class A amps are praised for their fine sound quality, despite the implications of high heat dissipation and low electrical efficiency.

Here, high bias levels are used to ensure the pairs of power transistors remain conducting throughout the entire cycle of the musical waveform. This bias, or standing current, is reduced in a Class B amp so each of the paired transistors conducts sequentially, in response to the positive-going and negative-going portion of the waveform. Cooler running and greater efficiency is gained in return for increased crossover distortion as one transistor picks up where the other leaves off.

Class D and the Class T variation are a very different proposition. Here the output transistors act as switches, which are either fully on or fully off. As switches cannot

dissipate heat, the technique should achieve 100% efficiency. Naturally, the continuous 'curve' of a musical waveform cannot be reproduced by single on/off states, so a Class D amp represents this signal at a very, very high frequency and then varies the length of time that these switches are held on and off. This is known as Pulse Width Modulation (PWM). Passing this signal through a sturdy analogue filter then reveals the amplified audio waveform.

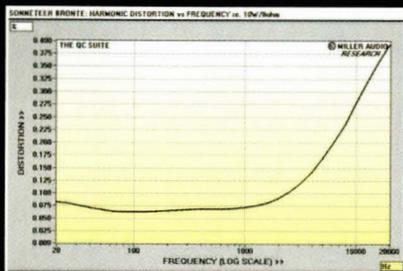
Tripath is cagey about the exact differences between Class D amps and its

Class T variation. Either way, truly 'digital' Class D amps, like the TACT Millennium, offer a more elegant approach because the switched signal is derived directly from the digital output of the player. Amplifiers based on the Tripath modules, by contrast, have analogue rather than digital inputs.

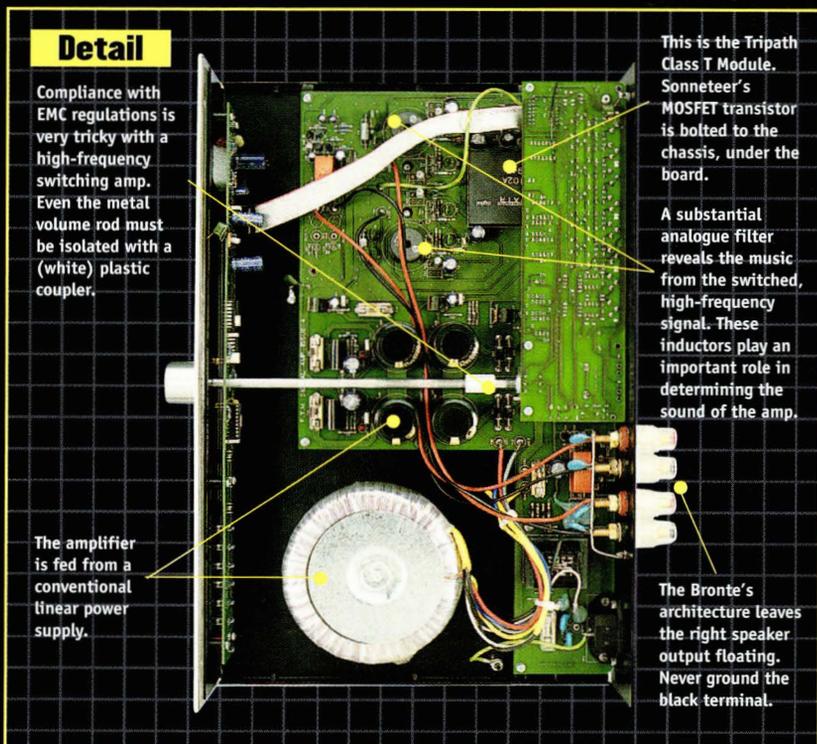
KEY FEATURES

Aside from the convenience of remote control, and lack of tone, balance or other facilities, the Bronte's key 'feature' is its Tripath TA0102 Class T processing module. ▶

DISTORTION



Distortion holds true between 0.08-0.1% from 0.1W (100mW) to 10W/8ohm though this is a little higher than the 0.02% enjoyed by ES Lab's DX-S4 amp which is based around the same technology. Nevertheless, both amplifiers incur a similar increase in distortion at higher frequencies, reaching a full 0.4% at 20kHz at modest 10W outputs.



Detail
Compliance with EMC regulations is very tricky with a high-frequency switching amp. Even the metal volume rod must be isolated with a (white) plastic coupler.

This is the Tripath Class T Module. Sonneteer's MOSFET transistor is bolted to the chassis, under the board.
A substantial analogue filter reveals the music from the switched, high-frequency signal. These inductors play an important role in determining the sound of the amp.

The amplifier is fed from a conventional linear power supply.

The Bronte's architecture leaves the right speaker output floating. Never ground the black terminal.



“This is essentially a gentle sounding amplifier, one that warms to the sound of strings rather than the splash of percussion and one that taps its feet to the rhythm of bass instead of gripping the deepest notes by the short and curlies.”

This module is driven by a conventional preamp and volume control which, basically, is what separates the Bronte from power amps that use the same Class T technology. Tripath's module samples this analogue signal and provides the very high frequency, switched output that's addressed to Sonneteer's choice of high power MOSFETs.

There are some neat tricks here, including running each channel at a fixed but slightly different rate. Attempting to accurately synchronise both channels would run the risk of high frequency 'beating' and hence increased interference. Ridding the amp of ultrasonic switching noise is key to any Class D or T design, right down to the hermetic sealing of the bonnet and casework. Also, the inductors used in the analogue filter play a crucial role in determining the amp's sound. Sonneteer uses ferrite-cored bobbin inductors rather than the toroids recommended by Tripath. It's all part of the tuning process. However, it's impossible to avoid the increase in output impedance associated with this sort of filter which is why Class D and T amps are typically fussier about speakers.

Otherwise, Sonneteer is not taking the ideals of high efficiency to its conclusion, for while the module and MOSFET switches run very cool, they are still fed from a linear (rather than switch mode) power supply. Unlike true digital amps, the S/N of the amplifier is not directly linked to the performance of the power supply. Nevertheless, the Bronte is a little 'noisier' than comparable Class A or B amps, particularly at lower output levels where the 73dB S/N ratio (re 0dBW) is about 10dB behind the norm.

PERFORMANCE

I listened to the Bronte using a mix of CD and wide bandwidth DVD-Audio and SACD



material via a Theta transport/DAC combination and Pioneer's DV-656A universal player, respectively, only to discover that the inherent character of the amplifier remains pretty much unchanged. This is essentially a gentle sounding amp, one that warms to the sound of strings rather than the splash of percussion and one that taps its feet to the rhythm of bass instead of gripping the deepest notes by the short and curlies. It's a well-worn and proven technique – soften both bass and treble and the all-important midrange tends to sound prominent, detailed and ostensibly more 'musical'. Add to this a smattering of extended harmonic distortions and an increase in background noise and the Bronte exhibits many of the hallmarks of an 'audiophile' valve amplifier, despite incorporating up-to-the minute technology.

Ryan Adams sounded every bit his charismatic self through *Somehow*, *Someday* but while the central image of his voice was impressively focussed, there was a hint of extra acid or sibilance in his voice that was missing with gentler tracks like *When The Stars Go Blue*. Nevertheless, while there's some clouding of fine detail through the busiest tracks, the Bronte never, ever ends up sounding harsh or aggressive. Rather, it seems to pick its way through the musical maze, conveying both the message and salient detail without really missing anything that seems important. It's a clever balancing act, for while other amplifiers might attempt to dig that bit deeper and stretch that bit higher, the

Bronte simply does not over-reach itself and, as such, never sounds as though it's getting into trouble.

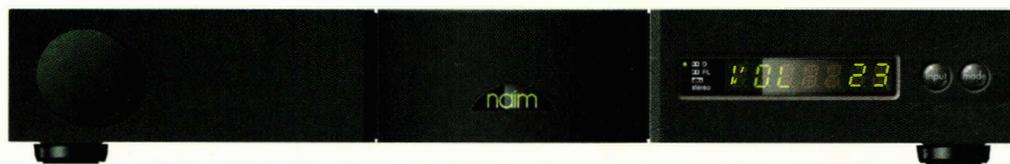
The 192kHz/2-channel DVD-A recording of Sandy Dillon's *I Am Just Blue* revealed a gentler side to her nature, as the Bronte sweetened the gravelly edge of her voice without seriously undermining the satchmo jazz style of her vocals. The power, if not the raw intensity, was obvious but presented in a way that was simply more approachable and even more intimate than is usually the case. There was, perhaps, some loss in top-end atmosphere or 'airiness' but once the ripple of applause rose from the crowd, there was no mistaking the live ambience of this recording. Once again, the Bronte succeeds by stealth rather than explicitness.

Two-channel SACD, including Barb Jung's *The Space In Between*, sounded no more open or transparent but these breathy, female vocals otherwise play right into the Bronte's hands. Expressive to the point of sounding haunting, her voice was accompanied by the rich sound of piano to terrific effect. Choose both software and speakers with care and, evidently, the Bronte has the capacity to sing.

VERDICT

The subjective strengths and weaknesses of Sonneteer's Bronte are arguably more system-dependent than competing, conventional amplifiers, but its inherent warmth and lush midband is better suited to emotive ballads and classical quartets than busier rock and pop tracks. ☺

SEE WHERE IT TAKES YOU



SERIES
5

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LIVING VOICE



Auditorium Avatar

Hi-Fi Plus *Editor's Choice*
Hi-Fi Plus *Product of the Year*
Hi-Fi Choice *Editor's Choice*

"The Avatar is a near perfect balance of size, bandwidth, efficiency and tonal refinement. Its slim lines and small footprint deliver a genuine 94db sensitivity, and excel when it comes to delivering the scale, vibrance and colour of the music. Its unobtrusive quality allows it to cut straight to the heart of a performance, unlocking the music trapped in the recording, whilst its refinement makes it equally at home with both basic and surprisingly expensive amplification."

Sale of Part Exchange and Ex-dem Items

	Sale	New
Proac Response 1SC including Target four leg stands.	£750	£1500
Impulse H2 Mahogany - boxed.	£1250	-
Cadence DS Rosewood.	£550	£1700
Living Voice Auditorium Walnut	£950	£1700
Linn Kelidh Walnut.	£390	£750
Rel Qbass subwoofer.	£200	-
Mirage M890i Canadian floorstanding speaker.	£390	-
Celestion A3 Rosewood - boxed - perfect.	£900	£1400
SJS Model 1 Line pre-amp.	£650	-
Conrad Johnson PV10 Phono pre-amp - new valves.	£700	£1400
AudioNote Soro Phono integrated - fully serviced + new valves.	£700	£1900
Cary 2A3 Stereo - new valves.	£775	-
Cary S500 Line pre-amp.	£350	-
Art Audio VP1 Phono - Special - Chrome.	£1000	£2000
Art Audio Concerto Power-amp 6550, inc Hovland caps	£1650	£2650
Art Audio Diavolo 6300B 15w - Black & Gold - inc volume pot.	£3000	£4200
Art Audio Concerto Line integrated 6550.	£1700	£2850
Canary 303 Mono power-amps. 12 months old - FAB.	£5750	£7250
Audio Innovations Series 500 Phono integrated - VGC.	£600	-
Audio Innovations Series 700 Line integrated.	£600	-
Border Patrol WE 300B Power-amp.	£3500	£4500
Croft EL34 Integrated.	£300	-
Tom Evans Groove Phono stage.	£1150	£1850
Audio Research VT100 Power-amp.	£3000	£4400
Border Patrol MB Power-supply.	£800	£1000
Wadia 861 CD player - substantial.	£5000	£7950
Helios Model 2 CD player.	£900	£1300
AudioNote DAC5	£10000	£19000
SME Series IV tonearm.	£800	£1200
Nottingham Analogue Interspace + RB300 + DNM Reca (new).	£900	£1033
Michell Orbe + RB300. 12 months - spotless.	£1700	£2450
Nottingham Analogue Space tonearm (carbon) 1yr	£325	£450

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REVIEWS – Jason Kennedy

PHONO STAGES

Amplifiers that are dedicated to phono cartridges are a must if you want to get the best from your vinyl

As you are well aware music is a deeply groovy thing, but some of you may be less familiar with what in many respects remains its finest carrier. This could be because you've never heard your favourite tracks played on a great turntable with an excellent phono stage. Phono stages have a tough job – they have to amplify the pitiful microvoltages produced by tiny coils being waved near compact magnets (or vice versa with moving magnet cartridges). These days, many amps don't have them built in, and few of those that do are up to scratch if you want to dig the most from your records' grooves. A stand-alone stage is the answer – here are six to choose from. 🎧

EQUIPMENT USED

SME Model 20A turntable & arm,
 Michell Orbe SE turntable with SME
 Series IV arm
 Van den Hul Grasshopper GLA III
 and Ortofon MC2000 MkII MC
 cartridges
 Border Patrol preamp
 Gamut D200 power amp
 Living Voice Avatar OBX-R speakers
 REL Stadium III subwoofer
 Townshend Super Tweeters
 Townshend Cryogenic speaker cable
 Living Voice Potato Wire interconnect
 Townshend Seismic Stands

MUSIC USED

Captain Beefheart & The Magic Band
Lick My Decals Off Baby
 John Fahey *Let Go*
 Massive Attack *Mezzanine*
 Rachmaninoff *Symphonic Dances*
 Joni Mitchell *Hejira*
 Him *New Features*
 Scientist *Encounters Pac-Man*

ON TEST

CLEARAUDIO BASIC SYMMETRY £495
LEHMANN BLACK CUBE £275
NAIM STAGELINE/FLATCAP2 £489/£195
REGA FONO MC £198
TOM EVANS MICROGROOVE £400
TRICHORD DINO+ £498

£495 ☎ 01252 702705 🌐 www.clearaudio.de

CLEARAUDIO BASIC SYMMETRY

Clearaudio is well into vinyl. It started out making moving coil cartridges with T-shaped profiles, progressed to turntables with parallel tracking tonearms (on rails!) and now produces phono stages. It makes a £7,500 phono stage, but the Basic Symmetry is one up from the entry level and is beautifully encased.

Unusually for phono stages, it claims automatic adjustment for different cartridges, though load impedance is quoted at 500 ohms, suggesting that gain is the variable factor. It runs from a 24V external supply that's permanently connected to the phono stage.

The model we received had a two-pin, European-style mains plug; presumably this is not the case with retail units.

Connections are high-quality RCA phonos either side of a miniature multipin socket for balanced connection to suitably terminated arm leads.

The Clearaudio is a very fine stage: it's open and clear, with great harmonic

VERDICT

SOUND
★★★★☆

FEATURES
★★★★☆

BUILD
★★★★☆

VALUE
★★★★☆

Attractively encased stage with considerable finesse, but limited features and no apparent upgrade options. However, its sound/looks complement will gain it plenty of fans.

CHECKLIST

- ADJUSTABLE GAIN **AUTOMATIC**
- ADJUSTABLE LOADING ✗
- MM/MC **MC**
- UPGRADEABLE POWER SUPPLY ✗



detail and lots of articulation. Timing is strong and Naim-esque, while image scale and depth are in the same league as the Microgroove. It doesn't have the latter's bass depth or energy, but comes close. Captain Beefheart sounds relaxed yet powerful, and there's

no shortage of detail. Subtle, dynamic and resolute, its sound matches its tasty finish.

The result was positive with the lower output Ortofon cartridge too, the body and sparkle of Fahey's guitar making a good case for this classic needle too. 🎧

£275 ☎ 0870 241 2469 🌐 www.hififorsale.com

LEHMANN AUDIO BLACK CUBE

Lehmann Audio grew out of German firm Entec, and it makes a D/A converter, digital preamp, alongside three variants on the Black Cube phono stage. The next model up, SE with matching PWX power supply, was reviewed a couple of months back and made a very good impression.

This base model comes with a power supply in the mains lead and will cater for both MM and MC cartridges. It even offers alternative input loading via tiny switches located in its base; impedance can be set at one of four levels between 80 ohms and 47k ohms. And if none of the settings suit, you can add a resistor into the circuit to perfectly match your cartridge. It's suggested that unless you're experienced in such matters that you ask a dealer to do this, but the online nature of Lehmann's UK retailing might complicate this a little.

Unusually, inputs and outputs are on either side of the Black Cube. This makes siting less straightforward, but it's hardly insurmountable.

The Black Cube kind of creeps up on

VERDICT

SOUND
★★★★☆

FEATURES
★★★★☆

BUILD
★★★★☆

VALUE
★★★★☆

Basic box and power supply conspire to create a well-balanced sound that has few limitations and plenty of good qualities. Also very flexible for the price.

CHECKLIST

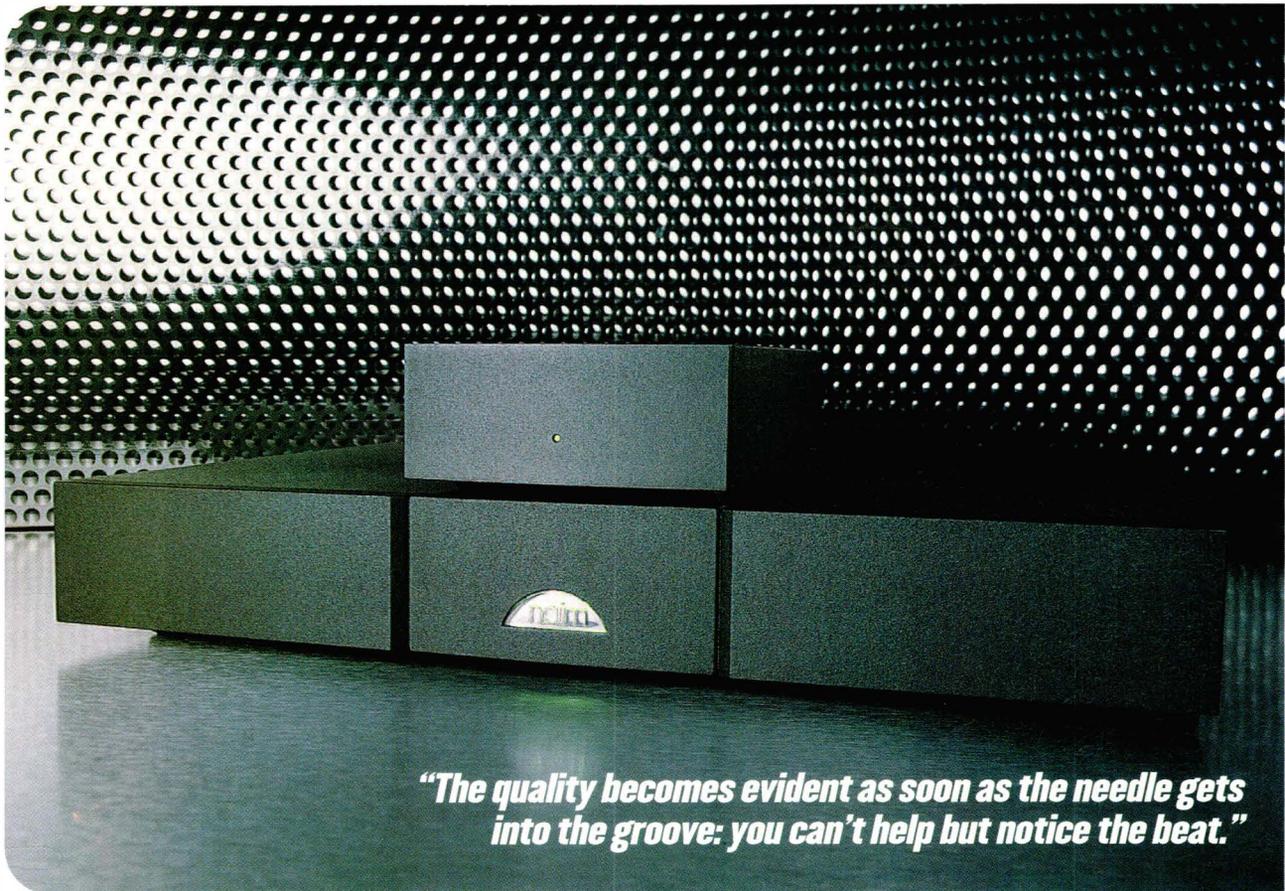
- ADJUSTABLE GAIN ✗
- ADJUSTABLE LOADING ✓
- MM/MC **BOTH**
- UPGRADEABLE POWER SUPPLY ✗



you. Initially, it sounds relaxed, spacious and well timed, but extended listening reveals a more insightful side to its capabilities. The growling bass on Massive Attack's *Inertia Creeps* takes on its full menace, while the orchestral might of *Symphonic Dances* swells more effectively than usual. It's not stunning

in any particular respect, but the mix of skills makes for engaging listening.

It's a little restrained in the energy department and timing wins over harmonic detail, but it has good bass weight for the price. And while it's a little dry tonally, you don't notice it without comparison. 🎧



"The quality becomes evident as soon as the needle gets into the groove: you can't help but notice the beat."

£195/£489 ☎ 01722 332266 🌐 www.naim-audio.com

NAIM STAGELINE/FLATCAP 2

Naim is a brand that will need little introduction to those who have been reading this or virtually any other hi-fi magazine in the last 20 years. It's very well distributed too, with a dealer network that most of its peers would kill for.

Naim is also an idiosyncratic brand. Nothing connects up quite the way you'd expect it to, and a Stageline is pretty well useless unless you have a Naim amp or buy one of its separate power supplies. In this instance we have the entry-level Flatcap 2 supply, but there are alternative PSUs to choose from, and most Naim amps owners can drive the Stageline from their existing amplifier (check with a dealer to make sure). Obviously, our value rating would be greater if a separate supply were not required.

There are three boards available for the stageline: MM and MC S or MC K – we're testing the latter. The S version is designed for less-refined MC cartridges.

It took a while to comprehend why

VERDICT	
SOUND	★★★★☆
FEATURES	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
Scores highly on the traditional Naim values of rhythm and timing, alongside bass weight and speed. Dynamics could be stronger, but if you don't need a separate supply it's a bargain.	
CHECKLIST	
ADJUSTABLE GAIN	✗
ADJUSTABLE LOADING	✗
MM/MC	OPTIONAL
UPGRADEABLE POWER SUPPLY	✓

there are phono input sockets on the Stageline but no obvious output sockets, just a multipin PSU connection. Eventually, we realised that the signal and the power share the same (supplied) cable, and the connection to the amplifier comes from the Flatcap power supply. In an all-Naim set-up, this minimises cabling.

The Stageline itself is fairly average phono stage size, but the attendant power supply is a full-width unit with a stunning array of DIN connectors along the back – don't lose the manual! Even with the manual, I had to seek professional advice on the best output to use. This is what dealer networks are for, of course.

Naim's sonic stock-in trade is rhythm and timing; its reputation was made with amplifiers that did justice to the rock music of the seventies, where the beat is relatively more important than it is with classical material. This quality becomes evident as soon as the needle gets into the groove: you can't help but notice the beat. Why this is so

is not obvious, but bass is notably tight and precise, which probably helps, and there's a sense of focus to the presentation that draws you in to rhythmic factors, where other stages major on energy.

Compared to dearer stages in the group there's a slight smoothing of harmonics, which gives a sense of focus. It sometimes seems rolled off in the treble, but the high bell on John Fahey revealed no shortcoming, just a slight loss of shine.

It's an engaging and musical device with propulsive timing that encourages you to listen and enjoy. Bass resolve is particularly keen and presumably related to the quality of power supplied by the Flatcap 2. How it might perform with a Naim-integrated as PSU, for instance, is hard to predict, but it's great to have such a clear and easy upgrade path. This, combined with its relatively low cost to Naim owners and the brand's enviable reputation, makes the Stageline look like a very appealing option. 🎧

£198 ☎ 01702 333071 🌐 www.rega.co.uk

REGA FONO MC

Although Rega has been one of the pillars of vinyl addiction for more years than most, it has only recently started to make a standalone phono stage.

Fono is powered by a basic wallwart supply and apparently no means of adjustment. Until you read the manual, that is. This encourages you to remove two screws in order to access gain and loading switches (resistance and capacitance). There's clearly something to be said for reading the manual before testing a product!

Capacitive loading is more of an issue for moving magnets than coils, but presumably both stages use the same board and there's no harm in having the option. Remember to multiply your cartridge's output millivolt figure to get closer to Rega's microvolt ratings.

Sound quality reappraised, the Rega put in a sterling performance, given its price. It's a relaxed, calm-sounding stage, with a steady hand on timing and cautious balance. High-frequency

VERDICT	
SOUND	★★★★☆
FEATURES	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆

Nicely encased budget design will suit similarly priced MCs and offers an upgrade over most, if not all, onboard phono stages. MM version costs £50 less and is even better value.

CHECKLIST	
ADJUSTABLE GAIN	✓
ADJUSTABLE LOADING	✓
MM/MC	OPTIONAL
UPGRADEABLE POWER SUPPLY	✗



harmonics are not abundant, and you appreciate the spatial skills of dearer alternatives. The Fono is best suited to modest MC cartridges and/or turntables, where a bit of smoothing helps to create a balanced result. It's pretty transparent by the standards of

onboard phono stages, however, and if you're using such a thing with an MC, the chances are you're missing out. Given Massive Attack's *Inertia Creeps*, Fono impresses with its transparency to light and shade, alongside substantial and tuneful bass. 🎧

£400 ☎ 01443 833570 🌐 www.audiodesign.co.uk

TOM EVANS AUDIO DESIGN MICROGROOVE

Tom Evans designed the phono stage that kicked off the whole separate stage thing some ten years ago, and that was the Michell Iso. After that he branched out into CD players, speakers and his own range of phono stages, of which the Microgroove is the entry model. It has a visually identical brother in the Microgroove Plus and a father figure called the Groove.

All three are based around custom-designed chips and come in acrylic cases, because of the problems that magnetic field effects have on low-level signals. While gain and loading are fixed, they can be specified at the time of purchase for any cartridge, be it MM or MC.

TEAD sees the Microgroove as a stepping stone to the Plus version with its Lithos regulation, and it uses the same DC-coupled, low-noise technology.

The Microgroove is impressive. It's remarkably good at revealing what the needle extracts from the groove, be it dynamics, imaging, bandwidth or

VERDICT	
SOUND	★★★★★
FEATURES	★★★★☆
BUILD	★★★★☆
VALUE	★★★★★

If you dig dynamics and real bass extension alongside good tonal colour, this is the one to beat. For the money, it's very strong all round.

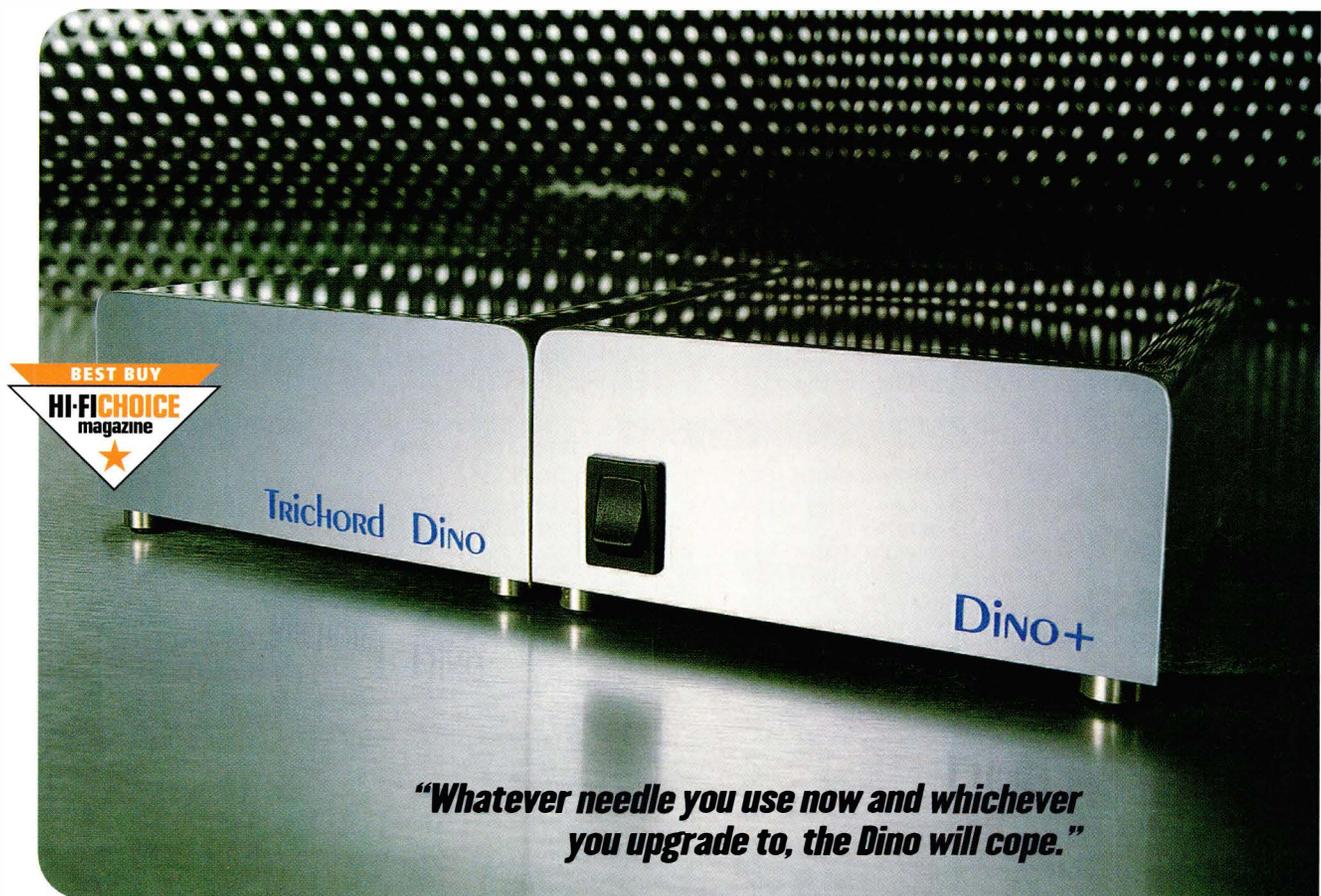
CHECKLIST	
ADJUSTABLE GAIN	OPTIONAL
ADJUSTABLE LOADING	OPTIONAL
MM/MC	OPTIONAL
UPGRADEABLE POWER SUPPLY	✓



low-level detail. The energy it produces gives music a realism and presence that other stages struggle to imitate. The bass too is stunning, deep and powerful, the tympani on *Symphonic Dances* being a great example.

It's pretty slick with harmonics too, John Fahey's guitar sounds vibrant and

alive, the zing of steel strings shimmering between the speakers. There's always acoustic space to be heard as well, the atmosphere of each recording opening up for instruments and voices to inhabit. It's not as refined as the Plus, but if your budget goes no further get one now and upgrade later. 🎧



“Whatever needle you use now and whichever you upgrade to, the Dino will cope.”

£498 ☎ 01684 573524 🌐 www.trichordresearch.com

TRICHORD DINO+

Trichord made its name with clock upgrades for CD players in the early nineties, raising awareness of the insidious digital distortion called ‘jitter’ in the process. Since then, it has effectively taken over making the electronics that formally went under the Michell (of turntable fame) banner. Which makes the Dino the natural successor to the highly successful Michell Iso phono stage which, oddly enough, was designed by a former partner in Trichord. As hi-fi circles go, that’s about as complete as they get.

Connections aside, the Dino is a different beast to the Iso. It has a broad range of adjustments for both moving magnet and moving coil cartridges, though the latter are better catered for, with four levels of load resistance and three degrees of gain. This makes the Dino one of the easiest stages in this group to tailor to the requirements of a range of cartridges. So whatever needle you use now and whichever you upgrade to, the Dino will cope.

VERDICT	
SOUND	★★★★★
FEATURES	★★★★★
BUILD	★★★★☆
VALUE	★★★★★
Extremely competent phono stage, relaxed yet resolute with very good image depth and natural balance. Great flexibility makes it a stage for all seasons.	
CHECKLIST	
ADJUSTABLE GAIN	✓
ADJUSTABLE LOADING	✓
MM/MC	BOTH
UPGRADEABLE POWER SUPPLY	✓

In standard form, the Dino costs £299 and comes with a basic power supply in the lead, but for an additional £199 you can add the Dino+ power supply. This comes in a matching case with a separate connecting lead and mains inlet, rather than a captive lead. Its claim to fame is an 88VA toroidal transformer and soft recovery rectification designed to minimise radio frequency interference (RFI).

Getting to the Dino’s sonic character proved less than straightforward: it’s a pretty transparent device and any limitations are simply because they’ve been omitted. Compared to its peers, its balance is midway between the focus of the Naim Stageline and the energy of the Microgroove. It’s smooth and revealing of dynamics, imaging, timing and tone, without emphasising any of these elements. It doesn’t have the bass power of the Microgroove or the timing of the Stageline, but it’s more than able to resolve the low-level detail crucial to building a credible sonic picture. If there’s scale on the

record it makes the most of it, and the way the soundstage on *Symphonic Dances* expands when you go from the 33rpm to the 45rpm cut can be fully appreciated.

This is a subtle yet very fine stage that disappears into the mix, leaving the music to shine through. It’s not as demonstrative as some of its peers, but there’s a lot to be said for audio components that become sonically invisible. After all, you want to hear the music, not the kit.

Joni Mitchell’s *Hejira* is a very fine album, arguably her best, and with a great cartridge and turntable driving it through the Dino+ combo, you will find it hard to argue – *Pastorius*’ exquisite bass and layered guitars create a lush backdrop to Joni’s songs of the road and the sky. I’m not sure if this album is still available on vinyl, but if it’s not it should be. This stage responds to its energy and inventiveness with panache; you know the music sounds great, but struggle to hear the phono stage. An excellent all-round buy. 🎧

PHONO STAGES CONCLUSIONS

Which phono amp should you pick? Time to take the stage...

This is a great bunch of phono stages, not a dog among them, which made picking those to recommend most strongly damn tough. To be honest, you will get great results with any of them if your record player is up to par.

But the more transparent the phono stage is, the better equipped and set up your turntable needs to be. Phono stages reveal the nasties as well as the music, so if your needle is worn or just plain brash – and some are – don't blame the phono stage for telling you. Happily, the days of rough-sounding cartridges are behind us, and you'll be hard pressed to find a moving coil that

won't sound sweet with a little care and attention in set-up.

The Rega put in a good performance given its price – certainly a big step up from the onboard phono stage in most amplifiers. The Black Cube is better still, its open and relaxed

sound earning a Recommendation. But if you really want to hear the difference a phono stage can make it's worth paying somewhat more – the Tom Evans and the Trichord are both excellent devices, the former winning out in the energy department while the latter is

perhaps better suited to those who prefer a lower key approach.

The Clearaudio and Naim products also excel in their own particular ways, and rightly have their fans. For us, though, they're marginally outshone given their price points. **B**

TRY THEM WITH THESE

TURNTABLES
SME MODEL 10A £3,411
 Gorgeous turntable and arm with build quality that would embarrass a Porsche, and it sounds superb.

AUDIO NOTE TT1 / ARM1 £594
 Great sprung turntable with decent arm will give musical results in most systems.

REGA P2 £198
 Entry-level deck that's well built and capable of great results.

CARTRIDGES
RESON ETILE £485
 Lively and detailed and refined with it, this is a very slick MC for the money.

SUMIKO BLUE POINT SPECIAL £250
 A classic bargain coil, the skeletal BPS will do justice to turntables costing a great deal more.

VAN DEN HUL FROG £999
 If you fancy tracing a bit special, this nimble groove tracer should do the trick. It will blow any CD player into the weeds.

HINTS AND TIPS

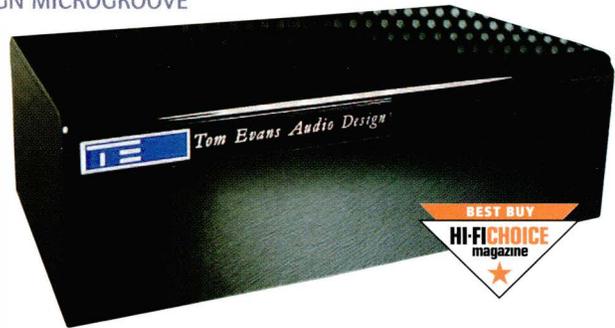
⊕ Phono stages are very sensitive devices and need to be kept well away from other components. You've got it right when all traces of hum have disappeared. Earthing can make a big difference in this respect as well, and with some stages it's worth using an interconnect with an earth tag at one end that you can screw under the ground terminal.

⊕ Mains quality also has a bearing, and it pays to do everything in your power to eliminate RF in the supply. The easiest thing is to use ferrite clamps on the cable right next to the stage, but specialist cables and filters can also be beneficial.

STAR PHONO STAGE

TOM EVANS AUDIO DESIGN MICROGROOVE

If you value the energy that music has when it's well reproduced, you'll love the Microgroove as much as we did. Some call this effect dynamics and others call it power, but what it comes down to is the essence of the music, its body and soul. This little stage times, resolves detail and images superbly too, but if you're looking for pure life, it beats its peers hands down.



PHONO STAGES AT A GLANCE

MAKE	Clearaudio	Lehmann	Naim	Rega	Tom Evans	Trichord
MODEL	Basic Symmetry	Black Cube	Stageline/Flatcap 2	Fono MC	Microgroove	Dino+
PRICE	£495	£275	£195/ £489	£198	£400	£498
SOUND	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
FEATURES	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
CONCLUSIONS	Attractive, with considerable finesse but limited features. Sound/looks complement will gain it plenty of fans.	Creates a well-balanced sound that has few limitations and plenty of good qualities. Very flexible for the price.	Strong on rhythm and timing alongside bass weight and speed. Better value for Naim users.	Will suit similarly priced MCs and offers an upgrade over most onboard phono stages.	For dynamics and real bass extension alongside good tonal colour, this is the one. Top value.	Relaxed yet resolute, with very good image depth and natural balance, and great flexibility.
Input load resistance ohms	500	47k/ 470/ 100	560	400/150/ 100/70	100	47k/ 1k/ 100/33
Dimensions (HxWxD) cm	16.5x10.2x6	4.4x11.4x10.8	5.5x12x18.6	5x18x14.5	6.5x20x11	5.8x11.2x13
Gain 1kHz dB	60	40/61	40/61	50-63	65	48-74
RIAA accuracy dB	+/-0.1	not supplied	not supplied	+/-0.1	+/-0.1	+/-0.2
Signal to noise ratio dB	40	77/69	60	70	80	60

IT LOOKS A MILLION DOLLARS.



IT IS.

When the first AV8, Arcam's ultimate home cinema processor, finally rolled off the production line, it had cost Arcam over one million dollars in R&D, tooling, licensing fees and coffee.

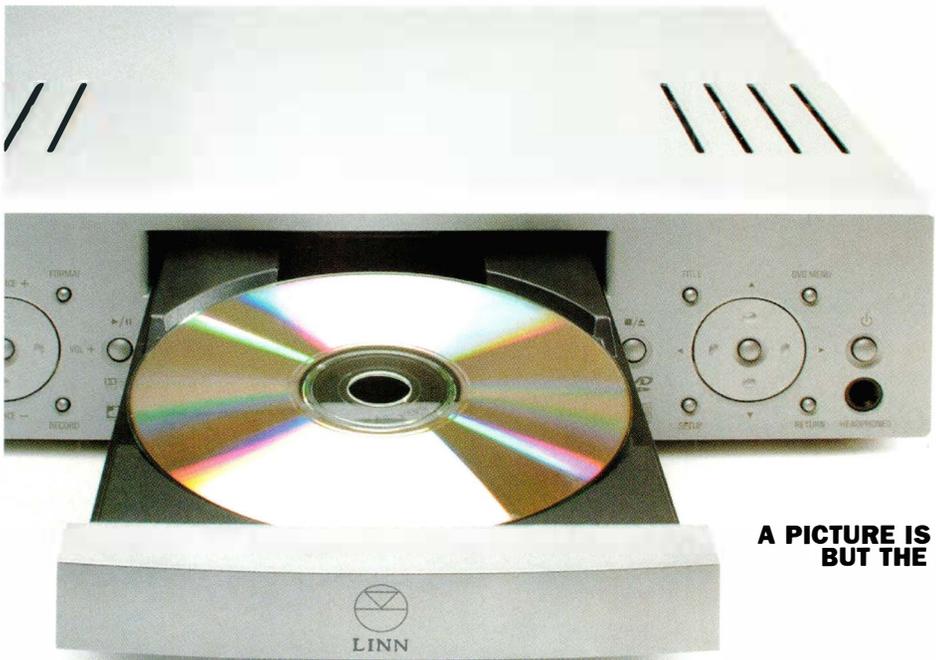
This extravagance shouldn't come as a shock to those who know Arcam.

In the 80s, when many high-end manufacturers were simply tweaking mass market CD players, Arcam invested in designing and building their own standard-setting players from the ground up. And at the turn of the millennium when most specialist DVD players were expensive rebuilds of mainstream products, Arcam again designed and built its own line of DVD players that reviewers have called "the best players available at any price".

The AV8 and matching P7 seven-channel power amplifier continue in that Arcam tradition. While it cost Arcam an absolute fortune, it will cost you far less than you might expect. For the full story, contact us for details of your nearest Arcam FMJ specialist.

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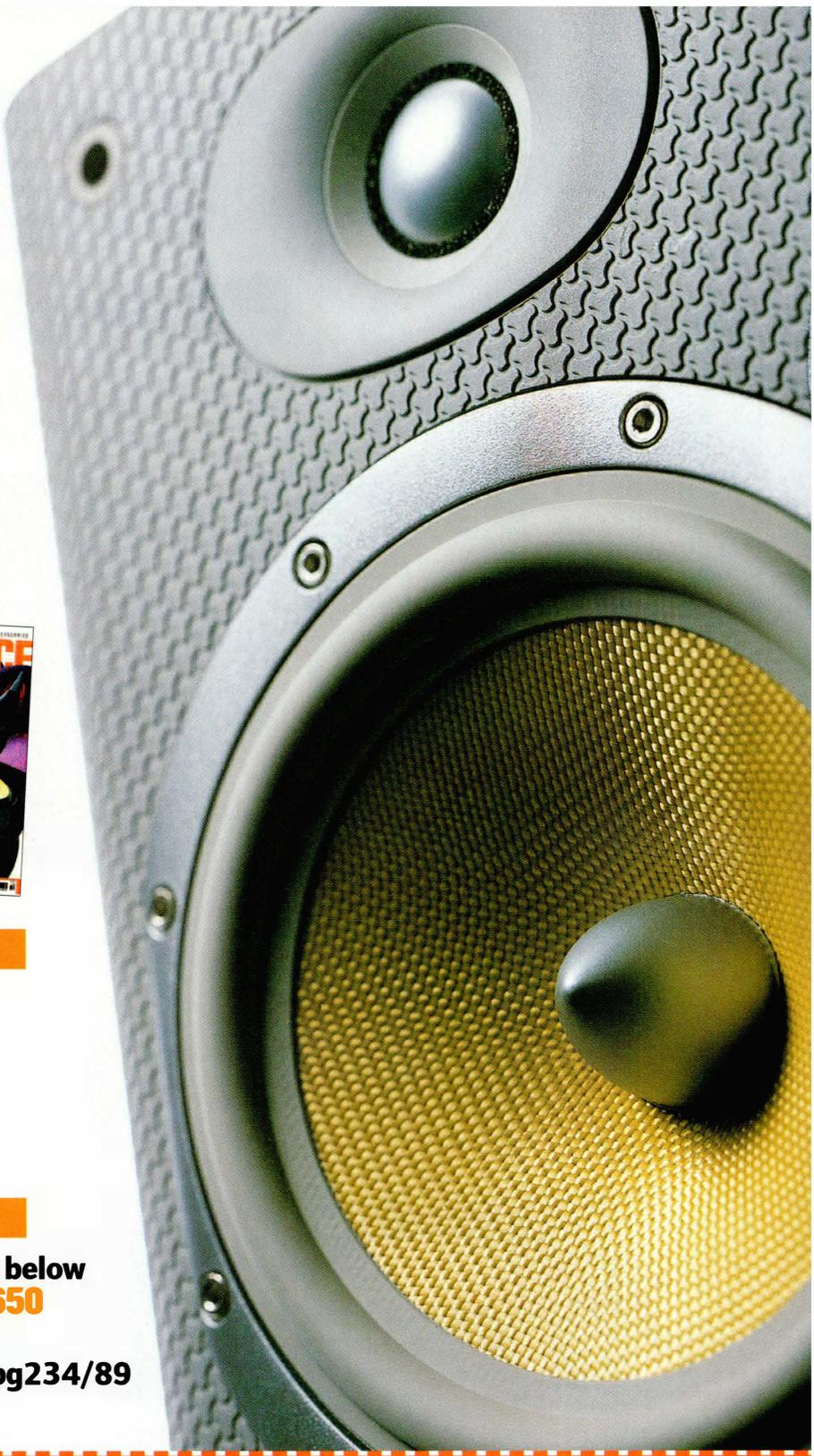
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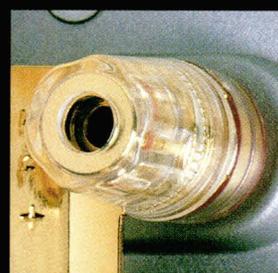
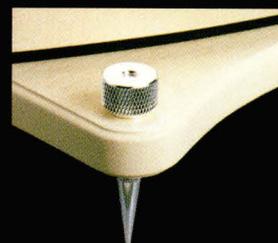
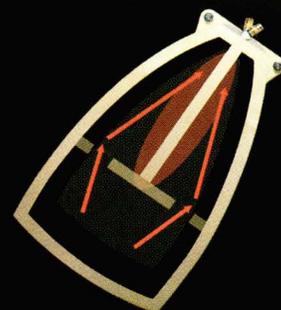
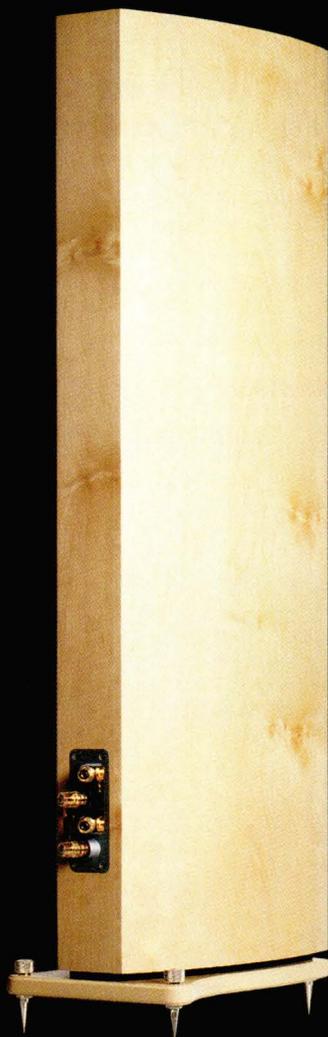
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REVIEWS – Paul Messenger

STEREO SPEAKERS

They may be relatively affordable but these speakers are highly refined examples of the hi-fi designer's art

The four speakers assembled here are right at the sharp end of the market, representing some of the leading sellers from several top brands. All have plenty of 'previous'. In other words, they represent the latest developments in a succession of similar models that have evolved down the years. Revision and updating usually takes place every two or three years, hopefully gradually refining the sonic performance, but perhaps more importantly, making sure that the cosmetics keep up with the fashion requirements of the market.

Be in no doubt, style has more influence than sonics on the shop floor. It might be a matter for some regret, but it's absolutely true that every customer (and often partners too) will eyeball the alternatives; precious few, especially towards the budget end of things, will do comparative listening. Indeed, chances are that someone contemplating one of these speakers is rather more likely to accept the judgement of magazines such as this, than back their own opinion.

Each of the four speakers represents

a different set of compromises. Tannoy's £230 floorstanding mX3-M has no need for additional speaker stands. The box might extend down to the floor, but only the top 13.5 litres are actually used

acoustically. Access is provided to fill the unused lower portion with ballast, which would seem sensible. The other floorstander, the £350 Acoustic Energy Aegis Evo Three with its extra cone driver uses rather more of its enclosure acoustically, but also has a blanked-off section and actually comes already loaded with ballast.

The Evo Three's separate plinth is a reminder that supporting a loudspeaker properly is no trivial task. The £250 KEF Q1 and £300 B&W 602 S3 are both standmounts, which have several inherent benefits, including superior dimensions acoustically, a better ratio of driver diaphragm to box panel area and superior mechanical support.

The cute little KEF has the advantage of its curved box sides, adding stiffness and spreading standing waves. There again, the more conventional B&W has the larger enclosure and main driver, the latter with a tough cast alloy frame. Each design represents its own series of compromises, and this is invariably reflected in the findings of the individual reviews. ☐

EQUIPMENT USED

Naim CDS II CD player
 Rega Jupiter CD player
 Linn LP12 turntable
 Rega RB1000 tonearm
 Linn Arkiv B, Dynavector
 XV-1 cartridges
 Magnum Dynalab MD 102 tuner
 Naim NAC52/NAP500
 pre/power amps
 Naim NACA5 speaker cables
 Kudos S100 speaker stands

MUSIC USED

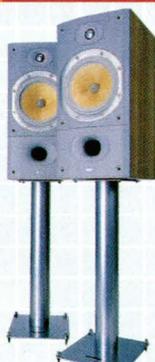
Lambchop *Is a Woman*
 Grateful Dead *From the Mars Hotel*
 Christy Moore *Live at the Point*
 Nitin Sawhney *Beyond Skin*
 Tom Waits *Rain Dogs*
 Eminem *The Eminem Show*
 Cambridge Singers/Rutter *There is Sweet Music*

BBC Radios 3 & 4 were also used extensively

ON TEST



ACOUSTIC ENERGY AEGIS EVO THREE
£350



B&W DM602 S3
£300



KEF Q1
£250



TANNOY MERCURY MX3-M
£230



£350 📞 01285 654432 🌐 www.acoustic-energy.co.uk

ACOUSTIC ENERGY AEGIS EVO THREE

The budget Aegis range has evolved – so how does the new range-topper stack up?

Acoustic Energy built its reputation on the AE1 mini-monitor, notable for its high price and metal diaphragm main driver. Metal cones remained the watchword as it moved into the mass market with its made-in-Malaysia Aegis models, this £350 Evo Three using such drivers for both its 130mm bass/mid unit and the 165mm bass-only driver.

This represents one significant change from its predecessor, which used a paper cone bass-only driver – logically enough from a performance though not a cosmetic point of view. Also significantly improving the cosmetic appearance, good-quality vinyl woodprint now covers the front panel, with a nicely bevelled edge.

A compact 'two-and-a-half-way'

VERDICT	
SOUND	★★★★☆
EASE OF DRIVE	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
There's plenty of solid engineering at a very sensible price here. The sound is not entirely neutral, but manages to sound both open and laid back, with warmth, richness and solidity.	
CHECKLIST	
CLOSE TO WALL	✗
WIDTH	19cm
HEIGHT	93cm
DEPTH	24cm
BI-WIRABLE	✓

floorstander, the Evo Three uses the same main and treble drivers as the standmount two-way Evo One (a Best Buy in *HFC 226*), underpinned by the rather larger bass-only driver. It's an arrangement that makes good sense, as the smaller (130mm cast frame, 100mm cone) bass/mid driver will give better integration with the tweeter through the crossover region, while the larger (165mm cast frame, 120mm cone) bass driver provides the air-moving capabilities needed at low frequencies.

Both drivers operate in their own separate reflex-ported enclosures, so the two ports will make their own contributions, which all adds up to a complex amalgam of four sources with various phase relationships through the bass region. A disadvantage is that the small bass/mid driver may be the limiting factor in power handling, especially with bass-heavy material.

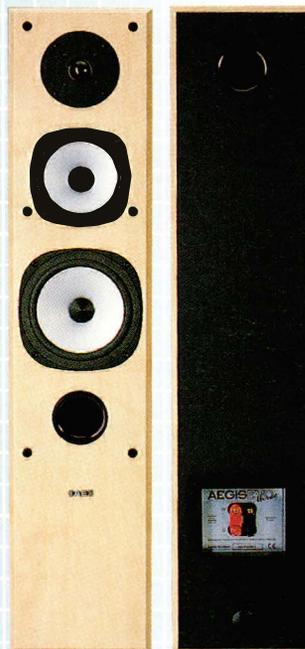
Unusually, the Evo Three comes with mass-loading fitted in the lowest box cavity. It's also supplied with a plinth and decent 8mm spikes to improve stability and enhance the appearance. The tweeter has a 25mm soft dome and a metal faceplate, while the rear panel carries twin terminals and a port.

The little Evo One was balanced for free space siting, and the same would certainly seem to be true for the Evo Three. The first impression – always an important clue – was of a very solid and well-grounded sound, with a warmth and richness which is unusual among budget speakers and similar to that more commonly found with larger, costlier models.

It's all a little restrained and laid back, though impressively clean, smooth and even-handed through the top half of the band. The extra weight and warmth, however, does make for a rather 'heavy' overall character – this is not a speaker that sounds particularly lively, nor could it be described as light on its feet.

This Aegis Evo Three certainly looks the business, and it supplies plenty of solid engineering at a very sensible price. The sound quality is a little less cut and dried: its character isn't entirely neutral, but will nevertheless have its own appeal – at once open, yet laid back, with a warmth, richness and solidity that many will like. 📍

KEY FEATURES



In the quest to get the best of both worlds, the Aegis Evo Three cleverly combines a 165mm bass-only driver with a 130mm bass/mid driver. Fine build content includes high class alloy cone/frame drivers, a separate plinth and factory-fitted mass-loading.

MEASUREMENTS

Our original Aegis Three's in-room averaged balance was unusually smooth with fine bass extension. Retested 15 months later, newer samples were substantially different and significantly less flat and even. 18 months further on, this new Evo 3 is different again, smoother than those second samples though still not up to those originals.

The mid and treble are impressively flat and smooth, but there's still too much upper bass energy (100-200Hz). Elsewhere, the low bass has better alignment than before, but the sensitivity registers around 89dB against claims for 90.5dB. Still, the bass goes deep and the amp load is reasonably conservative, staying above five ohms throughout.



£300 ☎ 01903 750750 🌐 www.bwspeakers.com

B&W DM602 S3

Classic big boned standmount now sounds better than ever

The dominant force in specialist hi-fi loudspeakers today, B&W has serious-quality speakers to fill any market niche you care to think of. The 600s have been its bedrock budget range for many years, the latest Series 3s featuring a finish option dubbed Light Oak Sorrento, which is very much in tune with current British tastes. This combines a light grey moulded front baffle and main driver surround, with a pale vinyl woodprint wrap and back.

Reviewed as part of a surround sound package in *HFC* 224, this 602 S3's heritage goes back more than 20 years. When it first appeared, this stereotypical 20-litre, two-way standmount looked attractively compact; in today's company it looks decidedly bulky. Since the laws of acoustics are unchanged (indeed, remain unchangeable), this is basically a reflection of how fashion has been driving the speaker marketplace.

At £300 per pair, the 602 S3 is hardly the most stylish offering around, but the point here is to offer the best sound quality for the money, and the bulkiness of this speaker is largely determined by the decision to use a solitary and relatively large main driver.

This has a 180mm cast frame and 140mm diameter Kevlar cone – significantly bigger than the others in this group. This is port-loaded by a flared and stippled front port (bungs supplied as an option), and operates

MEASUREMENTS

Sensitivity meets the manufacturer's spec at a healthy 90dB, while the amplifier load is an easy enough five to six ohms through the power-hungry parts of the spectrum, but dips to around three ohms at high frequencies.

The in-room, far-field averaged balance is very impressive overall, holding within +/- 4dB limits from 25Hz right up to 15kHz. Interestingly, the traces were significantly smoother using the shorter stands, and a very worthwhile improvement over the 602 Series 2 model tested in 2000. The only real departure from 'flatness' is a dip around the crossover zone (2-3.5kHz), while the relative treble level is just a shade stronger than average.

alongside B&W's tube-loaded 25mm metal dome tweeter. Twin terminals supply the usual connection options. Because the box is quite tall for a standmount, shorter-than-usual 450mm stands look and work best, bringing the tweeter up to seated ear height.

The B&W's relatively large bass/mid driver was immediately obvious in the extra dynamic grip and authority this speaker brings to the party, compared to the others in this group, plus a general lack of strain that implies rather superior headroom too.

The bass is particularly impressive and a substantial improvement over its S2 predecessor. It goes deep yet stays crisp and even along the way, providing a firm and propulsive foundation under the rest of the music and cleverly avoiding the 'thump 'n' boom' syndrome that's all too common among

KEY FEATURES



New light grey mouldings ginger up this timeless design. A metal dome tweeter features Nautilus-style tube loading, while a relatively large bass/mid driver has a shiny cast frame, Kevlar cone and grey rubber surround. The front-mounted port is gas-flowed and stippled to avoid turbulence.

VERDICT

SOUND



EASE OF DRIVE



BUILD



VALUE



Not the most fashionable speaker around, but the new finish helps and the solid sound quality totally vindicates this timeless design with a rare combination of grip, authority and headroom.

CHECKLIST

CLOSE TO WALL	✗
WIDTH	23.5cm
HEIGHT	49cm
DEPTH	29cm
BI-WIRABLE	✓

speakers at this sort of price.

The midband too is essentially neutral, though a touch 'pinched' and perhaps a little too laid back for some tastes. Some might prefer a more vigorous, punchier projection, but the 602 S3 has the sort of restraint that should suit budget electronics rather well. That said, the top end might be a shade too obvious for the same sort of kit, though it's probably clean and clear enough to get away with it.

It's hard to argue with the 602, which in outline has long been one of the all-time great all-rounders, and becomes increasingly refined with each successive generation, irrespective of the foibles of fashion. 🟡



£250 ☎ 01622 672261 🌐 www.kef.com

KEF Q1

The baby Q now sports a new driver array and a curvaceous cabinet

KEF's Q-series, based on the company's proprietary Uni-Q coaxial drive units, has been around for more than decade, but has recently been radically revised, the new range featuring substantial changes to both the driver and enclosure.

The smallest model in the range, this Q1 standmount is a direct replacement for the Q15, an established *HFC* favourite that picked up Recommended flags in both 1999 and 2000. The bad news is that the price has climbed by £50 to £250. But in place of the 15's chunky little squared-off box, this Q1 has deliciously curved and tapered sides, which not only look unusually attractive, but also improve overall stiffness and avoid the focusing of

VERDICT	
SOUND	★★★★☆
EASE OF DRIVE	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
Looks very stylish with its curved sides. A classy, if slightly small-sounding, standmount, with fine midband coherence, the Q1 works particularly well when sited close to a wall.	
CHECKLIST	
CLOSE TO WALL	✓
WIDTH	22cm
HEIGHT	34.5cm
DEPTH	30cm
BI-WIRABLE	✓

internal standing waves created by rectilinear boxes.

Available in a choice of maple, dark apple or black ash finishes, the vinyl-finished box is further decorated by a moulded 'bump' that covers much of the top surface, matching the curve of the main driver frame. This has a 165mm pressed steel frame (hidden beneath a trim ring) and just three fixing holes, while the bass/mid diaphragm is a 125mm plastic cone. In place of the central polepiece here, however, there's a small (19mm) metal dome tweeter. Mounting the tweeter coaxially has the benefit of aiding crossover integration, avoiding the 'lobes' that are created by separate spaced sources. A large port provides reflex loading at the front (bungs are supplied for tuning) and twin terminals are fitted on the rear.

As the in-room measurements predicted – and indeed as we found

with its Q15 predecessor – the Q1 is happiest when its bass output is being given some assistance from a nearby wall. While it's obviously no deep bass excavator, this fills in the bottom end very neatly and happily does so without any unwanted tendency to 'thump' on bass-rich material.

The Q1 does in truth sound a little 'small', probably because it's somewhat mid-oriented. There's limited deep bass here, and the extreme top end seems a little lacking in sparkle too, so the ears naturally tend to focus in on the midband, which attracts the attention because of its impressive coherence.

Speech is particularly convincing, in the way an individual's voice sounds 'all of a piece' and largely free from coloration and 'shut-in' effects. For this reason it's no surprise that KEF's Q-series has done consistently well in multichannel tests for the effectiveness with which dialogue is reproduced.

Placing any speaker close to a wall is apt to increase unevenness and colorations, but the Q1 is particularly adept at avoiding this. At the time of writing, the Concertgebouw Orchestra is performing Mahler's magnificent *3rd Symphony* live from the Proms, and the far end of the room is filled with beautiful music with no trace of boxiness. The Q1 more than maintains the honourable tradition set by its predecessor. 📍

KEY FEATURES



Compact standmount has a cute-looking – and functional – enclosure with curved sides. A curved moulding over the top emphasises the styling theme, while a silver finish focuses attention on the coaxial tweeter in the centre of the Uni-Q two-way driver.

MEASUREMENTS

One bonus of a measurement regime is the way it identified the crossover problem on our initial sample. That sorted, sensitivity is a generous 90dB, though that is achieved through a quite demanding impedance characteristic, which regularly drops to four ohms.

Like the Q15, close-to-wall siting seems preferable here, filling in the midbass region quite effectively, even though this does create some extra unevenness. Reflecting the coaxial driver, a major strength of this speaker is the smoothness of its crossover transition, with the main driver operating right up to 3.5kHz. By the same token, the treble starts to roll off determinedly above 10kHz under far-field conditions.



£230 01236 420199 www.tannoy.com

TANNOY MERCURY MX3-M

Popular low-cost floorstander reaches its third generation with aplomb

Three years on from the Mercury mX range, Tannoy has introduced the mX-M line-up as its effective replacement. The speakers look virtually the same as their predecessors, and also hit exactly the same retail price points, but have actually undergone a number of changes. These are mostly in the fine details, but also embrace moving the production from Taiwan to Malaysia.

The mX3-M retains its highly competitive £230 price tag, which makes it the least expensive model in our group, despite being a floorstander with no need for stands. Inevitably, therefore, this is a no-frills package, and notwithstanding the change of sourcing, the vinyl woodprint still looks rather better to the eyes than it feels to the touch. The speakers are now available in a choice of cherry or dark oak finish, with a conventional charcoal grille cloth replacing the striking silver grey of its predecessor.

The drivers are flush-mounted into the front panel, smoothing the baffle and adding a touch of class. The main driver has a modest 110mm ceramic-coated paper cone, no longer the distinctive white of its predecessor, mounted in a moulded 145mm plastic frame. The tweeter is a 25mm soft dome device, its faceplate partly cut away to reduce the gap between the two drivers.

The main driver doesn't use all of the box, and mass loading may be added to the blanked-off lower cavity. The enclosures are fitted with front ports,

MEASUREMENTS

A thoroughly competent loudspeaker, the mX3-M delivers a decent sensitivity of around 88dB, despite a small main driver, and an 'easy' impedance which only dips briefly below six ohms at 200Hz and 3.5kHz.

Ultimately, this is a small loudspeaker, and with the port tuned to 48Hz, there's little in-room bass extension below 50Hz. But the overall balance is very good – a little forward around 1kHz and a tad restrained through the presence region, 1.5-3.5kHz, but quite smooth overall. The bass alignment is very well judged – ports open if positioned away from the wall, closed if close to the wall.

but arrived with these blocked by foam bungs which heavily damp the port output. Modest 6mm spikes are supplied, with a rather small footprint from a stability point of view. The box uses tongue-and-groove joints, plus internal bracing and mass damping. Twin terminals permit bi-wire/amp operation, with short gold-plated links.

Starting off with the mX3-M well clear of walls, this speaker's fine midband delicacy, evenness and transparency was immediately obvious across all types of programming. Speech is notably open, natural and expressive, bringing out regional accents in a very convincing manner.

With the port bungs removed, the sound did seem just a little lightweight and lacking in authority and bass drive – a situation which was largely rectified by moving the speakers back towards

KEY FEATURES



A simple two-way with a modest size bass/mid driver, this very compact floorstander is really more like a standmount with its own integral stand, since only the top half of the enclosure is acoustically active. Mass loading may be added to the base for improved stability.

VERDICT

SOUND



EASE OF DRIVE



BUILD



VALUE



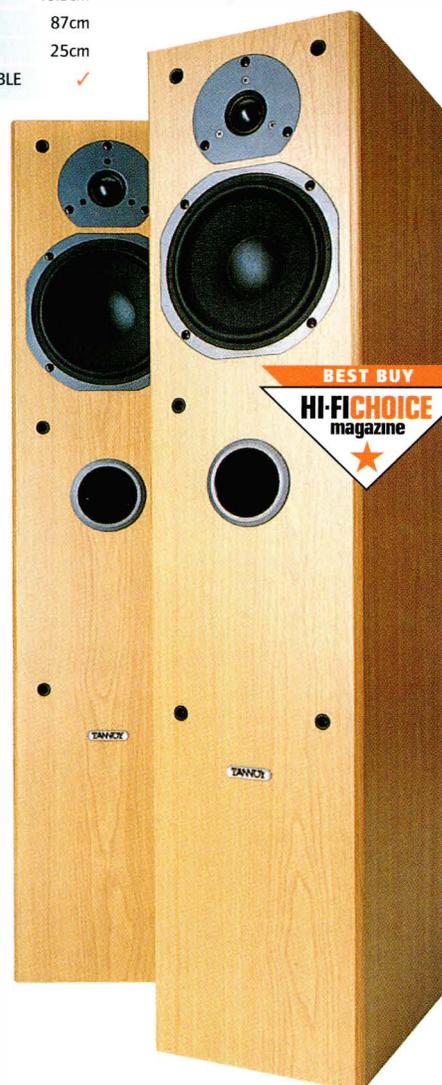
Could be more dynamic, but is beautifully balanced and voiced. This smooth design is smartly understated, with low midband coloration and good transparency at a very modest price.

CHECKLIST

CLOSE TO WALL	×
WIDTH	18.5cm
HEIGHT	87cm
DEPTH	25cm
BI-WIRABLE	✓

the wall and plugging the ports. Now Gomez's *In Our Gun* took on a rather more solid quality, while Phil Lesh's bass lines on *Mars Hotel* came across more convincingly and purposefully than before.

Granted, this isn't the most dynamically exciting speaker around, and it certainly isn't the first choice for power-crazy dance enthusiasts either. But it is beautifully balanced overall, expertly voiced through the midband, with a delightful lightness of touch. By any standards it's a smooth and highly accomplished design, with modest coloration and good transparency, so the fact that it's also very modestly priced is an added bonus. **C**



SPEAKERS CONCLUSIONS

A hotly contested group throws up some real sonic stars

All four of these speakers are developments of already well established and successful models, so it's hardly surprising to find them an impressive group performance-wise. What's interesting, however, is how obviously each speaker reflects the basic ingredients involved in its particular construction.

All speakers – even the relatively simple, low-cost designs featured here – involve a complex series of design choices. Key factors include enclosure size, shape and type, and main driver size and type.

Compare, for example, our two

TRY THEM WITH THESE

CD PLAYERS

NAD C5411 £330
Grey it may be, but this is an engaging and detailed sounding player that belies its price tag.

MARANTZ CD6000 OSE LE £300
Mildly tweaked variation on the 6000 theme delivers a detailed and well rounded sound which is at home in any musical context.

ROTEL RCD-02 £375
A well-balanced CD player from Rotel's latest budget range. Sound is bold yet refined, and unlike Rotel kit of old it comes it silver too!

AMPLIFIERS

ARCAM DIVA A65 PLUS £370
Arcam's entry-level amp is highly articulate and fluent sounding – a fine match for any of these speakers.

AUDIO ANALOGUE PUCCINI £450
Superb finish distinguishes AA's entry level model, which also delivers a sonic performance way out of its class.

ROTEL RA-02 £349
An agile and capable slimline designed with a powerful, detailed sound that draws you into the music.

HINTS AND TIPS

- ⊕ Standmounts require proper stands for stable support and to get the drive units well off the floor.
- ⊕ Choice of stand can have a big influence on the sound.
- ⊕ 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.
- ⊕ Expect speakers to improve steadily over the first 100 hours or so.
- ⊕ Be sure to use decent speaker cable if you want your system to perform at its very best.

Best Buys, the Tannoy and B&W. The former has a smallish paper cone main driver with moulded frame, the latter a much larger Kevlar cone and cast basket. And while the Tannoy has the more delicate voicing through the presence band, where the B&W is a

touch muffled and nasal, the latter is altogether more muscular and dynamically convincing through the lower registers.

By the same token, the curvaceous little KEF Q1 is physically the smallest in the group, and not surprisingly also sounds

the smallest in terms of bass weight and extension. It's also the one best suited for close-to-wall siting, even without using the supplied port-blocking bungs. If the others have to be placed close to a wall, experiment with blocking up their ports to avoid bass excess. ⊕

STAR SPEAKER

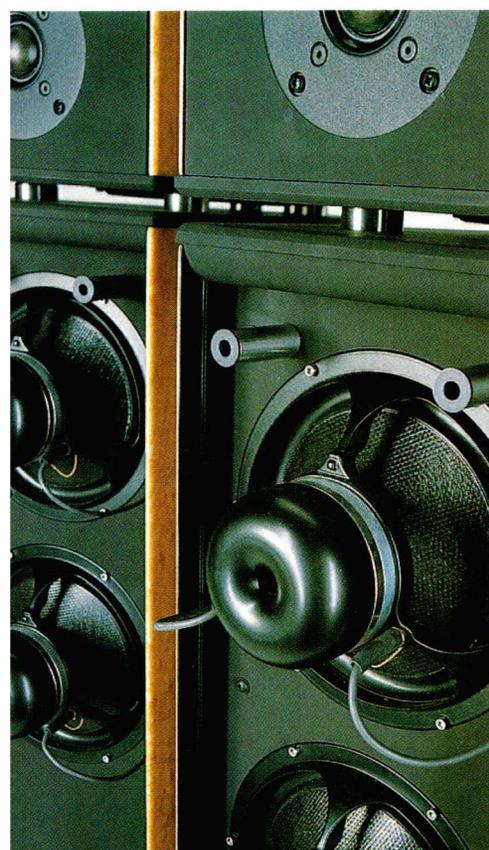
B&W DM602 S3

The basic principles of loudspeaker design have changed very little down the years, though the speakers themselves have tended to shrink and become fashion victims. Not so B&W's DM602, whose refusal to make such compromises is proof positive that a decent size main driver unit in a good size standmount box is still a great formula for filling the lounge with generous and genuine high fidelity sound.



SPEAKERS AT A GLANCE

	MAKE	Acoustic Energy	B&W	KEF	Tannoy
	MODEL	Aegis Evo Three	DM602 S3	Q1	Mercury mX3-M
	PRICE	£350	£300	£250	£230
	SOUND	★★★★☆	★★★★★	★★★★☆	★★★★☆
	EASE OF DRIVE	★★★★☆	★★★★☆	★★★★☆	★★★★☆
	BUILD	★★★★★	★★★★☆	★★★★☆	★★★★☆
	VALUE	★★★★☆	★★★★★	★★★★☆	★★★★★
	CONCLUSIONS	Solid engineering at a sensible price. Not neutral but sounds both open and laid-back, with warmth, richness and solidity.	The sound quality totally vindicates this timeless design, with a rare mix of grip, authority and headroom.	Classy if slightly small-sounding with fine midband coherence, works particularly well close to a wall.	Beautifully balanced, with low midband coloration and good transparency. Could be more dynamic.
	Dimensions (WxHxD) cm	19x93x24	23.5x49x29	22x34.5x30	18.5x87x25
	Weight kg	16	10.5	6.4	9.6
	Sensitivity dB/2.83V	90	90	90	88
	Bass extension 6dB in-room	25	23	30	30
	Impedance MIN, ohms	5	3	4	5



“The bottom line is a thoroughly impressive speaker, which more than matches the Bishop at a less extravagant price.”



EDITOR'S CHOICE
HI-FI CHOICE
magazine
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EXCLUSIVE

Myth or magic?

Wilson Benesch's cunning cocktail of carbon-fibre-composites, metal and MDF is no mythical beast

According to the Greek myths, the Chimera is a fire-breathing beast, part lion, part goat, part serpent. And while I'm sure the pronunciation (phonetically 'kim-ear-a', according to my Shorter Oxford) creates its problems in some export markets, it's still a great name for this Wilson Benesch loudspeaker.

The company is a relatively young, Sheffield-based operation, specialising in upmarket products and advanced materials such as carbon fibre composites (CFCs). Its earliest products were turntables and tonearms, but following the successful ACT One, loudspeakers have become the most important part of the WB operation.

This £15,000 Chimera represents a halfway house between the original ACT One or Two, and the still more costly and elaborate Bishop (HFC 189). It's a very attractive-looking speaker – tall, but very slim, with an intriguing (and incidentally very functional) shape, plus an interesting mixture of materials. Like the Bishop, the Chimera has a complex twin cabinet construction, in this instance using a combination of CFC and aluminium alloy for the sides and back, with MDF for the front panel.

In 'standard' £15,000 form, the metal sections, comprising the front half of each side, plus the spine, are finished in silver or black powder coat. Top-quality real wood veneer can be laid on the metal for an extra £1,762 (an extravagant price for a difficult and expensive process, carried out by a company which also veneers dashboards for Rolls-Royce cars).

While the CFC and alloy ensure excellent structural rigidity, the variable width helps to spread standing wave frequencies, and the pointed back avoids directly reflecting output from the rear of the drivers. The top surface is dramatically tilted and fitted with one of WB's 'bishop's mitre' CFC mouldings. And the whole speaker is fitted with a massive steel plate, accommodating four substantially wicked spikes, ensuring good stability and virtually nailing the speaker to a wooden floor.

Though basically a 'two-and-a-half-way'

VERDICT

Wilson Benesch Chimera loudspeaker
£15,000

▲ A lovely clean and open-sounding speaker, especially good at low levels. Elegant-looking too.

▼ A very demanding amplifier load. Could have more dynamic tension, and more mid-bass drive and urgency.

CONCLUSION

A very elegant-looking speaker with lovely sonic delicacy, but also plenty of weight. It offers a very special mix of attributes, particularly a low listening levels.

KEY FEAT RES

► Two-and-a-half-way configuration ensures fine temporal coherence, at some expense of power handling.

► In 'standard' form, the metal sections are finished in silver or black powder coat. Top-quality real wood veneer can be laid on the metal for an extra £1,762.

► While the CFC and alloy construction ensures excellent structural rigidity, the variable width helps to spread standing waves and the pointed back avoids directly reflecting output from the drivers' rear.

► The Tactic driver frame is machined from solid aluminium to give a very open profile behind the diaphragm, while the tiny motor uses powerful rare earth magnets. The cone material is a woven Isotactic polymer.

design, there are no fewer than seven drive units in each speaker. Four Tactic bass drivers are used in twin 'clamshell isobaric' pairs, mounted face-to-face in the lower enclosure, and port-loaded through the base. The main purpose of the isobaric approach, where twin drivers are close-coupled by a small air-gap and operate in acoustic series, is to reduce the effect of internal box colorations more effectively than a single diaphragm.

Two more Tactics are in the upper enclosure. The visible one, sited above the 25mm soft dome tweeter, operates as a regular bass/mid driver. The other, facing downwards and firing into the narrow gap between the enclosures, is actually an auxiliary bass radiator (ABR), acoustically coupled to the forward-facing main driver, and the mechanical equivalent of a reflex port. This implementation is rather more sophisticated than usual, because it uses a complete drive unit with damping resistor to provide controlled electromagnetic damping.

The Tactic driver is unique in several respects. The frame is machined from solid aluminium, and shaped to give a very open and unobstructive profile behind the diaphragm, all the more so because the tiny motor structure uses powerful but very compact rare earth alloy magnets. The cone material is a three-layer, self-bonding woven Isotactic polymer, which gives the driver its name.

Like its big brother the Bishop, the Chimera sports a complex twin cabinet construction, in this case using a combination of carbon fibre composite, aluminium alloy and MDF.

MEASUREMENTS

Sensitivity is unremarkable, at around 87dB for a 2.83V input. There's loads of low bass here, to be sure – too much for strict neutrality, it could be argued – but the price is an amplifier load that is very demanding indeed at low frequencies.

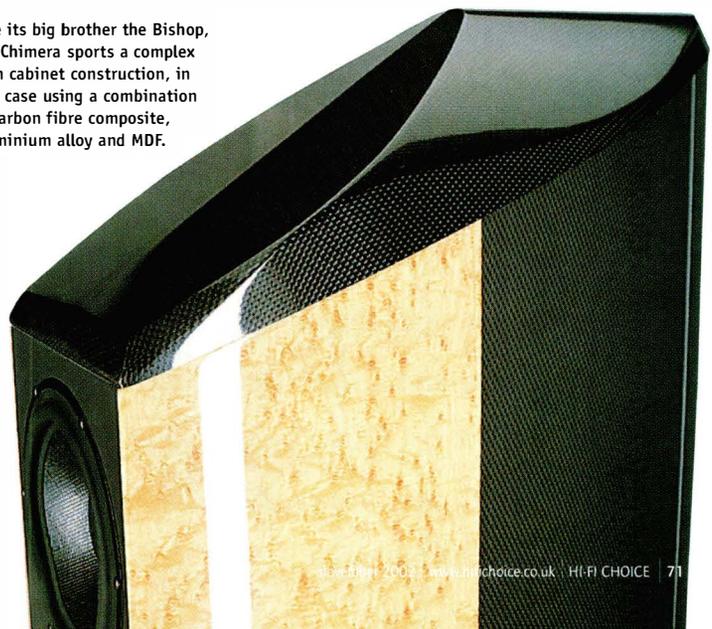
The discovery that the impedance dropped to two ohms at 20Hz prompted a phone call to Sheffield to check this really was the case. "Yes indeed", came the response, pointing out that people buying speakers costing £15,000 a pair would be using comparably high-quality amplifiers. Fair enough, but it does mean that Chimera users should not really attempt to use valve amps.

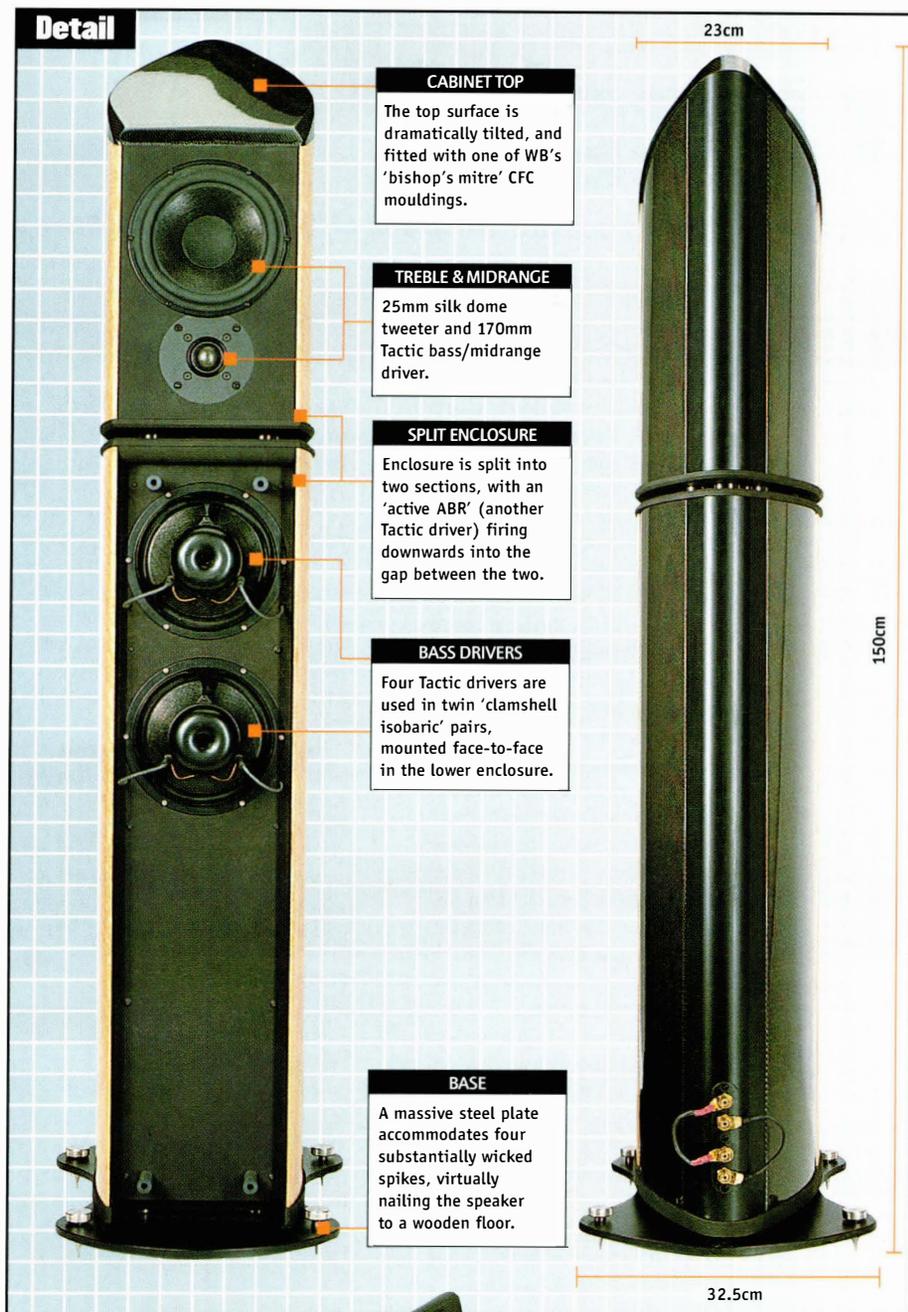
The in-room far-field averaged traces show a mostly flat balance, holding within impressively tight +/-4dB limits 60Hz-15kHz, and with impressive smoothness above 400Hz. Things are less smooth through the upper bass and lower midband, 60Hz-400Hz, while the low bass, 25-60Hz, is arguably a little too strong.

PERFORMANCE

This is unquestionably a top loudspeaker – as it should be, considering the price. The first impression – always a useful guide – is of a lovely delicacy and lightness of touch, despite the fact that this speaker has massive deep bass weight. In fact, it gets much closer than most to the ideal of combining a small speaker's delicacy and imaging with a large speaker's weight and welly.

It's a combination of qualities that





“The first impression is of a lovely delicacy and lightness of touch.”

uncoloured here, to be sure, but it also has a little too much deep bass wallop, and not quite enough mid-bass thump and drive. While the dynamic range is exceptionally wide, dynamics themselves do lack a little vigour and tension.

The slim enclosure assists in creating fine 'out-of-the-box' stereo imaging, with fine precision, focus and depth perspectives. Furthermore, by positioning the midrange driver slightly above the seated ears, the sound somehow fills the room more effectively.

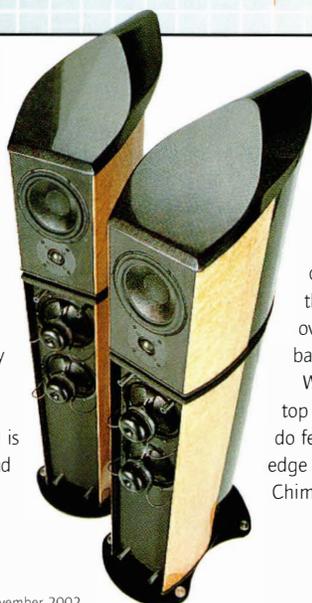
The simplicity of a two-and-a-half-way approach probably helps the Chimera achieve its impressive coherence and good timing, but this does mean the topmost bass/mid driver has to work rather hard, and this is likely to limit the ultimate attainable loudness somewhat.

The bottom line here is a thoroughly impressive speaker, which more than matches the Bishop at a less extravagant price. The super-clean enclosure signature is a major plus, aided by the isobaric bass, eliciting loads of detail even at whisper-quiet levels. But note that the amp load is very demanding, effectively restricting users to high power, high quality solid state amplification.

Wilson Benesch 0114 285 2656
www.wilson-benesch.com

attests to the effectiveness of the cabinet construction, in terms of its lack of coloration and boxiness. Most speaker enclosures tend to store some of the energy generated by the drive units, releasing it after the note in such a way as to limit the overall dynamic range and 'smear' low-level information. But there's an exceptional freedom from such 'overhang' here, which is highly unusual and a very real plus.

Low-level reproduction is probably the Chimera's greatest strength, and is something it achieves effortlessly and without resorting to 'hyping' the



balance in any way (that is, by incorporating a degree of 'forwardness' in the presentation to highlight presence detail). The Chimera isn't by any means laid back, rather it treads the delicate line of true neutrality with considerable deftness and poise. In this regard, it has a definite edge over the Bishop samples we reviewed back in 1999.

While I prefer the Chimera's mid and top end to those particular Bishops, I do feel the larger model had a slight edge through the bass region. The Chimera sounds exceptionally clean and

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B&W NAUTILUS 800 £11,000
Great power, grip and dynamic range from the most elegant-looking of all the Nautilis.

JMLAB MEZZO UTOPIA £7,799
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EXCLUSIVE

Halo effects

Parasound's THX-certified Halo combo aims to bring high-end looks and sound to the price-conscious

At once both proto-Krell and hyper-NAD, Parasound makes some exceptional electronics products, but is often overlooked (especially in the UK) in favour of more attractive, higher-profile brands. The new Halo range might well change all of that.

The range starts with the £750 P3 preamplifier and the matching THX Ultra 2-certified stereo A23 power amplifier, also £750. There are DVD-Audio/Video players, multichannel power amps and more on the way. But it's the Halo style that makes you wonder why other amps at the price aren't this well made. For £1,500 – disregarding the cost of importing – the Halo kit stands out like a Ferrari amid a car park full of Vauxhalls. It's sleek, solid and stylish, with natty blue backlit buttons and a blue fluorescent display in the centre of the P3's front panel. Perhaps the glowing red Parasound logos are a bit garish, but the overall look is excellent.

The P3 preamp has four line-level inputs, but cleverly one can be automatically switched to MM phono if a turntable is plugged into the aux socket. There is also a direct line input and a set of XLR-balanced sockets. Both single-ended phono and balanced XLR outputs are provided, and there is a useful External Loop set of inputs and outputs for those wanting to stick a processor of some description in the chain. Plus, there is a useful set of communications connections, including an RS232 hook-up for PC-style Crestron remotes.

BRIDGE TOO FAR?

The A23 can be used as a bridged mono design. Bridged mode is engaged by pressing the requisite switch on the back panel. Although this means you have to buy another A23, you also double the voltage swing to the loudspeakers, with a bridged mono design delivering 300 watts into an eight ohm speaker. However, because the speaker loading appears halved to the bridged amp, you shouldn't attempt to use speakers with a nominal impedance of less than eight ohms when bridged, as the A23 isn't happy driving loads of two ohms or less for any great time.

VERDICT

Parasound Halo P3/A23 stereo pre/power amplifier
£1,500

▲ Loads of power for not much money. Beautifully built with even-handed, natural sound. Deep sound stage and bolted-down stereo image.

▼ Detail resolution good, but not outstanding. Limited inputs. Slightly bassy sound.

○ **CONCLUSION**
Looks like high-end electronics, sounds like high-end electronics, priced like mid-fi. Unless you want uber-detail, see if your system needs a Halo.

KEY FEATURES

- ▶ Pre/power combination
- ▶ Balanced XLR/single-ended inputs and outputs
- ▶ Remote control preamplifier
- ▶ Defeatable tone controls
- ▶ Four line inputs
- ▶ Switchable MM phono/aux line stage
- ▶ THX Ultra 2 approved power amplifier
- ▶ Class A-AB design
- ▶ 125W per channel



The A23 Class A-A/B power amplifier takes both phono single-ended and XLR balanced inputs, with separate channel gain adjustment for fine-tuning volume levels. Its three bi-polar transistor per side output stage drops a hefty 125 watts per channel into an eight ohm load, but this doesn't quite double to 200 watts into a four ohm load. THX Ultra 2 approval means it can deliver this sort of power continuously without grumble.

Both units were developed by John Curl, Parasound's resident amplifier guru. Curl is a minor legend in US high-end amplifier circles, having developed classic amps like the Mark Levinson JC-2 and the Vendetta Research Phono Preamp.

PERFORMANCE

Normally, hi-fi buffs might prattle on about long run-in times and the delicate thermal sensitivities of pre/power amps.





“The Halo style makes you wonder why other amps at the price aren’t this well made.”

A blue fluorescent display makes the P3 look more like an AV processor than a stereo preamp.

None of that applies to the Halo duo. There is little or no improvement to be had by waiting a week for a burn-in. It does get slightly better with age, but what you get from the outset is basically 90 per cent of the final Halo sound.

That Halo sound is big and powerful, full of grunt and energy, yet surprisingly fast for a comparatively big, hefty amp design. There isn't the distinctive character of a beat-mungous Naim or the smoothness of a traditional Arcam: it merely plays without grace or favour.

Despite throwing up a big image, the sound stays within the confines of the speakers and it presents an image that is deep rather than wide. *Poor Misguided Fool* from Starsailor shows this well; it's tightly focused, and even though the vocalist seems larger than usual, the band forms a tight knot between and behind the speakers.

The combo is, in essence, tonally neutral, with extremely good coherence and vocal articulation. Sounds rise out of a dark background, stay solidly rooted in a 3D space and then immediately disappear. This is typical of a genuinely high-end sound, though if anything the Halo seems to have the edge when it comes to, er, leading edges. Something fast and gritty like *This Is It* by The Strokes seems to have less of the beautiful ponderousness of some high-end gear, and instead the immediacy of a good, tidy, integrated amplifier.

The high-end strikes back in detail resolution, though. While both pre and power are detailed, they lack resolution and detail retrieval abilities. Play something highly complex – Schoenberg, for example – and the combo doesn't quite have the same absence of signature, and it tends to blur the

bassier sounds of strings together slightly.

This is not a major stumbling block, though; in fact, such niceties are rare at the price. Neither component is an obvious weak link and the Halo combo offers a lot of amplifier for not a lot of money. Powerful stuff. 

 CSE 01423 359054

 www.parasond.com

ALSO CONSIDER

ARCAM FMJ A32/P35 £1,980

Perfectly matched bi-amp combination delivering 100 watts per channel. Sounds full of gravitas and sophistication.

MYRYAD MP100/MA240 £1,600

Looks smart, sounds smart and delivers a smooth, clean performance from its 120-watt power amplifier.

NAIM NAC112/NAP150 £1,375

Cleaner and sweeter sound than is traditionally associated with Naim, this 50-watt combo is a musical masterpiece.

audio

EXCELLENCE

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EXCLUSIVE

Twin peaks

Townshend's latest speaker was created to complement wide bandwidth formats. But can we hear it?

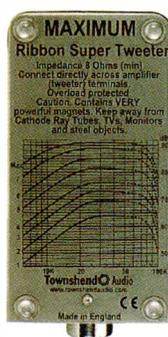
Super-tweeters are very strange things: plug a pair directly into your system in place of your usual speakers and you'll be hard pressed to hear anything coming out of them. But add them to an existing pair of speakers to extend the treble bandwidth out to places only the cat should be able to hear, and they change the sound of the system.

The CD format was created with a bandwidth that goes no further than 20kHz, the theoretical limit of human hearing; after all, even harmonics don't go that high. Yet super-tweeters are designed to extend a speaker's normal high frequency of 20kHz, at best up to 50kHz and beyond. This is not because we've suddenly evolved better hearing, but because the effects of what happens at high frequencies are reflected in the audio band.

One of the main factors behind the wide bandwidth of DVD-Audio was the discovery that by increasing bandwidth from 20kHz to 48kHz, a more natural sound could be achieved with digital audio.

The Townshend Super Tweeter claims a bandwidth that extends to 100kHz (-3dB) and is half as loud at 500kHz. It achieves these staggering results by employing a short ribbon drive unit and some very powerful magnets in a compact stainless steel case.

While ostensibly designed to take advantage of the extended response of the new high-resolution formats, it is suggested that having extra bandwidth is advantageous, even with more limited sources such as vinyl, CD and DVD-V.



VERDICT

Townshend Super Tweeter ultra high frequency loudspeaker £800/pair

▲ Increases the resolution from already very good systems and adds a degree of naturalness that's rare.

▼ Price. Only flat-topped speakers are suitable.

◎ **CONCLUSION** These are a highly effective means of improving already very good systems, enhancing naturalness and resolution.

KEY FEATURES

▶ Frequency response (selectable): 20/30kHz - 100kHz; -3dB

▶ 12kHz - 500kHz; -6dB

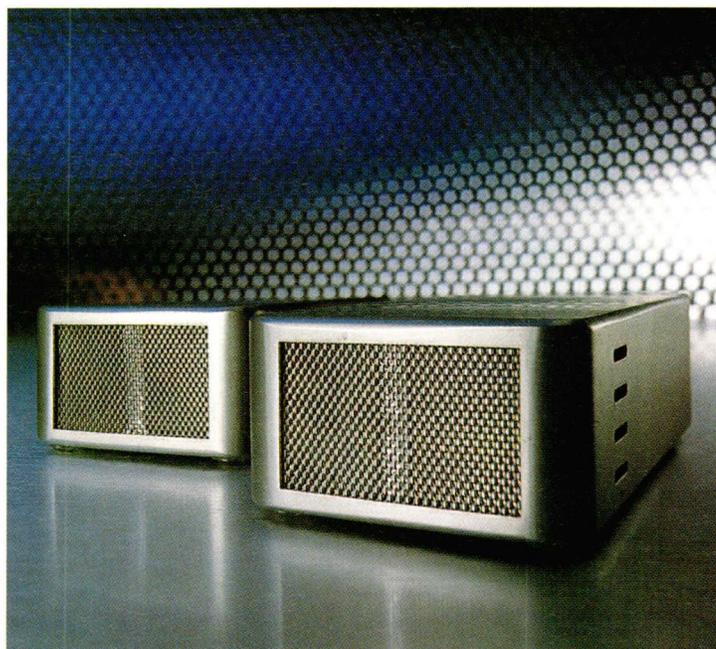
▶ Sensitivity (selectable): 96/94/84dB 2.8V (1 watt) @ 1m

▶ Impedance: eight ohms; 20kHz-100kHz

▶ Power rating: 500W

▶ Dimensions: 50x30x100mm

▶ Case: matt stainless steel



The Super Tweeter can extend the bandwidth of your speaker with astonishing results.

PERFORMANCE

A pair of Super Tweeters was tested with Living Voice Avatar OBX-R and Audio Physic Spark speakers. One was placed on the top of each speaker and connected via supplied cables to the high-frequency feed for the speaker below. They could be connected to the amp, but that leaves more cable trailing around the room without advantage.

The effect of using the STs with the AP Spark is quite dramatic. They add depth to the image and open up the sound-stage – there's more of the 'air' from the original recording in the sound. Definition also seems to improve, and with some discs there is an increase in 'liveness' and energy in the sound. Occasionally, the STs have an obvious effect on balance, the plucked piano strings on Sidsel and Bugge's *Out Here*. In *There* jumping out from the mix, for example.

On the more relaxed LV Avatars, the tweeters have a less dramatic, but nonetheless intriguing effect. The first thing you notice is the extra charge in atmosphere, a shimmer from the disc that makes the music more real. They clearly

add low level detail and it becomes easier to follow the various instruments in a mix. This is the case with CD, LP, DVD-A and SACD. Imaging is distinctly more precise, an effect that occurs whatever the balance of the material. This suggests that ultra high frequencies are present in even relatively low-frequency material.

The benefits on offer will depend on the quality of your system, but if it's of the performance envelope-pushing persuasion, the Townshend Super Tweeters will undoubtedly take it, and you, to the next level. ◎

☎ Townshend Audio 0208 979 2155
 ☎ www.townshendaudio.com

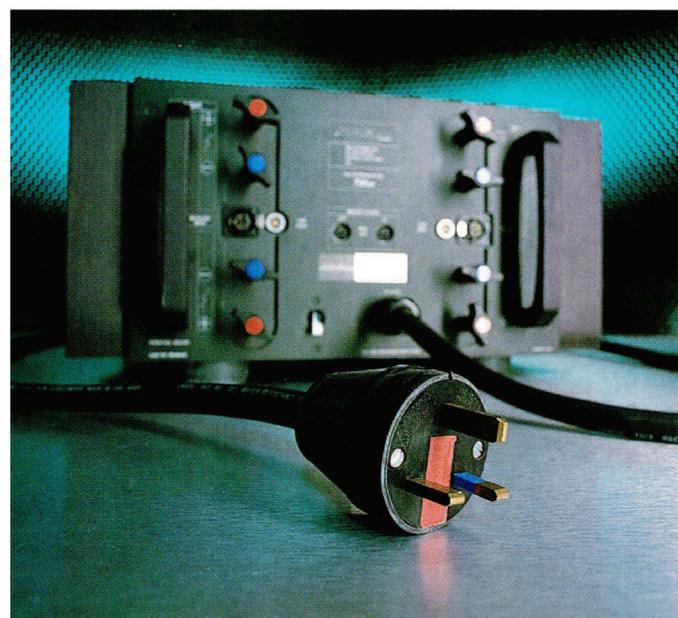
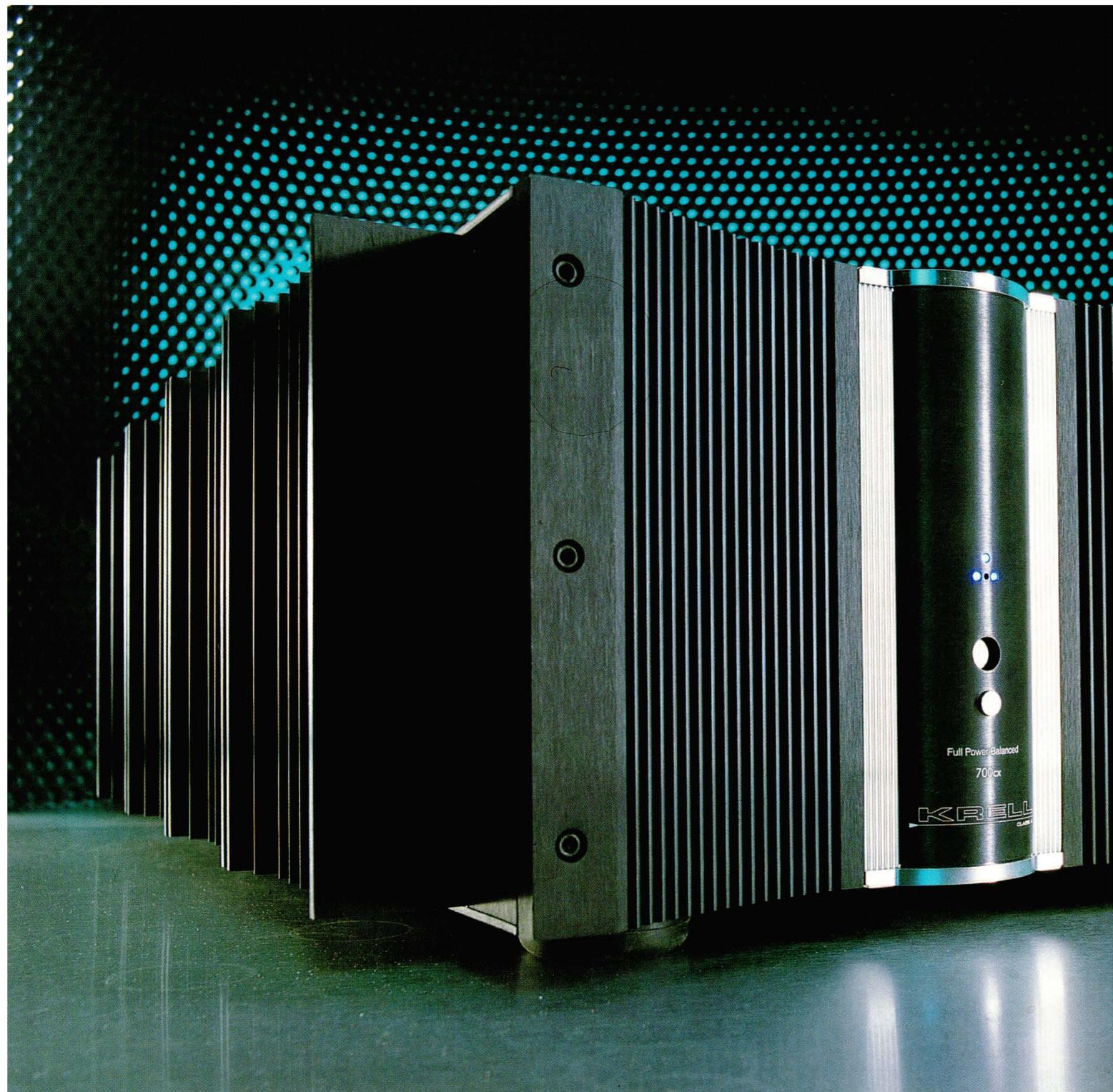
ALSO CONSIDER

TANNOY ST100 £1,200
 Titanium dome-based design with similar effects, but less high frequency extension.

TANNOY ST50 £600
 More affordable variant on the dome theme, with three sensitivity and three roll-in options.

TAD PT-R9 \$775 EACH
 Ribbon device from Pioneer's professional division with a phenomenal reputation but limited distribution, hence the dollar price. Available from www.pioneerelectronics.com





“The Krell 700cx is one of the few amplifiers that allows systems to do their thing without imposing its own character on the music.”



EXCLUSIVE

Monster Inc.

Krell's most powerful stereo amp is one of best that money can buy

The statistics are awesome. The FPB 700cx is the biggest and most powerful stereo amplifier Krell has ever made, and the company has been a byword for big, powerful amplifiers since the dawn of the high end. It measures 48x26x65cm, and weighs 81.8kg, but it feels like more thanks to the lack of handles and rather sharp metalwork – sharp because there has been no attempt to radius the edges, not because it hasn't been deflashed and finished. Big and heavy as it is, it's compact for an amp that delivers 700 watts into eight ohms, 1,400 watts into four ohms and 2,800 watts into two ohms, all in pure Class A. Yet it runs at sane temperatures and is convection cooled using the heat sinks that extend down each side.

The reason why it keeps its cool is Sustained Plateau Bias (SPB), one of a number of proprietary technologies that the FPB range draws on. SPB, now in its third iteration, is an output stage biasing scheme in which the loudspeaker load is measured with a Hall Effect sensor at power-up, and the input signal is monitored in real time. Any peak that cannot be handled in Class A causes the output bias levels to be ramped up before the peak is required – circuit time constants are measured in nanoseconds. When the initial demand has passed, the bias level is maintained for 60 to 90 seconds before being allowed to ramp back down. At no time is bias allowed to drift with the music, which would cause intermodulation distortion. Also, the ramping is completely inaudible.

SPB in combination with the enormously potent 8kW power supply imbues the design with an almost complete independence from the load. This has always been a Krell speciality. Krell amplifiers were the standard partner for the Apogee Scintilla speaker, a legendary amplifier-buster in its day, and its current models can cope with the complex impedance characteristic of Martin Logan electrostatics and anything else you care to name. More to the point, it never betrays the slightest discomfort in doing so. It doesn't even seem to get any warmer.

VERDICT

Krell FPB 700cx stereo power amplifier

£14,998

▲ Practically unlimited power, range and authority.

▼ Big, heavy, expensive. Especially expensive.

CONCLUSION

A reference class amplifier that may represent overkill in many systems, even high-end systems. But when the best is demanded, this is it.

KEY FEATURES

▶ Balanced circuit

▶ Fully regulated Class A output

▶ DC coupled throughout

▶ SPB III (Sustained Plateau Bias)

▶ CAST current mode & balanced inputs

▶ Can be adapted for unbalanced (single ended) inputs

▶ Internal blocking capacitor can be switched in for use with valve preamps

▶ Massive 8,000W power supply

▶ No capacitor reservoir bank in tightly regulated power supply

The 700cx is constructed on a grand scale. The amp is fabricated from heavy gauge aluminium panels and a large number of flight-certified fixings into a genuinely rigid carcass. Mains power uses a thick flexible captive lead with a moulded mains plug. Rear panel furniture includes CAST (see box below) and XLR balanced inputs and a mains power circuit breaker, plus bi-wire speaker terminals designed for spade connectors, with large wing nuts to provide sufficient torque to make a tight connection without tools. Single-ended (unbalanced) connection is still possible, and system-linked power switching is available using a Midi connector. On the front is a red CAST indicator LED, three blue LEDs to show current operating status and a remote control receiver.

PERFORMANCE

The 700cx was used with Krell's own KPS-25sc CD player/preamplifier, a logical choice on performance grounds,

CAST II

CAST, now in version two, is a technique for interconnecting pre and power amplifiers by using what amounts to an extension of their internal gain stages, so that pre and power amps operate as one. The circuit involves setting a high preamplifier output impedance so that it approximates an ideal current source, something that transistors are good at. The power amplifier input presents a low input impedance, almost a short circuit in fact, which is the opposite of the usual arrangement, and the interface works in current rather than voltage mode.

Because the voltages and the input impedance are so low, no negative feedback is required and the cable ceases to have any significant influence on the signal. As almost no voltage is developed across the power amplifier input, cable capacitance has no effect, and any residual voltage that is developed owing to cable inductance has no appreciable effect on the current source and therefore negligible effect on the sound.

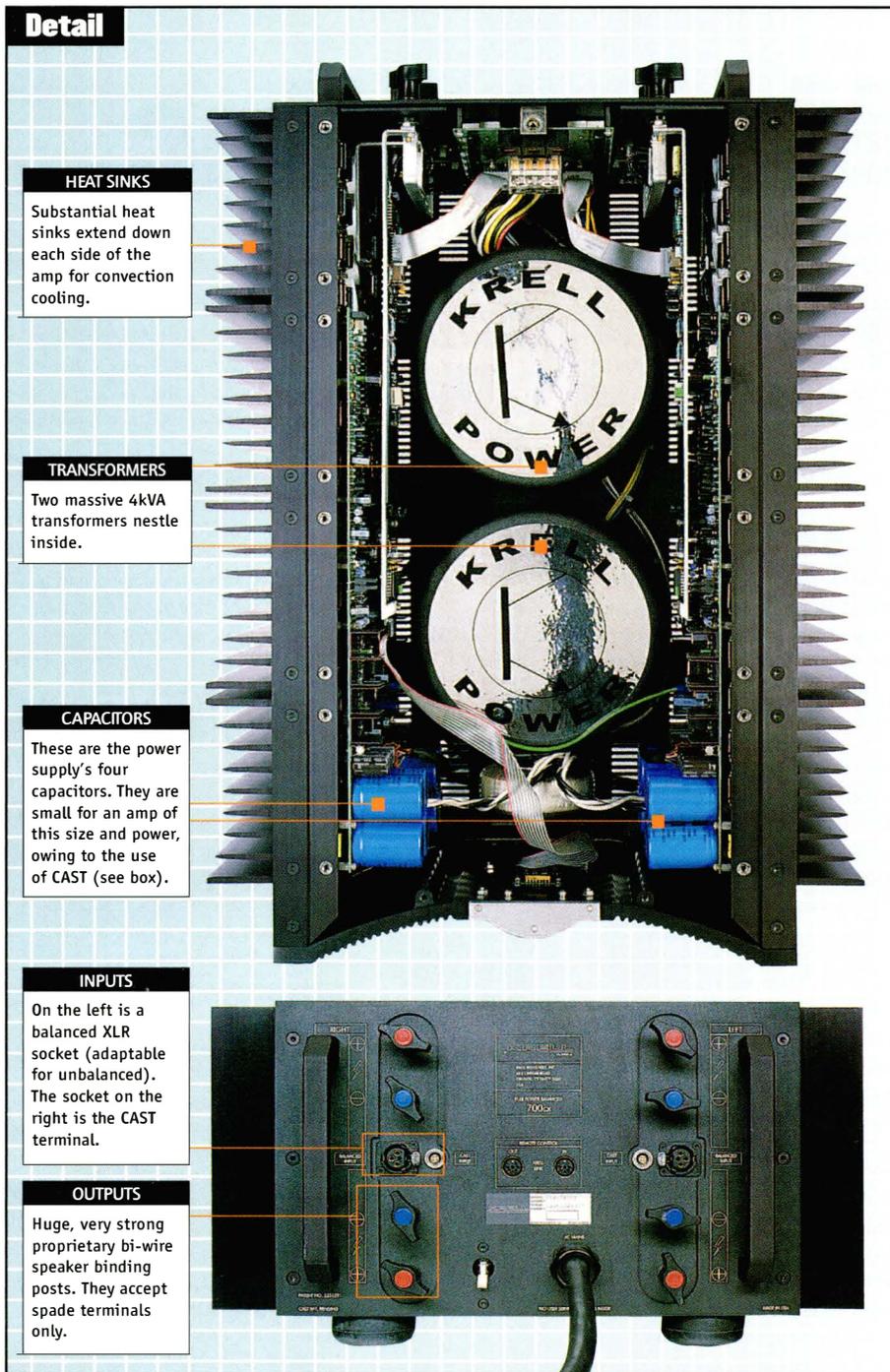
The result is almost complete independence from the factors that cause cables to sound different. Krell CAST cable is thin and easily hidden, and uses miniature high-quality four-pin connectors.

EDITOR'S CHOICE

HI-FI CHOICE
magazine



This massively constructed amp looks powerful - and with 700 watts per channel on tap it certainly is!



HEAT SINKS
Substantial heat sinks extend down each side of the amp for convection cooling.

TRANSFORMERS
Two massive 4kVA transformers nestle inside.

CAPACITORS
These are the power supply's four capacitors. They are small for an amp of this size and power, owing to the use of CAST (see box).

INPUTS
On the left is a balanced XLR socket (adaptable for unbalanced). The socket on the right is the CAST terminal.

OUTPUTS
Huge, very strong proprietary bi-wire speaker binding posts. They accept spade terminals only.

image width and stability are superior, tonality is altogether more sophisticated and varied, and transient impact is palpably more effortless and controlled, and therefore more natural.

Crucially, these qualities are just as obvious when the amplifier is virtually ticking over as when it is playing full blast. One classic example was with Lamb Chop's *The Daily Grawl* (from *Is A Woman*), which is a spacious acoustic recording with a lot of very subtle, often almost vanishingly quiet background sounds, which the Krell was able to resolve with a presence and vitality at low volumes that other amplifier's simply couldn't match. But of course this is a great amplifier with the blood and thunder stuff too: Mahler 8, Eels, Massive Attack and Marc Cohn spring to mind, but there were many others.

For all its qualities, the effect that the 700cx has on the music is surprisingly, sometimes breathtakingly, subtle. The Krell never sounds big, at least unless the music calls for it. And when it does go loud, the music doesn't become uncomfortable. One of the surest signs that it's beginning to pump watts is that you have to raise your voice to be heard. In effect, with the Krell installed into the system, the power amplifier ceases to be a factor in the sound quality equation. Its aural footprint is vanishingly small, in part because it is a low-distortion design. The main reason, however, is that the performance of the amp doesn't drift. It stays stable and consistent no matter what stress it is under. Indeed, it is virtually impossible to put it under stress; at any rate, stress that is audible. And this remains the case no matter what load it is driving. The Krell 700cx is one of the few amplifiers that allows systems to do their thing without imposing its own character on the music. By any reckoning, it is one of the greats. **CD**

Absolute Sounds 020 8971 3909
www.krellonline.com

and one of the few preamplifiers with a CAST output. Elderly and not-top-of-the-line transparent balanced interconnects were tried briefly, but CAST sounds more 'contrasty'. There is more 'blackness' between notes, more expansive, colourful and better located notes between the silences. Various loudspeakers were used in the tests including B&W's Signature 805 and the Martin Logan Odyssey, but at least half the time over a period of about two months was spent with B&W's flagship Nautilus 800.

Before the Krell arrived, a number of other amplifiers were used, including some which were clearly very good and of high repute. The Nautilus 800 is not especially load fussy and it is reasonably sensitive, so there was no reason why an amplifier like the 700cx should be called for. But in the end the 700cx was in a class of its own. It was clearly superior even to the Krell FPB 300cx, which is a less powerful, but otherwise similar design in the same series. The 700cx sounds more relaxed and transparent, yet

ALSO CONSIDER

NAIM NAP500 £10,000 (STEREO)
Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition.

THETA CITADEL £9,945 (MONO)
Almost endlessly powerful and authoritative, yet quick and refined.

AUDIO RESEARCH VT200 II £11,982 (STEREO)
Superb dual mono valve amplifier with 200 watts per channel power rating.



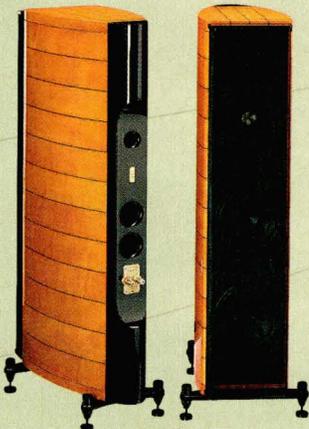
SONUS FABER

look to the past to hear the future



CONCERT HOME SERIES
L - R: SOLO, CONCERTINO, GRAVIS

AMATI HOMAGE



Sonus faber.

Franco Serblin is too much the artist to settle into a routine, too passionate a designer to sit still. After 20 years, he remains driven to discover better methods for reproducing sound. And just as his views change the way we look at loudspeakers, so has his medium - Sonus Faber - evolved alongside his need to further the loudspeaker art.

His loudspeakers have developed into three distinct ranges - all the better to address the needs of an increasingly sophisticated marketplace. After all, with maturity comes a clarity of vision and intent. At the time of Sonus Faber's birth, there was no home theatre to address, and digital audio was in its infancy. In 2001, the world of home entertainment encompasses discrete 5.1 channel surround sound, purist 2-channel analogue audio, emerging digital technologies such as SACD and DVD-A, and more.

Sonus Faber welcomes the future, yet it shows respect for the past, the most vivid example being the Homage series. This luxurious range consists of the stand-mounted two-way Guarneri and the three-way floor-standing

Amati, both embodying artisan skills of centuries past: the beauty and warmth of hand-fashioned cabinetry, wrapped around components which deliver sound worthy of the names of the greatest stringed instruments of all time. For more modest installations, the Signum and the Electa Amator II forge a direct link with the speakers which established the Sonus Faber name. And to serve a multitude of channels, the dazzling, ultra-modern Concerto Home series contains everything from satellite speakers and slim floor-standing models, to a centre channel, to the new Gravis subwoofer.

Whatever Sonus Faber speaker you acquire, whether you are reacting to the looks and finish or the sound it produces, there is only one response: "Che bello!"

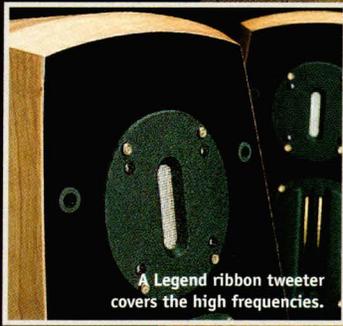


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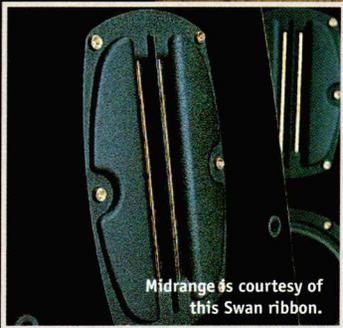
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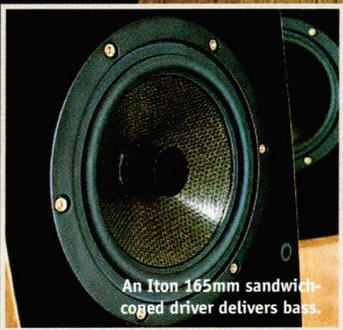
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A Legend ribbon tweeter covers the high frequencies.



Midrange is courtesy of this Swan ribbon.



An Iton 165mm sandwich-cogged driver delivers bass.

MEASUREMENTS

The Lampros delivers a set of measurements that significantly depart from the norm in several respects. The good news is that this speaker represents an easy load for amps, nice and resistive through most of the mid-band and treble, and staying above eight ohms throughout. This might suggest it is a 'valve-friendly' design, but the downside is an exceptionally low sensitivity, around 83dB-84dB means that only the most powerful will work. The far-field in-room responses show a very flat overall balance, which by implication means that, relatively speaking, the upper mid and treble are several dB stronger than average. Even when placed well clear of walls, the midbass is decidedly strong, averaging around +6dB ref the midband, which definitely indicates free-space siting. After the event, the manufacturer suggested experimenting with port-blocking bungs. Checking the different settings of the rear panel 'jumpers' revealed that their effect on the measured balance and impedance was very small indeed.

"It has outstanding projection of voice-band detail, but this can prove a bit of a double-edged sword."

EXCLUSIVE

Mmm Lumley!

A gorgeous-looking speaker from one of the smaller brands, Lumley's Lampros features radical ribbon drive units and an unusual enclosure

VERDICT

Lumley Lampros 200 loudspeaker
£4,000/pair

▲ Attractive looker with an open, clean, forward balance that projects presence detail particularly well.

▼ Pricey, low sensitivity, could be more top-to-bottom coherent. Midbass a little too strong.

● **CONCLUSION**

This great-looking speaker has a very clean, open sound, but low sensitivity will limit loudness and midbass is too heavy.

KEY FEATURES

- ▶ Elegantly curved side panels avoid parallel faces
- ▶ Veneered integral plinth
- ▶ Front and back both covered by a gloss black laminate
- ▶ Wide range of finishes
- ▶ A lead lining for controlling box colorations
- ▶ The 165mm frame bass driver has a 120mm diameter 'sandwich' cone
- ▶ Swan midrange ribbon 120x25mm
- ▶ Legend ribbon tweeter 55x10mm
- ▶ Chunky twin terminal pairs
- ▶ Size WxHxD: 24x95x32cm
- ▶ Hovland capacitors and silver-plated internal wiring

So just what is a Lampros? There's no mention of one in the 2,500 pages of my Shorter Oxford Dictionary, but according to Lumley's maestro John Jeffries, Lampros is Greek for 'great' (and probably rhymes with pillow!). Whatever his linguistic peccadilloes (he can't spell either), JJ's hi-fi credentials are impeccable. He's been involved in retail for at least three decades, and through most of that period has also carried out the small-scale manufacture of some decidedly serious loudspeakers. Many will remember the Nightingale NM1, which became something of a cult back in the 1970s, but JJ's more recent offerings have been launched under the Lumley brand.

His designs have sometimes been rather large and ungainly, but that is certainly not the case with this new four-strong Lampros range. With beautifully veneered, chunkily shaped and elegantly curved panels, it's unquestionably one of the most attractive-looking loudspeaker ranges around, and available in an almost inexhaustible range of finishes.

These £4,000 a pair Lampros 200s are on the second rung up the ladder, and could well be the pick of the bunch, sharing the ribbon midrange and treble drivers with the more expensive models, and packaging them with a single 6.5-inch bass driver, which provides more than ample bass (see box, left). Further up the range you get bigger boxes, bigger bass units and bigger prices.

The 200's integral veneered plinth – equipped for chunky 8mm spikes – is a particularly pretty touch, and a testament to the craftsmanship of JJ's cabinetmaker. Ditto the curved sides, which not only look good, but are actually very useful in avoiding parallel faces and the associated focusing of internal standing waves. Front and back are both covered by a gloss black laminate.

The price here is steep, to be sure, but this is much more than just a pretty-looking enclosure. A lead lining, adding lots of mass damping, is a very effective technique for controlling box colorations. And the very unusual drive units aren't going to be cheap, especially when bought in small quantities.



The Lampros is beautifully veneered and elegantly curved, with contrasting gloss black panels front and back.

The bass driver, from German brand Iton, has a 6.5-inch frame, a 120mm diameter 'sandwich' cone and is assisted by a rear port. The midrange ribbon, comes from US brand Swan, though it's actually made in China. The ribbon tweeter comes from US brand Legend.

Above the chunky twin terminal pairs, moveable links allegedly provide some adjustment over the relative levels of midrange and treble drivers (to very little effect). Hovland capacitors and silver-plated wiring are used internally.

PERFORMANCE

The sheer open cleanliness of the 200 is very beguiling in the way it projects voices out of the box. Indeed, you might fairly accuse this Lampros of a touch of over-projection, and in truth it can sound a tad cold and thin at times. But those ribbons do sound exceptionally clean and free from stress, so the speakers more or less get away with their forwardness.

One consequence is outstanding projection of voice-band detail, which can prove a bit of a double-edged sword: it sounds excellent on well-recorded material, but does tend to highlight the limitations of poorer sources, such as the nasality of TV speech.

By the same token it's great with violins, but less good at conveying the rich textures of cellos and basses. And while the balance is very effective at delivering fine detail, there does seem to be a degree of detachment between what the ribbons are doing and

the rather more conventional bottom end.

The bass is certainly clean, reasonably quick and free from overhang, but it doesn't quite manage to 'glue in' to the mid/top as effectively as with simpler two-way designs. There's something of the satellite/subwoofer character here, which was highlighted when playing Leftfield's *Rhythm and Stealth*.

Once again, there is lots of delightful mid and presence detail, but when the powerful bass lines come in, they combine with the Lampros' similarly hefty midbass to give a rather overwhelming net effect. It remains clean and agile, but is also altogether too fat and again emphasises the lack of warmth. Perhaps reducing the port outputs would be worth trying. Bungs are apparently available, but were not supplied in time for the review.

The overall dynamic range here is notably wide, and stereo images are beautifully spacious and free from boxiness, though there's less impression of dynamic tension.

To some extent, at least, we're in the territory of personal taste and preferences here. All loudspeakers have a degree of character, and the Lampros 200 has perhaps a little more than most, thanks in no small part to those ribbon drivers. The important thing is to ensure that its particularities suit your ears, room and system. ●

☎ Lumley 01892 539245

🌐 www.sounds-of-music.co.uk

ALSO CONSIDER

TANNOY DIMENSION TD10 £5,000
Good-value contender. Its ten-inch dual-concentric driver plus supertweeter delivers a convincingly rhythmic and very detailed sound.

SPENDOR S9 £2,500
A meaty floorstanding three-way with superb bass and an explicit, detail-packed midband.

WILSON BENESCH DISCOVERY £5,500
Ultra-compact three-way with innovative enclosure and drivers and integral stand, combines great subtlety with weight and headroom.

LIVING VOICE AVATAR OBX-R £4,000
External crossover adds refinement to a dynamic and high-resolution design, with a relaxed balance.

B&W NAUTILUS 803 £3,500
Essentially neutral if just a tad laid back, the 803 has a very good dynamic range and fine, driving bass with plenty of weight and determination, and notably spacious stereo.



FUTURE NOW

Future Sound Of London are back with a new album, a new sound and a firm belief that if hi-fi is to go forward, it needs to go back. Garry Cobain spills the beans on life and music as he knows it

From 'the psychology of facelessness' to spiritual rebirth, from state-of-the-art computer/video/audio equipment to acoustic guitars and sitars, from Tangerine Dream to Donovan, from turntables to India and beyond, Future Sound Of London have come a long way since their rave floorfillers of the late eighties (as Humanoid). Now they have morphed again into a gigantic psychedelic/acoustic electronic canvas where the past audibly becomes the future. The electronic duo's new album *The Isness* (under the Amorphous Androgynous moniker) explodes with the sound of personal and audio discovery.

"We wanted more joy and more colour. We hunted out music which represented that and went back to 1967, my birth date," says a be-flared, bearded and long-haired Garry Cobain (bandmate Brian Dougans isn't here for this exploration of the FSOL sonic aesthetic). He sits in a 1960s bucket chairs in a studio that sits between the late sixties and seventies with its pinks, reds and oranges, pics of The Beatles, George Harrison, Indian gurus and Werner Panton lamps.

"I was born in that great psychedelic year. And what the album is about is a celebration of how magic sound was in 1967/1970. I mean the way drums sounded then. I mean could anyone make the sound of an orchestra and guitar the way David Bowie did on *Space Oddity*?"

Cobain says they were sick of buying electronica albums for £20 with one so-so track, and instead went to London's Brick Lane market where, "for a tenner we bought 30 old records with great covers which had a warrior spirit and namechecks like Moog, Sitar, 'perfect back beat' and stuff". Cobain quotes The Moody

Blues *In Search Of The Lost Chord*, Donovan's *Barabajagal*, Crosby Stills Nash & Young and Japanese percussionist Stomu Yamash'ta. As a riposte to anyone who criticises the strong psychedelic whiff on *The Isness*, Cobain responds: "Music shouldn't just be a celebration of technology, and if the future sound is just a celebration of the latest software, why bother!"

SOUND'S STUDIO

Wandering around their Old Street studio is a revelation. The Technics Decks, Akai Samplers, Roland and

"I love the way hi-fi is returning to all that classic *A Clockwork Orange* / *2001: A Space Odyssey* look."

Emu synth modules, Midi samplers, Alesis Adats and dozens of other boxes lie dusty and neglected.

There are some Genaflex speakers and, shockingly, two Sony TCD D 7 DAT Walkmans just resting in accumulated dust, unused. There's a big space where an SSL mixing desk used to sit. It cost them £22,000 years ago and they swapped it for two iMacs on which they design their album covers. "We basically dismantled the gear room. Who needs a big rock and roll desk with 64 inputs? We monitor on that big ghetto box there (a JVC RVB 99 CD/tuner/tape), which has a built-in guitar jack. I reacted against all that bachelor pad hi-fi, which looks very black and very male. All that Mission and Naim stuff that looks very sanitary with just one dial. I'm now into 1970s ostentation with lots of buttons and sliders. I like a celebration of possibility, the idea of 'what can I do with this button kind of thing'."

In the living area with its kitsch lamps and carpets is a pile of old

silver Akai audio gear. A tuner, graphic equaliser, power amp, tape deck set-up which was all the rage in the late seventies and early eighties. Cobain is especially proud of his Technics Quartz Direct Drive SLQ01 Automatic TT system with its needle attached to the lid.

"It lights up and slides across the lid. Can you believe it? You can play an ambient meisterwerk at the end of an album by sliding it across. Press a button and it plays 45s too."

So much for the studio, what about the home hi-fi? "It's a real hotch-potch. A NAD amp, little

gold Tannoy speakers, 100-watt Boses. Basically, we've had to design a sound system that fills a warehouse and reacts well with wooden floors. More to the point, I love vinyl. I don't think I have a record until it's on vinyl, period. I just love the sound of analogue."

FUTURE REVOLUTION

The title track of the new album features several Indian instruments vying for your attention, as one of those Terry Riley organ sounds drones over the top.

"That's a note I sampled from an old record I just played over and over. It's some old organ sound. We sample things that already sound good, then we write with them. It's just one single note that I spread over my keyboard and a solo came out of it. What I love about samples is their resonance, that other-worldly resonance to the past that's like a ghost. I still have all the records I bought. All this new technology from CD to CD-R is supposed to free us, but I've come to the conclusion

that we were all wearing grey clothes and looking ill."

In fact, Cobain became so ill that he ventured to India on a path of spiritual and physical discovery.

"Yes, each year was spent wandering around India delving into Naturopathic and Ayurvedic medicine. Healing, purification, fasting and yoga. I wasn't happy hiding behind technology anymore. I wanted to put more joy and spirituality, femininity and sexuality into our music. I've lived such an extreme experiment in consciousness over the last five years that to most people I appear to be on drugs. In fact, I'm so straight – every day sauna, swimming, wholefoods, yoga, meditation and water – that I've shifted my consciousness to being extremely awake and aware all the time. This album's the result."

Acoustic guitars, toy drum kits, banjos, tambouras, sitars and an Apple Mac seem to be all FSOL need right now. Cobain performed at Indian weddings and went through Panchakharna, a form of Ayurvedic purification treatment in southern India. And came back with a hunger for colour and celebration. "I love the way hi-fi is returning to all that classic *A Clockwork Orange* / *2001: A Space Odyssey* look. The way Werner Panton designed hi-fi (check out his Dual 1218 1965 silver box design – pure Swinging London futurist). I think car designers and hi-fi designers have now got the message that 'alternative theories of life' is the new demographic and that people want to live a more expressive, spiritual, healthy, joyous and creative life. And for us *The Isness* celebrates all of that." ☺

See www.futuresoundoflondon.com
The Isness is reviewed on page 27

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RETRO

MARTINLOGAN CLS



A press release recently landed in my inbox to the effect that MartinLogan was finally to lay to rest the CLS full-range electrostatic, which was launched 18 years and almost 10,000 pairs ago. It's only dated by its enormous front area, but it's to go with a bang, a Limited Edition to celebrate the company's 20th anniversary. This then is a good time to take stock of a product that set standards when launched and which, remarkably, continues to set them today.

The original patent application for an electrostatic speaker was filed by Rice and Kellogg in 1929. Granted in 1934, this was the patent that inspired Peter Walker of Quad two decades later. But the limitations of the materials to hand – pig's intestine membranes with gold leaf electrodes, and varnish to insulate the perforated stators – made the product inconsistent over time. Even in its crude early form, however, it was recognised as offering transparency and resolution that was otherwise unavailable in a transducer.

Quad's special contribution, fully recognised by Martin Logan's founder, Gayle Sanders, was that the materials at their disposal enabled them to produce a consistent, high-performance product. But there were limitations, the clearest sign of which was Quad's inability to produce a working electrostatic without cloth covers and dust sheets. This is key to the CLS's appearance, but its seminal importance to the speaker's sonics is impossible to over-rate. It is at the core of its holographic imagery and its extraordinary clarity. Outside the bass, the CLS was and remains one of the cleanest loudspeakers ever made. The bass is lean and dry in the manner of all panel speakers, but it still just qualifies as a full-range transducer.

INSULATION CHALLENGE

The challenge with the diaphragm was to develop a coating, eventually consisting of an atomically bonded layer of copper oxide and beryllium, that holds a stable and uniform charge of around 3kV, free of hot spots under drive. It charges up in

seconds, but it doesn't discharge through your body like a capacitor owing to its incredibly high resistivity, which is in the order of one billion ohms/cm² – similar to the human hand. Potentially more dangerous are the interactions between the front and rear stators. It is easy to coat a piece of round section wire so that it can safely carry several thousand volts without danger to life or limb. It's much harder when wire is replaced by a perforated sheet such as those used on electrostatic panels to carry the polarising voltage, up to 8kV in the case of the CLS. In this case, the conductor has to be highly conductive, and a perfect insulation is required, which was not reliably available in the days before materials such as nylon and Delron.

HIT THE SPOT

Another key feature of the CLS was the 'curvilinear' diaphragm, which helps produce an arc of sound in the horizontal axis. Big panels act as line sources, with a strong throw but little spread in the sound, which makes listening off axis a trial. The curved panel is by no means a complete solution, and the CLS is still in effect a massively overgrown pair of headphones, which force the listener into a sharply defined sweet spot. But it does help.

There have been improvements to the CLS over the years. The edges of the panel were flattened in the CLSII to allow larger excursions and a deeper bass, which is also sustained by sympathetic resonances in the frame. There have been improvements to the coating technology, and the audio transformers are now of a much more sophisticated design. The current CLSIII offers a sweeter, more refined sound, with a slightly less punishing impedance curve than earlier Mk IIs, which were below one ohm, making Krell power amps virtually mandatory. But the fundamentals of the design have never had to be touched, and the CLS is a genuine milestone in the development of high fidelity. ☉

Alvin Gold

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JVC QL-Y5F turntable, piano gloss finish, £275. Burmester 785 high-end German preamp £395 ono. 01708 457691 (Essex).

REGA PLANAR 3 with RB300 arm and ortofon S10mkII cartridge, £150. 01283 547715 (Burton on Trent).

BUYING TIPS

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

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

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

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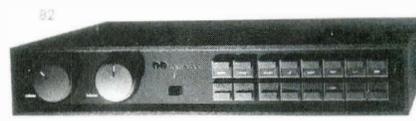
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HI-FI CHOICE BUYER'S BIBLE



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

Reviews you can trust

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

How to use this guide

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

SOURCE COMPONENTS

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CD PLAYERS

Audio disc players for music only



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

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

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



again before being amplified and sent to the output sockets.

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

SUPER AUDIO CD



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

Q&A

WHAT'S A DAC?

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

WHY HAVE SEPARATE TRANSPORTS & DACS?

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

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

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

DO I NEED DIGITAL CABLES FOR A CD PLAYER?

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

WHAT IS OVERSAMPLING/UPSAMPLING?

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

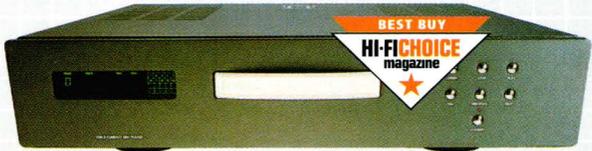
An affordable high-end machine, this very impressive player has it all: brawn, finesse and class. Not to mention the full range of features.

Our favourite CD PLAYERS

Audio only CD and SACD players

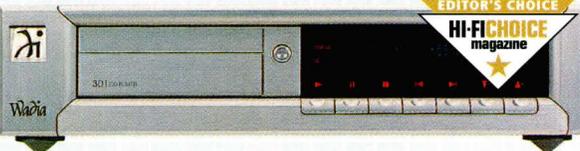
STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS							ISSUE NUMBER	
				SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	CD-RW COMPATIBLE	CD TEXT	BAL ANALOGUE OUT	HEADPHONE SOCKET		VARIABLE OUTPUT
UP TO £1,000												
R	Arcam CD92	900	High-resolution player needs a touch of spit and polish to be completely convincing		●	●		●				212
RE	Cambridge Audio D500	200	Clean and highly articulate player wears well in extended use		●							202
R	Cambridge Audio D500 SE	200	A really lively sounding player with good detail but just a hint of dryness		●	●						217
R	Cyrus CD7	800	New Cyrus player has strong all-round attributes to match its good looks		●							212
R	Exposet 2010	600	Undistinguished in the final analysis, but the 2010 nevertheless is a return to form for this famous marque		●	●	●	●				231
R	Linn Genki	995	Explicit, rather bright-sounding player with strong multiroom appeal								●	212
RE	Marantz CD6000 OSE LE	300	Detailed, well rounded, at home in any musical context – a real bargain		●	●		●		●	●	217
RE	Marantz CD6000 KI Sig	500	Impressive mid-market player is an unusually accomplished all-rounder, and is also well built		●	●	●	●		●	●	231
R	Marantz CD-17 MkII	800	Sophisticated player with a short but attractive feature set, and a new-found bounce in its step		●	●		●	●	●		206
RE	NAD C 5411	330	High-octane player has the occasional rough edge, but is remarkable value for money		●	●	●					231
R	NAD Silverline S500	1,000	It sounds as good as it looks, which is notably refined and easy on the ear		●	●		●				195
R	Rotel RCD-02	375	Against some strong competition in the same price area, the new Rotel generally holds up well		●		●					231
R	Rotel RCD-1070	495	Technically sound and well equipped, if a little lacking in excitement or involvement		●							226
R	Rotel RCD-991	825	Strong midrange player with switchable dither levels to provide some system tweaking ability		●							212
R	Talk Electronics Thunder 3	1,000	Clean, fast and the availability of a complete upgrade path makes this a good long-term proposition									195
ABOVE £1,000												
R	Arcam FMJ CD23T	1,200	Refined FMJ series player now boasts CD-RW and CD Text compatibility		●	●	●	●				226
EC	Audionet ART V2	2,300	Built to last forever, this CD has a dark natural sound with excellent bass and would be cheap at twice the price!		●		●					231
R	Creek CD53	1,199	Fine, assured and well-built player – balanced outputs too		●	●		●				226
RE	Cyrus CD7Q	1,150	This refined and expressive addition to the top of the Cyrus range builds on the qualities of the lesser models		●							226
R	Marantz CD17 MkII KI Sig	1,200	Fabulously built player adds musical integrity to an already impressive basic model (the CD17 Mk II)		●	●						226
EC	Mark Levinson No390S	6,495	Superbly built and comprehensively equipped with genuinely high-resolution sound		●	●	●		●		●	231
EC	Musical Fidelity CD-PRE ²⁴	2,000	Substantial player incorporates upsampling and extensive analogue and digital preamplification facilities		●	●					●	229
R	Naim Audio CD5	1,150	Recommended subject to audition – a dynamic machine, yet some physical minuses									212
EC	Naim NACDSII/XPS	6,265	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results									188
RE	Primare D30.2	1,499	Superb high-resolution player gives a strong taste of musical structure and physicality		●					●		226
EC	Sony SCD-333ES	1,200	High-end multichannel SACD player is excellent with CD, impressive in surround		●	●	●		●			224
EC	Sony SCD-XA777ES	2,300	Superb multichannel player that set the benchmark for the format at its launch		●	●	●		●	●		223
EC	Sony SCD-1	3,500	The first SACD player sounds fabulous, but it's a slow operator and doesn't support multichannel		●	●	●		●			194
EC	Wadia 301	3,650	Insightful player with digital preamp options and good onboard volume control. Try it direct for maximum effect		●	●			●		●	228

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



Primare D30.2 £1,499

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.

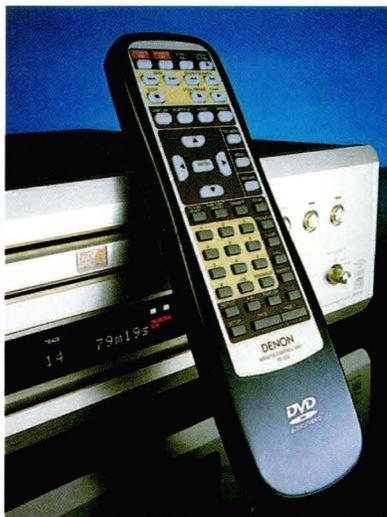
DVD PLAYERS

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 multifunction player when it comes to features. Early DVD players were not particularly good CD spinners because of the enormous amount of RF interference produced by video circuits, but as this problem has been identified manufacturers have begun to tackle it. Nowadays, most DVD players are competent CD players and a few are remarkably good – often as not they are the ones that play DVD-Audio discs as well.

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



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

Q&A

WHICH AUDIO OUTPUTS GIVE THE BEST QUALITY?

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

WHICH VIDEO OUTPUTS GIVE THE BEST QUALITY?

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

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

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

DO I NEED PROGRESSIVE SCAN VIDEO?

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

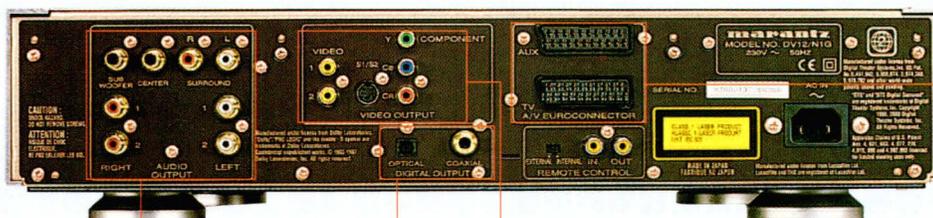
DVD-AUDIO

DVD-Audio is a high-resolution format that offers multichannel, stereo and Dolby Digital tracks on dedicated DVD-A discs. The discs can be played on any DVD player, but the CD-beating high-fidelity sound can only be appreciated with a DVD-A player. While offering similar benefits to SACD, it has the advantage of on-screen display for

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



BACK SHOT



ANALOGUE AUDIO OUTPUTS: For stereo and multichannel connections, use these for best results with DVD-Audio, SACD and CD.

DIGITAL OUTPUTS: For Dolby Digital, DTS and PCM audio bitstreams.

VIDEO CONNECTIONS: Yellow sockets are composite; red, green and blue sockets are for component which gives best results, while the black multipin socket is S-video, which sits qualitatively between the two.

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

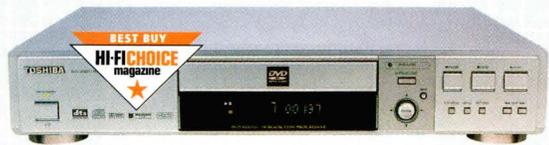
Our favourite DVD PLAYERS

Audio/Video disc players

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				DVD-A COMPATIBLE	SACD COMPATIBLE	ELEC DIG OUTPUT	OPT DIG OUTPUT	HEADPHONE SOCKET	ISSUE NUMBER
UP TO £1,000									
R	Arcam DIVA DV88	1,000	Video player built with non-obsolence in mind, but picture quality exceeds musical quality as a CD player						213
R	Harman/Kardon DVD25	350	Reasonable video player is an excellent CD player, making this a good choice for buyers who put music first						228
R	JVC XV-SA72SL	350	Fantastic value for money from a player which makes good music with DVD-Audio and CD alike						220
R	Pioneer DV-545	330	Stylish and well-equipped slimline DVD-Video player that is an extremely attractive all-rounder						221
EC	Pioneer DV-747A	899	UK's first universal player, compatible with virtually everything. Remarkably good with every format						226
BB	Toshiba SD-510E	320	Great all-rounder DVD-Audio from a slightly idiosyncratic player at a new low price point for Toshiba						228
R	Yamaha DVD-S1200	700	Clean, agile sound quality, and decent, if unexciting, DVD-A performance round off a good, if costly, player						228
EC	Denon DVD-3800	1,000	Impressive and well-equipped DVD-Audio player with component output. Excellent sound reproduction in all modes.						233
ABOVE £1,000									
EC	Denon DVD-A1	2,500	A convincing case for the DVD-A format, battleship construction combined with sonic and visual finesse						230
EC	Marantz DV8300	1,400	Universal machine with a great sense of timing and comprehensive features						233
EC	Marantz DV-12S1	2,500	THX Ultra-progressive DVD-A player is a classy all-rounder, and absolutely top notch in legacy CD mode						229
EC	Meridian DVD596	2,485	Very classy player with DVD-A upgrade potential, one of the few that is also a superb CD player						218
EC	Meridian 800	10,805	The ultimate in DVD replay, modular construction, buffered ROM drive, upsampling and high-res digital outputs						230
R	Pioneer DV-939A	1,200	Near state-of-the-art video and attractive, easy-on-the-ear music-making, from CD and DVD-Audio alike						213
BB	Toshiba SD900E	1,299	Top class DVD-Audio player and also a superb DVD-Video player – in this context, pricing is competitive						213
EC	Townshend DV-747A	2,899	Major upgrade to Pioneer machine turns it into a giant slayer of a disc player, available as an upgrade to existing owners						232

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

TOP BUYS



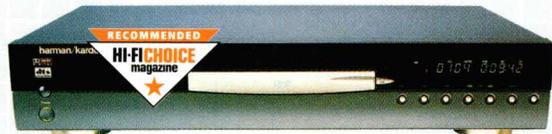
Toshiba SD-510E £320

Great DVD-Audio performance for the price and decent picture quality to boot.



Denon DVD-3800 £1,000

This DVD-Audio compatible player is excellent with music and equally sharp with video.



Harman/ Kardon DVD25 £350

A viable replacement for a straight CD player, but slightly less impressive on screen.



Marantz DV8300 £1,400

A superb machine compatible with virtually all formats including DVD-Audio and SACD.



Sound Fantastic



Olsons new *Sound Fantastic* range of units are specifically designed for both the home and professional hi-fi audio markets.

Each unit is fitted with a 10A mains R.F.I. filter with earthline choke and transient suppressor, designed to filter mains-borne transients, switching surges, R.F. interference, intermittent spikes and other disturbances.

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- ¥ 13A Sockets
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- ¥ 2m x 1.5mm Screened Cable
- ¥ UK Plug - 10A Fuse Fitted
- ¥ Colour Black
- ¥ Specials to order

TYPE NO.	NO. OF SOCKETS	OVERALL LENGTH	PRICE
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HF 6	6	557mm	£92.47
HF 8	8	670mm	£98.70

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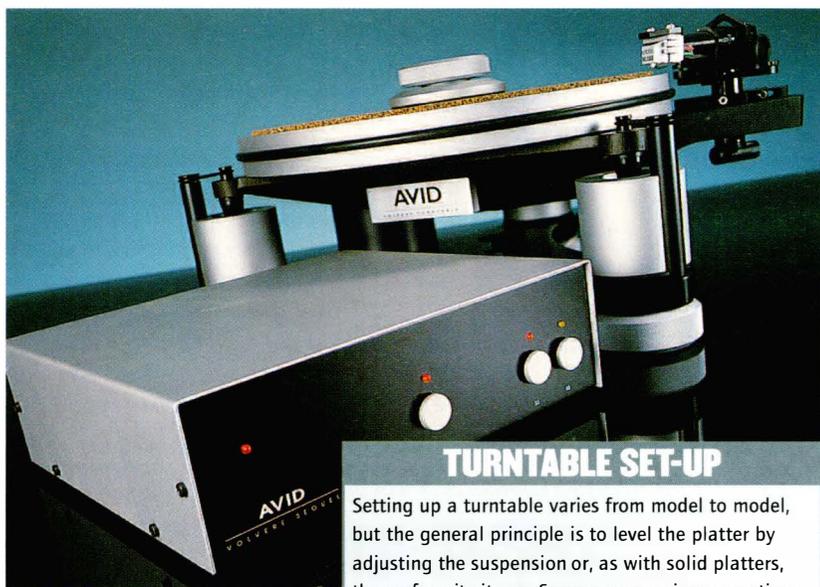
Turntables, cartridges and phono stages



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

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

A fourth element is an amp dedicated to the delicate job of amplifying and equalising the cartridge's insubstantial output. This is called a phono stage and can be found in some integrated amplifiers and preamps, but is increasingly purchased separately for use with line-only amps.



TURNTABLE SET-UP

Setting up a turntable varies from model to model, but the general principle is to level the platter by adjusting the suspension or, as with solid platters, the surface it sits on. Sprung suspensions sometimes require a bit of fine-tuning to sound their best, but the principle is to achieve a smooth, pistonic bounce.

Cartridge set-up is even more critical, as the angles at which the stylus traces the groove affects its tonal balance and levels of distortion. A good alignment protractor is essential if you are intending to set up your own cartridge, as is a degree of patience. In essence, there are two angles you need to get right: the tracing angle as the cartridge crosses the record if you are looking from above, and the vertical tracking angle (VTA), which is adjusted by raising or lowering the arm base to bring the arm parallel with the record surface.

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

TOP BUYS



NAD 533 £220

A simple and well-founded turntable combined with a tonearm, which is fine value for money and helps to deliver an impressive level of performance at a very modest price.



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.



Avid Volvere Sequel £3,500

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

Our favourite BB BEST BUY RC RECOMMENDED EC EDITOR'S CHOICE

TURNTABLES

Record players

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER
				SPEEDS	SUSP SUBCHASSIS	SWITCHABLE SPEED CHANGE	SUPPLIED WITH ARM	SUPPLIED WITH CART	
BB	Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high-end performance at an affordable price	33/45	●	●	●		203
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	●	●			194
R	Clearaudio Champion Level 2	1,955	Neutral balance, great looks, but only so-so detail. Benefits greatly from isolation	33/45			●	●	223
R	Dual CS415-2	160	No denying it's cheap and cheerful, but it does what it's paid for happily enough	33/45			●	●	214
R	Linn LP12 Basic	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc are still top rank	33	●		●		103
R	Michell Gyro SE	829	Stripped-down version of classic GyroDec, offering strong and lively sound	33/45	●				223
BB	Michell Orbe SE	1,725	A superb turntable, able to mix it with the best at virtually any price	33/45	●				192
BB	NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	33/45			●	●	203
BB	Rega P2	198	Updated Planar 2: just as much fun as ever and now even better value as the competition falls away	33/45			●		214
R	Rega P3	298	Updated Planar 3, building on the strengths of the P2 with added subtlety and detail	33/45			●		214
BB	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		●	●		228
EC	SME Model 10A	3,411	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	33/45	●	●	●		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	●	●	●		186
R	VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	33/45	●	●	●		203
EC	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in a clean reproduction	33/45	●	●	●		205

Our favourite

PHONO CARTRIDGES

MM and MC cartridges

PRODUCT	£	COMMENTS	SPECIFICATIONS			ISSUE NUMBER
			MM	MC	REPLACEABLE STYLUS	
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	●		●	214
Clearaudio Aurum Beta S	270	Clear improvement over cheaper Alpha, and good sound all round by any standards		●		223
Dynavector DV-20X L	350	Articulate-sounding with impressive treble resolve, though lightweight at times. Needs a high-quality turntable and arm		●		192
Dynavector DRT XV-1	2,900	Capable of conjuring one of the most tactile, three-dimensional sound stages on the vinyl planet. Extremely entertaining		●		208
Grado Prestige Black	40	Offers admirable detail and treble extension, with good bass and ambience too	●		●	214
Lyra Helikon	1095	Highly capable and highly neutral, this is a cartridge for all seasons, albeit fussy about vinyl quality	●			215
Ortofon MC 10 Supreme	300	A full and cultured-sounding cartridge, with collective attributes far outweighing its shortcomings		●		192
Reson Recca	250	If you're after a high-quality moving magnet cartridge, they don't get much better than this	●		●	192
Reson Etile	485	Plenty of life and detail, and refined with it		●		223
Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300		●		192

Our favourite

PHONO STAGES

Phono stages

PRODUCT	£	COMMENTS	SPECIFICATIONS				ISSUE NUMBER
			MM PHONO INPUTS	MC PHONO INPUTS	ADJ. GAIN	ADJ. IMPEDANCE	
Creek OBH-8SE	160	Neutral, relaxed and involving sound from this neat little unit	●				223
Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	●	●	●		201
Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer	●	●		●	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 Plus	700	Stunning detail, gives new insights into familiar discs		●			223
Tom Evans The Groove	1,800	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for maximum information retrieval off any LP		●			201

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

CARTRIDGE SPECS KEY **MM** Moving magnet cartridge – see amp and phono stage features to match this type. **MC** Moving coil cartridge – see amp and phono stage features to match this type.

REPLACEABLE STYLUS Some cartridges have separate styli for ease of replacement, but it compromises sound quality.

PHONO STAGE SPECS KEY **MM PHONO INPUT** Designed for a moving magnet cartridge. **MC** Designed for a moving coil cartridge. **ADJ. GAIN** Gain can be tailored to specific MC requirements.

ADJ. IMPEDANCE Impedance can be tailored to specific MC requirements.

RADIO TUNERS

FM and DAB hi-fi separates



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

DAB or FM

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

Where FM scores over DAB is in the lower cost of hardware and the greater reception

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

Absolute sound quality judgements are muddled by the fact that you are listening to different forms of compression and processing at the studio for each station.

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

RECEPTION

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

TOP BUYS



Denon TU260L II £130

The benchmark for all other budget tuners, with great sound and plenty of features.



NAD S400 £600

A nicely judged performer that maximises the potential of FM broadcasting.



Pure DRX-601E £300

This 'budget' DAB model can meet much more expensive alternatives head-on.



Arcam DT-81 £650

Highly professional implementation of DAB technology makes this one of the best options on the digital tuner market.

Our favourite TUNERS

BEST BUY RECOMMENDED EDITOR'S CHOICE

FM & DAB HI-FI SEPARATES

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

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



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specialise in designing and installing the finest home cinema, hi-fi and multi-room systems.

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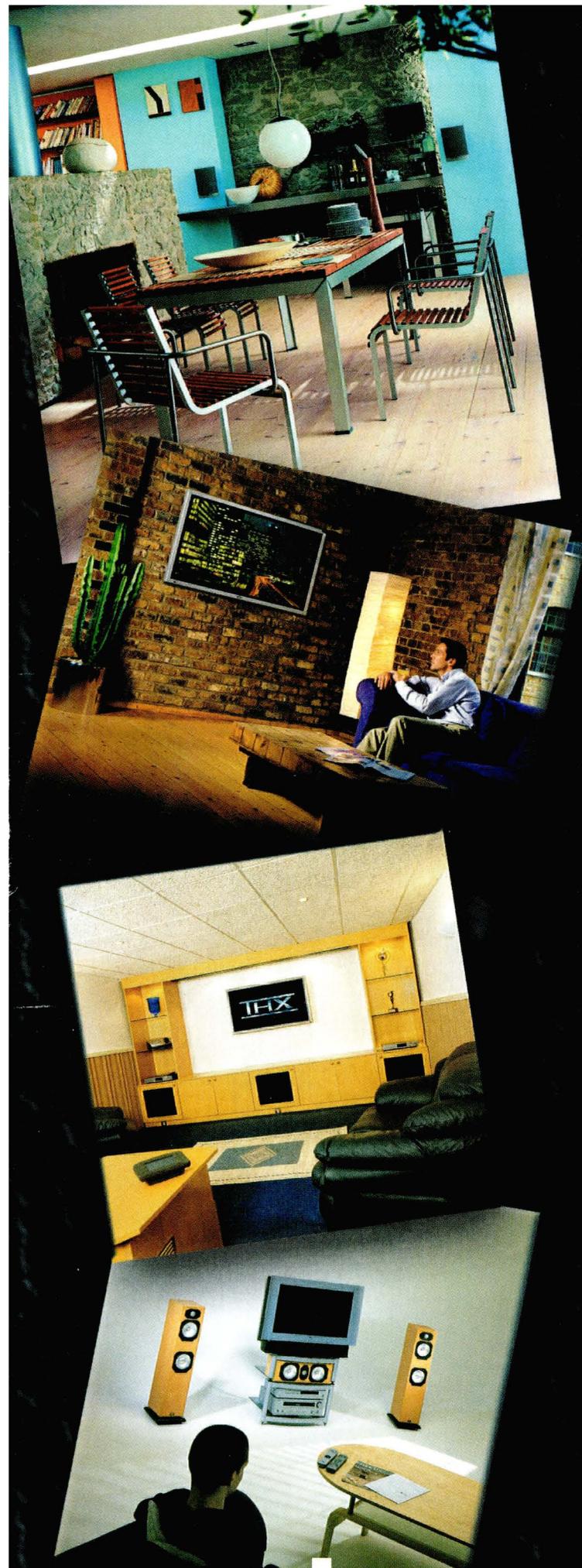
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Opening Soon Outlets in Poole, Shirley (Solihull) and Wolverhampton

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PROJECT

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 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."

★★★★★ WHAT HI-FI? SOUND AND VISION Awards 2000

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



Turntables & Tuners

Arcam DIVA T61 Tuner.....	£249.95
Denon TU260L MKII Tuner.....	£109.95
Marantz ST4000 Tuner.....	£119.95
Michell Gyro SE/RB300 Turntable.....	£1017.95
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.....	£549.95
Videologic DRX-601E DAB Tuner.....	£249.95

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

RCD-02 CD Player "Whether it's the raw, and sometimes just plain barking vocals of Tom Waits, or the stinging guitar stabs of Pete Townsend on some old Who tracks, the Rotel is one of those players that can't help but bring a smile to the face - it's a breath of fresh air." ★★★★★ WHAT HI-FI? SOUND AND VISION September 2002

RA-02 Amplifier "The amp has a fast, detailed and yet satisfyingly full presentation. That allows it to make a fine job of the beats of Groove Armada's *Goodbye Century* set without losing sight of the fine details of the mix, and also husking out Marianne Faithfull's deliciously smutty vocals on *Kissing Time* with real relish. Add in decent levels of equipment - and the convenience of remote control, and we reckon Rotel has a winner on its hands."

★★★★★ WHAT HI-FI? SOUND AND VISION August 2002



(((AE))) AEGISEVO Series ACOUSTIC ENERGY Evo One Speakers £179.95

"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.

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 through our test room's extensive CD library we couldn't find a genre that these AE's weren't happy playing." ★★★★★ WHAT HI-FI? SOUND AND VISION July 2002



CD Players

Arcam DIVA CD62T.....	£369.95
Arcam DIVA CD72T.....	£449.95
Arcam DIVA CD92T.....	£899.95
Arcam FMJ CD23T.....	£1199.95
Cyrus CD7.....	£799.95
Denon DCD485.....	£139.95
Linn Genki.....	£994.95
Linn Ikemi.....	£1949.95
Marantz CD4000.....	£99.95
Marantz CD6000Ki Signature.....	£399.95
Meridian 507.....	£1194.95
Meridian 588.....	£2099.95
Musical Fidelity A308 ^{CR}	£1999.95
Musical Fidelity NuVista 3D.....	£2999.95
Rotel RCD1070.....	£494.95
Sony CDPXE570.....	£109.95

Please Note: Some products may not be available at all outlets. Advertisement valid until at least 16th October 2002, E&OE.



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Amplifier Selection

- Arcam** DIVA A65 Plus Amplifier **£369.95**
- Arcam** DIVA A75 Plus Amplifier **£469.95**
- Arcam** FMJ A32 Amplifier **£1149.95**
- Cyrus** ACA7.5 Pre Amplifier **£699.95**
- Cyrus** Smart Power Amplifier **£599.95**
- Cyrus** 5 Amplifier **£499.95**
- Denon** PMA355 Amplifier **£229.95**
- Linn** Kolektor Pre Amplifier **£494.95**
- Linn** LK85 Power Amplifier **£494.95**
- Marantz** PM4200 Amplifier **£149.95**
- Musical Fidelity** A3.2 Pre Amplifier **£999.95**
- Musical Fidelity** A3.2 Power Amplifier **£999.95**
- Musical Fidelity** A308 Amplifier **£1999.95**
- Sony** TA-FE570 Amplifier **£149.95**



ARCAM
SOUND & VISION

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

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

★★★★★ **WHAT HI-FI?** SOUND AND VISION September 2002



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

★★★★★ **WHAT HI-FI?** SOUND AND VISION March 2001

B&W Bowers & Wilkins DM602S3 Speakers **£299.95**

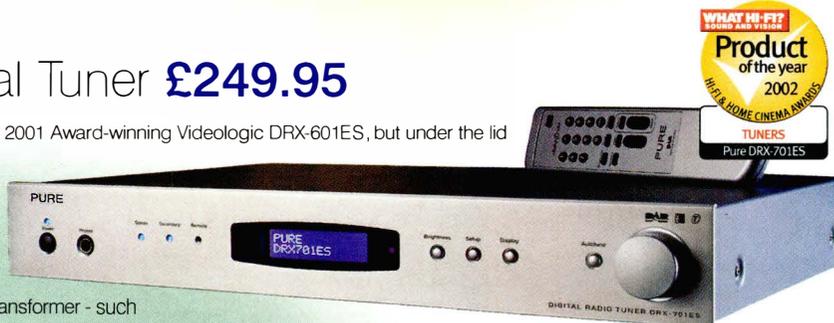
"But the B&W 602 S3 are our winners. They're big and not particularly beautiful, yet if it were our money they're what we would buy. No rival can match the wide ranging dynamics or low frequency performance of these not so compact standmounters. Add all-round sonic excellence and the choice is easy. Give them sufficient space to breathe, then sit back and enjoy the music."

★★★★★ **WHAT HI-FI?** SOUND AND VISION Supertest Winner August 2002

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



★★★★★ **WHAT HI-FI?** SOUND AND VISION October 2002



CYRUS

CD7Q CD Player £1149.95
7 Integrated Amplifier £699.95

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." ★★★★★ **WHAT HI-FI? SOUND AND VISION July 2002**

Cyrus 7 Amplifier "This is a fabulous amplifier. It's fast, punchy and has bags of power on tap but crucially delivers huge sackfuls of subtlety when the music requires. Some of the other amplifiers in this group may be better with particular genres of music but as an all-rounder it takes some beating." ★★★★★ **WHAT HI-FI? SOUND AND VISION November 1999**

ROKSAN Kandy KA1 MKIII Amplifier £549.95

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

The upgraded Kandy MkIII is an excellent amp; the MkII version was impressive, but MkIII is a stunner. It betters all the amps here in the timing department, and has a wonderfully robust character that works well with all types of music. It manages to retain the good points of the MkII while adding extra resolution and subtlety. All the amps here have a place in the market. It's just that at £550 the Kandy really does set the pace." ★★★★★ **WHAT HI-FI? SOUND AND VISION October 2002**



QUAD 11L Speakers £379.95

"Quad is best known for its superlative electrostatic designs, which start at £3500. So any £379 pair of speakers that carries the company's name has to be going some to avoid tarnishing the family reputation. The first surprise is that the 11Ls come in real-wood veneers covered with piano-gloss lacquer. This type of finish is almost unheard of at the £1000 mark, let alone at this price. Has anything been sacrificed for such a luxury finish? Here's the second surprise: apparently not.

The final surprise? Well, saving the best for the last, the sound quality of the 11Ls is phenomenally good. These are small speakers at just 33cm tall, but the scale and authority of their performance is terrific. The laws of physics dictate bass extension limitations, but thanks to a clever dual rear firing port arrangement the 11Ls plumb the depths with the determination of a rottweiler, even when placed in free space.

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

★★★★★ **WHAT HI-FI? SOUND AND VISION August 2002**



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).....	£894.95
Mission 780.....	£269.95
Mission 782.....	£629.95
Mission m71i.....	£129.95
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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MUSICAL FIDELITY **A3.2 Series**

A3.2 CD Player £999.95
A3.2 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.



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 has been to offer real advances in performance and value", says technical director Dean Hartley. Every single aspect of the existing range was analysed, every user comment studied. We could have improved what we had, but instead we decided to design a whole new range of speakers from the ground up." New models include the S1 and S2 standmounters, the S6, S8 and S10 floorstanders.

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

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

★★★★★ **WHAT HI-FI? SOUND AND VISION** October 2002

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." ★★★★★ **WHAT HI-FI? SOUND AND VISION** August 2001

Recorder Selection

- Marantz** DR6000 CD-RW.....**£299.95**
- Sony** MDS-JE770 MiniDisc.....**£229.95**
- Yamaha** KX393 Cassette Deck.....**£119.95**
- Yamaha** KX580SE Cassette Deck.....**£199.95**





Systems
Best Buy £1000 plus



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." ★★★★★ **WHAT HI-FI? SOUND AND VISION Awards 2001**

DENON

D-M30 CD Receiver £229.95 SC-M50 Speakers £69.95

"Denon's gorgeous D-M30 has a fine pedigree - and a record of success. Its forebear the D-M3 kept impressing us with its balance of good looks and great sound, winning two What Hi-Fi? Awards on the trot. Now the latest generation takes home a Product of the Year gong two years in a row. On its own merits, too, as this is much more than a rehash of the D-M3. Upgraded audio circuitry, improved power supply and the Mission-designed speakers all improve the package. The sound is superb, well-balanced and weighty... It's a big system in a very cute box."

★★★★★ **WHAT HI-FI? SOUND AND VISION Awards 2001**



Optional Recorders:

DMD-M30 MiniDisc Recorder • DRR-M30 Cassette Deck



TEAC Reference 300 System £549.95

"Teac's Reference 300 system is an absolute belter. The company's Reference series has won lots of awards and many admirers in the past, and the 300 range at £200 less than the bigger 500 series, is no disappointment. Your £600 buys you everything but speakers: an amplifier, tuner, CD player and cassette deck... As beautifully built as we've come to expect from Teac, this system delivers the goods with style."

★★★★★ **WHAT HI-FI? SOUND AND VISION Awards 2001**



Hi-Fi System Selection

Cyrus Quattro FM Ex Power Amp & Speakers	£899.95
Denon 201 Ex Speakers	£629.95
Denon DM50 Ex Speakers	£269.95
Marantz Eclipse 19 Inc Speakers	£549.95
Marantz Eclipse 21 Inc Speakers	£649.95
Marantz Eclipse 22 Inc Speakers	£699.95
Marantz Eclipse 25 Inc Speakers	£799.95
Tag McLaren Aphrodite Ex Speakers	£2994.95
Teac Reference 100 Inc Speakers	£299.95
Teac Reference 500 Ex Speakers	£699.95
Yamaha Pianocraft E150 Inc Speakers	£249.95

Please Note: Some products may not be available at all outlets.
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scotland and north

- Aberdeen** 491 Union Street **01224 587070**
- Edinburgh** 5 The Grassmarket **0131 229 7267** Closed Monday
- Glasgow** 88 Great Western Road **0141 332 9655**
- Hull** 1 Savile Row, Savile Street **01482 587171**
- Leeds** 112 Vicar Lane **0113 245 2775** Open Sunday
- Liverpool** 16 Lord Street **0151 707 8417**
- Manchester** 69 High Street, City Centre **0161 831 7969**
- Newcastle** 19 Newgate Street **0191 221 2320**
- Preston** 40-41 Lune Street **01772 825777** Open Sunday
- Sheffield** 635 Queens Road, Heeley **0114 255 5861** Open Sunday

midlands and east

- Bedford** 29-31 St Peters Street **01234 272779**
- Cambridge** 17 Burleigh Street **01223 304770**
- Ipswich** 12-14 Dogs Head Street **01473 286977**
- Leicester** 10 Loseby Lane **0116 253 6567**
- Lincoln** 20-22 Corporation Street **01522 527397**
- Norwich** 29/29a St Giles Street **01603 767605**
- Nottingham** 597-599 Mansfield Road **0115 911 2121**
- Oxford** 41 St Clements Street **01865 241773**
- Peterborough** 36-38 Park Road **01733 897697** Open Sunday

midlands and west

- Birmingham** 12 Queensway Arches, Livery Street **0121 233 2977**
- Bristol** 92b White Ladies Road, Clifton **0117 974 3727**
- Cardiff** 104-106 Albany Road **029 2047 2899**
- Cheltenham** 14 Pitville Street **01242 241171**
- Exeter** 28 Cowick Street **01392 218895**
- Plymouth** 107 Cornwall Street **01752 226011**
- Poole** Opening Soon Subject to Legal Completion **01202 671677**
- Shirley (Solihull)** Opening Soon Subject to Legal Completion **0121 733 3727**
- Swansea** 24 Mansel Street **01792 465777** Open Sunday
- Wolverhampton** Opening Soon Subject to Legal Completion **01902 312225**

london and south east

- Brighton** 57 Western Road, Hove **01273 733338**
- Bromley** 39a East Street **020 8290 1988**
- Chelsea** 403 Kings Road **020 7352 9466**
- Crawley** 32 The Boulevard **01293 510777**
- Croydon** 369-373 London Road **020 8665 1203** Open Sunday
- Epsom** 12 Upper High Street **01372 720720** Open Sunday
- Guildford** 73b North Street **01483 536666**
- Holborn** 144-148 Grays Inn Road **020 7837 7540**
- Kingston** 43 Fife Road **020 8547 0717** Open Sunday
- Maidstone** 96 Week Street **01622 686366** Open Sunday
- Reading** 3-4 Kings Walk Shopping Centre **0118 959 7768**
- Sevenoaks** 109-113 London Road **01732 459555**
- Southampton** 33 London Road **023 8033 7770**
- Southgate** 79-81 Chase Side **020 8886 2777**
- Swiss Cottage** 21 Northways Parade, Finchley Rd **020 7722 9777** Open Sunday
- Tunbridge Wells** 28-30 St Johns Road **01892 531543**
- Watford** 478 St Albans Road **01923 213533** Open Sunday
- Witham (Essex)** 1 The Grove Centre **01376 501733**

Please call to verify hours of business.

Contact our outlets via **E-Mail** outlet@sevenoakssoundandvision.co.uk

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.

croydon store re-fit

We are pleased to announce that the Croydon store has now been completely refurbished and we would like to take this opportunity to invite customers new and old to come and see the new look shop.

opening soon

Over the next few months we will be opening new outlets in Poole, Shirley (Solihull) and Wolverhampton. Full details to follow soon.

sevenoaks online

The Sevenoaks Sound & Vision website has news and information on the Sevenoaks group and its outlets nationwide. The website is designed to provide you with answers to the questions you may have when buying new equipment.

The site has comprehensive guides to a range of products and technologies from vinyl and compact disc to all the latest formats, including DVD Audio, SACD and widescreen plasma monitors and front projection systems.

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 over forty outlets nationwide, the Sevenoaks Sound & Vision group stock and display a wide range of products. As technology delivers improvements in performance, so 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.

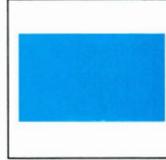
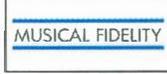
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Spread the cost of buying. 0% finance option is available on the vast majority of products we stock. †Written details on request. Licensed credit brokers. Minimum balance £400. Subject to status.

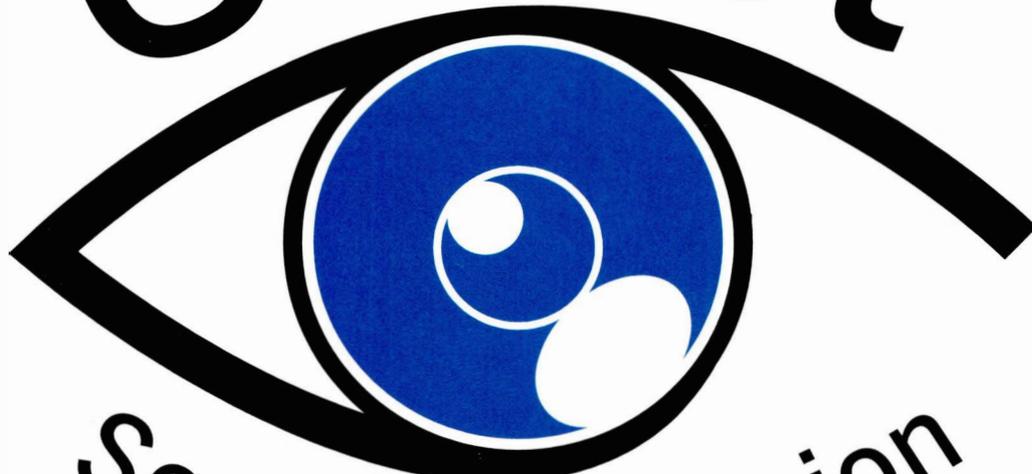
pricing policy

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

In the event you can find the same products and excellent service at a lower price, please bring it to our store managers' attention. We will always endeavour to offer you the best deal.



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Sound and Vision

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the award-winners
in store**

Are you someone who is not easily satisfied? Someone who demands the very best, the latest or perhaps the purest? Then you are going to love seeing what Unilet have in store.

Whether you are looking for a turntable or a state-of-the-art home cinema set up, or perhaps that elusive speaker cable that you read about in an American hi-fi magazine, you are likely to find it at Unilet. For years Unilet has been the place for the serious audiophile.

So why not come in and see us? You'll find us tucked away off the High Street, opposite Waitrose in New Malden, Surrey. We're just yards away from the BR station and a couple of minutes from the A3.



For a copy of our latest price list please call:

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or check us out on the web:

www.unilet.net

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Surrey KT3 4BY
Fax: 020 8336 0820



The Hidden Hi-Fi Store

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.

TOP BUYS



Philips CDR802 £300

Multidisc recorder that's slick and accomplished, albeit with a slightly flaky build.



Marantz DR6000 £400

Quality in a box – it eschews gimmicks, but it does a simple job very well.



Sony MDS-JE480 £130

Entry-level MD recorder that does exactly what it says on the tin, at a bargain price.



Yamaha CDR-HD1000 £700

First of its kind – a CD player and hard disc audio recorder. Effective but pricey.

Our favourite BEST BUY RECOMMENDED EDITOR'S CHOICE DIGITAL RECORDERS

CD-R/RW, MD and HD recorders

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS		
				DECKS	HD CAPACITY (GB)	ISSUE NUMBER
CD-R/RW RECORDERS						
R	Denon CDR-1000	400	A respectable player and recorder, though some midband congestion was noted when recording	1		218
R	Marantz DR6000	400	No frills, but in its fundamentals this is one of the finest CD recorders on the market	1		233
R	Marantz DR-17	1,500	Highly recommended, but with a jitter problem that, resolved, would improve sound quality	1		205
R	Philips CDR802	299	Tacky looks and build notwithstanding, this is a well-equipped and technically sound recorder at a good price	2	in	233
R	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		218
R	Pioneer PDR-609	280	Classy single-deck CD-R/RW burner is also a good, if characterful, player	1		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 RECORDERS						
R	Pioneer MJ-D508	200	Well equipped, but musically sleep-inducing player that receives its Recommendation owing to the price	1		205
R	Sony MDS-JE480	130	Straightforward and effective, but the three real killer features are price, price and price	1		233
HD RECORDERS						
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	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

STEREO AMPLIFIERS

Integrated and pre/power amps



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

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

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

How to choose an amp

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



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

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

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

Q&A

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

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

WHAT IS BI-WIRING AND BI-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.

TWO-CHANNEL AV

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

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

TOP BUYS



Arcam A65 Plus £370

Articulate and coherent integrated amp that will charm you with its midrange and high-frequency sophistication. Power is limited, but it's a quality not quantity device.



NAD C370 £450

This powerhouse stereo integrated amp just about has it all, including a flexible set of features. Tremendous power output (for the price) helps too.



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.



ATC SIA2-150 £2,375

A versatile and powerful integrated amp. Main strengths are an engaging, detailed soundstage that produces forward and open vocals without becoming too overbearing.

Our favourite BEST BUY RECOMMENDED EDITOR'S CHOICE

STEREO AMPLIFIERS

Integrated amplifiers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER
				LINE INPUTS	PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	
UP TO £1,000									
<input checked="" type="checkbox"/>	Arcam A65 Plus	370	Highly articulate and fluent, offers unusual insight for its price	5	●	●	●	40	232
<input checked="" type="checkbox"/>	Arcam DIVA A75 Plus	470	Quick, lively and well-presented amplifier, bass is sharper and more tuneful than its predecessor	5	●	●	●	50	224
<input checked="" type="checkbox"/>	Arcam DIVA A85	800	Much enhanced design topology gives a more hard-hitting, engaging sound than previous Arcams	7	●	●	●	85	214
<input checked="" type="checkbox"/>	Cyrus 5	500	An enjoyable amp that is assured and unflappable, although detail is unremarkable	7	●	●	●	45	205
<input checked="" type="checkbox"/>	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best-sounding audio brick around	6	●	●	●	60	196
<input checked="" type="checkbox"/>	Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high-fidelity operation	5	●	●	●	30	208
<input checked="" type="checkbox"/>	Exposure 2010	599	Neatly turned-out amplifier with mainstream appeal, but a bit on the bland side	6	●	●	●	50	214
<input checked="" type="checkbox"/>	Kenwood KAF-3030R	200	Kenwood's best amplifier for some years has a lean bass, but excellent mid and treble	5	●	●	●	50	217
<input checked="" type="checkbox"/>	Marantz PM8200	599	Warm, solid and likeable sound, with the occasional flash of steel when under pressure	5	●	●	●	60	224
<input checked="" type="checkbox"/>	Musical Fidelity X-A2	500	A chip off the old block; sounds very similar to the X-A1 and XA-100R	6	●	●	●	75	208
<input checked="" type="checkbox"/>	Myryad Z140	450	Slimline beauty with genuine integrity and coherence, if relatively limited power	5	●	●	●	50	232
<input checked="" type="checkbox"/>	NAD C320BEE	220	Spirited and enthusiastic amp with slight bass hump and a sound that will suit relaxed speakers	7	●	●	●	50	232
<input checked="" type="checkbox"/>	NAD C350	300	A typical NAD: refined, warm tonality, adequate detail and a strong power yield	7	●	●	●	60	208
<input checked="" type="checkbox"/>	NAD C370	450	Flexible, ultra high-power integrated amplifier delivers a real punch, but is not without finesse	6	●	●	●	120	217
<input checked="" type="checkbox"/>	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	●	●	●	30	214
<input checked="" type="checkbox"/>	Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	●	●	●	60	192
<input checked="" type="checkbox"/>	Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness	6	●	●	●	120	205
<input checked="" type="checkbox"/>	Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6	●	●	●	70	201
<input checked="" type="checkbox"/>	Rotel RA-931 MkII	189	Simple, non-remote amp majors on clarity and transparency, without sounding over-analytical	4	●	●	●	35	208
<input checked="" type="checkbox"/>	Rotel RA02	349	Agile and capable slimline design with an engaging sound that draws you into the music	4	●	●	●	40	232
<input checked="" type="checkbox"/>	Sugden A21a	899	This single-ended, Class A transistor amp has exquisite resolving ability and presence – an authentic classic	5	●	●	●	25	224
ABOVE £1,000									
<input checked="" type="checkbox"/>	Arcam FMJ A32	1,150	Remarkably flexible and well-featured, with excellent sound quality for the price	7	●	●	●	100	228
<input checked="" type="checkbox"/>	ATC SIA2-150	2,375	Starkly revealing powerhouse that eats most integrateds for breakfast	5	●	●	●	150	228
<input checked="" type="checkbox"/>	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	202
<input checked="" type="checkbox"/>	Marantz PM-14 MkII KI	2,000	Highly sophisticated and well equipped, with a refined and relaxed sound quality that's hard to resist	7	●	●	●	100	228
<input checked="" type="checkbox"/>	Primare A30.1	1,500	Smooth, detailed singing quality, elegant appearance and healthy power yield	6	●	●	●	100	214
<input checked="" type="checkbox"/>	YBA Intégré	1,550	Careful system matching is essential, but this is definitely one of the good guys	6	●	●	●	50	214

Our favourite BEST BUY RECOMMENDED EDITOR'S CHOICE

STEREO AMPLIFIERS

Pre/power amplifiers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER
				PRE-AMPLIFIER	POWER AMPLIFIER	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	
UP TO £2,000									
<input checked="" type="checkbox"/>	Arcam A85/P85	1,330	Integrated/power amp combo won't suit all systems, but delivers classic A85 virtues plus extra gravitas and range	●	●	7	●	85	225
<input checked="" type="checkbox"/>	Arcam FMJ A32/P35	1,980	One of the few correctly matched integrated/power combinations, the sound has real gravitas and sophistication	●	●	7	●	100	227
<input checked="" type="checkbox"/>	ATC CA2	750	Stripped-down version of ATC's range topper delivers considerable transparency and bandwidth. Excellent value	●	●	5	●	221	
<input checked="" type="checkbox"/>	Creek P43R/A43	900	Great value, with a particularly impressive way with dynamics	●	●	6	●	140	212
<input checked="" type="checkbox"/>	Croft Vitali/Series 5C	2,000	Oddball retro style and ergonomics, but truly magical voice coherence and projection, great transparency	●	●	3	●	30	216
<input checked="" type="checkbox"/>	Cyrus aCA7.5/Smart Power	1,250	Great for classical, jazz, and existing Cyrus owners	●	●	7	●	60	212
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	Musical Fidelity X-P100	800	Good long-term listening prospects; detailed and with a little fruitiness	●	●	6	●	200	
<input checked="" type="checkbox"/>	Musical Fidelity A308CR	3,898	Bold-looking design with an absence of sonic signature that proves there is life after NuVista	●	●	4	●	250	231
<input checked="" type="checkbox"/>	Myryad MP100/MA240	1,600	Smart finish and impeccable manners, smooth, clean performance	●	●	6	●	120	212
<input checked="" type="checkbox"/>	NAD Silverline S100/S200	2,000	Beautifully built kit that sounds as good as it looks, with heaps of power	●	●	7	●	200	200
<input checked="" type="checkbox"/>	Naim NAC112/NAP150	1,425	Clean, clever simplicity, plus a very well-balanced sound that's much sweeter than earlier Naims	●	●	6	●	50	213
<input checked="" type="checkbox"/>	Rothwell Indus/Rubicon	1,488	Quirky valve combo with passive pre-amp has a lovely neutrality and consistency across a wide dynamic range	●	●	6	●	10	216

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

Our favourite BEST BUY RECOMMENDED EDITOR'S CHOICE
STEREO AMPLIFIERS continued

Pre/power amplifiers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS						
				PREAMPLIFIER	POWER AMPLIFIER	LINE INPUTS	PHONO INPUT	REMOTE CONTROL	POWER OUTPUT (W)	ISCFE NUMBER
ABOVE £2,000										
R	Audio Note M2Phono/P2SE	2,698	Wonderfully natural and inviting sound with great warmth and drama, but limited loudness capability	●	●	4	●		18	216
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)	●	●	6	●	●	100	216
EC	AVI S2000M	2,398	This preamp/monoblock pairing does most things very well and images better than most	●	●	5		●	150	221
EC	Border Patrol P20	6,750	Muscular 300B P-P design with fluidity and dynamics to match the best	●	●				20	231
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application	●	●	8		●	120	212
BB	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
BB	Electrocompaniet EC4.7/120DMB	3,448	Bulky Norwegian combo has wonderful transparency, wide dynamic range and fine musical tension	●	●	6		●	120	216
EC	Mark Levinson No380/No334	9,490	Pre has precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	●	●	6		●	125	195
EC	Naim NAP500	10,995	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading-edge definition		●				140	208
EC	Naim NAC552	11,750	Extremely expensive preamp, but still solid value. Magnificent sound with fine flexibility and convenience	●		6		●		233
R	Primare A30.1/A30.2	2,700	Powerful, smooth, though slightly uneven with some speakers, but excellent control and separation in others	●	●	6		●	100	225
R	TAG McLaren DPA32R/250MR	4,940	In a class of its own for extendibility and it's tremendously subtle, though it can sound constrained dynamically	●	●	6		●	250	230
R	T+A PA 1520 R	2,400	Powerful, punchy amp that has many positive qualities, but sometimes seems to try too hard	●	●	8			260	230

AV AMPLIFIERS

Surround sound amps for music and movies

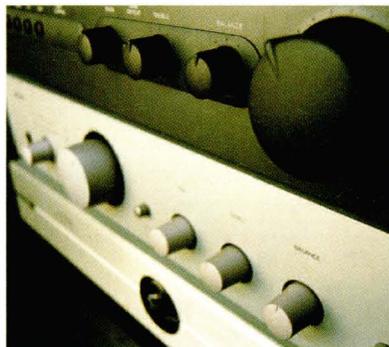


The multichannel, surround sound or AV amplifier is a popular option, thanks to the success of the DVD player and home cinema. Now you can buy five channels or more of amplification for the price of two. Now that multichannel music is also on the agenda, there's a lot to be said for a good AV amp or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

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

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

Processing in AV amps is needed because the surround formats on DVD-Vs are compressed, limiting their high-fidelity



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

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

Q&A

HOW MANY CHANNELS?

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

WHAT'S THE DIFFERENCE BETWEEN A PROCESSOR AND AN AV AMP?

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

WHAT DOES THE .1 IN 5.1 STAND FOR?

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

HI-FI MEETS SURROUND SOUND

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

their movie DVDs justice, and the number of AV products delivering sufficient quality is on the increase. But most aren't cheap – building a top-quality system with five or more channels is inevitably more expensive than sticking

with stereo. There are some very decent integrated options below £1,000, though the best (and most costly) route is to buy a separate processor and power amp(s). Or you can add AV amplification to a stereo model you can't bear to part with.

TOP BUYS



NAD T761 £650

The simple fact is that it does the job better than most others, whether singing piano or forte, and none of the features it doesn't have were missed.



Arcam AVR200 £800

Home cinema purists may want a bit more low-frequency muscle and it hardly bristles with extra features, but Arcam's DiVA receiver is competent with music and movies alike.



TAG McLaren AV32R EX £2,994

A superb multichannel processor – THX Ultra-approved and fully 7.1-compatible. Now includes a 5.1 analogue bypass for DVD-Audio and SACD.



Bryston SP1/9B THX £7,100

Purist hi-fi meets surround amplification and decoding with the minimum of musical compromise. Processor/preamp now features 7.1 and 5.1 analogue throughput.

Our favourite AV AMPLIFIERS

BEST BUY
 RECOMMENDED
 EDITOR'S CHOICE

Multichannel amplifiers

STATUS	PRODUCT	£	COMMENTS	RECEIVER	LINE INPUTS	7.1 COMPATIBLE	5-CHANNEL POWER (W)	ISSUE NUMBER
INTEGRATED AV AMPS								
<input type="checkbox"/>	Arcam AVR200	800	Upgraded AVR100 with Dolby Pro-Logic II and some bass management. Great for stereo, a bit bass-light for multichannel		6		70	229
<input type="checkbox"/>	Harman Kardon AVR 5500	749	Powerful-sounding receiver with some clever features, such as an automatic set-up, but a bit hard-edged		8		85	229
<input type="checkbox"/>	Marantz SR-5000	430	Something of a rough diamond, but a powerful and entertaining package		5		105	198
<input type="checkbox"/>	NAD T761	650	First-rate home cinema amp that sounds more powerful than its specs imply, and competes with specialist stereo amps		9		80	223
<input type="checkbox"/>	Onkyo TX-DS989	2,850	Authority personified, excellent AV signal processing, but sound quality a tad unsubtle		9		160	210
<input type="checkbox"/>	Sony VA777ES	1,500	Smart circuitry gives this model unusual precision and transparency, and it is a fine all-rounder		9		100	210
AV PROCESSORS AND POWER AMPS								
<input checked="" type="checkbox"/>	Bryston SP1/9B THX	7,100	Stripped-back 5.1 channel processor/amp combo reaches genuine audiophile heights		6	OPT	120	219
<input checked="" type="checkbox"/>	Meridian 861	9,833	Powerful surround processor with flexible modular construction, marvellous versatility to drive any speaker configuration		6			230
<input type="checkbox"/>	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
<input type="checkbox"/>	Roksan DSP/5 ch amp/VSU	2,440	Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels		4		80	210
<input checked="" type="checkbox"/>	TAG McLaren AV32R EX	2,994	Flexible AV processor, unusually good with music. Excellent for multichannel system in standard or seven-channel 'EX' form		6			215

SPECS KEY **RECEIVER** Integrated multichannel amp with built-in radio tuner. **LINE INPUTS** Input sockets for source components with a line level output: CD players, DVD players, tape decks, tuners, phono stages etc. **7.1 CHANNEL COMPATIBLE** The amp either has seven-channel in and outputs or in some instances is equipped with seven channels of amplification. **5-CHANNEL POWER (W)** Power output in watts per channel of all channels driven by the amp.

Information on Russ Andrews products available on our website

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STEREO SPEAKERS

Speaker pairs for stereo sound



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

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

Positioning

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

Going multichannel

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



Choosing speakers

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

Spikes

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

POWER

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

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

Q&A

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

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

WHICH SPEAKERS ARE BEST FOR SMALL ROOMS?

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

WHICH SPEAKERS ARE BEST FOR BIG ROOMS?

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

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

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

TOP BUYS



Acoustic Energy Aegis Evo One £180

A good-looking budget standmount incorporating some serious engineering for the money. Sound is crisp, relaxed and sophisticated.



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.

Our favourite STEREO SPEAKERS

BB BEST BUY R RECOMMENDED EC EDITOR'S CHOICE

Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE (WxHxD) (CM)	FLOORSTANDER	EASE OF DRIVE	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL
UP TO £1,000									
BB	Acoustic Energy Aegis Evo 1	180	An unusually classy and sophisticated performer for the price; laid-back sound and good looks too	19,36,24	A	30	●	226	
R	AR S20	150	Might not have the most dynamic sound around, but it's an honest and effective musical communicator	20,37,28	A	28	●	215	
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	●	215	
R	AVI Biggatron Red Spot	599	Good bass coherence and timing, but the lean and decidedly forward balance won't be to every taste	19,5,37,30	A	30	●	211	
BB	B&W DM303	180	Chunky looking and lively sounding, with deep bass, a fine midband and a restrained top end	20, 33, 23	A	23	●	226	
BB	B&W DM603 S3	600	Excellent all-rounder, smooth for its price with fine bass and mid, though top might be more refined	20,91,29	●	A-	25	●	231
R	B&W CDM-1NT	750	An uncommonly stylish and sonically self-effacing standmount that should be very easy to live with	22,40,29	A	30	●	208	
R	Bluroom Minipod	249	Blobular styling aside, it's hard not to fall for the Minipod's openness, expression and detail	18,34,17	A	50	●	225	
R	Castle Durham 3	399	A very attractive near-miniature wallmount with a lively and communicative disposition – lots of fun	19,37,22	●	A 45	●	227	
R	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	●	193	
BB	Dynaudio Audience 42	400	An aristocrat of the vinyl-covered miniature breed. A terrific small speaker for the price	17,29,24	A	40	●	215	
R	Dynaudio Audience 62	729	Pricy but cute vinyl floorstander that is a class act sonically – lightweight, but clean and dextrous	20,86,26	●	A 30	●	231	
R	Elac JET 205	650	Sweet, smooth, clean and delicate tweeter justifies hefty price tag, but a little lacking in warmth and body overall	20,33,29	A	40	●	231	
R	Energy e:XL 25	400	Neat slimline design delivers a fine all-round performance for the price, but could sound smoother	15,87,31	●	A-	25	●	201
BB	Epos M12	499	Retains the beguiling midband coherence that made the ES12 such a favourite. A genuine class act	20,38,26	A	40	●	215	
BB	Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	●	A+	30	●	193
BB	Heybrook Heylios	269	Classically styled standmount has a fine balance of smoothness and dynamics, plus real wood veneer	24,36,27	A+	25	●	201	
R	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	●	199	
BB	Infinity Alpha 30	300	Some sharpness and nasality, but fine musical literacy plus a good measure of dynamic expression	22,86,29	●	A 30	●	215	
R	Jamo E 850	400	A tad bright perhaps, but a cleverly conceived and good-looking speaker at a very reasonable price	18,87,34	●	A-	30	●	224
BB	JBL Xti40	430	Real wood and a cute shape, with a punchy driving bass and a restrained overall balance	23,82,31	●	A 40	●	210	
BB	JMLab Chorus 715	529	A fine all-rounder, this compact floorstander is lively and well balanced with good dynamic drive and grip	20,94, 28	●	A-	22	●	227
R	JMLab Cobalt 816	899	A little lean, cool and bright, but has righteous dynamic expression and lively communication skills	22,99,29	●	A 22	●	224	
R	Mission 771e	199	Beautifully styled miniature has a delightfully voiced midband and real wood finish	17,31,22	A	45	●	207	
R	Mission M71	129	Neat-looking and very discreet-sounding at a very nice price; experiment for best placement	17,29,28	A	40	●	226	
BB	Mission M73	199	Good-looking floorstander. Dynamics are a little limp, but it has a good overall balance. Excellent value for money	20,88,31	●	A 25	●	215	
R	Mission 773e	399	Beautifully designed slim floorstander could be more neutral, but still delivers an all-round entertaining sound	18,88,26	●	A-	30	●	193
R	Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	17,82,28	●	A 25	●	199	
R	Mission 775e	799	Lots of speaker for the money, and musically involving too, if a little short on serious weight and authority	23,115,30	●	A 25	●	204	
BB	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	A	30	●	207	
R	Monitor Audio Bronze 3	270	Good value with better dynamic expression than most of its ilk	19,87,24	●	A 30	●	215	
R	Neat Neat Petite III	845	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,31,20	A	30	●	211	

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

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The Heathrow High Fidelity Show - The Renaissance Hotel - 29/30 March 2003

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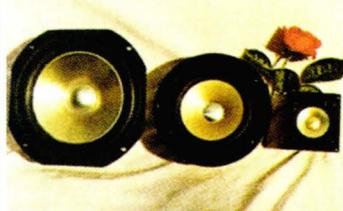
Our favourite R BEST BUY BB RECOMMENDED EC EDITOR'S CHOICE

STEREO SPEAKERS continued

Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE (WxD) (CM)	FLOORSTANDER	EASE-OF-DRIVE	BASS FROM (HZ)	FREE SPACE	CLOSE-TO-WALL
R	Opera SP-1	525	A strong case for serious hi-fi with curves. Sound is clear, crisp and detailed	16,29,23		A	50		225
BB	PMC TB2	700	A worthy successor to the TB1, which sets a high standard in its size/type for neutrality and transparency	20,41,31		A	30		211
R	Sonus Faber Concerto Home	999	Looks good and sounds better. Great midband communication skills, well aligned for close-to-wall siting	24,36,34		A	40		233
R	Spendor S3	600	Beautifully voiced, unboxy, lacks some dynamic and loudness capabilities. Best suited to small rooms	17,31,21		A-	30		224
EC	Tannoy mX2	150	Surprisingly refined considering its very modest price: very communicative with outstanding midband delicacy	19,33,25		A	45		207
BB	Tannoy Revolution R2	400	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24		A-	20		193
R	Tannoy Eyris 1	600	Pricy but very cute wallmount miniature; oddball, but has marvellous midband subtlety and delicacy	17,35,26		A+			227
R	Tannoy Eyris 2	999	This super-slim and cutely different-looking floorstander is very communicative, despite weak treble	17,91,26		A	20		231
BB	Triangle Antal XS	875	Ugly duckling has a rather tasty sound, with plenty of vigour and excitement	22,108,30		A-	40		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		226
ABOVE £1,000									
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		A-	25		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		219
EC	ATC SCM10A	1,269	Stylish, active powerhouses with plenty of subtlety when required (balanced connection only)	23,39,31		A	45		221
EC	ATC SCM50A SL	7,255	350W of power combine with superb drive units and a 48kg cabinet to provide alarming resolution	35,72,48		A	38		218
R	Audio Note AN-E/D	1,520	This classic large standmount might have throwback aesthetics, but it delivers an exceptional all-round sound	36,79,28		A+	20		204
R	Audio Note AN-J/SpE	1,675	Retro styling, but a vigorous and dynamic performer that creates fine musical tension	33,59,25		A	38		219
R	B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31		A	28		199
EC	B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art. Needs real power, but gives real sound	39,111,55		A-	34		183
R	B&W Nautilus 801	8,500	The 801 is a magnificent loudspeaker in nearly every respect, but it is one that likes to play loud	52,111,69		A-	34		186
EC	B&W Nautilus 800	11,000	Unequivocal challenge for world domination. One of the most revealing speakers around	45,120,65		A-	<20		231
EC	B&W Signature 805	2,250	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		A-	40		204
BB	Castle Harlech S2	1,000	Improved Harlech is slightly aggressive, but lots of fun, and very good-looking too	20,96,33		A	50		219
R	Castle Howard S3	1,350	A solid all-rounder with uniquely spacious imaging, bit pricy compared to some though	21,99,32		A+	38		229
R	Dali Noble	1,059	Easy on the eye and the ear, but unerringly musical. Some might prefer harder-hitting dynamics and bass	18,117,23		A	41		225
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		204
BB	Dynaudio Audience 82	1,460	Bulky, with vinyl finish, but offers exceptional neutrality, bass extension, power handling and loudness potential	22,106,36		A	30		229
R	Dynaudio Contour 1.3 MkII	1,198	Outstanding performer among compact standmounts; neutral, with fine punch and dynamic range	20,38,29		A-	45		219
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		214
R	Harbeth Super HL5	1,699	Looks old-fashioned, but classic monitor combines authority and transparency with good neutrality	33,64,31		A	30		233
BB	Infinity Intermezzo 2.6	1,600	Bi-amp speaker sounds laid back and 'disappears' acoustically; highly enjoyable, looks and sounds great	25,38,29		A+	27		233
EC	JBL TI-2K	1,250	Solid standmount with boat-tail rear end and highly detailed, spacious sound alongside weighty bass	42,28,42		A	45		230
BB	JMLab Cobalt 826	1,279	Big three-way French floorstander is lively, informative and mostly neutral, if a tad bright	22,103,34		A-	35		219
EC	JMLab Micro Utopia	3,349	Superb top-of-the-line standmount with magnificent powers of analysis and communication; no deep bass	26,43,41		A-	50		220
R	Linn Katan Aktiv/LK140	2,325	Too small to have much grunt or loudness, but bright top is very sweet, clean and detailed	17,34,23		ACT	40		214
EC	Living Voice Avatar	2,700	Dynamic and highly resolved, yet physically discreet design with a relaxed balance	22,104,27		A+	40		218
EC	Living Voice Avatar OBX-R	4,000	Discreet, but extremely fine design with external crossover and an affinity with great amps and sources	22,104,27		A+	45		196
BB	Meridian M33	1,560	Compact active wallmount packs remarkable dynamic vigour into a very discreet package	15,38,22		ACT	45		214

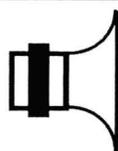
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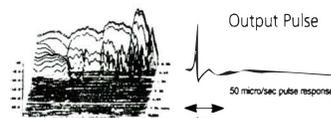


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Possessing outstanding ability to reproduce transients faithfully, and reproduce a wide frequency band, the 50mm unit covers 100Hz-20kHz, allowing flexibility in the choice of crossover frequency for multiple-driver loudspeakers: e.g. 200Hz (or lower 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..

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Our favourite BB BEST BUY RC RECOMMENDED EC EDITOR'S CHOICE

STEREO SPEAKERS continued

Stereo speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				SIZE (WxD) (CM)	FLOOR STANDER	EASE OF DRIVE	BASS FREQ (HZ)	FREQUENCY	CLOSE TO WALL
BB	Naim Allae	1,990	Chunky little floorstander has a 'cold' overall balance, but remarkable powers of musical analysis	24,94,28	●	A	40	●	229
EC	Naim NBL	6,925	Elegant, large floorstander is exceptionally informative, with an awesome dynamic range and dry, forward balance	29,116,47	●	A-	20	●	200
EC	Naim SL-2	4,995	Delivers magnificent musical analysis and communication skills in a notably discrete physical package	28,103,33	●	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	●	A-	20	●	226
BB	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	●	199
BB	PMC FB1	1,410	Has the lively coherence of a simple two-way, alongside impressive bass weight and extension	20,105,31	●	A	20	●	204
BB	PMC AML1	3,700	Sparkling active Pro monitor with serious attitude, 'in yer face' balance and great dynamics	20,40,32	●	A	25	●	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	●	221
BB	Ruark Prologue II	1,250	Attractive shape with a punchy and unusually open and neutral sound that's impressively free from harshness	22,5,96,24	●	A+	40	●	229
BB	Ruark CL20	1,650	This punchy rock'n'roller has plenty of drive and enthusiasm, but can sound aggressive	23,93,34	●	A	38	●	219
BB	Snell E5 Mk2	1,520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30	●	A	20	●	211
BB	Spendor SP2/3e	1,295	Large standmount is polite to a fault, but has beautiful 'hear-through' transparency – a genuine classic	28,55,33	●	A+	50	●	219
BB	Spendor S8	1,700	Classic midband neutrality and transparency, the S8 has great subtlety and fine bass grunt too	23,92,32	●	A+	40	●	229
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	●	225
BB	Tannoy ST-100	1,200	This add-on supertweeter adds a subtle and delicate effect while broadening the soundstage, but at a price	15,10,5,6	●	A+	N/A	●	206
BB	T+A Talis TLS3	1,799	Super-slim and beautifully engineered metal towers deliver marvellous musical results with superb imaging	15,130,17	●	A	30	●	225
BB	Vandersteen 2Ce Sig	1,990	Very superior midband neutrality, impressive freedom from boxiness and splendid stereophony. A classic	41, 109, 26	●	A-	30	●	229
EC	Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	●	A+	50	●	191
BB	Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid back, but also very charming and musical	17,97,30	●	A-	25	●	199
BB	Waterfall Victoria	1,500	Glass enclosures go with any decor. The Victorias make music in a confident and involving way	21,100,21	●	A	45	●	225
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	●	212

AV SPEAKERS

Speaker solutions for multichannel surround sound



Multichannel speaker systems have a front left/right (L/R) stereo pair, a centre or dialogue channel, two (5.1) or four (7.1) surround speakers and often a subwoofer. For best results, each of these speakers bar the sub should be identical. The problem is that few surround systems are dedicated to music and perform a home cinematic role as well, meaning the centre speaker has to sit above or below a

video monitor. Centre channels are usually wide and short for this reason.

This should not be a barrier to great surround for music and movies however, as many brands make centre channels with a very close sound to their L/R designs.

Music vs movies

High-resolution SACD and DVD-A music recordings tend to be mastered with

surround speakers in the ITU standard position which is as far behind the listener as the front channels are in front. 5.1 movie soundtracks tend to place surround channels not so far behind and to the side of listeners. Usually, practical limitations will dictate a limited range of placement options, but if you are a dedicated music fan, check out the ITU set-up regulations in the booklet supplied with SACD discs.

SET-UP

Ideally you should set up surround speakers with as much care as you would stereo systems, but practical issues tend to have a significant bearing on surround and centre speaker placement. Surround channels can be floorstanding or wallmounted, and centres usually have to perch on the TV or underneath it. Given these limitations, adjust your L/R front

speakers to give the best tonal match with the centre. If there's more than just you listening, 'toe in' the speakers so that their axis crosses in front of the listening position – this gives a wider stereo image. And if there's a subwoofer it should be placed near the front speakers. Use a sound pressure metre (available from Tandy among others) to accurately set levels.

SUBWOOFERS

Subs start working where stereo speakers run out of steam at low frequencies. The idea is to create deeper, better-controlled bass rather than more of it. They usually have onboard amplification (active) and connect to either the LFE (Low Frequency Effects) channel in a home cinema set-up or the speaker terminals in a stereo set-up.

TOP BUYS



B&W
600 S3 package £750
Decent size, high-quality main drivers make plenty of sense in both stereo and multichannel 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.

Our favourite AV SPEAKER PACKAGES

BEST BUY RECOMMENDED EDITOR'S CHOICE

Multichannel speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS					
				EASE OF DRIVE	NUMBER OF SPEAKERS	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
BB	Acoustic Energy Aegis	650	High-value package with deep bass and smooth neutrality	A+	5	22	●		198
BB	B&W 600 S3 package	750	Unquestionably delivers the sonic goods. High-quality drivers in standmount enclosures	A-	5	22	●		224
R	Castle CAV Sterling	1,250	Lovely real wood veneers. Sound has fine dynamic drive and expression, but can sound a little hard	A	5	28		●	224
BB	JBL Xti-series	980	Hexagonal boxes all round, this package has decent authority and all-round tension	A	5	40		●	210
R	JMLab Cobalt	1,797	A little lean and bright, but with righteous dynamic expression and lively communication skills	A	5	22	●		224
R	JMLab Electra system	3,017	Bold, solid system, tremendous consistency and easy to expand with an added subwoofer	A	5	50	●		232
BB	KEF Q AV7	1,300	With latest Uni-Q refinements, this system is astonishingly accomplished and amazing value	A+	5	35	●		232
R	Mirage Omni 2	2,650	Dark tonality, but superb imagery makes this an excellent all-round choice	A	5	30	●		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	A	5	25		●	210
R	PMC FB1/TB2	2,485	Classy, if bulky and pricey, package has good transparency, coherence and weight	A	5	20		●	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	A	5	25		●	210
R	Spendor S-Series	1,650	Ultra-tinies lack some dynamic and loudness capabilities, but beautiful voicing and freedom from boxiness	A	5	30		●	224
BB	Tannoy mXAV4	500	Lacks some grunt, but smooth and refined with seamless surround coherence. Excellent value	A	5	20		●	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 SUBWOOFERS

BEST BUY RECOMMENDED EDITOR'S CHOICE

Bass speakers

STATUS	PRODUCT	£	COMMENTS	SPECIFICATIONS			
				SIZE (WxHxD (CM))	POWER (W)	BASS FROM (Hz)	ISSUE NUMBER
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
BB	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

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

HEADPHONES

For your ears only



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

Cans are split into several types. There are open and closed-back designs, the latter being best for noisy (or noise sensitive) environments as they minimise leakage and intrusion. Open-back types tend to have a more open, less 'in-head' sound. There are also three variants of earpad design: circumaurals

enclose the ear and press on your head, supra-aurals press on the ear and intra-aurals sit in the ear and are particularly popular with personal stereo users.

Getting the best from your cans

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

Our favourite HEADPHONES

STEREO HEADPHONES

PRODUCT	£	COMMENTS	SPECIFICATIONS					ISSUE NUMBER		
			ELECTROSTATIC	SUPRA-AURAL	CIRCUMAURAL	OPEN BACK	CLOSED BACK		WEIGHT (g)	3.5MM JACK ADAPTOR
AKG K44	20	Lively, enjoyable and remarkably detailed: a bargain			●		●	190	●	219
AKG K100	36	Leather-clad groover with bags of power and clarity, for a respectable asking price		●			●	190	●	205
Audio Technica ATH-D40fs	105	Detailed and involving sound with a professional 'studio' quality appeal			●		●	250	●	194
Grado SR-60	90	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste		●		●		200	●	194
JVC HA-DX3	250	Great headphone with a rich bass, careful midrange and high comfort factor			●		●	340	●	205
Philips HP890	70	A remarkably sophisticated and very comfortable headphone			●	●		330	●	219
Sennheiser HD590	160	Assured and confident player with very low coloration and great comfort			●	●		270	●	205
Sony MDR-CD480	40	Generally neutral and nicely detailed – comfortable too			●	●		250	●	219
Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics		●			●	160	●	205
Stax System II	400	Luxury option at its price, but the sound delivery is five-star quality all the way	●		●	●		295	●	205
Vivanco SR222S	30	Not that subtle, but high fun factor compensates		●		●		250	●	219
Vivanco SR950	80	Cuddly feel and sound make these an enjoyable pair of 'phones			●	●		252	●	194

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



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CABLES

Wires to hook your system together



Hi-fi cables come in two varieties: interconnects and speaker cables.

Interconnects come in preset lengths, generally with RCA phono plugs attached, though some equipment uses XLR connectors for balanced connection. Speaker cable is sold by the metre and can be used without plugs or can be fitted with screw or solder-on types.

Choosing the best cables is not quite as

straightforward as it might seem. One problem is that components interact with the cables you use and this often results in audible effects, but there are few cables that are fundamentally incompatible with any components, and we recommend the advice of a good dealer. In any case, you should look to spend as much as you can afford.

Digital cables come in two flavours: electrical and optical. In most instances

electrical varieties sound better than optical, but if you are after a smoother sound the light carriers have the advantage, as they do if long lengths are needed (10m+). Optical outputs tend to have Toslink connectors (around 99 per cent), but some electrical digital outputs are of the superior BNC type, which uses a bayonet-type socket. Check which type your digital component has before buying a digital interconnect.

Our favourite CABLES

Interconnects and speaker cables

PRODUCT	£	COMMENTS	SPECIFICATIONS					
			STRANDED	SOLID CORE	COPPER	SILVER	DIGITAL CABLE TYPE	ISSUE NUMBER
ANALOGUE INTERCONNECTS								
Acoustic Research Master	50	Decent performance all round and good interference rejection	●		●			224
Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail	●		●			200
Cable Talk Advanced 3	35	Good sound and great detail, but a slight brashness in the treble	●		●			211
Chord Calypso	30	Informative, clear sound at a decent price	●		●			211
Ecosse The Composer	30	A high degree of realism and delicacy, and a fantastic price (0.8m)	●		●			211
Ecosse Reference Diva	100	Very good performance in all areas, with particularly fine, tuneful, bass (0.8m)	●		●			224
Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness	●		●			211
Monster Interlink 400 Mk2	70	Really lively and enjoyable sound	●		●			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	●		●			211
QED Qunex 1	20	Well balanced and easily rivals more expensive cables	●		●			211
van den Hul The Bay C5	45	Terrific detail, nice balance – a great cable	●		●			224
Vivanco Prowire SHQ	30	Good performance all round, with just a hint of bass congestion. Very good value	●		●			224
DIGITAL INTERCONNECTS								
Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound			●		E	207
QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced			●		E	207
Ross OP004	20	Sounds much like most other Toslink leads: slightly lacking detail, but good value					O	207
van den Hul Optocoupler	50	Noticeably has the edge over other optical leads, but still second best to electrical types					O	207
SPEAKER CABLES PRICE PER METRE								
Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable		●	●			203
Black Rhodium Aero Space S130x2	76	Great kick in the bass, but 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		●	●			203
Ixos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price; strong and consistent	●		●			203
Kimber 4PR	5	Considering the price, this cable's very slight dryness is forgivable when everything else is so right			●			192
Kimber 8VS	18	Beautifully full, open and transparent sound right across the board. Price for 1m terminated pair	●		●			227
Kimber 8TC	39	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	●		●			203
QED Silver Anniversary	5	A few minor flaws, but overall performance is very assured for this price	●		●			192
QED Profile Silver 12	15	Very slightly laid back, but good tone and detail – wears its achievements lightly	●		●			215
Supra Ply 3.4/S	7.95	Good in all areas, with rich bass and just a touch of treble roughness	●		●			203
Tara Labs Prism Nexa	9.95	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		●	●			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, O – optical. Cables are one metre length unless otherwise stated.

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ES 2.3
 "...make no mistake ES 2.3/CS 2.15 is superb" WHAT HI-FI? ★★★★★
 "a fine audiophile sound that is clean as a whistle " HI-FI WORLD 2002

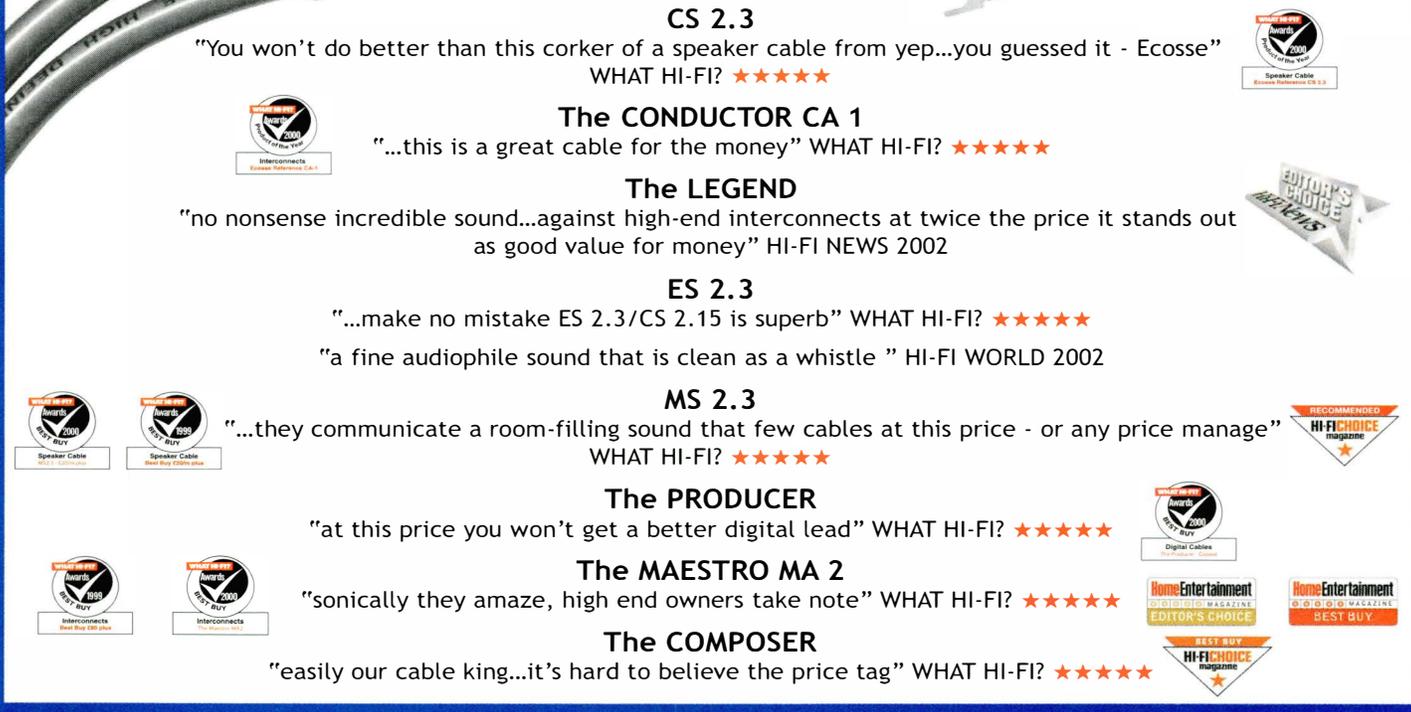
MS 2.3
 "...they communicate a room-filling sound that few cables at this price - or any price manage"
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The PRODUCER
 "at this price you won't get a better digital lead" WHAT HI-FI? ★★★★★

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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.

Our favourite EQUIPMENT SUPPORTS

Equipment supports

PRODUCT	£	COMMENTS	SPECIFICATIONS					
			HEIGHT	TOP PLATE SIZE (CM)	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
Avik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47		4	MDF	193
Atacama Europa	250	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6		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 Isoshelf	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	●	4	Glass	206
Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49	●	4	Glass	193
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	●	4	Glass	193
Townshend 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

Speaker stands

PRODUCT	£	COMMENTS	SPECIFICATIONS					
			HEIGHT	TOP PLATE SIZE (CM)	FILLABLE	WELDED	NUMBER OF LEGS	ISSUE NUMBER
Atacama Nexus 6	60	An excellent all-round performer and a genuine hi-fi bargain	60.50	14.5.18	●		3	202
Cyrus CLS50 Stand	200	Unusual combination of style and performance, and a definite contender in the right environment	64	17.19			1	220
Custom Design R/S300 MkII	100	A solid stand improving on the original, with better focus and detail	61.56.51	16.5.18	●		2	202
hne Cableway	399	Looks great, sounds great, so start saving! Clean and sweet, and neutrality is exceptional with orchestral material	63	17.20			1	220
Kudos S50	115	Formidable bass with real authority, and a wide dynamic range across a broad bandwidth	61	15.20	●		1	220
Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29.32		●		202
Partington Dreadnought	100	Fully welded high-class engineering gives a very clean, open sound at a sharp price	61	17.15	●	●	5	220
Partington Dreadnought Ultimate	299	Super heavyweight stand that is an open window to the speaker placed on it	63	21.24	●		1	202
Sound Organisation Z522	95	Very hefty build for the price helps to deliver a solid sound with good authority and drive	60	16	●		4	220
Townshend Seismic Sink	499	Unique inflatable plinth that works wonders with decent floorstanders, as well as standmounted speakers	4	38.48				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.

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GLOSSARY

TECHNICAL TERMS

5.1-CHANNEL AUDIO Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer.

BALANCE Most loudspeakers have a characteristic frequency balance resulting from emphasising parts of the audio range and/or de-emphasising others.

BASS The lowest three octaves of the audio band – hence 'low bass' refers to the bottom octave (20-40Hz); 'mid-bass' the middle octave (40-80Hz); and 'upper bass' the 80-160Hz octave.

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

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

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

CD-RW Re-writable or re-recordable CD, incompatible with older CD players.

CLASS 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 L/R, centre and mono surround channels via an analogue matrix.

DRIVE UNIT/DRIVER A transducer which converts electrical energy into acoustic energy, eg bass driver, tweeter.

DSD (direct stream digital) The coding format used for SACD offers a frequency response of over 100kHz and a dynamic range over 120dB, it has over four times the data capacity of CD.

DSP or Digital Signal Processor. Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

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

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

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

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

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

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

JITTER An 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 psycho-acoustical model that predicts what is, and what is not, 'audible' within a sequence of music.

MIDRANGE The middle three or so octaves of the audio band, where the

ear is most sensitive, covering the approximate frequency span from 160Hz up to 3kHz.

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

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

PCM (pulse code modulation) The digital coding system for analogue waveforms used for CD and DVD. Quality is limited by the oversample and bit rates used – CD is 44.1kHz/16-bit while DVD-A is capable of 192kHz/24-bit.

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

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

SACD (super audio CD) was launched in 1999 and is a Sony/Philips format based on DSD coding that offers high resolution stereo and multichannel sound from hybrid discs that can also be played on ordinary CD drives.

SAMPLE RATE The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

SENSITIVITY The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/W).

THX Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra is more stringent than THX Select.

TOSLINK The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications.

TRANSISTOR/MOSFET The two main types of power semiconductor used in solid state amplifier output stages.

TREBLE High frequencies, the top end of the audio band, ie above 3kHz.

TWEETER Treble driver.

TWO/THREE-WAY Loudspeaker crossovers split the signal into two or three frequency bands, a two-way speaker can have more than two drive units.

WATTS (per channel) The watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output.

DESCRIPTIVE TERMS

AGGRESSIVE Forward and bright sonic character.

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

ANALYTICAL Highly detailed.

ARTICULATE Intelligibility of voice(s) and instruments and the interactions between them.

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

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

BODY Fullness of sound, with particular emphasis on upper bass. Opposite of thin.

BOXY The sound of a loudspeaker with audible cabinet resonances.

BRIGHT A sound that emphasises the upper midrange/lower treble.

DARK A tonal balance that tilts downwards with increasing frequency. Opposite of bright.

DECAY The fadeout of a note, it follows the attack.

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

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

DETAIL The most delicate elements of the original sound and those which are the first to disappear with lesser equipment.

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

DYNAMIC The suggestion of energy and wide dynamic range. Related to perceived speed as well as contrasts in volume both large and small.

EUPHONIC An appealing form of distortion that generally enhances perceived fidelity, often ascribed to the harmonic elaborations of some valve amps.

FAST Good reproduction of rapid transients which increase the sense of realism and 'snap'.

FOCUS A strong, precise sense of image projection.

FORWARD(NESS) Similar to an aggressive sound, a sense of the image being projected in front of the speakers and of music being forced upon the listener.

GRAINY A slightly raw, exposed

sound which lacks finesse.

GRIP A sense of control and sturdiness in the bass.

GRUNT See grip.

HARD Uncomfortable, forward, aggressive sound with a metallic tinge.

HARSH Grating, abrasive.

IMAGING (stereo) The sense that a voice or instrument is in a particular place in the room.

JUICY Sound that has joie de vivre, energy and life.

LOW-LEVEL DETAIL The quietest sounds in a recording.

MUSICAL or musicality. A sense of cohesion and subjective 'rightness' in the sound.

NATURALNESS Realism.

OPAQUE Unclear, lacking transparency.

OPEN Sound which has height and 'air', relates to clean upper midrange and treble.

PACE Often associated with rhythm, a strong sense of timing and beat.

PRESENCE A sense of an instrument or voice occupying a place in the listening room.

PRESENCE RANGE The upper midrange.

SEISMIC Very low bass that you feel rather than hear.

SIBILANCE An emphasis of the 'S' sound, often heard on radio.

SNAP A system with good speed and transient response can deliver the immediacy or 'snap' of live instruments.

SPEED A fast system with good pace gives the impression of being right on the money in its timing.

STURDY Solid, powerful, robust sound.

THICK A lack of articulation and clarity in the bass.

THIN Bass light.

TIMBRE The tonal character of an instrument.

TIMING A sense of precision in tempo. See speed and pace.

TRANSCIENT The leading edge of a percussive sound. Good transient response makes the sound as a whole more live and realistic.

TRANSPARENCY, transparent. A hear-through quality that is akin to clarity and reveals all aspects of detail.

TWEAK To tune a system or component in an attempt to get the best performance from it.

TWEAKER Someone who enjoys this process.

VEILED Loss of detail due to limited transparency.

WARM A fullness in the lower midrange/upper bass.

WEIGHT A sense of substance and underpinning produced by deep, controlled bass.

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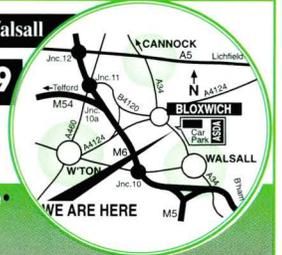
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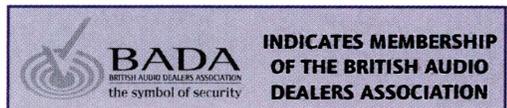
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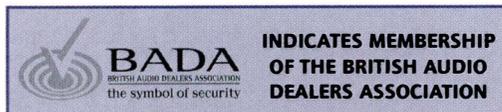
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NEXT MONTH



DECEMBER'S BUMPER ISSUE OF H-FI CHOICE

SYSTEMS WITH STYLE

Black boxes are banished in this test – we're uncovering stylish stereo solutions from all the leading brands. One-make systems from hi-fi gurus like **Arcam**, **Cyrus** and **Creek** combine style and substance to please tough audiophile spouses.

STATEMENTS

Is **JBL's £20k K2 S9800** the best speaker we've ever heard? Find out next month along with reviews of the new **Michelle Orbe DC** turntable and **Mirage's** new **Omni-sat** sub/sat package.

HI-FI SHOW AND AV EXPO 2002 REPORT

All the very latest kit revealed from this year's packed Heathrow Hi-Fi show. We're uncovering all the hot new products you must see and hear.

EXTRA GROUP TESTS

In addition to our systems test we'll be group testing six of the best cartridges to breathe new life into your turntable and four of the very latest multichannel amps from **Denon**, **Marantz**, **Onkyo** and **JVC**.

PLUS

Speaker cables are sorted in our wires round-up, we take an in-depth look at **Arcam's** factory, interview head honcho **John Dawson** in our *Industry Profile* and follow up with an in-depth review of the new **AV8** processor and **P37** power amp.

AND...

All your favourites including the new expanded *Audio File* news pages, *System Addict*, readers' ads and the most reliable buying guide in the business.

HFC235 on sale 31 October

Location, location, location

David Vivian comes over all Laurence Llewelyn-Bowen as he describes the world's most awesome listening room (probably)

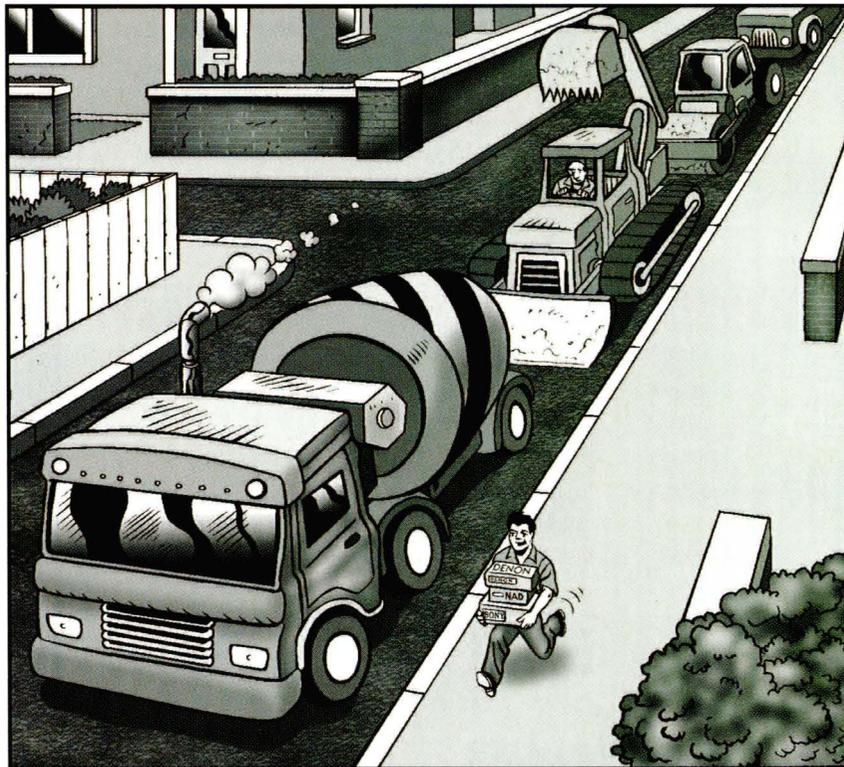
Ready yourself, but chances are you'll need a mortgage to buy the most important component in your hi-fi system. Relax, you probably already have. It's the building that contains the room it sits in. Trust me on this. Think you know how your speakers sound? Then take your system to a friend's place: you won't recognise it.

Which is why, despite reviewers' efforts, there is no absolute answer to how a hi-fi performs: it's partly down to environment. Mostly, this doesn't matter. If hi-fi didn't sound good, no-one would buy it. The differences most rooms impose on sound quality seem to be benign, anyway. Problems such as a boomy bass, for instance, can often be minimised with a spot of deft speaker repositioning.

You could always build a dedicated listening room with perfect golden ratio dimensions, solid walls and floor, exotic mains spur cabling, strategic resonance damping etc – a sort of fully equipped gym and personal trainer for your system. Then, when you splash out on that five-figure piece of high-end kit, you'll know it has the freedom to spread its wings and fly. Extreme or what?

How about not. The Diet Coke of extreme, as Dr Evil might say. Let me introduce you to the kind of thinking that makes a purpose-built listening room seem about as committed to the cause as lifting your amp off the carpet and putting it on the nearest table.

First, mark out your area, say 23x28ft; spacious, but not excessively so. Now build the biggest sub in the world. Not out of MDF, but out of bricks and mortar. Under the floor. All of it. We're talking two sub horns sunk into a metre-deep 'bass-meat', each with a length of 31ft and mouth area of 7sq ft, placed either side of a central compression chamber, driven by 16 18-inch bass drivers, eight per side. Add 600kg of reinforcement



“You could always build a dedicated listening room...a sort of fully equipped gym and personal trainer for your system.”

to the enclosure (making a total enclosure weight of 720kg). That's the ten Hertz at full power bass extension taken care of.

Surround sound? No problem. Assemble 32 impossibly esoteric, real wood, hand-made, two-way horn loudspeakers, each weighing 23.5kg, and assign eight each (in a special stacked and coupled configuration flanked by 7ft high exponential wood panels for extra efficiency) to the four main channels. Detail another four to centre channel duties.

Now put all the amplification – two 17-watt, zero-feedback, push-pull valve amps (bi-amped) for the main drivers, a 1.7-watt single-ended tube amp for the high horns – into a hole in the ground decoupled from the rest of the room, connect everything with 1,700ft of high-purity OFC cable, treat the walls in the usual way (virtually anechoic at the back) and there you have it. Not so

much a listening room as a highly efficient speaker system you can actually sit inside.

A blueprint for audio insanity? No, the room actually exists in Italy, a joint venture between high-end specialists Royal Device and speaker maker Alliante. Apart from the frightening bass extension, overall system efficiency is rated at 110dB for one watt at one metre. The system uses no crossovers or feedback, and claims to play at 'real life' levels with no distortion on just a handful of watts.

As the Italian designers of the room point out: "It is important to get the maximum. In our room, when you play the *Jurassic Park* cinema track, when there is the dinosaur coming, you horribly feel all the walls crashing down. Many people got afraid. Now I normally ask them if they are ready to be afraid."

Be afraid. Be very afraid. ☉

Only the balance of all aspects enables the highest quality: Dynaudio Special Twenty-Five. The experience of twenty-five years of in-house research, development and production is now reflected in a masterpiece - the best compact loudspeaker ever created by Dynaudio. With ambition and enthusiasm Dynaudio has incorporated all know-how and experience in one audiophile masterpiece, hand built in Denmark by Dynaudio's skilled master craftsmen and finished in an exclusive cross-grained birch veneer. Based on the company's latest reference products and the Dynaudio tradition of the finest compact loudspeaker designs, the Special Twenty-Five provides unbelievable depth, precision and realism in music reproduction. Underlining the status of this loudspeaker, Dynaudio provides an exclusive twenty-five years limited warranty. The balance of perfection: Dynaudio Special Twenty-Five.



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evolution

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