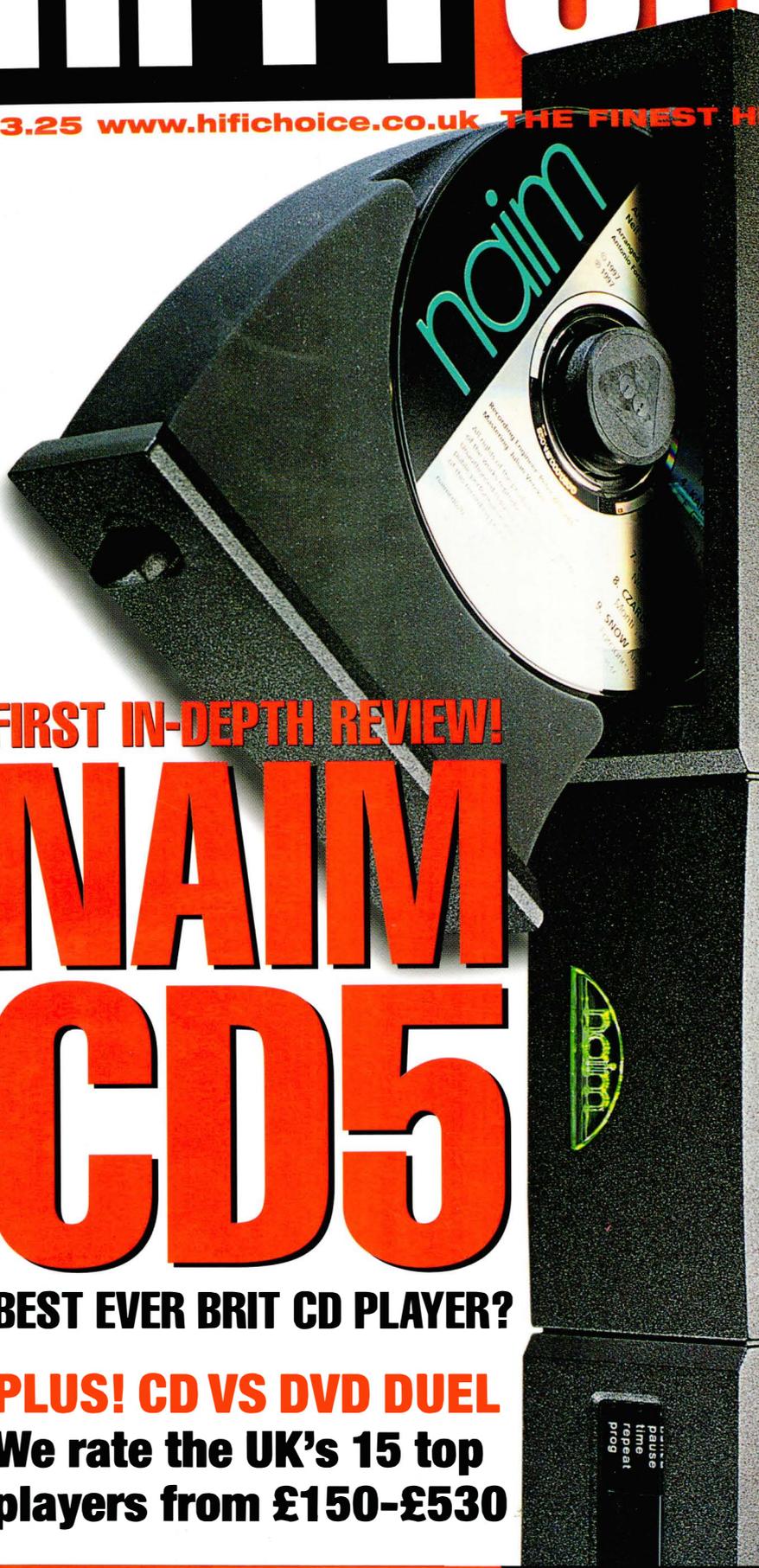


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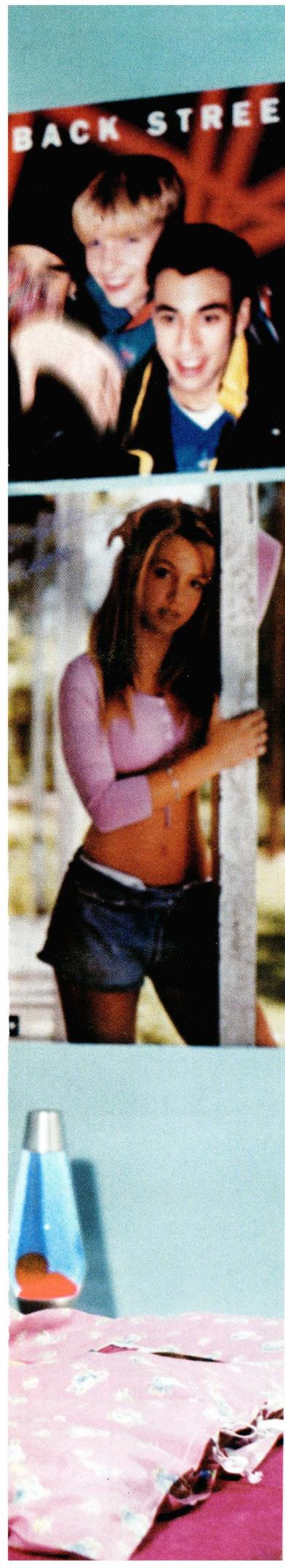


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☎ (020) 7317 2600 Fax (020) 7317 2686

Regrettably we cannot speak with readers or answer queries on the telephone. Please send a letter, fax or e-mail instead.

- **Editor** Jason Kennedy
jason.kennedy@futurenet.co.uk
- **Deputy Editor** Tim Bownen
tim.bownen@futurenet.co.uk
- **Art Editor** Del Gentleman
del.gentleman@futurenet.co.uk
- **Production Editor** David Bailey
david.bailey@futurenet.co.uk
- **Reviews Editor** Nick Gear
nick.gear@futurenet.co.uk

Consultant Editor Paul Messenger • **Technical Editor** Paul Miller
Contributors Richard Black • Alvin Gold • Jimmy Hughes • Phil Strongman • David Vivian
Photography Chris Foster

ADVERTISING

- **Advertising Fax** (020) 7486 5676
- **Group Ad Manager** Rob Debenham ☎ (020) 7317 0239
rob.debenham@futurenet.co.uk
- **Ad Manager** Andrew Goldsmith ☎ (020) 7317 0202
andrew.goldsmith@futurenet.co.uk
- **Senior Sales Executive** Debbie Maclaren ☎ (020) 7317 0214
debbie.maclaren@futurenet.co.uk
- **Senior Sales Executive** Fiona Beech ☎ (020) 7317 0217
fiona.beech@futurenet.co.uk
- **Classified Sales Exec** Andrew Maxey ☎ (020) 7317 0202
andrew.maxey@futurenet.co.uk

PRODUCTION

- ☎ (01225) 442244
- **Production Coordinator** Rebecca Brooks
- **Production Manager** Fiona Milne
fiona.milne@futurenet.co.uk

MANAGEMENT

- **Publisher** Simon Davies ☎ (020) 7317 2600
simon.davies@futurenet.co.uk
- **Group Publisher** Jon Bickley
jon.bickley@futurenet.co.uk
- **Managing Director** Mike Frey
mike.frey@futurenet.co.uk

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● OVERSEAS LICENSING ENQUIRIES

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Hi-Fi Choice is the UK hi-fi magazine representative of the European Imaging & Sound Association (EISA). Every year EISA honours the finest hi-fi and home cinema products throughout Europe.

**EDITOR'S NOTEBOOK**

Jason Kennedy

has been discovering how much you can get out of the humble CD.

It's been a busy old month. We've looked at far too many CD players and DVDs, and found that, despite the way the market's going, the players that are dedicated to two channel music are still the best for the job. We've scrutinised all the hot new contenders in the budget loudspeaker market and picked out the finest, and last – but by no means least – we've found the digital interconnects that do the business best. It might seem a simple task to pass bits from one machine to another, but you'd be surprised at the variations that are available.

Coming along

The boy Evans has been tinkering with my Eikos CD player again. This is the player I have been using for three and a half years and which has received two very impressive upgrades over the period, both of the power supply regulation variety. It has been a steady reference over that time and rarely fails to see off all but the most excessively priced alternatives. However just as standards keep improving so does the Eikos, this time with the addition of an external power supply and the removal of the original mains transformer – thus removing a source of noise from the sensitive environs of the converters and analogue stage. This supply in combination with Lithos A and D regulators, the Eliminator board DC coupled analogue stage, the Acoustic Precision Master Reference clock and the original dual differential Legato Link DACs brings the player's price up to a serious £3,500, and adds a 3.1 suffix to its name.

You'll be hard pressed to find a better player for the price, let alone one with such a breadth of features (the Eikos started out in life as a humble Pioneer PD-S904 and is therefore fully equipped on the widgets front).

The effect of this latest £775 upgrade seems to have been greater from the point of view of resolve than earlier modifications, and they were pretty stunning at the time. The key word is precision, which it always had in abundance but now majors in, which means extra definition in all respects but without any glare. It also brings a new level of dynamics to the party; if anything, this is the area where a good Wadia, for instance, could trounce the old Eikos, but now

I'm not sure that the outcome would be so easy to predict. It might not have quite such a muscular sound but the low level detail and phenomenal imaging skills balance things up.

I was having a marvellous time playing all my favourite discs through the reborn Eikos when the dCS combination of Purcell upsampler and Delius DAC turned up. This eight and a half K pairing proved that, for all its apparent refinement, the Eikos is quite an excitable youth by the very highest standards. The dCS kit takes Eikos standard and adds another level of finesse, smoothing away the last nuance of digital and leaving you with a sound that's more analogue than vinyl. I haven't yet gone back to the player on its own but in many ways I'm looking forward to it sounding exuberant – something it never does when it's compared with other standalone players.

**EDITOR'S CHOICE****DCS PURCELL & DELIUS**

Having said that (see main text), the dCS components are staggeringly good. It's fantastic to find such technologically advanced and high fidelity components being made to such awesome standards in the UK. This is the sort of quality usually reserved for professional applications, a field dCS isn't entirely unfamiliar with, and I'm inclined to make comparisons with the likes of Apogee Electronics from the US and our very own Meridian.

Of the two components its the Delius DAC that warrants maximum commendation, the Purcell is the icing on the cake, but this is significant enough to warrant the asking price. And who wants plain cake anyway?

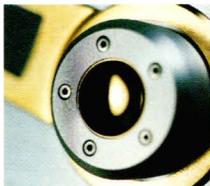
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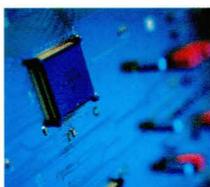
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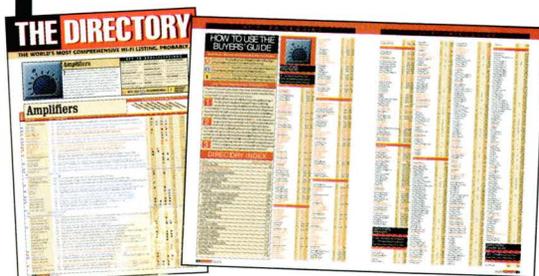
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NEWS & VIEWS

Tim Bown, Nick Gear, and Jason Kennedy report the latest hi-fi news.

NEWS IN BRIEF



BEAUHORN'S VIRTUOSO horn speakers are now being manufactured in an eye catching ivory and ebony livery. See them at The London Hi-fi Show 2000. ☎ (01424) 813888

TECHNICS Mercury Music prize albums of the year have been announced. They include Coldplay's *Parachutes*, Badly Drawn Boy's *Hour of the Bewilderbeast* and The Delgados' *The Great Eastern*. The winner will be announced on September 12th.

CAPITAL RADIO has strengthened its commitment to Dolby Radio by joining forces with regional radio consortia, MXR and Switchdigital. The consortium will bid for licenses covering the Severn Estuary, South Wales, West Midlands, the North West, Yorkshire and North East.

PSION, the hand-held computer specialist, has made The Wavefinder, an integrated aerial and digital tuner that works via a PC. Priced at £300 this device does all but display information and represents the cheapest route to DAB yet. ☎ (020) 7317 4100

BEYER DYNAMIC has unveiled the £44.99 translucent blue, supra-aural-designed DT321 Galactic headphone. It has a claimed linear response of 20-18,000 Hz. ☎ (01444) 25858



HABITEK has developed the Overture Speaker Lamp, a lamp and wireless loudspeaker in one. It has a range of up to 100 meters, 50W rms and optional remote control. Price is £799. ☎ (01792) 455552

HI-FI 2000, the North of England show, will take place in the Hilton, Manchester airport over the 18th and 19th of November.



Denon Dives into DVD-A

 Denon has released early details of its first DVD-Audio player. Like the others announced thus far, the DVD-3300 is a DVD-Audio/Video combination player compatible with both DVD movies and forthcoming DVD-A music software, as well as CD.

Unlike some models from other brands, the company claims this machine is fully equipped to make the most of DVD-A's extended bandwidth and increased dynamic range. It features 24-bit/192kHz DACs and includes an 'Audio Only' mode that turns off video circuitry to minimise interference with the audio signal. Its chassis is a hybrid construction, combining a metal base with a moulding to minimise the effect of external vibration.

Denon claims the player's picture performance is

every bit as good as its audio, aided by a high-spec 10-bit/27MHz video DAC. A number of peripheral sound modes are also included, like the 'cinema voice mode', which allows you to adjust dialogue levels independently from the rest of a movie's soundtrack. There's also the lengthily-titled 'headphone virtual surround feature', said to give pseudo Dolby Digital surround sound through an ordinary set of headphones.

Until a few weeks ago, a September launch was still officially planned for the machine. However, with commercial DVD-A software still not forthcoming, its release has been postponed. Expect to see it in UK shops no earlier than November, priced around £1,000.

Hayden Laboratories ☎ (01234) 741 200

Torchlight speakers

 Sennheiser is expanding its repertoire to include a loudspeaker alongside its headphones and mics. But this is no ordinary speaker, in fact it's about as far from the norm as you can get. The Audiobeam is an ultrasonic radiator that's designed to produce a very tightly focussed soundbeam; its applications do not yet include hi-fi.

A more likely use would be over a picture in a gallery. The Audiobeam could relay information about the picture solely to the people standing in front of it; theoretically people looking at the next picture would hear nothing. Sennheiser has based the Audiobeam technology on an 80-year-old patent which works on the basis that a strongly focussed ultrasonic sound can be used as a carrier for equally focussed audio. It is claimed to offer better low frequency extension and power than the MIT Soundbeam demonstrated on *Tomorrow's World*.

Bandwidth is said to be from 100Hz to 20kHz, so bass is not on offer, but in information dispersion applications this isn't an issue. If you are interested visit Sennheiser at Expo 2000 in Hanover, Germany – it's a wild sonic experience. www.rfe-online.de



Lucky 7 for Cyrus

 The new CD 7 from Cyrus joins a slowly growing group of CD players that play CD-RW discs. Priced at £800, its maker claims it is based on an all-new platform, incorporating a number of improvements in power supply and circuit layout over the now obsolete DAD 3.

The player uses a tuned version of Philips CDM 12.1 mechanism, the alleged result of which is extremely low levels of jitter. DACs are of the 24-bit/96kHz variety and upgrade paths open to the user include ports to add an external PSX-R power supply and any future developments in DAC technology.

The CD 7 is part of a whole raft of new products on the way from Cyrus, among them a DVD player (DVD 7) and the long awaited collaboration between Cyrus and NXT loudspeaker technology. Expect more details next month, along with a first test of the £800 CLS 70 speakers and an exclusive review of a Cyrus system featuring the CD 7.

Cyrus ☎ (01480) 451 777

Sony DVD plays SACD!



Sony has revealed that its latest high-end DVD-Video player will also play high-resolution SACD music discs. The DVP-S9000ES is the first DVD player to feature in Sony's upmarket 'ES' range and is expected to sell for around £1,200.

Machines combining DVD and SACD playback have long been predicted, a notion most applicable to catch-all 'Universal' players expected to play both the new ultra-high quality formats – SACD and DVD-Audio. However, though Pioneer has already launched one such machine in Japan (the DV-AX10, c. £3,500), this new Sony will not be compatible with DVD-A. It is said to incorporate the same core SACD technology found in Sony's top-grade SACD players. It is also claimed to play CDs at a genuinely high standard. For instance, two separate clocks are used, one dedicated to CD and the other to DVD. The result is said to be a significant reduction of jitter.

A number of 'audiophile' grade components are included to help the cause, including Sony's S-TACT Pulse Generator, VC24 Digital Filter and twin R-CORE



transformers, separating the power supply to the audio and digital circuits to eliminate noise. A number of advances are also claimed on the video side, including state-of-the-art digital noise reduction via a new MPEG Image Processor. It is also the first Sony model to incorporate the latest 10-bit/54MHz video DAC. For optimum audio quality with CDs and SACDs, all video circuitry may be switched off.

Sony ☎ (0990) 111999

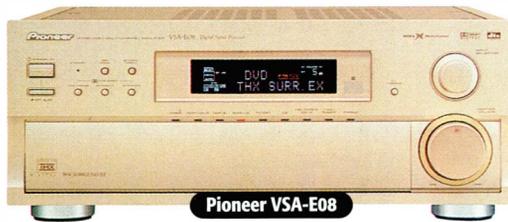
Pioneer's new breed



Multi-channel bigwig Pioneer has revealed its latest line up of surround sound amps with the battle cry: music and movies in equal measure. The company is a major player in the DVD-Audio stakes and performance with multi-channel music is high on the list of design criteria. There's still plenty of muscle and all the facilities an A/V enthusiast would crave, but not at the expense of musicality – so says Pioneer.

Two key models are the VSX-909RDS receiver at £1,000 and the VSA-E08 amp at £1,500. Superficially both are almost identical to the models they replace, but substantial changes have been wrought under the lid. Both these THX Ultra certified beasts now include THX Surround EX and DTS-ES decoding as standard.

In addition, the top-flight VSA-E08 sports a large copper bus-bar, designed to improve the power supply to the MOSFET output devices. DSP blocks are carefully shielded from the audio circuits together with independent power supply regulation for audio, video and digital sections. It appears Pioneer has taken the task of meld-



ing fine music and movie performance seriously. Says Pioneer's John Bamford: "Traditionally, hi-fi enthusiasts have considered AV amps to be compromised products: fine for 'surround sound gimmicks' but not transparent enough for music. But this has to change, as the AV amp will – by necessity – become the heart of music lovers' high fidelity systems in the coming years. It is a challenge for designers to ensure high musical quality from multi-channel amps which are hampered by the inclusion of DSP engines and DACs."

Pioneer ☎ (01753) 789789

Mission on a budget



Classic British speaker brand Mission is gearing up to launch an all-new low-cost range this Autumn. The m70 series replaces the 700 range in the company's portfolio and sports an evolved version of its predecessor's glass composite drive unit technology.

The range starts at the traditional £130 budget price point with the m71, a two-way compact standmounter standing at 29.6cm. That's followed by the larger m72 standmounter at £170, with the m73 floorstander weighing it at £200. The taller m74 floorstander follows at £300 with twin mid/bass drivers, and the range is topped off by the m7c centre speaker (£100) and m7ds bipole effects speakers (£180) for surround sound use.

Each speaker uses a bonded, woven glass composite



cone for its main drive unit(s), alleged to deliver a fine balance between fulsome bass and transient attack. The tweeter is a newly-designed 25mm fabric dome and much is made of overall build quality: the front baffle is machined from 'rigid' MDF and the tweeter is shielded from excessive vibration by the front moulding. The entire range is expected in the shops this September.

Mission ☎ (01480) 451777

NEWS IN BRIEF

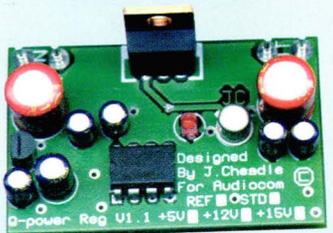


LG ELECTRONICS' MF-PD360 (above) is claimed to be one of the "smallest, lightest and most portable MP3 players on the market". This £170 model weighs just 60g and features twin MMC flash card slots, a back-lit LCD, in-line remote control, graphic equaliser presets and repeat/random track play. See the December issue of *HFC* for a complete review. Also new from LG is the DVD-3350E DVD player, a £280 machine complete with built-in MP3 decoder. ☎ (01753) 500400

MASSOLUTION has followed up last month's release of the T-series 5-tier rack with the launch of the S-Series. This new series adopts a modular system constructed from solid 4.8cm diameter steel uprights with a laser cut steel x-frame. ☎ (01274) 604099

MONSTER CABLE at last has a new UK distributor. The brand will be handled by Lenbrook UK, home of NAD and Dali amongst others. ☎ (01908) 319360

ERRATUM: NAD's new C350 amplifier is an extension of the brand's current range and not a replacement for the C340, as reported in last month's issue.



AUDIOCOM has a new power supply regulator upgrade for CD players called the Q-Power (above). This £65 (reference grade version £89) circuit board produces a low-noise precision voltage reference, which is then RC filtered before feeding into a low noise op-amp. For an additional £20, Audiocom will fit the Q-Power into CD players, transports and DACs. ☎ (01646) 685601

SOUNDSTYLE has made select improvements to its Classic five-shelf rack to accommodate larger equipment such as multi-channel amps. The usual height of the lowest shelf has been increased by 2.5cm while 1.5cm has been added to the width and 4.5cm to the depth. Prices start from £240. ☎ (01279) 501111

www.Zzap.com is the latest website to promise hi-fi and home entertainment appliances at "affordable" or "lower than street prices". Zzap.com also claims to deliver products from the likes of JVC and Philips within five working days. www.zzap.com

PREVIOUSLY UNHEARD

Phil Strongman digs out rare and classic tracks appearing on CD or virgin vinyl for the first time. May the groove be with you.



BIG BOSS MAN

BIG BOSS MAN Humanize

Big Boss Man are a group of youngbloods who exist in the Bermuda Triangle that exists between Brian Auger, the Spencer Davis Group circa 1968 and the Wag Club now – pulsing Hammonds, crisp drumming and uplifting music that flits between soul jazz, psychedelic boogaloo, real rhythm'n'blues and the odd hint of Madness style ska. All of it, a few long loops aside, was recorded live in 1999 in North London's funky junk studio and the energy – and musical skill – comes blasting through with Naz' endearing vocals. Don't get too hung up on technology, it may well be time to Humanize.

Blow Up CD

Music ★★★★★ Sonic ★★★★★

SPARKS No.1 Song In Heaven

In 1979 bands like Kraftwerk were making electronic waves in all the right night clubs, so what better time could there be for glam boys Sparks to cut an album with switched-on disco maestro Giorgio Moroder? Everything sounds great sonically here – with synth breaths sweeping left and right while electro keyboards shimmer in the background or spike up the sound stage – although, musically speaking, only *La Dolca*

Vita and the hit singles manage to match Moroder's production. *Beat The Clock*, though, does now sound like a classic example of a future echo, a foreshadow of the digital chorus to come.

Repertoire CD

Music ★★★★★ Sonic ★★★★★

IGGY POP New Values

Simultaneously the Godfather and bastard child of the whole punk-new wave thang, Iggy's always held a curious position in modern music although this 1979 offering finds his grittily ripe voice in straight-ahead hi-energy rock mode. Contains the dum-dum gem *I'm Bored*.

Arista CD

Music ★★★★★ Sonic ★★★★★

SPIROGYRA Burn the Bridges – the demo tapes 1970-71

No, not the jazzy Birdland mob but Spirogyra, cult Brit folk-rockers who, judging from this disc, deserved a better fate. The curious other-worldly opener, the seven minute *Turn Again Lane* sets the tone with it's clear, breezy vocals, tinkling pianos and energetically strummed guitars. Allowing for the circumstances – cut and mixed straight to stereo in a small room in Kent University – the 17 tracks here were incredibly well recorded by one Brian Roberts.

Repertoire CD

Music ★★★★★ Sonic ★★★★★

FINK fresh produce

As bizarre as you'd expect from those hip Ninja people, this is a cinematic trip through the city's Summer sounds; complete with a dazzling beats, vocal samples, synth pads and mood-enhancing FX. For the full effect apply with sunshine and mild intoxication.

Ninja Tune CD

Music ★★★★★ Sonic ★★★★★



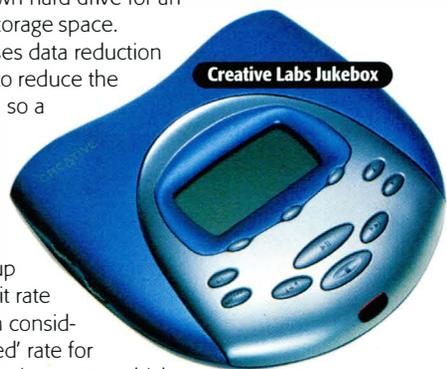
Jukebox Jury for MP3



Creative Labs is set to unleash its Digital Audio Player Jukebox on an unsuspecting music-buying public. It's a portable MP3-style device designed to record and playback music, but instead of storing digital information on limited flash memory it incorporates its own hard drive for an unprecedented storage space.

The Jukebox uses data reduction codecs like MP3 to reduce the size of digital data so a huge amount of music can be stored at one time. Creative claims it has the capacity to store up to 150 CDs at a bit rate of 128Kbps, often considered the 'optimised' rate for MP3. And it weighs just 400g, which means entire CD collections can be stored and transported wherever the user desires.

The unit is described as 'codec agnostic', which means it isn't just limited to MP3. Other codecs like WMA, AAC and WAV can be applied through its upgradeable firmware, with future formats downloadable as and when they become available. A USB connection is supplied for connection to a PC, enabling the user to 'rip' music from CDs via a CD-ROM drive and download into the Jukebox, or download material from the Internet if required. Music management facilities are also included, so tracks and albums may be sorted according to name, type and so on. Price is expected to be around £349. *Creative Labs* ☎ (0118) 934 4322



Arcam's new divas



Arcam has a new range which incorporates its first foray into the rapidly expanding DVD market. The DiVA series fits below its FMJ range and continues the trend toward all metal, silver finishes. It also has a rather nice stick remote.

The £900 Arcam DV88 DVD video player is an all format (CD-V, CD-R and RW etc) machine built around a Zoran chipset. Its modular construction means that it is DVD-A ready, as does the Wolfson 24/192 DAC.

DiVA also brings new amplifiers to the brand, including the A65 (£370) and A75 (£430) alongside the A85 (£700) a highly flexible, DVD-A ready design using current rather than Arcam's usual voltage feedback. A pair of CD players, CD72 (400) and CD 92 (£850), and a tuner, T51 £280 completes the two channel line-up.

Multi-channel enthusiasts will be more interested in the AVR 100 receiver (the first from the brand) at £800 and offering 5x70 Watts with all the AV widgets.

Arcam ☎ (01223)203203

Arcam DV88



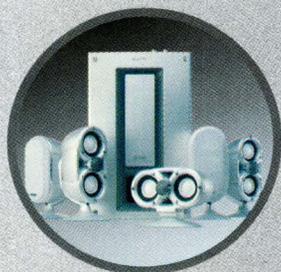
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SONY

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AEGIS *Series*

BY
ACOUSTIC ENERGY

PAUL MESSENGER

Paul steps onto his own Oriental Express, and finds himself face-to-face with Tannoy's impressive mass-production facility. Praise the machine!

A few hours after finishing the budget speaker Super Test on pp57-73, I was jetting off to the Far East to see for myself where and how one of the Best Buys was actually made. 'Overseas manufacture' is an emotive phrase, but Tannoy has been totally candid about adopting this strategy for its budget Mercury and new mX-series speakers, and decided to take a few journalists over to see the operations in action. This trip encompassed cabinet building and final assembly in Taiwan, driver manufacture in Thailand, plus a chance to spend a day at the Taiwan High End hi-fi show.

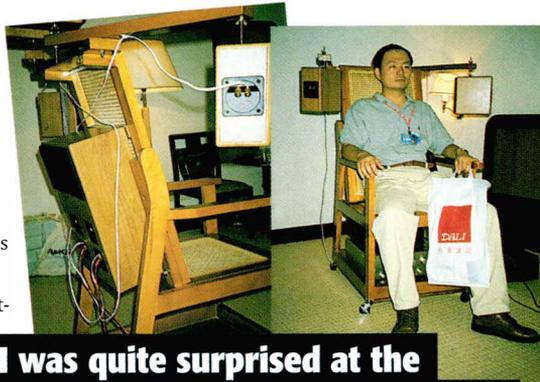
The show was fascinating, if of limited relevance to what's going on here in Britain. Serving a population of around 22 million, including plenty of serious hi-fi enthusiasts, the show was exceptionally well organised in Taipei's Asiaworld Plaza hotel. Taiwan's free market economy meant that loads of interesting kit was being demonstrated, from all corners of the globe. There was a good sprinkling of indigenous Taiwanese brands, while amongst the imports American brands seemed to dominate, but with plenty of representation from Germany, Britain, France and elsewhere. Surprisingly perhaps, there seemed little evidence of high end Japanese brands.

The rooms were split about 50/50 between stereo-audio-only and sound-with-video dems. While it's obvious that traditional hi-fi has to reach some sort of accomodation with AV, I took some heart from a room labelled 'Vintage', in which a dozen or so twentysomethings were sat around on the floor listening to a little valve amp driving a fine collection of 'historic' speakers, including Goodmans Axiom 80s, Lowthers, and various Altecs.

Elsewhere I was surprised to find a very active Onix brand, now Taiwanese owned, and met a French speaker designer Thierry Comte (ex-Triangle), who has been working on a very interesting prototype speaker with unusual features – such as balance weights around the midrange surround. Of more immediate relevance to the UK, perhaps, were a complete new Chorus range from JMLab, plus a cute Micro Utopia and some mean-looking subwoofers.

A short plane ride took us to Kaohsiung, Taiwan's main industrial city. There we were introduced to the local branch of a large (if little known) Japanese multi-national named Minebea (or NMB, for Nippon Miniature Bearings). It's the largest ball bearing manufacturer in the world, and almost certainly made the spindle on which your CDs spin, but also supplies all sorts of other precision components to all sorts of industries.

The Hwan Chong plant in which the speakers were made seemed much the same scale as



I was quite surprised at the very high level of automation. "Machines are faster and more consistent than humans," I was informed.

European plants I've visited (despite the workforce being about 30 times as large). The cabinet making section had all the latest machinery, including a 3-D CNC router for shaping baffles, and separate lines for real wood and vinyl finishes.

Even more impressive was the drive unit operation, in one small section of Minebea's vast Bang Pa-In plant 30 miles north of Bangkok. Driver manufacture is relatively straightforward, but I was quite surprised at the very high level of automation that was being used. "Machines are faster and more consistent than humans", I was informed, and both char-

acteristics must be essential in an operation which churns out three million drivers a month, for all sorts of applications.

Ultimately, combining consistency with precision is what a multi-disciplinary OEM engineering company like Minebea should be about, and the company's key strengths lie in its production engineering and management skills, plus an impressive attention to fine detail. Tannoy's chief engineer Alex Garner explained how all the engineering is tightly controlled by the main technical centre in Japan.

There's no doubt that Minebea's South East Asian factories are more than capable of matching European production standards. The question so far left unanswered is why Tannoy (and most other leading UK brands) started looking overseas for partners in the first place.

The traditional *modus operandi* of the speaker manufacturer (making and/or buying drive units and cabinets for final assembly, testing, packing and dispatch) still holds good for the more specialist loudspeakers. However, the need to stay competitive, hold prices and beat inflation has found many leading British brands using outside (OEM) manufacture for their mass market models over more than a decade.

Inghams in Yorkshire was a popular OEM source for a long time, but the operation closed down a couple of years back, leaving its customers little alternative but to look overseas. Belgium's Lefebvre took up some of the slack, while some have gone further afield, to Eastern Europe, the Far East and China. The most substantial UK source for mass market budget loudspeakers is now AGI, in Devon, which operates JPW and Heybrook alongside some OEM contract work (compare the Heybrook and the Monitor Audio models in our test.)

However, the art of brand management has much to do with working with an exclusive supplier, and Tannoy's links with Minebea would seem entirely positive to both parties. Meanwhile the increasing globalisation of all budget loudspeaker manufacture would seem both inevitable and perhaps desirable, in improving both the diversity and competitiveness of the end product.

Above: We have ways of making you risten! An innocent punter is strapped into a sexy new hi-fi listening chair. Right: Paul Messenger – card-carrying hi-fi cosmopole.



EZO Fog S £575.00

Jason Kennedy is won over by some idiosyncratic Gallic charm

This was (and is in France) a Cairn Fog but Linn's Kairn preamp had prior claim to that name – hence the EZO moniker. Either way, it's a distinctive CD player with a great name. There aren't many so attractively encased in this price zone, and there are none with such minimalist pretensions!

Its manual details 15 other components by the brand, ranging from the Geant DVD player to the Bernina tuner, with a variety of amplifiers and CDPs in between. Apparently all are available in black or silver aluminium with 10mm face plates and epoxy glass PCBs throughout. It is even claimed that all the analogue circuits are balanced, which would explain the XLR output sockets alongside RCA phono alternatives on the Fog.

I had a little trouble with my first sample of this machine, which refused to spin discs. The second sample was more successful; its remote, on the other hand, didn't fare so well and refused to do a thing. This left the two buttons on the machine, which luckily are sufficient for basic operation.

SOUND QUALITY

It's worth noting that the Fog S is the basic version of this player. There are two upgrades that can be made to it, the second of these – Soft – incorporates a 24/192 capable upsampler in the player and offers a variety of filter options. Impressive stuff for an all in price of £1,105.

As it stands, the Fog S is an appealing player with a nice sense of timing. It likes to drive the music along but manages to remain quite relaxed while it does (a rare trick for any player, let alone one at this price). It also plays CD-R and RW discs, the latter sounding better and more expansive than I've had the pleasure to encounter before.

One thing that perplexed me was the unusually low output level, which I thought might be explained by the dead remote – apparently not. This is another example of the player's individuality, output sounds about half what you usually get, but this doesn't seem to get in the way of sound quality. It certainly gives you a bit more scope with the volume control and makes me wonder what the advantages of 2 Volts are. If you have taste for the unusual, try the Fog for size.

★★★★★ Audio Illusion ☎ (01753) 542761



Audio Note's CD combo looks clean and sounds fast.

AUDIO NOTE CDT Zero and DAC One 1x £549.00/£699.99

Jason Kennedy tries Audio Note's entry level 'filter free' two box CD player.

This twin-box pairing of CD transport and converter represents Audio Note's least expensive route to filter-free CD playback. Like the unfeasibly expensive DAC 5 featured in *HFC 203*, the DAC One 1x is devoid of digital filtering, which means that it trades that otherwise universal device's limitations for scary amounts of RF noise at the output. How well this works depends largely on the partnering amplifier's ability to cope, but in the case of the DAC 5, Paul Messenger thought it worked beautifully.

Transport and DAC combos have not been fashionable of late but by introducing this good-looking pair at a reasonable price, Audio Note is clearly trying to put the breed back on the map. In this instance, you get 'serious' hi-fi in mini casework: it wouldn't look out of place alongside TEAC 500 series components, which is unusual for a valve-oriented brand like AN.

You might not guess from the sealed casework on the DAC One 1x but there's a valve output stage inside – the only sign is an earthing point on the back panel. In the same area are two digital inputs, both electrical, alongside analogue-out and mains-in socketry. The CDT Zero transport is short on buttons – in fact its fascia is devoid of them and if you lose the remote, you'll have to fiddle round the back for open/close and play/pause buttons!

SOUND QUALITY

This combo's qualities, while bearing the mark of the tube technology employed, are by no means defined by it. There is a slight lack of definition in the bass and the midrange is a little pronounced, but if anything these factors blend into the picture and enhance musical communication. Just as influential is the filter-less-ness, which brings an attractive and engaging feel to proceedings, with good leading edge definition and speed. Occasionally it seems to trip up on track starts, leaving you with the sensation that the leading edge has actually been omitted, such is the immediacy of the opening note!

Its skills in terms of midrange resolve are indubitable, you can hear right into the mix and even Radiohead lyrics become discernible. This makes for a very distinctive CD player that will provide a lot of musical insight in the right system, but check compatibility with your amp first.

★★★★★ Audio Note UK Ltd ☎ (01273) 220511

The EZO Fog plays misty for you...



DENON CDR-1000 £399.99

Tim Bower tests Denon's first foray into the world of domestic CD-RW.

Affordable CD-RW recorders for the home are spouting up everywhere, increasing consumer choice and inevitably sharpening the penetration of this excellent recording format. All good news, but why the delay? Philips encountered difficulties developing its latest generation, and since many new recorders are based on Philips' transport technology the hiatus has affected all and sundry.

But the new Philips CDR 951 is here at last (*HFC 205*), hotly followed by close relations like this Denon. It's £20 more than the Philips model but it's better built, with an aluminium fascia and a more business-like control layout. Its origins are immediately obvious: it sports the same display as the 951 and an identical tray mechanism. It also operates in the same user-friendly way.

Denon claims it's added a few tricks of its own, including a 'unique' monitoring feature allowing you to test the level of the source material to be recorded via both digital and analogue outputs. This is useful, but it's also present on the Philips model. And the Philips provides something the Denon doesn't – a microphone input. That apart, facilities are more or less the same, including socketry: you get three digital inputs, two electrical and one optical, along with optical and electrical digital outputs and standard analogue in/outs.

SOUND QUALITY

When it comes to making recordings, the CDR-1000 is just as good as the class-leading CDR 951. Copies from CD aren't quite identical but they're very, very close. Played back through a dedicated reference player and carefully compared, it's possible to find small differences between original and copy – the recording is 'tougher' and denser, perhaps. But we're talking real fine detail here; you won't get a closer copy for this kind of money anywhere.

Its playback performance is pretty well balanced and reasonably well defined (more than you can say for many CD-RW models), but compare it to a good playback-only model at a similar price and you'll be disappointed. It's relatively flat and sluggish, with a touch of congestion in the upper registers.

If you're buying a CD recorder you're likely to have a straight CD player too, so playback performance is probably not crucial. Features, user-friendliness and recording quality are, however, and on that score this Denon is a winner.

★★★★★ *Hayden Laboratories* ☎ (01753) 888447

Sony's most accomplished MD deck yet.

Denon takes a shot at the growing CD-R market.

HEAT SEEKERS



SONY MDS-JB940 £299.99

Tim Bower checks out the latest MD deck from the format's home.

After a slow start, the mass market has come round to MiniDisc, wooed by the format's robust portability and brilliant editing facilities. The originator of the format, Sony has consistently made the best MD recorders around, particularly in the separates market, and its mid-range £300 machines have been among the most accomplished of all. The MDS-JB940, the latest in this line, replaces the excellent 930, and features a number of enhancements.

One of these is a Long Play facility. This doubles or quadruples the record time to a maximum of 320 minutes from an 80 minute disc, albeit at a lower quality. Also, Sony's 24-bit variable coefficient filter allows the user to tweak sound in playback mode. It also features a number of modifications aimed at improving performance – a specially selected op-amp for the DAC's output, a double top plate and copper plated screws for the case work.

Beyond that, this well-equipped machine offers a plethora of playback and editing facilities. Making and naming compilations is a piece of push; altering the content at a later date is just as simple. The front panel controls feel 'right', the remote is comprehensive, if a little cluttered, and the net result is arguably the most versatile domestic recorder ever.

SOUND QUALITY

MD's data reduction means recordings will never be entirely faithful, and certainly not equal to recordable CD. But, using the latest ATRAC Type R Digital Signal Processing, this deck manages to sound pretty fine. Recordings are essentially neutral, with a good sense of rhythm, and an impression of depth that's unusual for MD. It's still a little cold, a little lifeless compared to an original CD, and certainly not the last word in fidelity. But its overall character is perfectly enjoyable, so long as you don't touch that Long Play facility.

There is some doubt hovering over the future of MD, with solid state MP3-related recorders set to threaten its portable supremacy. One might also question the wisdom of plumping for a £300 MD separates deck with so many excellent CD-RW recorders emerging. And if portability and cheap re-writable blanks are the best reasons for buying MD right now, why not go for a recordable personal like Sony's splendid MZ-R91 instead? Still, if you do need a full-size deck, this one's top banana.

★★★★★ *Sony* ☎ (0990) 111999



DAVID VIVIAN

IKEA, eh? They told us to chuck out our chintz, in favour of their stylish solutions. But they didn't reckon on the pulling power of Timbrestage's sexy new equipment stand.

I embark on this column having just read Richard Black's jaw-dropping group test of equipment stands (*HFC* 206). What this means is my copy is late. Luckily I'm also involved in an e-mail exchange with the fundamental physicist Julian Barbour whose latest book, *The End of Time*, argues that time doesn't actually exist but is pure illusion. I've been telling editors this for years; maybe now they'll listen.

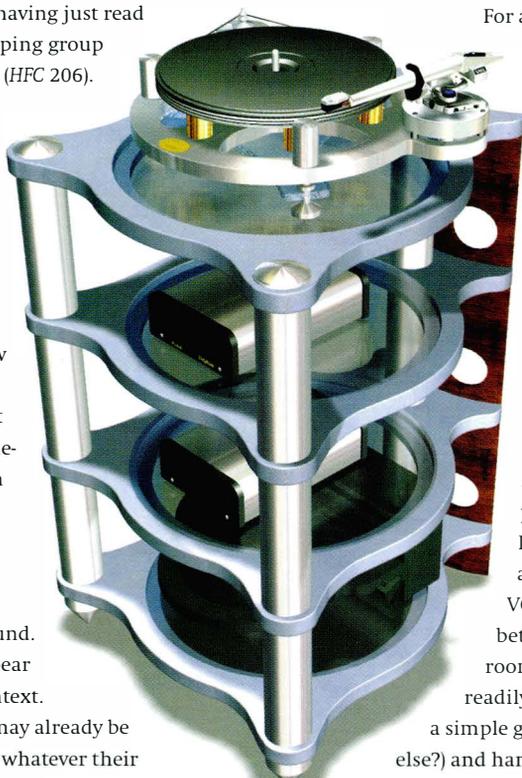
Anyway, I'm glad I read Richard's test because it's likely to be every bit as apple-cart wobbling as JB's 'next revolution in our understanding of the universe'. Equipment tables, it seems, aren't the rocks of sonic impartiality we thought, but tuned resonators that, at best, add euphonic coloration to our systems' sound.

And at worst? Well, it doesn't really bear thinking about in any serious 'hi-fi' context. Which is why I try not to. Some of you may already be aware of my take on equipment stands: whatever their claimed sonic benefits (realised or otherwise), it all comes second to the way they look and integrate with their domestic surroundings. Use this as a basic criterion and most dedicated system supports are so awful they're not even worth considering.

What amazed me when I moved into my new flat wasn't that the three absurdly inexpensive IKEA Lack tables I chose to support my TV and hi-fi (just like the ones so liberally scattered about the *Big Brother* house) sounded different to the spiked tubular numbers I previously used - I'd have been surprised if they hadn't - but that they weren't obviously worse. All right, they softened up things a little but that wasn't necessarily a bad thing. Most importantly, they kept the deal musical: good enough for me.

Don't underestimate the psychology at work here. If you shudder every time you look at your equipment tables, you're hardly going to be in a mood to appreciate their sonic contribution. This shouldn't be the case but it is. There's a huge difference between the way we listen in dealer or show demos and at home. The former are always going to be strange environments. You don't expect to feel completely chilled or 'at home', which, in a way, makes it easier to focus on the sound. Our own private living space is different. There's a large element of 'just so' - and a hulking great structure of welded steel is about as 'just so' as a splinter in your bum. It doesn't matter if you close your eyes or stand on your head, you know it's there.

My requirement, therefore, is dead simple. Show me an equipment table that both looks and sounds better than the cheapo IKEA classic and I'll get excited. So Tony Knight did.



For a couple of weeks, Tony was a breathlessly revved-up voice on the other of the phone. He said that, like me, he'd been frustrated by the absence of serious equipment supports he'd give house room to. Being in the interior design and office furniture business, though, he reckoned he knew how to do something about it. That was two years ago. Research and development done, Timbrestage - billed as a "truly versatile, modular and interchangeable range of exquisite equipment support solutions" - is ready to go, and it makes its debut at this year's London Hi-Fi Show.

The picture on this page - thoughtfully computer-generated by Tony's boys - saves me at least a thousand words. As you can see, 'gorgeous' hardly scratches the surface. Tony brought round two pieces to represent the two ranges, the circular Legend Annexe to support the AVI amps, CD player and tuner, and the elliptical Evolution for the TV, VCR and DVD player. The Evolution looked even better than the Legend but was simply too big for my room, and there wasn't a smaller Evolution Annexe readily to hand. So I compromised by plonking the TV on a simple glass table with screw on metal legs (IKEA, where else?) and hanging on to the Legend. The combination of square

The picture on this page saves me at least a thousand words. As you can see, 'gorgeous' hardly scratches the surface.

glass table and something that looks like a Richard Rogers tower (albeit one built out of three solid aluminium columns, MDF outer platforms and 10mm bevel-edged toughened glass inner shelving) is simply dazzling. A curved 12mm wood veneered back panel with holes in (big for power cables, small for interconnects) sits just

behind the rear aluminium column and keeps the spaghetti nice and neat.

The whole thing is heavy (38kg), tremendously stable and doesn't ring a damn if you shout or clap your hands at it - maybe because the MDF is doing some damping. Which may well explain why it sounds significantly better than IKEA's simple stalwart. So it should at £980. Versions with aluminium outer platforms are on the way which will be still heavier and more expensive. They'll look even more stunning, but will they ring? Perhaps you can field that one, Richard. I think I've found what I was looking for.



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There's no such thing as perfection - but now, you can get pretty close.



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LETTERS

Hi-Fi Choice's 'points of view' page, where hi-fi and music enthusiasts get to tell it like it is.

LETTER OF THE MONTH

SCENES OF GRAPHIC HORROR

I'm writing to comment about the bar charts presented in the group tests. In my opinion, their usefulness is limited by the way the results are displayed. The confusion comes from the values attributed to each item. That is, for some items a high value is good, but for others a high value is bad. I always have to figure out whether a high value is good or bad. And because these 'judgement scales', depending on the sequence of items that are assessed, flip continuously from 'high is good' to 'high is bad' and so on, the graphs become unclear when comparing two (or more) products. Of course, the reader can always go back and check the text, but then the 'graphical' spell is broken.

In my opinion, there are two ways to solve this problem. The first would be to have graphs for each test, with all the products being compared at once. In this type of graph, it's possible to express which value is better. The other solution would be to have graphs with all the five values together, separated by product, but changing the scales in such a way that a high value would always mean good by inverting the scales when necessary. The advantage of this second approach is that it would be easy to compare tested products by looking at all their characteristics at once.

Daniel Paiva, via e-mail

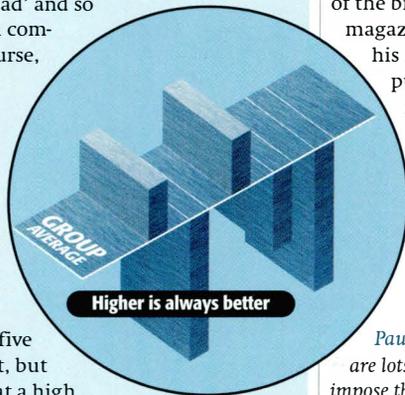
Editor replies... Clearly, we are not giving you enough information about the way in which the graphs are compiled. In fact, all of them are done so that, for instance, a high percentage (and high bar) for audible distortion means that distortion is low. All the figures are organised so that bars rising above the group average denote that a product has done better than average in that field. We'll try to make it clear in the future. Thanks for your input.

TWISTED SISTERS

While reading the review of the Well Tempered turntable in the September issue, I was intrigued to see that the drive belt was twisted at the motor end. My own turntable (Systemdek IIX / Linn Basik plus / DNM Reson Recca) sports a similar flat section belt, and, you guessed it, I decided to give it a whirl myself.

The results were little short of

astounding: lowered noise floor, reduced treble graininess, better control of the bass and a more fluid midband. In short, just a huge improvement all round. That evening I was speaking to a friend on the telephone and mentioned the way things had improved (he is another vinyl head) and managed to persuade him to try it himself. He too could not believe what his ears were



telling him. I just thought that some of your readers might like to try this out for themselves. Like the best tweaks, this one is free!

Chris Firth, via e-mail

NAIM THAT TUNE

I'm an ex-Naim flat Earther who still looks back with fondness on the brand and miss the qualities of the brand, but how can the magazine let Paul Messenger use his Naim system for review purposes? I remember reading a group speaker test of his a few months ago and you could trace 90 per cent of the negative character he attributed to the loudspeakers back to the review system!

Nigel Burt, via e-mail

Paul Messenger replies... There are lots of amps out there. All will impose their signatures on any speakers I

listen to, and there's no escaping that. The speaker is the slave to the amp, but you can't review speakers without one, and therein lies the rub. Which amp should I choose? The Naim kit has the virtues of: a) long-term consistency, b) good load tolerance, and c) it is undoubtedly the most successful serious amplification on the UK market. And, none of the alternatives I've tried have proved as successful.

DAB BE GOOD TO ME!

I think you may have missed one of the deciding issues about

WRITE TO US

Let it all flow and send us your points of view on all that is hi-fi. The author of the best missive wins a prize for their efforts. Get writing to: The Letters Page, Hi-Fi Choice, Future Publishing, 99 Baker Street, London W1U 6FP, or send your e-mail to: jason.kennedy@futurenet.co.uk

MiniDisc in the issue 205 review. The arrival of digital radio broadcasts has made the old cassette look a bit long in the tooth. For many years, I fear decades, I've used my Nakamichi to record radio broadcasts off air via a Quad FM4. The arrival of DAB definitely makes a digital recorder a sensible purchase. But DAB is data reduced, so why spend money on CD-R when MD is cheaper to run, easy to edit, and seems to my ears not to introduce any quality loss from DAB?

I bought the Sony JA555ES a few weeks back to partner my satellite receiver, Audio Synthesis DAX and ATC set-up. This new recording system is as good as it needs to be for BBC Radio 3 and Radio 4 on Astra 2 and the excellent German DAB stations on Astra 1.

Dave Billings, Portsmouth

Editor replies... That's certainly an interesting observation, Dave, and we take your point. However, we were trying to assess which was the highest fidelity recorder for all applications, and in that respect MD doesn't compete with CD-R.



TDK's audio CD-R range

Letters page sponsored by



at the heart of it

COMPETITION

WIN TOP-OF-THE-RANGE MONITOR AUDIO GEAR!

Your chance to bag some of Monitor Audio's astonishingly sexy speakers.

This month we are giving you the opportunity to walk away with a fabulous Monitor Audio home cinema kit worth over £1,500, made up of their Silver 3i, 5i and 10i speakers.

First up is the Silver 3i. Designed to be shelf or stand mounted, its rigid, twin-ported cabinet provides the ideal platform for the company's recently developed C-Cam (Ceramic Coated Aluminium Magnesium alloy) bass-midrange driver.

Monitor Audio's famously clear and open-sounding, gold-dome tweeter provides an ideal sonic match.

Designed both for musical and multi-channel performance, the Silver 5i floor-stander facilitates a pair of five and half inch C-Cam drivers and gold dome tweeter. Monitor Audio describes the Silver 5i sonic properties as a "convincing weight

and scale, superb separation of instruments and a true sense of space and timing".

Also on offer is the Silver 10i centre channel speaker. Boasting "a clear and natural" delivery of your favourite movies, the centre 10i incorporates a gold metal dome tweeter, twin five and a half inch C-Cam drivers and a front ported enclosure. The end result is a sensitivity of 89dB and 100 Watts of power handling.

To complement the Silver series,

Monitor Audio is giving away an ASW110 subwoofer to give your movies that extra bass bite. The active sub uses a pair of 10-inch, gold anodised drivers with a 100 Watt amp.

To be in with a chance of winning the whole shedful of speakers, simply answer the questions below.

Good luck!



HOW TO ENTER

Answer the questions below by circling the correct answers, then fill in your name, address and daytime telephone number in the spaces given.

WHAT DOES C-CAM STAND FOR?

1. Ceramic Coated Aluminium Magnesium
2. Copper Coated And Magnetised
3. Clear Cooled Aluminium Magnesium

WHAT IS THE POWER HANDLING OF THE SILVER 10i

1. 1000 Watts
2. 100 Watts
3. 50 Watts

Post this entry form to:

Hi-Fi Choice Competition (CHFC 0011A)
Kirsty Husband, Database Direct, PO Box 9, Dunoon, Argyll
PA23 8QQ

All entries must arrive by First Post, 15 November 2000.

Please remember to tell us whether you are over 18 years of age.

Name _____

Address (inc. postcode) _____

Day-time Telephone Number _____

Please tick here if you are under 18.

Tick here if you do not wish to receive information on other products or services.

Please tick one only of the following:

Are you a current subscriber? OR

Are you a regular reader? OR

Are you an occasional reader?

COMPETITION RULES

- 1) The closing date for the Monitor Audio competition is First Post, Wednesday, 15 November 2000.
- 2) Winners of the Monitor Audio Competition will be judged from all correct entries submitted, and drawn at random after the Closing Date given in 1) above.
- 3) All winners will be notified by post.
- 4) The Editor's decision is final and no correspondence will be entered into.
- 5) The Monitor Audio Competition is not open to employees of Future Publishing Ltd, Monitor Audio, their suppliers, agents or associates.
- 6) We regret this competition is open to UK residents only.
- 7) No cash alternatives will be offered.
- 8) We reserve the right to substitute alternative prizes with equal value to those shown, in the unlikely event of stock being temporarily unavailable.
- 9) By entering the competition, you agree to be bound by the rules.
- 10) No purchase necessary, send the details requested on the left on a postcard to the address given. Please note: only one entry per household.

CHFC 0011A

CD & DVD

DVD player prices are plummeting, so much so that it's not looking good for the dedicated CD player, but what does this mean for fidelity? *Alvin Gold* looks at what the leading names have to offer.

Let's face it: CD players are probably now in terminal decline. This appears to have less to do with any reduction in the popularity of compact discs *per se*, than the ready availability of new types of disc spinners which can be used to play CDs – notably DVD. DVD is a superset of the classic Red Book CD standard, with players able to play CDs as part of a more all-embracing specification which also includes the ability to play DVD-Video discs, and possibly a CD-R and CD-RW read capability. As sure as eggs is eggs, when DVD-Audio becomes an everyday component of DVD-Video players – which will start with higher priced units at first, and only later extend to affordable models – the writing may finally be on the wall for single purpose high fidelity CD players.

In recent months, we have looked at various types of alternative disc players, including multi-disc CD players, and both recordable and re-recordable compact disc. Further back, we have looked at mixed groups of DVD and CD players, using common criteria, and a single, uniform set of tests, where the listening panel – a key feature of our group reviews – had no idea whether they were listening to CD or DVD players.

This month presents another opportunity to look at these two important types of disc spinner. There are a total of 15 players: six CD-only units, and nine DVD players. While on previous occasions the DVD players were on average significantly more expensive than the CDs, that difference has all but disappeared thanks to a sharp reduction in the costs of DVD hardware. The trigger for this was the decision by Tesco (that well-known audio retailer) to market the Wharfedale budget DVD player, creating a new route into the market. This path has since been trodden by a number of other brands, some of which have had little to do with specialist audio, and a number of which offer an even more ambitious specification – sometimes at lower prices still. This month's group, for example, includes two ultra-low-cost DVD players, one of which we believe to be the cheapest yet, and there is no doubt that their presence has had a knock on effect on the wider

THE CAST LIST

CD players

Arcam Alpha 7 SE	£299.90
Kenwood DPF-3030R	£179.95
Marantz CD6000	£249.90
Onkyo DX-7511	£299.95
Technics SL-PS7	£199.99
Yamaha CDX-596	£229.95

DVD players

Alba DVD103	£150.00
Denon DVD-1500	£399.99
Encore DV-450	£199.99
Hitachi DVP-505	£300.00
JVC XV-523	£280.00
Panasonic DVD-RV40	£349.99
Philips DVD960	£530.00
Sony DVP-S735D	£499.99
Toshiba SD-100E	£250.00

market, pulling down the prices of mid-market and more expensive models.

Remarkably, the first group of three players, all of which cost under £200, includes two DVD players. Indeed the least expensive of the three, the Alba, is a DVD player, undercutting the least costly CD player this month by a full £50.

The Alba and the Encore are very simple players of their type, without some of the more sophisticated video processing found in more expensive DVD players, and consequently their screen performance is relatively modest, a comment that applies equally to their sound quality. But this doesn't stop the Alba offering a Dolby Digital decoder, while the Encore has the ability to play MP3 CDs and has a component video output, and both can be persuaded to play discs with any regional code, including US standard Code 1 discs. By contrast, the Technics SL-PS7 has

Digital Re-Master Processing Technology which is designed to deliver some of the benefits of high resolution audio from low resolution compact disc, and therefore is a significant product in its own right, price notwithstanding.

The middle ground in this test is a six strong group covering a relatively narrow price band: two are DVD players and four CD players, involving mid-market models from a cross-section of the most prominent names in the business. One point to note is that, with few exceptions, there are few features or capabilities not also present in the entry level group of players below £200. Indeed the budget DVDs have capabilities out of the box that none of these more mainstream models possesses, such as the ability to play Regional Code 1 discs

without the extra costs of chipping. What you're being offered here, then is no more or less than better performance.

In the highest-priced group here, there are some really unusual players. These include a Sony DVD player that is about as far removed from the Sony mainstream as we can recall, a Denon DVD which turned out to have some peculiar and critical failings, an 'audiophile' DVD player from Philips, Panasonic's latest DVD player... And just two CD players, one a mainstream unit from Kenwood which

features arguably the most successful implementation yet of its DRIVE II (Dynamic Resolution Intensive Vector Enhancement) technology.



How the tests were done

The players went through the usual tests, including a close physical examination, unsighted panel-based listening tests, hands-on listening, and a computerised measurement test programme (from Paul Miller). Each player was run in and warmed up prior to testing.

Panel testing, spread over the course of two days, included a large number of repeats, with no panel member knowing the identity of the player on test,

and with levels carefully normalised at the beginning of each test run. The test system used included a Krell KPS25sc CD/preamplifier, Krell FPB600 power monoblocks and JM Labs Mezzo Utopia speakers for the unsighted and hands-on tests. Speaker cables and interconnects were from Transparent Audio and Nordost. Hands-on listening was broadened to include a Denon integrated amplifier, and speakers included

the Tannoy R2, and a Ruark Vita 5.1 system.

The music we used

Eva Cassidy – *Kathy's Song* from *Time After Time*
 Jacquet De La Guerre/Carole Cerasi – *Rigaudon I & II*
 Garbage – *Queer* from *Garbage*
 Takemitsu – *Twilight by Sky* from *Quotation of a Dream*

GLOSSARY

DIGITAL CONVERTERS The slice of silicon that converts the digital signals into an analogue waveform.

Converters come in various forms. Of these, the traditional multibit or ladder type, and the low-, single or Bitstream types are the best known, and have known strengths and weaknesses which designers are more or less adept at accommodating.

FILTERS Intrinsic to digital audio is the extensive use of filters, both analogue and digital. These are often very sophisticated in design, and in sum total probably have more to do with the 'personality' of CD player sound than many other better known factors.

OUTPUT IMPEDANCE A measure of resistance to alternating current, a low output impedance (say, below 100ohms or so) helps ensure compatibility with most amplifiers, even when using long or unusual designs of interconnect cables. A high impedance, especially in conjunction with an amplifier with a low input impedance (some are as low as 8k Ohm, though the standard is 47k Ohm) can result in audible treble losses.

JITTER This represents the uncertainty in the timing of digital signals, which translates into a muddling and loss of detail and defocused imagery. State of the art is below 150psec, but figures over 1000psec are not uncommon.

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

CD-RW Recordable/erasable and re-recordable disc, the true successor to the compact cassette, and comparable in its capabilities to recordable MiniDisc. Finalised CD-RW discs must be unfinalised before they can be re-recorded.

HINTS & TIPS

Extracting the best from your CD or DVD player is, to a large extent, a matter of common sense. CD players don't like to be run from cold, so don't expect the best sound for the first half-hour or so, unless (and sometimes even if) yours is one of the growing number with a standby feature. Ideally try to avoid stacking the player on top of other hi-fi components, especially if it's a copious heat generator like an amplifier, but if needs must, try to arrange some space and mechanical isolation between the components. We have found that compliant isolating feet can give good results.

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ALBA DVD 103 DVD player



Wharfedale started something by offering Chinese DVD players cheaply through Tesco, and now half a dozen manufacturers or more have DVD players which are selling for £200 or less. Considerably less in this case: the Alba DVD 103 typically costs just £150, which we believe makes it the least costly player on the market, and at least one of the greatest bargains.

The player is made in Taiwan and appears adequately constructed. Short of opening the lid, it is far from easy to tell exactly which corners have been cut. The matt silver plastic looks OK, and the simple, bi-colour display, and other front panel furniture (a headphone socket and level control, open/close, pause, play, stop, fast scan and track skip) is workmanlike. From the remote, it is possible to switch between PAL and NTSC, but the effect this has depends on your TV, and most will work happily with either setting.

Supported video standards are impressive, and include RGB, S-Video (via Y/C) and composite. Rear panel socketry includes a Scart, a 5.1 channel set of analogue outputs, a separate stereo output, optical and electrical digital outputs. Almost unbelievably, the £150 price even

“This player typically costs just £150, which we believe makes it the least costly player on the market.”

includes a Dolby Digital decoder, though options for speaker size and bass management are limited.

On-screen features are simple, but include a zoom feature, and operationally the player worked well, although occasionally it would claim there was no disc inserted when there was. The player is capable of reading any disc with any regional code straight from the box, which enhances its desirability still more.

SOUND QUALITY

Perhaps inevitably, the Alba was not a particular success on audition, but perhaps it should be credited for working at all. Musically it sounded rather soggy, with little presence, life or vitality. The acoustic Eve Cassidy track sounded shiny and yet dull, but the singer ‘breathed’ naturally enough, and the effect was not unmusical. The same loss of presence and detail was noted in the harpsichord recording, and the

Takemitsu and the Garbage track both sounded rather shut in. Nevertheless, if it loses its grip and sounds a tad boomy in the more complex material, the Alba was not displeasing with simpler material. Overall, the results from this model were consistent with the kind of loss of immediacy often encountered with higher than normal levels of jitter. (Check out what Mr Miller thinks in the boxout below.)

Picture quality was below par by DVD standards, with some moiré and a rather grey overall cast. Colours were undistinguished, and indistinct, and some weaving of angled lines was noticed, with higher than normal levels of pixellation in some moving scenes.

CONCLUSION

It’s difficult to know how to sum the Alba up. It is quite obviously superb value for money by any standards but when considering the question

of whether it makes an effective substitute for a hi-fi CD player (the object of this exercise, after all), it becomes less appealing. Nothing can hide the fact that the answer can only be yes in the purely functional sense: it plays CDs, somewhat crudely, but serviceably. Crude and serviceable is how it looks on screen too. Recommended then, on the basis that it has to be the best £150’s worth you can buy, but not necessarily because it will answer all your musical needs.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★★
PRICE	£150.00

Outrageously good value for money, this player almost has it all, though quality levels are not to mainstream standards, musically or visually.

ONE YEAR GUARANTEE

Alba plc, Harvard House, 14 – 16 Thames Road, Barking, Essex IG11 0HX.

(020) 8787 3111

THE LAB REPORT

Alvin, quite rightly, stopped short of opening the lid because, frankly, that’s my job. Inside we find one of Burr-Brown’s PCM1723 96kHz/24-bit DACs, a low cost chip designed to receive an MPEG (video) clock, which is divided

internally to provide the various audio clocks. This is a decent enough chip, and

so the DVD103 offers a good 104dB S/N ratio even if its low-level resolution really begins to tail-off at the -90dBfs mark where errors of +0.0/-2dB are evident. Distortion, too, is low enough at 0.0015 per cent (0dBfs) but builds at lower levels, reaching 0.02 per cent at -30dBfs and a substantial 20 per cent at -90dBfs. Some play-



ers will achieve a THD of just 1-2 per cent at this very low signal level.

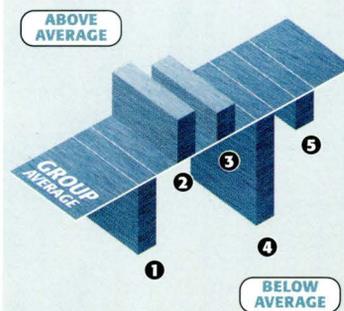
Meanwhile, the basic digital filter suppresses images by just 30dB or so and allows IM distortions back into the audioband. The filter is

also responsible for an obvious response ripple though not necessarily the -1dB treble droop. The 0.6dB channel balance error may well be audible in some systems, but at least any correlated jitter is relatively modest (for a budget DVD player) at 430psec. Indeed, the spectral content of these digital nasties is far preferable to that entertained by the Denon and Encore that follow... **PMI**

HOW IT COMPARES

Sluggish track access, a poor digital filter and higher-than-average levels of distortion lend the player a ‘vintage’ performance, but Alba’s low jitter levels could still teach newer players a thing or two.

1 SUPPRESSION OF DIGITAL IMAGES	-45%
2 JITTER	30%
3 PRACTICAL DYNAMIC RANGE	20%
4 HARMONIC DISTORTION VS LEVEL	-70%
5 LINEARITY	-20%



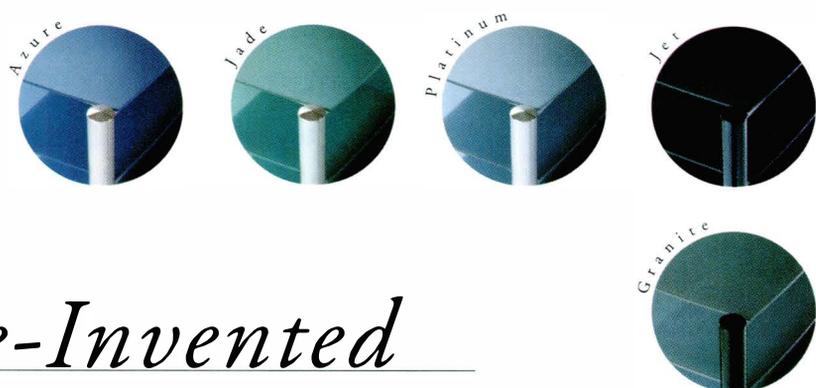
SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	<0.01%	0.0015%
Maximum output level	2.0V	2.1V
A-wtd S/N ratio	>85dB	103.5dB

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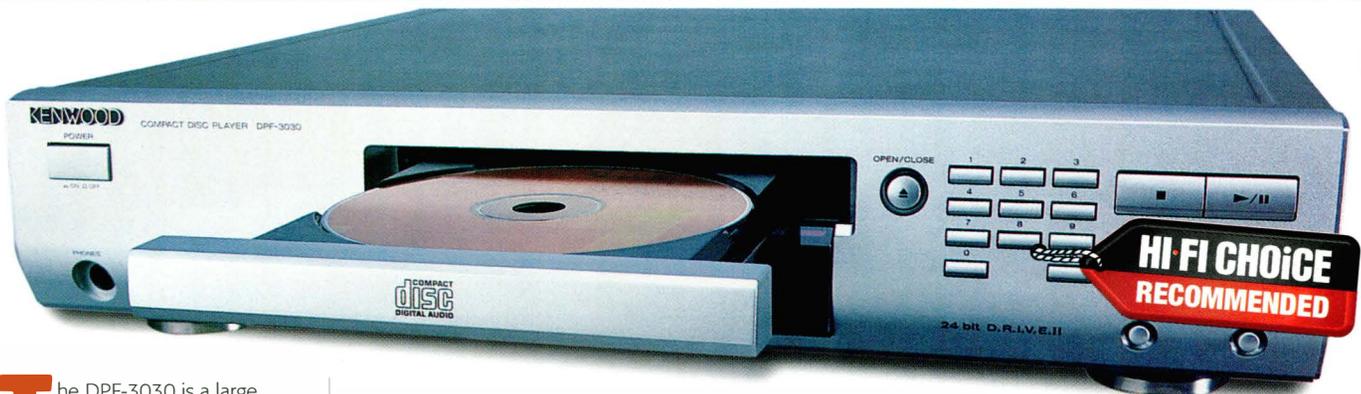
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New

X S S E R I E S

KENWOOD DPF-3030 CD player



The DPF-3030 is a large, though slimline, CD player, one of the principal claims to fame of which is its Resolution Intensive Vector Enhancement circuit, designed to drastically reduce distortion at low signal levels. The player also features a 'high performance' 1-bit D/A converter, with a claimed 24-bit resolution, though as such a beast barely exists at everyday price levels, the resolution claim at least must be taken with a pinch of salt. The ability to deal with 24-bit numbers from the digital filter without truncation at the input is the usual meaning of this claim.

Potentially useful operating features include CD Peak Search, and a tape edit function that reorganises the disc contents to make best use of tape sides, and to ensure that tracks are not interrupted in the middle. Auto Space adds even gaps between tracks, and a system control function allows a Kenwood system to be controlled by a unified remote controller.

Other features include random play, repeat, and random track access through a numeric keypad on the front panel, as well as on the remote control. CD Text data is

"This is an above average CD player, though it is up against stiff competition at similar or lower prices."

delivered from the optical digital output and, recorder permitting, can be included on MD recordings. There is no electrical digital output, however. Headphones can be connected, along with a volume level control, which not only adjusts the headphone feed, but also the main player output. The most notable omission from a contemporary player: CD-RW replay compatibility.

The handset is a small and chunky item, with output level keys, random play, repeat mode, preset facilities, a time display mode change key and editing features.

SOUND QUALITY

This is an above average CD player, though it is up against stiff competition at similar or lower prices, from the Arcam Alpha 7SE and the Marantz CD6000 in particular. 'It's on the lean side,' commented one panel member after listening to the

Eve Cassidy track, 'but it's nice to listen to. Instruments are well portrayed, and the voice has a sense of scale.' Others agreed. 'It's nice and warm, almost like a live PA sound,' wrote one, while another remarked that the song sounded 'well balanced and enjoyable'.

The harpsichord recording was 'nicely delineated, accurate and poised', with particular praise reserved for the lower registers, and another remarked on the Kenwood's 'good depth' and the way that the music was able to 'flow realistically'. 'It's a good, well balanced sound', he concluded.

In the hands-on testing, it lacked the easy clarity of the Arcam, and the sonority and smoothness of the Marantz, but it gave an airy, spacious account of a wide range of music types. It seemed less sure-footed with very dense choral and orchestral recordings, which sometimes

tended to lose focus and sound mushy. But, for the most part, the Kenwood sounded clean, lively and entertaining, with plenty of grip and purpose, and with a powerful and extended bass. It retained these qualities even at very low levels, where some players begin to lose control.

CONCLUSION

This decent, well-organised sounding player from Kenwood is not a giant killer, but it more than holds its own in this large and surprisingly diverse group. Recommended.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £179.95

One of the best Kenwood CD players we've heard in some time, this a confidently voiced and articulate model.

ONE YEAR GUARANTEE

Kenwood Electronics UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB.
(01923) 816444

THE LAB REPORT

This player is certainly several steps ahead of its budget predecessors, offering a low 0.0015 per cent distortion at the peak 2V output, a wide 102dB S/N ratio, channel separation better than 85dB at all frequencies and jitter at just 190psec.

Additional processing offers around 7 bits of attenuation (42dB), via a digital volume control, over the player's peak 2V output. Nevertheless, the DPF-3030 has its quirks. Kenwood has chosen Analog Devices' AD1855 DAC, but the on-board digital filter offers just 38dB rejection of digital images and contributes to a slight 'wobble' in the response at HF. Here, there are signs of peak-level compression as THD actually

falls from 0.01 to 0.004 per cent from 0dBFS to -30dBFS at 20kHz. Mid-level distortion looks a little less tidy with both harmonic and digitally-derived products appearing both in and out of the audioband.

There are also similarities with the DVF-R9030 DVD-A player reviewed

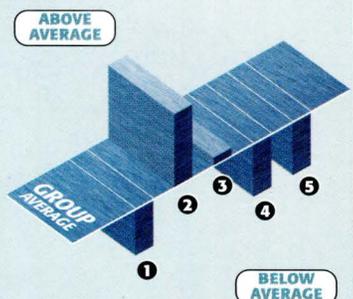
last month. The 100ppm clock error is identical as are the +/-3dB errors in low-level linearity. Bearing in mind this is a so-called 24-bit DAC, I would have expected errors about 10x lower than this. Furthermore, the fact the 'R9030 suffered the same errors but uses different DACs suggests it's Kenwood's (KAN06) DRIVE processor that's to blame (see MD review, HFC 205). **PMi**



HOW IT COMPARES

A player that sounds better than might be indicated by the lab tests, but would arguably sound better still without DRIVE processing.

- 1 SUPPRESSION OF DIGITAL IMAGES -30%
- 2 JITTER 50%
- 3 PRACTICAL DYNAMIC RANGE 5%
- 4 HARMONIC DISTORTION VS LEVEL -35%
- 5 LINEARITY -35%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBFS	<0.003%	0.0015%
Maximum output level	2.0V	2.0V
A-wtd S/N ratio	>98dB	102.3dB

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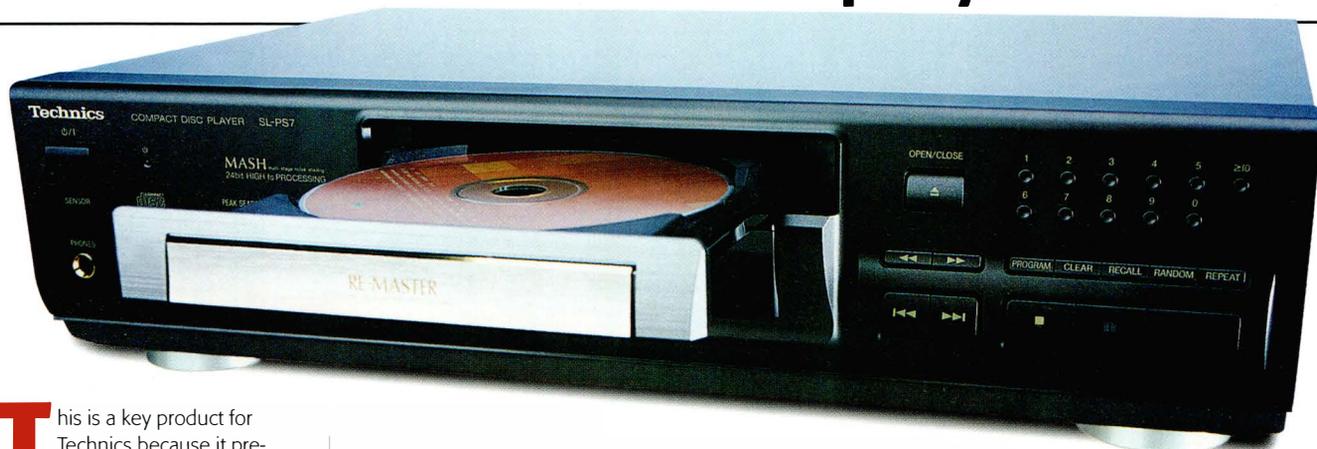
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web www.lenbrook.co.uk

www.NADelectronics.com

TECHNICS SL-PS7 CD player



This is a key product for Technics because it premieres new technology spun off from the DVD development programme, of which the most important is Digital Re-Master Processing Technology. The essential idea here is to take the digital data off disc and process it with a new high resolution MASH converter and DSP, which generates musical harmonics above 20kHz based on the signal below 20kHz. Gaussian dither, a type of random noise-like signal, is added, and the result filtered and fed through a spectrum harmoniser, which continually responds to the music spectrum, and the end result is remixed with the music signal data. The output is a continuous spectrum extending up to 96kHz, and there is claimed to be no aliasing distortion. '[DRMP] can make CD reproduction nearly overtake DVD-Audio in terms of high frequency response,' says Technics. Astute readers may note parallels with Pioneer's decade (or more) old Legato Link, and may object that inventing musical content based on a prior existing narrower bandwidth signal cannot enhance the information content of the original signal.

"If the idea is that this player matches the sound quality of DVD-Audio, this may be true on current form."

The SL-P7 otherwise looks like a typical upmarket Technics player. There are the obligatory new high quality components, in this case a novel mains transformer type called TUI-Core (which has low claimed flux leakage among other benefits), TA-KEH II capacitors, a virtual battery power supply, and a THCB low resonance base. There are also some standard Technics peculiarities, such as their continued allegiance to optical digital interfaces to the exclusion of electrical, and again Technics has missed the opportunity to add CD-RW compatibility.

SOUND QUALITY

If the idea is that this player matches the sound quality of DVD-Audio, this may be true on current form, but only because the sound quality demonstrated by early DVD-A players and discs is so worryingly deficient. The SL-PS7 may premiere an

important advance in digital audio, notwithstanding the comments made above, but it didn't exactly clean up in the panel tests. Eve Cassidy's *Kathy's Song*, for example, sounded solid but veiled, with a rather forced quality (which was confirmed in the hand's on testing, by the way) which led to comments that it sounded 'shouty', and that it lacked 'delicacy and subtlety'. The harpsichord recording was 'rich tonally, but it too 'failed to shine'.

The other two test tracks were somewhat more successful. The Garbage track, for example, elicited the remark that 'good HF control makes this player more listenable' (than other players in the same sessions), and that it was 'musical'. The same listener described bass depth, however, as 'restricted – an unusual complaint of CD – and that the upper bass was 'congested', leading to what he felt was a Phil Spector-

like 'wall of sound'. The Takemitsu orchestral excerpt was felt to be band limited and slightly lacking in vitality, but overall the comments here were quite positive.

CONCLUSION

A bit of a curiosity, the Technics SL-PS7 is something of a mixed blessing, but given its price, and the availability of better-sounding and highly affordable alternatives in this same group, the Technics can only be described as disappointing.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£199.99

Ultimately hard and opaque sounding introduction to the wonderful world of neo-high resolution Digital Re-Master Processing.

ONE YEAR GUARANTEE

✉ Panasonic UK Ltd, Panasonic House, Willoughby Road, Bracknell, Berks RG12 8FP. ☎ (08705) 357357

THE LAB REPORT

It's been some time since a Technics CD player has been Lab Tested, though the intervening period has seen Technics sticking with its European partner, Philips, for supply of its transport mechanisms. The VAM1201 transport is used here, along with a high quality audio PCB



including a promising filter stage based around AD OP271 op-amps. An MN64735 processor, digital filter and DAC forms the heart of the player, offering a low 0.0005-0.001 per cent THD through bass and midrange frequencies (increasing to 0.06 per cent at 20kHz), a respectable 102dB S/N ratio, a slight +0.4dB treble lift and mere +0.0/-0.4dB errors in low-level linearity.

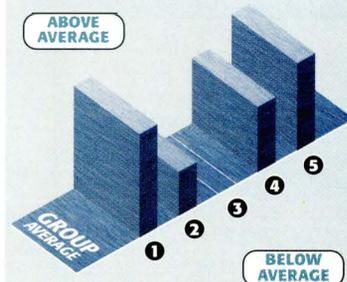
The output of ultrasonic noise from the (MASH) DAC's noise-shapers is fairly well-controlled, but there's a significant 'grass' effect of low-level digital distortions. The noise floor is, therefore, dirty rather than purely random or noise-like. For years, Technics' players have

incurred moderate levels of data-induced jitter, but the SL-PS7 provides a markedly more complex spectrum involving power supply and data-related patterns, plus some device-specific jitter centred on multiples of 377Hz. The weighted total of 435pspec is below-average but not devastating, though it does reinforce the sense that the player has a variety of loose digital ends. **PMI**

HOW IT COMPARES

The analogue performance of this player is first rate, but the digital processor seems responsible for detectable non-harmonic distortions, complex jitter and, possibly, a slight treble lift.

1 SUPPRESSION OF DIGITAL IMAGES	70%
2 JITTER	30%
3 PRACTICAL DYNAMIC RANGE	0%
4 HARMONIC DISTORTION VS LEVEL	45%
5 LINEARITY	60%



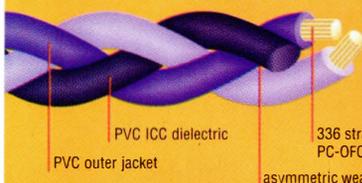
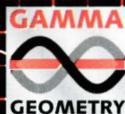
SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	0.0023%	0.001%
■ Maximum output level	2.0V	1.9V
■ A-wtd S/N ratio	100dB	102.1dB

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WHAT HI-FI?



ARCAM Alpha 7SE CD player



The Alpha 7SE is Arcam's standard issue player, pitched below the high tech Alpha 9, and which for a long time has been the UK's best selling CD player. The 7SE is the latest in the series, until recently priced at £350, and is the recipient of a new, higher resolution Burr Brown D/A converter, and a revised motherboard layout which addresses the problem of jitter. The latest model also has an improved remote control but, although well equipped, it is still rather cramped and only moderately ergonomic. Since we last examined the 7SE, there have been enhancements to internal earthing, a better, lower-jitter master clock has been substituted, there is more metal on the PCB tracking, and greater separation between components.

This new Alpha 7SE is a quality product that features a Sony mechanism and good internal build quality. As usual with the Alpha range, it is the exterior decorations that are well past their sell-by date. Surely the day must come soon when the fascia design is cleaned up and simplified,

"Overall, the Arcam is a clean, agile and detailed player. Its superiority over the previous version is obvious."

and generally dragged kicking and screaming into the new century, or is Arcam so wedded to the need to retain visual compatibility with the past that they dare not tinker?

But at least there's nothing wrong with the range of features. You get optical and electrical digital outputs, display on/off/dimming, and a wide range of programming functions, though a few of the widgets are specifically to appeal to the CD dubbing fraternity. Usefully, the remote control can also adjust the volume of an Arcam remote control amplifier. One of the best features of all, however, is one that you can't tell just by looking – the ability to upgrade from the Alpha 7SE to any of the more senior models in the range.

SOUND QUALITY

The changes are not insubstantial on paper, and so it proved in practice. The panel wasn't quite in one mind

about this player, but the general trend was enthusiastic. The Eve Cassidy track, for example, was described as 'lively, clear and coherent' by one, and 'natural' by a second, but there were odd complaints of a 'thrummy' acoustic guitar sound and occasionally of sibilance. 'The strings are well separated, and the brass is clear without being strident,' as one put it, the Arcam handling this difficult piece very well.

The Arcam did not have it all its own way in this test, however. It came across stiff competition from Marantz and others, but the Alpha 7SE was never less than likeable, and it frequently managed that most central of tasks for any hi-fi system: acting as an effective advocate for the difficult and the unfamiliar. There was a sense in which the Arcam sounded slightly lightweight in the hands-on testing, and the complaints of sibilance, although not directly

confirmed, did coincide with a certain untidiness at times. Overall though it is a clean, agile and detailed player, and although no direct comparison was possible, its superiority over the previous version is obvious.

CONCLUSION

This is an improved version of an existing Best Buy, and the price has dropped by a rather startling £50 – not the result of a fire sale, we were assured, but 'because we can'. Given the stiffer competition this time round, the sound quality rating has been dropped by one star, but the overall rating is confirmed. Best Buy.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★★
PRICE	£299.90

The venerable value for money Arcam CD player has been revised and improved yet again, while the pricing has been shaved.

TWO YEAR GUARANTEE

✉ A&R Cambridge Ltd, Pembroke Avenue, Waterbeach, Cambridge CB5 9PB.

☎ (01223) 203203

THE LAB REPORT

The differences in performance between the original Alpha 7 (HFC163), which used Burr-Brown's PCM1710 DAC, and the first Alpha 7SE (HFC195), which replaced this with the high performance PCM1716, are very much more significant than those between the latter and this latest generation Alpha 7SE. Today's Alpha 7SE still

uses the popular PCM1716 with its ability to handle 24-bit data, but revisions to the circuit layout and power supply represent a subtle, sideways shift in performance rather than a major step forward.

Distortion, for example, has fallen from 0.0013 to 0.0009 per cent at peak level (itself down from 2.37V to 2.3V) and from 0.003

to 0.0015 per cent at -30dBFS. Better layout now ensures that stereo separation is better than 100dB at all frequencies while errors in low-level resolution are maintained at just +/-0.3dB over a full 100dB dynamic range. The low 165psec of data-induced jitter is unchanged, but

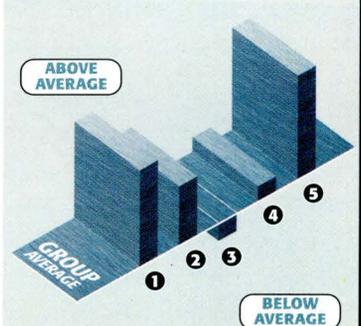


Arcam's latest tweaks have produced a full 260psec of hum-induced jitter where before there was virtually none. The weighted total jitter for the '7SE has now increased to 310psec, though the subjective effect of this jitter pattern will be to add a slight extra warmth to the bass register rather than blur the overall musical picture. I wonder if this was done on purpose? **PMi**

HOW IT COMPARES

Distortion, separation and resolution are all improved but the overall S/N ratio and hum-related jitter are slightly worse. On balance, the year's have it.

- 1 SUPPRESSION OF DIGITAL IMAGES 65%
- 2 JITTER 40%
- 3 PRACTICAL DYNAMIC RANGE -10%
- 4 HARMONIC DISTORTION VS LEVEL 10%
- 5 LINEARITY 70%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBFS	<0.005%	0.0009%
Maximum output level	2.3V	2.3V
A-wtd S/N ratio	>100dB	101.0dB

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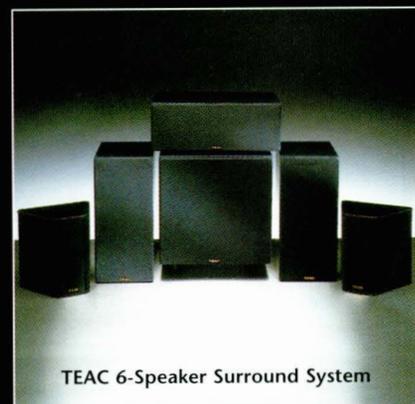
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TEAC 6-Speaker Surround System

TEAC

The TEAC DVD Home Theatre System

ENCORE DV-450 DVD player



A Region 2 DVD player, the Encore has an on-board Dolby Digital decoder, and is easily hackable to work with Regional codes 1 through 6 via the remote control. As well as playing CD-Rs and RWs, the Encore will also play CDs which have been recorded with MP3 files, specifically 128kbps/44.1kHz files formatted to ISO9660. Dts datastreams can be reproduced through the audio digital outputs.

Headphones can be plugged in and controlled directly, but the DV-450 otherwise has a relatively plain front panel, with all but the most basic controls available only via the remote control. Video scanning is available up to 30x normal play speed, and there's a multi-speed slow motion facility, plus a 2x and 4x zoom, but the magnified image looked badly pixellated. The single Scart socket can be programmed for RGB, S-Video or composite video, and other connections include an S-Video Y/C socket, two composite outputs and two pairs of stereo/mixed audio outputs, as well as the usual optical and electrical digital

"The Encore impressed as an inviting player, nicely detailed, although a little messy with more complex material."

outputs. There is even a component video output, for those who choose a £200 DVD player for their £5k projectors. As with the Alba, there are some set-up restrictions which limit how bass management is organised: although the digital outputs can be set to 96kHz, the maximum output in fact is 20-bit/48kHz.

The remote control is much better organised than the Alba's, as well as being more clearly labelled. It is a quality item that boasts a set of cursor control keys grouped around an 'enter' key. One peculiarity that caused endless merriment was that the player would 'ping' loudly when stop was selected from play mode

SOUND QUALITY

Musically, the Encore was on firm ground. Eve Cassidy's *Kathy's Song* sounded unbox-like, with a clear and lifelike guitar, and the harpsichord recording was equally inviting, though

one panellist found it heavy-handed and wooden. There was consensus about the other test pieces, however. The Takemitsu reproduced 'strongly – with good ambience', while Garbage sounded 'smooth, with well delineated instruments and vocals', and a 'well extended and fruity' bass, though high frequencies tended to sound messy.

In the sighted listening, the Encore impressed as an inviting player, nicely detailed, although a little messy with more complex material. It showed some heavy-handedness with certain recordings, particularly simple acoustic recordings that would normally reproduce with a more tangibly physical feel.

There were some limitations. The Encore was the only player on test to trip up with some of the technical wizardry of *The Matrix*, a known problem with players whose video ROMs are not the latest issues. There

was also some moiré and high resolution stills looked a tad unstable, and colours a little grey, though contrast was not a problem. There was also some bleeding of colour from light to large low-light areas.

CONCLUSION

Although slightly more expensive than the Alba DVD player, in some respects this player is even better equipped, and for many it will be more than worth the modestly higher price. Recommended

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£199.99

Slightly more expensive than the Alba, this model is even better equipped in key areas, though it appears to have an older video ROM, which raises some compatibility issues.

ONE YEAR GUARANTEE

Encore Direct, Unit 3, Cowley Mill Trading Estate, Longbridge Way, Uxbridge, Middlesex UB8 2YG.

(01895) 450450

THE LAB REPORT

A badged, OEM design from Taiwan, the Encore is accompanied by a generic DVD user manual. The fascia is uncluttered, but useful features are clearly a priority. The transport, for example, will handle DVD, CD and CD-R discs, while the 5.1 channels derived from the on-board Dolby Digital decoder are routed via



three Burr-Brown PCM1716 96kHz/24-bit DACs. This prompts the lowest distortion (0.0015 per cent) via the 'stereo outputs' rather than the 'front left/right' outputs (0.04 per cent) when listening to two-channel CD.

The basic specification continues to look healthy with low 0.008 per cent THD at -30dBFs, good clock accuracy, a mild -0.6dB

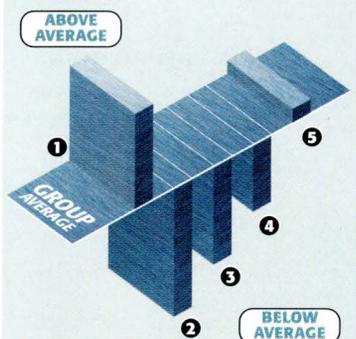
treble loss, excellent channel matching and good low-level linearity right up until very high frequencies where errors of +1.5dB/-0.5dB are present. Limitations include regular interference patterns at multiples of 15.3kHz (probably derived from

the video section), a poor 84.7dB S/N and an inability to recognise pre-emphasised material recorded on CD-R discs. With DVD/CD, the S/N improves to 95dB. Sadly, data-induced jitter is a truly massive 3785psec which punches through the elevated noise floor and, in all subjective likelihood, right through the life, vitality and subtlety of more complex musical selections. **PMI**

HOW IT COMPARES

A mixed offering that combines a broadly compatible DVD/CD transport and low distortion but let down by moderate levels of noise and very high levels of jitter.

1 SUPPRESSION OF DIGITAL IMAGES	65%
2 JITTER	-85%
3 PRACTICAL DYNAMIC RANGE	-65%
4 HARMONIC DISTORTION VS LEVEL	-45%
5 LINEARITY	10%



SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBFs	<0.01%	0.0015%
Maximum output level	2.0V	2.0V
A-wtd S/N ratio	>90dB	94.7dB

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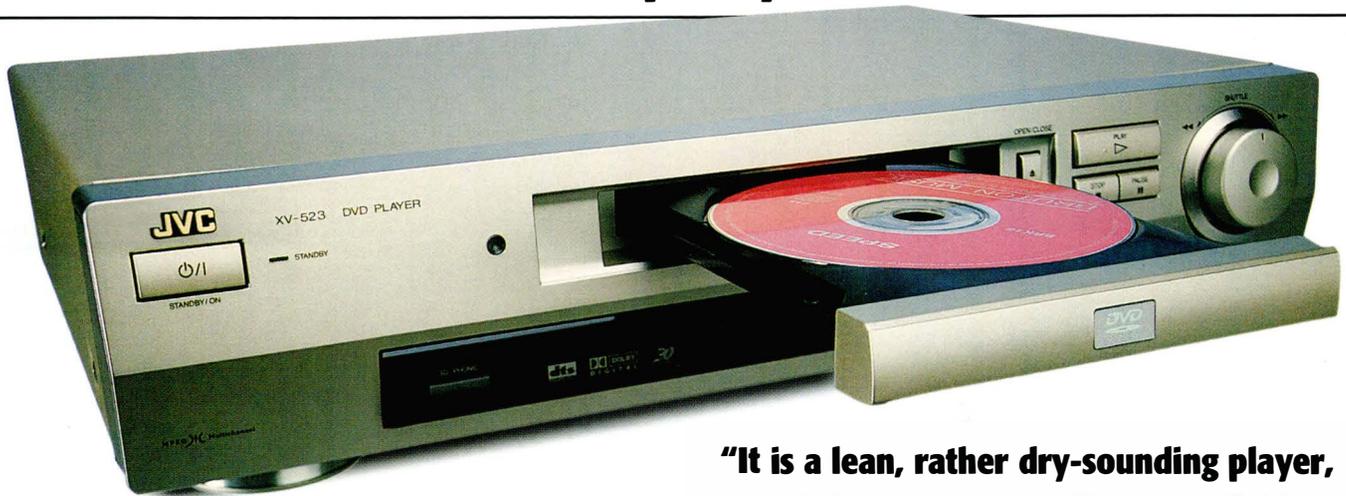


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JVC XV-523 DVD player



"It is a lean, rather dry-sounding player, which becomes muddled and a little untidy when extended."

JVC's newbie is a relatively straightforward model, with quite a short feature set (shorter than some of the very low price models in the test), though it gives every indication of being much better built, and of performing to a higher standard. There are no built-in surround sound decoders, the only analogue outputs being stereo or Dolby Surround from a pair of phono sockets. Optical and electrical digital outputs are available, both of which can stream Dolby Digital and dts 5.1. Video is delivered in composite and S-Video form from phono, Y/C and Scart connectors. The JVC doesn't stretch to a headphone socket, but you do get a pair of Compulink sockets, which is the JVC's very own way of getting a complete system to co-operate, and strut its stuff from a single remote control.

Other features include supposedly high bit rate and high sampling of the video signal, though the 10-bit/27MHz figures are industry standard at present, and already

exceeded by some. A 24-bit resolution 96kHz converter is included but, in common with most of the others, the JVC won't deliver 96kHz from its audio output.

The menu system of the JVC is a tad simple-minded and obstructive. Otherwise, it was a pleasure to use, leavened with some neat video and audio related tracks, such as a data rate display, and a remote control coded to operate a wide range of televisions.

SOUND QUALITY

The JVC XV-523 is a fairly typical mainstream DVD player, modestly priced and equipped, and a better performer on screen than it was through an amp and loudspeakers. The four test tracks used for the panel testing gave reasonable results, clearly favouring the Eve Cassidy and the harpsichord, their essential simplicity and open textures making the most of the JVC's limited lower midband resolving power. By contrast, the Takemitsu was written off by one panellist as

'opaque', and by another as 'scrawny', and certainly this quite difficult piece tended to sound rather shrill through some of its bolder passages. The track from Garbage was also performed at a level well under the best of the other players in this test. A certain lack of weight turned out to be no great handicap in practice, but the JVC also tended to muddle the timing of the piece, with the result that it sounded rather 'messy and ill-differentiated'.

In hands-on testing, the JVC behaved in keeping with these remarks. It is a lean, rather dry-sounding player, which does indeed become muddled and a little untidy when extended, and which consistently failed to energise and engage with difficult densely scored or rhythmically involved material. It's picture quality, though, was sharp, clear and essentially free from unwanted digital artefacts.

CONCLUSION

Here is one of the mass of middle market DVD players from respectable brand names, which look good on screen but fail to excite as CD players. There is more to say in the JVC's favour, however, when it is used as a digital source using an outboard dts or Dolby Digital decoder with well-recorded material.

VERDICT

SOUND ★★☆☆☆

BUILD ★★☆☆☆

VALUE ★★☆☆☆

PRICE £280.00

Good pictures place the JVC well against the competition, but sound quality from CD fails to hit the button.

ONE YEAR GUARANTEE

JVC UK Ltd, JVC Business Park, Priestley Way, London NW2 7BA.

(020) 8450 3282

THE LAB REPORT

The technical appearance of this DVD player bears a resemblance to JVC's latest CD players which, on reflection, is probably no bad thing. JVC has had plenty of experience designing effective, high-order noise-shapers and, indeed, ultrasonic noise is well maintained by



the XV-523. Digital images, however, are not particularly well-suppressed by the oversampling filter between 20kHz-44kHz (just -37.8dB) and neither will the XV-523 respond to de-emphasis flags on CD-R/RW discs. Silver CDs are de-emphasised correctly, though there's no difference in S/N between CD, CD-R or CD-RW recordings (unlike with the Hitachi and Sony players).

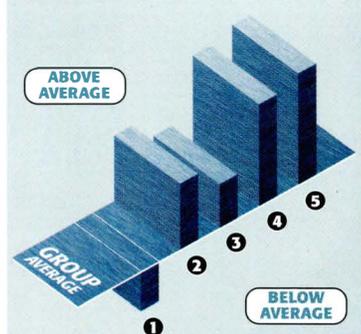
Distortion is very low at 0.0005 per cent through the midrange at 0dBfs (still only 0.0015 percent at -30dBfs) and 0.006 percent at 20kHz) with errors in low-level linearity of just +0.0/-0.3dB over a 100dB dynamic range. That result could teach the average CD player a thing or two. Similarly, the response is flat to within +/-0.05dB and stereo separation better than 98dB across the audioband. This and the low 265psec jitter all looks very impressive though, like the Sony, the XV-523 also suffers a noise-like jitter around high frequency peaks possibly, once again, as a result of a shared video/audio master clock. **PMI**

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HOW IT COMPARES

This DVD player enjoys the lowest distortion, very low correlated jitter and one of the widest S/N ratios of the bunch but it also looks to be impaired by the demands of its neighbouring video circuitry.

1 SUPPRESSION OF DIGITAL IMAGES	-25%
2 JITTER	45%
3 PRACTICAL DYNAMIC RANGE	30%
4 HARMONIC DISTORTION VS LEVEL	70%
5 LINEARITY	75%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1 kHz/0dBfs	0.002%	0.0005%
Maximum output level	2.0V	2.1V
A-wtd S/N ratio	n/a	104.0dB



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MARANTZ CD6000



"This was the one player of the group that the panel chose to use as their benchmark when discussing the other players."

The CD6000, the base version of the 6000 OSE reviewed previously, is a one-bit player, with bitstream converters that are driven in dual differential mode to improve linearity and reduce noise and distortion. An HDAM buffer amplifier is included to ensure low output impedance, and a high speed rate output. The disc drive mechanism is the VAM1201, a floating design, used with a digital servo.

Most of the features are those expected of a mainstream player. You get a choice of electrical and optical digital outputs, a headphone socket with an associated volume level control, various random play and repeat modes, intro-scan, peak search and tape edit features, and the ability to synchronise recordings with Marantz recorders using the D-Bus rear panel link. Peak search helps identify passages on the source disc, which can assist in setting record levels. Also included is the ability to play CD-RW discs, and support for CD Text.

It is even possible to adjust the output level from the main output, and Marantz suggests you might want to do just this with an amplifier that lacks remote control, essentially

adding a remote control facility to a non-remote amplifier. But as usual the cost of this is reduced resolution from the analogue output, and reduced sound quality as a result. The player itself is well turned out, with a number of decent quality controls, and a very neat remote control handset featuring all the toys.

SOUND QUALITY

The family resemblance between the CD6000 and the OSE variant, which we tested recently, is not hard to hear. This model also has the same characteristic smoothness and grace, the same openness and air and the same bold architectural quality. It even has much the same slight reticence in the upper registers, but there is nothing here to indicate any significant loss of clarity or detail.

The acoustic Eve Cassidy recording was described by one panellist as 'clear and detailed [with] good ambience and voice quality' – a 'good start', he thought, 'with an

even balance but some loss of subtlety'. Another wrote that the guitar work on this track was 'not so well resolved amidst a cascade of damp cadences', and another described how he felt the 'subtle bits' had been 'stripped away'. The harpsichord recording attracted wide praise: 'beautifully portrayed, especially the left hand' – 'convincing' and 'lifelike' were typical comments. The Takemitsu was described as 'flowing well' with a 'delicate, detailed, subtle deep bass extension', and indeed this piece reproduced with a tremendous fullness and energy, and just a hint of holding back, which if anything only enhanced the feeling of power even more.

Consistently, this was the one player of the group that the panel chose to use as their own benchmark when discussing the other players. While it doesn't have quite the range or clarity of the OSE model, it is a supremely well balanced player, and moreover one whose

strengths and limitations are particularly well attuned to the kind of ancillaries it is likely to be used with.

CONCLUSION

One panellist managed to sum up the Marantz well by commenting that he could forgive this player anything, and the Marantz does indeed have the seductive quality that is often needed, but too infrequently encountered in budget CD players, at a particularly keen price. The CD Text and CD-RW compatibility only serve to enhance its appeal. Best Buy.

VERDICT

SOUND	★★★★★
BUILD	★★★★★
VALUE	★★★★★
PRICE	£249.90

A great choice for low to mid price systems, with a full, rich tonality, awesome power and strong focus.

TWO YEAR GUARANTEE

Marantz Hi Fi UK Ltd, Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middlesex UB7 0EH.
(01753) 680868

THE LAB REPORT

Unlike the CD5000, which shows a greater allegiance to Philips-based technology, the CD6000 is very obviously a stripped-down version of the CD6000 OSE reviewed in HFC200. Here the same Philips VAM1201 mechanism and dual-differential SM5872 DACs are used, but Marantz's

two-stage HDAM buffer is traded for a pair of JRC op-amps and just one HDAM buffer driving the player's 2V analogue output. The 328psec of jitter is primarily linked to the player's power supply rather than any other more obnoxious source and is actually rather 'cleaner' than the 350psec clocked-up by its bigger brother, the CD6000 OSE.



Avoiding one HDAM stage improves the overall S/N ratio from 96.3dB to 100.7dB while distortion remains as low at 0.0009 per cent (1kHz at 0dBfs), only increasing slightly to 0.001 per cent at 20kHz and 0.006

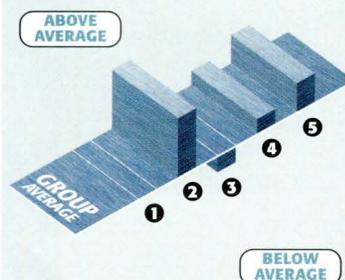
per cent at 20kHz. Errors in low-level resolution amount to just +0.0/-0.6dB

over a 100dB range, which is no worse than the CD6000OSE. Channel balance is held to within 0.03dB and both non and pre-emphasised responses are flat with just a little (-0.25dB) dip at 20kHz. Better crystal selection would improve the +82ppm clock error while the changed board layout has caused separation to drop below 100dB at 20kHz. Hardly debilitating stuff. **PMI**

HOW IT COMPARES

This budget version of the CD6000 enjoys the low distortion, jitter and excellent resolution of the CD6000OSE with an even wider S/N ratio. The loss of one HDAM stage, however, may strip its music of some colour.

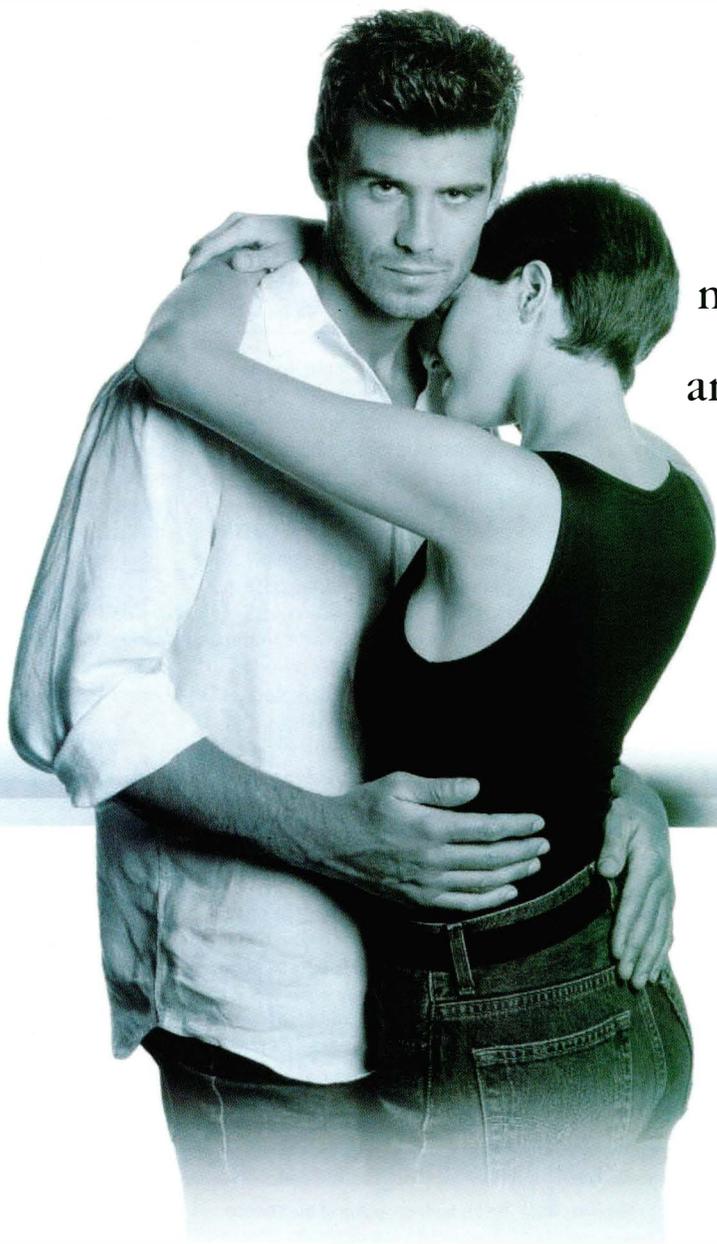
1 SUPPRESSION OF DIGITAL IMAGES	0%
2 JITTER	40%
3 PRACTICAL DYNAMIC RANGE	-10%
4 HARMONIC DISTORTION VS LEVEL	10%
5 LINEARITY	20%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	0.0025%	0.0009%
Maximum output level	2.0V	2.0V
A-wtd S/N ratio	>103dB	100.7dB

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ONKYO DX-7511



“The player lacked weight and power, and the rawness in the treble took the edge off the midband performance.”

This chunky albeit not so high tech Onkyo features a single bit D/A converter with proprietary FPCS (File Pulse Conversion System) and a little something called Accupulse Quartz System. A dig around the back reveals optical and electrical digital outputs, and two sets of analogue outputs, one at fixed level, the other variable, which allows the player to be used with a non-remote control amplifier with the volume set on the CD player's handset. There are also sockets for remote control link cables, which allows a complete Onkyo system to be operated from a single handset. The final output is a headphone socket with a control which also adjusts the line output – not, as usual, by a cheap and nasty digitally stepped attenuator, but by a motor driven potentiometer.

Other user features are aimed at trick play artistes and those who want to dub their CDs onto tape, or another CD. The list includes peak search (accessed from the remote control only), repeat modes, shuffle

play and time edit. The remote isn't beautiful, but it is serviceable. The player (one of a diminishing number of full width players in Onkyo's armoury) can be purchased in black or silver.

SOUND QUALITY

The panel was equivocal about his player, and there were persistent complaints about the bass and the treble extremes. The former was described as 'not controlled' (Eve Cassidy), 'loose and lacking in weight' (Garbage) and also 'slow and lumpy', also Garbage. More seriously, the treble was perceived as 'raspy and veiled', referring to Eve Cassidy's voice, and 'veiled' in the Takemitsu. Overall the player lacked weight and power, and the rawness in the treble took the edge off midband performance, which was consequently felt to sound rather flat

and uninspired.

In the separate hands-on listening, the DX-7511 again failed to impress. This is not a bad CD player by any means, but it was let down by a certain flatness and a rather caricatured treble quality, and at the end of the day there was little sense of scale and proportion to large scale works, it simply failed to shine.

The Onkyo does have certain qualities in its favour. Apart from being solidly constructed, there is no shortage of detail, and although it could not be described as transparent – there's too much character for that – the DX-7511 does offer real clarity, and at times it was an insightful performer, capable of delivering a strong musical punch. Dynamically the Onkyo was on strong ground, and the midband was certainly not lacking in weight or projection. A little more refinement, especially in

the upper midband and treble, and the story might have been different.

CONCLUSION

This player tends to fall apart at the frequency extremes, the treble especially falling flat, which also lends the midband a monochromatic feel, lacking in the organic responses that get the musical juices circulating. It would be putting it too strongly to suggest that this is a poor CD player, but the market is too competitive at this price level to sustain interest here.

VERDICT

SOUND ★★☆☆☆

BUILD ★★☆☆☆

VALUE ★★☆☆☆

PRICE £299.95

Not one of his test's star players, the Onkyo is well enough built and endowed, but musically there are too many rough edges.

TWO YEAR GUARANTEE

Jamo UK Ltd, Oakfield Park, Milton Road, Rugby Warwickshire CV22 7AL.

(01788) 556777

THE LAB REPORT

Equipped with what looks like an old-style 'analogue' CD mechanism, the tracking and focus servo adjustments inside this Onkyo player are set manually at the factory, but are more liable to drift than a mech equipped with modern digital servo's. The main PCB is also very untidy, though it's fitted



with a capable SMS872 DAC from NPC. Once again, the 8x oversampling filter adopts the gentle, low-order roll-off characteristics seen with the DX-7510 and DX-750 (HFC151 & 141) but more commonly associated with Pioneer's Legato Link players. This is the basis of Onkyo's Fine Pulse Conversion System, or FPCS.

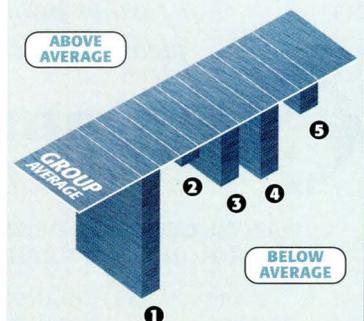
This manipulation of stopband images gives the impression of a gently rolled-off response (-2.5dB at 20kHz) that extends beyond CD's notional ~20kHz limit. This 'extension' is nothing more than a reflection or distortion of the music signal.

Otherwise, distortion is low at 0.0009-0.02 per cent across the audioband (re. 0dBfs), the S/N acceptable at 98dB and low-level linearity below average with errors of +0.0/-2.0dB over a 100dB range. Sadly, the high 930psec of data-induced jitter represents an oversight by Onkyo's engineers, particularly as this form of distortion can curtail the natural warmth and colour of the player. **PMI**

HOW IT COMPARES

Some interesting technology is concealed behind the obscure FPCS acronym but, otherwise, the 'untidiness' of its implementation is reflected in a rather below-average performance.

- 1 SUPPRESSION OF DIGITAL IMAGES -80%
- 2 JITTER -5%
- 3 PRACTICAL DYNAMIC RANGE -35%
- 4 HARMONIC DISTORTION VS LEVEL -45%
- 5 LINEARITY -15%



SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	0.004%	0.0012%
Maximum output level	2.0V	1.90V
A-wtd S/N ratio	100dB	98.1dB

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TOSHIBA SD-100E DVD player



One of four new Toshiba models, the SD-100E is one of a number of DVD-Video players claiming enhanced video resolution – 540 lines of horizontal resolution, compared to a standard 500 lines or thereabouts. This is thanks in part to a new anti-aliasing filter, while a new enhanced video amplifier is said to ensure that whites are whiter than before. Daztastic! Perhaps of more direct interest to *HFC* readers, the SD100E also claims superior audio performance in the role of a CD player, with a wider dynamic range and lower harmonic distortion than is usually found.

The player also boasts what Toshiba describes disarmingly as a wealth of digital trickery, including variable zoom (up to x3.5), with a panning option, and a bit rate display option (numeric and graphical). One completely unprecedented feature in a mainstream DVD player is described as a Dynamic Upgrade System, which allows firmware upgrades by the means of playing a special system disc which will be made available through dealers. This is aimed, apparently, at ensuring compatibility with disc types that cannot be read, though no idea of

“Smooth and liquid, with a purposeful, solid structure, and good detail.”

what kind of discs Toshiba is referring to is given.

The Toshiba SD-100E proved capable of playing CD-RWs. There is no on-board surround sound decoder, but Dolby Digital and dts data are available from the digital output sockets (optical and electrical) for connection to an outboard home cinema processor in the time honoured fashion. Other socketry is limited to composite and S-Video, and also a Scart socket. Surprisingly, there is no headphone socket. Other features include ‘jitter reduction’. Whatever can they mean?

SOUND QUALITY

The Toshiba SD-100E was not disliked on test, but neither did it excel. The Eve Cassidy recording sounded ‘mellifluous – smooth and liquid – with a purposeful, solid structure, and good detail’ according to one, while another concluded that it was a ‘very enjoyable’ performance which was also ‘emotive, involving... and easy to follow’. But the harpsi-

chord recording was deemed ‘small scale’ with ‘soft...leading edges’. The Takemitsu led to some split scoring, with one listener complaining that the sound was ‘papy’ and ‘not very good’ overall, while another thought that the piece ‘built nicely’ to its powerful climax.

Overall, however, the Toshiba seems to us a rather average player. Picture quality was one the stronger points, but it was not the best on test, being good in most areas without actually excelling in picture stability, clarity or colour reproduction. Musically the hands-on testing suggested that the panel got it about right. It is a modestly decent sounding CD player, but without the authority and dynamics of a good CD player, and there were clear indications of increasing congestion and spatial flatness when the music got going.

CONCLUSION

The firmware upgrade feature sounds like a useful piece of sticking

plaster to ensure a long life in an uncertain future, but it is hard to see what practical use it will be – and any idea that you will be able to add something really useful like DVD-Audio compatibility is a chimera. It isn’t going to happen, and what you’re left with is a perfectly adequate but unexciting DVD player which sounds about as good playing CDs as most DVD players – that is, not very good – and which has rather average video picture quality too. It’s worth considering strictly as a mid-market mainstream DVD-Video player.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £250.00

■ Moderately successful DVD-Video player with some upgrade potential and respectable all-round performance.

ONE YEAR GUARANTEE

✉ Toshiba UK Ltd, Toshiba House, Toshiba UK Ltd, Frimley Rd, Frimley Rd, Camberley, Surrey GU16 5JJ.
☎ (01276) 62222

THE LAB REPORT

Toshiba’s early DVD players were simple but fine-sounding players, and the SD-100E looks to continue the trend. Jitter is very low at just 205pssec and the data-related pattern is almost identical to that from the Philips DVD-960. Toshiba, too, specifies a 96kHz/24-bit DAC

(Burr-Brown’s PCM-1716) together with a (FujiFilm) Dolby

Digital decoder, presumably to provide a down-mixed output should a multi-channel DVD disc be played. But stopband images are very much better suppressed than they are with the Philips player (80dB versus just 39dB), just as ultrasonic noise is fairly well controlled with spurious tones and ‘digital’ distortions kept at bay.



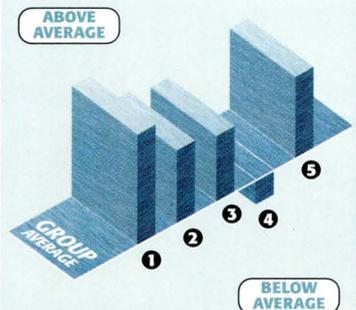
There is some disc sensitivity, however, as the S/N with CD-RW discs clocks-in at ~101dB but increases to 105dB with CD/DVD software. Linear and de-emphasised responses are flat with a slight-0.3dB dip at 20kHz, while low-level linearity is excellent

with errors of just +0.0/-0.4dB over a 100dB range. Distortion, too, is very low at just 0.0007 per cent (-10dBFs) increasing to 0.001 per cent at the peak 2.1V output and to just 0.007 per cent at 20kHz. This is a low figure for distortion at high treble frequencies. Indeed, this is one DVD player whose technical sheet looks pretty close to that of a CD player. **PMI**

HOW IT COMPARES

Relatively basic but, from the audiophile’s point of view, very well-sorted DVD player that offers low noise, jitter and distortion without the oversights demonstrated by much of its competition.

- | | |
|---------------------------------|------|
| 1 SUPPRESSION OF DIGITAL IMAGES | 75% |
| 2 JITTER | 50% |
| 3 PRACTICAL DYNAMIC RANGE | 45% |
| 4 HARMONIC DISTORTION VS LEVEL | -15% |
| 5 LINEARITY | 55% |



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	<0.002%	0.001%
■ Maximum output level	2.0V	2.1V
■ A-wtd S/N ratio	>105dB	105.0dB

Sound looks

cameo

Inner value

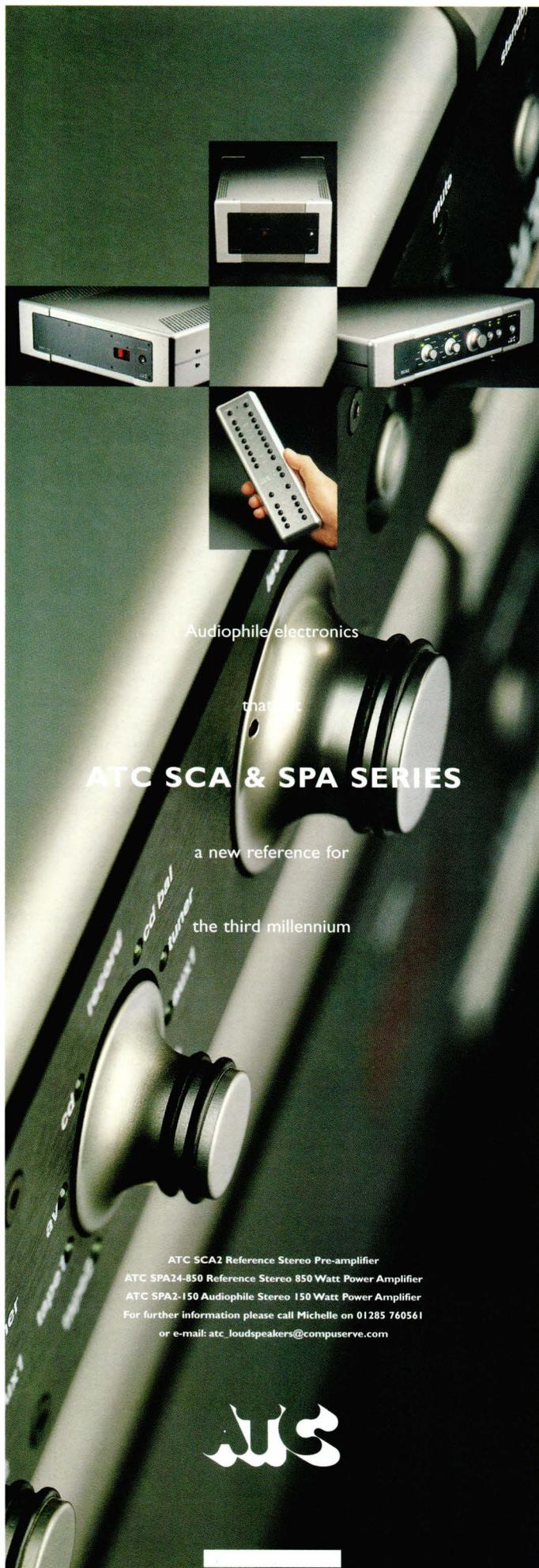


WHAT HI-FI? August 2000

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YAMAHA CDX-596



Manufacturers involved in making specialist CD players are having to sharpen up their act, and here is a good example. The CDX-596 is a comparatively straightforward CD player, but, for the first time from Yamaha, CD-RW compatibility is included, and so is CD Text. Both optical and electrical digital outputs are fitted, and all outputs can be attenuated using the output level control. Our usual words of warning apply here: line level controls almost invariably impact negatively on sound quality if an attenuated feed is used to drive an amplifier input.

As usual, a range of features is available to help when dubbing CDs, automatic peak level search to identify passages on disc which can be used to set an appropriate record level, tape length programming, auto track spacing and synchronised recording. Other features include display dimming, and Yamaha continues to be one of the few to support index number searches.

Technology highlights include Pro Bit circuitry, which re-samples 16-bit

“In the hands-on testing, the Yamaha acquitted itself quite well, somewhere behind the Arcam and Marantz players.”

data, supposedly to 20-bit precision, applying proprietary curve smoothing as it does so, and something called Intelligent Digital Servo attempts to compensate more effectively than usual for warped discs by adjusting the servo characteristics.

SOUND QUALITY

This player caused a curiously ambivalent reaction from the panel, who thought that it sounded better than previous players in the test (it wasn't, but the test was re-run to set their minds at rest). They also thought there was a lack of focus, with much of the sound localised at the left and right extremes, almost as though the player was out of phase (again, it wasn't). Other key findings from the panel were of muddle in Eve Cassidy's guitar, and of a 'lack of tension' in the Takemitsu – a fabu-

lous recording, but one that is meaningless without the inner tensions that episodically come to the boil.

But it wasn't all bad. The Garbage track was felt to offer good timing and good vocal quality – 'the best today' in one opinion. Notwithstanding the earlier comments, the Takemitsu was described by another panel member as offering 'well reproduced strings, which are natural without sounding strident', and the harpsichord, though 'slightly lacking in depth', was 'spacious' and 'made sense musically'.

In the hands-on testing, the Yamaha acquitted itself quite well, somewhere behind the Arcam and Marantz CD players, and arguably trailing the Kenwood player too. But there was little here to justify the complaints of a lack of imagery, still less of being out of phase, except

that there was a trace of image spread around the centre position. There was also little of the architectural quality that a really top rank CD player can bring to the table. Nevertheless, this appears to be a clear step up from recent Yamaha CD players we have tested, with good lateral imaging, respectable levels of detail, and a smooth, attractive overall standard of presentation.

CONCLUSION

A decent and attractive player, there may be little here to excite the audiophile, but on the whole this is a pleasing model with a thoroughly contemporary feature set.

VERDICT

SOUND	★★★★★
BUILD	★★★★★
VALUE	★★★★★
PRICE	£229.95

Although not universally endorsed by the panel, this is a sweet natured and enjoyable player, with attractive features, including CD-RW compatibility.

■ TWO YEAR GUARANTEE

Yamaha Electronics UK Ltd, 200 Rickmansworth Rd, Watford, Herts WD1 7JS.
(01923) 233166

THE LAB REPORT

Yamaha has cleaned-up its act as far as digital jitter is concerned, for the CDX-596 turned-in just 160pssec of data-induced distortions, a result that's on a par with last year's version of the Arcam Alpha 75E. The implementation of Analog

Devices' AD1854 96k/24-bit compatible DAC is partially respon-

sible, as this IC includes a proprietary technology called 'data-directed scrambling'. This technique is designed to reduce data-related jitter which, in this case, certainly seems to have done the trick. Distortion is also very low at 0.001 per cent (1kHz) and just 0.008 per cent (20kHz) while the response is ruler-flat and the S/N up with

the best at 103dB. A mere +8ppm clock error also shows that Yamaha is taking its selection of crystals seriously.

But it's not all joy, for the digital filter is less inspired, leaving the stopband cluttered with substantial, rippled digital images in addition to various spurious tones.

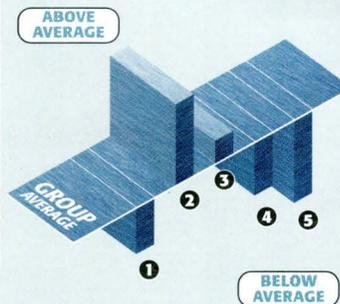
This, coupled with a below-average 38dB rejection of digital images, is likely to make the CDX-596 somewhat susceptible, or vice-versa, to the choice of partnering amplifier. Low-level resolution is also affected, with substantial high frequency errors between +3.5dB/-8.5dB over a 100dB dynamic range. **PMI**



HOW IT COMPARES

A practical example of a player that's so near and yet so far with low jitter levels and low harmonic distortion but 'coloured' by digital artefacts that escape the filtering process.

1 SUPPRESSION OF DIGITAL IMAGES	-30%
2 JITTER	55%
3 PRACTICAL DYNAMIC RANGE	15%
4 HARMONIC DISTORTION VS LEVEL	-35%
5 LINEARITY	-55%



SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBFS	<0.0025%	0.001%
Maximum output level	2.0V	1.87V
A-wtd S/N ratio	>115dB	102.9dB

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DENON DVD-1500 DVD player



A decoder-free player, the kind most likely to be of interest to the videophile (as it can play DVD-Vs from overseas), the DVD-1500 is Denon's new middle price DVD model. With a 24-bit 96kHz D/A converter, and with Dolby Digital and dts 5.1 feeds available as usual from the optical and electrical digital outputs, this is one of the few players that can deliver a 24-bit 96kHz digital output for external high resolution stereo processing. This will be a selling point for those who invested in DAD discs mastered to the 24 bit/96kHz standard, though in the absence of an appropriate D/A converter, this was not a facility we were able to test. A number of features are aimed at improving picture and sound quality, including a reinforced, low resonance loader, and a new, more sophisticated adaptive digital servo with a learning algorithm. The Denon doesn't read CD-RWs, but it does include component video.

The drive is a double speed type with a buffer memory. So, as data is held in a buffer before it is used, if vibrations or other factors cause the

"The Denon's sound was bolder and more refined than most DVD players."

pickup to skip, it has time for a second read to avoid interruptions. The remote control is a good one, with extensive use of colour to group control buttons by function.

SOUND QUALITY

It is tempting to describe the DVD players using established stereotypes, but this one offers something a little different – although this didn't always mean it performed better. The Eve Cassidy track, for example, had what was described as a 'plummy, one-note' guitar sound, and the vocals were 'sibilant' and 'a bit compressed'. The harpsichord recording was 'not bad, but lacked weight', others similarly describing the instrument as 'thin'. The lack of weight was also noted in the Takemitsu, while the Garbage recording 'lacked bass control' and sounded 'flat and slow', though this is a criticism that was made quite

widely, even with the best players.

So far then, the Denon does read a bit like a stereotypical DVD player, but it was clear in the hands-on testing in particular that it is made of rather sterner stuff. Although it is not really good enough to be a worthy substitute for a conventional CD player, the Denon's musical performance was characteristically bolder, tonally more colourful and also more refined than most of the DVD players. There was also more detail and presence, even allowing for a rather lightweight bottom end.

Add to this very good video performance, and the Denon begins to look like a very attractive proposition, especially if you happen to have a component video input facility on your TV. Picture quality was particularly stable and clean, with good fine detail reproduction, and (using a 100Hz non-interlace monitor) little of the subtle weaving of sharp edges

that is apparent with many players. It all looked very solid on screen: colour was subtle, with well-saturated blacks, and there was little moiré.

CONCLUSION

Denon has stepped out of the shadows of Panasonic (their OEM source in the past) with this distinctly above average mid-price player. A good all rounder, CD replay quality is almost to specialist CD player standards, and as a home cinema DVD player, it was among the best on test.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £399.99

Excellent mid price player is not particularly strong on features, but delivers the results, on screen and through loudspeakers.

■ TWO YEAR GUARANTEE

Hayden Laboratories Ltd, Hayden House, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG. (01753) 888447

THE LAB REPORT

Free of the problems associated with its first (Panasonic-based) DVD players, the DVD-1500 turns in what appears to be a creditable set of figures thanks largely to the AD1855 96kHz/24-bit DAC. Harmonic distortions are low at 0.003 per cent (0dBfs) and 0.002 per cent (-30dBfs) but this gives little indication of what is a very 'untidy' looking spectrum that's criss-crossed by spurious tones and digitally-derived (i.e. non-harmonic) distortions. The S/N ratio is more than good enough at 100dB, errors in low-level linearity are just +0.0/-0.8dB over this range and the response is flat to 16kHz before dipping slightly (-0.4dB) at 20kHz.

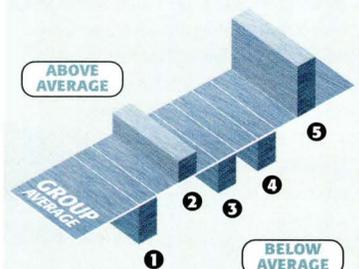


There's an 8dB de-emphasis error with CD-R software (silver CDs are ok) and I'm more than a little concerned by the floating voltage on this unit's chassis (see Oasis, pp82). Otherwise, the DVD-1500 does suffer a very specific, digital or clock-derived distortion in response to mid-to-high frequency signals from 0dBfs to -30dBfs. This really needs to be investigated by Denon because it hints at a potentially more insidious problem. The same phenomenon crops up on the jitter test, for though the correlated value of 595psec is not especially debilitating, the uncorrelated or noise-like distortions look to be far more substantial. PMI

HOW IT COMPARES

Denon is confusing its specification for dynamic range (100dB) with S/N ratio (115dB). Meanwhile, digital distortion 'created' by the '1500 both inside and out of the audioband is unusually high.

1 SUPPRESSION OF DIGITAL IMAGES	-25%
2 JITTER	15%
3 PRACTICAL DYNAMIC RANGE	-20%
4 HARMONIC DISTORTION VS LEVEL	-20%
5 LINEARITY	35%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	0.002%	0.0026%
■ Maximum output level	2.0V	2.0V
■ A-wtd S/N ratio	115dB	100.0dB

HITACHI DVP-505 DVD player



A number of manufacturers who left the specialist audio arena some years ago have begun to return to the fold, in full force, with the surge of interest in DVD-Video. Nestling inside every DVD player, after all, is a CD player.

The Hitachi DVP-505 is a well-equipped mainstream DVD player selling for as much as £150-200 less than it would a year or so ago – a sign of how prices have been undermined by the recent influx of unbranded and non-specialist branded DVD players. The DVP-505 has an interesting feature list, starting with its use of a 2x computer drive mechanism which gives speedier response to control input and faster recovery from errors (see Denon review, p42). A choice of 5x, 10x and 100x search speeds are available, though they give a rather jerky representation on screen.

Naturally the Hitachi confirms to all the current standards, which means it will recognise the provenance of digital signals off disc, and deal with them appropriately. Dolby Digital, and only Dolby Digital, can be decoded on board, and extracted

“The Hitachi sounded like a cruder version of the reference player – praise indeed.”

from a 5.1 matrix of analogue outputs, as usual. Picture zoom (two magnification levels, with adjustable centring) is available too. The Hitachi can cope with virtually all disc types, including CD-RW. It will also convert NTSC to 50 or 60Hz standards, rather than leaving it all to the transcoder in the TV, the result of which was that the 100Hz feature of our test television wasn't overridden with 60Hz NTSC material, giving a clearer, flicker-free picture.

SOUND QUALITY

Unlike most of the DVD players on test, the Hitachi delivered an unusually heavyweight sound. The Eve Cassidy track was even rather heavy handed, and there was a lot of lower-mid frequency energy that gave the player a rather exuberant feel, though it was lacking in top end sparkle. 'Melodic' was the way that

one put it, 'but emotive, and not especially detailed'. The harpsichord track was similar: 'warm' and 'nice' being the principal epithets, though the piece was also described as 'diffuse' by one panel member.

The Takemitsu showed other aspects of the Hitachi's character. 'It's harder sounding than the [Krell]' was one comment, which tied in with the subsequent sighted listening. Overall there was clear loss of clarity compared to some of the other players, but what there was seemed convincingly portrayed. The treble sounded slightly rolled away, and the whole effect seemed rather measured and deliberate. The Garbage track gave the Hitachi a somewhat easier time, the piece hanging together well, attracting adjectives like 'forward' and 'exuberant', with one comment to the effect that the player sounded like a 'cruder version of the reference' –

praise indeed in the circumstances.

The sighted listening also pointed to a rather phoney result, and some harshness, but picture quality was everything it should be: noise free, colourful and crisp on screen, with negligible motion artefacts and moiré.

CONCLUSION

An intriguing player, the Hitachi was a little off the beaten track sonically, sounding cool and solid, but being rather short on sweetness and fine detail. It was good on-screen though.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£300.00

Good, solid middle range player is a tad unsubtle and lossy musically from CD, but it is a good straight DVD-Video player.

ONE YEAR GUARANTEE

Hitachi Home Electronics (Europe) Ltd, Hitachi House, Station Road, Hayes, Middlesex UB3 4DR.
(0345) 581455

THE LAB REPORT

In a generous implementation, three PCM1716 96kHz/24bit DACs drive the front L/R (including two-channel stereo), rear L/R, centre and LFE outputs. However, the performance level is not up to the standard of the Toshiba player which uses the same DAC. The Hitachi displays some sensitivity to CD-R and CD-RW discs



over notionally identical (silver) CDs and DVDs. The S/N varies from 92.1dB (CD-R/CD-RW) to 103.8dB (CD) though distortion (0.0009 per cent at 0dBfs) is unaffected. The de-emphasis flag is not recovered from CD-R/CD-RW discs, though CD 'originals' are accurately de-emphasised. The response, otherwise, is ruler flat and chan-

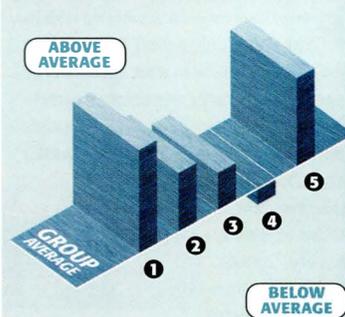
nel balance almost perfect while errors in low-level resolution are perfectly acceptable at +0.6/-0.5dB over a full 100dB dynamic range. Distortion at the -30dBfs level is low enough at 0.0035 per cent (1kHz) and 0.03 per cent (20kHz) and digital images and related distortions are well suppressed, though

there are a number of spurious tones evident, most notably one around 12kHz. Jitter, too, is suitably low with just 325pssec of data-related patterns escaping what is an unusually 'contoured' noise floor. Not a bad result then, though this player suffers clock-related IM distortion discussed in this month's *Oasis*. PMI

HOW IT COMPARES

Watch the lower-than-average output level during A/B demos and check-out the differences in performance with CD/DVD and copied CDR/RW software. Distortion and noise are low but potential, clock-related 'distortions' may still spoil the party.

1 SUPPRESSION OF DIGITAL IMAGE	70%
2 JITTER	40%
3 PRACTICAL DYNAMIC RANGE	25%
4 HARMONIC DISTORTION VS LEVEL	-10%
5 LINEARITY	60%



SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
Distortion @ 1kHz/0dBfs	0.003%	0.0009%
Maximum output level	2.0V	1.85V
A-wtd S/N ratio	110dB	103.8dB

PANASONIC DVD-RV40 DVD player



The RV-40 is model number two of three new Panasonic DVD players which differ principally in the provision of internal surround sound decoders. The DVD-RV20 doesn't have one, the DVD-RV60 has two – Dolby Digital and dts, while the DVD-RV40, our subject, has one, Dolby Digital.

Outputs include composite, S-Video, optical and electrical digital, and a 5.1 set of analogue outputs from the Dolby Digital decoder. Some models with this provision manage without Scart sockets, or have main outputs that timeshare with the two channel/Dolby Surround outputs – but this one has two Scarts, separate main and front analogue outputs, and two composite video outputs, in addition to the Scart socket. Omissions? Component video (not widely supported by display devices at present, but more DVD players are being supplied with component video), RGB, CD-RW compatibility and a headphone socket. The remote control has a very practical layout, and doesn't set any particular traps for the unwary.

The Panasonic player includes VSS (Virtual Surround Sound) which simulates a surround soundfield

“The Takemitsu extract was described as ‘cardboardy – with no real sense of scale’.”

from two speakers when working from a Dolby Digital 5.1 soundtrack. It also features a dialogue enhancer, which lifts the centre channel relative to the others to boost dialogue intelligibility. There's also a handy Chapter Review feature, which plays a few seconds from the start of each chapter as an *aide memoire* when returning to a disc after a gap. The player's Digital Video mode 'improves' picture quality by adjusting luminance and colour levels, and boosting low light detail visibility to give a more 'cinematographic' effect. In effect, it's a video 'loudness' control, reducing video dynamic range, but the effect is fairly subtle.

SOUND QUALITY

Many of the DVD players sounded bland playing compact discs, and this one was no exception. It was far from the worst of its type, though, and the player's desirability was helped by good video quality. The Eve Cassidy test recording offered 'a

nice sense of light and shade, subtlety and good timing' said one, though he also complained that the guitar sounded 'overblown and lacking in detail'. In the harpsichord recording, qualities identified included a lack of detail in the left hand playing (the lower registers), while others described it as 'a bit rushed and lightweight', while a third called it 'thin and tinkly'. The Takemitsu was described in very similar terms 'cardboardy – with no real sense of scale or depth' in the words of one, and the Garbage track was felt to be soft around the edges, with a 'thuddy' bass.

In hands-on testing, the stereo feed was indeed lacking in definition at the frequency extremes, and the bass end of the spectrum lacked authority and presence, robbing the music as a whole of subtlety and variety, accounting for the panel's repeated use of the word 'bland'. Picture quality, however, was sharp and clear, with few motion artefacts

– a clear step (or more) up from the budget DVD players below £200, and unsurprisingly there were no problems with discs like *The Matrix*.

CONCLUSION

This player's good picture quality and build must be measured against its lacklustre and rather bleached out sound quality. Although it is in no danger from the budget DVDs in a straight comparison, the Panasonic's appeal must be to videophiles to whom the integral Dolby Digital decoder is probably of little use.

VERDICT

SOUND ★★☆☆☆

BUILD ★★★★★

VALUE ★★☆☆☆

PRICE £349.99

Quality midrange DVD player at a quality price, but not attractive as a surrogate CD player.

ONE YEAR GUARANTEE

Panasonic House, Willoughby Road, Bracknell, Berks RG12 8FP.

08705 357357

THE LAB REPORT

In keeping with its stance from day one, Panasonic uses its own, in-house decoder board and, paralleling those early DVD players, this new RV40 model also suffers from a high level of jitter. The 1520psec of low-rate (PSU derived) jitter is certainly lower than the ~6500psec obtained from the DVD-A360

but it's still 'messier' than most of its competitors these days (the Sony DVP-S735 being an unexpected exception). Otherwise, Panasonic has really tidied-up its digital act, for the DVD-RV40 is one of the few budget DVD players *not* to suffer the noise-like jitter seen with many other DVD players at high frequency (see *Oasis*, p82).



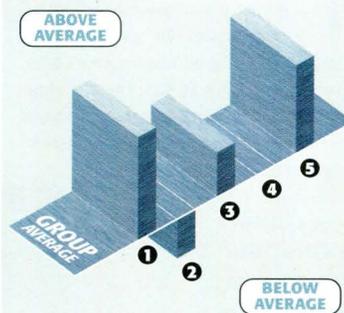
The player's ultrasonic spectrum is not unlike that of the Toshiba SD-100E, though there are in-band distortions seen here derived from digital processes within the player. The player will not respond to de-emphasis on CD-RW discs but normal silver CDs are flat to within +0.05/-0.15dB.

Similarly, the A-wtd S/N via CD-RW is also lower at 99.5dB while 104.1dB is achieved from CD and DVD, for example. Low-level linearity and distortion are unaffected by choice of disc, with figures of +0.0/-0.4dB over a 100dB range for the former and better than 0.003 per cent from 0dBfs to -30dBfs for the latter. PMI

HOW IT COMPARES

Like other manufacturers, Panasonic confuses S/N (115dB) for dynamic range (98dB). Jitter is lower than before but still high by modern standards while linearity, distortion, response and balance are all very good.

- 1 SUPPRESSION OF DIGITAL IMAGES 70%
- 2 JITTER -25%
- 3 PRACTICAL DYNAMIC RANGE 30%
- 4 HARMONIC DISTORTION VS LEVEL 0%
- 5 LINEARITY 60%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	0.0025%	0.0015%
Maximum output level	2.0V	1.95V
A-wtd S/N ratio	115dB	104.1dB

PHILIPS DVD960 DVD player



Here's something quite unexpected: a DVD-Video player aimed at 'audiophiles'. This is exactly the way that it is phrased on the paperwork from Philips' PR company. They further claim that the DVD960 offers 'advanced audio circuitry to deliver sparkling, audiophile sound quality from DVD and CD audio discs', and that 'in recognition that high end installations use outboard decoders for multi-channel sound, the DVD960 has... no internal decoders'. Finally, 'in line with audiophile specifications, the power on/off button has been placed on the back of the player, allowing purists to leave it in standby mode'. But one begins to wonder if they really know what they're talking about when the instructions recommend using the Euroconnector (Scart) for the highest quality A/V connection, while phono leads come in second as 'excellent'. For the record, Scarts are always second best in audio performance terms.

The minimalist front panel – just play, pause, stop, and open/close – is so minimal that even track select

"Philips' claim that this is an audiophile player fails to stand up to close scrutiny."

requires the services of the well designed and comprehensive remote control. The connection panel is relatively bare too. A single Scart, with RGB and composite video options, is fitted alongside a set of outputs delivering composite, S-Video and true component video. Audio outputs extend to optical and electrical digital audio and ordinary two-channel analogue audio. For digital surround sound (Dolby Digital or dts), one of the digital outputs will be needed, though the analogue outputs carry Dolby Surround coding, and can feed an outboard Dolby Pro-Logic decoder.

The finish is peculiarly low-key. The white anodised alloy front panel and crudely moulded silvered buttons have a retro appearance. Intriguingly, the test sample showed the Grundig logo on screen, presumably because it is made (by Philips?) on Grundig's behalf, and someone has called up the Grundig ROM in

error. The on-screen CD player is interesting and useful too, and so is the dual laser mechanism which is designed to deal with CD-R and CD-RW discs as well as the usual culprits.

SOUND QUALITY

Philips' claim that this is an audiophile player fails to stand up to close scrutiny, but its performance is better than average. One difference from many other players is that it has an unusually solid and well-controlled bass. The Garbage test track, *Queer*, was reproduced with a strong sense of weight, and a realistically propulsive gait. Good instrumental timbre also featured, but one panel member pointed to what he perceived as 'veiled' vocals, and another took a similar view, describing the vocals as 'lumpy, flat and uninteresting'. The Takemitsu recording was felt to be a bit flat sounding, but it still reproduced a strong sense of tension. Orchestral timbre and

textures were 'excellent', and the harpsichord extract was 'lightweight, articulate and controlled'.

The Philips DVD960 may be no audiophile's wish fulfilment, but it is better than average musically – and visually. Picture quality was sharp and stable, though colour reproduction seemed slightly washed out by the very highest standards.

CONCLUSION

This is an intriguing, but uneven player, and moreover quite an expensive one. Audio and video performance is not exceptional, given the recent reductions in the price of brand name players like this one.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£530.00

Plain Jane exterior is not a good guide to the musical character of his player, which has more authority and drive than many DVDs when playing CDs.

ONE YEAR GUARANTEE

Philips Centre, 420 - 430 London Road, Croydon Surrey CR9 3QR.

(020) 8689 4444

THE LAB REPORT

This player's admirable handling of ultrasonic noise, but relatively weak suppression of digital 'images', bears comparison with JVC's XV-523. There is some digital IM distortion within the audioband as a result of this weak attenuation of stop-band images just outside the audioband (-39dB).

Philips specifies a 96kHz/24-bit DAC but distortion is higher than expected, regardless of whether CD or CD-RW is used. Indeed, from 0.0055 per cent (0dBfs) to 0.0024 per cent at -10dBfs and 0.0015 per cent at -30dBfs, the trend is the opposite of what's normally found.

As a side issue, the DVD-960 failed to recognise de-emphasis flags on either disc

type, leading to a response that's +8dB or so up at 20kHz with pre-emphasised material. With conventional CDs, the response is actually a little down (-0.5dB) at 20kHz. However, having been beaten with the 'jitter stick' in recent years (after the launch of its first CD-R recorder, see

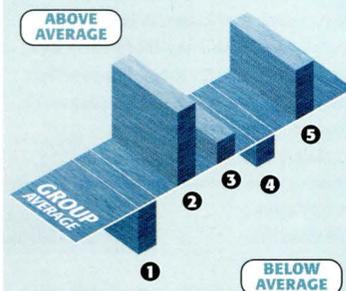
HFC 174), it's great to see the DVD-960 enjoying a mere 200psec of data-induced jitter – one of the best results of the group and very similar indeed to the Toshiba SD-100E in 'nature'. The wide 103dB S/N ratio, excellent channel balance and separation plus +0.0/-0.7dB errors in linearity over a 100dB range also rank as achievements at this price.

PMI

HOW IT COMPARES

Output level is fractionally low and distortion increases during the loudest sequences but the S/N ratio, jitter and general response look very healthy indeed. A good product, but improved digital filtering would stretch the performance to a new level.

1 SUPPRESSION OF DIGITAL IMAG	-30%
2 JITTER	50%
3 PRACTICAL DYNAMIC RANGE	15%
4 HARMONIC DISTORTION VS LEVEL	-15%
5 LINEARITY	35%



SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	0.0014%	0.0055%
■ Maximum output level	2.0V	1.9V
■ A-wtd S/N ratio	113dB	103.0dB

SONY DVP-S735D DVD player



It's hard to say why the DVP-S735 is so obviously striking, but it is. Visitors thought so too. It is as wide as other players, but shallow and low at just 7.1cm tall. With its bright alloy finish, it has a jewel-like appearance. It is quite different to the usual run of DVD players, and striking even by the standards of a brand with a track record in such things, and the blue multichannel LED doesn't hurt either. Blue LEDs are still not quite mainstream.

The new Sony DVD player – or rather CD/DVD player, as it is billed – is a full on Dolby Digital/dts player, with Dolby Digital unwrapped by an on-board decoder, or fed as a digital datastream from the digital output. Dts discs are also recognised and sent out through the optical and digital S/PDIF outputs, but the analogue outputs are not muted, which could give granny a nasty surprise when she pops on her favourite recording, and cranks up the volume.

The Sony is liberally equipped with interfaces: two Scart sockets (one intended as a loop-through connector for a VCR, say), true component video out, S-Video and composite video – RGB is available from one of the Scarts – the previously

“The player lacked drive, which impacted on its performance with rock music.”

mentioned optical and electrical digital outputs, standard two channel analogue stereo or Dolby Surround, and 5.1 channels in analogue from the Dolby Digital decoder.

The Sony has plenty of picture enhancement possibilities, and will reproduce a 24-bit 96kHz disc through its digital output if programmed to do so. The player also offers CD Text, and something called DVD Text.

This is a very slick machine to operate. It has a real quality feel, responds rapidly to control input, and has comprehensive and (for the most part) comprehensible on-screen menus. It also offers excellent picture quality, which is eminently tweakable through the control system, and which is always stable, largely free of moiré and yet extremely detailed.

SOUND QUALITY

Would that it had sounded as good as it looked. The Eve Cassidy record-

ing of *Kathy's Song* sounded 'jangly, and faster than the Krell player used as reference', and no less than two listeners independently described this track as 'sibilant', with further comments on its 'thin and lightweight' sound. The guitar was well liked, but the complaints resumed with the other test tracks, generally concentrating on the player's perceived lightweight, mid-frequency led balance, and of a rather scrawny and not entirely musical midband.

This was also the message of the hands-on testing. Persistently, the Sony was among the very best on-screen performers, but the audio performance was simply below par – and incidentally below the standards of previous Sonys, notably the excellent S7700, admittedly a more costly model, but also a much earlier design. The player did indeed lack drive, which impacted on its performance with rock music, and the mid forward balance giving it a rather glassy feel which did not serve it well

with natural sounding acoustic recordings.

CONCLUSION

It is not known if this model went through the UK customisation process that many UK products are subject to – we did enquire, but were unable to get an answer at press time – but our guess is that it didn't. Certainly it performs like a player that has been optimised for picture quality, and it sounds very good using external decoders from its digital output, but it is not very appealing as a CD player.

VERDICT

SOUND ★★☆☆

BUILD ★★★★★

VALUE ★★☆☆

PRICE £499.99

Glamorous and slimline design is a striking on-screen performer, but sounds rather jangly.

ONE YEAR GUARANTEE

Sony UK Ltd., The Heights, Brooklands, Weybridge, Surrey KT13 0XW.

(0990) 111999

THE LAB REPORT

Neither the digital filter nor, especially, the noise-shaping is as effective in this DVD player as in Sony's budget CD players or costlier DVD units. Indeed, the level of ultrasonic requantisation noise, though not quite on a par with infamous DACs like the old PCM 1710, is still likely to be sufficient to cause differences in sound quality with different, partnering amplifiers. The very high 1705psec jitter level is also something of a surprise and very 'un-Sony' like, particularly as this infestation of power supply interference is joined by what I presume to be a noise-like jitter caused by a shared video/audio master clock. Either

way, this will not make a positive contribution to the S735D's sound quality, despite it enjoying a low 0.0015 per cent distortion at 0dBfs and very low at 0.0007 per cent at -10dBfs.

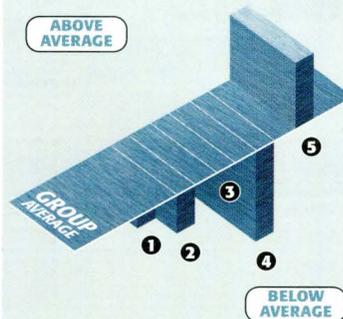
There are other oddities to accommodate. For example, this is another DVD player that provides a poor S/N ratio with CD-RW discs (in this case around 80dB or so) but a full 104.5dB with CD/DVD. Otherwise, low-level linearity proved a little wayward on this player's left channel (+2.2dB at -95dBfs) but stereo separation is superb at >100dB over the full audiorange and the response is as flat as a pancake. PMI



HOW IT COMPARES

S/N ratio is closer to what Sony specifies as dynamic range (98dB). Otherwise this unit is not up to Sony's customarily high standard, with surprisingly high jitter and ultrasonic noise bringing an air of unpredictability with different amps.

1 SUPPRESSION OF DIGITAL IMAGE	-5%
2 JITTER	-25%
3 PRACTICAL DYNAMIC RANGE	35%
4 HARMONIC DISTORTION VS LEVEL	-60%
5 LINEARITY	45%



SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
Distortion @ 1kHz/0dBfs	<0.0025%	0.0015%
Maximum output level	2.0V	2.05V
A-wtd S/N ratio	>110dB	104.5dB

CD & DVD Players Conclusions

So, which DVD and CD players make the grade as decent audio players?

Alvin Gold takes us through the best in the test...



ARCAM Alpha 7SE CD player £299.90
This current version marks a further improvement thanks to a new motherboard layout which addresses jitter and component separation. Although it elicited mixed feelings at times from the panel, this was generally seen as lively, clean and entertaining, and an improvement on an already excellent player.



MARANTZ CD6000 CD player £249.90
A thoroughly excellent CD player: warm and even slightly lush-sounding, with a well extended bass, a sweet refined treble and a bold dynamic structure. A significant bargain, being easily the best sounding player in the test, at a price that undercuts the most expensive by more than half.

ALBA DVD103 DVD player £150.00
Possibly the cheapest DVD player on the market (this week, but perhaps not next), this unit has no obvious operational problems, and it includes a Dolby Digital decoder – but don't buy for its CD replay quality.



ENCORE DV-450 DVD player £199.99
The features list almost says it all: Code hackable, component video, MP3 compliant and cheap, but the video control software is not fully up to date, which causes problems with films like *The Matrix*.

MAKE	ARCAM	KENWOOD	MARANTZ	ONKYO	TECHNICS	YAMAHA	ALBA
MODEL	ALPHA 7 SE	DPF-3030R	CD6000	DX-7511	SL-PS7	CDX-596	DVD103
PRICE	£299.90	£179.95	£249.90	£299.95	£199.99	£229.95	£150.00
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
GUARANTEE	2yr	1yr	2yr	2yr	1yr	2yr	1yr
DISTORTION @ 1KHZ/0DBFS	0.0009%	0.0015%	0.0009%	0.0012%	0.001%	0.001%	0.0015%
MAXIMUM OUTPUT LEVEL	2.3V	2.0V	2.0V	1.9V	1.9V	1.87V	2.1V
A-WTD S/N RATIO	101dB	102.3dB	100.7dB	98.1dB	102.1dB	102.9dB	103.5dB
STATUS							

Since we started looking at DVD and CD players under one roof, we've asked the same question, namely whether a DVD player can be an adequate substitute for a CD player. This month, several of the DVD players achieved a standard worthy of a Recommended flag, but two of them, from Alba and from Encore, did so as special cases, recommended simply on the grounds of their low price. In fact they're both rather pedestrian as CD players, sounding rather soft and lacking in detail. Although neither sounds unpleasant, there are plenty of dedicated CD players at similar prices that perform better, though none of them are part of this group. Even the least costly CD player here, Kenwood's DPF-3030R (at around £20 less than Encore's offering), is more than a match for either DVD player. But widen the field to include the Marantz CD6000, and there is simply no contest.

Dedicated CD players don't have it all their own way. Toshiba, for example, has a very competent mid-market DVD player called the SD-100E, and while still no match for a half decent CD player at most price levels, it remains an eminently listenable player, both as an audio and as a video source. And so the story continues. In test after test, the dedicated CD players continue to outperform the DVD players, even the

less satisfactory CD players generally managing to show the best DVD hardware a clean set of heels. One of the better DVD players is Philips' DVD960, which only missed recommendation on the basis of its high price, is specifically billed as an 'audiophile' player, and which does indeed sound better than most DVD players when playing CDs. But it is still no match for the previously mentioned Marantz CD6000, which costs less than half as much.

The fundamental finding of this test then is that it confirms previous results, namely that on any reasonable basis, DVD players cannot currently compete with CD players as tools for playing compact discs. Some of the reasons for this are beginning to become clear, but are by no means fully understood even now. All we can say with any confidence is that DVD technology has a long way to go to match CD standards, and if progress towards these ends is not made very quickly, it will impact on DVD-Audio, which after all relies almost totally on technology recycled from DVD-Video.

BEST BUYS & RECOMMENDATIONS



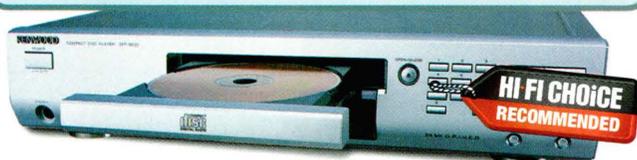
BEST BUYS: Our famous Best Buy swagtag is awarded to hi-fi equipment which offers an excellent standard of performance at an attractive price. Best Buy winners are superb all-round components.



RECOMMENDED: Recommended products are first-class audiophile propositions, losing out to Best Buy status only because of a higher price or less competitive overall sound quality.

KENWOOD DPF-3030 CD player £179.95

In après test discussion with Kenwood, they told us that this player had been the subject of intensive optimisation, and that it is a player that they are particularly pleased with. This player has an airy, spacious quality and plenty of well-resolved detail, though it begins to sound messy with difficult, densely-scored passages.



TOSHIBA SD-100E DVD player £250.00

This well-endowed mainstream DVD player worked well all round, coming closer to decent CD replay quality than any of the other players in the same price territory. Considerable effort has gone into getting the picture right, and the audio side has not been neglected either.



YAMAHA CDX-596 CD player £229.95

An updated design which now includes CD-RW replay compatibility, CD Text, and proprietary Pro Bit technology (which resamples 16-bit data to 20-bit precision). The Yamaha sounds attractive, if not always compelling, and imagery was unusual, with good location at the extremes, and some vagueness around the centre stage.

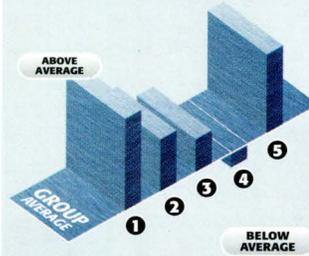


UNDERSTANDING OUR BAR GRAPH MEASUREMENTS

Behind Hi-Fi Choice's unique bar graphs are some of the most advanced measurements made anywhere on the planet. They are provided by our Technical Editor, Paul Miller, using his own, award-winning, PC-based Virtual Instrument software. Each bar graph value is derived from a weighted statistic of several key measurements and is displayed relative to a notional zero per cent which represents the group average for that particular category. Above the line ratings indicate a positive result whatever the element.

- 1 SUPPRESSION OF DIGITAL IMAGES:** This indicates the effectiveness of the player's digital filter in removing 'aliasing' or 'stopband' distortions immediately outside of the audio band.
- 2 JITTER:** Any uncertainty in the timing of the digital code produces digital jitter which manifests as an insidious form of distortion during digital-to-analogue conversion. The lower the figure the better.
- 3 PRACTICAL DYNAMIC RANGE:** This is determined by the player's Signal-to-Noise ratio and to what degree it is compromised by any Noise Modulation occurring under real signal conditions.
- 4 HARMONIC DISTORTION VS. LEVEL:** This bar chart value is derived from the variation in distortion both with frequency and signal level. The consistency and nature of the distortion also forms part of the equation.
- 5 LINEARITY:** Linearity is a measure of the player's low-level resolution. If a signal coded at -80dB emerges from the player at -80.5dB then this represents a deviation in its linearity of 0.5dB.

THE BAR GRAPHS



MAKE	DENON	ENCORE	HITACHI	JVC	PANASONIC	PHILIPS	SONY	TOSHIBA
MODEL	DVD-1500	DV-450	DVP-505	XV-523	DVD-RV40	DVD960	DVP-S735D	SD-100E
PRICE	£399.99	£199.99	£300.00	£280.00	£349.99	£530.00	£499.99	£250.00
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
GUARANTEE	2yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr
DISTORTION	0.0026%	0.0015%	0.0009%	0.0005%	0.0015%	0.0055%	0.0015%	0.001%
MAXIMUM OUTPUT LEVEL	2.0V	2.0V	1.85V	2.1V	1.95V	1.9V	2.05V	2.1V
A-WTD S/N RATIO	100dB	94.7dB	103.8dB	104dB	104.1dB	103dB	104.5dB	105dB



I have a Marantz CD-67 CD player and PM-66 KI-Signature amp, with Dynaudio Audience 50 speakers. Which cables would you recommend I use?

Uros Pavlic, via email

If you were to spend about ten per cent of the system's total cost on cables, you'd be looking at about £150. Try QED Silver Anniversary speaker cable (£5/m) or perhaps Kimber 4VS (£8.50/m) with van den Hul D102 MkIII HB interconnects (£80).

Our hi-fi messiah Tim Bown is here to die for your Linns. Hark, little children, and consider the subwoofer...

Pictures and sound



I want to buy a DVD player and I'm considering the Panasonic RV-20, Pioneer DV-717 or Sony DVP-S725. I want both high picture quality and high sound quality. I understand the Sony has twin lasers for enhanced CD sound. I listen mostly to classical music and I'm prepared to spend the extra £150 or so for the Sony if its CD sound is noticeably better than my elderly DAD 7000. Or perhaps there is an even better DVD player I should be considering?

Anthony Rattan, Middlesex

At this moment in time, we would generally advise those who value high sound quality from CD to stick to a dedicated CD player and keep the DVD for video playback. CD performance varies between different DVD players and none can yet be said to be wholly successful in that department. Universal DVD-Audio/Video players are beginning to emerge, however, and DVD machines conforming to the existing DVD-Video standard are now arriving from specialist hi-fi companies, so things may soon change.

The best CD playback we've yet heard from a DVD player came from an extremely costly Theta unit. At a more realistic price point we're pretty impressed with the Primare V20 (£1,000), and of the three you mention the Pioneer DV-717 (£550) is the best bet for sound and picture (soon to be 'replaced' by the DV-737). Other units from the likes of Arcam



will follow soon, but if music is of great importance to you (after all, you're reading Hi-Fi Choice) you may be better off waiting to see what transpires in the DVD-Audio department, once things have settled down. In the meantime, if you're desperate to get your hands on DVD-Video, why not buy one of the cheap players currently cleaning up in the high streets and supermarkets to tide you over? And if you're serious about CD, try auditioning some top-notch dedicated CD players as a long-term investment.

Hi-fi and the SL-1210



I'm interested in buying a Technics SL-1210 Mk2 turntable for mixing music. I haven't noticed a report on this deck in *Hi-Fi Choice*, but I've only seen recent issues so you may have done it before. What is your opinion?

Gergo Szocs, Hungary

Though extremely popular in certain circles, the SL1200/1210 (around £300-£350) isn't the kind of turntable we feature in an average issue of Hi-Fi Choice. It's not exactly a hi-fi turntable, you see – other more purist designs beat it hands down in terms of resolution and general sonic grace. But none of these decks boast the Technics' combination of ultra-rugged build, direct drive (essential for mixing), pitch control, cueing light and quick-touch stop/start, which makes it ideal for DJ and broadcast use.

For these reasons, the '1200/1210 has become the deck of choice for DJs, earning an unrivalled reputation for reliability, good sound and all-round coolness. In the past we've written about its capabilities in DJ Choice, a supplement given away on occasion with past issues of HFC, and it remains the deck most DJs aspire to for mixing purposes.



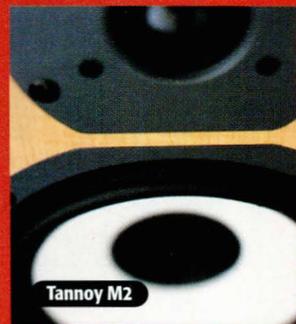
Human voice



I am planning to upgrade my 10 year old system consisting of a Sansui tape deck, an Akai amp of 40 Watts RMS per channel and a pair of Technics SB 5000 speakers. I would like to buy a NAD 310 amp, an Onkyo K-185 cassette deck or a pair of speakers, perhaps Mission 700, KEF Coda 7, Tannoy Mercury M2 or Wharfedale Diamond. I can only spend £150 on one component for now. My main requirement is clarity of human voice.

Joseph Malieckal, India

Well, there's plenty of scope for upgrading there, Joseph! Without personal acquaintance with your existing tape deck, amp and speakers, it's difficult to be definitive about your first step, but we would suggest a change of speakers would make the most overt improvement. If you're not in a position to listen before you make your order, The Tannoy M2 (£150) is the safest bet – well balanced and great with vocals. Alternatively, if you like it load go for the Mission. And later, upgrade the amp...



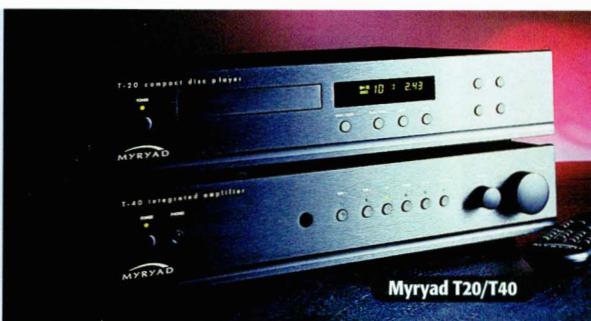


Chord/Gamut showdown

 I'm looking to buy a high-end power amp, and I'm considering two options – the Gamut D200 (£2,995), which you rate as an Editor's Choice, and the Chord SPM 1200c (£4,210). Would the Chord be faster and offer greater extension, or do you think the Gamut is the better bet? If you think it's more than a match for the Chord then I may go and listen or even make a purchase. I've found a couple of dealers who stock it, but neither will let me take one away for a home demo without obligation. I will either have to dismantle my kit and bring it to them or buy the amp on spec!

Nigel Burt, via email

The first thing to say is, don't buy without listening! Hi-fi and music taste is a very personal thing and it would be dreadful to end up



A Myryad of choices

 I want to upgrade my CD player. At present I'm using a Sony CDP-XE210 in conjunction with Monitor Audio Silver 5 speakers, biamped with a Myryad T40/T60 combo. I'm considering the Myryad T10 (£400) or maybe the T20 (£600), if only because they match the amps' styling and should match sonically as well. My concern is that neither model gets rave reviews. What is your opinion, and which models should I audition them against?

Alan Cooper, via email

The answer is in your final sentence, Alan. Auditioning is the only way you can ultimately decide. True, neither the T-20 nor the T-40 came out well in our group tests, with the former described as "ordinary", and the latter as "matter-of-fact" and "bright". But tastes differ and players respond differently in a variety of set-ups – they may not be the best at their respective price points but when matched with Myryad amps, your speakers and your ears they may just shine. You might also decide that the benefits of a visual system match outweigh any apparent shortcomings in sound quality.

The way to find out is to audition these two players against a variety of top-rated alternatives. We'd certainly recommend the Arcam Alpha 8 (£520) and 8SE (£600), Marantz CD6000 KI Signature (£500), Pioneer PD-S505 Precision (£460) and Rotel RCD-971 (£450). These are all excellent in their own right and should provide a good measuring stick by which to judge the two Myryads.

with an expensive mistake. Some specialist dealers will give you a money-back guarantee if you're not satisfied with your purchase, so that could be an option if a full home trial is out. Failing that, it's well worth taking the time and trouble to book an audition and bring your gear into the shop to hear the product in your own system. If the dem facilities are good you should get a pretty reliable picture of whether it's right for you.

It's difficult for us to make a direct comparison on paper, particularly as we've never given that particular Chord a formal review. But the Gamut we can thoroughly recommend as a staggeringly transparent power amp, able to squeeze the most from some very serious speakers with real grace and timing. In general, the Chord amps exert a more overt sense of control on proceedings, a sound that a lot of people swear by. If you want an expressive and authoritative type of sound, one with real gravitas, Chord may well be the make for you. Whichever you choose you should end up with some excellent amplification; enjoy making the decision!

Mixed signals



Can you tell me how I can receive RDS on my new stereo? It says RDS on the LCD... I wonder if there are any circuitry upgrades, because that's what happens when you live in a place without decent radio signals!

Ryan, via email

Hmm. Strange. If the FM tuner section of your stereo is RDS (Radio Data System) equipped, and signal strength is good enough for half-decent sound, you should be receiving the benefits automatically. If you're not getting RDS information at all, then presumably you're not obtaining listenable FM reception, in which case the only answer may be a roof aerial (assuming you've tried every position possible with the supplied antenna).

You can also buy FM signal booster boxes from high street electrical stores, which may be used in poor reception areas with both internal and external aerials. And remember that not all stations broadcast RDS data. Tune in to a major station (any BBC Radio station, for example) – if the station name comes up, then you're getting RDS.



Q Just how good are the Tannoy Revolution R3 speakers? A certain other hi-fi mag keeps banging on about how great they are.

Douglas Houston, via email

A The Revolution range contains some excellent speakers, but the R3 isn't our favourite. It offers fine material value, but at £550 it's a little too restrained. The R2 (£350) fares better.

Stepping sideways



My current system consists of a Rega Planet CD player, Audio Analogue pre/power and Sonus Faber Grand Piano speakers, with Tara Labs speaker cable and a mix of Tara and Aparture interconnects. I listen to classical music, particularly piano and violin, with some easy listening and modern cantopop.

The thing is, I find this set-up a touch too laid back. The sound stage is always a long way behind the speakers and it doesn't matter how much I shift them around, the result is always the same. I'm willing to spend up to £1,500 to get an improvement. Any suggestions?

William Fong, Hong Kong

We can suggest a few possibilities, William, though for a definitive answer you'll have to try them yourself and judge the most pleasing effect. First, the issue of support. You don't mention whether you're using a dedicated hi-fi stand for your components. To that end, we warmly recommend you try Townshend's Seismic supports – they add a whole new dimension to the soundstage.

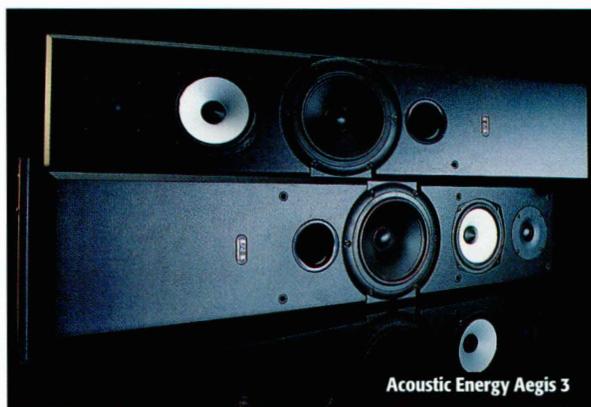
You could also look at cabling, particularly at the speaker end. Switching to something like Nordost Red Dawn would promote a more up-front character, or you could try Townshend Isolda or our



Martin-Logan Prodigy

Editor's favourite, Electrofluidics Monolith 2020.

Looking at your main components, the amp combo and speakers are both of high quality but certainly suggest a relatively laid-back type of sound. In contrast, the CD player is a lively little fellow but a touch rough around the edges compared to your other components. The only sure fire way to make a big difference to presentation style is by trying different loudspeakers. You might have to lose the Sonus Fabers' finesse but the result could be closer to what you are after. The problem is that your current budget will limit you. We suggest you try some Living Voice Auditoriums, these have the dynamics you crave and don't fight shy of solid imaging. Alternatively trade in your speakers, save very hard and get the best of both worlds with Martin-Logan Prodigys. They have both resolve and power aplenty.



Acoustic Energy Aegis 3

Audio anglophile



Though I live in the States, most of my hi-fi components are British. I'm currently using an Arcam Alpha 8R amp with a NAD C540 CD player, hooked together with Tara Labs Prism 331 interconnects and Vampire Wire 12-gauge speaker cable. I don't know why I gravitate that way – perhaps because British solid state components sound more tube-like?

Now I need to buy some speakers and I'm again thinking British. I'm very interested in the Acoustic Energy Aegis 3 or perhaps the Tannoy Revolution R2? Or should I go French and plump for the Triangle Zephyr II? My room is 18 feet wide, 22 feet long and 8 feet high.

Jerry Schmidt, USA

The Aegis 3 is an excellent floorstander. OK, so it sports a vinyl finish (what do you expect for £350?), but anyone looking for a speaker with real bass weight and a detailed mid-band would be hard pressed to beat it at the price. It works well with your amp, too, so go and audition it pronto!

The Tannoy R2 is another excellent model at the same price point and well worth a listen, particularly if you prefer a smoother, more laid-back style of music making. Then there's the Zephyr II, an extremely interesting proposition. It's more expensive at £599 in the UK, but it's a highly invigorating listening experience (and a pretty extreme contrast to the Tannoy). Listen and decide.

Sooner than that



I was wondering, when will you be reviewing the new Kenwood amp and CD players. I like their looks, and the prices seem good, but what do they sound like?

Nnarel, via email

We did the KAF-3030R amp (£250) in our Heat Seeker section back in the June issue and liked it so much we brought it back for the full Mega Test treatment in September. It's an absolute star, probably our favourite amp below £300 right now, and when you listen to it we hope you'll agree.

The DPF-3030 CD player (£170) has also been in the mag twice. It was a Heat Seeker in July/August and returns for a group test this very issue. As you've probably read by now, it's a smart player which holds its own sonically – nothing spectacular but solid value. You should listen to one or two other players like the Marantz CD6000 (£250) and Cambridge D500 (£200), but the visual match of the Kenwood pairing may be

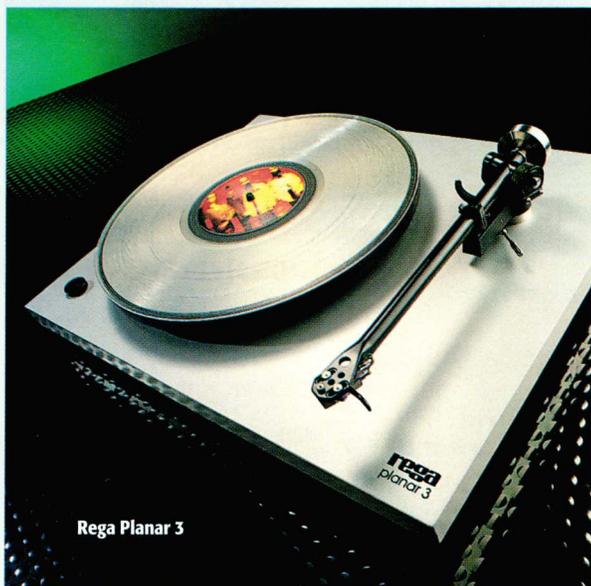
Kenwood KAF-3030R



Which is the best CD recorder on the block right now?

Jo Allison, Croydon

We think the new Philips CDR951 (£380) is tops, but Pioneer's PDR-555RW (£480) is also damn fine. And check out the Denon CDR-1000 (£400) in this month's Heat Seekers.



Rega Planar 3

Vinyl not dead shocker!



Recent visits to my favourite music store made have made me realise vinyl is far from dead. Indeed, there are plenty of new LP editions of 'alternative' music, like Fila Brazillia, Massive Attack and Tosca. So now I've finally decided to buy a turntable, but I need your advice. I have a Primare A20 MkII, a Rega Planet CD player, ProAc Tablette 50 speakers and Kimber cables. I love the Planet's rhythmic and lively sound, so a Rega turntable seems an obvious choice, but I haven't decided whether to go for the Planar 2 or the Planar 3. And I've got no idea of what cartridges and phono stages I should be looking at. My overall budget is £500-600 and I'd really love to get some advice from *Hi-Fi Choice* – my monthly magazine vice!

Manuel Macedo, Portugal

We certainly wouldn't dissuade you from buying a Rega turntable, particularly at the price level you're gunning for. Between the Planar 2 and 3, the 2 is the better known and probably the best value. The 3 is marginally better, however, and would easily fit your budget; it has also been revamped recently, so it's well worth checking out. You might also like to try the new Planar 25 – it breaks your budget at £619 without a cartridge but received a glowing Best Buy when we tested it a few months back. You may decide it's worth stretching your budget a little further...

On the cartridge front, start with the likes of the Rega Bias (moving magnet, £39) and Denon DL110 (moving coil, £70), then decide if it's worth spending the extra on something like the Sumiko Blue Point Special (moving coil, £250). If you want a good, affordable phono stage try Musical Fidelity's X-LP (£130); if you're prepared to spend more, and want to hear what those grooves really hold, stretch to Tom Evans' Microgroove (£399).

Enjoy your vinyl discovery. And though it's nice to have a vice, please don't take things beyond the bounds of decency...

Saving on a sub



I wonder if you could give me your opinion on subwoofers. I am thinking of purchasing one of the following: the Wharfedale SW12 (£200), Mission 7AS1 (£259), B&W ASW500 (£349) and Paradigm PS1000 (£200).

Mr O'Halloran, via email

Subwoofers have become the norm for home cinema enthusiasts, but their use with music replay is somewhat controversial. A bad sub, or a poorly set up one, will ruin a decent set of speakers, but the more musical-sounding active models can be very effective when used in a bass-light system. We don't review subs too often, and none of the models you mention have graced our pages. But from what we know of these products the B&W is your best bet, particularly from a musical perspective.

If you're limited to £350 the best bet we have tried is JPW's SW60 but if you are able to spend more, we would suggest you check out the likes of REL and M&K; they offer better performance and improved 'tuneability'. Try REL's excellent £600 Strata III, say, or one of the REL's 'Q' models if that's too costly. A subwoofer group test is planned for our January 2001 issue.



Modern favourites



I'm planning on upgrading my CD player and have three in mind: the Arcam Alpha 7SE, NAD C540 and Sony CDP-XB930E. I need it to partner a Rotel RA-921 amp and B&W DM601S2 speakers. My musical tastes vary from old rock (Hendrix, Gary Moore) to more modern 'favourites' (Reef, Stereophonics, Counting Crows).

Mike Harrison, via email

You've picked three very decent players there. Probably our least favourite would be the NAD (£330) – the company is currently making some fine products, particularly on the amp side, but this isn't one of its best. Though pleasingly smooth its sound lacks a little insight, while disc handling is, as we put it, "pedestrian at best". On the other hand, both the Arcam (now £300) and Sony (also £300) rate as Best Buys in our book. If you like your sound with pace and bite you may find the Sony has the edge, but some will find the Arcam the better balanced product. That's probably the way we would go, given your system, but you should audition to make the final decision. And check out Marantz's CD6000 too (£250) – it's a bit of a star as this month's Mega Test reveals.

Can you recommend some headphones around £80-100?

Matt Hunt, Sussex

Sure can (can... gedit?). The

£79 Grado SR80 is a beautifully expressive performer, or for a more refined approach try the £90 Sennheiser HD 570 Symphony.

FB1



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Bristol	Radfords	0117 944 1010
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Ipswich	Signals	01473 622866
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Norwich	Basically Sound	01508 570829
Oxford	Audio T	01865 765961
Rayleigh	Rayleigh HiFi	01268 779762
Sheffield	Moorgate Acoustics	0114 275 6048
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Yeovil	Mike Manning	01935 479361

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D102III Hybrid

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Product of the year (interconnects)

What Hi-Fi? Awards '99

Best Buy Hi-Fi Choice

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Best Buy Hi-Fi Choice

 ★★★★★ **March '99**

 ★★★★★ **What Hi-Fi? October '99**

Storm II Hybrid

 £29.99/0.8m pair

Best Buy What Hi-Fi?

 ★★★★★ **Awards '99**

The First (LSC)

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 ★★★★★ **What Hi-Fi?**

 ★★★★★ **Hi-Fi Choice** (sound quality)

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Dynamic Duo

Equipment pictured

 Plinius SA-250 Class A Power Amplifier

 and Plinius M16 Preampifier

Accuphase - A.T.C.

 Audio Analogue

 Basis - BKS - DNM - Classe

 Clearaudio - Crimson - DCS

 Fanfare - Graham - Helios

 Mirage - Monrio - Nagra - Passlabs - Plinius - Opera - Ortofon - Rehdeko

 Resolution - Rockfort - (Gamut) Sirius - Sugden - Unison Research - V.P.I.

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BUYING GUIDE TO AMPLIFIERS



An amp is the heart of a hi-fi system, the control centre through which sources are selected and volume is specified. It

boosts the output of your source components to the level required to drive your loudspeakers and is a crucial element of any system's performance, big or small, low cost or top grade. Here are a few brief hints to help you choose an amp that's right for you.

Valves vs. Transistors

Once all amps used valves, but when transistors were introduced around the late 50s a whole new breed of amplification was born. Today, the majority of amps are transistor based designs; for most people they are the cost effective option, easier to live with and more flexible for system building. Their greater power output also makes them easier to match with speakers.

However, there are those who still swear by valves on the grounds of sound quality. There is a clarity and depth to a good valve sound which, for some, cannot be matched by transistors. Their transparent midrange and clean, sweet treble can be enthralling, but there is a trade-off: many valve designs sound a little soft and woolly in the bass compared to high-performance transistor-based models. But what they lack in grip they more than make up for with dynamics, ironically lower powered triode types often produce a more powerful sound than the pentode alternatives. But it's important to partner them with sensitive speakers.

One box or two?

Most low to mid-priced amps are integrated designs – a preamp and power amp combined in one box. As price increases there's more of a choice: you can still buy an integrated model if you feel it's the neatest solution, or you can buy a separate pre- and power amp.

There are several sonic advantages in going the two (or more) box route, assuming the manufacturer has made full use of them. First, it helps ensure delicate line level signals are isolated from interference from the power stage. Second, it allows the power supplies for each stage to be optimised for their particular function. Third, it gives more scope for the components to be optimised and gives the buyer more choice in tailoring amplification to his/her specific needs. However pre/power combos aren't *always* better than integrats – it's what's under the hood that counts.

Matching an amp to your speakers

The amp/speaker interface is a crucial part of system building. If your speakers offer a tricky load or aren't particularly efficient, make sure the amp has enough muscle to handle them properly. In stereotypical terms, high-powered amps tend to sound more dynamic, and high-powered amps matched with sensitive speakers

are the most dynamic of the lot. However, amps with more lowly outputs sometimes have the advantage in terms of speed and agility. Ultimately, the quality of an amp cannot be judged by its power output, but the way it controls your speakers is important so make sure you listen to the combination before you buy.

Facilities

It may sound obvious, but make sure the amp you choose has all the facilities you need. There would be nothing more annoying than deciding on an amp then discovering it doesn't have enough inputs to take all your source components. If you use recorders, make sure there are enough record in/out to suit your needs and if you feel you may want to upgrade with, say, additional power amps or multichannel processors then make sure the necessary sockets are provided.

If you use a turntable, you'll need to make sure the amp has a decent built-in phono stage. If not, or if you want to make sure your turntable sounds its best, you can buy an off-board phono stage and plug it into a standard line-level input.

Tone controls are generally frowned upon by audiophiles, the theory being the more you put in the signal's path the more you rob it of its purity. But there are times when tone adjustment can be useful, for example when playing a bright or bass-heavy recording. If you do decide you need them, make sure the amp has a 'tone defeat' switch so you can switch them out when they're not needed.

Bi-amping

This is an increasingly common (and useful) upgrade path offered by some integrated models. Basically, this means you add an extra power amp to an existing integrated, using one to drive the speakers' tweeters and the other, the main drive units. You need bi-wirable speakers to do this; if your speakers are tri-wirable, you can even tri-amp. Gains vary between models, but generally expect improved dynamics and overall grip.

General hints and tips

Don't skimp on cables and use recognised methods of isolation – a good quality equipment support will help, perhaps with an additional isolation platform or equipment 'feet' of the compliant or coned variety. Amps like to be stretched to attain optimum performance – they may need a week or so to run in, and could take around an hour to warm up prior to serious listening.

Keep ventilation holes clear and avoid stacking equipment on top of the amp; if direct stacking is unavoidable, put the amp on top. It's best to site amps well clear of source components, on a separate shelf of a dedicated hi-fi support if possible. And if tone controls are fitted, set them to zero or hit the by-pass switch.

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Integrated £475

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A remarkable power amp, hugely dynamic and almost perfectly transparent. Sheer class.

KENWOOD KAF-3030R

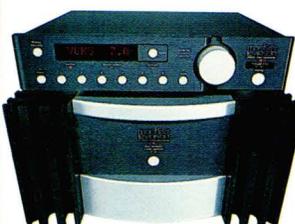
Integrated £250

A new low-cost star, this Kenwood offers unrivalled clarity for newcomers and first-time upgraders alike.

MARK LEVINSON 380/334

Pre/power £9,490 (below)

Serious power, OTT build, maximum control. A bit of a hi-fi legend.



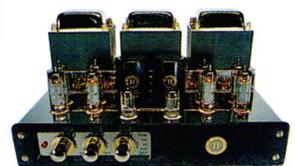
PRIMARE A30.1 Integrated £1,499

An excellent example of an upmarket integrated: clarity and power in equal measure.

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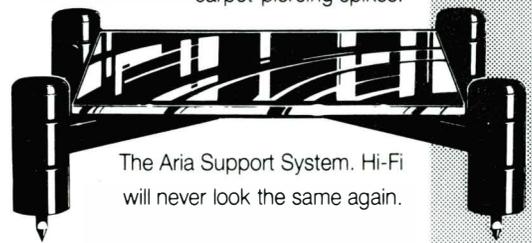
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Budget Speakers

A bit tight on space and cash, but still want some top-notch speakers? *Paul Messenger* might just have the answer...

With eight models from eight major brands, all clustered between £150 and £200, this Supertest is a genuine budget shoot-out between many of the leading contenders in by far the most competitive sector of the speaker marketplace. The tight cost constraints imposed by these modest selling prices don't leave the designers with a lot of flexibility, with the result that, cosmetics apart, all these models cling pretty closely to the

established 'budget bookshelf' stereotype. There are a few variations of course, especially in the sizes of the box and main driver, but these are fundamentally smaller than the similarities.

All eight are port-loaded, two-way stand-mounts, some slightly larger and some slightly smaller than average. Half are quite familiar *déjà vu* experiences, inasmuch as they're updated versions of well established and successful models – check out the B&W, KEF, Mission and Tannoy examples.

Others are conceptually brand new, with no obvious previous heritage known to the author. Heybrook might have revived its traditional HB1 model name, but this Kevlar-coned newcomer is quite different from the original. I can't recall Monitor Audio venturing this far down into the budget battleground before, while the Jamo is also quite different from its predecessors.

And isn't it nice to see the Mordaunt-Short name coming back onto the hi-fi map, after its acquisition by The Audio Partnership a year or two back? If we were handing out prizes here on cosmetic grounds, the chunky little 902 with its striking silver front is an obvious stand-out contender (challenged by the little real-wood finish Mission).

These speakers might be small, but their potential for delivering decent hi-fi quality sound shouldn't be underestimated. Obviously they won't have the deep bass capability or loudness headroom of much larger designs, but their small size has its own strengths in terms of agility and modest box coloration. Used at the end of a good quality system and – most importantly – on good quality stands, they can mix it with many floor-standers and look that much more discreet.

How the tests were done

The tests were carried out in a room that is a little larger than average – 5.5x4.2x2.6m (LxWxH) – but not excessively so. The speakers were measured using a series of sinewave sweeps and averaged across the listening zone, to determine optimum placement with respect to room boundaries. These tests also give a realistic appraisal of sensitivity and relative bass extension.

The main reference system used for the blind and hands-on work consisted of the usual collection of Naim and Linn components: Linn LP12 turntable, Naim ARO tonearm, Linn Arkiv B

and Clearaudio Discovery cartridges, Naim CDS CD player, NAT01 tuner, NAC52 preamp and NAP500 power amp. Speaker cables were NACA5, and speaker stands were Kudos S100s.

The Music We Used

Joni Mitchell – *Mingus*
 Chemical Brothers – *Brothers Gonna Work It Out*
 Fun Lovin' Criminals – *Come Find Yourself*
 Christy Moore – *Live at The Point*
 Mari Boine – *Eallin*
 BBC Radios 3 and 4 were also used extensively.

THE CAST LIST

B&W DM601 S2	£199.95
Heybrook HB1	£179.95
Jamo E800	£200.00
KEF Q15.2	£199.99
Mission 771e	£199.90
Monitor Audio Bronze 2	£179.95
Mordaunt-Short 902	£149.95
Tannoy mX2	£149.90

GLOSSARY

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 power amp and each driver.

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.

DRIVE UNIT/DRIVER: A transducer which converts electrical energy into acoustic energy, e.g. main driver, tweeter.

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

IMPEDANCE: The complex electrical load that a loudspeaker presents to the amplifier which is driving it.

MAIN DRIVER: A drive unit which reproduces both bass and midrange frequencies.

MIDRANGE: The middle three or so octaves of the audio band, where the ear is most sensitive, covering the approximate frequency span from 160Hz up to 3kHz.

NETWORK: see *Crossover*.

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

SENSITIVITY: The relative loudness generated for a specific voltage input.

TREBLE: The top end of the audio band, eg above 3kHz.

TWEETER: Treble driver.

WOOFER: Bass driver.

HINTS & TIPS

The first step with budget speakers is to put them on proper stands, at least ensuring stable, predictable support and that the drive units are the same distance off the floor as your ears (when seated).

Choice of stand can have a big influence on the sound, if you feel like experimenting, but finding the right place to put the loudspeakers with respect to the room walls, from an acoustic point of view, is more important still. Our reviews include suggestions, but every room is different, so do take time and trouble over this. And don't forget to use decent speaker cable, if you want your system to perform at its best.

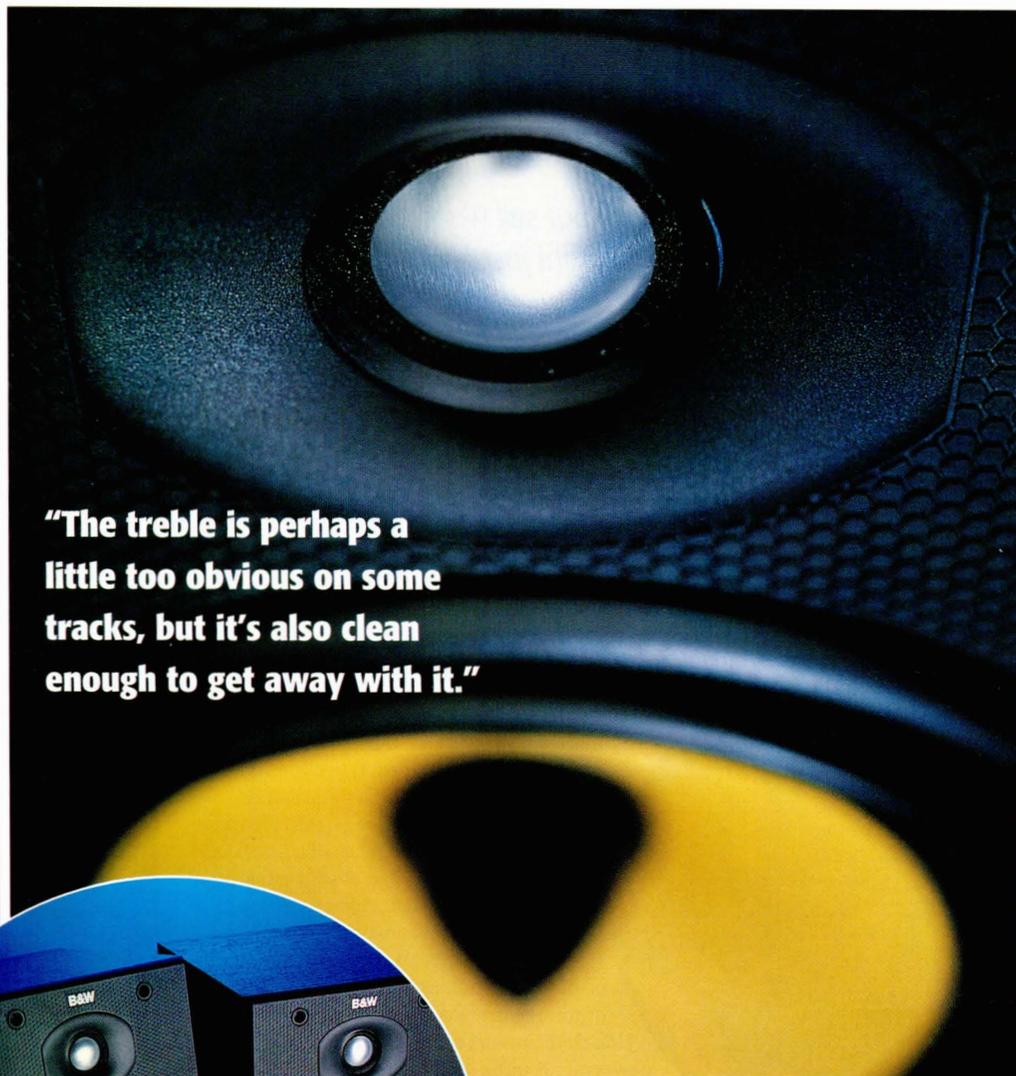
B&W DM601 S2

Despite (or maybe because of) remaining purely a loudspeaker specialist, B&W is now comfortably the largest of Britain's hi-fi companies. And in terms of market share and sales volumes at least, the DM601 S2 is the company's most important model. Conceptually it has an impressive history that can be traced back at least two decades, but its immediate ancestor is the original 601 which was reviewed way back in 1996. This new version looks superficially almost identical to its predecessor, and it carries the same £200 price tag too, even though the change to S2 status involves some significant underskin engineering improvements – as outlined in our recent review of the 602 S2 (*HFC 201*).

The key S2 improvement lies in its radical tweeter, which is based on work done initially for the upmarket Nautilus 800-series models. Said tweeter now uses ultra-compact neodymium magnets, which minimise early reflections and resonances and allow the sound radiation from the back of the 25mm metal dome to be absorbed down a 'transmission line' tube several inches long. The 'focusing ring' used in front of the diaphragm of S1 models is no longer needed with the S2 tweeter, which should further smooth the high frequency delivery.

With an internal volume of around 14 litres, it's about twice the size of the smallest in this group, with all that promises in terms of extra bass and loudness capabilities. The main driver has a 120mm diameter Kevlar cone, as big as any of its immediate rivals, and unusually at this price said driver uses a tough cast alloy frame. A hefty metal ring forms part of the fixing arrangements, though the fixing involves rather flimsy, coarse-pitch woodscrews.

The 601 was already looking a tad dated back in 1996, so the kindest adjective one can use here in the year 2000 is probably 'timeless'. B&W can supply similar speaker technology in prettier packages at higher prices: the 601 S2 is all about providing maximum sonic performance at minimum cost. The enclosure and build are solid enough, using a foam-lined box built from 13mm chipboard, while the front panel is a combination of structural plastics backed by 12mm MDF.



"The treble is perhaps a little too obvious on some tracks, but it's also clean enough to get away with it."



The plastic moulding incorporates a small flared port, while twin terminal pairs provide bi-wire/-amp options for those that wish to use them.

The in-room measured far-field balance is impressively smooth, even through the midband, with a broad shallow trough through the presence region (2-4kHz). The bass alignment is approximately suited to either free-space or close-to-wall siting, indicating that best results are likely to be found somewhere in between. Sensitivity registers a comfortable and satisfactory 89dB, given that the impedance stays

above four Ohms throughout, and that the bass extension measures a very respectable -3dB at 30Hz in-room.

SOUND QUALITY

The 601 S2 is a classy and clever all round compromise, combining a nicely voiced, if slightly 'shut in' midband, with a degree of authority and bass drive that's unusual in this price zone. The treble end is perhaps a little too obvious on some tracks, and certainly seems relatively stronger than the Series 1 601, but it's also clean enough to get away with it (on most material anyway).

At the same time, the sound textures do seem a little 'thickened', and there's a degree of 'boxiness' evident in the upper bass. These are two factors which do take the edge off my enthusiasm for a speaker which perhaps plays it a little too safe in trying to avoid causing offence, and ends up a little lacking in vim and vigour.

CONCLUSION

B&W's 601 S2 is a highly competent all-round performer, with an impressive roster of serious engineering content for the price. It's a speaker that demands respect and Recommendation, yet which somehow lacks the vigour and spark needed to match the 602 S2's Best Buy rating. Interestingly, that's pretty much the same as the conclusions we came to four years ago, with the original 601 and 602.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£199.95**

This smooth and sophisticated stand-mount combines good drive with fine neutrality and an overall balance well suited to partnering budget electronics.

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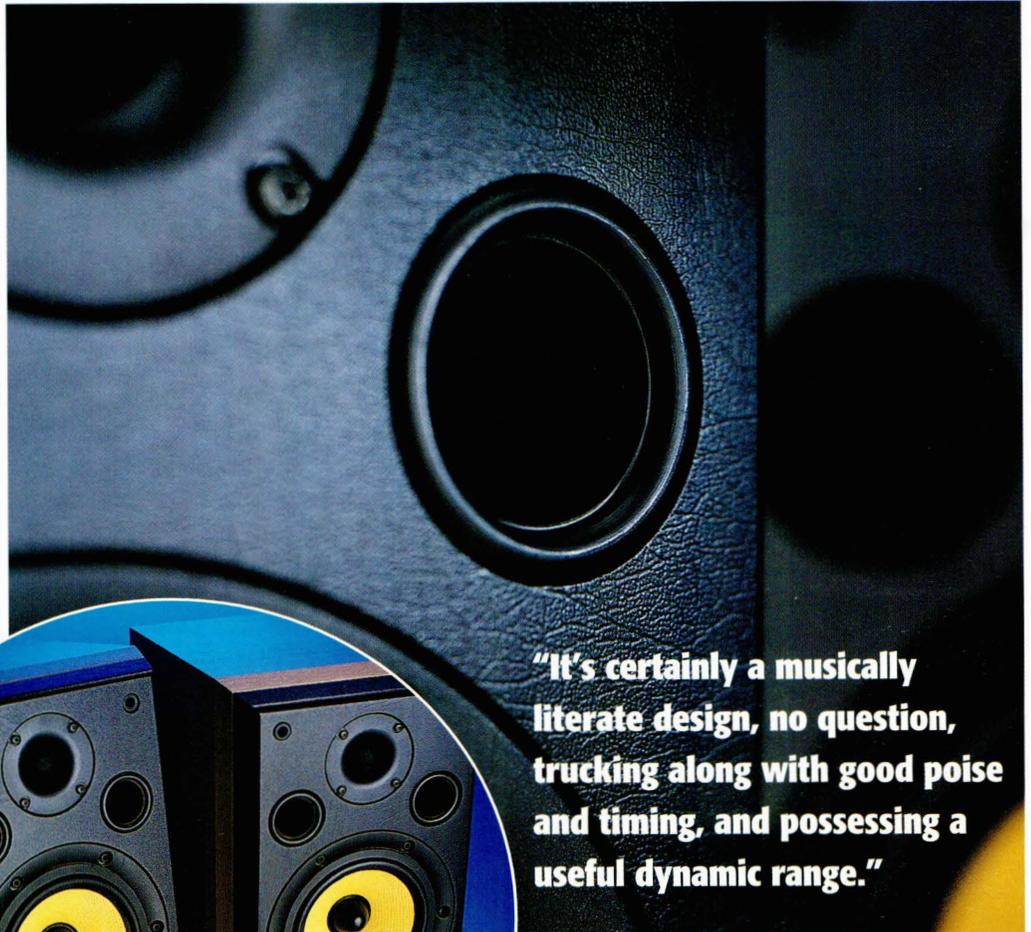
HEYBROOK HB1

Hi-Fi Choice last reviewed a Heybrook HB1 way back in 1991, and even in those far off days this classic design had already achieved MkIII status. That's not to say that this new £180 HB1 should be accorded a MkIV suffix, however, as it's a completely different design in conception, execution and intended customer, selling at a far lower inflation-adjusted price than its illustrious predecessors.

If the HB1 has changed quite dramatically, so has the company itself over the past decade. Heybrook is actually now part of the much larger AGI group, operating alongside larger, more mass-market oriented brands such as JPW. That means it can enjoy the cost savings that accrue from such a relationship, while also keeping a measure of its own identity through applying engineering solutions. Whereas JPW's budget loudspeakers have main drivers with doped paper cones, for example, this Heybrook sports the familiar yellow and patterning of a woven Kevlar matrix.

One has become so accustomed to yellow Kevlar meaning B&W that it comes as quite a surprise to find another company using the material. But I guess that's what competition and free markets are all about. This 11.5 litre HB1 costs ten per cent less than the B&W 601 S2, yet it's actually a slightly larger loudspeaker in external dimensions, so perceived value has got to be good. Somewhat surprisingly, however, it uses a smallish 5.25-inch (frame) main driver with just a 100mm diameter cone – and hence has a significantly smaller cone area than other similar size speakers in this test group.

The vinyl woodprint (black ash or beech) is less convincing than some, though the black textured front panel and flush-mounted drivers look neat. The only real attempt at styling is the heavy chamfering of the lower baffle corners, which looks right with the grille in place, but a bit odd without it. The box is solidly constructed, with a double-thickness front baffle and internal figure-8 brace, and the main driver's plastic frame is securely held by six wood-screws.



"It's certainly a musically literate design, no question, trucking along with good poise and timing, and possessing a useful dynamic range."



In complete contrast to the earlier HB1 (whose sealed-box loading ensured good ultimate bass extension), this HB1's reflex ports are tuned to a highish 60Hz, which promises good control over driver excursion at its natural (80Hz in-box) resonance, but little in the way of deep bass weight or extension. And because the midbass output is consequently very healthy, this speaker is probably better suited to free-space than close-to-wall siting (though it's a close call, because wall-mounting over-boosts the mid-bass, while in free space the upper bass is emphasised). Users are encouraged to experiment.

Sensitivity registers around 88dB midband, but the in-room balance is not particularly smooth, while the impedance stays above 3.3 Ohms throughout (and is therefore a quite a demanding amplifier load). As

noted, achieving optimum bass alignment is not straightforward, and there's unevenness too through the somewhat recessed presence region, 1.5-4kHz.

SOUND QUALITY

One inevitably approaches a group of loudspeakers with some expectations and prejudices. Unsurprisingly, one of these is that the larger loudspeakers are likely to produce the most bass weight. The HB1 might be one of the largest in this test group, but it doesn't go deep into the bass, and this seemed somehow more disappointing than maybe it should have been.

It's certainly a musically literate design, no question, trucking along with good poise and timing, and possessing a useful overall dynamic range alongside a decent measure of dynamic expression. But it's also fighting the balance anomalies on a fair range of material. Male spoken word sounded both shut in and slightly chesty, for example.

That said, those who like to play their music loud should check out the HB1, as its rather laid back balance and essentially good

dynamics seemed well suited to high level listening. On the right material it can be a whole lot of fun.

CONCLUSION

This new variation on the HB1 theme has little in common with its predecessors. Rather it's a straightforward budget two-way with an impressive roster of engineering content for its asking price. However, a loudspeaker is more than just the sum of its parts, and while the HB1 remains an attractive enough listening experience on much material, the unevenness of its performance remained a handicap under our review conditions.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£179.95

Good material value but an uneven if musically fun performer, the HB1 seemed happiest with the volume control turned well up.

■ TWO YEAR GUARANTEE

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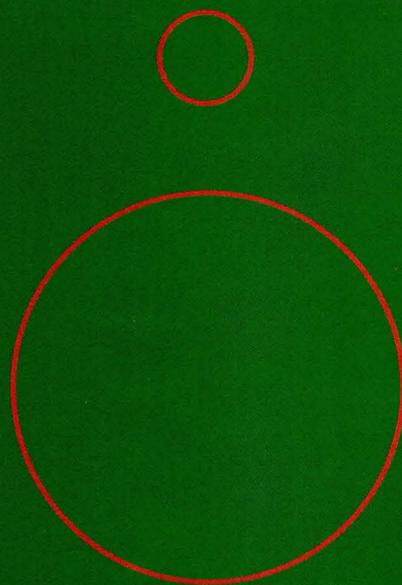
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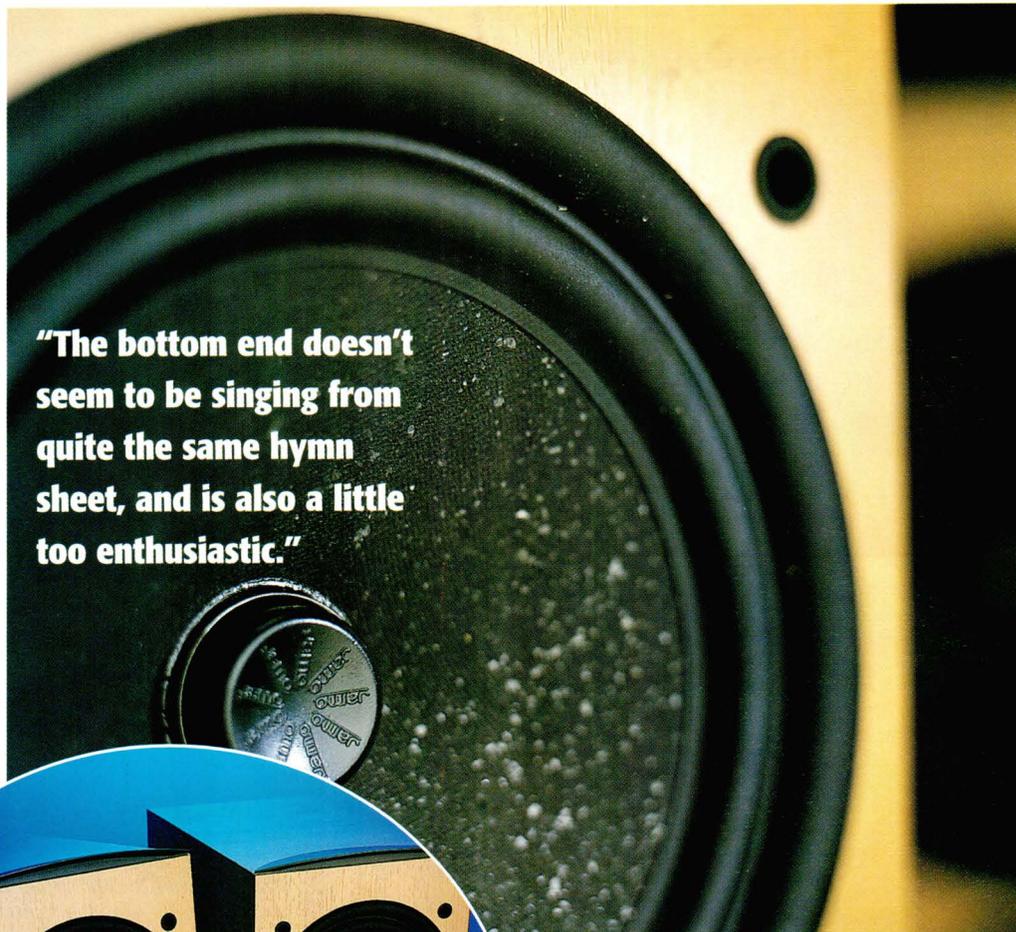
The only non-British brand to be represented in this group test is that highly successful and competitive Danish operation Jamo, best known perhaps for the stylish design work it applies across an exceptionally broad range of products. The new E8-series consists of six models in all, a stand-mount and two floorstanding stereo pairs, backed up by a surround sound pair, a subwoofer and a dialogue speaker. The subject of this review is the baby of the range, the £200 E800, which Jamo suggests is best suited to rooms up to 25 square metres (roughly the size of the room used for the tests).

It's a good looking speaker, deeper than it is wide to create a fashionably slim front view, and much more interesting to look at than the Cornet-series the company used to make for the budget hi-fi customer. Curiously, the company quotes the external rather than the internal volume of the speaker, but I reckon the latter is around 11 litres, which puts it pretty much on a par with the larger models assembled for this group test.

The same is broadly true of the E800's main driver, which uses a mineral-loaded and fibre-reinforced paper cone some 110mm in diameter, mounted in a moulded plastic frame. One clever touch is a surround which extends an extra half-roll beyond the edge of the frame to cover up the fixing screws, while the Jamo logo is embossed onto the driver's central polepiece extension no fewer than eight times (in very small print).

Without its grille, however, the E800 looks very odd indeed, especially the curved bit of plastic stuck onto the top edge. Replacing the shield-shaped covers linked that bit of plastic trim with the chunky metallic badge near the base, while also revealing the underlying logic behind a pretty and clever solution to making a small squarish box look interesting. That said, the treatment around the front baffle edge is rather less successful to these eyes.

Vinyl woodprint is the order of the day here, our beech examples backed up by cherry, black oak and white oak options. The rear of the



"The bottom end doesn't seem to be singing from quite the same hymn sheet, and is also a little too enthusiastic."



box is adorned with a generous flared port, and the regulation twin terminals permitting the bi-wire/-amp option. The tweeter used here has a 25mm fabric dome and is flush-mounted into the baffle, the two drivers operating 'inverted', with the main driver above the tweeter.

The measured in-room, far-field traces look a tad problematic, inasmuch as the bass region is rather dominant. Even when the speaker is sited well clear of nearby walls, output is at least 3dB stronger through the broad bass region (40-250Hz) than it is throughout the rest of the range. Elsewhere, the mid-through-treble portion of the spectrum looks

very smooth, well judged and essentially flat and neutral, albeit at a relative level that indicates a modest sensitivity rating of around 87dB, despite an amplifier load which dips down to three Ohms in the upper bass.

SOUND QUALITY

The E800 has a lovely open mid-band which is particularly welcome with speech, for example, and avoids the slightly 'shut in' character that other designs tend to adopt. It works well with lightweight acoustic material too, again projecting voices well, albeit with a touch of pinched and nasal coloration.

Things are much less satisfactory when material with plenty of bass content is played. To start with there's rather too much bass, even with the speakers well away from walls, it's always going to be noticeable. The heart of the problem, however, is that it's not very good bass, lacking crispness and authority and tending to thump and muddle the temporal plot. Reminding me of

the results sometimes encountered with satellite/subwoofer combinations, this balance could well suit movies better than music.

CONCLUSION

The E800 is ultimately a bit of a mixed bag. It has the virtues of attractive and distinctive cosmetics, with beautifully open midband neutrality and voicing. But the bottom end doesn't seem to be singing from quite the same hymn sheet, and is also a little too enthusiastic to make its contribution heard, perhaps mindful of the increasing importance of cinematic rather than purely musical sources these days.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£200.00**

This pretty looking speaker has a nicely voiced, open midband, but the bottom end is a bit strong and sounds rather vague and amorphous with it.

SEVEN YEAR GUARANTEE

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KEF Q15.2

We reviewed the original version of this loud-speaker some eighteen months ago, in *HFC* 186, and this Series 2 update looks very similar indeed, from a superficial examination at least. It certainly shares the same £200 price-tag, and the same slightly four-square, dumpy shape makes up this 11.5 litre port-loaded, vinyl-clad enclosure.

One of the more obvious changes is that said vinyl is now an altogether more convincing imitation of real tree wood than before, and indeed a rather attractive example of the type. Natural cherry and dark apple now join the timeless black ash in the roster of pseudo-wood finishes.

According to KEF there are also one or two less obvious changes in this Mk2 version. The tweeter has a larger and more powerful magnet, while the main driver's polypropylene cone has been stiffened and given an attractive 'silver' finish. Uprated inductors are also fitted in the crossover network.

Elsewhere it's pretty much the same mixture as before, but with one feature unique to KEF – a Uni-Q drive unit. One's first reaction might be 'Wot no tweeter?', as there's no obvious sign of one in the conventional sense. In fact, compact but powerful neodymium magnets allow the tweeter to be mounted 'co-axially', directly onto the polepiece in the middle of the main driver cone. Such an axi-symmetric arrangement should make it that much easier to accomplish successful driver integration through the crossover region, and also means the speaker will sound the same on its side as on its nominal base.

The Q15.2 has a relatively large 125mm diameter main cone – the largest, by a small margin, in this group test – while the compact co-axial tweeter has a small 19mm diaphragm. Both these drivers are mounted on a pressed steel frame with a magnetically shielded motor, which is fixed into a recess in the moulded plastic front panel. Extra plastic trim covers up the frame and smoothes the lines. A large flared port, tuned to 50Hz, provides some extra bass reinforcement, and twin bi-wire terminals are fitted.

"A well balanced and lively communicator that doesn't get in the way of the music, and handles any kind of material you throw at it."



Despite the engineering changes, this Mk2 version delivers a remarkably similar technical performance to the original. The impedance changes seem to be restricted to the low frequency end, where the main cone changes have re-tuned the port interaction slightly, and where it also appears that the DC resistance of the coil has been reduced. In the original review, I criticised the Q15 for its sub-three Ohm load in the treble, and now KEF has brought the impedance at 200Hz down nearly as low.

The in-room far-field averaged responses look very similar to before, though there's certainly a slight increase in relative treble level,

especially above 10kHz, and the traces here seem smoother too. The bass alignment is too lean for free space siting, but the Q15.2 delivers a beautifully judged bottom end with the 50-100Hz boost that close-to-wall siting provides.

SOUND QUALITY

I've long had a soft spot for the Q15, as one of those 'Goldilocks' speakers that somehow manages to come out of the twists and turns of speaker engineering compromises sounding 'just right'. Comparing it to KEF's less expensive Cresta 2 only reinforced my prejudices.

The Q15 remains the cherry in KEF's budget range, no question, and this Mk2 review merely confirms that this speaker is a well balanced and lively communicator that doesn't get in the way of the music, and handles any kind of material you throw at it with composure and aplomb. In the final analysis, the bottom end has a slight tendency to lose the plot on some of the most 'difficult' material, but in

every other respect this remains a thoroughly impressive all-rounder.

CONCLUSION

The Q15 has changed in its transition from Mk1 to Mk2 status, but the changes are very much of a minor nature, and haven't had a dramatic effect upon the character of what always was a thoroughly engaging and entertaining loud-speaker. The improvements in woodprint finish and treble output are both welcome, while the simple fact that it works so well when mounted close up to a wall will continue to win the Q15.2 many friends and customers.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£199.99**

■ **A vigorous and entertaining compact speaker that remains particularly well aligned for close-to-wall siting. Cute shape too.**

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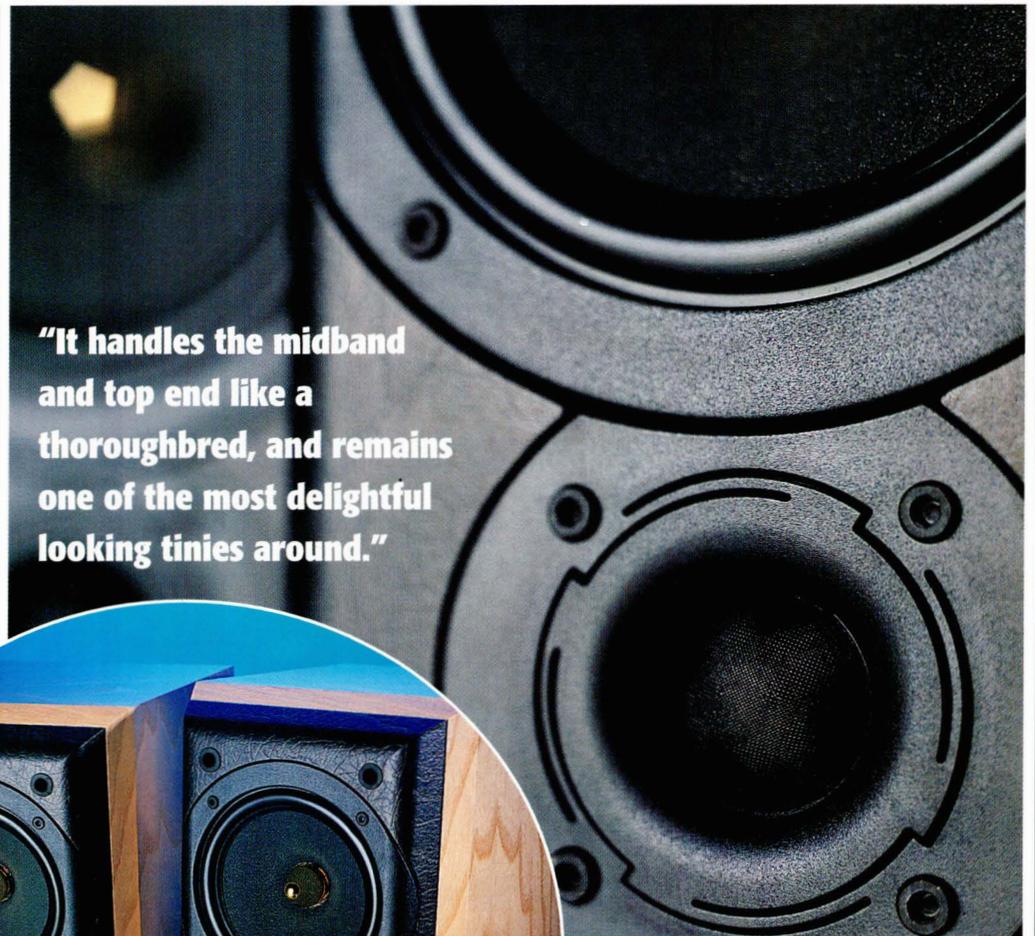
Mission's original 771 was reviewed (and Recommended) some eighteen months ago (*HFC* 186), and this e-suffixed variation is remarkably similar in nearly every way. Except that, when the carton arrived from photography, a horrible death rattle was emanating from inside. Presumably someone had dropped it *en route*, and the shock had sheared one of the magnets from its plastic frame. A replacement pair, clothed in rather more substantial packaging, arrived safely.

Not surprisingly, this 771e is the baby of the 77-series range, all of which have certain distinctive elements in common: real wood veneer work, an ultra-lightweight Aerogel cone, and a very classy line in industrial design. It is in fact the only speaker in this test group with a real wood finish (albeit a rather plain example of the breed), a very unusual feature to find in the sub-£200 price sector.

Perhaps by way of compensation, however, it's also the smallest and lightest model in our test group. This is a true 'miniature', with an internal volume of just 6.5 litres, and a main driver cone only 95mm in diameter; and these two factors have various implications. The deepest bass is naturally not on the agenda, while loudness and headroom will also tend to be more limited than with larger designs. But a pair of miniatures can do a surprisingly good job, especially in the smaller room, comfortably going down to around 50Hz and sometimes also showing greater agility and less coloration through the midband.

An outstanding example of industrial design, the enclosure uses an ultra-thick (38mm) front baffle, decorated in a combination of real wood and black textured finish, with heavy edge chamfering to narrow the perceived frontal area and aid lateral dispersion. The inside of the baffle is cut away to avoid impeding the rearward output of the driver.

The very neat grille is entirely optional, as the speaker looks good with or without its clothes on. A shiny little 'gold'-plated pole-piece



"It handles the midband and top end like a thoroughbred, and remains one of the most delightful looking tinies around."



protrusion will help regulate output at the top of the main driver range. A clever touch is the way the 25mm soft fabric dome tweeter has a form of leaf-spring decoupling built into its faceplate, ensuring that whole motor/diaphragm assembly is substantially unaffected by any vibration generated within the front baffle by the action of the main driver. The back panel has a small port to reflex-load the enclosure, and the twin bi-wire terminal pairs, which together represent the most substantive difference between the 'e' and its predecessor.

The far-field in-room response looks beautifully judged, and unusually smooth too. A little wall reinforcement will help fill out the midbass (there is no low bass), but

this should not be overdone as it tends to make the midband a little less even.

Sensitivity is a little below average at 87dB, but the 771e is a rather easier load for the partnering amplifier to drive than the other models assembled here, staying at six Ohms or higher throughout.

SOUND QUALITY

Perhaps inevitably, given the assembled company in this test group, the 771e sounded a bit small, thin, and undernourished through the bass and lower midband. There's some lack of warmth and tonal 'richness' here, the impact of which depended rather on the material being played. It was clearly rather out of its depth trying to preserve the true tonal character and colour of the Chemical Brothers or Massive Attack, but was much more convincing at reproducing Tom Waits' snarl as he *Walked Spanish* down the hall.

Dynamic expression and range are not strong points, but the mid and top sound clean, clear and

coherent, with plenty of detail and expression. There's a touch of forwardness that helps project the midband, true, but such mild artifice remains within acceptable bounds.

CONCLUSION

Not exactly the biggest bang for your bucks, this little Mission does have its sonic limitations, especially at the bass end of things. But it handles the midband and top end like a thoroughbred, and remains one of the most delightful looking tinies around. Provided your room is fairly small, and you value the real wood finish, the 771e is probably the most cost effective option out there.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £199.90

Not the biggest bang for your bucks, but certainly one of the best looking budget speakers around, with fine midband delicacy. Best suited to smaller rooms

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REAL TRADITION — the **PH3 phono preamplifier** is eagerly sought out by those enjoying the renaissance of interest in vinyl. A total of 109 part changes now see the PH3 in Special Edition guise as the **PH3SE**. An upgrade will be available for existing owners.

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Reference 2 all-valve line stage preamplifier
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smooth detailed sound, clean focus and plenty of bass impact. It has the flexibility to integrate with high quality audio and video components. **REAL PERFORMANCE** — the **LS16** preamplifier is for those looking to make a transition into real high-end yet wish to retain the convenience of full remote control of all front panel functions. It offers both singled ended and balanced inputs with microprocessor controlled relays for gain control and switching. Enthusiasts looking for the traditional qualities of an all-valve line preamplifier will find them carried over into the **LS8** which replaces the popular LS7 and LS9. **REAL POWER** — The 100 watt per channel **VT100 power amplifier** is a hard-driving amplifier with true bass slam

matched by a liquid mid and top. Its speed and control have to be heard.

Robert J Reina (Stereophile March 1999) concluded his VT100 review: "This extraordinary amplifier is beginning to make me wonder if current tube technology may once again be edging ahead of solid-state in the race for ultimate sonic realism".

The VT100 MkII build features doubled power supply energy storage, cooling fan and valve damping rings. MkII enhancements are available as a factory upgrade for existing owners.

The mid-power VT100 comes between the classic **VT50**, at around £3300, and the mighty **VT200**. Jonathan Valin writing in Fi magazine (October 1998) went so far as to rate the VT200 as: "The best high powered stereo amplifier I've heard — a genuine hi-fi masterwork".

REAL PARTNERSHIP — The **LS16/VT200** pre/power partnership puts excite-

ment back into your music with its detail resolution and dynamic slam.

REAL INTEGRATION — enthusiasts waited a long time for the **CA50** all-valve, remote control integrated amplifier. Conservatively rated at 50 watt per channel the CA50 is designed to be stunningly musical, handsome in appearance — its styling cues coming from the awesome Reference series — and completely convenient. Audition this important

Audio Research first and find out why Ken Kessler (Hi-Fi News February 1997) said, "So much for the superiority of separates...".

REAL QUALITY — An entirely new full 20-bit **CD player**, the **CD2**, is styled to match the CA50. As a complete player **Audio Research** is convinced the CD2 can compete with any single or two-box player in the market with its astounding resolution of detail and dynamics.

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MONITOR AUDIO Bronze 2

A long established brand that goes back to the 70s, Monitor Audio has long been known for its upmarket speakers clothed in top quality real wood veneers, and in recent years as one of the pioneers and chief protagonists of using metal diaphragms for both main drivers and tweeters. However, the company changed hands a couple of years back, and its new management seems to be taking a rather more aggressive stance towards the 'popular price' sector of the market. That's particularly true of the new Bronze series, which to this author's recollection represents MA's first ever real tilt at the true budget sector, this £179 Bronze 2 more than matching the assembled competition on size, weight and price.

Following what has become something of a pattern amongst budget speaker ranges, three Bronzes are available as 'stereo pairs' – two stand-mounted and one floorstanding – plus a centre-front 'dialogue' speaker and a powered subwoofer. These five models can then be put together in various combinations to handle both two- and 5.1-channel sources, though our tests are exclusively devoted to their stereo performance.

The front panel has classic Monitor Audio styling cues, and the familiar gold coloured tweeter dome, though in other respects the ingredients look pretty much standard budget speaker fare. One item of interest is a new cone material used for the main driver, code-named MMP for 'metal matrix polymer'. This doesn't sound like an earth-shattering innovation, as polypropylene cones have had mineral loading for many years, though replacing a mineral with a metal does give a nice shiny finish, and is claimed to supply superior sonics too, by reducing the self-damping.

At this price and size, vinyl finish is probably inevitable, but the wood-print used here – black or cherry – is prettier than most. Curiously, the shape of the main driver frame suggests it's meant for surface mounting, though MA has a double-thickness front panel here, and therefore both drivers are inset. The main driver has a plastic frame and



"The bass has as much weight as you're entitled to expect from such a package, and drives things along with good authority."



shielded magnets, to drive a 120mm MMP cone, while the tweeter has a 25mm alloy/ceramic dome. Twin terminals on the rear encourage bi-wiring connection (which is not necessarily appropriate with budget speakers, I would suggest), while twin ports on the front add symmetry to the styling.

Although the Bronze 2 works pretty well in free space, the in-room far-field traces show a classic 'wall-mount' alignment, with useful reinforcement through the midbass region. This speaker supplies a useful combination of 89dB sensitivity and quite generous bass extension (-4dB at 30Hz in-room), thanks in part to a port system tuned to around 42Hz, though the amplifier load hits a quite demanding three Ohms at that frequency and again at 200Hz further up in the bass region.

The overall balance could have been smoother and flatter, but looks pretty well ordered overall, with a slight upper mid forwardness (800Hz-1.2kHz) followed by a broad, shallow trough centred on 2kHz.

SOUND QUALITY

The Bronze 2s arrived a day or two ahead of the pack, so had the dubious privilege of following a pair of large £5,000 three way monitors into the listening room. It took a while to adjust to the resultant substantial 'shrinkage' of the sound, but it quickly dawned on me that these small 'budget bookshelf' speakers were actually doing a very decent job. Even though the sound might be a little constrained, most of the musical messages seemed to be coming through. I chuckled at the amount of sheer pleasure I was getting from these little speakers (driven from a 20 grand hi-fi system!).

When it came to mixing and matching the Bronze 2s with the others assembled for this group test, I found my initial enthusiasm had not been misplaced. This little

Monitor Audio really is a bit special. The balance is pretty good, if just a tad shut in with some nasal coloration, but it also delivers a sound that has some authority and dynamic vigour. The bass has as much weight as you're entitled to expect from such a package, and drives things along with good authority.

CONCLUSION

Given our rather negative reaction to the Silver 3 some 18 months ago, it's particularly nice to find that this new Bronze 2 is a real corker, looking good and combining solid material value for money with a fine all round sonic performance.

VERDICT

SOUND	★★★★★
BUILD	★★★★★
VALUE	★★★★☆
PRICE	£179.95

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

■ THREE YEAR GUARANTEE

✉ Monitor Audio Ltd, 34 Clifton Rd, Cambridge CB1 7EB.

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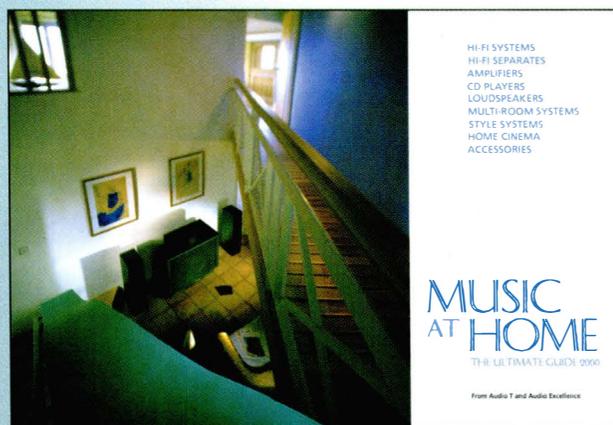
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Audio Excellence and Audio T have joined forces to bring you the benefits and security of buying from a larger dealer, yet each of our stores is run as an individual specialist shop. Our staff are enthusiastic and friendly, with the knowledge and experience to satisfy your expectations. Plus, we haven't forgotten that buying hi-fi should be as much fun as listening to it!

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MORDAUNT-SHORT 902

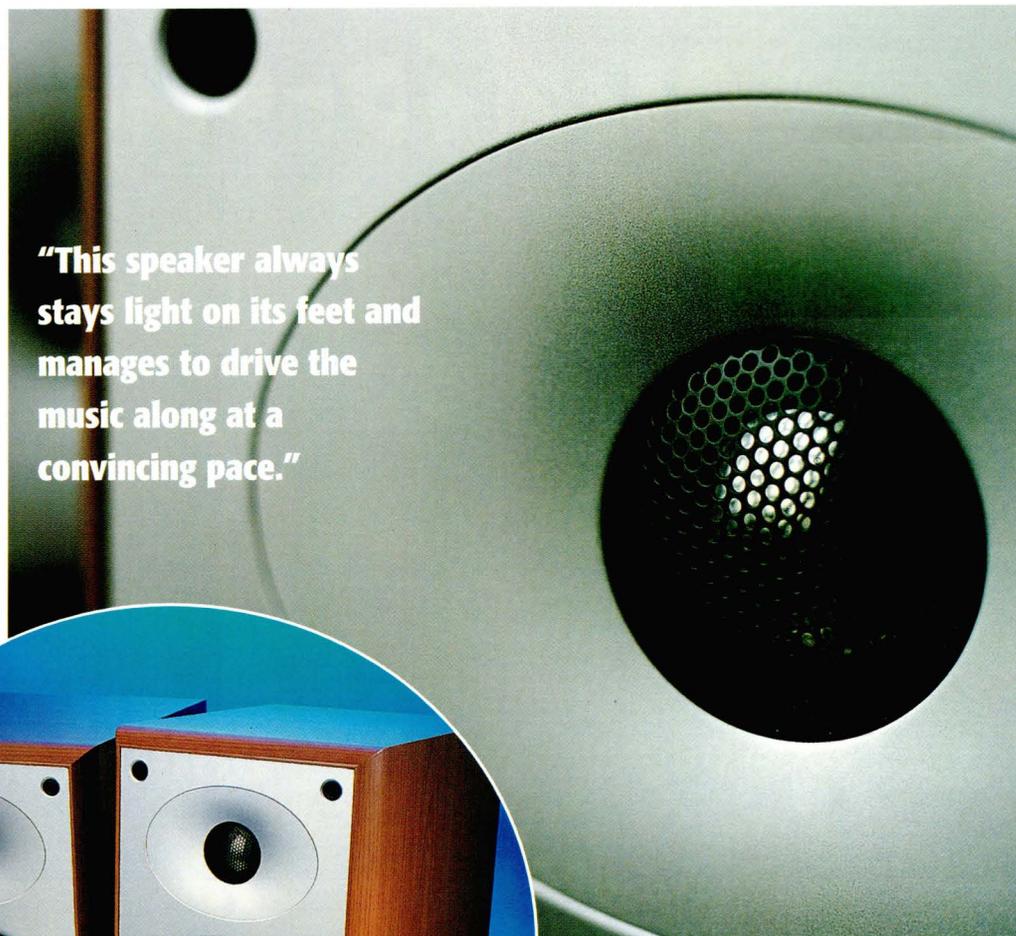
A couple of years ago, it looked like that the Mordaunt-Short name might disappear forever, when then parent company TGI decided to concentrate its resources on the Tannoy and GLL parts of the operation. The Mordaunt-Short brand was put up for sale, and in stepped The Audio Partnership, which already has electronics brands such as Cambridge Audio under its umbrella.

Although the changeover represented something of a hiatus, some continuity was retained through the services of Senior Designer Graeme Foy. And even though it has taken quite some time to get this all-new range onto the market, the wait seems to have been worthwhile. The 900-series and this 902 in particular are amongst the classiest looking speakers this reviewer has ever seen, notwithstanding the very modest £150 price tag attached to this compact stand-mount.

The combination of an aluminium 'skin' on the front panel, with aluminium alloy for the diaphragms of both main driver and tweeter, looks seriously chic, especially the embossed name, while the oval 'dish' indentation around the tweeter reinforces the traditional Mordaunt-Short brand identity, as well as the dish-shaped main diaphragm.

The super-clean look is only slightly spoiled by the inset rubber grommets used to hold the grille in place, and the instruction manual suggests this is used, rather paradoxically, as it covers up all the shiny cosmetics. I daresay most users will choose to ignore both this advice and the grilles entirely, though this metal diaphragms are more easily cosmetically damaged than other popular cone materials. A separate mesh covers the delicate tweeter dome: this is magnetically held and its removal is recommended for best results – but take care, it's tricky.

In order to create that super-clean front panel, the drivers are actually mounted from behind. The rear-ported box is very solidly built, with a double thickness back and an internal stiffening brace, while the crossover network is a minimalist



"This speaker always stays light on its feet and manages to drive the music along at a convincing pace."



well ordered. For the most part, that is, save for an isolated little peak up at 4.5kHz (probably the main driver diaphragm's first break-up mode), and the suggestion of another up at around 10kHz.

SOUND QUALITY

Even with the grilles in place to cover up the shiny appearance, the 902 has a distinctly shiny sonic character. This proved quite effective at clarifying diction when playing the speakers quietly, but proved rather less engaging when the volume was turned up, especially when reproducing the applause of a live performance. The introduction to Christy Moore's *Live at the Point* – admittedly a recording with forward tendencies, but of exceptional quality nonetheless – was quite unpleasant when played loud.

That said, this speaker has an engaging total coherence with fine communication skills, which help to drag the listener into the music and which seemed to make unfamiliar types of material interesting and involving. Inevitably, the bottom end

lacks both weight and warmth, and tonal colours seemed a little bleached in the lower octaves, but this speaker always stays light on its feet and manages to drive the music along at a convincing pace.

CONCLUSION

This gorgeous little speaker sets new standards for style at any price, never mind a beer budget £150 a pair. One wonders, however, to what extent the cosmetics have dictated the performance, as the sound quality is not quite as impressive, being a little thin, forward and shiny. But it doesn't disgrace itself by any means, and this 902 will probably sell by the shed-load just because it looks so good.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£149.95**

Doesn't sound quite as good as it looks, but it's so gorgeous many will accept the compromise.

ONE YEAR GUARANTEE

Audio Partnership Plc, Richer House, Hankey Place, London, SE1 4BB.
(020) 7940 2200

affair (in the M-S tradition), fed by two terminal pairs. The plastic frame main driver incorporates magnetic shielding and uses a small 100mm diameter diaphragm, while the tweeter has a 25mm metal dome.

The combination of a small enclosure and main driver, a port tuned to a highish 65Hz, and an amplifier load that's rather less demanding than most of the others assembled for this group test, has inevitable consequences in a relatively modest 87dB sensitivity rating, and an in-room bass extension that goes down to 50Hz, but no lower.

Perhaps surprisingly, the bass alignment favours keeping the 902 well clear of room boundaries, whereupon it delivers an overall in-room balance which is for the most part impressively smooth, flat and

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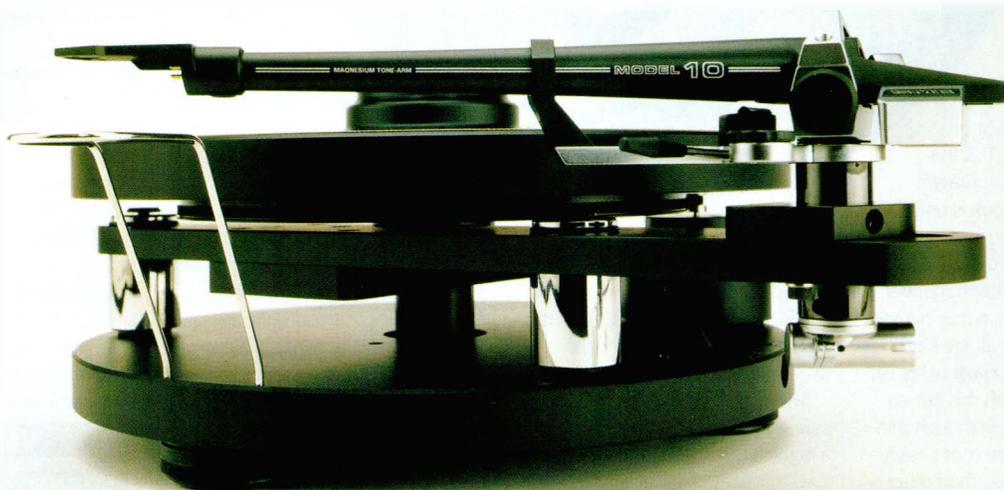
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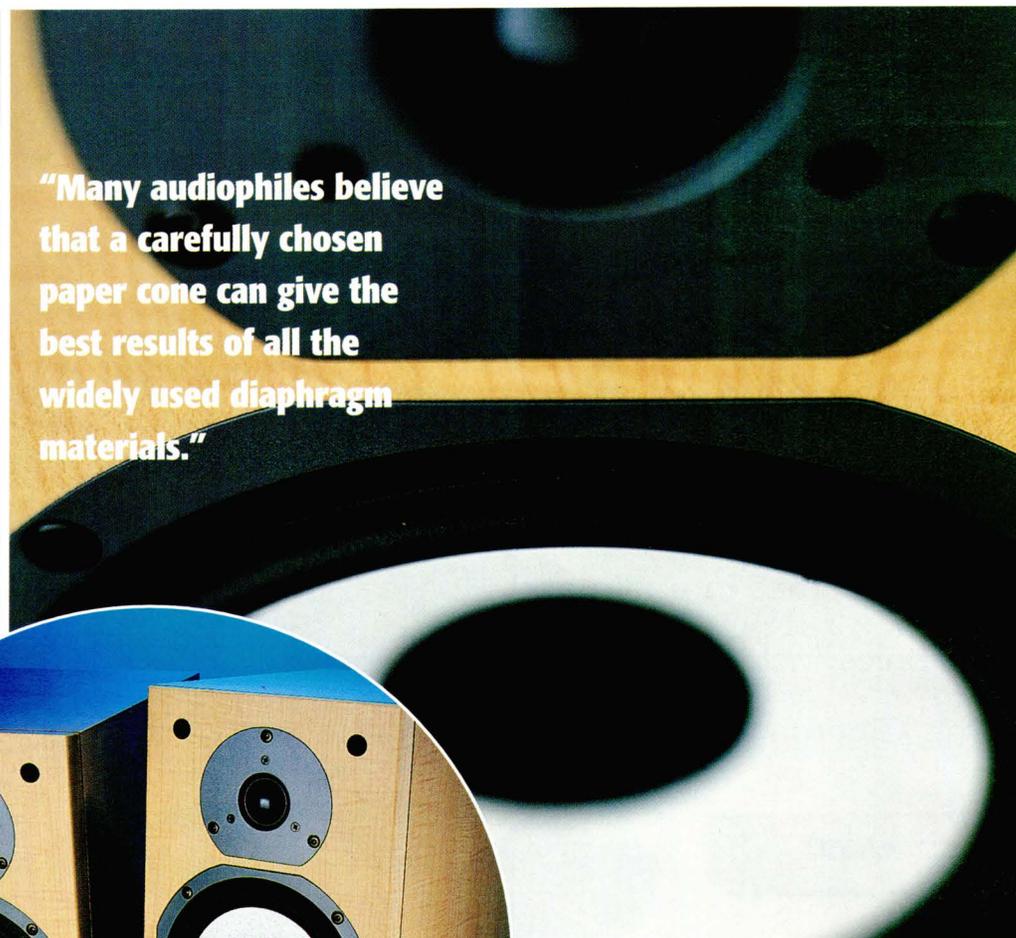
TANNOY mX2

The launch of its Mercury M-series put Tannoy back at the top of the best sellers list, essentially by offering a bigger speaker for the money than most of its rivals, due in no small part to going to Eastern Europe for much of the manufacture. Three years on, and it's update time. The first to come our way was the compact floorstanding mX3, which earned a Best Buy rating in HFC 201. Now it's the turn of the £150 stand-mount mX2 to come under scrutiny. The price may have gone up by a tenner over the original M2, and the overall configuration remains much the same, but the detail changes have been far-reaching – as far, that is, as transferring production to the Far East!

This mX2 actually uses the same drivers as the mX3, packaging them in a much smaller stand-mount box that costs some £80 less. Since the mX2 will need a pair of stands to sound its best, and since that pair of stands is likely to soak up any difference in price, the advantage would seem to lie with the floorstander. But it's not really that straightforward. The drive units are the bits that make the music, while the enclosure is mostly a necessary evil that's largely responsible for adding unwanted coloration. Putting the same drivers into a smaller box with maybe just one third of the total surface area is therefore quite likely to improve the speaker system's performance, while the separate stand is also likely to have some advantage over the floorstander.

Like virtually every speaker of its type, the mX2 is a port-loaded design, siting the port itself on the rear panel here. Unlike most, however, it comes with a special foam bung which resistively loads the port, reducing but not eliminating its output. This provides a little extra flexibility in siting the speaker, and/or tuning the bass to suit circumstances.

Available in 'light maple' or 'nearly black' vinyl woodprint, this cost-effective finish looks OK from a



"Many audiophiles believe that a carefully chosen paper cone can give the best results of all the widely used diaphragm materials."



distance, and even quite close up, but stroke it and you're immediately aware of its synthetic origins. Strikingly, the speakers come with a silver-grey grille cloth, which is a very attractive alternative to regulation black, my only worry being that, long term, this could become dirtied through filtering the air being pumped in and out by the drivers.

Whatever, the mX2 looks pretty enough without its grille, as the drivers are now flush-mounted into the front panel. The main driver has a 115mm treated paper cone, strikingly white in colour, mounted in a moulded plastic frame. The tweeter is a 25mm soft dome device, and twin terminals permit bi-wire/-amp operation.

Measurement shows an obvious

family resemblance to the previous M2, though this new model represents a significantly more demanding amplifier load for little if any change in voltage sensitivity, and a slight reduction in absolute bass extension (the port is now tuned to 50Hz rather than 40Hz). The overall balance looks very well judged for free space siting with the port open, or with bung in place if close to a wall.

SOUND QUALITY

To be honest, the mX2's sheer unobstructiveness blew me away. Given a top quality system and stands, this speaker simply gets out of the way and lets the music flow through. Many audiophiles believe that a carefully chosen paper cone can give the best results of all the widely used diaphragm materials. The mX2's midband openness and delicacy, and its ability to deliver subtle and believable textures, would seem to reinforce that point of view.

It might perhaps be a little laid back for some tastes, and dynamic is not the first adjective to come to mind, but even away from its obvi-

ous midband strength, the mX2 hangs on in remarkably well, and scarcely puts a foot wrong. Even though the bass lacks serious weight and authority, it remains nimble and informative, and the enclosure is impressively free from boxiness.

CONCLUSION

The mX2 is a thoroughly impressive all-round compromise with exceptional midband delicacy and communication skills at a remarkably modest price, and a balance that should be well suited to budget electronics. All that, and good looks too, what more can you ask for?

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£149.90**

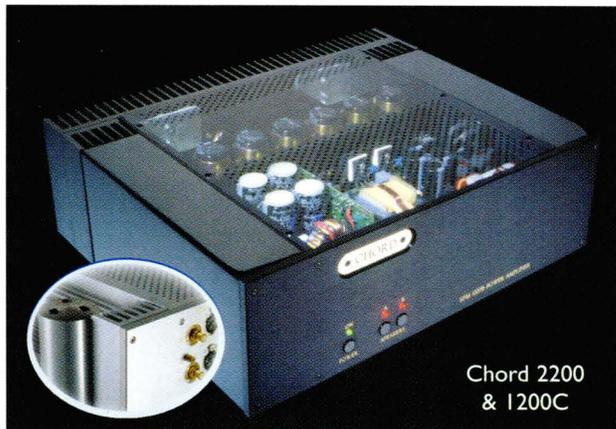
■ A great all round compromise with exceptional midband delicacy and communication skills at a remarkably modest price.

■ FIVE YEAR GUARANTEE

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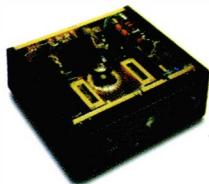
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CONCLUSIONS

LOUDSPEAKERS

One trouble with group testing budget loudspeakers is that, by and large, value for money is bound to be high. The speakers are inherently simple, often with quite similar ingredients, so it's quite hard to get the recipe seriously wrong.

The differences between the different models are quite audible, but its much harder to state unequivocally that one is right and another wrong. That's because the speaker sits right at

the end of the hi-fi chain, and is very much the slave of the rest of the system. A different system could well change the order of preference, so do try to get involved in the selection process, if possible.

This latest group test indicates that budget speakers continue to evolve and improve, while the prices remain more or less the same, which has got to be good news for customers. One much less welcome trend, however, is

the vicious circle of steadily lowering the impedance of a speaker in order to make it sound louder than the competition when comparator switching. Lowering the impedance sucks more current from an amplifier for a given volume control setting, and current is what drives loudspeakers, so they go louder as a result.

The trouble is, it's bad news for amplifier makers, who find their margins for handling difficult loads constantly being eroded. It is

conceptually wrong too. The actual music signal is represented by voltage, not current, and having loads of current sloshing around is not the best way to conserve the subtlest voltage nuances.

The other noteworthy trend is the relative success of the larger models with their bigger main drivers. Call it the revenge of the six and a half inchers, if you like, but in this group test they've certainly been showing the way to the five and a quarter inchers.

BEST BUYS & RECOMMENDED



TANNOY mX2 £150.00
A thoroughly impressive all round compromise with exceptional midband delicacy and communication skills, and a balance that should be well suited to budget electronics. All that, and good looks too!

HI-FI CHOICE BEST BUY



MISSION 771e £170.00
Not the biggest bang for your bucks, but it handles the midband and top like a thoroughbred, and remains one of the most delightful-looking tinies around.

HI-FI CHOICE RECOMMENDED



B&W DM601 S2 £200.00
A highly competent all-round performer, with an impressive roster of serious engineering for the price. The sound is well balanced for budget electronics, but could be more exciting.

HI-FI CHOICE RECOMMENDED



MONITOR AUDIO Bronze 2 £179.00
A real corker, which looks good, offers solid material value for money and has a sound that combines a surprising degree of authority with fine musical and dynamic literacy

HI-FI CHOICE BEST BUY

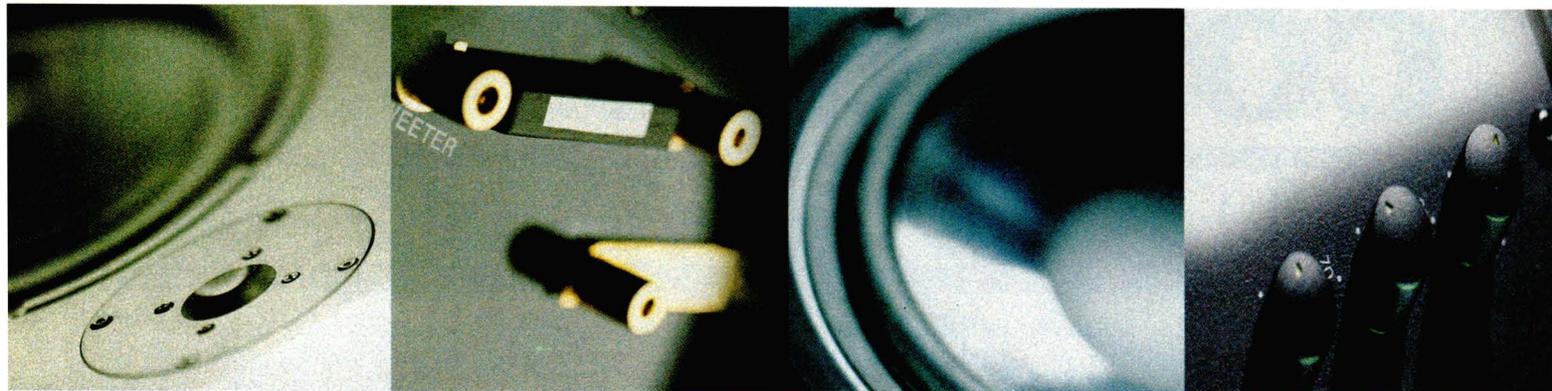


KEF Q15.2 £200.00
The improvements in finish and treble output are both welcome, while the simple fact that it works so well mounted close to a wall will continue to win many friends.

HI-FI CHOICE RECOMMENDED

SPEAKERS COMPARISON TABLE

MAKE	B&W	HEYBROOK	JAMO	KEF	MISSION	MONITOR AUDIO	MORDUANT-SHORT	TANNOY
MODEL	DM601 S2	HB1	E800	Q15.2	771E	BRONZE 2	902	MX2
PRICE	£199.95	£179.95	£200.00	£199.99	£199.90	£179.95	£149.95	£149.90
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
GUARANTEE	5yr	2yr	7yr	5yr	2yr	3yr	1yr	5yr
SIZE (WXHxD, cm)	20.5x36x23	21x38x25	17.5x33x29	20.5x31x27	17x31x22	18.5x35x27	18x31x25	18.5x33x25
SENSITIVITY @ 1M/2.83V	89dB	88dB	87dB	89dB	86dB	89dB	87dB	89dB
IMPEDANCE (MINIMUM)	4 Ohms	3 Ohms	3 Ohms	3 Ohms	6 Ohms	3 Ohms	4 Ohms	4 Ohms
ESTIMATED BASS EXTENSION	30Hz	50Hz	30Hz	30Hz	45Hz	30Hz	45Hz	45Hz
STATUS	HI-FI CHOICE BEST BUY			HI-FI CHOICE RECOMMENDED	HI-FI CHOICE RECOMMENDED	HI-FI CHOICE BEST BUY		HI-FI CHOICE BEST BUY



Five Stars For Value

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

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

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

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

Power of the Press

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

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

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

circumstances in which the review was conducted.

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

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

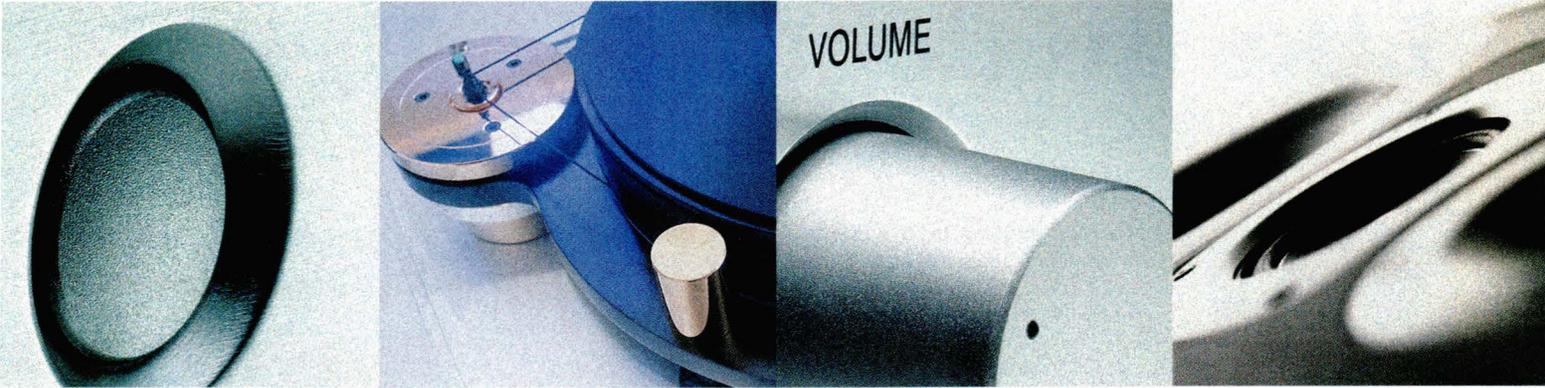
The Role of the Dealer

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

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

STAR QUALITIES

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



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

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

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

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

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

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

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

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

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

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

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

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

Paul Messenger

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

TOP 20 UK SPECIALIST HI-FI DEALERS

LONDON

N1 GRAHAMS HI-FI
190a New North Road
020 7226 5500

SW11

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

W4 MARTIN-KLEISER
109 Chiswick High Road
020 8400 5555

SOUTH

Ashford, Kent
SOUNDCRAFT HI-FI
40 High St. 01233 624441

Chelmsford
RAYLEIGH HI-FI
216 Moulsham Street
01245 265245

East Grinstead
AUDIO DESIGNS
26 High St. 01342 314569

Kingston-upon-Thames
INFIDELITY
9 High Street Hampton Wick
020 8943 3530

Lakeside Retail Park

RAYLEIGH HI-FI
Dansk International
Furniture World
01708 680551

Rayleigh, Essex
RAYLEIGH HI-FI
44a High St. 01268 779762

Ringwood, Hampshire
PHONOGRAPHY
Star Lane 01425 461230

Southend-on-Sea
RAYLEIGH HI-FI
132/4 London Road
01702 435255

Uxbridge
MARTIN-KLEISER
278 High Street
01895 465444

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

MIDLANDS

Banbury **OVERTURE**
3 Church Lane
01295 272158

Birmingham
SOUND ACADEMY
152a High Street, Bloxwich
01922 493499

Leicester **CYMBIOSIS**
6 Hotel St. 0116 262 3754

Northampton **LISTEN INN**
32 Gold St. 01604 637871

Shrewsbury
CREATIVE AUDIO
9 Dogpole 01743 241924

NORTH

Cheadle **AUDIO COUNSEL**
14 Stockport Road
0161 428 7887

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

Sheffield

MOORGATE ACOUSTICS
184 Fitzwilliam St
0114 275 6048

York **SOUND ORGANISATION**
2 Gillygate 01904 627108

SCOTLAND

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

Glasgow **STEREO STEREO**
260 St. Vincent Street
0141 248 4079

N. IRELAND

Belfast **LYRIC HI-FI**
161 Stranmillis Road
028 90 381296

Like analogue for digital

There are converters and there are dCS converters, and rarely do the twain meet.

Richard Black and Jason Kennedy try and explain why.

When I am doing a recording that I really, really care about, I rent a dCS ADC for a couple of days, just so I feel I'm doing the job properly. It was thus with not a little self-interest that I requested the loan of a dCS DAC for my review of digital interconnects in this issue. I expected to get an Elgar, but what dCS suggested instead was the newer Delius. A slightly cheaper model, this nevertheless shares with the Elgar (and with the professional 954) the essential element in all dCS converters – the Ring DAC.

Most modern DACs use low-bit converters together with oversampling and noise shaping to achieve good linearity and noise performance in the audio band, and the Ring DAC is a particularly elegant implementation. At its heart is a DAC with approximately 5-bit performance, designed so that any linearity errors average out and appear only as broadband noise. With appropriate oversampling, this gives linearity and noise performance close to the theoretical ideal for input words up to 18-bits long, and although noise does not improve any further with longer words, linearity is claimed to be effectively as good as 29-bits.

The Delius, like the Elgar, can accept inputs in any digital format, from 32kHz 16-bit to 192kHz 24-bit. It comes as standard with an array of inputs, including two phono, BNC, Toslink and two AES, with AT&T optical and IEEE-1394 (Firewire) as options. If the 954 is anything to go by, it will accommodate DSD (SACD) as soon as an interface for it is standardised. Outputs are phono and XLR (balanced), and there are also digital outputs for recording (simply looped through from the active input) and word clock synchronisation.

Internally, build quality is good with most of the electronics being surface-mounted on quite large circuit boards. The analogue electronics are based on high quality op-amps, while the digital circuitry is all of dCS's own design, including the oversampling filters (four different filter shapes are available, with more or less aliasing; there's no non-aliasing option, though, something about which I have a bit of a bee in my bonnet). Output volume is adjustable and one could use the unit without a preamp in an all-digital-source system.

Sound quality

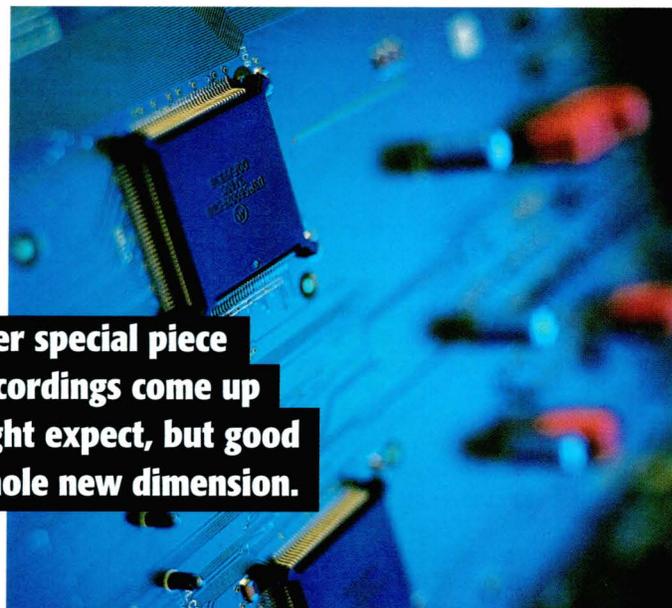
I listened to the Delius mainly with CD and DAT (48kHz) sources, though I did have a very brief spell with some 96kHz Nagra D tapes. See Jason's report for performance at higher sample rates.

This is clearly a rather special piece of kit. Even bad recordings come up cleaner than one might expect, but good ones develop a whole new dimension compared with most digital replay equipment. There's that certain 'rightness' to everything: images drop securely into place, the frequency response suddenly flattens out, noise drops, instruments seem to breathe properly and in general one can hear just that little bit more of familiar recordings.

The most outstanding quality of this unit, for me, is its silky sound texture. I wouldn't want to give the impression that some kind of sheen is added to the sound, because if anything the opposite is true. One analogy I can think of is a piece of wood: in its natural state, as sawn, it's got quite an interesting surface and one can see the grain more or less, but sand it to a fine finish and apply some linseed oil, and not only is it lovely to touch but the details of its appearance become much clearer, every last ebb and flow of the grain clear to see. The Delius is like that.

Mind you, it hasn't the slightest objection to a bit of up-tempo party music, if that's your bag. With its wide frequency response and excellent dynamics, it can kick backside with the best of 'em and it's not

This is clearly a rather special piece of kit. Even bad recordings come up cleaner than one might expect, but good ones develop a whole new dimension.



afraid of some overdriven lead guitar or super-bright jazz trumpet now and then. But turn down the wick a bit and play some string quartets or solo art songs and there will be no nasty surprises in store – quite possibly some very pleasant ones, in fact.

Conclusion

Overall, this is probably the best DAC I've heard, except possibly the Elgar, which I didn't have in the house for very long. It seems tonally neutral in the extreme, truly to 'reference standards' in the sense that with recordings I have made myself I can't fault it: it has oodles of detail and excellent dynamics. I would love to see it include an option of a truly non-aliasing filter, which just *might* make it even better. But as it stands, if you can afford it, you ought to try it at least. **RB**

★★★★★ £5,000

dCS Purcell

As Richard managed to get hold of the Delius DAC this month, I thought I'd try out the matching Purcell upsampler. Priced at £3,450, this intermediary between transport and DAC is the first of its kind. What it does will be described in full glory by Paul Miller next month, but I can give you the maker's line which is that it uses extremely accurate interpolation filters to produce a refined version of the bitstream. It is hard to see how this differs from oversampling, but that's why we employ Mr Miller.

In practise, what the Purcell does is to change both wordlength and sampling frequency to produce, at one extreme, a 24-bit/192kHz signal from a 16-bit/44.1kHz input as found at the digital output of CD players. You still need to pass this signal onto a digital to analogue converter to make music out of it, and that converter has to be able to cope with these higher rates. As far as I'm aware only dCS's DACs will accept a 192kHz signal, largely because there is no interface standard for this sampling rate. dCS uses a pair of AES/EBU in and outputs for the purpose.

It's only when you take a look at the manual that the Purcell reveals its extraordinary flexibility. The back panel with its XLR, BNC, RS232 and (fortunately) RCA phono in and outputs gives some idea of the sophistication involved, but it's the 'Control Summary' sheet that exposes the nature of the beast. Because the unit only features three buttons you need to scroll through the options, these include output word length, noise shaping, dither, filter options (for certain combinations only), cloning (bit for bit operation for use with HDCD), brightness, input word length and various test options, contact details and a pink noise system burn-in setting – not one to set accidentally! In other words



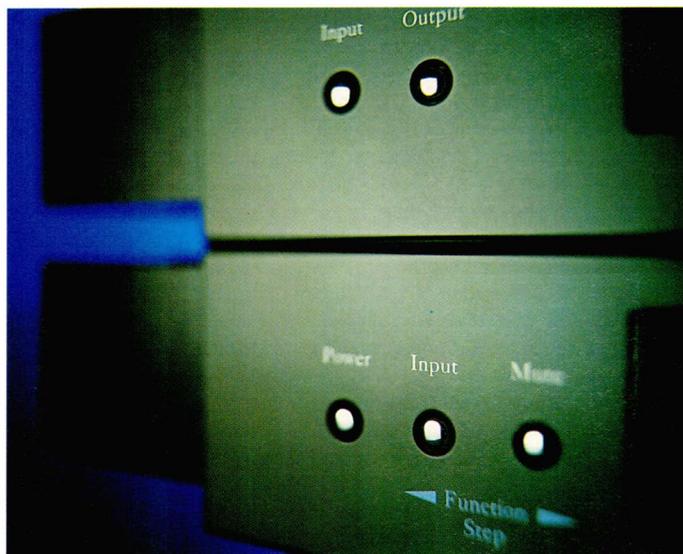
it's about as flexible as your average computer but with a somewhat limited key set. Despite this, it's easy to get the thing up and running. The Summary also usefully recommends different combinations of noise shape and dither settings for different word length outputs – and I stuck to these. The Purcell features pretty strong futureproofing. At present software upgrades can be made via a PC and the RS232 socket, but dCS has plans to produce upgrades on CD-ROM that you merely play through the component to make the change.

Sound quality

I used the Purcell with my recently revamped Acoustic Precision Eikos 3.1 CD player and the dCS Delius and Audio Note x1 DACs. Getting a handle on the Purcell meant finding out what the Delius was capable of first: my CD player doesn't have a digital input unfortunately and I don't use a separate DAC as a rule. But listening to the Delius is, as Richard explains, not exactly a hardship, it's a fine device with greater resolution in the bass and better depth than the Eikos alone, while having a more relaxed overall presentation. Running the Purcell at its maximum 24-bit/192kHz in between these two brought a variety of improvements to the party, but most obviously it dramatically improved depth resolution. It's ironic that CD players, with all their fantastic signal to noise and dynamic range specs, don't seem to be very good at reproducing the third dimension and creating true stereo. The Purcell however, proves to a far greater extent than anything else, that three dimensional musical information is on our regular CDs, waiting to be revealed.

It's this that gives the Purcell its analogue quality, the ability to let the music breathe. If all the notes are presented in a flat plane, as is the case with most CDPs, you don't get the decay and body of each note, you almost just get the fundamental. However, when I made a comparison with my record player and an identical recording on vinyl I was surprised to hear a significantly larger soundstage, one that made the digital alternative seem restrained by comparison. There was also a bit of vinyl 'roar' but this didn't seem to undermine the quality of timbre and all round believability. The difference is probably due to limitations in both formats, but it makes the point that there's life in analogue technology yet, however good the competition sounds in isolation.

Purcell is also rather good at bass. This upsampler manages to find more detail and colour in the bass than the Delius alone, and it's pretty



hot in this department to begin with. In terms of detail the dCS pairing is phenomenal, it was extraordinary how the playground noise on *OK Computer*, for instance, became recognisable as a sample for the first time. Using it at lower sampling rates and passing it through without up or downsampling seemed to introduce a degree of grittiness. 96k, for instance, sounded brasher than 192k as you might expect, but running the signal through with no change, 44.1 – 44.1, had a similar effect. I guess the cloning facility would have been the best way to do this.

Conclusion

There's far too much to say about this unusual device, but the important thing for the music lover is that it can extract levels of resolution from discs that you wouldn't believe existed. If you love analogue sound but have to use digital software, the Purcell will get you as close to that goal as anything, just remember you need a top notch DAC to make the most of it.

★★★★★ £3,450 dCS ☎ (01799) 531999

JK

HTP Sauce

An audiophile home theatre amp? Surely some mistake? None at all, says *Paul Miller*.

It is a sign of the times when a 'purist' hi-fi manufacturer like Musical Fidelity finally embraces AV with a Dolby Digital/dts decoder and five-channel power amp. But if the AV scene is turning into a tide, then MF is determined not to be swept away. Rather, its approach to the design of these components simply reaffirms its commitment to good sound quality – quality that will not be sacrificed on the altar of home cinema convenience.

At £2,000, the HTP processor embodies the resources to ensure good sound quality, even if its distinctly minimalist appearance puts it at odds with the button-filled ergonomic nightmares that currently pass for AV product these days. To my mind, the HTP demonstrates that AV preamps need not be baffling to operate. For example, source and DSP-based music mode selections are joined by a combined rotary volume/menu control knob on the silver-and-gold fascia. Recognition of incoming Dolby Digital or dts data is automatic while the system set-up may be achieved via an on-screen display or stepwise, via the HTP's own fluorescence display. Neither is the remote control unnecessarily complex, even if it is vital for the fullest operation of the HTP.

Adjustment over tone, level, delay, speaker size, source and trigger (to operate external kit like roller blinds/screen etc) may be swiftly accomplished and committed to the HTP's memory. Various of the Japanese manufacturer's who customarily produce great behemoths of AV receivers could do worse than look to the HTP for aesthetic inspiration. The OSD, meanwhile, is only available via one composite and one S-Type video output, though there are plenty more video inputs and outputs to choose from. These are joined by five optical and eight coaxial self-sensing digital inputs, eight analogue inputs and six line-level audio outputs (front L/R, surround L/R, centre and LFE).

Very few manufacturers instigate custom DSP decode programming from the ground-up (McLaren and Meridian are two exceptions) and, to the best of my knowledge, only McLaren does it in a £2,000 product. It simply makes economic sense to buy in a high quality DSP application from a third party and Musical Fidelity, in common with Arcam, Myryad, Rotel and many others, have chosen Sample Rate Systems in Finland. This fifth-generation DSP board includes the Crystal CS49260 processor and CS4226 single chip codec. The latter combines stereo ADCs and six 20-bit DACs on a single substrate unlike the entirely discrete 24-bit DAC arrangement used by McLaren in its AV32R processor.

I draw attention to this only because MF, very bravely, has announced that its HTP is the rival to beat the AV32R. Technically, the AV32R is superior, offering lower noise, distortion and low-level linearity, but the HTP is only a smidgen behind and suffers no obvious flaw in any aspect of its applied technology. Regular readers may care to compare the two 3D plots on the right with those from the McLaren AV32R on p52 of *HFC* 204. The bitstream DAC technology produces more noise from the HTP, but both audible (1) and ultrasonic noise (2) is only fractionally higher from the surround channels (lower plot, 1a and 2a respectively). Here, the HTP evidently bests the Rotel RSP-966 which uses the same Crystal decoder and DACs (*HFC* 204).

MF's matching HT600 five-channel power amplifier is all home-grown stuff, however, and is most closely aligned with the very popular A3 amplifier in terms of its design. Five identical, bipolar power amplifier stages are arranged across the width of this substantial case, each with its own power supply and bright blue indicator LED. Each amplifier will deliver a healthy 115 Watts into an 8 Ohm load, falling slightly to 100 Watts into five channels

thanks to the series-connected NTC thermistor on the mains input board (used to suppress any switch-on surge). Hook-up could not be simpler: just five input phono sockets and five pairs of 4mm speaker outlets.

Sound Quality

Having pressed the same listening panel into service earlier in the week with Naim's CD5 player (see p80), it made sense to stick with a similar choice of stereo music software. Thus, Earl Klugh's *Doin' It* was described as "obviously more alive and spontaneous", the percussion as "having more twang". Its bass certainly sounds full and fruity, but not especially extended, while the midband, though not forward, remains very lucid and informative. Typically, CDs will sound fresh and very spacious, while the soundfield is full of clearly defined instruments and performers. Each component of the musical mix has its own sense of dynamics and purpose without overwhelming any other, and contributes to the performance in a very even-handed fashion.

As mentioned in the CD5 review, Ocean Colour Scene's *Profit in Peace* can sound overwhelmingly loud, busy and compressed and yet the MF combination pulled out a very big and bold sound, packed with powerful strings, quick percussion and surprisingly articulate vocals. Its faintly rose-tinted perspective allows the MF combo to cover its tracks, concealing any ripeness or muddling with a sense of involvement and engagement which is difficult to ignore. "The sound may snare you", our listeners suggested, "but you'll willingly walk into the trap".

This highly agreeable, two-channel trend is maintained in multi-channel mode which, given the symmetry of the preamp and power amp, is hardly a surprise. Lyle Lovett's dts-encoded *...Feel Good* possessed its familiar lilt, though the synthetic panning of backing vocals from front to rear is hardly realistic. Tonally, the music is very well balanced, free of sibilance and graininess, though this smoothness does seem to detract from the deepest bass (and, yes, all speakers were set to 'large' in the set-up menu).

Each instrument has sufficient acoustic space, 'micro-dynamics' and tonal shading to keep the music sounding compelling. Although other combinations might offer a starker sense of contrast, the occasionally vague or over-ripe perspective of the MF never once impeded our appreciation of the music. Of course, both dts and DD encoding can lend a slightly pinched, and ironically less spacious, sound than is

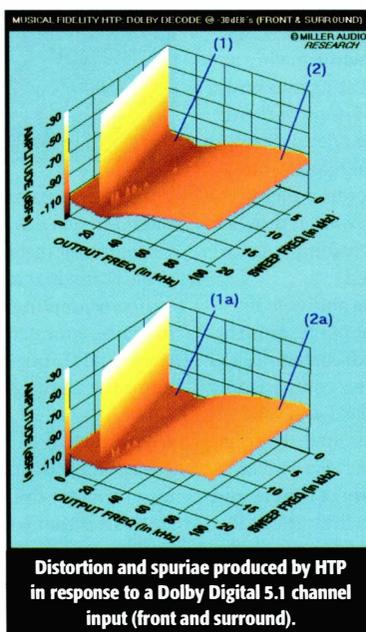
achievable with good two-channel recordings. We reached the same general conclusion in our group test back in *HFC* 198, but the HTP, with its gregarious personality, makes a better fist of it than most.

Conclusion

It is unusual to discover a one-brand AV pre/power where one or other of the combination does not let the side down (usually the former). In this case the performance of the HTP processor, if not state-of-the-art, is still up with the very best and, importantly, is the perfect complement to the HT600 power amp. Above all, they *sound* like modern, Musical Fidelity products so if you like the X-Ray or XA-100, then you'll love the HTP/HT600. The sheer elegance of the combination and simplicity of set-up and operation also makes them perfect for the novice or technically-timid AV enthusiast. As one listener suggested, "the money you can now save on a Ford Focus buys one of these AV combo's". And though we've never seen a Focus with gold wheel arches, at least the silver front panels will match.

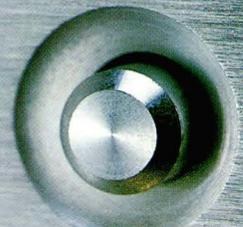
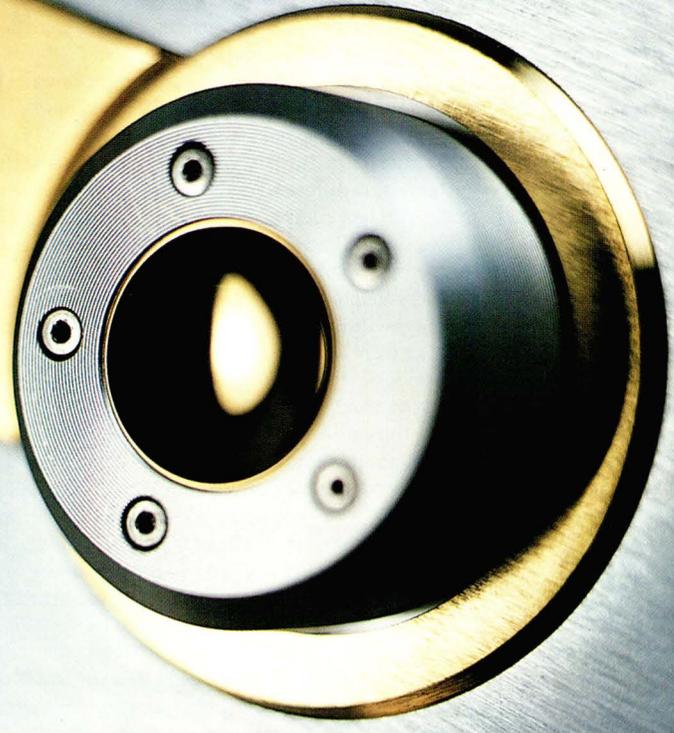


£2,000 Musical Fidelity ☎ (020) 8990 2866





Tonally, the music is very well balanced, free of sibilance and graininess, though this smoothness does seem to detract from the deepest bass.



A spot of colour

Paul Miller finds his ear pleasingly bent by Naim's distinctive new CD player.

Our review of the high-end, high-cost NACDSII CD player back in HFC 188 indicated that Naim was finally moving out of its enclave and embracing a broader compatibility with alternative systems and components. No longer was it necessary to cosset a new Naim player with Naim amps and speakers: this product stood on its own two (or four) feet and took on all comers with confidence. This is a philosophy that is clearly spreading down the range, and a trend reflected in its more affordable slimline range of separates, including the £1,200 CD5 player reviewed here.

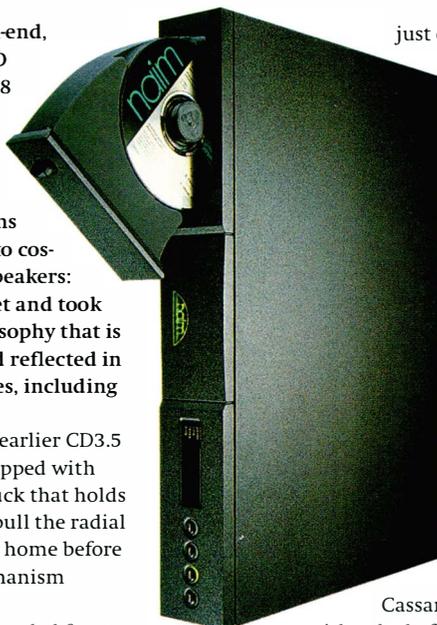
The guts of the CD5 are clearly based on the earlier CD3.5 (see HFC 188), including a CD loader that's equipped with Philips' VAM1205 transport and lightweight puck that holds everything in place. And, yes, you still have to pull the radial drawer out of the CD5, load the CD and push it home before enjoying the music. A motorised CD eject mechanism remains the stuff of dreams for Naim users...

Nevertheless, thanks to the significantly upgraded front panel and sculptured appearance, few people would disagree that the CD5 is a markedly more modern and stylish-looking product than the box-like CD3.5 which it replaces. These enhancements are more than aesthetic, for the improved rigidity of the casework is said to cut down on microphony. Also, do not be concerned if the rear sockets feel a little 'wobbly' when connecting up as they, and the entire motherboard, are supported on compliant mounts to further reduce the effects of vibration from the outside world. It's this board, along with the retractable transport, that you release by removing the two transit bolts when unpacking the player.

Naim's new, illuminated badge is particularly attractive and the green hue is chosen to complement the LED display and four (track skip, play, stop) function buttons. A matching, system remote has multifunction keys which communicate with Naim's CD players, amplifiers and tuner, offering extra widgets like fast cueing, repeat, pause, direct track access and program play. Switching the CD5's limited four-digit display from track to time mode is also accomplished via the remote.

As ever, the CD5 lacks any sort of digital output while the analogue outputs are routed via a DIN socket. If the CD5 is destined for use outside a Naim system, then DIN-to-phono adapter leads will be available from your dealer. An adjacent socket allows the internal PSU to be bypassed in favour of an external Flatcap 2 supply. Experience showed this to be a worthwhile upgrade with the older CD3.5, though it'll set you back another £499. Then again, a key enhancement to the CD5 includes its more sophisticated power supply with separate digital/analogue transformer windings, rectification and regulation. Lessons have evidently been learnt from the high-end NACDSII, though the CD5's low 0.001 per cent distortion and moderate 102.5dB S/N ratio are basically defined by the choice of a Philips TDA1305 hybrid DAC.

Nevertheless, Naim's thoughtful implementation keeps jitter down to an insignificant 180psec while its proprietary analogue output stage is capable of driving the wildest of interconnect designs. Here, too, we find that Naim's special 7-pole filter not only provides a slight (-0.6dB) treble roll-off but also bites very deeply into the sort of ultrasonic noise (1) that can cause a harsh and grainy sound with some amplifiers. However, this filter kicks in



just outside of the audioband (2) leaving a rising noise floor within our audible range (3). The 'rippled' distortion (4) is what remains after digital rather than analogue filtering, incidentally.

Sound Quality

Whereas the NACDSII was arguably the first Naim player capable of being slotted into a wide range of non-Naim systems, the CD5 seems keen to retain a foot in both camps. This 'hesitancy' has its repercussions. For example, Earl Klugh's *Move* sounds well balanced with sax and strings that are acutely detailed, but the interplay between instruments is methodical rather intuitive. This is a shift away from Naim's traditional outlook: although the music is better composed and certainly more finely detailed than might have been anticipated, there is a slight blandness or flatness in its delivery of what would otherwise be strong midband-orientated vocals and instruments.

Similarly, the strings that run through

Cassandra Wilson's *Right Here, Right Now* are depicted with a deal of detail, but her voice lacks the same focus and projection – just as the very high treble octaves are very subtly rolled-off. So the musical picture is very tidy but slightly restrained. This overwhelming sense of control and composition kept Prokofiev's *Symphony 1 in D* surging along with a realistic spirit and yet without allowing the gusto of the violins to dominate. Here at least was a genuinely realistic sense of musical power and dynamics, achieved while still lacking extreme treble 'airiness' and stage 'depth'.

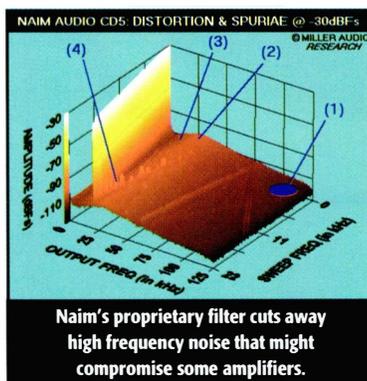
By now, the obvious strengths of the CD5 were becoming clear to our (blind) listening panel who requested a selection of traditionally 'difficult' CDs. Would the CD5 maintain a tight rein in the face of extreme provocation? Ocean Colour Scene's *Profit in Peace* can so often descend into a fatiguing cacophony with less 'together' CD players. But with the CD5 at the helm, the bass drove along strongly with drum and bass guitar crisply differentiated. Similarly, the vocals retained their power with sufficient composition to remain articulate. Once again, there's this loss of top-end air and pizzazz, but the music still retains a meaningful 'busyness' that seizes your attention from track to track. Our listeners concluded that there was some obvious manipulation on the part of the CD5, but if this was some kind of sonic confidence trick, then we were all quite content to be hoodwinked!

Conclusion

Unlike the earliest Naim players, the CD5 is smoother and very polished sounding but, for all the obvious detail, its delivery might seem a little wooden. Naturally, combined with the typical forwardness of a Naim amp/speaker combination, any reticence on the part of the CD5 is likely to be swept away. But there is undoubtedly some program-dependence at work here for, at its best, the CD5 sounds both dynamic, vivid and compelling. With other discs, it could be the CD equivalent of *Baywatch* or *Hollyoaks*: good lighting, smart sets and decorative actors, but not entirely believable as an all-round performance. Then again, the CD5 is nothing if not distinctive. And at a time when the market is being flooded with bland-sounding DVD players, I'm all in favour of some colour and musical licence being injected into the hi-fi market.

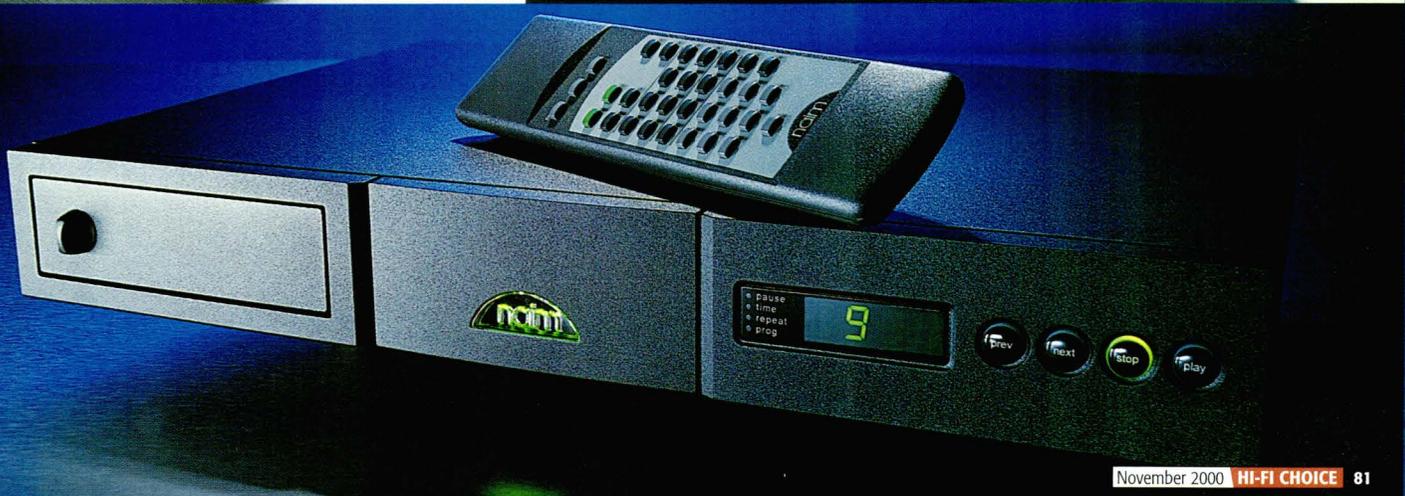
★★★★★☆☆☆☆

£1,125.00 Naim ☎ (01722) 332266





The music still retains a meaningful 'busyness' that seizes your attention from track to track



OASIS OF SANITY

This month's Super Test of CD and DVD players seems to prove that you shouldn't ditch your old faithful CD players just yet – as *Paul Miller and his bobbins* confirm.

During our compilation of this month's Super Test, it became clear from my regular conversations with Alvin that the group of CD players was uniformly exceeding the performance of the DVD players. The issue here is not with DVD as a multi-channel movie-carrier but as a source of high quality, two-channel audio. And, credit where it's due, DVD-Video has succeeded in fuelling a revolution in home cinema entertainment where the cumbersome LaserDisc and noisy VHS tape have largely failed. Its video and sound quality have the potential to exceed those latter formats while its user-friendliness is unmatched. And, naturally, the concept of a small silver disc has a familiar resonance among the broader public with the acceptance of CD over the last 17 years or so.

But let's face reality. The current rash of budget machines are a reaction to a market that has been infiltrated by very affordable DVD players designed, almost solely, for movie viewing on the cheap. To that end, they succeed admirably, but the effect has been to drive down prices of hardware at the expense of build quality and performance, and an increase in the incidence of software bugs. Manufacturers do what they can, but with a budget of next to nothing, audio performance is not even getting a look in. And audio performance, lest we forget, is the reason you are reading *Hi-Fi Choice*.

Let's look at some specific examples of differences in design between DVD and CD hardware. For starters, almost all the DVD players in the test were equipped with high-speed, lightweight, low-cost switch-mode power supplies. Bearing in mind the additional burden of electromagnetic and RF noise loosed into the DVD player's local environment, is it any surprise that 99.9% of CD players use conventional, linear power supplies? Less local interference means better sound quality, or so the theory goes.

TIMED TO IMPERFECTION

Digital carriers, like CD and DVD, synchronise the flow and conversion of data through the player with reference to a fixed, stable master clock. Obviously, DVD players must deal with both digital video data

and audio data, which each beat to the tune of very different clocks. To save costs, it's becoming increasingly common for DVD players to derive their audio (CD) clock from the 27MHz MPEG video clock. There are even audio DACs available, designed for use in DVD players, that will run off this MPEG clock despite it bearing no relationship to the 11.3MHz and 16.9MHz references normally used in CD players.

Two methods of deriving an audio clock are possible. Either the incoming 44.1kHz data is sample-rate converted so that it's a multiple of the 27MHz clock or, more commonly, the audio reference is extracted from the MPEG clock via a PLL (Phase Locked Loop). Using binary multipliers in the feedback loop of a PLL actually gives a division in its output, from which the audio clock is derived.

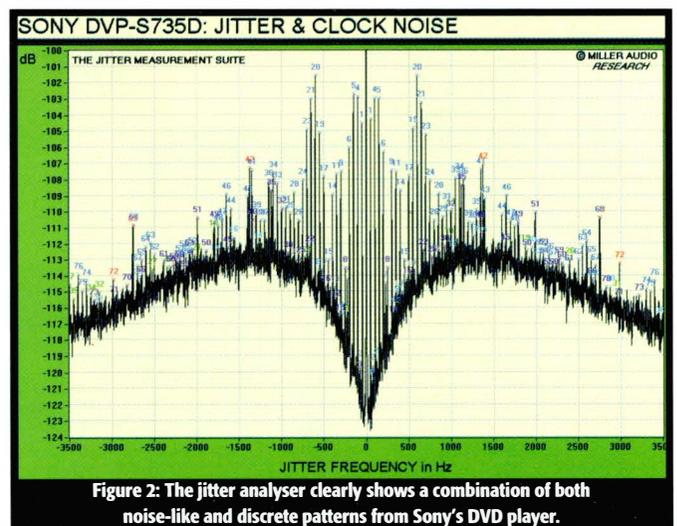
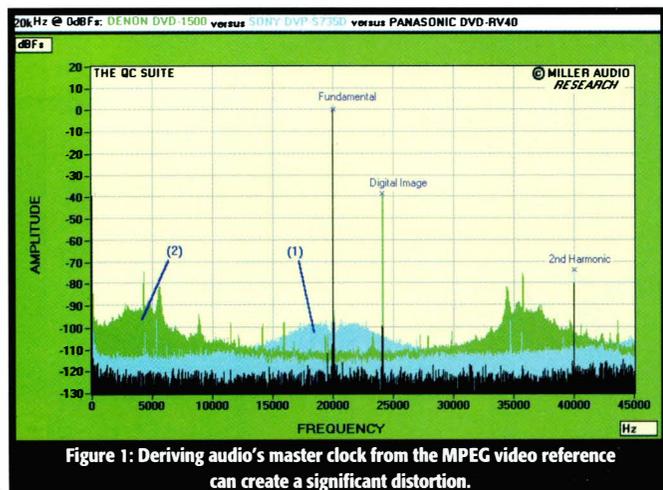
But, as Figure 1 illustrates, this is a far from perfect solution. The black trace shows a 20kHz tone at maximum level (0dBfs) taken from Panasonic's DVD-RV40 player where the sharp peak is joined by an insignificant stopband image (at -99dB) and mild 2nd harmonic distortion (-80dB). This is a near-ideal result and one shared, broadly speaking, by all the CD players in our group that use dedicated audio clocks. The blue trace depicts the same signal from Sony's DVP-S735D where a random, noise-like jitter (1) is easily visible around the main peak. This sort of random noise is a typical by-product of a non-ideal PLL and will inevitably compromise its sound quality.

The rash of budget DVD players has driven down prices of hardware at the expense of build quality and performance.

MAKING THE SWITCH

Figure 2 reveals this in more detail, via my Jitter Analysis software. The two symmetrical humps of noise-like jitter are evident along with a regular pattern of PSU-induced spikes (the blue markers) that arise from the player's switch-mode power supply. This effect isn't found in Sony's costlier DVD players where discrete video and audio clocks are employed along with conventional, linear power supplies. It's no coincidence that these players also sound markedly superior.

Returning to Figure 1, the green trace shows a more severe form of noise-like jitter (2) suffered by Denon's DVD-1500, possibly as a result of a beat-pattern or instability in the PLL used to extract the audio clock.



The increase in noise, distortion, general background spurious and stopband images (marked as 'Digital Image') is obvious over and above that achieved by the Panasonic player (black trace).

SPOT THE DIFFERENCE

The impact of this distortion on the Denon DVD-1500 is revealed in Figure 3, where this unusual noise-like jitter or IM distortion (2) can be seen tracking alongside the audio signal (3) as it sweeps from 20Hz to 20kHz. Also clearly visible are the rippled stopband images (4) released by its digital 'filter'. The same information, plotted in an overhead view, shows the jitter-like distortion (2) and digital images (4) more clearly (lower plot, Figure 3). Ironically, conventional harmonic distortions of the sort typically specified by manufacturers and magazines alike, are low to non-existent but the DVD-1500 is still far from 'clean'.

The DVD players also responded unpredictably to the same test software encoded onto CD, CD-R and CD-RW discs. Many would not respond to de-emphasis flags on CD-R and CD-RW discs, but silver CDs were treated correctly. By contrast, these same CD and CD-R discs behaved indistinguishably in all the CD players. Similarly, the S/N ratio measured from the DVD players varied by up to 20dB depending on whether a CD, CD-R or CD-RW disc was in play. The biggest variations were detected from the Hitachi DV-P505 and, most notably, the Sony DVP-S735D. No such variations were encountered with our group of CD players, adding further weight to the argument that playing CDs on DVD players is not such a straightforward technical exercise after all.

SHOCK TACTICS

Denon's DVD-1500 received a further blot in my copybook after delivering a mild electric shock to yours truly during the lab tests. Under the bonnet, I discovered two mains filter capacitors (in compliance with

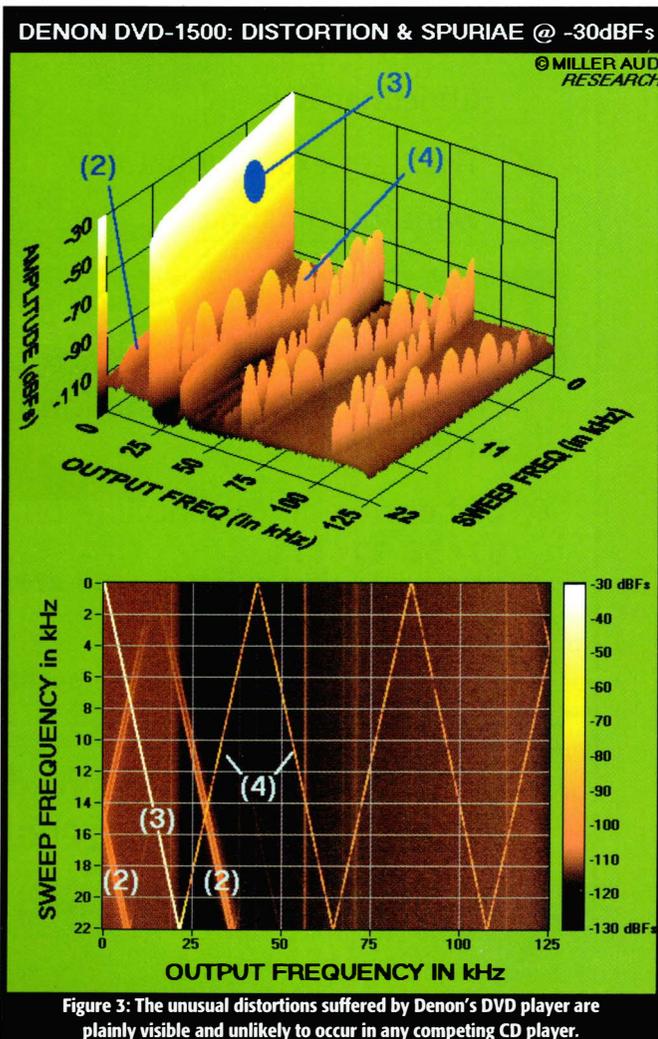


EMC regulations) that are connected live-to-chassis and neutral-to-chassis but, as the chassis is not grounded, this leaves it and the phono sockets floating at half of the incoming rail (mains) voltage. Finding 120V floating across the chassis of so-called 'double-insulated' products (usually equipped with symmetrical, two-core inlets) is not uncommon, but there is typically little or no current to sustain this voltage if the case is grounded, directly or indirectly. Incidentally, this is the reason why many products feel 'fuzzy' when you gently brush your fingers over their metal fascias.

The British Standards' BSEN 60-065 low voltage directive requires less than 0.7mA from any point accessible on the player, grounded via a 50kOhm resistor. 50kOhm, incidentally, is taken as the average 'resistance' of the unsuspecting consumer. Testing the DVD-1500, I measured 0.3-0.4mA, which seems perilously close to this standard and around 10x higher than other, similarly configured, products in this test. Also, this is more than sufficient to sustain an electric shock should you have a hand on the DVD-1500 while reaching for the phono leads hooked into a grounded amplifier. It's also enough to damage a PC sound card hooked directly into the analogue or digital outputs of the DVD player, should you be so inclined.

Alvin confirmed that he had received a 'tingle' from the DVD-1500 when hooking it up to his (earthed) Krell preamplifier. He also pointed out, quite correctly, that it seems ludicrous for the safety authorities to concern themselves with plugging up 4mm speaker sockets on amplifiers when products that are capable of delivering a discernible electric shock are given the green light. There's nothing quite like bureaucracy for completely missing the point. Personally, I would not appreciate experiencing a 'tingle' when touching a microwave oven, so why should it be any more acceptable from a budget hi-fi? What do you think?

Do you have a subject matter for the Oasis? Contact Paul Miller via email at MILLER_AUDIO_RESEARCH@compuserve.com



GLOSSARY

DAC OR DIGITAL-TO-ANALOGUE CONVERTER:

The stage at which incoming 16-24 bit digital data is used to reconstruct a recognisable analogue (music) waveform.

DIGITAL IMAGES: Reflections of the audio (music) signal that appear either side of the sample frequency. These artefacts only occur in digital audio.

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

PLL OR PHASE-LOCKED LOOP: (in this instance) A technique by which a clock of defined characteristics is used to generate a new clock at a different frequency from the original.

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.

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Digital Interconnects

If a digital signal is just ones and zeros, why bother having decent connecting cables? *Richard Black* has the answers.

Once upon a time, a digital interconnect was any old bit of wire. People said it's only digital data, at a modest rate too, so who cares if it gets a bit bent in the wires? It'll be recovered OK at the end.

Of course it wasn't long before a few folks started playing 'What If?' and duly discovered that digital cables can indeed make a subjective difference. You see, there's a major problem with the digital audio interface, in that data is sent out from the source and, er, that's it. Now the source (CD transport or whatever) and DAC are each running to an internal 'clock' and in principle both clocks go at the same pace, but given the real tolerances involved in the quartz crystals used as reference oscillators, there will in practice be a difference of up to about 100ppm (0.01%) between the ends.

If no steps were taken to deal with this, the DAC would typically either run out of data or overflow at its input buffer. So what happens in practice is that the DAC looks at its internal clock for initial set-up, but then analyses the incoming data and uses it to generate a fresh clock signal at exactly the right rate. That's the overflow/underflow problem sorted, but the new clock signal is prone to corruption by jitter in the data and, although steps can be taken to reduce this, it's surprisingly hard to get it down to truly negligible levels.



Now some manufacturers (Arcam and DPA come to mind) have provided a clock *output* on their DACs that links via a separate cable to the transport so that the synchronisation problem can be made to vanish, eliminating the need for deriving a clock signal from incoming data. Unfortunately one must have both DAC and transport from the same manufacturer for this to work.

If the cable used to link transport and DAC is not ideal, the square-shaped data pulses that are (or should be) generated by the transport will end up at the DAC looking a bit ragged, with ramps instead of sharp edges, and noise of any sort will generate timing errors or jitter. Things aren't helped by the near-universal use of the phono plug as a connector, since it is utterly unsuited to the task.

And what of optical leads? Optical fibres are capable of outrageous bandwidth, but the sort standardised for the common Toslink interface are much less esoteric, and the real problem is that the transmitter and receiver devices are made to a 'just good enough' design criterion, so the whole thing is badly hamstrung and, by common consent, unsuited to the most demanding duty. The fancier, but very rare, AT&T optical interface is a very different beast.

Current thinking suggests that the digital lead is only crucial when it links to a DAC. And that when connecting to a digital recorder, it's a case of 'bits is bits'. However, this sounds much like the argument for ignoring digital cable quality in the first place and it seems likely that differences will be just as appreciable with CDR and RW.

How the tests were done

The hardware options for testing digital interconnects are endless, so I started by establishing which were the most revealing component combinations. I soon settled on the dCS Delius DAC, fed variously by Rotel and Marantz CD players, as the

primary reference, with a Marantz CD-R in Record/Pause mode alternating as a DAC of more modest pretensions. Rest of system: EAR pre and power amps, ATC SCM20 and Quad Electrostatic speakers, Kimber, Furukawa and Goertz cable.

THE CAST LIST

Audioquest Digital One	£35.00/m
Chord Optilink	£40.00/m
Ixos 1051-100	£39.95/m
QED Qunux P75	£25.00/m
Ross OP004	£19.99/m
SonicLink Digital Optical	£30.00/m
Straight Wire Info-Link	£299.95/m
van den Hul Optocoupler	£49.95/m

GLOSSARY

TOSLINK: The proprietary name given by Toshiba to the optical fibre system it invented for consumer applications. The system includes dedicated connectors, transmitters and receivers.

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

JITTER: Variations in timing of digital data; a form of distortion when converted to analogue.

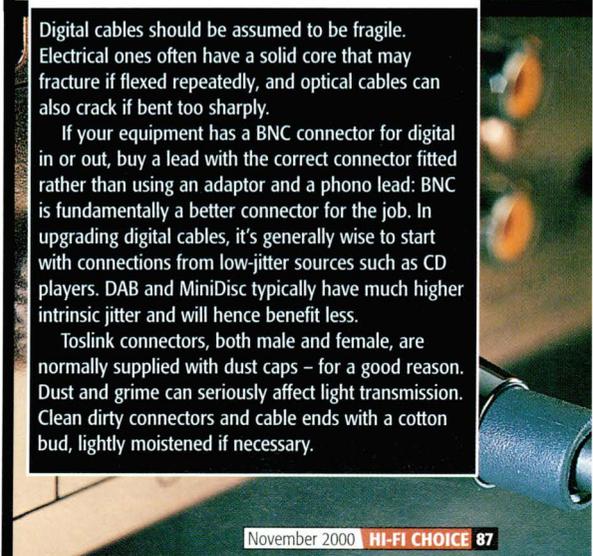
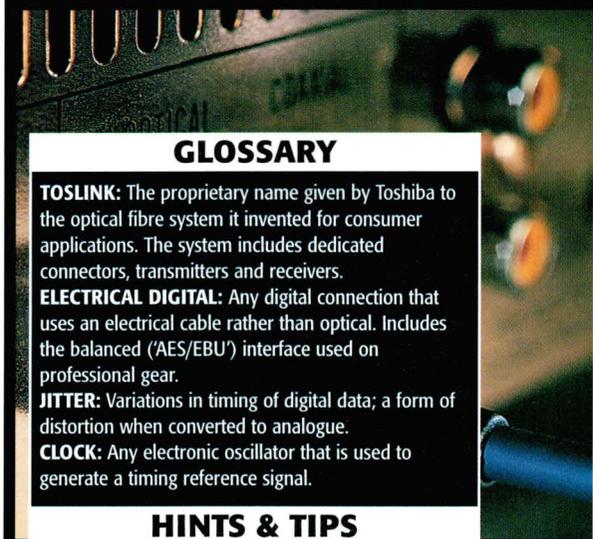
CLOCK: Any electronic oscillator that is used to generate a timing reference signal.

HINTS & TIPS

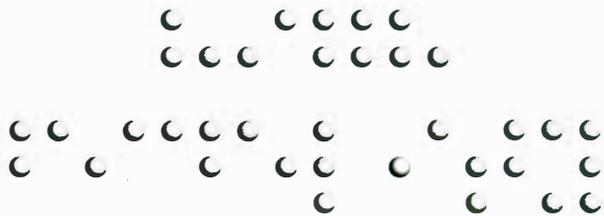
Digital cables should be assumed to be fragile. Electrical ones often have a solid core that may fracture if flexed repeatedly, and optical cables can also crack if bent too sharply.

If your equipment has a BNC connector for digital in or out, buy a lead with the correct connector fitted rather than using an adaptor and a phono lead: BNC is fundamentally a better connector for the job. In upgrading digital cables, it's generally wise to start with connections from low-jitter sources such as CD players. DAB and MiniDisc typically have much higher intrinsic jitter and will hence benefit less.

Toslink connectors, both male and female, are normally supplied with dust caps – for a good reason. Dust and grime can seriously affect light transmission. Clean dirty connectors and cable ends with a cotton bud, lightly moistened if necessary.



Confused ?



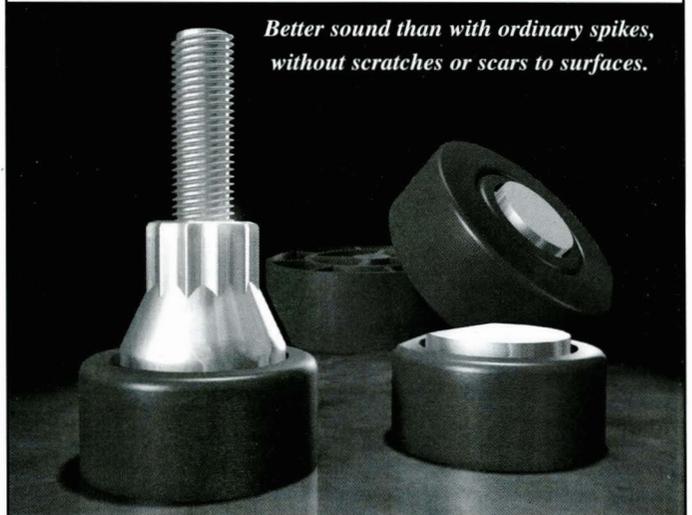
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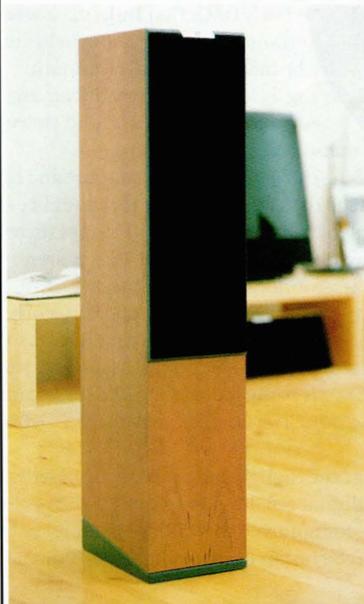
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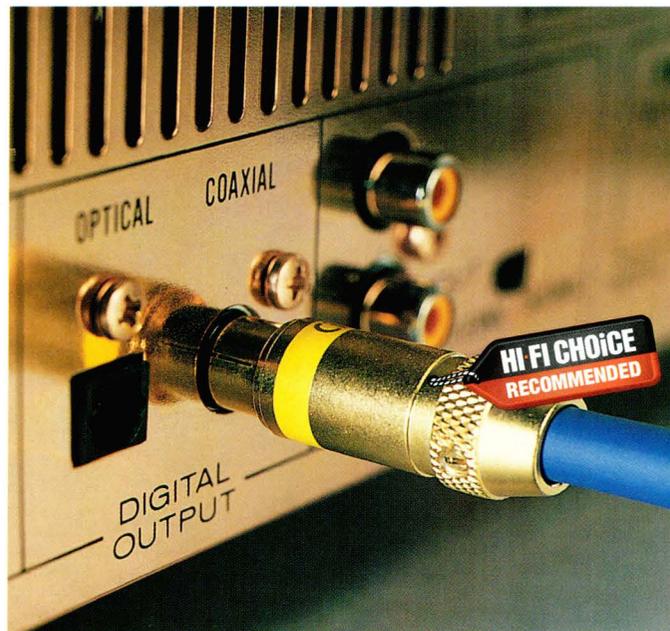
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AUDIOQUEST Digital One Coaxial Interconnect

Looking indistinguishable at first glance from some of Audioquest's analogue interconnects, this is in fact a simple coaxial cable (most of the analogue cables are pseudo-balanced), built to the usual digital specification of 75 Ohms impedance. The conductor is solid copper and the insulator Teflon (foamed, by the look of it), with a double screen of foil and copper braid. All good basic engineering practice. The phono plugs fitted are of decent, though not outstanding, quality, with a split centre pin and a sensibly dimensioned earth contact which gives good but not excessive grip on sockets. As is often done, the cable's screen is twisted into a 'tail' to connect to the plug's body, a practice which is arguably not ideal since it creates an impedance discontinuity and also worsens immunity to interference.

SOUND QUALITY

This cable seems to offer a particularly solid and clear bass, extended but without ever being excessive. There is no artificially enhanced bass 'kick' as can occasionally happen with some analogue cables (and other components). On the contrary,



this bass passes the acid test of remaining steady and controlled whatever else may be happening in the music, which is always a good starting point for relaxed long-term listening. Where it seemed to lag, very slightly, behind the best in the group was the area of bass 'tunefulness', but there was very little in it.

At higher frequencies performance is similarly praiseworthy. Detail is good – perhaps not the very best, but close to it. Stereo imaging is excellent and the way the sound holds together right through a climax is most gratifying. One of my favourite test tracks for analogue cables – orchestral violins playing

high up – turned out to be quite a tricky one for digital cables too, but this one had little trouble and the sound was clean and free from glare, artificial or otherwise.

CONCLUSION

No one musical style seems unduly favoured by this cable, which does what any cable should – puts out exactly what is put into it. Its vices are extremely minor, the price is reasonable and it can certainly be Recommended.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £35.00/m

■ A neutral and capable cable that adds little or no character to the sound.

LIFETIME GUARANTEE

✉ Goldring Products Ltd, 8 Greyfriars Road, Bury St Edmunds, Suffolk, IP32 7DX

☎ (01284) 701101

SPECIFICATIONS

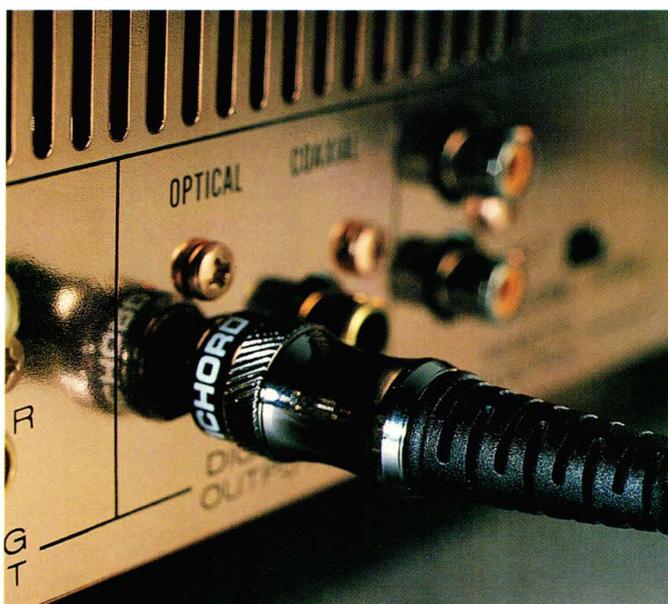
- Topology: Coaxial, 75 Ohm
- Conductor: Long grain copper
- Dielectric: Teflon

CHORD Optilink Optical Interconnect

For what it's worth, Chord has found a very smart finish for the jacket of this cable: black with dark green flecks. Possibly more to the point, the jacket is also pretty flexible and is fitted into the plugs with a good strain relief. The plugs are nicely profiled and solidly made from metal, but I still find them less convenient to handle than the plastic ones fitted to the cheapest Toslink cables. The last bit of sheath, where the fibre itself protrudes through the plug body, is metal and gold-plated at that, and the fibre end is slightly domed which makes the fibre act to some extent like a lens, refocusing light at the output end. Chord claims to have 'practically eliminated scattering and insertion loss' – although 'eliminated' is a strong word, it's a bit hard to prove because both those factors should be low anyway.

SOUND QUALITY

It proved quite hard to distinguish this cable reliably from the other optical leads, especially the Ross and SonicLink. There seems to be something of a 'house style' to Toslink cables, which (perhaps surprisingly) is fairly constant across a range of



source components and DACs. To my ears, the most noticeable difference between Toslink and electrical connections is the lack of detail in the former. It's not vast, but it does seem to be of similar order to the lack of detail one often finds in analogue interconnects of rather modest attainments. So with any

decent recording, one finds that details one is used to hearing are suddenly barely there, and the subtleties that distinguish a great performance are much less evident.

There's also a slight loss of bass, both in level and in precision, but otherwise the balance is good. Not surprisingly, given the lack of detail,

imaging is a little compromised in depth. However, tonality of most instruments and voices seems generally natural, with just a hint of dryness occasionally.

CONCLUSION

It's not really a bad performance overall, but given the similarity to two cheaper Toslink leads, and the better results obtained with cheaper electrical leads, it seems a little difficult to get very excited about this nicely-made cable.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £40.00

■ Beautifully made, but performance is practically indistinguishable from other, cheaper, Toslink leads.

TEN YEAR GUARANTEE

✉ The Chord Company, 30a Sarum Business Park, Portway, Salisbury, Wilts, SP4 6EA

☎ (01722) 331674

SPECIFICATIONS

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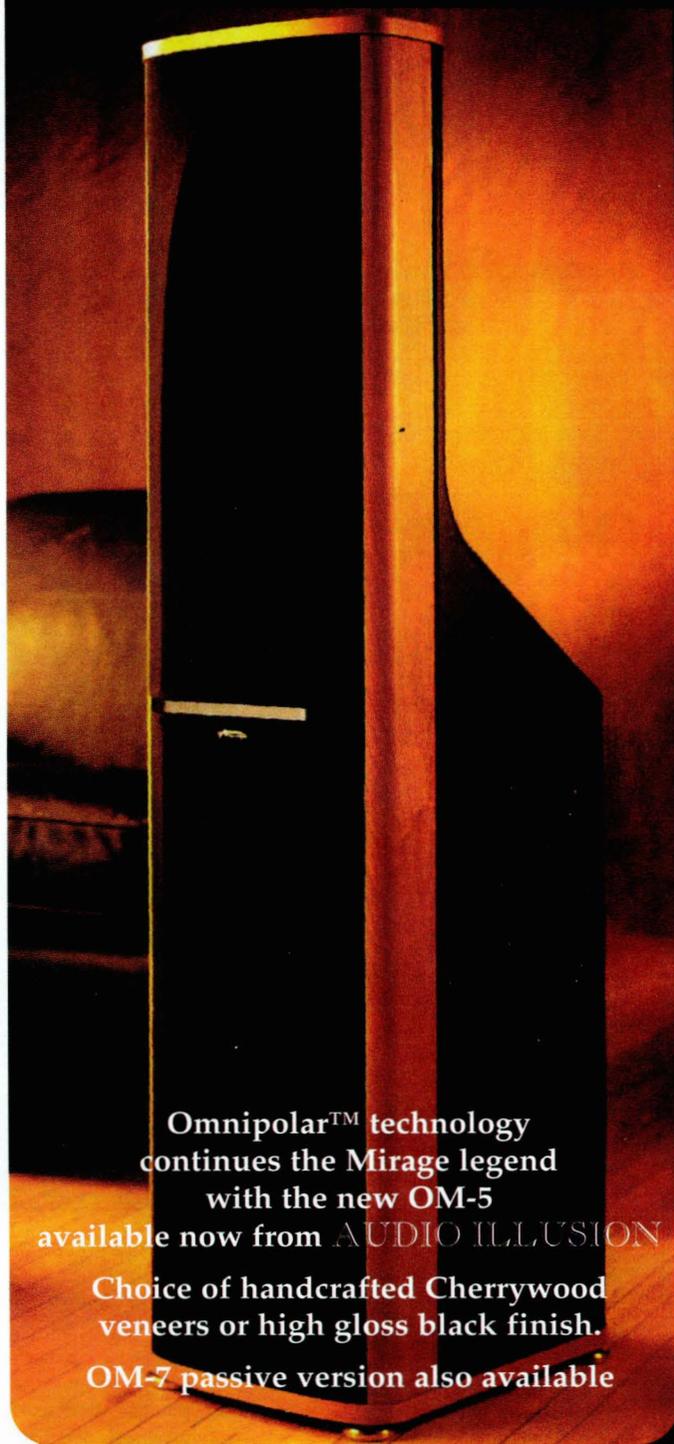
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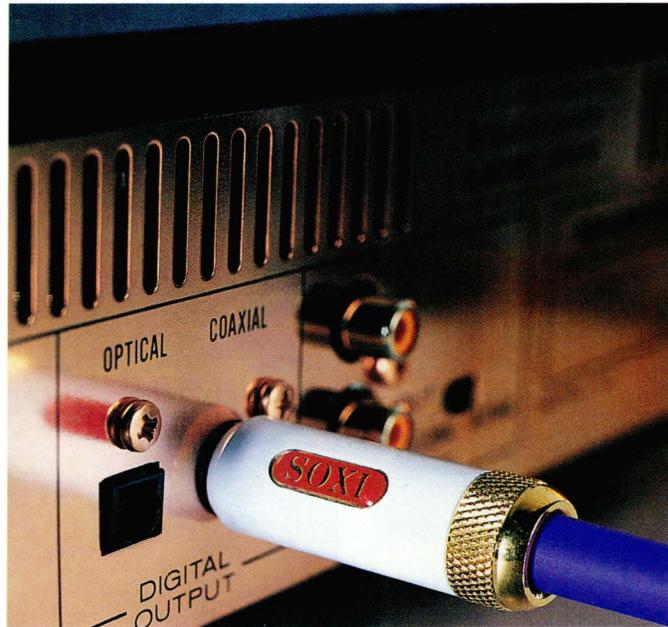
IXOS 1051-100 Coaxial Interconnect

Big, chunky and generally very Ixos indeed, this cable claims on its jacket to have a 'silver conductor', though the packaging and press release more modestly claim that it is in fact silver-plated PC-OFC (Perfect Crystal Oxygen-Free Copper). Does it matter? Silver has a marginally higher conductivity than copper, but then in a high-frequency cable – and digital audio signals are after all in the MHz region – most of that advantage is realised by plating since, as has been repeatedly stressed by cable manufacturers, high frequencies travel principally on the surface of conductors. In fact, given the frequencies involved, silver plating perhaps makes more sense in a digital cable than an analogue one.

But what's even more important is the quality of the dielectric (insulator) and Ixos has chosen foamed polythene, a suitably high quality material. A double screen of braided copper is applied, then a soft jacket (fat but flexible), and the phono plugs are Ixos's own, good quality and very grippy on any socket.

SOUND QUALITY

Although the differences between



electrical cables in this test were quite small, this one showed a consistent character. Above all, it has the fullest bass of the group, but that's achieved somewhat at the expense of bass clarity – as often seems to be the way. This is clearly going to be something of a matter of taste, but I feel compelled to point out that

the degree of 'extra' bass is not all that much – don't expect it to be much use in balancing up bass-light systems! Nor is the lack of clarity anything serious.

The only thing that really bothered me with this cable was a slight loss in tangibility of sound, which in turn makes for a little less listener

involvement. Detail is generally good, as is tonality (the orchestral violins test was just a little compromised by some glaze), and imaging is good though strangely the entire image seems a shade further away.

CONCLUSION

If you like lots of bass, by all means try this one and see if it does the business for you. Overall, though, it doesn't seem to offer any particular advantages.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £39.95

Plenty of bass, and detail seems good, but there's a loss of involvement.

LIFETIME GUARANTEE

Path Group, Unit 2, Desborough Ind. Park, Desborough Park Road, High Wycombe, Bucks, HP12 3BG.

(01494) 441736

SPECIFICATIONS

■ Topology: Coaxial, 75 Ohm

■ Conductor: Silver-plated OFC

■ Dielectric: Foamed polythene

QED Qunex P75 Coaxial Interconnect

Another pretty straightforward coaxial cable, this time with solid '99.999%OFC' copper conductor, foamed polythene dielectric, foil and double braid screen, and a soft PVC jacket. The phono plugs are QED's own, with their 'ergonomically shaped' metal body (as copied, if I'm not mistaken, by more than a couple of other cable manufacturers). These plugs have a solid centre pin but give plenty of grip on the earth contact. As usual, they do not connect the cable braid all round its diameter, though.

SOUND QUALITY

In many areas, this emerged as the most plausible cable in the batch, low price notwithstanding. Given the small differences involved between cables and the relative newness of digital interconnects as a topic of interest (I've been testing and listening to analogue cables for over 15 years, digital ones for more like five), it's hard to be dogmatic about areas such as tonality, but when a cable offers all-round better detail than its peers, without apparently sacrificing any other parameter, it's hard not to be impressed.



And that's basically what Qunex P75 achieved. In several familiar recordings I was struck by things I had not previously registered – little things like the sound of a guitarist's left hand on the frets or a singer's enunciation of some particular consonant. It's decidedly not the kind of detail that is forced on the listener,

as occasionally happens with some equipment which tends to become very wearing after a while. On the contrary, the sound has a consistently relaxed feel which means that one is still concentrating just as hard at the end of a CD as at the start.

Tonality certainly seems fine on the whole, although on a couple of

tracks I felt that bass sounded very slightly 'hollow', perhaps as if very slightly boosted in the upper bass region. Imaging is excellent and there is no detectable change in character with level.

CONCLUSION

It's nice to find a product that sounds comfortable with any material under any circumstances. It's even nicer when it's cheap. This is an obvious Best Buy.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £25.00

Plenty of bass, and detail seems good, but there's a loss of involvement.

TWO YEAR GUARANTEE

QED Audio Products Ltd, Ridgeway House, Ridgeway Close, Lightwater, Surrey, GU18 5XU
(01276) 451166

SPECIFICATIONS

■ Topology: Coaxial 75 Ohm

■ Conductor: High purity OFC

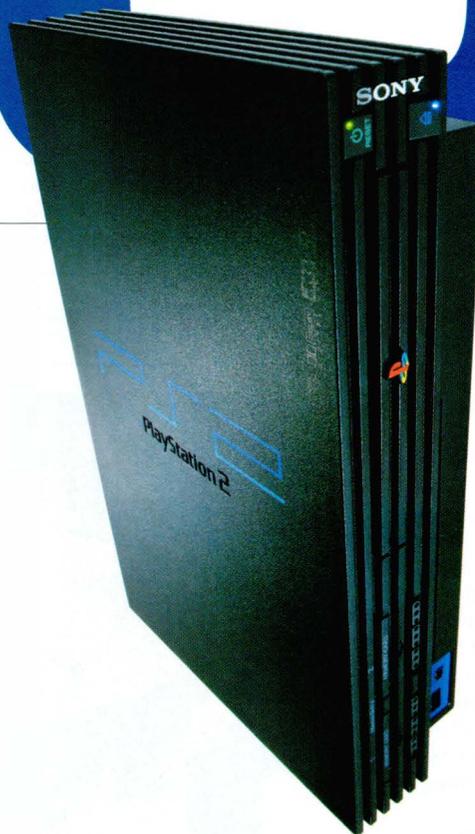
■ Dielectric: Low density polythene

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ROSS OP004 Optical Interconnect

This is pretty much yer basic fibre optic lead and, although its price is not quite the lowest ever, it's one of the cheapest you'll find easily on the high street. It comes with a couple of nifty accessories, though, a pair of adaptors to allow its use with portable MiniDisc (etc.) players which have those clever combined 3.5mm jack/optical sockets. The plugs are the usual cheap moulded plastic ones, which nevertheless give perfectly good connection and ease of use. I couldn't find any technical information on the fibre, but in my limited lab tests it seemed to pass signal just as well as the dearer ones.

SOUND QUALITY

There's honestly little enough to distinguish this lead from the dearer optical types. In fact, I found myself unable to tell it apart from the Chord reliably: perhaps the Chord had the edge in bass detail, perhaps the Ross managed slightly better imaging, but there was precious little in it. The overall 'signature' of Toslink is still very much present in the lack of detail compared with the electrical cables. But let's not get too despondent: the total degradation is still only



about the same order as that of some medium-grade analogue cables, and because of the way a digital signal effectively gets completely regenerated when it's recorded and replayed there's effectively nothing to choose between this cable and any other when used to connect a recording device to a source.

Perhaps a line from my listening notes will put the 'Toslink effect' into better perspective. I commented at one point, while listening with the dCS DAC, that this optical lead made the sound more like that of my usual Rotel RCD-971 CD player, which I generally rate as a particularly capable piece of kit. OK, it's only a tenth

of the price of the dCS, but it manages many things very nearly as well, just falling short on the ultimate subtlety front. I think that probably sums up in a way the size, but also the importance, of the difference between Toslink and electrical digital connection.

CONCLUSION

These reservations aside, this lead is certainly cheap and very practical, and perfectly fine for any recording duties. It would be daft not to Recommend it.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £19.99

Sounds much like most other Toslink leads: slightly lacking detail, but good value.

ONE YEAR GUARANTEE

Recoton (UK) Ltd, Towngate Business Centre, Lester Road, Walkden, Manchester, M38 0PT

(0161) 702 5000

SPECIFICATION

Topology: Toslink

SONICLINK Digital Optical Optical Interconnect

This was the only cable in the group supplied as longer than 1m – 1.5m. There has long been a belief that optical leads are decidedly dodgy in longer runs, but aside from the fact that this is after all not very much longer, it's worth mentioning that modern fibre materials and construction give losses much lower than some early types, and runs of 10m and over are perfectly practical. And speaking of losses, SonicLink has found a rather nifty way of minimising these by incorporating what it calls 'adjustable' Toslink connectors. That means they are spring-loaded so that the end of the fibre is held in contact with the transmitter and receiver devices. It's not clear how this is done but there's evidently some 'give' somewhere inside the fibre assembly that allows the necessary millimetre or so of movement.

Apart from that, construction is similar to the Chord lead, with metal-bodied plugs and a gold-plated sheath end over the fibre. Overall diameter is moderate at 5mm: SonicLink's Graham Nalty mentioned that he has found some correlation between diameter and



performance, though neither he nor I could think of any explanation.

SOUND QUALITY

Although there was certainly a good deal of generic similarity between this and the other optical leads, it had some small distinguishing features. For a start, it had a slight edge

in bass detail over the Chord and Ross leads particularly, though it also had a similar (if anything a little more pronounced) hollow quality to the QED electrical lead – without however matching the latter's extension and assurance. Across most of the spectrum, once again, there was a persistent feeling that

some detail had gone missing, which tended to make for a less interesting listening experience: quiet music passes one by, and climaxes lack impact. Imaging seemed slightly better than with the Chord and Ross leads.

CONCLUSION

As optical leads go it's arguable that this one has a slight edge, but it's so slight that it hardly warrants a nod. The price is very fair for the slightly longer length, though.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £30.00

Possibly slightly more detailed than other opticals, but still no match for a decent electrical digital link.

TWO YEAR GUARANTEE

SonicLink, Derwent Business Centre, Clark Street, Derby, DE1 2BU

(01332) 674929

SPECIFICATIONS

Topology: Toslink



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STRAIGHT WIRE Info-Link Coaxial Interconnect

By some margin the most expensive cable here, Info-Link justifies its price not least on the use of a solid silver centre conductor. Dielectric is 'microporous Teflon foam' and the screen appears to be the usual tape and braid. The phono plugs are Straight Wire's own, seriously chunky affairs with a split centre pin and a collet-locking ground contact. Given the use of the collet lock, I wish Straight Wire had made the earth contact slightly less tight, as it proved nearly impossible to fit and remove on some phono sockets, and they don't all take infinite abuse! Assembly to the plugs is good, though the soldering was noticeably tidier at one end than the other, and although the screen is for once connected all round, the cut-away design of the plug partly negates the advantages of that, making interference rejection less good than it might be.

SOUND QUALITY

There's no doubt that this is a good cable, but it has a particular character which is frankly most surprising in a digital cable. There's a lightness to the bass, which is far from unpleasant and makes for a very agile sound



altogether, but which certainly defies any simple electronic/psychoacoustical explanation. In fact the low frequencies are there if one listens for them, and it's never hard to distinguish the pitch of low notes either, but there's a certain loss of weight at any level, loud or soft.

That's hardly more than a matter of taste. What's more concrete is that detail is excellent and imaging very good too, although I felt that both of these suffered by a small margin at climaxes, by comparison with the QED cable, and there was a hint of glaze on orchestral violins.

Dynamics are unrestricted across the board, and excitement is never withheld when it's required.

CONCLUSION

The general trend with this cable seems to point to its ideal use by those who value excitement above subtlety, and indeed it was at its best with upfront music like rock and the Buena Vista Social Club. That's fine, but at this price one might wish for a little more all-round suitability...

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£299.95**

■ A good cable, but bass seems a little light and detail suffers a little at climaxes.

■ TWO YEAR GUARANTEE

✉ CSE, Unit 9, Centre Park Holdings, The Airfield, Tockwith, York, YO5 8QF
☎ (01423) 359054

SPECIFICATIONS

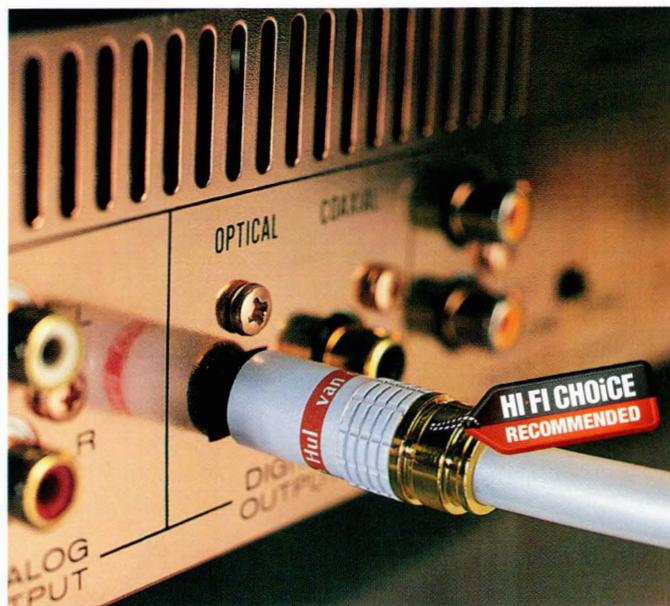
■ **Topology:** Coaxial, 75 Ohm
■ **Conductor:** Silver
■ **Dielectric:** Foamed Teflon

VAN DEN HUL Optocoupler Optical Interconnect

It would be unlike van den Hul to make a completely 'me too' cable, and although there's not much room for manoeuvre with Toslink leads, the Dutch maven has done his best. The Optocoupler has domed ends to the fibre, which according to vdH leads to better focussed light within the fibre and hence less 'modal dispersion' and lower jitter. That appears to make sense: modal dispersion is indeed the bugbear of large-diameter plastic fibres of the type universally used in Toslink leads, and it places limits on data rate and transmission distance. vdH claims that the lead is good for 250Mbit/s, which, in the absence of Toslink transmitters and receivers capable of anything like that rate, we'll have to take on trust for now. Construction is much like other 'upmarket' Toslink leads, with metal-bodied plugs, though these give a particularly tight fit in sockets (perhaps a bit too tight – Toslink sockets are not very robust). 3.5mm 'mini-plugs' are an option.

SOUND QUALITY

Of all the optical leads, this seemed the only one that was clearly differ-



entiated from the others. Even so, differences are not vast, but there is a greater amount of detail on offer right across the spectrum, approaching that of some electrical leads. Bass is extended and quite strong, though not quite as tuneful as with electrical connections, and although voices (especially choral) still lack

some precision they are better defined and easier to understand than with the other optical leads. Imaging is certainly no worse than with the others, perhaps just a shade better, and climaxes are a touch cleaner, which also makes for a better sense of scale. Overall, there is a greater sense of ease to

the sound and any kind of music is easier to follow and to listen to for long periods.

CONCLUSION

Although it's hard to get wildly enthusiastic about this lead, it does achieve a better performance than competing products. That should make it a good choice for connecting gear that lacks an electrical digital output, and as such it seems appropriate to Recommend it.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE **£49.95**

■ Noticeably has the edge over other optical leads, but still second best to electrical types.

■ LIFETIME GUARANTEE

✉ van den Hul UK, Unit 12, Imex House, 6 Wadsworth Road, Perivale, Middx, UB6 7JJ
☎ (020) 8997 4280

SPECIFICATIONS

■ **Topology:** Toslink



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CONCLUSIONS

DIGITAL INTERCONNECTS

Having approached this test with some trepidation, I am now quite convinced of the wisdom of careful digital cable selection. Before we have a full post mortem, however, I should like to mention the ninth cable that rounded out the batch – free giveaway analogue interconnect, the stuff we’re always telling you to use as parcel string. How it fares as digital cable is of interest, because from its basic electrical parameters it could hardly be worse suited to the job, and yet it demonstrably doesn’t actually lose any data over 1m or so.

While it doesn’t entirely mask the virtues of the dCS Delius DAC, it certainly has a pronounced, and decidedly unpleasant, effect. Images are completely to pot, shifted sideways, backwards and forwards, and detail is highly random – one instrument will be nicely pointed, another barely distinguishable. On the other hand, tonality is relatively unaffected, and dynamics don’t seem too bad either, but all in all it was a trial even listening to a couple of brief excerpts. Considerably worse than a Toslink lead, by the way.

That’s useful to put the results into context. For one thing, all four of the electrical cables had very similar electrical parameters, which simply means that they all closely meet the 75 Ohm specification (given that, there’s little room for variation in inductance and capacitance, and resistance is unlikely to vary widely either). I’ve found cables in the past sold as digital interconnects which missed that spec by some way, and they might well sound very different, but it seems that even

within its parameters there is some room for subjective differences – which, I would hazard, are as much due to termination practice as the cable itself.

In the end we have a clear hierarchy of electrical cables, followed by the Toslinks. Among the former, QED seemed to offer the most all round, with only the smallest of deviations from tonal neutrality in the bass to mar what otherwise seems completely blameless performance. By a nose, it beats Audioquest’s Digital One into second place, and while Ixos and Straight Wire both fell short of a formal pat on the back, the distance was not so very great – indeed, had the Straight Wire been considerably cheaper, it would have been recommendable.

As for Toslinks, as I said in the introduction it seems probable that the weakest links in the chain are the transmitters and receivers and that scope for improvements in the (polymethacrylate) fibre is limited. All the same, van den Hul seems to offer just a fraction of a lead on the rest of the field and is recommended accordingly, while the Ross picks up a gong simply for value. In the end, there’s not much competition between Toslink and electrical connections, since the former generally apply to equipment that lacks the inputs or outputs for the latter, or of course in recording duty where they can sometimes help eliminate ground loops.

For listening applications, though, electrical still rules. Now I confidently await the letters saying that this is all rubbish – but don’t you wait for that, get along and listen to some!

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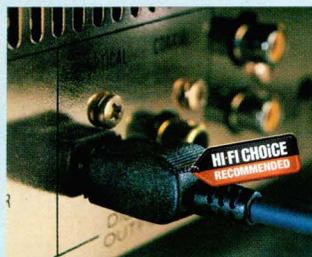
QED Quunex

A smart, practical, well-made cable from one of the most reputable brands in the business: the cheapest electrical cable in the group and it still sounds great. Who would not be impressed? Apart from QED’s competitors perhaps...



AUDIOQUEST Digital One

Only just behind the QED in the absolute performance stakes, though a little more expensive. Sound is confident and detailed across the audio spectrum, with a particularly solid bass which all gives a rewarding listening experience.



ROSS OP004

If you need an optical cable, you aren’t going to pick one up for much less than this – and you even get a pair of mini-plug adaptors thrown in. Sound, though, seems on a par with supposedly ‘up-market’ competition, so you can’t go wrong.



VAN DEN HUL Optocoupler

It’s a bit specialist this one, because there aren’t that many situations in which you will absolutely have to wring the last bit of performance out of a Toslink-only digital interface. Still, if that’s where you’re at, this could be a nifty upgrade.

DIGITAL INTERCONNECTS COMPARISON TABLE

MAKE	AUDIOQUEST	CHORD COMPANY	IXOS	QED	ROSS	SONIC LINK	STRAIGHT WIRE	VAN DEN HUL
MODEL	DIGITAL ONE	OPTILINK	1051-100	QUINEX P75	OP004	DIGITAL OPTICAL	INFO-LINK	OPTOCOUPLER
PRICE (1m)	£35.00	£40.00	£39.95	£25.00	£19.99	£30.00 (1.5m)	£299.95	£49.95
SOUND	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
GUARANTEE	10 yr	Life	Life	2 yr	1 yr	2 yr	2 yr	Life
TOPOLOGY	Toslink	Coaxial	Coaxial	Coaxial	Toslink/miniplug	Toslink	Coaxial	Toslink
CONDUCTOR	PMMA	Long-grain copper	Silver-plated OFC	High purity OFC	PMMA	PMMA	Solid silver	PMMA
DIELECTRIC	n/a	Teflon	Foamed polythene	Low density polythene	n/a	n/a	Foamed Teflon	n/a



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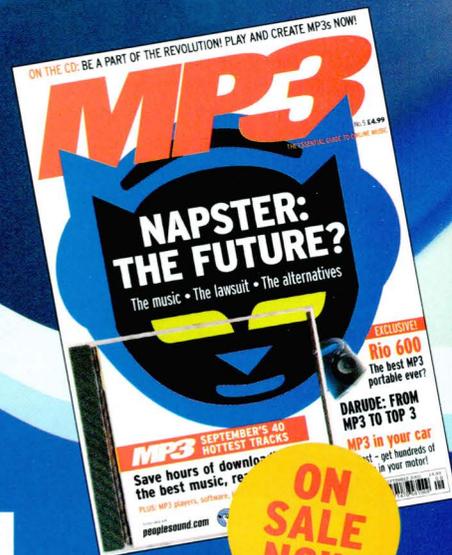
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When most people think of Quad, it conjures up images of classics such as the Quad II, the current-dumping 405, the original ESL (or 'Walker's little wonder', as it was fondly known), and more recently the ESL-63. Quad has always managed to stay ahead of the game, particularly bearing in mind today's diversity in musical tastes and the level of competition rife amongst high-end brands. Quad has met this challenge with two of the most eagerly awaited product launches of recent years.

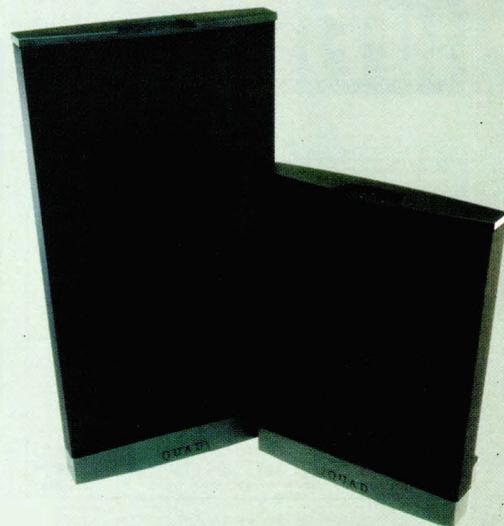


ESL-988 AND ESL-989

New electrostatic loudspeakers are a rare event indeed, but Quad has pulled two out of the bag: the all-new ESL-988 (a replacement for the much loved ESL-63), and the ESL-989, a bigger version with additional bass panels – as much of a revolution as the original was in 1957.

Both the new ESL loudspeakers share a design featuring concentric rings of anodes, fed through delay lines to create a perfectly spherical wave front; these are the only speakers in the world to use this innovative construction technique. Virtually every component has had a complete overhaul since the days of the ESL-63. A much cleaner signal path, new upgraded transformers, and a thorough overhaul in rigidity and robustness answer criticisms levelled at the old ESL-63.

Both models demonstrate a massive improvement, retaining the famous strengths of the ESL-63s, but with none of the shortcomings. Stereo imaging is simply breathtaking, and the resolution and detail of the sound is equally impressive. On top of this, the dynamics have been improved and the addition of two extra electrostatic bass panels on the 989 means they can cope with a much wider spectrum of musical styles. With complete overload protection, both the 988 and 989 are also capable of much louder volumes than their predecessors.



Top right: Quad QC-twenty four preamp and a pair of II-Forty power amps. Above and right, the 988 and 989 electrostatic speakers. Below: the II-Forty with its KT-88 output valves on show.



QUAD II-FORTY

As if two new ESLs were not enough, Quad are now beginning production of the Quad II-forty and QC-twenty four – a true high-end, all-valve pre/2x monobloc package. Based upon the legendary Quad II, re-engineered for the requirements of modern equipment, the original circuit topology has been fully retained, but now the power amplifiers use KT-88s (40wRMS) among a complement of exclusive Quad valves. The input valves are metal cased military items, designed initially for the guidance systems of ground-to-air missiles – but now put to a slightly more constructive use.

Created by perhaps the UK's finest valve designer, Andy Grove, the Quad II-forty caused something of a stir at last year's London Hi-Fi Show where they were previewed for the first time. The originals became a legend in the world of hi-fi, and the successors could well be destined for the same prestigious reputation.

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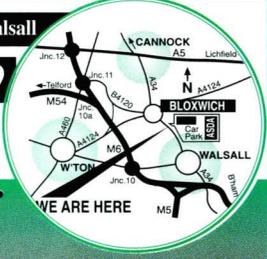
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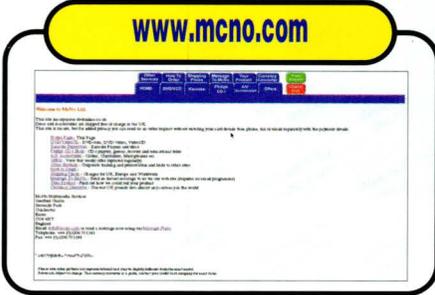
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- E EDITOR'S CHOICE:** Components which have outstanding sound quality but do not qualify for BB or R because of non group testing.

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The *Hi-Fi Choice Price Guide and Directory* are extremely simple to use, but contain all the information you need to select and buy the perfect hi-fi system. Here's how it works.

- STEP 1 DISCOVER** which products fall within your budget by using our Price Guide, which starts on this page. The product listing is updated using manufacturers' data every other month, and aims to include every hi-fi component currently available in the UK. (But please fax us on (020) 7317 2686 with any omissions!) It is an alphabetical listing divided into different types of hi-fi component, and also into price bands.
- STEP 2 PRODUCTS** whose names are printed in **RED** are those we have reviewed, which you can read about in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy, Recommended or Editor's Choice awards, denoting products of exceptional quality and value. The Directory is sorted by product type and listed alphabetically, and the beginning of each section provides essential information about each kind of hi-fi component.
- STEP 3 FIND** your nearest hi-fi store in our Dealer Directory (at the end of the Directory) to book a demonstration of the hi-fi equipment you want to hear. Remember to take your own software!

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AMPLIFIERS INTEGRATED

KEY

- Ⓢ - Number of line-level inputs.
- '20W' - Rated RMS output power per channel into a nominal 8 Ohm load.

UP TO £250

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Cambridge A1 Mk III	Ⓢ	30W	100
Cambridge A1 Mk3 SE	Ⓢ	30W	120
Cambridge A100	Ⓢ	40W	140
Cambridge A300	Ⓢ	40W	150
Cambridge A3i	Ⓢ	60W	200
Cambridge A500RC	Ⓢ	50W	200
Denon PMA-250SE	Ⓢ	30W	140
Denon PMA-350SE	Ⓢ	50W	180
Denon PMA-535R	Ⓢ	50W	230
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H/K HK630	Ⓢ	40W	200
H/K HK5270	Ⓢ	65W	250
JVC AX-A372BK	Ⓢ	40W	200
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Kenwood KA-1080	Ⓢ	60W	140
Kenwood KA-3080R	Ⓢ	70W	170
Kenwood KAF-3010R	Ⓢ	70W	180
Kenwood KAF-3030R	Ⓢ	50W	200
Marantz PM-48	Ⓢ	50W	150
Marantz PM-57	Ⓢ	50W	200
Marantz SR-47	Ⓢ	40W	200
Marantz PM6010 OSE	Ⓢ	50W	230
Marantz PM-66SE	Ⓢ	50W	230
Musical Fidelity E1	Ⓢ	30W	199
NAD 310	Ⓢ	20W	100
NAD C300	Ⓢ	25W	146
NAD C320	Ⓢ	40W	200
NAD 312	Ⓢ	25W	200
Pioneer A-109	Ⓢ	40W	120
Pioneer A-209R	Ⓢ	45W	150
Pioneer A-307R	Ⓢ	55W	170
Pioneer A-509R	Ⓢ	60W	250
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Rotel RA931	Ⓢ	35W	175
Rotel RA971 Mk II	Ⓢ	60W	250
Sansui AUX-410R	Ⓢ	50W	150
Sansui AUX-510R	Ⓢ	70W	230
Sherwood AX 4050R	Ⓢ	50W	150
Sherwood AX-7030R	Ⓢ	95W	230
Sony TA-FE230	Ⓢ	40W	100
Sony TA-FE330R	Ⓢ	60W	130
Sony TA-FB740R	Ⓢ	50W	200
Teac A-E2000	Ⓢ	50W	180
Teac A-R600	Ⓢ	90W	200
Technics SU-V300	Ⓢ	25W	130
Technics SU-V500	Ⓢ	30W	160
Technics SU-A600 Mk3	Ⓢ	37W	200
Technics SU-V620	Ⓢ	70W	230
Technics SU-A707	Ⓢ	70W	250
Technics SU-A700 Mk3	Ⓢ	45W	250
Yamaha AX-396	Ⓢ	60W	170
Yamaha AX-496	Ⓢ	85W	230

£251 TO £500			
Arcam Alpha 7R	Ⓢ	45W	300
Arcam Alpha 8R	Ⓢ	50W	380
Arcam Alpha 9	Ⓢ	70W	500
Audio Analogue Puccini	Ⓢ	40W	475
Audiogram MB1	Ⓢ	40W	493
Creek 4330	Ⓢ	40W	279
Creek 4330R	Ⓢ	40W	355
Creek 5250	Ⓢ	50W	450
Cymbol CA1	Ⓢ	40W	499
Cyrus 5	Ⓢ	40W	500
Denon PMA-735R	Ⓢ	65W	300
Denon PMA-1500R	Ⓢ	70W	500
Edmund Audio ES110	Ⓢ	85W	400
EMF Audio Sequel	Ⓢ	50W	450
H/K HK650	Ⓢ	60W	330
Kenwood KA-5090R	Ⓢ	65W	300
Magnum IA120	Ⓢ	65W	265
Magnum IA170	Ⓢ	96W	330
Magnum IA170SE	Ⓢ	90W	430
Marantz PM7000	Ⓢ	95W	300
Marantz PM-68	Ⓢ	90W	300
Marantz PM-66 Kl Sig.	Ⓢ	50W	400
Marantz SR5000	Ⓢ	105W	500
Monno Asty	Ⓢ	55W	400

Musical Fidelity E11	Ⓢ	60W	300
Musical Fidelity X-A1	Ⓢ	50W	480
Musical Fidelity A2	Ⓢ	25W	500
Myryad T-40	Ⓢ	50W	400
NAD 314	Ⓢ	35W	260
NAD C340	Ⓢ	50W	270
NAD 317	Ⓢ	80W	400
Onkyo A9210	Ⓢ	40W	260
Onkyo A921	Ⓢ	50W	350
Onkyo A922	Ⓢ	70W	400
Pioneer A-607R	Ⓢ	60W	300
R-20 A10	Ⓢ	50W	500
Rega Big Brio	Ⓢ	35W	298
Rega Luna	Ⓢ	40W	375
Rega Mira	Ⓢ	60W	475
Roksan Kandy KA-1	Ⓢ	110W	475
Rotel RA-972	Ⓢ	60W	450
Shearpe 2.5	Ⓢ	35W	499
Sony TA-FB940R	Ⓢ	60W	300
Sony TA-F300ES	Ⓢ	70W	450
Sony TA-F3000ES	Ⓢ	40W	500
TAG McLaren 60i	Ⓢ	60W	500
Talk Electronics Storm 1	Ⓢ	50W	500
Teac AH-500	Ⓢ	50W	280
Technics SU-A808	Ⓢ	55W	300
Technics SU-A909	Ⓢ	100W	400
Token K50	Ⓢ	55W	350

£501 TO £700

Alchemist Kraken APD6A	Ⓢ	55W	600
Alchemist Nemesis	Ⓢ	80W	700
Audio Analogue Puccini Remote	Ⓢ	50W	575
Audio Note Kanji Line SE	Ⓢ	90W	699
Audio Note First integrated	Ⓢ	40W	699
Audio Refinement Complete	Ⓢ	50W	699
Audiogram MB2	Ⓢ	60W	599
AVC EL34	Ⓢ	30W	650
CR Dev CR324se	Ⓢ	150W	569
CR Dev Kalypso	Ⓢ	15W	599
CR Dev CR325	Ⓢ	175W	699
Creek 5250SE	Ⓢ	60W	665
Cyrus 7	Ⓢ	60W	700
Densen Beat B-100 MkII	Ⓢ	60W	700
Gamma Gemini	Ⓢ	12W	699
H/K HK690	Ⓢ	60W	530
Hi Q Sound MCI	Ⓢ	30W	565
LFD Integrated 0	Ⓢ	50W	549
Linn Majik (Line)	Ⓢ	33W	650
Lynwood Opal	Ⓢ	80W	685
Magnum IA200	Ⓢ	100W	599
Magnum Class A	Ⓢ	85W	690
Musical Fidelity A220	Ⓢ	50W	700
Myryad Cameo	Ⓢ	60W	530
Myryad MI 120	Ⓢ	60W	700
Naim Nait 3	Ⓢ	30W	590
R-20 A20 Mk II	Ⓢ	70W	600
Rose Scion	Ⓢ	65W	615
Shearpe Phase 2	Ⓢ	50W	689
Sugden Audition T	Ⓢ	65W	549
Talk Electronics Cyclone 1	Ⓢ	60W	550
Talk Electronics Storm 2	Ⓢ	50W	650
Teac AB-X7R	Ⓢ	50W	700
YBA Complete Integre	Ⓢ	50W	699

£701 TO £1000

Alchemist Nexus	Ⓢ		799
Alchemist Forseti Integrated	Ⓢ	100W	1,000
Arcam Alpha 10	Ⓢ	100W	800
Arcam FMJ A22	Ⓢ	100W	1,000
Aria S2	Ⓢ	12W	1,000
Audio Analogue Puccini SE Remote	Ⓢ	60W	795
Audio Note Oto Line PP	Ⓢ	12W	950
AVI S2000MI	Ⓢ	100W	999
Copland CSAB	Ⓢ	60W	899
Credo IMP702	Ⓢ	70W	850
Credo IMP703	Ⓢ	70W	1,000
Denon AVR-3300	Ⓢ	75W	800
Exposure XX Super	Ⓢ	60W	800
Exposure XV Super	Ⓢ	60W	900
Exposure RCXXV	Ⓢ	60W	1,000
LFD 0 LE Integrated	Ⓢ	60W	799
Linn Majik (Phono)	Ⓢ	33W	800
Magnum Class A SE	Ⓢ	80W	795
Marantz PM-17	Ⓢ	60W	900
Meridian 551	Ⓢ	55W	795
Musical Fidelity A3	Ⓢ	85W	849
Musical Fidelity X-A100R	Ⓢ	75W	999
MVL A2	Ⓢ	100W	970
NAD T770	Ⓢ	90W	1,000
Naim Nait 3 R	Ⓢ	30W	780
Nakamichi AV-10	Ⓢ	140W	1,000
Pathos Classic One	Ⓢ	55W	995
Plinius 2100i	Ⓢ		995
Roksan Caspian	Ⓢ	70W	795
Shearpe Phase 2 Reference	Ⓢ	50W	799
Sonneteer Alabaster	Ⓢ	50W	900
Sugden A21a Int	Ⓢ	25W	799
Sugden Audition C	Ⓢ	60W	799
TAG McLaren 60iRV	Ⓢ	60W	999

£1001 TO £2000

Aria SR-1	Ⓢ	80W	1,250
Aria S6	Ⓢ	35W	1,600
ATC SIA2-150	Ⓢ	150W	1,984

Audio Analogue Maestro	6	150W	1,995
Audio Note Soro Line PP	6	20W	1,200
Audio Note Oto Line SE	4	12W	1,200
Audio Note Soro Line SE	3	12W	1,500
Audio Note Soro Line SE	18W	1,699	
Audio Valve Assistant-S 20	1	20W	1,250
Beam-Echo SA-50	5	50W	1,950
Beard 30-60 Mk II	6	30W	1,495
Bow Technologies Wazoo	6	50W	1,795
Bryston B-60	5	60W	1,281
Canary Audio CA-608	4	24W	1,495
Copland CSA14	6	60W	1,199
Copland CSA28	6	60W	1,249
Copland CTA402	5	35W	1,698
CR Dev Romulus V3	5	35W	1,198
CR Dev Athena	4	38W	1,499
CR Dev Remus V3	5	60W	1,989
Credo LIM 702	1	1,191	
Credo LIM 703	1	1,249	
Densen DM-10	6	75W	1,450
EAR 859	6	13W	1,999
EAR 834	6	40W	1,999
Golden Tube Audio SI-50 MkII	5	50W	1,100
Graef Venticinque	5	25W	1,790
Jadis Orchestra	5	40W	1,345
LFD Integrated 1	5	65W	1,099
Lundahl Mag Amp	5	23W	1,735
Marantz PM17KI Sig	6	60W	1,300
Meracur Intrare	6	60W	1,095
NAD S300	6	100W	1,900
Papworth MIH-200	6	200W	1,200
Papworth MVH-200	6	200W	1,200
Plinius 8150	6	1,895	
Practica Sonoro	6	100W	1,800
R-20 A30.1	6	100W	1,500
Restek Fantasy 2	6	100W	1,499
Roksan Caspian DSP	6	1,295	
Sonic Frontiers Anthem Integrated	6	25W	1,299
Sony TA-VA777ES	6	100W	1,500
T+A R1200R	5	90W	1,750
Woodside ISA230 Line	5	30W	1,099
Woodside ISA230 Disc	4	30W	1,249
YBA a Integre Line	5	50W	1,095
YBA a Integre DT Line	5	50W	1,395

OVER £2000

Adyton Opera	4	50W	2,595
AMP Flux System 2	5	50W	5,000
Arcam Alpha 10 DAVE	7	100W	2,500
Arcam FM1 A22 DAVE	7	100W	2,850
Aria S8	5	24W	2,950
Art Audio Integra	5	25W	2,400
Audio Note Meishu Line	9W	2,750	
Audio Note Ongaku	6	26W	56,000
Audio Research CA50	5	45W	3,399
Belcanto SET140	40W	4,450	
Belcanto Orfeo 30S1	35W	5,450	
Cary CAD-300SEI	4	15W	3,395
Conrad-Johnson CAV-50	5	50W	2,495
EAR V20	6	24W	2,495
Gamma Rhythm	6	18W	2,499
Gamma Rhythm Ref	4	20W	3,499
Gamma Moment	5	40W	19,999
Jadis DA30	5	30W	2,690
Jadis DA60	5	60W	4,483
Krell KAV300i	6	150W	2,495
Krell KAV300r	4	150W	3,333
Krell KAV500i	6	250W	5,000
McIntosh MA6400E	6	100W	5,999
McIntosh MA6800E	5	150W	5,999
Meracur Onesta	4	75W	2,595
Musical Fidelity A1001	6	200W	2,500
Pathos Twin Towers	5	35W	3,250
Rotel RSP-985/RPB-985	6	130W	2,225
Rowland Concentra	6	100W	5,500
Sonus Faber Musica	6	50W	2,295
T+A R1500R	6	135W	2,015
Tube Tech Unisig Sig. Int.	5	30W	2,300
Tube Tech Synergy PPS	5	150W	6,900
Wavac MD811	5	15W	2,995
Wavac MD300B-ST	6	10W	5,575
Wavac MD300B WE	6	10W	6,750

AMPLIFIERS PREAMPS

KEY
 (etc) - Number of line-level inputs.
Ph - Phono input fitted as standard
 (may be an option on some other models).

UP TO £500

Arcam Alpha 9C	5	400
Aria Simply Phono	5	500
Audio Analogue Bellini	5	495
Audio Note M Zero	5	299
Beam-Echo PP-21	5	499
Bryston BP1	1	438
CR Dev Themis	5	349
Creek OBH-9	5	160
Creek P43/R	6	350
Creek PS2	6	499
Crimson CS610D	6	475
Cyrus aEQ7	5	498
Densen DP-Drive/DP-02	5	500

DPA Enl'ment phono	275
EAR 834P	349
EAR 834L	449
EAR 834P/MC	499
Henley HMC50	150
Henley HMC100	350
Hi Q Sound LCP2	149
LFD Mstral Linestage	449
LFD LSO Linestage	499
Lumley PP70	345
Lumley PP1	345
Magnum MP120	330
Magnum MP660	500
Magnum MP350	500
Monrio Asty L	500
Moth 30 Passwe	149
Moth 30 Phono	249
Moth 30 Line stage	349
Musical Fidelity X10-D	120
Musical Fidelity X-LP	130
Musical Fidelity X-PRE	200
Musical Fidelity E20	400
NAD PP-1	40
NAD 114	270
NAD 116	430
Naim Prefix	360
Naim NAC92	485
Parasound P/HP-100	130
Parasound P/HP-850	400
Plinius Jarrah	450
Pro-Ject Phono Box	40
QED Discsaver DS-1	35
R-20 R-20	450
Rega EOS	398
Rega Cursa	475
Roksan Artaxerxes 10	445
Rose RV-23	450
Rotel RQ970BX	150
Rotel RC971	155
Rotel RC972	250
Rothwell Indus	499
Sunfire Phono	430
Talk Electronics Hurricane 1	500
Technics SU-C1010	300
Tom Evans Microgroove	399
Trilogy 905	375
Trilogy 904	375
Trilogy 900	499

£501 TO £2000

Adyton Chorus	1,995
Alchemist Kraken Pre	549
Alchemist Forseti Pre	999
Alchemist Signature Pre	1,499
Aria Feather One	795
Aria Mystery Two	1,750
Aria Mystery One	1,750
Art Audio Vinyl One MM	916
Art Audio VPS Line	963
Art Audio Vinyl One MM/MC	1,307
Art Audio VPS Phono	1,460
Art Audio Conductor Phono MC	2,000
Audio Note M1 Line	550
Audio Note M1 RIAA	550
Audio Note M2 Line	999
Audio Note Discovery	999
Audio Note M2RIAA	1,099
Audio Prism Mantissa	1,995
Audio Research LS8 MkII	1,449
Audio Research PH3	1,490
Audio Synthesis Pro Passion	595
Audio Synthesis ADQ Disc Stage	995
Audio Synthesis Passion Ultimate	995
Audio Valve Eklipse	1,650
AVI S2000MP	949
AVI S2000MP+P	1,199
Beam-Echo SP-21	1,116
Bryston BP20	1,126
Bryston BP-25	1,326
Bryston BP-25P	1,592
Canary Audio CA-606	1,295
Canary Audio CA-601	1,595
Cary SLP-50 Mk II	1,195
Cary PH-501	1,695
Chord Phono	1,898
Clearaudio Symphono	740
Concordant Exhilarant	900
Concordant Exquisite	1,950
Conrad-Johnson PV-10AL	995
Conrad-Johnson PV-10A	1,295
Conrad-Johnson PV-12AL	1,990
Conrad-Johnson EF-1	1,990
Conrad-Johnson PF-2	1,990
Copland CSA303	1,249
Copland CTA301 MkII	1,099
CR Dev Carmenta	659
CR Dev Argento	699
Credo CMP004	1,246
Credo CMP005	1,876
Cyrus aC7	800
Cyrus aEQ7/PSX-R	826
Densen Beat B-200	1,000
Densen DM-20	1,580
DNM 3 Start	1,000
DNM 3A Start	1,300
DPA Enlightenment pre	795

Dynavector L200	995
Dynavector P100	1,495
Dynavector L100	1,995
Exposure XII	800
Exposure XIX	800
Exposure XVII	850
Exposure RC XXI	1,000
Gate PR101P	1,195
Golden Tube Audio SEP-2	990
Golden Tube Audio SEP-3	1,995
Graef WFB Two	1,390
Graef WFB One	1,750
Henley HMC200	600
Hi Q Sound MCB2	545
Hi Q Sound MCL2	645
Jadis DPL2	1,590
Krell KAV250p	1,999
LFD MC1 Phonostage	949
LFD L51 Linestage	999
LFD MC2 Phonostage	1,499
LFD L52 Linestage	1,599
LFD L5B Linestage	1,999
Linn Wakonda	750
Linn Linto	850
Linn Kairn	1,400
Lumley LV1.5	895
Lumley LV1	1,150
Lumley PV1.5	1,700
Lumley PV1	1,700
McIntosh C712	1,999
Meracur Ingredi	925
Mendian 501	695
Meridian 562	765
Meridian 562V	995
Mendian 502	1,295
Michell Delphini	895
Michell Orca	1,650
Muse Model 3	1,990
Musical Fidelity X-LP2/X-PSU	628
Musical Fidelity X-P100	800
Musical Fidelity F25	1,500
Myriad MP100	600
NAD S100	600
NAD 118	1,000
Naim NAC92R	650
Naim NAC72	745
Naim NAC102	1,000
Quad 99 Pre	750
Rega Hal	998
Roksan ROK-L2.5	1,250
Rose RV-23S	525
Rotel RC995	525
Shearpe Phase 6 Pre	999
Shearpe Phase 1 Pre Ref	1,499
Siemel MC20	650
Siemel MM20	650
Siemel TU10	599
Siemel TR20	599
Sonic Frontiers Anthem Pre 1P	899
Sonic Frontiers Phono 1	1,999
Sonographe SC26	995
Sugden Audition Pre	549
Sugden Masterclass Pre	1,995
Sumo Athena IIB/1 LS	987
Sumo Athena III	987
Sumo Artemis uP	1,595
Sunfire The Classic	1,630
T+A P1200R	965
TAG McLaren PA10	849
TAG McLaren PPA20	1,499
TAG McLaren PA20R	1,499
TAG McLaren DPA32R	1,695
Talk Electronics Hurricane 2	650
Talk Electronics Hurricane 3	900
Talk Electronics Hurricane 4	1,550
Talk Electronics Hurricane 5	1,900
Thorens TTP-200F	699
Tom Evans The Groove	1,500
Trilogy 901	750
Trilogy 906	995
Trilogy 902	1,595
Tube Tech Seer Line	935
Tube Tech Mac Phono	1,150
Tube Tech Prophet	1,970
van den Hul Pre-amp	1,800
Woodside SC27 Line	949
Woodside SC26 Line	1,557
XTC PRE-1	1,350
YBA 3a Line	995
YBA 2a Line	1,450

OVER £2000

Adyton Temper	2,495
Adyton Modus	2,695
Art Audio VPS Dual Mono Line	2,350
ATC SCA2	2,999
Atma-Sphere MP-3	3,795
Atma-Sphere MP-1	7,600
Audio Note M3Line	2,650
Audio Prism Avanti	7,995
Audio Research LS25	4,999
Audio Research REF 1	8,495
Audio Valve Fanfare	4,995
Audiolab 511	6,775
Balanced VK-50	3,995
Boulder L3AE	2,100
Boulder L5AE	3,400

Boulder L5M	3,800
Boulder 2010	22,000
Canary Audio CA-801	3,750
Cary SLP-98L	2,395
Chord CPA 1800	2,220
Chord CPA 2200	2,740
Chord CPA 3200E	4,041
Chord CPA 4000E	6,675
Conrad-Johnson PF-R	2,490
Conrad-Johnson PV-12A	2,590
Conrad-Johnson Premier 15	3,995
Conrad-Johnson Premier 14	4,495
Conrad-Johnson Premier 16LS	7,995
Conrad-Johnson Art	14,995
CAT SL1 Ultimate	5,750
CR Dev Kastor	2,995
Credo LPR 001	2,815
DNM 3C Primus	2,100
DNM 3C Twin	3,100
DNM 3C Six	4,100
EAR 802MC	2,599
EAR G88	9,999
EAR P52	15,999
Gamma Era Ref	7,999
Graef GM13.5B II	3,950
Jadis DPL	2,900
Jadis DPMC	2,900
Jadis JPL	4,200
Jadis JPP200	4,290
Jadis JP30MC	5,290
Jadis JPS2	6,690
Jadis JP80MC	10,166
Jadis JP200MC	15,900
Klyne 6LE	2,650
Klyne 6PE	2,850
Klyne 7LX SE	3,750
Klyne 7PX	4,450
Krell KRC3	2,998
Krell KRC-HR	6,949
LFD Disc Preamp	4,499
Levinson 25S	2,950
Levinson 380	3,995
Levinson 380S	6,495
Levinson 32	14,495
McIntosh C22	2,999
McIntosh C40	4,999
McIntosh C39	5,999
Meracur Pretare	2,195
Michell Delphini Mono	2,250
Naim NAC82	2,225
Naim NAC52	3,450
Pass Labs XOno	2,995
Plinius M14	2,595
Plinius M16L	2,995
Roksan ROK-L1.5	2,250
Rowland Synergy	4,999
Rowland Coherence	14,999
Sonic Frontiers Line 1	2,499
Sonic Frontiers Line 2	3,299
Sonic Frontiers Line 3	4,999
Sony TA-E1	3,000
TAG Pre DA3000	2,640
TAG McLaren DPA32R DAB	2,290
Technics SU-CS300	2,997
Trilogy 918	2,775
Tron Nucleus Phono	3,500
Tron Nucleus Line	3,500
Tron Retro	4,000
Tron Meteor	5,000
Wavac ATT Q	4,500
Wavac PR X1	5,075
Wavac ATT S	5,750
Woodside SC26 Line & Phono	2,233
YBA 1a Line	3,095
YBA Sig. Dual Mono 2	5,870
YBA Sig. Dual Mono 4	10,000

AMPLIFIERS POWER AMPS

KEY
 '20W' - Rated RMS output power per channel into a nominal 8 Ohm load.

UP TO £500

Arcam Alpha 8P	50W	260
Arcam Alpha 9P	70W	400
Creek A43	50W	399
Creek A52	70W	499
Crimson CS620C	50W	450
Cyrus XPA	50W	350
Cyrus Power	50W	500
Earmax Headphone	0.1W	375
Earmax Headphone Pro	0.1W	475
LFD Mstral Phono	60W	449
LFD PAO Powerstage	50W	499
Magnum MF120	85W	365
Marantz MA-500	125W	250
Marantz MA-700	200W	400
Moth 30 Stereo	20W	399
Moth Phones-01	30W	299
Moth 30 Mono/40	0.1W	469
Musical Fidelity X-CANS	40W	130
Musical Fidelity E30	100W	500
Musical Fidelity X-A50	50W	500

Myryad T-60	50W	300
Myryad MA 120	60W	500
NAD 912	30W	200
NAD 214	80 W	370
NAD 216THX	125W	470
Naim NAP90/3	30W	460
Parasound HCA-750A	75W	450
Rega Maia	85W	475
Rotel RB971 Mk II	70W	225
Rotel RB981	130W	355
Shearpe 3.5	35W	489
Talk Electronics Tornado 1	50W	450
Technics SE-A1010	100W	350

£501 TO £2000

Alchemist Kraken Pwr	55W	549
Alchemist Forseti Pwr	150W	1,399
Alchemist Signature Power	100W	1,999
Arcam Alpha 10P	100W	600
Aria Power 35	35W	1,500
Art Audio Quartet	15W	1,753
Art Audio Concerto	25W	1,960
Audio Analogue Donizetti	60W	595
Audio Note The P	40W	550
Audio Note P Zero	8W	599
Audio Note P1	12W	750
Audio Note P1SE	12W	999
Audio Note P2	20W	1,000
Audio Note P2SE	18W	1,499
Audio Note Conqueror	8W	1,599
Audio Prism Antares	35W	1,695
Audio Research D130	130W	1,890
Audio Research VT60	35W	1,999
Audio Valve RKV	0.1W	595
Audio Valve PPP25	25W	1,095
Audio Valve PPP45	45W	1,395
AVI S2000MM	150W	1,399
Beauhorn Obligato	7W	1,695
Bryston 2B-1P	75W	750
Bryston 3B-ST PRO	150W	1,160
Bryston 3B-ST	150W	1,160
Bryston THX3B	150W	1,262
Bryston 4B-ST PRO	300W	1,756
Bryston 7B-ST	500W	1,815
Bryston 7B-ST PRO	500W	1,815
Bryston THX4B	300W	1,850
Bryston THX7B	500W	1,886
Canary Audio CA-706	40W	1,695
Canary Audio CA-708	50W	1,950
Chord SPM 400	100W	1,565
Conrad-Johnson MV-55	50W	1,995
Copland CSA515	150W	1,299
Copland CTA505	67W	1,899
CR Dev Amphion	12W	1,949
Credo PMP 804	12W	1,876
Creek AS2SE	100W	599
Crimson CS630D	100W	850
Crimson CS640D	200W	1,300
Cyrus aP7	150W	1,900
Densen B-300	100W	800
Densen DM-30	100W	1,580
DNM PA Start	45W	1,000
DNM PA1 Start	45W	1,300
DNM PA3	50W	1,900
DPA Enlightenment pwr	100W	995
Dynavector HX75	75W	1,995
Exposure XVIII Super	75W	900
Exposure XVIII Mono	60W	1,800
Golden Tube Audio SE-40	40W	1,100
Golden Tube Audio SE-300B MkII	8W	1,790
Graef Venticinque P	25W	1,395
Graef 5050	50W	1,995
Hi Q Sound MCM	70W	715
Jadis DA5	40W	1,749
Krell KAV150a	150W	1,990
Lexicon 212	120W	1,850
LFD PA1 Powerstage	60W	999
LFD PA2 Powerstage	75W	1,599
LFD PA2M Powerstage	90W	1,999
Linn LK100	50W	650
Linn LK240	120W	750
Linn AV5105	100W	1,200
Lynwood Ruby	120W	985
Magnum MF330	150W	685
Magnum MF660	125W	825
Magnum AS005E	120W	1,485
Magnum AS05E	200W	1,599
McIntosh MC7100	100W	1,999
Meracur Ciere	60W	1,095
Meridian 555	60W	750
Meridian 556	100W	895
Meridian 557	200W	1,400
Meridian 505	160W	1,590
Michell Alecto Stereo	50W	1,150
Michell Alecto Mono	100W	1,950
Monrio Asty P	100W	950
Moth Stereo 60	60W	599
Moth 30 Mono/100	100W	879
Muse Model 100	100W	1,490
Musical Fidelity X-A200	200W	1,000
Myryad MA240	120W	1,000
NAD 218THX	200W	850
NAD S200	200W	1,400
Naim NAP140	45W	770
Naim NAP180	60W	1,112
Naim NAP135	75W	1,705

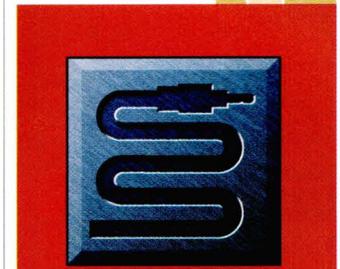
Naim NAP250	70W	1,705
Papworth TVAS0	50W	1,425
Parasound HCA-1000A	125W	600
Parasound HCA-1500A	205W	1,000
Quad 99 Stereo Power	85W	550
Quad 909	140W	900
Quad 99 Monoblock	150W	1,300
Rega Exon	125W	598
Roksan Caspian Power	70W	595
Roksan ROK-S1.5	70W	1,495
Rose RP-190 (Dual Mode)	75W	550
Rotel RB991	200W	600
Rotel RB-1090	380W	1,575
Rothwell Rubicon	10W	949
Shearpe Phase 3	50W	639
Shearpe Phase 3 Reference	50W	749
Shearpe Phase 5 Mono	100W	1,598
Sonic Frontiers Anthem Amp 1	40W	1,299
Sonographe SA250	125W	1,195
Sonographe SA400	220W	1,695
Sugden Audition Power	549	
Sugden A21a Power	25W	649
T+A A1210	90W	875
T+A PA1220R	100W	1,445
T+A A1500	140W	1,535
T+A PA1500R	135W	1,665
TAG McLaren 60P	60W	849
TAG McLaren 100P	100W	1,099
Talk Electronics Tomado 2	65W	600
Talk Electronics Tomado 3	100W	750
Talk Electronics Tomado 4	110W	1,100
Thorens TTA-2000	30W	599
Trilogy 948	50W	1,895
Trilogy 948T	22W	1,895
Tube Tech Unisis Sig. Pwr	30W	1,900
Woodside SA240	40W	1,199
Woodside MA100	100W	1,733
Woodside STA50	50W	1,880
XTC POW-2	150W	1,600
YBA 3a DT Stereo	45W	1,455

OVER £2000

Adyton Cordis 1.6	120W	3,495
Adyton Cordis 3B	280W	12,995
Aria Smart 845	24W	3,500
Aria Smart 300B	24W	4,250
Art Audio Symphony	7W	2,500
Art Audio Tempo	30W	2,714
Art Audio Maestro	60W	3,884
Art Audio Diavolo	13W	4,000
Art Audio Jota	18W	6,000
Art Audio Ellesse	18W	8,500
Art Audio Chiara	25W	10,000
ATC SPA2-200PRO	20W	2,056
ATC SPA2-150	200W	2,699
Atma-Sphere S-30 Mk II	30W	2,450
Atma-Sphere M-60 Mk II	60W	4,195
Atma-Sphere MA-1 Mk II	150W	7,995
Audio Note P3	9W	2,150
Audio Note Quest	9W	2,750
Audio Note Yubi	18W	3,850
Audio Note Conquest	18W	4,450
Audio Note Tomei	30W	8,500
Audio Note Neiro	7W	11,360
Audio Note Ankoru	60W	14,500
Audio Prism Debut Mk II	35W	2,495
Audio Prism Mana	100W	12,995
Audio Research VT50	50W	2,950
Audio Research 100.2	100W	3,395
Audio Research VT100 MkII	100W	4,950
Audio Research VT200	200W	8,790
Audio Synthesis Desire Decade	200W	2,495
Audio Valve Avalon	60W	2,195
Audio Valve Challenger 115	115W	2,995
Audio Valve Challenger 140	140W	3,495
Audio Valve Challenger 300	300W	7,995
Audio Valve Baldur 200 Plus	149W	8,995
Audiolobar 500	230W	5,998
Beam-Echo DL7-35	30W	3,525
Belcanto SET40	40W	3,450
Belcanto Orfeo 30S	35W	4,750
Belcanto SET80	80W	6,750
Border Patrol 300B SE	9W	3,995
Border Patrol 300B SE (WE)	10W	4,495
Boulder 102AE	100W	2,800
Boulder 102M	100W	3,100
Boulder 500AE	150W	4,995
Boulder 500M	150W	5,500
Boulder 2060	150W	25,000
Boulder 2050	999W	45,500
Bryston THX8B	20W	2,385
Canary Audio CA-304	40W	2,695
Canary Audio CA-301	22W	2,995
Canary Audio CA-303	24W	5,495
Cary CAD-572SE	20W	2,250
Cary CAD-2A3.5E	5W	3,150
Cary CAD-300SE	20W	4,495
Cary CAD-805C	50W	7,995
Chord SPM 600	130W	2,040
Chord SPM 1000B	200W	2,920
Chord SPM 1200B	250W	3,790
Chord SPM 1200C	330W	4,210
Chord SPM 1400E mono	500W	5,650
Chord SPM 5000	580W	14,500
Conrad-Johnson MF2250	130W	2,295
Conrad-Johnson MF-2500	250W	3,495

Conrad-Johnson Premier 11A	70W	3,500
Conrad-Johnson Premier 12	140W	6,900
Conrad-Johnson Premier 8XS	150W	17,000
Conrad-Johnson Premier 8A	275W	17,000
CAT JLI	100W	17,550
CR Dev Artemis	35W	4,995
Credo LPO 804	2,456	
Credo PMP 155	2,676	
Credo LPO 455	4,975	
Credo LPO 155	6,983	
DNM PA35	23W	2,900
Dynavector HX1.2	130W	3,995
EAR 861	32W	3,599
EAR 509 Mk II	100W	5,999
EAR 519	100W	4,699
EAR 549	200W	6,499
Exposure IV	90W	2,199
Exposure XVI	125W	4,000
Gamma Aeon	20W	4,999
Gamma Space Ref	18W	7,999
Gamma Aeon Ref	70W	49,999
Gate TR201A	22W	3,335
Golden Tube Audio SE-100	100W	2,495
Graef GM20	60W	2,950
Graef GM100	100W	4,450
Jadis DA8	80W	2,990
Jadis DA7	100W	4,790
Jadis JA30	30W	5,180
Jadis SE300B	10W	7,980
Jadis JA80	60W	9,580
Jadis JA100	100W	10,298
Jadis JA200	160W	13,980
Jadis JA500	400W	19,990
Krell KAV250a	250W	3,145
Krell KAV500/2	100W	3,195
Krell FPB200	200W	5,998
Krell FPB250m	250W	8,994
Krell FPB300	300W	9,500
Krell FPB600	600W	12,900
Krell FPB350m	350W	15,994
Krell FPB650m	23,800	
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Linn Klimax 500	500W	11,200
Lumley M125	120W	3,750
Lumley M250	250W	7,500
Magnum Class A mono	180W	2,450
Magnum A200SE	275W	3,750
Mana Stealth	300W	4,800
Levinson 334	125W	5,495
Levinson 335	250W	7,495
Levinson 336	350W	8,995
Levinson 33H	150W	19,395
McIntosh MC150	150W	3,499
McIntosh MC300	300W	3,999
McIntosh MC500	500W	8,999
McIntosh MC1000	999W	14,999
Meracur Tentare	75W	2,245
Meracur Cantare	-W	8,995
Muse Model 160 Ser. II	160W	2,290
Muse Model 150	125W	2,690
Muse Model 175 Ser. II	175W	3,490
Muse Model 300 Ser. II	300W	3,990
Musical Fidelity F16	200W	2,500
Musical Fidelity NuVista 300	350W	3,300
Musical Fidelity F19	300W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Plinius SA50/3	2,750	
Plinius SA100/3	3,450	
Plinius SA250/3	4,580	
Roksan ROK-M1.5	160W	2,250
Rowland Model 2	75W	4,999
Rowland Model 6	150W	10,999
Rowland Model 8T	250W	12,499
Rowland Model 9T	350W	27,999
Sharp SM-SX1000	165W	10,000
Shearpe Phase 1 Pwr Ref	100W	2,399
Siemal TA20	50W	2,350
Sonic Frontiers Power 1	55W	2,499
Sonic Frontiers Power 2	110W	4,999
Sonic Frontiers Power 3	220W	8,599
Sony TA-N1	200W	4,500
Sugden Masterclass Power	75W	2,995
Sunfire Load Invariant	300W	2,280
Sunfire Signature	600W	2,600
T+A A3000	190W	2,850
TACT Millennium II	150W	7,000
TAG McLaren 125M	125W	2,399
Talk Electronics Tornado 5	200W	2,100
Trilogy 958T	45W	3,395
Trilogy 958	100W	3,395
Tron Type PX25	5W	6,150
Tron Type WE300B	8W	6,550
Tron Type PX25 Mono	5W	12,300
Tron Type WE300B Mono	15W	13,100
Tube Tech Genesis Sig.	100W	4,700
Tube Tech Synergy DMA	150W	6,400
van den Hul Power amp	65W	2,500
Wavac MD572	50W	6,250
Wavac EC300B	10W	16,500
Wavac EC838	35W	21,750
Wavac HE 4304	15W	24,750
Wavac HE 833	100W	27,500
Wavac HE 805	45W	27,500
XTC POW-1	200W	2,500

YBA 2a HC Stereo	70W	2,350
YBA 3a Mono	45W	2,425
YBA 2a HCSD Stereo	70W	3,050
YBA 1a HC Stereo	85W	4,400
YBA 2a HCSD Mono	70W	5,000
YBA 1a HC Mono	85W	6,650
YBA Sig. Stereo	100W	6,995
YBA Passion Mono	250W	8,775
YBA Sig. Mono	100W	9,995
YBA Sig. HC Mono	100W	16,650



CABLES

Analogue Interconnects

KEY

- ⊗ - Stranded construction.
- ⊙ - Solid-core construction.

Prices of interconnects are for a one-metre terminated pair.

Acoustic Precision Eikos	⊗	89.00
Argento Copper I/C	⊗	120.00
Argento Silver I/C	⊗	250.00
Argento VDM Silver	⊗	865.00
Art Yam Church 5000	⊗	515.00
Audio Note AN-A	⊗	18.00
Audio Note AN-C	⊗	35.00
Audio Note AN-S	⊗	99.00
Audio Note AN-V	⊗	179.00
Audio Note AN-Vx	⊗	450.00
Audioquest Jade	⊙	3700
Audioquest Turquoise	⊙	60.00
Audioquest Topaz	⊙	80.00
Audioquest Coral	⊙	100.00
Audioquest Viper	⊙	160.

H I - F I P R I C E G U I D E

Harmonix HS-102	195.00
Harmonix HS-101	265.00
Henley HSP10	20.00
Henley HSP50	35.00
Henley HSP100	65.00
Henley HSP200	95.00
Henley HSP250	150.00
Heybrook Black Flash	39.00
Insert Focus 1.2	21.50
Insert IC100 Mk II	46.95
Insert Image 5.1	84.95
Insert Status 3.4	159.95
Ixos 104	20.00
Ixos 1003	30.00
Ixos Gamma 1002	39.95
Ixos 103	45.00
Ixos 102	60.00
Ixos 1000	89.95
Ixos 101	100.00
Ixos 100.X03	150.00
Kimber PBJ/Ultraplute	68.00
Kimber KC1	96.00
Kimber Hero	110.00
Kimber Silver Streak	180.00
Kimber KCAG	390.00
Kimber KCTG	720.00
LAT International IC-50	37.00
LAT International IC-80 MkII	58.00
LAT International IC-100 MkII	95.00
LAT International IC-200 Mk II	151.00
Lieder Chanson	340.00
Lieder Lek	420.00
Lieder Het Lied	420.00
Lieder Song	580.00
Lieder Maas	620.00
Lieder Rijn	1,000.00
Lieder Waal	1,400.00
Lumley Silver 12/2	115.00
Lumley Silver 14/4	175.00
Monster Interlink 100	11.00
Monster Interlink 200	23.00
Monster Interlink 300 MkII	40.00
Monster Interlink 400 MkII	50.00
Moth Leyline Black	100.00
Moth Leyline Grey	200.00
Nordost Magic	35.00
Nordost Black Knight	60.00
Nordost Solar Wind	84.95
Nordost Blue Angel	98.00
Nordost Blue Heaven I/C	150.00
Nordost Red Dawn	300.00
Nordost SPM	825.00
Nordost Quattrofil	1,250.00
Ortofon 7N interconnect	250.00
PHY-HP Intercon. unscrnd	120.00
PHY-HP Intercon. scrnd	165.00
Precious Metals SS50	50.00
Precious Metals SS35	50.00
Precious Metals SS52	70.00
Precious Metals SS53	90.00
Precious Metals SS100	100.00
Precious Metals SS102	130.00
Precious Metals SS103	160.00
Precious Metals SS104	190.00
Precious Metals SS200	220.00
Precious Metals SS202	290.00
Precious Metals SS203	360.00
Precious Metals SS204	450.00
Prowire Silver	60.00
PAD Elementa	145.00
QED Qunex 2	30.00
QED Qunex 4S	60.00
QED Qunex Sil'r Spiral	90.00
Roksan HDC-02A	60.00
Rothwell River	55.00
Rothwell Torrent	119.00
Shinpy Red Star 2	120.00
Shinpy Black Star 2	240.00
Shinpy Pulsar 2	495.00

Shinpy Quasar 2	850.00
Shinpy Big Bang 2	1,995.00
Siltech MC2-12	308.00
Siltech MC4-24S	400.00
Siltech FTM-35	730.00
Silver Sounds SS2	99.00
Silver Sounds SS1	199.00
Silver Tone Ex-Static	35.00
Silver Tone Sci-Fi	95.00
SME S2LB-4	46.18
SME S3LB-4	52.06
SME 4900A	76.83
SME 5900A	102.57
SonicLink Red	25.00
SonicLink Silver pink	35.00
SonicLink Black	50.00
SonicLink Lilac	65.00
SonicLink Violet	85.00
SonicLink Maroon	125.00
SonicLink Blue Nickel	150.00
SonicLink Vermilion	195.00
SonicLink Red earth	300.00
SonicLink Black earth	450.00
SonicLink Blue earth	695.00
SonicLink Black Rhodium	995.00
Straight Wire Chorus	40.00
Straight Wire Sonata	80.00
Straight Wire Encore II	99.95
Supra DAC-X	59.95
Supra EFF-IX	69.95
Supra EFF-ISL	79.95
Supra EFF-XLR	89.95
Tara Prism 5	2195
Tara RSC Axiom	1370.00
Tara RSC-Prime Gen/2	1700.00
Tara Prism 5S1	195.00
Tara RSC-Ref Gen. 2	224.50
Tara RSC Air 3	336.00
Tara RSC Air 2	560.00
Tara RSC Air 1	790.00
Tara ISM The Three	894.00
Tara ISM The 2	1,144.00
Tara ISM The One	2,175.00
TCI Viper	54.99
Transparent Cable Musichord	48.00
Transparent Cable The Link	92.00
Transparent Cable Music Link	119.00
Trichord Pulsewire 75	169.00
Vampire Wire CC	24.00
Vampire Wire CCC/II	58.00
Vampire Wire SC/II	98.00
Vampire Wire SC/IV	144.00
Vampire Wire AI/2	259.00
Vampire Wire SL	412.00
van den Hul Storm II	29.99
van den Hul PBS HB	50.00
van den Hul Source HB	65.00
van den Hul D102 III	79.95
van den Hul Thunderline HB	145.00
van den Hul First Classic	240.00
van den Hul Second	275.00
van den Hul First Ultimate	320.00
van den Hul MC Gold	550.00
van den Hul MC Silver IT	1,400.00
van den Hul MC Silver IT Bal	1,750.00
Wireworld Orbit	30.00
Wireworld Solstice II	40.00
XLO Type ER-6	30.00
XLO Type ER-2	30.00
XLO Pro 125	40.00
XLO Type ER-1	40.00
XLO Type ER-5	50.00
XLO Pro 150	70.00
XLO Type ER-4	99.00
XLO Pro 100	119.00
XLO Pro 102	129.00
XLO Ultra 1	169.00
XLO Ultra 2	199.00
XLO Ref 2	330.00

XLO Signature 1.1	625.00
XLO Sig 2.1	675.00
XLO Sig 3.1	750.00
XLO Limited Ed'n	2,200.00

Art Yam Church 5000	275.00
Audioquest Digital/video 1	35.00
Audioquest Digital/video 2	75.00
Audiosource Petros Blue Plus S	35.00
Audiosource Stratos Ser. 2	59.00
Cable Talk Digital 3	50.00
Cardas Audio Lightning	190.00
ChordCo Codac	38.00
ChordCo Optichord	40.00
ChordCo Prodac	50.00
DNM-Reson DIG100	26.00
DPA Opt-Link	20.00
DPA Digi-Link	27.50
Ecosse Ref MD2	71.50
Harmonix HS-101 DIG	240.00
Insert Dataline 500	24.95
Insert Optic 2.1	29.95
Insert Dataline 700	39.95
Insert Image 5.1	44.95
Ixos 105	25.00
Ixos 106	30.00
Kimber Opti-link	50.00
Kimber Illuminati DV-30	70.00
Kimber Illuminati D-60	325.00
Kimber Illuminati DX-50	350.00
Kimber Illuminati Orchid	750.00
LAT International DI-20-D	79.00
Monster Datalink 100	47.00
Monster Lightspeed 100	47.00
Moth Leyline Datalink	140.00
Nordost Moonglo	155.00
Nordost Silver Shadow	335.00
Precious Metals SD35	20.00
Precious Metals SD100	50.00
Precious Metals SD200	110.00
Precious Metals SD202	145.00
QED Qunex OT	30.00
Roksan HDC-01D	45.00
Shinpy Digital	265.00
Siltech HF-6	145.00
SonicLink Green	60.00
Supra ZAC	44.95
Supra EFF-ID	45.00
Supra DAC-XLR	45.00
Tara Prism D-1	59.99
Tara Prism D-2	119.99
Tara RSC Air Dig. 75	345.00
Tara RSC Air Dig. 110	450.00



CABLES
Digital Interconnects

KEY

- ☉ - Stranded construction.
- - Solid-core construction.

Prices of interconnects are for a one metre terminated pair.

Tara ISM The One Dig.	995.00
Theta AT&T	550.00
Transparent Cable PDL	199.00
Trichord Pulsewire 75D	75.00
Vampire Wire DL/1	150.00
van den Hul Source HB	35.00
van den Hul Videolink	70.00
van den Hul AES-EBU 110	75.00
van den Hul First	140.00
van den Hul Second	150.00
van den Hul First Ultimate	180.00
XLO Pro 104	60.00
XLO Ultra 4	89.00
XLO Ref 2	180.00
XLO Sig 4.1	325.00
XLO Limited Ed'n	1,100.00

ALR/Jordan QMM	5.00
Argento Copper	35.00
Argento Copper Ref	65.00
Argento Silver	125.00
Argento Silver Ref	380.00
Art Yam Church M2000	470.00
Art Yam Church 5000	795.00
Audio Note AN-D	4.50
Audio Note AN-B	16.50
Audio Note AN-L	29.50
Audio Note AN-SP	150.00
Audio Note AN-SPx	450.00
Audioquest Type 2	3.00
Audioquest Slate	75.00
Audioquest Granite	30.00
Audioquest Bedrock	45.00
Audioquest Gibraltar	65.00
Audioquest Caldera	120.00
Cable Talk Theatre 2.1	1.75
Cable Talk Flat 1	2.00
Cable Talk Talk 3.1	2.50
Cable Talk Flat 1 Biwire	4.00
Cable Talk Talk 4.1	4.50
Cable Talk Talk 3.1 Biwire	5.00
Cable Talk Flat 2	5.00
Cable Talk Concert 2.1	8.00
Cable Talk Talk 4.1 Biwire	9.00
Cable Talk Flat 2 Biwire	10.00
Cable Talk Symphony 3	14.00
Cable Talk Concert 2.1 Biwire	16.00
Cardas Audio 300B-Microtwin SC	35.00
Cardas Audio Quadlink-Five SC	59.00
Cardas Audio Cross SC	99.00
Cardas Audio Hexlink-Five SC	109.00
Cardas Audio Hexlink Golden5 SC	175.00
Cardas Audio Golden Cross SC	789.00
ChordCo Carnival	3.00
ChordCo Myth	6.00
ChordCo Legend	15.00
ChordCo Odyssey	17.00



Tel: 0208 348 5676 (2.00-7.00 pm)
Fax: 0208 341 9368

Esoteric High Fidelity CABLES

Dealers in: Absolute, Audio Note, Audioquest, Deltec, Electrocompaniet, Harmonix, Kimber, Mandrake, MIT, Siltech, Symo, Transparent, Van den Hul, WBT and others.

... the RIGHT cables
... in YOUR system
... for YOUR ears
... in YOUR home

CONNECTIONS 13 John Princes Street, London W1M 9HB (A division of Connection 90' Travel Ltd.)

Contact us by phone, fax, or letter and we'll do our best to help you achieve your goal.
(Auditions may be subject to a handling charge)

HI-FI PRICE GUIDE

DNM-Reson LSC	●	6.95
DNM-Reson LSCB	●	13.95
Ecosse Ref FS2.16	⊛	1.75
Ecosse Ref CS2.2	⊛	2.50
Ecosse Ref CS2.3	⊛	3.75
Ecosse Ref CS2.15	⊛	5.75
Ecosse Ref MS2.2	⊛	15.00
Ecosse Ref MS2.3	⊛	20.00
Ecosse Ref MS2.15	⊛	30.00
Ecosse Ref US2	●	450.00
Electrofluidics Monolith 2020	●	45.00
Gale XL105	⊛	1.00
Gale XL189	⊛	1.00
Gale XL315	⊛	2.00
Gale XL160-2	⊛	2.50
Gale XL315-2	⊛	3.99
Gamma Wonder Line	⊛	99.00
Goertz M1	●	16.00
Goertz M2	●	32.00
Goertz Big Boy	●	64.00
Harmonix Harmonic-Strongs	⊛	30.00
Harmonix HS-101T-1	⊛	56.00
Harmonix HS-101SC	⊛	88.00
Ixos 607	⊛	2.00
Ixos 6004	⊛	3.00
Ixos Gamma 6003	⊛	3.00
Ixos 605	⊛	3.00
Ixos Gamma 6006	⊛	5.00
Kimber 4PR	⊛	5.00
Kimber 4VS	⊛	9.00
Kimber 4TC	⊛	19.60
Kimber 8TC	⊛	32.70
Kimber 4AG	⊛	394.00
Kimber 8AG	⊛	656.00
LAT International SS 800	⊛	16.00
LAT International BiWIRE	⊛	23.00
LAT International SS 1000	⊛	36.00
Lieder Pad	⊛	133.00
Lieder Bel Canto	⊛	188.00
Lieder Spoor	⊛	253.00
Lieder Straat	⊛	463.00
Lieder Weg	⊛	663.00
Linn K20	⊛	4.00
Linn K400	⊛	10.00
Linn K600	⊛	15.00
Lumley Silver 12/2	⊛	35.00
Lumley Silver 14/4	⊛	40.00
Monster XP Clear	⊛	2.20
Monster XP Navajo	⊛	2.40
Monster Superflat Mini	⊛	2.75
Monster XP HP	⊛	3.70
Monster Original	⊛	4.40
Monster New Monster	⊛	5.50
Naim NAC A5	⊛	5.00
Nordost Octava	●	3.70
Nordost 4-Flat	●	9.95
Nordost Solar Wind Bi-wire	⊛	279.5
Nordost Blue Heaven Spkr	⊛	58.95
Nordost Red Dawn	⊛	110.00
Nordost SPM	⊛	325.00
Ortofon SPK100	⊛	3.00
Ortofon SPK200	⊛	5.00
Ortofon SPK300	⊛	8.00
PHY-HP Speaker	●	40.00
Precious Metals SL32	⊛	7.50
Precious Metals SL102	⊛	10.00
Precious Metals SL34	⊛	15.00
Precious Metals SL104	⊛	20.00
Precious Metals SL106	⊛	30.00
Precious Metals SL108	⊛	40.00
Profigold Silverflex LC8258	⊛	4.00
Prowire Out of Sight	●	1.99
QED QED Micro	⊛	1.50
QED QED Micro Bi-wire	⊛	3.00
QED QED Mk II Bi-wire	⊛	4.85
QED QED Silver Anniv.	⊛	5.00
QED Profile 4x4	⊛	9.00
QED Profile Silver 12	⊛	15.00
QED Genesis S'r Spiral	⊛	30.00
QED G's S'r Spiral B/W	⊛	60.00
Rega Speaker	⊛	1.58
Rega SC42	⊛	19.98
Roksan HDC-015	⊛	6.00
Shinpy Red Star 2	⊛	235.00
Shinpy Black Star 2	⊛	375.00
Shinpy Pulsar 2	⊛	625.00
Shinpy Quasar 2	⊛	1,245.00
Shinpy Big Bang 2	⊛	4,250.00
Siltech LS2-45	⊛	109.00
Siltech FT-12 MK1	⊛	240.00
Siltech LS4-120	⊛	549.00
Silver Sounds 12 Gauge	⊛	15.00
Silver Sounds 10 Gauge	⊛	35.00
Silver Sounds 8 Gauge	⊛	75.00
Silver Tone Silver-Sonic	⊛	10.00
Silver Tone Silver-Sonic HC	⊛	15.00
Silver Tone Silver-Voice	⊛	55.00
Silver Tone Silver-Voice Ultra	⊛	85.00
SonicLink AS160	⊛	2.50
SonicLink AS175	⊛	2.95
SonicLink AS200	⊛	5.95
SonicLink AS2200x2	⊛	9.95
SonicLink S300	⊛	18.00
SonicLink S1300x2	⊛	20.00
SonicLink S300x2	⊛	40.00
SonicLink S900	⊛	60.00
SonicLink S600x2	⊛	80.00

SonicLink Black Rhodium 4	⊛	1,000.00
Straight Wire Duo	⊛	3.00
Straight Wire Rhythm	⊛	6.00
Straight Wire Quartet	⊛	8.00
Supra Classic 2.5	⊛	2.49
Supra Linc 2.5 Flex	⊛	3.49
Supra Classic 4.0	⊛	3.95
Supra Rondo 4x2.5	⊛	4.95
Supra Classic 6	⊛	4.95
Supra Ply 2.0	⊛	4.95
Supra Linc 4.0 Flex	⊛	4.95
Supra Ply 3.4	⊛	6.95
Supra Ply 3.4/5	⊛	7.95
Supra Quattro 4x4	⊛	8.95
Tapewire 418	⊛	7.00
Tapewire 212	●	16.00
Tara Klara	⊛	2.95
Tara Prism 2+2	⊛	7.95
Tara Prism Nexa	⊛	9.95
Tara Prism Bi-Wire	⊛	18.00
Tara RSC Prime 500	●	36.00
Tara RSC Prime 1000	●	73.00
Tara RSC Ref Gen/2	●	118.00
Tara RSC Prime 1800	●	150.00
Tara RSC Digital 75	●	230.00
Tara RSC Air 2	●	291.00
Tara RSC Air 1	●	466.00
Tara ISM The Two	●	708.00
Tara ISM The One	●	941.00
TCI Python	●	7.99
Townshend Isolda	●	50.00
Transparent Cable Musichord	⊛	11.00
Transparent Cable The Wave	⊛	23.00
Transparent Cable Music Wave	⊛	25.00
Vampire Wire SC-384	⊛	11.00
Vampire Wire SC-554	⊛	15.00
Vampire Wire ST-I	●	30.00
Vampire Wire SC-1108	⊛	30.00
Vampire Wire ST-II	●	48.00
Vampire Wire ST-III	●	73.00
van den Hul Skyline HB	⊛	3.99
van den Hul Snowline	⊛	5.49
van den Hul Skytrack HB	⊛	5.99
van den Hul Clearwater	⊛	7.99
van den Hul Snowtrack	⊛	10.99
van den Hul Royal Jade	⊛	10.99
van den Hul CS122 HB	⊛	15.49
van den Hul Cleartrack	⊛	14.99
van den Hul D352 HB	⊛	21.00
van den Hul Teatrac HB	⊛	23.99
van den Hul SC512	⊛	36.00
van den Hul Magnum HB	⊛	40.00
van den Hul The Wind HB	⊛	44.00
van den Hul Revolution HB	⊛	80.00
van den Hul Revelation HB	⊛	120.00
van den Hul The Third	⊛	1,000.00
XLO CDA 16/2	⊛	4.45
XLO CDA ER-14 THX	⊛	5.81
XLO CDA 16/4	⊛	8.60
XLO CDA ER-11 THX	⊛	11.62
XLO Pro 600	⊛	16.60
XLO CDA ER-12 THX	⊛	23.24
XLO Pro 1200	⊛	33.20
XLO Ultra 6	⊛	41.50
XLO Ultra 12	⊛	83.00
XLO Ref 2	⊛	216.00
XLO Sig 5.1	⊛	398.00
XLO Limited Ed'n	⊛	1,660.00



CARTRIDGES

KEY
MM - Moving-magnet type.
MC - Moving-coil type.

UP TO £100

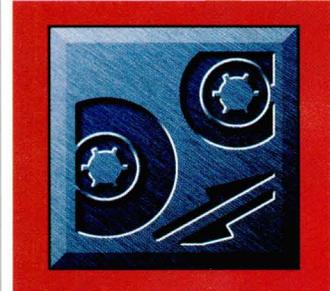
Audio Note IO1	MM	99
Audio Technica AT-91	MM	15
Audio Technica AT-95E	MM	20
Audio Technica AT-110E	MM	28
Audio Technica AT450E	MM	70
Audio Technica AT440ML	MM	90
Benz-Micro MC20EII	MC	70
Denon DL110	MC	70
Denon DL160	MC	90
Denon DL103	MC	100
Goldring Elan	MM	20
Goldring Elektra	MM	30
Goldring 1006	MM	65
Goldring 1012GX	MM	85

Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado Prestige Red	MM	98
N'ham Tracer I	MM	99
Ortofon OM 3E	MM	16
Ortofon OM 5E	MM	20
Ortofon OM 10	MM	30
Ortofon 510	MM	40
Ortofon OM DJ	MM	50
Ortofon OM 20	MM	70
Ortofon 520	MM	70
Ortofon MC1 Turbo	MM	75
Ortofon Concorde DJ	MM	80
Ortofon OM 30	MM	90
Ortofon 530	MM	100
Pickering TE-15	MM	20
Pickering VE-15	MM	25
Pickering T-E	MM	25
Pickering V15-DJ	MM	28
Pickering TL-E	MM	35
Pickering TL-2E	MM	45
Pickering XV15-625E	MM	50
Pickering XV15-150-DJ	MM	50
Pickering TL-2-S	MM	55
Pickering XV15-757S	MM	60
Pickering XV15-625DJ	MM	60
Pickering XV15-1800S	MM	70
Pickering TL35	MM	80
Pickering XEV-3001E	MM	95
Pickering XLZ-3500	MM	100
Pickering TL-4-S	MM	100
Rega Bias	MM	42
Rega RB78	MM	42
Rega Super Bias	MM	64
Rega Elys	MM	89
Shure SC35C	MM	36
Shure M44G Pro	MM	45
Shure M447 Pro	MM	53
Stanton 500AL II	MM	35
Stanton 500EL	MM	44
Stanton 680AL/X	MM	59
Stanton 680EL/X	MM	74
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MM	100

OVER £100

Allaerts MC1 Eco	MC	850
Allaerts MC1 B	MC	1,295
Allaerts MC1 B MkII	MC	1,995
Allaerts MC2 Finish	MC	2,995
Audio Note IO2	MM	139
Audio Note Soara	MC	795
Audio Note IO1V	MC	1,095
Audio Note IOLtd	MC	4,500
Audio Technica AT-OC9ML	MC	350
Audio Technica AT-33PTG	MC	489
Benz-Micro The Glider	MC	600
Benz-Micro Reference	MC	1,100
Benz-Micro Reference Ruby	MC	1,500
Benz-Micro Ruby Open Air	MC	1,600
Clearaudio Alpha Mk 2	MM	135
Clearaudio Beta Mk 2	MM	190
Clearaudio Beta-S Mk 2	MM	250
Clearaudio Virtuoso	MM	295
Clearaudio Sigma	MC	590
Clearaudio Gamma-S	MC	810
Clearaudio Victory	MC	960
Clearaudio Signature	MC	1,540
Clearaudio Accurate	MC	2,515
Clearaudio Insider	MC	5,165
Clearaudio Insider Ref.	MC	6,810
Denon DL304	MC	200
Dynavector 10X4II	MC	189
Dynavector DV20XH	MC	299
Dynavector DV-20XL	MC	299
Dynavector DV20XL	MC	299
Dynavector 17D2	MC	450
Dynavector XX-1L	MC	998
Dynavector XX-1	MC	998
Dynavector Te-Kaitora	MC	1,698
Goldring 1022GX	MM	105
Goldring Eroica LX	MC	120
Goldring Eroica	MC	120
Goldring 1042	MM	130
Goldring Elite	MC	235
Grado Prestige Silver	MM	119
Grado Prestige Gold	MM	149
Koetsu Red T	MC	1,359
Koetsu Red K Sig	MC	1,899
Koetsu Urushi	MC	1,999
Koetsu Signature	MC	2,999
Koetsu Gold PR	MC	5,498
Linn K9	MM	125
Linn Klyde	MM	500
Linn Arkiv	MC	1,000
London Decca Maroon	MM	299
London Decca Gold	MM	359
London Decca Maroon Dp	MM	379
London Decca S Gold	MM	439
London Decca Gold Dp	MM	439
London Decca S Gold Dp	MM	519
London Decca Jubilee	MM	999
Lyra Lydian Beta	MC	599

Lyra Clavis Da Capo	MC	995
Lyra Parnassus Dct	MC	1,895
N'ham Tracer II	MM	310
N'ham Tracer III	MM	410
N'ham Tracer IV	MM	660
Ortofon MC15 Super II	MC	140
Ortofon 540	MM	140
Ortofon MC3 Turbo	MC	200
Ortofon MC25E	MC	200
Ortofon MC25FL	MC	250
Ortofon MC10 Supreme	MC	300
Ortofon MC20 Supreme	MC	450
Ortofon MC30 Supreme	MC	550
Ortofon MC200II	MC	800
Ortofon MC Rohmann	MC	1,000
Ortofon MC3000 II	MC	1,200
Ortofon MC Jubilee	MC	1,250
Ortofon MC7500	MC	2,000
Pickering TL-3003	MM	145
Pickering XLZ-4500	MM	150
Pickering TL-4004	MM	175
Pickering XSV-5000U	MM	200
Pickering XLZ-7500	MM	200
Pickering TLZ-7500-S	MM	200
Rega Super Elys	MM	150
Rega Exact	MM	275
Reson Mica	MM	195
Reson Rca	MM	270
Reson Aciore	MC	330
Reson Etile	MC	485
Reson Lexe	MC	1,300
Roksan Corus Black	MM	145
Roksan Shiraz	MC	995
Shure V15XMR	MM	295
Stanton 890AL/X	MM	120
Sumiko Blue Point Special	MC	250
Transfiguration Esprit	MC	950
Transfiguration Spirit	MC	950
Transfiguration Temper Supreme	MC	2,250
van den Hul DDT-II	MC	600
van den Hul HC-10	MC	750
van den Hul MC-One	MC	900
van den Hul MC-ONE Super	MC	1,050
van den Hul MC-Two	MC	1,200
van den Hul The Frog Low o/p	MC	1,500
van den Hul The Frog HO	MC	1,700
van den Hul Grasshopper IISLN	MC	2,000
van den Hul Grasshopper IISLA	MC	2,000
van den Hul White Beauty S-X	MC	2,500
van den Hul White Beauty HO	MC	2,500
van den Hul Grasshopper IIIGLN	MC	2,800
van den Hul Grasshopper IIIGLN	MC	2,800
van den Hul Grasshopper IIICMN	MC	2,800
van den Hul Grasshopper IIVCHN	MC	2,900
van den Hul Grasshopper IIVCLA	MC	3,000
van den Hul Black Beauty	MC	3,000
Wilson Benesch Matrix	MC	786
Wilson Benesch Analog	MC	1,572
Wilson Benesch Carbon	MC	1,573



CASSETTE DECKS

KEY
 ← - Autoreverse - no need to remove and turn around the tape.
 3-H - 3 heads, i.e. separate record and replay heads.

UP TO £200

Ariston WX-510	←	70
Denon DRM-555	←	150
Denon DRW-585	←	200
H/K DC520	←	200
JVC TD-X372BK	←	170
JVC TD-R472BK	←	200
Kenwood KX-W4080	←	160
Kenwood KX-3080	←	160
Kenwood KX-W6080	←	200
Kenwood KX-5080S	←	200
Marantz SD-455	←	170
Marantz SD-57	←	199
Onkyo K 185	←	200
Pioneer CT-W208R	←	150
Pioneer CT-S250	←	130
Pioneer CT-W606DR	←	200
Sony TC-KE240	←	120

Sony TC-KB205	180
Sony TC-WE835	200
Teac W-416	100
Teac V-615	130
Teac RH-300	160
Teac W-790R	170
Teac V-1050	180
Teac RH-500	200
Technics RS-8X501	170
Technics RS-TR373	180
Technics RS-TR474	200
Technics RS-AZ6	200
Yamaha KX-393	130
Yamaha KX-W321	170
Yamaha KX-493	180

OVER £200

Denon DRM-740	270
H/K TD420	250
JVC TD-V662BK	270
JVC TD-W718BK	300
NAD 613	230
NAD 614	270
NAD 616	300
Nakamichi DR-10	800
Onkyo TA 6210	230
Onkyo TARW 211	270
Onkyo TARW 311	320
Onkyo TA 6310	330
Onkyo KR 609	350
Onkyo KW 606	370
Onkyo TARW 411	370
Onkyo K 611	460
Pioneer CT-W806DR	300
Rotel RC960BX	250
Sony TC-KA6E5	650
T+A CCI200R	1,180
Teac W-860R	230
Teac W-6000R	450
Teac V-6030S	550
Teac V-8030S	650
Technics RS-AZ7	270
Technics RS-TR575	280
Yamaha KX-580SE	250



CD PLAYERS

KEY

➡ - Multiplayer: can be loaded with more than one disc.
 [10] - Electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

UP TO £250

Ariston CDX700	50
Ariston CDX710	70
Ariston CDX720	80
Cambridge CD5	100
Cambridge D100	120
Cambridge CD4	150
Cambridge CD4SE	200
Cambridge D500	200
Denon DCD-435	130
Denon DCD-655	180
Denon DCD-735	230
Eclipse CD101a	40
H/K FL8350	200
H/K HD720	230
JVC XL-V120BK	110
JVC XL-V130BK	120
JVC XL-V230BK	140
JVC XL-F116BK	180
JVC XL-F216BK	200
JVC XL-Z574BK	250
Kenwood DP-1080	110
Kenwood DP-2080	130
Kenwood DP-R3090	140
Kenwood DP-R4090	160
Kenwood DPF-3030	170
Kenwood DP-3080	170
Kenwood DPF-3010	180
Kenwood DPF-R6030	180
Kenwood DP-R6090	200
Kenwood DP-4090	250
Marantz CD-38	130
Marantz CD5000	150

Marantz CC3000	150
Marantz CC-38	200
Marantz CD-48	200
Marantz CD-57	230
Marantz CD-67II	250
NAD C520	170
NAD 522	170
NAD 510	200
NAD 524	250
NAD 523	250
NAD 512	250
Onkyo DX-7222	170
Pioneer PD-107	100
Pioneer PD-207	120
Pioneer PD-F607	200
Pioneer PD-M603	200
Pioneer PD-F1009	250
Pioneer PD-F958	250
Pioneer PD-F706	250
Sansui CD220	120
Sherwood CD-4030R	180
Sherwood CDG680	180
Sherwood CDG6050R	180
Sony CDP-XE220	100
Sony CDP-XE330	110
Sony CDP-M305	120
Sony CDP-XE530	140
Sony CDP-CE435	180
Sony VDP-CE740E	200
Sony CDP-CX235	220
Synergy CDJ1210	120
Teac CDP-1120	100
Teac CD-P1820	130
Teac CD-P1440	150
Teac CD-P3450SE	200
Teac PD-D2400	200
Teac PD-H5001	240
Technics SL-PG390A	90
Technics SL-PG490A	100
Technics SL-PG590A	120
Technics SL-PD6	140
Technics SL-PD8	160
Technics SL-PS670D	200
Technics SL-PS770D	250
Yamaha CDX-396	130
Yamaha CDC-575	180
Yamaha CDX-496	180
Yamaha CDC-675	230
Yamaha CDX-596	230

£251 TO £500

Arcam Alpha MCD	330
Arcam Alpha 7 SE	350
Arcam Alpha 85E	500
Cambridge CD6	300
Cyrus dAD1.5	400
Denon DCD-835	280
Denon DCM-260	300
Denon DCD-1550AR	350
H/K HD740	300
H/K FL8550	300
H/K HD760	500
JVC XL-Z674BK	300
Kenwood DP-R7080	300
Kenwood DP-9090	300
Kenwood DP-5090	300
Kenwood DP-7090	400
Marantz CD-67SE MkII	300
Marantz CD6000 OSE	300
Marantz CC-870	400
Marantz CD-63IIK1	400
Musical Fidelity E60	300
Musical Fidelity A2 CD	500
Musical Fidelity E624	500
Myryad T-10	400
NAD 513	290
NAD C540	329
NAD 515	350
NAD 514	370
NAD 517	400
Nakamichi MB10	400
Onkyo DX 7210	260
Onkyo C721	290
Onkyo DXC 320	380
Onkyo DX 7510	400
Onkyo CM 716	450
Parasound C/DP-1000	499
Philips DVD750	400
Pioneer PD-F1007	300
Rega Planet	475
Roksan Kandy	475
Rotel RCD-951	350
Rotel RCD-971	450
Rotel RCC-955	500
Sony CDP-XB930E	300
Sony CDP-CX450	400
Sony CDP-X3000ES	500
Synergy CDJ2010	300
Technics SL-MC7	300

£501 TO £1000

Acurus ACD11	699
Alchemist Nexus	600
Arcam Alpha 9	800
Audio Analogue Paganini	750

Audio Note CD1	599
Audio Note AN-CD2	999
Audiomeca Obsession	999
AVI S2000MC 24 Ref	999
Creek CD43	599
Cyrus dAD3	600
Cyrus dAD3 Q24	900
Denon DCD-1650AR	700
DPA Renaissance int CD	950
Helios Model 3	700
Helios Model 2	950
Linn Mimik	875
Linn Genki	995
Magnum CD2020	595
Marantz CD-17	800
Musical Fidelity X-RAY	799
Musical Fidelity A3 CD	800
Myryad Cameo	580
Myryad T-20	600
Myryad MC100	800
Quad 99	650
R-20 D20	700
Roksan Caspian	895
Rotel RCD-991	750
Sony CDP-XA555ES	1,000
Sugden Audition	649
Talk Electronics Thunder 1	550
Talk Electronics Thunder 2	700
Talk Electronics Thunder 3	1,000
Teac VRDS-8	600
Teac VRDS-9	700
Teac VRDS-25X	1,000
Trichord Genesis	569
Trichord Digital Jukebox 25	619
Trichord Digital Jukebox 50	669
Trichord Digital Jbox 100	719
Trichord Revelation	819
YBA Complete	649
YBA Special	695

OVER £1000

Acoustic Precision Eikos	1,850
Advantage CD15	3,995
Alchemist Kraken CD	1,249
Alchemist Forseti Int.	1,249
Alchemist Forseti	1,995
Arcam FMI CD23	1,100
Audio Analogue Maestro	1,100
Audio Research CD2	3,399
Audiomeca Keops	1,500
Audiomeca Talisman	2,150
Audiomeca Talisman SE	2,300
Balanced VK-D5	3,995
Cary CD-301	2,350
Classe CDP-3	1,395
Conrad-Johnson DF-2	1,695
Conrad-Johnson DV-2b	2,495
Copland CDA-266	1,199
Copland CDA277	1,649
Copland CDA289	1,899
Copland CDA288	1,995
Cymbal CDP12	1,299
Densen B-400	1,280
Exposure CD Player	1,050
Helios Model 1	1,250
Helios Stargate	2,250
Jadis Orchestra	1,345
Krell KAV250cd	2,490
Krell KAV300cd	3,599
Krell KPS25s	19,995
Linn Ikemi	1,950
Linn Sondek CD12	12,000
Marantz CD-17KIS	1,100
Marantz CD-7	3,500
Levinson 39	4,995
McIntosh MCD7009	3,699
Meracur Tanto	1,395
Meracur Imago Player	4,495
Meridian 506	1,100
Meridian 508	1,895
Myryad MCD500	1,380
NAD S500	1,100
Naim CD3.5	1,050
Naim CDX	2,200
Naim NACDSII/XPS	5,625
Oracle CD Player	9,499
Pink Triangle Numeral	1,049
Pink Triangle Litaural	2,200
Proceed CDP	3,395
R-20 D302	1,500
Resolution CD50	1,500
Roksan Attesa-DP3P	2,995
Shearman Phase 7	1,495
Sherwood CD1	1,499
Sonic Frontiers Anthem CD1	1,100
Sonic Frontiers SFCD-1	1,699
T+A CD1210R	3,799
T+A CD1120R	1,185
T+A CD1220R	1,540
TAG McLaren CD20R	1,250
Theta Miles SE	2,390
Tube Tech Fusion	1,350
Tube Tech Fulcrum	1,850
Wadia 860x	7,495
YTC CDP-1	1,350
YBA Integre a	1,095
YBA CD5a	1,850

YBA CD2a	2,950
YBA CD1a	3,895
YBA CD1a a2 spec.	5,025



CD TRANSPORTS

KEY

[10] - Electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

Alchemist Forseti Drive	1,100
Alis CDT III	4,995
Audio Note CDT Zero	399
Audio Synthesis Transcend Decade	3,995
Audiomeca Damnation	999
Audiomeca Damnation SE	1,100
Audiomeca Talisman	1,850
Audiomeca Talisman SE	1,999
Audiomeca Talisman DOB	2,250
Conrad-Johnson DR-1	1,795
DPA Enlightenment Drv	775
Jadis JD3	1,999
Jadis JDI	9,190
Linn Karik	1,850
Levinson 37	3,995
Levinson 31.5	9,295
Meracur Imago	3,995
Muse Model 5	1,800
Muse Model 8	3,500
Oracle CD Drive	7,399
Pink Triangle Cardinal II	909
Rega Jupiter	598
Resolution VT960	3,500
Roksan Attesa-DP3	1,295
Sonic Frontiers Transport 3	5,999
T+A CM1200R	875
TAG McLaren CDT20R-T2L	1,499
Teac VRDS-T1	550
Teac P-30	2,500
Theta Pearl	1,349
Theta Jade	2,650
Thorens TCD-2000	999
Trichord Digital Turntable	719



DIGITAL TO ANALOGUE CONVERTERS (DACs)

KEY

4 - Number of digital inputs.

Alchemist TS-D-1	300
Alchemist Forseti DAC	1,100
Alis Reference	4,995
Audio Note DAC Zero	369
Audio Note DAC1	675
Audio Note DAC2	1,099
Audio Note DAC3	1,750
Audio Research DAC5	2,335
Audio Research DAC3 MkII	3,999
Audio Synthesis DAX Decade	2,995
Audiolabor 531	7,550
Audiomeca Elxir	799
Audiomeca Ambrosia	1,850
Boulder 2020	21,000
Cary CD-303	2,695
Chord DSC900E	2,040
Chord DSC1100E	2,815
Chord DSC1500E	4,895
Conrad-Johnson D/A-3	1,195
Conrad-Johnson D/A-2b	1,990



dCS Elgar		8,500
DPA Little Bit 3	Ⓔ	325
DPA Renaissance DAC	Ⓔ	595
DPA Enlightenment DAC		850
DPA SX128		2,000
DPA SX256		4,000
DPA SX512		8,000
Harmonix Reimyo DAP-77		2,790
Jadis JS2		2,499
Jadis JS1	Ⓔ	6,990
LFD DAC2		1,950
LFD DAC3		3,000
Linn Numerik		1,500
Levinson 360	Ⓔ	4,395
Levinson 360S	Ⓔ	6,895
Levinson 30.6		16,495
Meracus Auriga		1,295
Meracus Flagrare		2,495
Meridian 566		1,095
Muse Model 2		2,190
Muse Model 2 Plus	Ⓔ	2,500
Muse Model 2/96	Ⓔ	3,000
Musical Fidelity X-ACT		200
Musical Fidelity X-24K		300
Musical Fidelity X-DAC		300
Onkyo DX 7310		330
Rega Io		475
Resolution D92	7	1,500
Roksan Attessa-DA2	Ⓔ	595
Sonic Frontiers Processor 3	Ⓔ	5,999
Sumo Theorem IIB	Ⓔ	1,155
Teac D-T1	Ⓔ	500
Theta Chroma 396 Std		799
Theta Pro Geny		1,099
Theta Pro Prime IIa		1,699
Theta Pro Basic IIIa		2,990
Theta Casablanca LS		6,158
Thorens TDA-2000	Ⓔ	700
Trichord Pulsar Ser One		1,395
Tube Tech Fulcrum Xport		950
Woodside DVAC-18		1,499

Sony MZ-R90	MD	1
Sony MDS-541	MD	1
Sony MZ-R70	MD	180
Sony MDS-JE530	MD	300
Sony MDS-JB950	MD	550
Sony MDS-JA55ES	MD	300
Teac MDH300	MD	350
Teac RW-800	MD	350
Teac MD-H500i	MD	600
Teac MD-8	MD	600
Teac MD-5	MD	900
Teac MD-10	MD	399
Traxdata Traxaudio 900	MD	230
Yamaha MDX-595		400
Yamaha CDR-S1000		



HEADPHONES
KEY
 'D' - Dynamic type, compatible with virtually all normal headphone outputs.
 'E' - Electrostatic type; generally includes a separate power supply.
 Ⓔ - Open-back construction.
 Ⓜ - Closed-back construction.

AKG Rox	D	Ⓔ	30
AKG K100	D	Ⓔ	36
Aural Envelope DX200	D	Ⓔ	20
Aural Envelope DX220	D	Ⓔ	30
Beyer DT131	D	Ⓔ	29
Beyer DT131TV	D	Ⓔ	32
Beyer DT75	D	Ⓔ	34
Beyer DT231	D	Ⓔ	40
Hama SL275	D	Ⓔ	20
Hama SL275	D	Ⓔ	25
JVC HA-CD88	D	Ⓔ	18
JVC HA-D525	D	Ⓔ	20
JVC HA-F65	D	Ⓔ	20
JVC HA-D626	D	Ⓔ	25
Kenwood KPM-310	D	Ⓔ	18
Kenwood KPM-410	D	Ⓔ	25
Maxell HP-2000	D	Ⓔ	20
Pioneer SE-A40	D	Ⓔ	20
Pioneer SE-A20V	D	Ⓔ	23
Pioneer SE-M250	D	Ⓔ	25
Pioneer SE-M350	D	Ⓔ	30
Sennheiser HD56	D	Ⓔ	18
Sennheiser HD433	D	Ⓔ	20
Sennheiser HD400	D	Ⓔ	25
Sennheiser HD470	D	Ⓔ	35
Sennheiser HD60TV	D	Ⓔ	40
Sony MDR-250V	D	Ⓔ	18
Sony MDR-A34L	D	Ⓔ	18
Sony MDR-ED228LP	D	Ⓔ	18
Sony MDR-G52LP	D	Ⓔ	20
Sony MDR-E848LP/MP	D	Ⓔ	20
Sony MDR-ED238ML	D	Ⓔ	22
Sony MDR-G56V	D	Ⓔ	25
Sony MDR-G62LP	D	Ⓔ	25



DIGITAL RECORDERS
KEY
 MD - MiniDisc
 DAT - Digital Audio Tape
 Ⓜ - Portable

Denon DMD-1000	MD	300
Denon DMD-1600AL	MD	600
JVC XM-448	MD	200
JVC XL-R5000	MD	450
Kenwood DMF-5020	MD	250
Kenwood DMF-9020	MD	499
Kenwood DM-7090	MD	500
Kenwood DM-9090	MD	550
LG ADR-620	MD	350
Marantz CM635	MD	500
Marantz DR700	MD	600
Marantz DR-17	MD	1,500
Onkyo MD-121	MD	450
Onkyo MD 122	MD	700
Philips CDR770		1
Philips CDR775		1
Philips CDR570		1
Philips CDR951		380
Pioneer MJ-D508	MD	200
Pioneer PDR-509	MD	300
Pioneer PDR-W739	MD	400
Pioneer D-05	DAT	900
Pioneer D-C88	DAT	2,000
Sharp MD-R1 MkII	MD	180
Sharp MD-R3H	MD	300
Sharp MD-R2	MD	300
Sharp MD-MS200H	MD	350
Sharp MDXV300H	MD	1,000

Sony MDR-G59G	D	Ⓔ	30
Sony MDR-G72LP	D	Ⓔ	30
Sony MDR-V300	D	Ⓔ	30
Sony MDR-IF130K	D	Ⓔ	30
Sony MDR-EX70LP	D	Ⓔ	35
Sony MDR-ED268LP	D	Ⓔ	35
Stanton ST Pro	D	Ⓔ	25
Technics RP-F200	D	Ⓔ	25
Technics RP-F400	D	Ⓔ	30
Technics RP-F500	D	Ⓔ	40
Vivanco SR250	D	Ⓔ	20
Vivanco FMH 3000	D	Ⓔ	50
Vivanco IR5800	D	Ⓔ	30
Vivanco SR222	D	Ⓔ	30

OVER £41

AKG K301	D	Ⓔ	70
AKG K240DF	D	Ⓔ	100
AKG K221R	D	Ⓔ	100
AKG K401	D	Ⓔ	120
AKG K501	D	Ⓔ	150
AKG K3331R	D	Ⓔ	150
AKG K4441R	D	Ⓔ	180
AKG K290S	D	Ⓔ	250
AKG K1000	D	Ⓔ	700
Audio Technica ATH910PRO	D	Ⓔ	80
Audio Technica ATHD40FS	D	Ⓔ	100
Audio Technica ATH-M40	D	Ⓔ	120
Audio Technica ATH911	D	Ⓔ	120
Beyer DT331	D	Ⓔ	70
Beyer DT431	D	Ⓔ	80
Beyer DT433/863	D	Ⓔ	100
Beyer DT531	D	Ⓔ	105
Beyer DT831	D	Ⓔ	135
Beyer DT100	D	Ⓔ	160
Beyer DT931	D	Ⓔ	180
Denon AH-D210	D	Ⓔ	45
Denon AH-D650	D	Ⓔ	95
Denon AH-D750	D	Ⓔ	130
Grado SR60	D	Ⓔ	79
Grado SR80	D	Ⓔ	100
Grado SR125	D	Ⓔ	150
Grado SR225	D	Ⓔ	200
Grado SR325	D	Ⓔ	300
Grado RS2	D	Ⓔ	495
Grado RS1	D	Ⓔ	695
Hama SL276	D	Ⓔ	50
Hama IR Cordless	D	Ⓔ	60
Jecklin Float Model 1	D	Ⓔ	79
Jecklin Float Model 2	D	Ⓔ	99
Jecklin Float ELS	E	Ⓔ	399
JVC HA-D727	D	Ⓔ	43
JVC HA-D50	D	Ⓔ	45
JVC HA-W60	D	Ⓔ	49
JVC HA-D910	D	Ⓔ	65
JVC HA-W200RF	D	Ⓔ	75
JVC HA-DX3	D	Ⓔ	200
JVC HA-DX1	D	Ⓔ	200
JVC HA-D1000	D	Ⓔ	250
JVC HA-F25	D	Ⓔ	699
Koss TD/80	D	Ⓔ	50
Koss R/100	D	Ⓔ	100
Philips HD910	D	Ⓔ	80
Pioneer SE-M550	D	Ⓔ	50
Pioneer SE-M750	D	Ⓔ	60
Precide Ergo Model 1	D	Ⓔ	120
Precide Ergo Model 2	D	Ⓔ	140
Sennheiser HD200	D	Ⓔ	50
Sennheiser IS 380	D	Ⓔ	50
Sennheiser HD490	D	Ⓔ	50
Sennheiser HD495	D	Ⓔ	60
Sennheiser HD500	D	Ⓔ	70
Sennheiser RS30	D	Ⓔ	70
Sennheiser RS40	D	Ⓔ	80
Sennheiser HD270	D	Ⓔ	80
Sennheiser HD25 SP	D	Ⓔ	90
Sennheiser HD570 Symphony	D	Ⓔ	90
Sennheiser RS60	D	Ⓔ	120
Sennheiser HD265 Linear	D	Ⓔ	125
Sennheiser HDC 451-1	D	Ⓔ	130
Sennheiser HD2501	D	Ⓔ	150
Sennheiser HD25-13	D	Ⓔ	160
Sennheiser HD590	D	Ⓔ	160
Sennheiser RS80	D	Ⓔ	160
Sennheiser HD25	D	Ⓔ	160
Sennheiser HD 580 P'cision	D	Ⓔ	200
Sennheiser HD600	D	Ⓔ	250
Sennheiser HE60/HEV70	E	Ⓔ	998
Sennheiser Orpheus	E	Ⓔ	9,652
Sony MDR-V500DJ	D	Ⓔ	50
Sony MDR-RF830RK	D	Ⓔ	60
Sony MDR-V700DJ	D	Ⓔ	100
Sony MDR-D77	D	Ⓔ	130
Sony CD2000	D	Ⓔ	200
Sony MDR-DS5100	D	Ⓔ	400
Stanton DJ Pro 101/HB	D	Ⓔ	65
Stanton DJ Pro 1000	D	Ⓔ	95
Stanton DJ Pro 1001	D	Ⓔ	150
Stax SR-0001	E	Ⓔ	280
Stax SR-Lambda Nova C	E	Ⓔ	370
Stax System II	E	Ⓔ	400
Stax SR-Lambda Nova Basic	E	Ⓔ	449
Stax SR-Lambda Nova S	E	Ⓔ	450
Stax Omega	E	Ⓔ	1,896
Technics RP-F800	D	Ⓔ	50
Technics RP-HC100	D	Ⓔ	55

Vivanco SR650	D	Ⓔ	45
Vivanco SR750	D	Ⓔ	50
Vivanco SR850	D	Ⓔ	50
Vivanco FMH7980	D	Ⓔ	60
Vivanco SR950	D	Ⓔ	80



EQUIPMENT SUPPORTS
Hi-Fi Tables
KEY
 4 - Number of shelves.

Aavik Furniture A4	4	350
Alphason SM17	1	49
Alphason VSM17	1	85
Alphason GSM17	1	85
Alphason GMV1P	1	110
Alphason R17/17	3	120
Alphason GMH1P	1	150
Alphason VR17/17	3	190
Alphason GR17/17-AS	4	275
Apollo Soprano	4	275
Arcici Air Head 1	1	275
Arcici Air Head 2	1	425
Arcici Air Head TNT	1	725
Arcici Suspense 4	4	1,695
Arcici Suspense 5	5	1,895
Atacama Europa	4	240
Audiophile Base 01	1	79
Audiophile S4T120	4	280
Audiophile S4T120P	4	560
Audiophile Furniture Base	4	615
Avid Isoschell	5	1,100
BCD Model 1006/8	1	795
BCD Model 1000	3	1,250
Custom Design Aspect 650	4	250
Custom Design Aspect 850	5	280
Custom Design e'lite E5	5	280
Custom Design Aspect 500AV	3	290
Custom Design e'lite XE5	5	300
Custom Design e'lite AVE	8	350
Deadrock 701	1	60
Deadrock 802	2	90
Deadrock 703	3	130
Deadrock 705	5	230
Deadrock 704	4	250
Elemental Isotube X1	1	169
Elemental Isotube BS	1	199
Elemental Isotube TS	1	209
Elemental Isotube IS	1	209
Elemental Reference B1	1	329
Elemental Isotube X2	2	379
Elemental Isotube X3	3	489
Elemental Reference B5	1	499
Elemental Reference X1	1	499
Elemental Reference IS	1	549
Elemental Reference TS	1	549
Elemental Reference X2	2	799
Elemental Isotube X4	4	849
Elemental Isotube X4/Ref	4	1,199
Elemental Reference X3	3	1,199
Elemental Isotube X4Rse	4	1,349
Elemental Reference X4	4	1,599
Fi-Rax R4	6	399
Finite Elemente A03 pagode	4	479
Finite Elemente E03 pagode	4	649
Finite Elemente HD03	4	1,995
Frameworks H175	1	159
Frameworks FS1	1	159
Frameworks H500	3	265
Frameworks FT2	2	285
Frameworks FT3	3	350
Frameworks H700	3	355
Frameworks H900	3	389
Impulse Iso-plate		190
JPW 3 Tier	3	80
JPW 5 Tier	5	100
Mana K3000		85
Mana Sound Frame		125
Mana Mini Table		150
Mana Power supply table		150
Mana Reference flat top		175
Mana Sound Shelf		200
Mana Sound Stage		235
Mana Sound Table		200
Mana Ref Shelf		325
Mana-Reference Table		350
Mana 2 Tier Stand		375
Mana 3 Tier Stand		450
Mana 4 Tier Stand		500
Mana 5 Tier Stand		600

HI-FI HELP
 Let our experts help with your hi-fi problems. Send your query to 'Help' at the usual address.

Mana 6 Tier Stand	700
Mana 7 Tier Stand	800
Mana 8 Tier Stand	900
Mission Stance	100
Optimum OPT 3406	149
Optimum G5	180
Optimum OPT 4906	199
Optimum G5P	200
Optimum OPT 3000	200
Optimum OPT 6606	249
Optimum OPT 340	249
Optimum AV200	270
Optimum OPT 5000	280
Optimum OPT 490	299
Optimum AV30	299
Optimum OPT 440	299
Optimum OPT 10206	299
Optimum OPT 660	349
Optimum AV 300	349
Optimum OPT 7000	359
Optimum OPT 1020	399
Optimum OPT 8000	400
Optimum OPT 1190	450
Optimum AV400	450
Projekt A3	145
Projekt A4	215
Projekt A5	235
Projekt B3	255
Projekt A6	280
Projekt B3i	300
Projekt B4	340
Projekt B Multi	345
Projekt B3ii	345
Projekt C3	375
Projekt D3	420
Projekt C3i	420
Projekt B5	425
Projekt C3iii	465
Projekt C3ii	465
Projekt D3i	500
Projekt C4	500
Projekt C3iv	510
Projekt D3ii	545
Projekt C Multi	555
Projekt D4	560
Quadraspire Q4S mini shelf	65
Quadraspire Q4S shelf	65
Quadraspire QKS Cabinet shelf	80
Quadraspire QAV shelf	130
Quadraspire Q4M mini table	250
Quadraspire Q4 table	250
Quadraspire Q4SP Table	320
Quadraspire QAV table	350
Quadraspire QAVSP Table	400
Quadraspire QK Cabinet	450
Reson DOMOPS	195
Reson DOMOWS	195
Roksan Glass stand	495
Solid Steel Model B	141
Solid Steel Model A	152
Solid Steel Series 3	220
Solid Steel Series 5	310
Solid Steel H3	372
Solid Steel H5	517
Sound Org Z540	140
Sound Org Z560	160
Sound Org Z545	160
Sound Org Z530	170
Soundstyle Radius SR210	200
Soundstyle X053	200
Soundstyle X100	240
Soundstyle Finewoods W100	245
Soundstyle X058	250
Soundstyle Radius SR310	250
Soundstyle Radius SR100	250
Soundstyle X310	260
Soundstyle X6053	260
Soundstyle X105	265
Soundstyle X6100	275
Soundstyle Radius SR105	280
Soundstyle X6058	290
Soundstyle Finewoods W105	295
Soundstyle X6105	300
Soundstyle X6310	300
Soundstyle Finewoods W310	360
Standsign Des gn 4	490
Stands Unique Isolation Platform	55
Stands Unique Sound Support	260
Stands Unique Sound Tower	299
Stands Unique Compact Sound Support	329
Stands Unique Sound Support 10	329
Stands Unique Sound Twr Cabinet	389
Stands Unique Ref Wall Support	560
Stands Unique Ultimate Tower	720
Stands Unique Ref Floor Support	840
Target B5	175
Townshend Seismic Sink 1-CD	110
Townshend Seismic Sink 1-3D	400
Townshend S/Sink Stand 1-4	999
Townshend Seismic Sink Stand	1,245
Vibraplane Passive	1,895
Vibraplane Active	3,600
Wilson Benesch Standard Shelf	130
Wilson Benesch Mono Block	265
Wilson Benesch Asside Basic	590
Wilson Benesch Asside	720
Wilson Benesch Triptych	990



EQUIPMENT SUPPORTS Speaker Stands

KEY
60 – Height of stand in cm.

Acoustic Solutions Platform Eight	49	220
Aliante Base	425	
Aliante Vela	750	
Alphason NCI	60	47
Alphason Akros I	60	49
Alphason RS1	120	49
Alphason Akros II	60	65
Alphason NCIII	60	84
Alphason HDS	60	85
Alphason Titan S	60	125
Apollo Olympus	60	75
Apollo A26	66	80
Apollo A4/6	51	82
Atacama Nexus 6	60	50
Atacama BD21	56	55
Atacama BD17	55	55
Atacama BD25	60	60
Atacama SE16	65	65
Atacama SE12	65	65
Atacama SX500	67	67
Atacama F2	70	70
Atacama F1	70	70
Atacama SX600	70	70
Atacama SL200	70	70
Atacama SE24	61	70
Atacama SE20	70	70
Atacama SX700	73	73
Atacama SL300	73	73
Atacama TP600	75	75
Atacama TP500	75	75
Atacama SE615	75	75
Atacama SE515	75	75
Atacama SE415	75	75
Atacama SL400	76	76
Atacama SE1000S	80	80
Atacama R724	60	150
AVF P6171BP	100	30
AVF Tower P6144BP	60	35
BCD Model 1010	60	595
Black Box Speaker Stand	100	797
Credo STD 001		284
Custom Design M Range	56	85
Custom Design R/S 300 Mk II	61	100
Custom Design Ref. stands	60	200
Deadrock 903	60	60
Deadrock 902	67	60
Deadrock 901	39	60
Elemental Reference SB1	8	399
Elemental Isotube SZ	49	499
Elemental Isotube SZse	61	599
Elemental Isotube SCZ	49	699
Elemental Isotube SCZse	49	799
Elemental Reference SZ	52	999
Elemental Reference SZc	52	1,499
Heybrook Stand-S6	63	69
JPW MS2	45	45
JPW MS3	61	55
JPW MS1	46	80
JPW HS1	61	120
JPW HS2	45	120
Mana Sound Base	8	175
Opera WS1/E	60	235
Opera S1	60	295
Opera S2	60	345
Partington A-4	60	119
Partington Dreadnought Ultima	63	299
Pioneer CP-7	59	50
Pioneer CP-8	80	80
Projekt Signature	55	80
Royd Royd	55	99
Russ Andrews Tarlyte	61	599
Silverado Silverado 1 Stand	60	350
Solid Steel SL	63	186
Solid Steel SS	63	333
Solid Steel SS801	25	366
Sonus Faber Ironwood		475
Sonus Faber Stonewood		497
Sonus Systems Excel	65	99
Sound Org Z522	59	89
Soundstyle Finewoods W122	57	95
Soundstyle X122	57	95
Soundstyle Select	59	95
Soundstyle Radius S122	57	110
Stands Unique Speaker support	59	165
Stands Unique Tuned Spkr Support	59	230

Stands Unique Tuned Carbon Fibre	59	299
Stands Unique Vivas CF Spkr Supp	60	349
Target TR60	60	68
Target HM60	55	106
Target R1	53	280
Townshend Seismic Sink L/S	4	499



LOUDSPEAKERS

KEY
 1 – Floorstander; larger models requiring no separate stand.
 2 – Stand mount; smaller models designed to be raised above the floor.
 3 – Wall mount; designed to be sited on or near the wall.
 4 – Box type, including infinite baffle, reflex and transmission line types.
 5 – Horn type; mostly large and very efficient.
 6 – Panel type, including electrostatic and planar magnetic types.

UP TO £130		
Acoustic Energy Aegis Compact	4	55
Allison Micro Monitors	4	95
Allison Mini References	4	120
AR Status S10	4	150
Ariston MSX 03	4	30
Ariston MSX 05	4	50
Celestion 121	4	119
Denon SC-M2	4	80
Denon SC-E313SE	4	130
Eltax Liberty 1+	4	99
Eltax Monitor III Mk II	4	129
Gale Mini Monitors	4	70
Gale Gold Monitors	4	90
Gale 2i	4	130
Genexa GX300	4	80
Genexa GX330	4	80
GLL Arena	4	90
GLL Imagio IC208	4	100
Interaudio XL1000	4	130
Jamo Arina	4	120
Jamo 28	4	125
Jamo Cornet 145	4	130
JBL CM40	4	90
JBL MX300	4	90
JBL Control 1X	4	100
JBL CM42	4	130
JPW ML110i	4	90
JPW ML210i	4	100
JPW ML310i	4	120
JPW ML410i	4	130
JVC SX-SC1VBK	4	60
JVC SP-V50	4	80
JVC SP-X220TBK	4	100
JVC SP-X550BK	4	130
KEF Coda 7	4	129
Kenwood LS-90UK	4	130
Mission 700	4	130
Monitor Audio Bronze 1	4	130
NAD 801	4	100
Paradigm Micro v2	4	100
Paradigm Atom v2	4	120
Pioneer CS-3070	4	100
Polk AB410	4	100
Realistic Minimus 26	4	56
Realistic Minimus Pro-77	4	100
Sony SS-86E	4	100
Tangent Monitor 3	4	60
Tangent Monitor 5	4	80
Tannoy Mercury M1	4	120
Tannoy mX1	4	120
TDL Nucleus 1	4	75
TDL Nucleus 2	4	130
Teac LS-X8 Mk II	4	80
Technics SB-CS65	4	100
Wdale Valdus 100	4	80
Wdale Diamond 7.1	4	100
Wdale Valdus 200	4	110
Wdale Modus Micro	4	110
£131 TO £200		
Acoustic Energy Aegis Centre	4	140
Acoustic Energy Aegis One	4	150

Allison Model 4A	170
B&W DM302 Ser II	150
B&W DM601 Ser II	199
Bose 201 IV	200
Boston CR6	149
Boston 325	149
Boston Micro 80 Sat	169
Boston Runabout	169
Boston 335	179
Boston 351	189
Boston CR7	199
Boston Runabout II	200
Celestion 15i	199
Cerwin-Vega CT-165	200
Eltax Liberty 3+	149
Eltax Liberty 5+	199
Genexa GX650	140
Genexa Pro	160
GLL Imagio IC218	140
GLL Imagio IC318	200
Heybrook HB1/2000	150
Heybrook Heylette	199
Interaudio XL2000	200
Jamo Cornet 165	150
Jamo 38	150
Jamo 525	150
Jamo 560	150
Jamo 660	170
Jamo D165	200
Jamo 68	200
Jamo 892	200
JBL CM52	150
JBL MX1000	170
JBL LX20	200
JBL MX1500	200
JM Lab Tantal 505	199
JPW ML510	150
JPW ML610i	180
KEF Cresta 2	149
KEF Coda 8	189
KEF Model 60S	199
KEF Q15.2	200
Kenwood LS-200G	200
Magnat Vector 22	179
Mission 701	160
Mission 77C	199
Mission 77DS	199
Mission 771e	200
Mission 702e	200
Monitor Audio Bronze 2	180
Monitor Audio Monitor 1	200
Mordant-Short MS206	200
Paradigm Mini Monitor	200
Pioneer CS-5070	150
Pioneer CS-7070	200
Polk M2	180
Polk RT3	200
Polk AB610	200
Royd A7X	155
Sequence 200	199
Sony SS-126EB	150
Sony SS-176E	200
Tangent Monitor 9	155
Tangent Monitor 11	180
Tannoy Mercury M2	140
Tannoy Satum S6C	200
Tannoy Revolution R1	200
TDL Nucleus 3	200
Technics SB-CS95	150
Technics SB-M20	200
TLC Maestro 70S	159
Wdale Diamond 7.2 Ann'y	150
Wdale Valdus 300	150
Wdale Modus Music Two	200
Wdale Valdus 400	200
Yamaha NS-90	180
Yamaha NS-45E	200
Yamaha NS-100	200

£201 TO £300

Acoustic Energy AE100i SE	230
Acoustic Energy Aegis Two	249
ALR/Jordan Entry 2	249
AR 15	275
Arcaidy Baby 1	299
Audio Gem Opal	230
B&W DM602 Ser II	300
B&W 602 S2	300
Blueroom Minipod	250
Bose 151	220
Bose 301 IV	300
Boston 361	219
Boston CR8	239
Boston 381	259
Boston CR9	279
Boston Voyager	299
Castle Richmond	249
Castle Keep	290
Celestion C1	250
Celestion 23i	290
Cerwin-Vega VS-8	259
Cerwin-Vega CT-330	300
Chario Syntar 100	249
Chario Ref 100	299
Chano Hipper 1000	300
Dali 102B	260

HI-FI PRICE GUIDE

Dali 150	300
Eltax Linear Resp. 4.5	249
Eltax Liberty 7+	249
GLL Imagio IC238TL	250
Heybrook HB2/2000	240
Heybrook Heylios	269
Heybrook HB3/2000	300
Interaudio XL3000	230
Interaudio XL4000	260
Jamo Cornet 175	230
Jamo Classic 4	250
Jamo E850	300
Jamo Art	300
Jamo D265	300
JBL CM62	250
JM Lab Tantal 507	299
JPW ML710i	250
JPW ML810i	300
JVC SX-SW10	300
KEF Coda 9	299
KEF Model 705	299
Linn Kan	295
Mission 750	248
Mission 772	250
Mission 780	299
Mission 703	300
Monitor Audio Monitor 2	250
Monitor Audio Bronze 3	270
Monitor Audio Silver 3i	300
NAD 802	280
Paradigm Monitor 5	250
Paradigm Monitor 7	300
Pioneer CS-9070	250
Polk AB505	220
Polk M3 II	220
Polk RT5	250
Polk RT7	300
Polk M5	300
Promenade SP1	299
Rega Ara	255
Royd The Envoy	249
Royd Minstrel	275
Ruark Epilogue	239
Sequence 300	249
Sony SS-176EB	250
Tannoy mX3	229
Tannoy Mercury M3	230
TDL Nucleus 4	300
TLC Maestro 1305	289
TLC Voyager 350	289
Wdale Modus Music Four	230
Wdale Valdis 500	300
Yamaha NS-120	250
Yamaha NS-200	300
ZYP A1	229
ZYP A25	299

E301 TO E500

Acoustic Energy AE105SE	350
Acoustic Energy Aegs Three	350
Acoustic Energy AE109 SE	450
Acoustic Energy AE120SE	500
Allison Model 2A	420
Arcaydis Baby 2	399
Arcaydis ASC	399
Audiovector C1	350
AVI Neutron	499
AVI NuNeutron	500
B&O Beovox CX50	325
B&O Beovox CX100	425
B&W LCR6	349
B&W DM305	350
B&W CDM2SE	400
Bandor Pictures	352
Boston Micro 90 Sat	369
Boston Micro 80 Sys	369
Boston VR20	380
Castle Inversion 15	425
Castle Pembroke	499
Celestion 25i	399
Celestion 30i	449
Celestion 35i	499
Cerwin-Vega VS-10	350
Chario Syntar 100T	399
Chario Ref 1000	499
Dali 104B	370
Dali Royal Menuet MkII	400
Dali 606	400
Dali Royal	500
Def Tech Celsius	395
Dynaudio Audience 40	399
Dynaudio LR/C120	439
ELAC CL82 MKII	399
Eltax Linear Resp. 6.5	349
Eltax Chroma Front	348
Eltax Linear Resp. 8.5	449
Energy eXL25	399
Epos ES12	499
GLL Imagio IC248TL	350
GLL Imagio IC258TL	450
GLL Imagio IC348TL	500
Heybrook Heylo	359
Heybrook HB4/2000	500
Indigo One	330
Indigo Three	500
Jamo Classic 6	330

Jamo Cornet 195	350
Jamo 98	350
Jamo D365	400
Jamo Classic 8	400
Jamo Graphic	400
Jamo 128	450
Jamo Atmosphere	500
JBL LX60	350
JBL Ti 200	400
JM Lab Tantal 515	499
Jordan Watts JHFLG	380
Jordan Watts JH200	420
JPW ML910i	350
JPW ML1010i	450
KEF Q35.2	350
KEF RDM One	499
KEF Q35.2	500
Linn Sekrit	395
Magnat Vector 55	349
Magnat Vintage 320	350
Magnat Vector 77	449
Mission 751H	348
Mission 733	399
Mission 773e	400
Mission 704	450
Mission 774	500
Mission 705	500
Monitor Audio Monitor 3	350
Monitor Audio Silver 5i	450
Monitor Audio Studio 2SE	500
Mordaunt-Short MS207	400
Mordaunt-Short MS208	500
Mordaunt-Short MS817	500
Mus Tec Kestrel Evolution	315
Mus Tec Harrier	400
Mus Tec PM15	475
NAD 804	400
Neat Critique	445
Opera Mini	325
Opera Duoetto	395
Opera Prima	495
Origin Live OL-1AS	499
Origin Live Monarch	499
Paradigm Studio/20	350
Paradigm Monitor 9	400
PMC TB15	470
Polk AB705	330
Polk RT8	400
Polk RT10	500
Polk AB805	500
Promenade SP2	399
Promenade SP3	499
Rega Alya	365
Rega Jura	475
Rega ELA	498
Roksan ROKone 1	400
Royd The Squire	350
Royd Minstrel SE	399
Royd Doublet	485
Ruark Icon	399
Sequence 400	329
Sony SS-X7	400
S Coast Odette	325
Spendor S3/5	499
System 1130	500
Tannoy Revolution R2	350
Tannoy Saturn S6LCR	400
Tannoy Saturn S6	500
TDL G20	380
TDL Chiltern CF100	450
TDL G30	500
Technics SB-M300	350
Technics SB-M500	450
TLC Altus 300	366
Triangle Cometes	359
Wdale Modus Music Six	330
Wdale Modus Music Eight	430
Wdale Modus Music 1/6	500
Yamaha NS-300	400

E501 TO E800

Acoustic Precision Eikos FRI1	800
Aliante Stile	580
Aliante Voce	600
Allison Model 3A	525
Arcaydis AK3	599
Arcaydis AS2	699
Arcaydis AK4	699
Audio Gem Emerald	540
Audio Note AN-K/D	620
Audio Note AN-J/B	799
Audiovector M1 Improved	650
Audiovector C2	700
AVI Biggatron	599
B&O Beolab 2500	750
B&W 603 S2	550
B&W CDM1 SE	600
Bose 501	600
Bose A'mass AM3	600
Boston VR30	600
Castle Severn 2SE	700
Celestion A Compact	599
Celestion 45i	599
Celestion C2	599
Cerwin-Vega VS-12	699
Cerwin-Vega VS-15	550

Chario Constellation Lynx	549
Chario Ref 100T	599
Chario Hiper 1000T	699
Cura CA-10	699
Dali 107	600
Dali 350	600
Dali 450	700
Dali 109	800
Def Tech BP2X	595
Def Tech CLR2002	595
Def Tech BP6B	750
Diapason Micra II	750
Dynaudio Audience 50	577
Dynaudio Audience 60	729
ELAC CL102 MKII	599
ELAC CL310i JET	800
Eltax Linear Resp. 10.5	549
Energy eXL26	600
Epos ES14	675
Harbeth BBC LS3/5A	699
Harbeth HL-P3ES	799
Heybrook Duet	799
Indigo Four	750
Infinity Kappa 60	595
Infinity Kappa 70	795
Jamo Classic 10	600
Jamo X3M8	600
Jamo X3M10	750
JBL LX80	550
JBL Ti 400	550
JBL SVA1500	650
JBL Ti 600	650
JM Lab Cobalt 807	599
JM Lab Tantal 520	599
JM Lab Cobalt 810	799
Jordan Watts JH400	515
KEF LS3/5a	649
KEF RDM Two	699
KEF Q65.2	700
Kelly KT2	700
Linn Tukan Passive	550
Linn Keilidh Passive	750
Magnat Vintage 710	799
Meridian A500	750
M&K S-85	700
Mirage FR-7	550
Mission 752f	578
Mission 782	699
Mission 753f	798
Mission 775e	800
Monitor Audio Silver 7i	600
Mus Tec Falcon	680
Naim Intro	680
Neat Mystique 2	575
Neat Petite II	745
NHT Super Two	550
Opera Seconda	595
Opera Pavarotti	695
Opera Platea	795
Opera Operetta	795
Origin Live Resolution	732
Paradigm Studio/60	650
Paradigm Studio/80	750
PMC TB1SM	517
PMC TB1	529
PMC TB1M	576
PMC XB1	600
Polk RT12	640
Polk RT16	799
Polk LS50	800
ProAc Tablette 2000	649
ProAc Studio 100	749
Promenade SP4	650
Roksan Ojan 3	795
Royd The Sorcerer	595
Royd Abbot	695
Ruark Templar II	559
Ruark Sceptre	599
Ruark Talisman II	799
Shinpy Polays	595
Silverado Raider	695
Snell K5	795
Soliloquy 5.0	795
Sonus Faber Concertino	599
S Coast Lancelot	575
S Coast Hades	695
S Coast Merlin Monitor	795
Spendor S1	549
System 1150	750
T+A TB 100	700
Tannoy Revolution R3	550
Tannoy Definition D100	689
TDL Cotswold CF200	650
Titan Orbital	598
Titan Logic T/2B	600
Titan Logic T/2	699
TLC Classic 2	535
TLC Classic 1	800
Totem Mite	599
Totem Rokk	765
Triangle Zephyr II	599

E801 TO E1500

Acoustic Energy AE1	845
Acoustic Energy AE2-II	1,245
Acoustic Solutions Eight	1,375

Aliante Moda	1,200
Arcaydis AK5	1,399
ATC SCM100	1,000
Audio Note AN-J/D	930
Audio Note AN-K/SPx	1,060
Audio Note AN-E/B	1,299
Audio Note AN-J/SPx	1,415
Audio Physic Step	1,299
Audiovector M1 Super Impr.	880
Audiovector M1 Sig Improved	1,180
Audiovector M3	1,200
AVI Positron	899
B&O Beolab 4000	1,100
B&W DM604 Ser II	849
B&W CDM7SE	1,000
B&W Nautilus 805	1,500
Bandor Trident	846
BC Acoustique Araxe	1,140
BKS Audio Hybrid 107	1,500
Bose A'mass AM5	900
Bose 701	1,000
Boston VR40	1,000
Carlsson OA-52.2	1,500
Castle Inversion 50	875
Castle Harlech	899
Celestion A1	899
Celestion C3	999
Celestion A2	1,499
Cerwin-Vega AL-1000	1,100
Cerwin-Vega 1515	1,300
Chario Ref 1000T	999
Chario Academy 1	1,299
Cura CA-20	1,199
Dali 850	1,100
Dali Evidence 870	1,300
Def Tech BP8B	1,000
Def Tech BP10B	1,500
Diapason Prelude II	875
Diapason Karis	995
Diapason Nux	1,395
Dynaudio Contour 1.1	879
Dynaudio Audience 70	1,100
Dynaudio Contour 1.3	1,198
Dynaudio Audience 80	1,460
Epos ES15	890
Epos ES22	1,185
Final 03	1,495
Harbeth HL-K6	899
Harbeth HL-Compact 7	1,299
Harbeth BBC LS5/12A	1,499
Impulse Kora	1,250
Infinity Overture 1	900
Infinity Kappa 80	995
Infinity Kappa 90	1,295
Infinity Overture 2	1,500
Jadis Orchestra	999
Jamo Concert 8	1,365
JBL SVA 1600	850
JBL 4312 MKII-WX	1,000
JBL SVA 1800	1,000
JBL SVA 2100	1,250
JM Lab Cobalt 815	999
JM Lab Electra 905	1,199
JM Lab Cobalt 820	1,199
Jordan Watts JH1+1	1,150
KEF Ref. Model One	1,199
KEF RDM Three	1,500
Kelly KT3	1,200
Linn Tukan Aktiv	1,050
Linn Keilidh Aktiv	1,250
L Voice Auditorium	1,500
Lumley L/M3.5	1,050
Magnat Vintage 720	1,199
Magneplanar SMG-C SE	990
Magneplanar MG-0,6 SE	1,370
Meridian Argent 1	995
M&K S-125	1,150
Mission 705a	900
Mission 783	1,900
Mission 754f	1,298
Monitor Audio Silver 9i	1,000
Mus Tec Condor	1,000
Mus Tec Hawk	1,250
Mus Tec Eagle	1,500
Naim Credo	1,090
Neat Elite	1,195
Opera Terza	995
Opera Super Pavarotti	995
Opera Gallas Gold	1,095
Opera Divina II	1,495
Orelle Swing	1,200
Origin Live Sovereign	1,130
Paradigm Studio/100	950
PMC LB1	999
PMC FB1	1,275
Polk CS1000	999
Polk LS70	1,200
Polk RTE1000	1,300
Polk RT20p	1,500
ProAc Tablette 2000 Sig	899
ProAc Studio 125	999
ProAc Response 1 SC	1,199
Rega Naos	998
Rehdeko RK115	1,500
RMS Revelation S 1	1,299
Roksan Ojan 3X	995
Royd The Albion	985

Ruark Prologue One R	949
Ruark Solus	1,200
Shahinian Super Elf	875
Shahinian Starter	1,195
Shahinian Compass	1,495
Shinpy Micraphonica	1,099
Silverado Ryder	1,395
Soliloquy SM 2A3	1,095
Sonus Faber Concerto	945
Sonus Faber Concerto CP	999
Sonus Faber Signum	1,200
S Coast Classic	1,175
Spendor SP3/1P	825
Spendor FL6	1,099
Spendor SP2/3	1,187
Spendor FL8	1,355
T+A TAS 1200E	1,050
T+A TB 120	1,060
TAG McLaren Calliope	1,495
Tannoy Definition D300	999
TDL Cheviot CF300	850
Technics SB-M1000	1,500
Titan Enigma T/3	825
Titan Logic T2B3	900
Titan Sovereign T/4	1,175
Totem The Arro	959
Totem The Staaf	1,249
Totem Model One	1,249
Veritas 7	1,000
Veritas 15	1,300
Veritas 20	1,400
Vienna Acoustics Mozart	1,500
Zingali Colosseum	975

£1501 TO £3000

Acoustic Energy AE1 Sig	1,995
Acoustic Energy AE2 Sig	2,995
Aliante Zeta	1,850
Aliante Linea	2,060
Aliante One	2,700
Alon I Mk II	1,795
Alon II Mk II	2,495
ALR/Jordan Note 7	2,500
ATC SCM20SL	1,750
ATC SCM20 Tower SL	2,400
Audio Note AN-E/D	1,520
Audio Note AN-E/SPx	2,250
Audio Physic Spark 2	1,749
Audio Physic Tempo	1,999
Audio WKp Cyclone 34	2,000
Audiostatic DCI	2,495
Audiovector M3 Super	1,700
Audiovector M3 Sig	2,200
B&O Beolab 6000	1,550
B&O Beolab 8000	2,100
B&O Beolab Penta 3	2,650
B&W Nautilus 804	2,500
Bandor Bandoline	2,350
Bandor Bandora/Mora	2,350
BKS Audio Hybrid 128	2,549
Bose 901 VI	1,650
Boston Lynfield 300L	2,000
Castle Inversion 100	1,575
Celestion A3	2,399
Celestion Kingston	2,500
Chario Academy 2	1,649
Chario Academy Mill'm 2	2,100
Credo SPB 003	1,820
Credo SPB 009	2,453
Cura CA-30	1,799
Dali Grand Coupe	2,500
Def Tech BP2004	1,700
Def Tech BP2002	2,400
Diapason Adamantes III	1,995
Dynaudio Contour 1.8	1,894
Dynaudio Craft	2,598
Dynaudio Contour 3.0	2,930
ELAC CL330 JET	2,499
ELS Res'ch Vision	2,800
Epos ES30	2,385
Eurostatic Model 1	2,250
Final 0.4	2,950
Gamma Epoch Ref Five	2,999
Harbeth HL-S8	1,999
Helius Syrius II	2,395
Helius Syrius I	2,850
Heybrook Octet	1,799
Hi Q Sound SM108	2,000
Impulse Lali	1,850
Infinity Overture 3	1,750
Infinity Kappa 100	1,895
Inner Sound Isis	2,375
Jamo Concert 11	2,250
JM Lab Electra 915.1	1,899
JM Lab Electra 920.1	2,399
Jordan Watts JH2K	2,400
Jordan Watts JH5K	3,000
KEF Ref. Model Two	1,599
KEF Ref. Model Three	1,999
Linn Kaber Passive	2,000
Linn Kaber Aktiv	2,640
L Voice Aud'm Avatar	2,400
Lowther Accolade 2	1,950
Lumley L/M2 Mk3	2,995
Magnat Vintage 760	1,999
Magneplanar MC-10 SE	1,650

Magneplanar MG-1.5 SE	1,780
Magneplanar MG-2.7 SE	2,650
Martin-Logan Aerius i	2,199
Meridian M60	2,150
Monitor Audio Studio 20SE	1,900
Naim SBL Active	1,885
Naim SBL Passive	2,030
Neolith NEO 1	2,999
O'hEocha D1-f	1,760
Opera Caruso II	2,495
Origin Live Conqueror	1,750
PMC AB1	1,758
PMC IB1S	2,697
Polk LS90	1,700
ProAc Response 1.5	1,790
ProAc Response 2.5	2,700
Rehdeko RK125	2,650
Ruark Crusader II	1,649
Ruark Equinox	2,000
Shahinian Arc	1,995
Shahinian Obelisk	2,850
Shinpy Euritmica	1,995
Shinpy Altair	2,895
Silverado Silverado 1	1,995
Snell XA-60	2,500
Soliloquy 5.3	1,750
Sonus Faber Electa Amator 2	2,849
Sound-Lab Quantum	2,150
S Coast Excalibur	2,150
Spendor SP1/2	1,674
Spendor FL9	2,220
Spendor SP100	2,234
T+A TB 140	1,760
Tannoy Definition D500	1,999
Tannoy Stirling TW	2,200
Tannoy Definition D700	2,500
TDL Studio Monitor-m	2,750
Totem Tabu	2,299
Totem The Forest	2,675
Veritas 25	1,750
Veritas H1	2,995
Wilson Benesch Orator	2,900
Zingali Overture 25	1,975

OVER £3000

Acoustic Energy AE5	7,995
Alon Lotus SE	3,500
Alon V Mk II	5,495
Alon Adriana	8,500
Alon Circe	12,000
Alon Phalanx	19,000
ATC SCM20A PRO	3,140
ATC SCM20TASL	3,995
ATC SCM50PSL	4,377
ATC SCM100PSL	5,098
ATC SCM50ASL	5,948
ATC SCM100ASL	6,669
ATC SCM70PSL	8,842
ATC SCM70ASL	10,508
ATC SCM200ASL	16,843
ATC SCM300ASL	19,150
Audio Note AN-SE Silver	7,900
Audio Note AN-ESE Silver	9,600
Audio Physic Virgo 2	3,399
Audio Physic Avanti 2	6,699
Audio Physic Caldera	10,599
Audio Physic Medea	24,999
Audiostatic DCI Plus	3,750
Audiovector 5X	3,999
Audiovector 6X	4,800
Avalon Avatar	5,995
Avalon Arcus	6,995
Avalon Eclipse Classic	8,995
Avalon Radian HC	13,995
Avalon Eidolon	20,495
Avalon Sentinel	79,995
Avantgarde Uno	5,300
Avantgarde Duo	7,500
Avantgarde Trio Compact	16,500
Avantgarde Trio Classic	17,300
AVI Gravitron	4,250
B&W Nautilus 803	4,000
B&W Silver Signature	5,500
B&W Nautilus 802	6,000
B&W Nautilus 801	8,500
B&W Nautilus	35,000
Beauhorn Virtuoso Bronze	4,065
Beauhorn Virtuoso Gold	4,815
Beauhorn Virtuoso Ref. DX3	4,420
Beauhorn Virtuoso Ref. DX4	4,945
Beauhorn Accelerando	6,600
BKS Audio Hybrid 175	3,995
Boston Lynfield 500L	4,449
Carfrae Little Big Horn	6,795
Carfrae Carfraehorn	18,000
Chario Academy 3j	5,999
Credo SPB 012	3,147
Credo SDL 001	5,677
Dali Grand	4,000
Def Tech BP2000	3,600
Diapason Adamantes Ltd	3,995
Dynaudio Contour 3.3	4,815
Dynaudio Confidence 3	4,846
Dynaudio Confidence 5	5,924
Dynaudio Consequence	14,566
Dynaudio Evidence	50,909

Eggleston Rosa	8,500
Electrofluidics Sonolith 2.2x	5,999
ELS Res'ch Vista	3,900
ELS Res'ch Illusion MKII	9,000
Eurostatic Model 2	3,650
Impulse Ta'us	3,100
Inner Sound Eros	3,995
Jadis 2	5,900
Jadis 1	18,900
Jamo Oriel	9,000
JM Lab Mini Utopia	4,500
JM Lab Mezzo Utopia	7,300
JM Lab Utopia	18,300
JM Lab Grande Utopia	35,000
Jordan Watts JH10K	7,570
KEF Ref. Model Four	3,299
Kochel K-300S	10,000
Linn Keltik Aktiv	6,000
L Voice Avatar OBX	4,000
L Voice Air Scout	19,500
L Voice Air Partner S	37,200
Lowther Fidelio	3,100
Lowther Academy	3,550
Lowther Bel Canto	3,750
Lowther Delphic	4,300
Lumley L/M 2 Sig. Mk3	4,500
Magnat Vintage 770	3,500
Magneplanar MG-3.5SE	3,800
Magneplanar MG-20 SE P	10,300
Magneplanar MG-20 SE A	11,000
Martin-Logan SL3	3,399
Martin-Logan CLS Ilz	4,555
Martin-Logan Re-Quest Z	5,875
Martin-Logan Statement S2	8,967
Meridian DSP5000	3,295
Meridian DSP5500	5,950
Meridian DSP6000	9,400
Monitor Audio Studio 50	3,300
Monitor Audio Studio 60	5,000
Naim NBL	6,648
Naim DBL Active	8,050
Neolith NEO 2	3,499
Neolith NEO 3	4,999
Ocellia Tilia	3,400
Ocellia Olea	4,100
Ocellia Kedros	5,500
PMC MB1P	5,135
PMC BB5-P	8,841
PMC MB1-A	14,805
PMC BB5 A	19,799
PMC MB1/XBD-A	22,266
PMC BB5/XBD-A	32,606
ProAc Response 3.8	3,990
ProAc Future 1	5,875
ProAc Response 5	9,000
ProAc Future 2	10,575
ProAc Response 4	12,000
Rehdeko RK145	4,000
Revel Gem	5,295
Rockport Merak	13,995
Rockport Syzygy	15,000
Rockport Procyon	32,500
Ruark Solstice	4,000
Ruark Excalibur	7,000
Shahinian Hawk	5,495
Shahinian Diapason	9,495
Shinpy Enigma	3,995
Shinpy Euphonia	5,995
Shinpy Magnifica Suprema	14,500
Shun Mook Bella Voce	6,000
Snell XA-75ps	4,500
Sonus Faber Guarneri Homage	5,795
Sonus Faber Amati Homage	11,450
Sony SS-M9ED	10,000
Sound-Lab Dynastat	3,790
Sound-Lab Aura	6,490
Sound-Lab Pristine III+	7,990
Sound-Lab A-3	11,990
Sound-Lab Ultimate II	13,950
Sound-Lab A-1	13,990
Sound-Lab Ultimate III	18,950
Sound-Lab Ultimate I	23,950
S Coast Excalibur Ref.	9,599
Spendor FL10	3,475
T+A A4D	3,850
T+A A3D	4,550
T+A A2D	8,400
Tannoy Edinburgh TW	3,250
Tannoy Definition D900	3,999
Tannoy GRF Memory TW	4,000
Tannoy Westminster TW	6,600
Tannoy Canterbury 15 TW	7,720
Tannoy Westminster Royal	14,920
TDL Ref Standard-m	6,000
Titan Goliath T/4	4,112
Totem Mani-2	3,100
Totem Shaman	9,999
Veritas 45	3,750
Veritas H2	4,495
Veritas H3	5,995
Wilson Audio Cub	5,495
Wilson Audio WATT 5	8,390
Wilson Audio WITT II	10,995
Wilson Audio Maxx	34,995
Wilson Benesch Actor	3,900
Wilson Benesch ACT1 spkr	6,900
Wilson Benesch Act 2	8,900

Wilson Benesch The Bishop



20,000

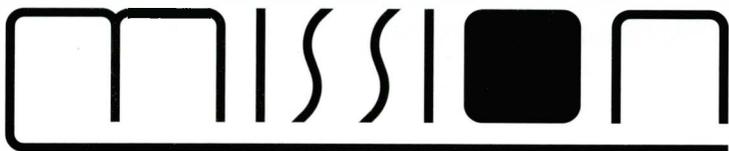
SUBWOOFERS

KEY

▲ - Active; includes a dedicated power amplifier.

THX - THX-approved by LucasFilm for use in Home THX installations.

Acoustic Energy Aegis Sub	300
Allison Mini Ref Sub	210
Alon Poseidon	12,000
ATC SCM 0.1/1.5	3,810
Audio Physic Terra	3,499
Audiovector M Sub	699
Audiovector M Sub Sig.	849
B&W ASW1000	500
B&W ASW2000	800
B&W ASW3000	1,000
Boston CR400	300
Boston VR500	450
Boston VR2000	800
Celestion CS135	139
Celestion CSW MkII	329
Celestion S1i	349
Celestion A6s	800
Cerwin-Vega HT-10D	200
Cerwin-Vega HT-12D	250
Chario Syntar Bass	299
Chario Hiper Bass	499
Credo SDC 001	3,054
Eltax Atomic A-8	129
Eltax Atomic A-10	179
Eltax Atomic A-15	299
GLL Le Bass	350
Infinity HPS-250	550
Jamo SW1008	250
Jamo SW410e	300
Jamo SW708	300
Jamo SW-2010	400
Jamo Sub One	400
JBL Control Sub 6	200
JBL Control Sub 10	300
JM Lab Tantal SW20	349
JM Lab Cobalt SW27A	599
JM Lab Electra SW33A	899
JM Lab Sub Utopia	2,200
JPW Subwoofer	130
JPW SW40	240
JPW SW60	350
JPW SW-120	500
KEF Model 20B	349
KEF Model 30B	499
KEF Model AV1	2,499
Kenwood SW500	250
Kenwood SW501	349
Linn AV5150	2,850
L Voice RW24	11,500
Magnat Vector Sub 30P	149
Magnat Vector Sub 30A	299
Magnat Omega 300	429
Meridian M2500	1,595
M&K Vx-7MKII	450
M&K V-75 MKII	650
M&K Vx-100	750
M&K V-125	800
M&K V-125 (THX)	800
M&K MX-70	900
M&K MX-700	1,495
M&K MX-150 (THX)	1,500
M&K MX-200	1,800
M&K MX-350THX	1,995
M&K MX-5000 (THX)	2,900
Mission 75as	548
Monitor Audio ASW100	300
Monitor Audio ASW110	500
Monitor Audio ASW210	700
Mus Tec PMS 45	500
Mus Tec Tercel	700
Muse Model 22	1,890
Muse Model 18	3,790
Neat Gravitas	1,095
Paradigm PDR10	250
Paradigm Servo 15A	800
Polk PSW50	350
Polk PSW150	500
Polk PSW500	750
REL Q50	375
REL Q-100E	495



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REL Q201E	700
REL Storm III	800
REL Q400E	1,000
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REL Studio II	4,000
Revel Sub-15	2,195
Roksan Ojan 3S	795
Ruark Log-Rhythm	750
Sequence FW120	249
Solloquy S10	1,050
Sony SA-W305	130
Spendor Sub3	695
Sunfire Sub Junior	1,099
Sunfire True Sub	1,499
Sunfire Trus Sub Sig.	1,699
Tannoy mSUB 10	250
TDL Nucleus SBR	200
Titan Mercury	350
Titan Mars	450
Titan Jupiter	799
Tsunami TS300	300
Tsunami TS210	350
W'dale Topaz SW-12	400
Wilson Audio Puppy 5.1	8,450
Wilson Audio Whow III	10,999
Wilson Audio XS	17,000
Yamaha YST-SW45	140
Yamaha YST-SW90	180
Yamaha YST-SW160	280
Yamaha YST-SW300	350

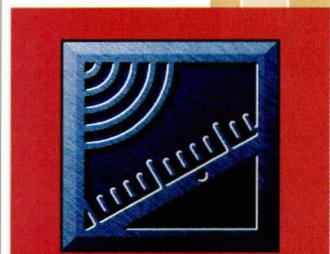


TONEARMS

KEY
 ⊙ - Pivoted.
 # - Parallel tracking.

Air Tangent IC	#	4,600
Air Tangent 10B	#	8,600
Air Tangent Reference	#	14,000
Audio Note AN-ARM 1	⊙	169
Audio Note AN-0s	⊙	795
Audio Note AN-1s	⊙	995
Audiomeca SL5	#	2,500
Clearaudio Souther TQ-1	#	1,670
Clearaudio Master TQ-1	#	3,620
Dynavector 507	⊙	1,995
Graham Mk 2.0 Basic	⊙	1,810
Graham Mk 2.0 Deluxe	⊙	2,650
Helius Orion 4 Copper	⊙	549
Helius Cyalene 2	⊙	1,495
Kuzma Stogi S	⊙	399
Kuzma Stogi	⊙	750
Kuzma Stogi Ref	⊙	1,250
Linn Akito	⊙	500
Linn Ekos	⊙	1,500
Moth Mk I	⊙	109
Moth MKIII Stainless	⊙	146
Moth Mk III Tungsten	⊙	174
Moth Moth 900	⊙	598
Naim ARO	⊙	1,070
N'ham Interspace Arm	⊙	3,700
N'ham Space	⊙	450
N'ham Mentor	⊙	800
N'ham Foot	⊙	1,100
N'ham Anna Log Arm	⊙	1,500
Pro-Ject 9	⊙	350
Rega RB250	⊙	124
Rega RB300	⊙	188
Rega RB600	⊙	358

Rega RB900	⊙	648
Rockport Series 7000	#	6,000
Roksan Tabriz	⊙	345
Roksan Tabriz Zi	⊙	445
Roksan Artemiz	⊙	895
SME 3009 Ser II Imp	⊙	309
SME 3009 S2 Ser II Imp	⊙	338
SME Series II 3009-R	⊙	514
SME Series II 3010-R	⊙	526
SME Series II 3012-R	⊙	565
SME 309	⊙	689
SME 310	⊙	705
SME 312	⊙	802
SME Series IV	⊙	985
SME Series V	⊙	1,461
Triplanar V1A	⊙	3,500
Triplanar V1B	⊙	3,750
Wilson Benesch Act 0.5	⊙	795
Wilson Benesch ACT2	⊙	1,350
Zeta AS	⊙	469
Zeta VDH	⊙	549



TUNERS

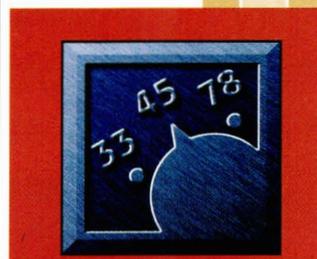
KEY
 # - 'P20' (etc.) - Number of presets.
 RDS - Radio Data System; receives text information on station, programme type etc.

Arcam Alpha 7	P24	230
Arcam Alpha 8	P24	280
Arcam FMJ T21	P24	400
Arcam Alpha 10 DRT	P07	800
Arcam FMJ DT26	P07	1,000
Ariston TX-510	P20	50
AVI S2000MT2	P99	899
Cambridge T500	P64	180
Creek T43	P64	399
Cymbal C-DAB1	P08	999
Cyrus FM7.5	P29	400
Davidson-Roth FM Ref Classic		5,590
Denon TU-260L MkII	P40	130
Denon TU-425RD	RDS	200
Denon TU-1500RD	RDS	250
Fanfare FT1	P08	1,395
H/K TU930	P30	150
H/K TU950	P30	200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P20	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dyalab FT11		499
Magnum Dyalab FT-101A		795
Magnum Dyalab Etude		1,250
Magnum Dyalab MD108		4,990
Marantz ST-48	P60	120
Marantz ST-17	P60	600
McIntosh MR7084	P60	2,499
McIntosh MX118	P50	4,999
McIntosh MX130	P50	6,999
Meridian 504	P30	695
Musical Fidelity 50	P20	300
Myryad T-30	P29	400
Myryad Cameo	P29	490
Myryad MT100	P29	600
NAD 412	P24	190
NAD C440	P30	200
NAD 414RDS	P30	250
NAD 710	P24	270
NAD 712	P24	330
Naim NAT03	P24	615
Naim NAT02		1,130
Naim NAT01		1,780
Onkyo T 421 ORDS	P30	180
Onkyo T 409	P30	230
Onkyo T 411 RDS	P30	260
Pioneer F-208RDS	P30	140
Quad 99	P25	700
Rega Radio R	P24	350
Roksan Kandy	P50	375
Roksan Caspian	RDS	695
Rotel RT940AX	P20	225
Rotel RT-955	P30	350
Sony ST-SE200	P30	100
Sony ST-SE300	P30	120
Sony ST-SE520	RDS	130
Sony ST-SB920	RDS	180
Sony ST-S3000	RDS	250
Sony ST-SA3ES	RDS	280



Sony ST-D777ES	P99	RDS	550
T+A T1200R	P60	RDS	790
TAG McLaren T32R	P99		1,400
TAG McLaren T32R DAB	P99		2,295
Teac T-R400	P40		100
Teac T-R460	P40		120
Teac T-H500	P30	RDS	170
Technics ST-GT350L	P30	RDS	130
Technics ST-GT550L	P39	RDS	180
Technics ST-GT650L	P39	RDS	230
Technics ST-GT1000	P97	RDS	500
Thorens TRT-2000	P59	RDS	499
Yamaha TX-396L	P40		100
Yamaha TX-492RDS	P40	RDS	150
Yamaha TX-59 2RDS	P40	RDS	180
Yamaha RX-396RDS	P40	RDS	250
YBA Complete	P14	RDS	490

Audio Note AN-TT 3	⊙	1,995
Audiomeca Romance	⊙	1,895
Audiomeca J1	⊙	3,500
Avid Volvere	⊙	1,399
Avid Acutus	⊙	3,995
Basis 2000 *	⊙	1,995
Basis 2001	⊙	2,995
Basis Ovation II	⊙	5,400
Basis 2500	⊙	5,495
Basis 2800	⊙	7,495
Basis Debut Gold Std III	⊙	8,200
Basis Debut Gold Vacuum	⊙	10,300
Chantray QT Level 2	⊙	705
Clearaudio Solution	⊙	925
Clearaudio Evolution	⊙	1,095
Clearaudio Revolution	⊙	2,500
Clearaudio Reference	⊙	3,835
Clearaudio Master Ref.	⊙	8,510
DNM-Reson Rota 1	⊙	3,100
DNM-Reson Rota 2	⊙	4,100
Garrard 501	⊙	5,278
Impulse Moskito	⊙	695
Kuzma Stabi S	⊙	695
Kuzma Stabi	⊙	1,950
Kuzma Stabi Reference	⊙	3,750
Linn LP12 Basic	⊙	1,100
Linn LP12 Lingo	⊙	1,750
Michell Gyro Spider Ed'n	⊙	775
Michell Gyrodek	⊙	875
Michell Orbe SE	⊙	1,725
Michell Orbe	⊙	1,995
N'ham Spacedeck	⊙	750
N'ham HyperSpacedeck	⊙	1,700
N'ham Mentor	⊙	2,600
N'ham Anna Log	⊙	5,500
Oracle Delphi	⊙	3,370
Oracle Delphi 15th Anniv	⊙	3,800
Pink Triangle Taranella II	⊙	850
Pro-Ject Perspective	⊙	750
Rega P25	⊙	619
Rega Planar 9	⊙	1,698
Reson RS1M	⊙	695
Reson Rota 1	⊙	3,100
Rockport Capella II	⊙	7,500
Rockport Sirius III	⊙	90,000
Roksan Xerxes 10	⊙	1,295
Roksan TMS	⊙	2,745
SME Model 10A	⊙	3,333
SME Model 20/2	⊙	3,403
SME Model 20/2A	⊙	4,863
SME Model 30/2	⊙	10,675
SME Model 30/2A	⊙	12,135
SOTA Comet	⊙	995
SOTA Millenia	⊙	5,750
Stratosphere ST1	⊙	6,500
Technics SL-1200LTD	⊙	700
Thorens TD-146 VI TP50	⊙	550
Thorens TD-2001 TP90	⊙	700
Thorens TD-520 SME	⊙	1,050
Verdier Nouvelle Platine	⊙	1,995
Verdier Platine Verdier	⊙	3,995
VPI HW19 Junior	⊙	650
Well Tempered Record Player	⊙	1,995
Well Tempered Classic V	⊙	3,500
Well Tempered Reference	⊙	5,500
Wilson Benesch Circle	⊙	795
Wilson Benesch Full Circle	⊙	1,995



TURNTABLES

KEY
 ⊙ - Arm included.
 # - Cartridge included.
 UP TO £500

Audio Note AN-TT 1	⊙	349
Dual CS435-1	⊙	140
Dual CS 455-1	⊙	220
Dual 505-4 UK	⊙	220
Dual CS-750-1	⊙	330
Genexxa Lab-710	⊙	60
Genexxa Lab-810	⊙	70
Kenwood KD-492F	⊙	100
Michell Mycro	⊙	455
Moth Alamo	⊙	199
Moth Kanoot MkII Arm	⊙	279
Moth Kanoot MK3 Arm	⊙	329
NAD 533	⊙	220
N'ham Interspace	⊙	500
Pioneer PL-J2500-C	⊙	80
Pioneer PL-990	⊙	130
Pro-Ject 0.5/OM10	⊙	170
Pro-Ject 1/510	⊙	200
Pro-Ject 2/510	⊙	250
Pro-Ject Classic/510	⊙	360
Pro-Ject 6/510	⊙	400
Pro-Ject Classic Cherry	⊙	450
Pro-Ject 6.9	⊙	400
Rega Planar 78	⊙	224
Rega Planar 2	⊙	224
Rega P3	⊙	298
Sherwood PM8550	⊙	160
Sony PS-LX250H	⊙	90
Sony PS-LX300H	⊙	150
Technics SL-J110D	⊙	120
Technics SL-BD20	⊙	160
Technics SL-BD22	⊙	180
Technics SL-1210MkII	⊙	400
Technics SL-1200MkII	⊙	400
Thorens TD-180 AT91	⊙	210
Thorens TD-280 IV/UK	⊙	230
Thorens TD166 VI AT95E	⊙	370
Thorens TD-166 VI/UK/BR	⊙	400

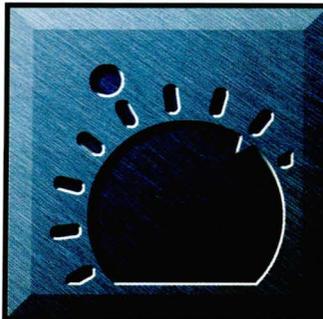
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Amplifiers

The amplifier is at the heart of any hi-fi system, accepting the outputs from various music sources, increasing the amplitude of their signal and then driving the loudspeakers to produce sound. One-box 'integrated' amps rule the roost at low-to-middle price points, but if you pay more, the low-level and high-level signal processes are separated into preamp and power amp boxes, and even separate 'outboard' power supplies come into play. Another luxury is a separate amp for each stereo channel: such devices are known as monoblocks. Finally, output power and sound quality are not necessarily related. Some of the finest amplifiers outputs only 12 Watts, but will yield loudness aplenty when partnered with high-efficiency loudspeakers.

KEY TO SPECIFICATIONS

LINE INPUTS: Number of input sockets for line-level (non-vinyl) sources such as CD players, tuners and cassette decks.
MM PHONO INPUT: An input specially designed for moving magnet (high output) phono pickup cartridges.
MC PHONO INPUT: An input for moving coil (low output) phono pickup cartridges.
REMOTE CONTROL: An infrared handset to adjust volume etc.
HEADPHONE SOCKET: An integral output for headphones.
POWER OUTPUT (Watts): Our measurement of an amp's RMS power output into 8 Ohms.
RECEIVER: An amplifier with built-in radio receiver (tuner).
ISSUE NUMBER: The issue of *H-FI Choice* in which an original review appeared.

B BEST BUY **R RECOMMENDED** **E EDITOR'S CHOICE**

Amplifiers

SPECIFICATIONS

LINE INPUTS
MM PHONO INPUTS
MC PHONO INPUTS
REMOTE CONTROL
HEADPHONE SOCKET
POWER OUTPUT (W)
RECEIVER
ISSUE NUMBER

STATUS

PRODUCT	(E)	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	RECEIVER	ISSUE NUMBER
Affordable Valve Co. EL34	650	A real bargain on the face of it, but the sound is oh so soft, warm and old-valve. Too much of a good thing	4					40		202
Alchemist Kraken APD6A	599	Compact, with Darth Vader styling, yet sound quality is meek and mild, despite strong midband dynamics	5	●				55		175
AMC 3025a	140	Surprisingly potent and easy on the ear, if not especially analytical – classic bargain-basement material, in fact	4	●	●	●	●	30		171
AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	45		167
Arcam Alpha One	230	Rather like an Alpha 7 but without the remote control and what appears to be better sound quality still	6					35		186
Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●				45		196
Arcam Alpha 8R	380	The Alpha 8R sets a high level of resolution and stability, and has some useful features for home cinema users	5	●				50		192
Arcam Alpha 9	500	Not quite a match for the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7					70		168
Arcam Alpha 10	800	Although not the best sounding in its class, the Alpha 10's modular nature demands it be taken seriously	5					100		181
Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7					100		201
ATC SIA2-150	1,984	An impressive sounding integrated amp with a dynamic, open and detailed sound	4					150		192
Aria S2	1,000	Glamorously packaged valve amp produces a real eyes closed, feet up kind of sound	4					12		190
Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	●	●			40		175
Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	●	●			40		181
AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5					100		175
Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5					60		175
Cambridge Audio A500RC	200	Solid value, decent build and a surfeit of watts make this an attractive proposition, but it can sound slightly loose	6					50		196
Canary Audio CA-608	1,495	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4					24		202
Copland CSA8	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5					60		168
Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	●				60		189
Copland CTA 402	1,698	A unusually flexible valve amp with an attractive and textured sound	5	●				35		193
CR Developments CR324	569	Solid and capable on paper, this is a bit of a blunt instrument when let loose on the music	5					150		181
Cymbal CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6					40		178
Creek 4330	279	Diminutive but dassy amp will drive anything, and can be specified in various configurations	4	●				40		192
Cyrus 5	500	A enjoyable amp that is assured and unflappable, although detail is unremarkable	7					45		205
Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6					60		196
Denon PMA-250SE	140	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5					30		171
Denon PMA-350SE	180	Reinvented in the minimalist tradition, this SE model is a control freak, but can sound wonderful	5					50		162
Denon PMA-535R	230	The kind of amp they made in the 70s, dressed to the nines, and nowhere to go	5	●				50		192
Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●			97		157
Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●			70		181
Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch above its weight, but check it will complement your system	5					60		175
Densen DM-10	1,375	Big, bold and expressive amplifier, but sometimes rough around the edges, and not as powerful as it appears	6					75		189
Edmund Audio ES110	400	Honest but unexciting straight line amp from REL associate company	6					85		192
Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6					75		201
Graaf Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6					25		202
Harman/Kardon HK630	200	Sharp, clean but sometimes slightly raw-sounding budget amp	4	●				40		192
Harman/Kardon HK690	530	Bold, dynamic amplifier with plenty of balls, but not the most sophisticated sound on earth	6	●	●			100		196
Hofli Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	●				65		181
JoLida 202	695	Well-built and technically accomplished, affordable valve integrated with subtle refined, if not quite gripping sound	4					40		168
JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5					45		149
Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	●				70		186
Kenwood KAF-3030R	250	Highly capable amp with good treble, bass and fine detail	5	●	●			65		205
Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsubtle performance	5	●	●			65		171
Krell KAV-500i	5,000	More at home in background listening/home cinema applications than out-and-out audio maniac set-ups	5					250		192
Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5					23		196
Magnum IA120	265	Mirror finish amplifier with bold, colourful delivery, but needs careful system matching to avoid loss of clarity	6	●				65		171
Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour and dynamics	6					96		142
Magnum IA200	599	Sweet, valve-flavoured solid state amplifier which flatters where it doesn't cast light	7					160		162
Magnum Class A SE	795	A MOSFET amplifier drawing inspiration from the world of valves, this is an erratically refined, detailed amplifier	5	●				80		175
Marantz PM-6010SE	229	Good starter amplifier, with characteristic smooth, low key delivery	5	●				50		196
Marantz PM7000	300	Lots of power for the price, but detail and subtlety seem to have been sacrificed	6	●	●			115		205
Marantz PM66 KI-Signature	400	It knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●	●			50		168
Marantz PM-17	900	Probably worth it for the WBT terminals and other build features alone, but this model doesn't sing as it should	6	●	●			60		181
Marantz PM-17 KI-Signature	1,300	Full feature audiophile amp where the end results don't quite justify the fantastic ingredients	6	●	●			60		189

CONTINUED

Amplifiers

SPECIFICATIONS

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

STATUS

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	RECEIVER	ISSUE NUMBER
Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility					55		178
Musical Fidelity E1	199	Richly flavoured tone and realistically-scaled imagery distinguish this entry-level Richer Sounds special					30		171
Musical Fidelity E11	299	Well built minimalist amp with a five year guarantee, but can sound congested when extended					60		178
Musical Fidelity X-A1	479	Idiosyncratic visuals just another plus for an amp that is powerful, well built, and serves the music superbly					50		181
Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some		●	●	●	85		196
Musical Fidelity X-A100R	999	Sings like a thoroughbred, but better with Mozart than Mötörhead				●	75		189
MVL A2	970	Curiously designed, and curious sounding amplifier with Sound Sentinel circuits to address perceived weaknesses		●			100	●	201
Myryad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse		●		●	50	●	192
Myryad M1120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle				●	60	●	175
NAD 310	100	Fleet and sure of foot, it seems likely to set all appendages tapping with its blend of enthusiasm and artfulness					20		149
NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build				●	40	●	186
NAD C340	270	A classic NAD amplifier copes with any speaker, delivers plenty of power, and does so with calm decorum		●		●	50	●	192
NAD 317	470	Build quality aside, the current improved version is a real powerhouse, but smooth and detailed too				●	80	●	196
NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong				●	100		189
Naim Nait 3	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes					30		154
Naim Nait 3R	780	Remote control variant of the basic Nait has a similarly dynamic credible sound but ultimately lacks power				●	30		189
Opera Aida	795	Low power (in practice) minimalist integrated amp, but the mahogany wings don't help it to fly		●	●		60		201
Pathos Classic One	995	Unusual looks and even more unusual electronic design, but compromised musical potential				●	55		202
Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of us worn down by the ongoing stress of life		●		●	50	●	1149
Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build		●		●	45	●	186
Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness		●		●	60	●	192
Pioneer A-300R Precision	400	Sophisticated variant of the A-300R. Not an obvious winner, but it slowly plys you with its subtle charms		●	●	●	35	●	162
Pioneer A07	999	Curious blend of high-end attributes and inconsistent, though undeniably detailed sound		●			80		175
Pracisica Acustica Sonoro	1,800	It is not often that transistor amplifiers are made to sound so palpably valve-like				●	100		189
Primare A10	500	Sharp, clean and agile sound quality, class leading build and an excellent control system – what more can you ask?				●	50		201
Primare A20 MkII	799	Everything except packaging has changed in Mk II version: but ballsier model has lost none of its refinement				●	70		181
Primare A30.1	1,499	Superb build and aesthetics, and undemonstrably musical down to its smallest screw				●	100		189
Rega Elex	398	Minimalist amplifier, derived from Elicit, is a little uninspiring, although at least it is well behaved		●			50		162
Restek Fantasy II	1499	Muscular, but ultimately rather strident amplifier which needs careful system matching				●	100		189
Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness		●		●	120	●	205
Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances				●	70		201
Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight		●	●		65		168
Rotel RA-931	150	Rather dry and unforgiving sound from this internally well specified and attractively priced amplifier		●			35		171
Rotel RA-971 MkII	225	Improved AR971 is a chip off the old block: bags of power, but with added precision and clarity				●	60	●	196
Rotel RA-972	450	Better in the treble than the bass, which is a little too rounded and woolly				●	90		205
Sharp SM-SX100	10,000	The world's first stable, 1-bit digital amplifier is a technological milestone that should go from strength to strength	n/a				110		200
Sony TA-FB740R	200	Very open and clear sound, comfortable with a wide range of musical styles		●		●	60	●	205
Sony TA-F448BE	250	Minimalist interface is matched to carefully considered circuit with satisfactory effect – but keep the volume in check		●		●	55	●	171
Sony TA-F3000ES	500	Champagne 'shoebbox amp' may lack power reserves, but is quick and articulate. In every sense a knockout		●	●	●	35	●	178
T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality				●	100		189
Tact Millennium Mk II	7,000	This digital class D amplifier represents a bold declaration on the future expansion of digital audio in the home	n/a			●	150		194
TAG McLaren 60i	800	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement					60	●	189
TAG McLaren 60iRv	999	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive				●	60	●	184
Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model				●	50		162
Talk Electronics Cyclone 1	550	Much improved build quality and silver finish, but the sound lacks physicality and can sound strained				●	65		196
Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall				●	50		175
Teac A-E2000	180	Has the potential to cause significant damage in the budget amp sector once the wrinkles are ironed out					50		195
Technics SU-A660 Mk 3	200	Plenty of wellie for the price, but the sound can be a tad coarse and lacking in fine detail		●			37		186
Technics SU-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat		●		●	55		196
Technics SU-A800D Mk 2	300	Two-box amplifier looks great, has plenty of gadgets, and makes good, if slightly overexuberant, music		●		●	55		178
Technics SU-A900D Mk 2	400	Looks like a pre/power amplifier, but in effect it's an integrated, with a rather soft-centred sound to match		●		●	70		175
Token Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic					50		186
Tube Technology Unisis Sig	2,400	A very attractive product which combines many classic valve attributes to good effect		●			30		202
Yamaha AX-392	170	Standard budget fare, and it's easy to pick holes, but in undemanding surroundings it works creditably				●	60	●	192
Yamaha AX-492	220	Powerful, well equipped amplifier at an attractive price, offers powerful and engaging music-making		●		●	85	●	178
Yamaha AX-592	280	Fine, middle-ranking amplifier, with a detailed midband but performance declines at frequency extremes		●	●	●	100		171
PREAMPLIFIERS									
Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent				●	50	●	187
Alchemist Kraken APD7A MkII	549	Unusual looks and unusual sound too, rather rough and lacking detail							187
Arcam Alpha 9C	400	Well specified and flexible preamp with sound only just lacking in greatness				●		●	187

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Audio Note M Zero	299	Neat shoe box-size preamp. Able to impart music with real life and soul when partnered with P Zero power amps	5						191
Copland CTA-301MkII	1,249	Sweet sounding, but never gets bogged down in audio treacle	4	●					151
Creek P43R	350	Excellent sound, remote control operation and upgrade options from this fine value preamp	6						187
Crimson CS610	450	Good, clear sound, including a decent phono stage, but flexibility is limited	3	●	●				187
Cyrus aCA7	798	A decent enough unit at the price but not as good as the Cyrus aPA7 power amp it was tested with	5			●	●		190
Densen Beat B-200	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	●	●				191
Levinson 380	3,995	True high end preamplifier combines precision and warmth with unusual configurability	6			●			195
LFD Mistral Linestage	449	Strong ergonomics, generally decent sound, but a little lacking in detail	6						165
Meridian 501	695	Tight, positive sound, but dispassionate; intense at high levels. (Tested with 555 power amp)	5	●			●		145
Meridian 502	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation	7			●			162
Michell Orca	1,650	Line-level design with a gorgeous remote and focused, spacious sound. (Tested with Alecto power amps)	6			●			187
Moth 30 Active Line Stage	349	Excellent-sounding ultra-simple miniature preamp	4						165
Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5			●			166
Musical Fidelity X-PRE	200	Cleverly configured preamp with many upgrade options, and open, lively and engaging sound	4						175
Musical Fidelity X-P100	800	Good long-term listening prospects; detailed and a little fruitiness (tested with X-A200 power amp)	6	●		●			200
NAD 114	270	Beer-budget preamp which sounds focused, detailed and consistent	6	●	●		●		165
NAD Silverline S100	600	Beautifully built kit that sounds as good as it looks (tested with S200 power amp)	7			●			200
Naim NAC92R	630	Upgradeable preamp uses proprietary socketry. (Tested with NAP90 power amp)	5			●			165
Naim NAC102	1,000	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety	6			●			200
Rega Hal	998	Passive line stages dedicated to Exon power amps	6	●	●	●			165
Rotel RC-971	150	Low price is offset by rather coarse sound quality with certain types of music. (Tested with RB-971 power amp)	5				●		178
Rotel RC-995	525	Highly capable, though less astonishing value than matching RB-991 power amp (tested as pair)	6	●	●	●			200
Samuel Johnson pca100	1,800	Stylish wood and metal fascia - precise, clean sound with an emphasis on leading edges	6			●	●		201
TAG McLaren PA20R	1,500	Refinement of Audiolab original with clean, detailed sound but limited thrill power. (T/w 125M monoblocks)	6			●	●		184
Talk Hurricane 2L	649	Design of integrity which gets to the heart, if not the soul, of the music	6						165
Technics SU-C3000	2,997	Price includes SE-A3000. Supremely clean and even sounding combo, though it could be more musically involving	5	●					188
Technics SU-C1010	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	●		●			200
POWER AMPLIFIERS									
Alch. Kraken APD8A MK II	549	Unusual looks and unusual sound too, rather rough and lacking detail	1					55	187
Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1					60	165
Arcam Alpha 10P	600	Well made and flexible: upgradeable to 3 channels. Good sound lacking the last degree of detail	1					100	187
Audio Note P Zero	599	Neat shoe box size valve monoblocks, priced per pair. Impart music with life and soul. (Tested with P Zero preamp)	1					8	191
Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1					8.5	186
Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1					5	196
Copland CTA-505	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1					67	151
Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear	1					410	202
Creek A52SE	599	Well designed and built amplifier with plenty of power, detail and refinement	6					100	187
Crimson CS630	800	Space-saving slimline monoblocks with both grunt and finesse	1					100	187
Crimson 620C	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1					50	181
Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1					50	183
Cyrus aPA7	1,896	Low feedback design that's a positive departure from the transistorised norm. (Tested with Cyrus aCA7 pre)	1					150	190
Densen B-300	800	Expensive but highly musical. Colourful and warm sound with strong timing and listener involvement	1					100	183
Gamut D200	2,995	Single MOSFET pair per side gives tremendous resolution and timing (balanced only). Formerly Sirius	1					200	183
Levinson 334	5,495	A mailed fist in a velvet glove; refined, authoritative and transparent	1					125	195
LFD Mistral Power	449	Infectious upper band vitality, but LF dynamics lacking - likewise 'grip' and transparency	1					60	165
Mana Stealth MA-1	4,800	A monoblock with an uncanny ability to drag you into the music, and spend half the night sitting up listening	2					200	199
Michell Alecto Monoblocks	1,950	Hefty beasts offering real power and striking imaging. Not the last word in timing. (Tested with Orca preamp)	1					100	187
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse - not comfortable with difficult speaker loads	1					60	165
Moth 30 Series Monoblocks	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1					100	155
Musical Fidelity X-A50	500	Cleverly configured and attractively packaged, open, lively and engaging sound. Reviewed with X-PRE	1					50	175
Musical Fidelity X-A200	1,000	Good long-term listening prospects; detailed and a little fruity (tested with X-P100 preamp)	1					200	200
Musical Fidelity NuVista 300	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfil the demands of the most dynamic material	1					350	199
Myriad MA120	450	Based on M1120 integrated - see latter for comments, but sounds significantly better when bi-amped with M1120	1					60	165
NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1					80	165
NAD Silverline S200	1,400	Beautifully built kit that sounds as good as it looks with heaps of power (tested with S100 preamp)	1					200	200
Naim NAP90	450	Power amp from a Nait integrated with some improvements	1					30	165
Naim NAP180	1,122	More of a 'character act' than a truly neutral reproduction system, majors on excitement at the expense of subtlety	1					60	200
Samuel Johnson ppa100	2,200	Stylish wood and metal fascia - nimble, high resolution and highly coherent sound	1					50	201
Technics SE-A1010	350	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	1				●	90	200
Technics SE-A3000	2,997	Price includes SU-C3000. Supremely clean and even sounding combo, though it could be more musically involving	1				●	100	188
Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1					100	187
Rega Exon	1,196	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1					125	165
Roksan Caspian Power	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1					70	183
Rotel RB-971	200	Somewhat better than the accompanying preamp - clean, mean and bridgeable. (Tested with RC-971)	1					70	178
Rotel RB-991	600	Top stuff and stunning value: rather outshone the matching RC-995 preamp (tested as pair)	1					200	200
Rotel RB-980BX	450	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound	1					120	155
TAG McLaren 125M	2,400	Refined Audiolab replacement monoblocks with clean sound but limited thrill power. (T/w PA20R preamp)	1					145	184
Talk Tornado 2	600	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1					65	165
PHONO STAGES									
Clearaudio Symphono	740	Slightly inconsistent balance mars the performance of this lively performer	0			●			201
Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character	0			●			189
Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough	0		●				189
Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality	0			●			189
Electrocompaniet ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise	0	●					189
Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage	0	●	●				189
Musical Fidelity X-LP2/X-PSU	628	An enjoyable listening experience in its way, but a bit short on inner details	0	●					201
NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too	0	●					189
Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	0	●					201
Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer	0	●					201
Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	0	●	●				201
QED Discsaver DS-1	35	It's cheap, it's cheerful, it's OK - perfectly adequate for use with a phono-less integrated, though not very refined	0						189
Roksan Artaxerxes X/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components	0	●	●				189
TAG McLaren PPA20	1,549	One of the best-equipped phono stages available. Resolution is excellent, but timing is marginally behind the best	0	●	●				187

CONTINUED

Amplifiers

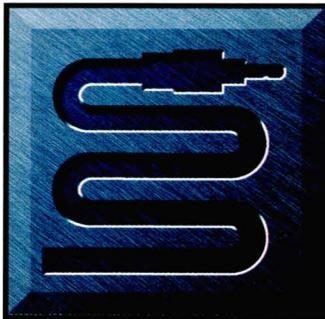
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R Tom Evans The Groove	1,500	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP	0	●	●	●	●	●	201
MULTI-CHANNEL AMPLIFIERS									
R Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5	●	●	●	●	●	110 198
Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4	●	●	●	●	●	N/A 201
R Denon AVR-3300	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4	●	●	●	●	●	75 198
B Marantz SR5000	500	Something of a rough diamond, but a powerful and entertaining package	5	●	●	●	●	●	105 198
NAD T770	1,000	Lacks both transparency and subtlety while the omission of dts will be a drawback for some at this price	5	●	●	●	●	●	90 198
Nakamichi AV-10	1,000	A very powerful AV receiver that's easy to install and set-up with a civilised and subtle performance	4	●	●	●	●	●	140 198
Pioneer VSX-908RDS	1,000	A flexible heavyweight AV receiver whose sound is just a little too stodgy and lacking in crispness	4	●	●	●	●	●	80 198
R Roksan Caspian DSP	2,290	A potent combination offering the bare essentials of DD and dts decoding	4	●	●	●	●	●	130 198
R Rotel RSP-985/RPB-985 MkII	2,225	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3	●	●	●	●	●	130 198
Sony TA-VA777ES	1,500	Dual purpose model with enthralling midrange and presence, that does music and movies with equal aplomb	6	●	●	●	●	●	100 205
Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5	●	●	●	●	●	110 198

Cables



Cables are an integral part of a hi-fi system, required to connect source components to amplifiers, and the latter to speakers.

- Analogue Interconnects connect source components and amplifiers, and run between pre and power amps. They are priced for one-metre terminated pairs.
- Digital interconnects connect CD transports to DACs or digital recorders. They come in optical and electrical varieties, the former being made of plastic or glass. The prices shown are for a terminated linear metre.
- Speaker cables are used between the amplifier and speaker. Our prices are per unterminated metre. Termination (plugs and soldering) costs vary.

KEY TO SPECIFICATIONS

- **SYMMETRICAL:** A twisted pair of conductors.
 - **COAXIAL:** A central 'hot' conductor and a shield that carries the negative signal.
 - **STRANDED:** Multiple strands with no intervening insulation.
 - **SOLID CORE:** Single or multiple, individually insulated strands.
 - **COPPER:** Material used for conductor.
 - **SILVER:** Material used for conductor.
 - **DIG CABLE TYPE:** O - optical digital; E - electrical digital for CD Players, DACs and digital recorders.
- ISSUE NUMBER:** The issue of Hi-Fi Choice in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Cables

STATUS

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG CABLE TYPE ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
ANALOGUE INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)										
Acoustic Precision Eikos	89	Not entirely neutral: probably best suited to upbeat music. Very stiff construction	●	●	●	●	●	●	●	188
Audio Note AN-A	18	Not especially impressive: warm but well-rounded balance that restricts 'air' but is quite clear	●	●	●	●	●	●	●	108
Audio Note AN-C	35	Neutral but lacking in subtle texture and unable to distinguish fine detail	●	●	●	●	●	●	●	131
R Audio Note AN-S	99	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass	●	●	●	●	●	●	●	131
Audio Note AN-V	179	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable	●	●	●	●	●	●	●	131
Audioquest Topaz X2	60	Well made but let down by a pervading sense of muddle and congestion in the sound	●	●	●	●	●	●	●	188
R Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail	●	●	●	●	●	●	●	200
R CableTalk Advanced 2	35	Slight roughness in loud music barely detracts from a well-balanced performance with good imaging	●	●	●	●	●	●	●	176
R Cable Talk Studio 2	65	A first-class performer from tonal, dynamic and rhythmic standpoints	●	●	●	●	●	●	●	160
Cambridge Pacific	30	Lacks subtlety and bass impact but is otherwise quite serviceable for the price	●	●	●	●	●	●	●	176
R Cambridge Audio Studio Ref	40	Dynamic cable with strong soundstaging and only a slight lack of detail	●	●	●	●	●	●	●	160
Cambridge Silver Spirit 60	100	Good bass but a lack of detail and differentiation of instruments	●	●	●	●	●	●	●	188
Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces	●	●	●	●	●	●	●	176
Chord Chameleon 2	90	Deep bass is fine but despite that the sound can be a bit hard and lacking body and resonance	●	●	●	●	●	●	●	188
R Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	●	●	●	●	●	●	●	160
R DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried	●	●	●	●	●	●	●	200
Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)	●	●	●	●	●	●	●	176
Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness	●	●	●	●	●	●	●	176
R Insert Audio Image 5.1	85	Very good detail and imaging: perhaps a touch bass-light	●	●	●	●	●	●	●	200
B Ixos 104	20	Open and detailed presentation, full bass and silky if overly smooth treble	●	●	●	●	●	●	●	131
Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though	●	●	●	●	●	●	●	176
R Ixos 103	45	Even-handed and generous sound, bass has a well-rounded, bouncy quality	●	●	●	●	●	●	●	131
Ixos 102	60	A bit bright and undynamic, this cable is nevertheless a good all-rounder, whose faults are largely subtractive	●	●	●	●	●	●	●	160
Ixos 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price	●	●	●	●	●	●	●	200
Ixos 101	100	A cable with personality: its veiled and shut in quality bring an earthiness to vocals and rhythm guitar alike	●	●	●	●	●	●	●	131
B Kimber PBJ	68	Assured sound, solid and natural bass and clear treble - excellent performance all round	●	●	●	●	●	●	●	188
R Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	●	●	●	●	●	●	●	176
R Moth Ley Line Black	100	Offers a full sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●	●	●	●	●	●	●	108
Moth Ley Line Grey	200	Detailed, but there's a sense of distance between music and listener: vocals are coarse rather than liquid	●	●	●	●	●	●	●	108
Nordost Black Knight	60	Flat black cable that is distinctive but slightly coloured - but not in a wholly negative manner	●	●	●	●	●	●	●	160
R Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music	●	●	●	●	●	●	●	188
R Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	●	●	●	●	●	●	●	176
Precious Metals SS35	50	Extended bass, but dry character suits electronic music better than acoustic	●	●	●	●	●	●	●	188
R Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness	●	●	●	●	●	●	●	176
B QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value	●	●	●	●	●	●	●	176
R QED Qnect 4S	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid	●	●	●	●	●	●	●	188
R QED Qnex Silver Spiral	90	A great cable for lovers of big sounds	●	●	●	●	●	●	●	200
Reference CS1	75	A moderate performer, with a little coloration and a tendency to lose bass at climaxes	●	●	●	●	●	●	●	188
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight	●	●	●	●	●	●	●	160
B SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. We're unsure about the flesh-coloured finish, though...	●	●	●	●	●	●	●	160
R SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	●	●	●	●	●	●	●	176
SonicLink Lilac	65	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	●	●	●	●	●	●	●	188
SonicLink Violet	85	Better bass than treble - a little dry in the upper octaves	●	●	●	●	●	●	●	200

CONTINUED

Cables

STATUS

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG. CABLE TYPE ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG. CABLE TYPE	ISSUE NUMBER
Ⓜ Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss					●	●		176
Ⓜ Straight Wire Sonata	80	Tonal balance favours lower frequencies but despite this it's a very listenable cable					●	●		188
Ⓜ Straight Wire Encore II	100	Slightly variable bass performance is a weakness in this otherwise capable cable					●	●		200
Ⓜ Supra EFF-ISL	80	Excellent sound in all areas – nothing to criticise	●				●	●		188
Ⓜ Tara Labs Prism 22	64	Mild tendency to plumminess offsets some hardness in complex music with mixed results					●	●		188
Ⓜ Tara Labs Prism 55-i	195	Good with laid-back music, but seems lazy with more exciting material					●	●		200
Ⓜ TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	●				●	●		200
Ⓜ van den Hul PB5	50	A highly neutral cable with fine dynamic and rhythmic performance too – excellent					●	●		188
Ⓜ van den Hul Source HB	65	Price for 0.8m. Hybrid carbon-fibre/copper cable that is a paragon of naturalness					●	●		160
Ⓜ van den Hul D102 MkIII HB	80	A fine cable, but the competition has crept up and it no longer leads the pack	●				●	●		200
Ⓜ van den Hul The Second	275	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●				●	●		131
DIGITAL INTERCONNECTS (PRICES PER TERMINATED LINEAR METRE)										
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear-cut transparency					●	●		E 108
Chord Codac	36	A connection with a stranded inner core and a sound that lacks integration					●	●		E 108
Ⓜ Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz					●	●		E 131
Ⓜ Ixos 105	25	Extended but soft-edged treble that's mercifully free of fatiguing colorations; plenty of weight, smooth					●	●		E 131
Ⓜ Kimber Cable Opti-link	50	Appears to be a bog-standard PMNA fibre, yet sounds a little brighter and livelier than most					●	●		O 108
Moth Leyline Datalink	140	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive					●	●		E 108
Ⓜ QED Digiflex	20	A top performance, low-loss 75 Ohm coax with a very open, almost liquid quality					●	●		E 108
Ⓜ Siltech HF-6	145	Sounds detailed, very clean and extended, but bass is less well resolved – a treat for high-end systems					●	●		E 131
Ⓜ SonicLink Green	60	Spacious, positive and engaging if a bit over-crisp at times – very compelling, however					●	●		E 131
Ⓜ van den Hul The First	140	Exceptionally natural albeit slightly cautious compared to some. Plenty of subtle information and integration					●	●		E 131
LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)										
ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative					●	●		183
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that are twisted into stereo pairs. Sounds rather grippy and forward						●	●	109
Ⓜ Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical					●	●		133
Ⓜ Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel, which was happy to accept its foibles	●				●	●		133
Ⓜ Audio Note AN-SP	150	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity	●				●	●		109
Ⓜ Audioquest F-14	2.2	Ideal for laying under carpets. F-14 encourages a slightly warm and vibrant sound					●	●		109
Audioquest F-18	3.60	Slightly lumpy bass and lack of midrange detail: can also be a bit dry					●	●		192
Audioquest Type 4	5	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains 'bite'					●	●		109
Audioquest Type 6	9	A very inflexible cable in which the sonic ends don't quite justify the means					●	●		183
Ⓜ Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable	●				●	●		203
Ⓜ Bاندridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings					●	●		157
Ⓜ Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music					●	●		168
Cable Talk Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained					●	●		157
Cable Talk Flat 2	5	Rather unexciting sound, with variable bass and dry voices					●	●		203
Cable Talk Concert 2.1	8	Can make stereo images recede, and favours the upper bass					●	●		192
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension					●	●		168
Ⓜ Chord Company Odyssey	17	Relatively vice-free cable with good detail throughout the range and generally neutral bass	●				●	●		192
Ⓜ Chord Company Rumour 2	10	Performance is listenable enough but fails to excel in any area					●	●		203
Ⓜ DNM LSCB500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire					●	●		133
Ⓜ Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere - one of the best cables available all round	●				●	●		203
Ⓜ Gale XL189	1	Slightly bright and not too subtle, but a perfectly acceptable cable for any starter system	●				●	●		168
Ⓜ Gale XL315	2	A little lacking in detail but plenty of life and excellent value	●				●	●		157
Ⓜ Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative					●	●		157
Ⓜ Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●				●	●		168
Ⓜ Hitachi LC-0FC	7	Very crisp, very clear and very confident. In the right system would be very expensive to better					●	●		109
Ⓜ Ixos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price, strong and consistent	●				●	●		203
Ⓜ Ixos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant – though only slightly	●				●	●		192
Ⓜ Kimber 4PR	4.90	Considering the price, this cable's very slight dryness is forgivable when everything else is so right					●	●		192
Ⓜ Kimber 4VS	8.50	A good mix of virtues including particularly fine bass	●				●	●		183
Ⓜ Kimber 4TC	18.80	A well-balanced cable with good performance in all areas	●				●	●		168
Ⓜ Kimber 8TC	348	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	●				●	●		203
Linn K20	4	Seems to work best with lively, unobtrusive music – can be dry and edgy					●	●		183
Naim NAC A5	5.5	A 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems, where it works a treat					●	●		109
Nordost Octava	3	Fair bass but confused treble and some coloration					●	●		168
Nordost Flatline Gold II	9.50	Exciting sound but a bit too 'in-yr-face', and bass is not always even					●	●		92
Ortofon SPK100	3	Grey-sounding – strips instruments of their natural richness and resonance. A bit bass-shy, too					●	●		133
Ⓜ Ortofon SPK200	4.99	Good strong bass and fair detail, only slightly marred by a little dryness	●				●	●		183
Ⓜ Ortofon SPK300	8	Tremendously open and atmospheric, with robust, full-blooded bass – if slightly bright at times	●				●	●		133
Precious Metals SL102	10	Unusual construction gives rather strained sound, only really cheering up with simple musical textures					●	●		183
Profigold Silverflex LC8258	4	A pretty-looking cable that does little to offend but is let down by some congestion					●	●		203
Prowire Out of Sight	1.99	Special-purpose cable for laying under carpets etc. Fair sound across the board					●	●		203
Puresonic 7845	1.95	Big, weighty sound – but too messy and bloated for its own good	●				●	●		183
Puresonic 7891	2.85	Chunky cable design; shame about the sound quality					●	●		157
QED Qudos	2.25	Despite high-tech design and excellent Air-Loc plugs, its music-making failed to gel					●	●		57
Ⓜ QED Qudos Silver	5	A few minor flaws but overall performance is very assured for this price	●				●	●		192
QED Profile 4x4	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding					●	●		168
QED Genesis Silver Spiral	30	Commendable bass, with a little dryness and mildly compromised imaging: good, but not the best at its price					●	●		203
SonicLink S300	18	Happiest with simple music; tends to smudge detail in complex pieces					●	●		168
Ⓜ SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced	●				●	●		157
Ⓜ SonicLink AST75	2.95	Unusual materials and rather unusual performance too, strong on excitement and with plenty of bass	●				●	●		203
Ⓜ SonicLink AST150	3.95	Slightly plummy bass and a useful way of holding musical strands together	●				●	●		157
SonicLink AST200x2	5.95	At its best with exciting music, this cable seems shy of subtler details					●	●		192
Straight Wire Duo	3	Not so subtle and lacking some detail, but sound is consistent with level and musical style					●	●		203
Straight Wire Rhythm	6	Its major flaw seems to be woolly and indistinct bass, which pervades most types of music					●	●		192
Ⓜ Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience	●				●	●		183
Ⓜ Supra Ply 3,4/5	6.95	Clear sound which stays together well at high levels, with full bass – perhaps a touch of treble restriction	●				●	●		183

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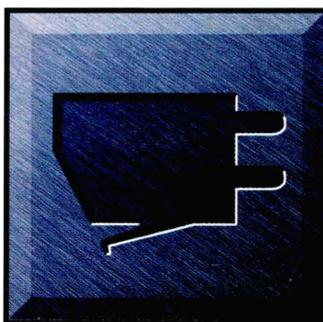
Cables

STATUS

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG CABLE TYPE ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
Tara Labs Klara	2.95	A good budget cable with an even spread of virtues – and very minor vices – across the board	●				●			183
Tara Labs RSC Prime 500	36	More suited to melodious music than anything with bite and drive, with only moderate detail	●				●			203
TCI Python	7.99	No single major sin, but detail is not outstanding and rhythm isn't always completely solid	●				●			203
Townshend Isolda	50	Superb sound all round, and amplifier compatibility enhanced by included stabilising inductor	●				●			203
van den Hul The Clearwater	7.99	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable					●		●	109
van den Hul Royal Jade	10.99	Lots of technology, but sound suffers from dryness and woolly bass	●				●			203
van den Hul CS122 HB	13.99	Good dynamics can make for exciting sound, but fine detail suffers and the treble is often dry	●				●			192
van den Hul The Magnum	40	Touted as vdH's most prestigious twin-lead cable, The Magnum sounds soft and old-fashioned					●		●	109
van den Hul The Wind	44	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass					●		●	109
van den Hul Revolution	80	Silver-plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble					●		●	133
MAINS CABLES AND CONDITIONERS										
Clearaudio Accurate Power Gen	1,090	Compact and beautifully finished unit that offers positive sonic benefits that justify the price								206
Lynwood Electronics Mega Power	295	Reasonable price model that improves focus while producing a sweet, tight and clean bass								206
PS Audio Power Plant	1,200	Power Plant improves the cleanness and separation of individual voices and instruments, giving an impressive 3-D quality								206
GTA PHY-HP board	299	Oozing style and quality, the board generates an extremely natural and truthful sound								206
Russ Andrews Kimber/Power Block	350	Improved version that elevates music to a cleaner and more three-dimensional experience with greater stereo imagery								206
Russ Andrews The Purifier	250	More ambitious version of the Silencer that gives a cleaner, quieter background, allowing more low level detail								206
Russ Andrews Silencer	40	A cost effect solution to noise-free mains supply that reduces 'hash' without losing brilliance and immediacy								206
SonicLink S-Gold mains	225	Delivers a clean incisive sound with excellent detail, clarity and with no increase in noise								206
Trichord Research Powerblock500	300	Isolation transformer that bolsters clarity, openness and gives an increased refinement making for a purer and natural sound								206



Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low- and very-low-output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono-input-equipped valve amps need a transformer to cope with MC cartridges. ■ Even basic high-output MM cartridge designs will benefit from a customised amplifier input load. Consult your dealer for further details on this topic.

KEY TO SPECIFICATIONS

- **MM:** Moving-magnet cartridge with a normal output, suitable for all amplifier phono inputs.
- **MC:** Moving-coil cartridge with a low output, only suitable for high-sensitivity MC amplifier phono inputs.
- **REPLACEABLE STYLUS:** Most MM cartridges have a stylus (needle) that can be removed and replaced when worn out.
- **OUTPUT (mV):** Cartridge output in millivolts.
- **MASS (g):** The mass of your chosen cartridge affects the choice of partnering tonearm. Consult dealers or manufacturers to establish which arms and pickups work well together.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Cartridges

STATUS

SPECIFICATIONS

MM REPLACEABLE STYLUS OUTPUT (mV) MASS (g) ISSUE NUMBER

PRODUCT	(£)	COMMENTS	MM	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER
Allaerts MC1B	1,295	Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford			●	0.5	203
Audio Technica AT-95E	20	Clear and dynamic, though richly balanced	●		●	2.8	48
Audio Technica AT-OC9ML	330	A well-finished cartridge with a sound that's smoothly detailed, but also rather unexciting			●	0.4	8 192
Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy			●	0.55	11.5 175
Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well			●	1.0	6 48
Denon DL160	90	Although listeners just preferred the 110, its brother here survived lab tests and is still 'thoroughly competent'			●	0.1	6 43
Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail			●	0.1	6 103
Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether, and a bargain at the price			●		103
Dynavector DV-20X L	299	Articulate-sounding, with impressive treble resolve, though lightweight at times. Needs a high quality turntable and arm			●	0.25	8.6 192
Dynavector Karat 17D2 mk2	450	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent			●	0.15	5.3 158
Dynavector Te-Kaitora	1,698	A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk			●	0.25	8.5 175
Dynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm			●	0.25	12 84
Dynavector XX-1	998	Good, but not immensely competitive at the price, and not helped by comparison with the low output version			●	2.0	12 84
Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body	●		●	5.0	7 67
Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency coloration apparent	●		●	6.5	7 85
Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved	●		●	6.5	7 85
Goldring Eroica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative			●	0.5	8 84
Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though			●	6.5	6 91
Goldring Elite	220	The basics are right, and it will cheerfully tackle any source material, but its sound is not the cleanest			●	0.5	8 103
Goldring Excel VX	525	Good bass drive but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end			●	0.45	8 175
Grado Prestige Gold	149	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	●		●	4	6 158
Grado Reference	995	Loads of tracking headroom but treble is limited. A prospect for mid-oriented valve amp users			●	1.7	6.5 175
Linn K9	125	Linn improved this model by beefing up the Basik's bodywork and adding a super stylus	●		●	4.5	5 Col
London Decca Maroon	259	Now manufactured under the London brand name, this Decca cartridge is as iconoclastic as ever			●	5.0	6 67
London Decca S Gold	399	Immediate and detailed, but coloured and nonlinear, with a questionable effect on records			●	5.0	6 84
Lyra Lydian Beta	599	A thoroughly enjoyable cartridge – smooth, agile and dynamic in character			●	0.5	8 192
Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed			●	0.3	7 158
Lyra Clavis Da Capo	995	A stable tracker, and one of the finest cartridges we've heard			●	0.1	7 143
Lyra Parnassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak			●	0.22	10.5 175
Ortofon 510/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●		●	3.0	5 85
Ortofon 520/P	65	Sensitive to load capacitance, but the 520/P has a lively, effervescent sound	●		●	3.0	5 67

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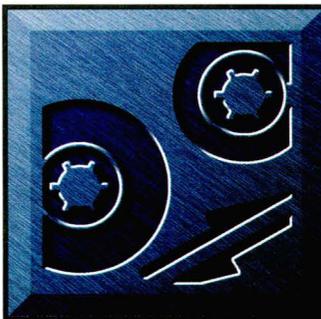
Cartridges

STATUS

SPECIFICATIONS

REPLACEABLE STYLUS
MM MC
OUTPUT (mV)
MASS (g)
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER
Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but subtle – take it as it comes	●	3.3	4	103
Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up	●	0.35	7	103
Ortofon MC2SE	180	An excellent upgrade for a mid-price turntable	●	0.5	11	139
Ortofon MC2SFL	250	A bit too stark and honest, but faithful to what's on the LP	●	0.5	11	139
Ortofon MC 10 Supreme	300	A full and cultured-sounding cartridge, with collective attributes far outweighing its shortcomings	●	0.5	10.7	192
Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings	●	0.5	10.7	158
Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound	●	0.25	8.5	175
Ortofon MC3000II	1,100	A real ear-opener. Nothing to criticise anywhere – one of the very best	●	0.12	10	84
Ortofon MC5000	1,500	Limited tracking ability, bright and forward sound, but good stereo	●	0.12	10	91
Rega Bias	39	Difficult to mount in some arms due to its shallow body, but the Bias offers a gentle, refined sound	●	5	4	67
Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●	5.0	5	67
Reson Recla	250	If you're after a high quality moving magnet cartridge, they don't get much better than this	●	6.5	6.3	192
Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●	6.5	5	91
Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300	●	2.5	9	192
van den Hul MM-1	250	If woody midrange could be tamed, imaging and security would pull it through	●	5.5	6	103
van den Hul DDT-II	600	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy	●	0.35	7.6	158
van den Hul MC-10	750	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass	●	0.4	6	60
van den Hul MC-One	900	This extends all the positive qualities of the 10, but adds greater authority and scale – worth all the extra money	●	0.4	6	60
van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal	●	0.4	6	72
van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals. This delicate and subtle performer has great charm	●	0.65	7	175
van den Hul G' hopper III/LA	2,800	Undoubtedly one of the finest cartridges available. It has tremendous bandwidth, energy and finesse	●	0.4	6	122
Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive	●	0.58	6	158
Wilson benesch Carbon	1,573	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound	●	0.45	7	175



Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Cassette decks hook up to the 'tape loop' inputs and outputs offered by most modern amplifiers. It's worth taking care to choose the best tapes for a specific machine. For example, expensive metal tapes will be a wasted investment for a cheap deck. Many better-specified decks have manual or automatic bias adjustment to get the best from specific samples of tape. Twin decks offer the possibility of copying from tape to tape, playing two cassettes sequentially or recording onto two tapes at once. Autoreverse is a useful feature, but uni-directional mechanisms promise better sound. Dolby S is the ultimate noise reduction system, and three-head decks permit record monitoring off-tape.

KEY TO SPECIFICATIONS

- **DOLBY B/C:** The first and second Dolby noise reduction systems.
- **DOLBY S:** A desirable derivative of Dolby SR professional noise-reduction.
- **DOLBY HX-PRO:** Extends the dynamic range for cassette recording.
- **3-HEAD:** Permits monitoring off-tape while you're recording.
- **TWIN DECK:** Controls two decks for dubbing and continuous play.
- **AUTOREVERSE:** Automatically plays both sides of the cassette.
- **AUTO CALIBRATION:** The deck will automatically set up bias and EQ for any tape.
- **ADJUSTABLE BIAS:** Permits manual optimisation of tape.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

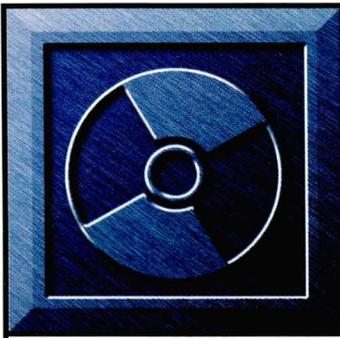
STATUS

Cassette Decks

SPECIFICATIONS

DOLBY C
DOLBY S
DOLBY HX PRO
3-HEAD
TWIN DECK
AUTO REVERSE
AUTO CALIBRATION
ADJUSTABLE BIAS
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN DECK	AUTO REVERSE	AUTO CALIBRATION	ADJUSTABLE BIAS	ISSUE NUMBER
Aiwa AD-F450	120	Basic but well-designed deck. Astonishing value; only the poor metering gives the game away	●	●	●	●	●	●	●	●	136
Aiwa AD-WX727	170	High-class twin for those who want bells, whistles – and music	●	●	●	●	●	●	●	●	146
Denon DRM-550	160	There are some technical limitations, but this remains a fine-sounding deck, and excellent value	●	●	●	●	●	●	●	●	158
Denon DRW-580	200	Twin deck: OK for casual use, but will quickly pall with more quality critical applications	●	●	●	●	●	●	●	●	171
Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●	●	●	●	●	●	●	●	140
Denon DRM-650S	230	An improvement on predecessors, it offers a wide-ranging, sound. Dolby S is not the best feature	●	●	●	●	●	●	●	●	164
Denon DRM-740	270	Breathed-on DRM-710, with good external treatment, offers good, if somewhat detached sonics	●	●	●	●	●	●	●	●	136
Denon DRS-810	310	Draw-loading deck, carefully designed yet lacking in subtlety on audition	●	●	●	●	●	●	●	●	127
Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design	●	●	●	●	●	●	●	●	140
Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	●	●	●	●	●	●	●	●	164
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●	●	158
JVC TD-V662BK	270	Assured, clean and agile-sounding recorder, if not quite the most refined in its class	●	●	●	●	●	●	●	●	146
JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable performance	●	●	●	●	●	●	●	●	171
Kenwood KX-W6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass	●	●	●	●	●	●	●	●	171
Marantz SD455	170	Works well as a single deck, especially on replay, but dubbing at high/low speed compromises sound	●	●	●	●	●	●	●	●	184
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●	●	158
NAD 616	300	Twin deck with basic features. No Dolby setting memory, transport is too unstable for audiophile use	●	●	●	●	●	●	●	●	171
Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD	●	●	●	●	●	●	●	●	195
Onkyo K-611	460	Cute drawer-loading mini-size component with 3 heads and dual capstan transport	●	●	●	●	●	●	●	●	146
Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●	●	●	●	●	●	●	●	164
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended	●	●	●	●	●	●	●	●	171
Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	●	●	146
Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open sound	●	●	●	●	●	●	●	●	158
Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound	●	●	●	●	●	●	●	●	184
Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head	●	●	●	●	●	●	●	●	164
Technics RS-AZ7	270	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in state-of-the-art	●	●	●	●	●	●	●	●	158
Yamaha KX-490	200	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●	●	●	●	●	●	●	●	158
Yamaha KX-580SE	250	Subtle, engaging and transparent deck, with a lightweight tonality, but stability and strong detail	●	●	●	●	●	●	●	●	171



CD/DVD Players

All CD players offer a basic selection of facilities, and some can keep you entertained for hours as you programme in disc names and track orders. All but the excessively inexpensive feature remote control. Most CD players can be upgraded by adding an outboard DAC (see p129). To do this the player needs a digital output of either electrical or optical type. The former is preferable for the ultimate sound. A CD player can be split into two basic components: the disc drive or transport, and a device which converts the disc's digital bitstream into an analogue audio signal. This is called a digital to analogue converter, or DAC. Although most players are contained within a single box, expensive players are usually two-box affairs. The first new DVD players have not excelled with CD software.

B BEST BUY

R RECOMMENDED

E EDITOR'S CHOICE

KEY TO SPECIFICATIONS

- **ELECTRICAL DIGITAL OUTPUT:** For electrical connection to an outboard DAC.
- **AES/EBU ELEC DIG OUTPUT:** Balanced digital output to be used with similarly equipped DACs.
- **OPTICAL DIGITAL OUTPUT:** For optical connection to an outboard DAC.
- **ST OPT DIG OUTPUT:** High-speed optical output to be used with similarly equipped DACs.
- **BAL ANALOGUE OUTPUT:** Balanced analogue output for amplifiers equipped with balanced inputs.
- **HEADPHONE SOCKET:** For 'can' users.
- **VARIABLE OUTPUT:** Remotely adjustable output level (usually non-audiophile).
- **MULTI-DISC:** Equipped with a carousel or multi-tray system for continuous play of multiple discs.
- **DAC TYPE:** BS – Philips Bitstream; MB – multi-bit; Hyb – hybrid of multi-bit and bitstream technologies; 1bit – single bit types eg MASH, bitstream, PWM, etc; CC – constant calibration.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared. Factsback information page.

CD/DVD Players

STATUS

SPECIFICATIONS



PRODUCT	(£)	COMMENTS	ELEC DIG OUT	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	ISSUE NUMBER
B Acurus ACD11	899	First-rate if costly player, which combines a delightful transparency with an uncontrived naturalness	●									1bit 166
Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass	●									1bit 165
Advantage CD15	3,995	A CD player of some stature – what it lacks in dynamics it makes up for in subtlety and flow	●									20bit 193
Alchemist Kraken	1,249	Distinctive looking player likely to suit a Alchemist system, but will result in variable results elsewhere			●							24bit 190
R Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation	●									Hyb 169
AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable										BS 172
B AMC CD9/DAC8	200	Beer-budget two-box system (player plus DAC) is smooth, attractive and easy on the ear	●									CC 179
Anthem CD1	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy	●									MB 178
B Arcam Alpha 7SE	350	Revamped starter model is a clear improvement on very likeable predecessor	●									MB 195
R Arcam Alpha MCD	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer	●									MB 178
R Arcam Alpha 8	520	Refined, intricately detailed but a little cautious. Should be broadly compatible with a variety of amps	●									BS 163
R Arcam Alpha 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder	●									1bit 176
R Arcam Alpha 9	800	Refined, articulate player which employs new DAC technology to great effect	●									Ring 188
R Arcam FMJ CD23	1,100	World class presentation allied with innovative technology to deliver an engaging standard of music making	●									Ring 206
Audio Analogue Paganini	750	Basically good, but sometimes heavy-handed player	●									24bit 191
Audio Research CD1	3,290	Suspends disbelief with a real yet obviously coloured sound. A rare proposition among CD players	●									BS 163
Audio Note AN-CD1	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured	●									Hyb 188
Audio Note AN-CD2	999	High output impedance makes performance unduly system fussy	●									MB 195
AVI S2000MC2	899	A chip off the old block. This model's in-yer-face balance obstructs an otherwise finely detailed sound	●									MB 176
R AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system	●									MB 169
Balanced Audio Tech VK-D5	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety	●									18bit 194
Cambridge Audio D100	120	Hard, clanky and coloured sounding, and with suspect control logic										DS 200
B Cambridge Audio D500	200	Clean and highly articulate player wears well in extended use	●									DS 202
R Cambridge Audio CD6	250	A sharp, articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●									BS 159
R Copland CDA-266	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution	●									MB 176
Copland CDA 289	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000	●									20bit 194
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour	●									MB 163
R Cymbal CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings	●									Hyb 176
R Cyrus dAD1.5	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality	●									Hyb 191
R Cyrus dAD3	598	A relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance	●									BS 163
R Cyrus dAD3 Q24	900	Bold, lean and lively player demands sympathetic system matching	●									DS 200
R Denon DCD-435	130	Good low cost player, and a step up from the DCD-425, its predecessor	●									DS 191
R Denon DCD-655	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems	●									MB 200
Denon DCD-1550AR	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player	●									MB 179
Denon DCD-1650AR	700	Powerful, authoritative, and well equipped too, but this player sometimes lacks subtlety	●									MB 195
Harman/Kardon HK720	230	Sometimes aggressive and ill-disciplined player, but at least it's well built	●									1-bit 202
R Harman/Kardon HD740	300	Powerful but subtle and involving player: welcome back, Harman/Kardon	●									DS 191
R Harman/Kardon FL8300	300	Generally capable changer with relaxed sound and firm bass. Just a hint of roughness on occasion	●									MB 178
Harman/Kardon HD760	500	Sophisticated internally, but mildly disappointing when treading the boards in anger	●									MB 195
JVC XV-D723GD	500	Convincing DVD-Audio player that is ultimately let down by poor CD performance	●									MB 206
Kenwood DPF-3010	180	Grey, somewhat mechanical sounding player										Hyb 191
R Kenwood DPF-R6030	180	Inexpensive and adequately specified, with decent mid/treble and slightly anaemic bass	●									1 bit 204
B Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music – and has CD Text too	●									1bit 172
Kenwood DP-5090	300	Disappointing senior brother to the excellent DP-4090, but surface interface is good	●									1bit 179
B Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●									MB 163
Kenwood DVF-R9030	800	Kenwood's first DVD-A player suffers from a mild compression of dynamics resulting in a polite yet matter of fact sound	●									MB 206
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●									Hyb 155
Marantz CD5000	150	Well equipped budget player sounds thin and rough at times	●									1 bit 202
Marantz CD3000	150	Ragged sounding player, but it is cheap and well equipped	●									CC 204
B Marantz CD6000 OSE	300	Superbly constructed, slightly emasculated sounding, but smooth and articulate	●									1bit 200
R Marantz CD-63 MkII KI Sig	400	It's the quintessential sound of Marantz – warm, open, and smooth almost to a fault	●									Hyb 169
R Marantz CD-17KI Sig	1,100	Minor QC problems aside, this is a superbly tuned-out machine, but ultimately a little bland	●									BS 176
R Marantz CD-17 MkII	800	Sophisticated player with a short but attractive feature set, and a new found bounce in its step	●									MB 206
R Marantz CD-7	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure	●									16bit 194
R Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics – but it's not cheap	●									DS 169
B Meridian 506	1,100	Revised 506 includes MSR remote and a new D/A chip, which makes it livelier and more detailed	●									1bit 176
Monrio Asty	695	Well built player has solid, propulsive sound quality that deteriorates towards HF	●									DS 200
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●									MB 166

CONTINUED

CD/DVD Players

SPECIFICATIONS

- AES/EBU ELEC DIG OUT
- OPTICAL DIG OUT
- ST OPT DIG OUT
- BAL ANALOGUE OUT
- HEADPHONE OUT
- VARIABLE OUTPUT
- MULTI-DISC
- DAC TYPE
- ISSUE NUMBER

STATUS

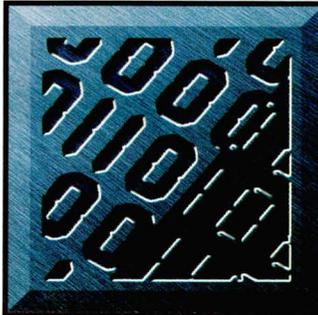
PRODUCT (€) COMMENTS

DACS

Alchemist TS-D-1	300	24/96-equipped DAC sounds tidy but a little shut-in with both 16-bit CDs and 24-bit/96kHz DVDS									BS	187
Audio Note DAC Zero	369	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)									Hyb	191
Audionote DAC 5	18,500	Astonishingly natural and realistic in the right system, the only problem being the extravagant price									Hyb	203
Linn Numerik	1,500	A new 20-bit DAC and revised Karik transport have cleaned up; but sounds a bit dry and humourless									MB	144
E Musical Fidelity X-24K	300	24/96 ready with a warm, natural sound and good soundstaging (tested with Pioneer DV-717)									MB	187
Roksan Attessa ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material									1bit	162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed									BS	144
Thorens TDA2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble									BS	162
R Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc.									Hyb	162

DVD PLAYERS

Denon DVD-2500	500	Good picture, but nondescript sound, except when using the digital output at full 24/96 throttle	●									DS	198
Denon DVM-3700	1,000	One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound	●	●							●	DS	204
F Denon DVD-5000	1,600	The first DVD-V player that ain't bad as a CD player. A fine musical device	●	●								BS	187
JVC XV-D701	500	Good video player, but rather undeveloped musically - CD Text is neat, though	●	●								DS	198
JVC XV-515GD	300	Musically soft as a baby's bottom, and as surprising as yesterday's news	●	●								DS	202
R Kenwood DVF-9010	1,000	DVD player with brilliant picture and clean, lively sound	●	●							●	24/96	190
NAD T-550	500	Soft-centred but likeable player in the classic NAD mould	●	●								DS	202
Nakamichi DVD-10	800	Not the most compelling model in the resurrected Nakamichi line-up	●	●								DS	198
Panasonic DVD-A360E	580	Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best	●	●								DS	198
E Philips DVD750	400	Clever DVD with CD-R/CD-RW compatibility and surprisingly keen sound	●	●								DS	198
E Pioneer DV-525	399	Lean, clean and lively sound quality. CD-R and 24/96 compatible, too	●	●								MB	202
E Pioneer DV-626D	450	Superbly equipped, and more than respectable sound quality	●	●								DS	198
E Pioneer DV-717	550	Superb DVD player with good picture quality and which really knows how to play 24/96 discs	●	●								MB	190
F Primare V20	1,000	Elegant and well built DVD performer that possess a strong picture quality and decent CD player	●	●								MB	206
Samsung DVD-907	500	DVD player with below average picture, and lacklustre sound quality	●	●								24/96	190
Sony DVP-CX850D	600	Lacklustre sound quality is a disappointment, but the price is appealing for a 200-disc DVD player	●	●							●	DS	204
R Sony DVP-S7700	950	Powerfully endowed player offers articulate and believable sound	●	●							●	DS	198
R Sony DVP-S525	330	Bare bones DVD with workmanlike sound, although it can sound 'loud'	●	●								DS	202
Sharp DV-760	500	Reasonable picture, but sonically brings new meaning to the term rough and ready.	●	●								DS	202
Teac DV-1000	400	Blowsy, and occasionally astringent sounding, but otherwise straightforward and reasonably priced	●	●								DS	198
Theta DaVID	4,650	A top-notch CD transport, that also plays DVD-Video discs well. Pricy for a DVD transport, but worth it	●	●								24/96	191
Thomson DTH2000	380	This DVD player's main attributes are reasonable pricing and fair to good all round performance	●	●								24/96	190
Toshiba SD-3109	380	Defocused and soft-edged, this is more attractive for its picture than its sound quality.	●	●								N/A	202
Toshiba SD9000	800	Costly, high tech player with stunning pictures and crisp, slightly lightweight sound	●	●								DS	198
Yamaha DVD-S795	529	Fare price, and an unconstrained digital output, but otherwise unexciting	●	●								DS	198



Digital Recorders

Domestic digital recording has been possible since the launch of digital audio tape (DAT) in the '80s. Since then DAT has remained expensive and largely esoteric, favoured only by well-heeled or professional users. Digital Compact Cassette and MiniDisc (MD) were launched in the early '90s but only MD has stayed the course. A little later came domestic CD-Recorders using CD-R discs, while the latest twist is the arrival of re-recordable CDs known as CD-RW discs. The recording quality hierarchy is as follows: DAT, CD-R/CD-RW, MD. MD is probably the most convenient to use, and offers sophisticated editing facilities, while CD-R is ideal for making digital 'clones' of prerecorded CDs. DAT is the medium of choice for high-quality location recording.

KEY TO SPECIFICATIONS

- FORMAT:** Type of recorder - see left for descriptions.
- DAC TYPE:** Digital to analogue converter: BS - Philips Bitstream; MB - multibit; Hyb - hybrid of multibit and bitstream; 1bit - single bit types such as MASH, bitstream, PWM etc
- ADC TYPE:** The analogue to digital converter (ADC) converts sound into digits during live recording. Types of ADC are as per DACs (qv).
- PORTABLE:** Battery operable, but not necessarily personal-stereo-sized.
- OPTICAL IN/OUTPUTS:** Digital socketry for optical cable.
- ELEC IN/OUTPUTS:** Digital socketry for electrical cable.
- ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

- B** BEST BUY
- R** RECOMMENDED
- E** EDITOR'S CHOICE

STATUS

Digital Recorders

SPECIFICATIONS

- FORMAT
- DAC TYPE
- ADC TYPE
- PORTABLE
- OPTICAL IN/OUTPUTS
- ELEC IN/OUTPUTS
- ISSUE NUMBER

PRODUCT (€) COMMENTS

MINIDISCS																		
Denon DMD-1000	300	A good machine, but it still doesn't manage to shake off the MiniDisc plague of losing the listener's interest											MD	MB	BS	●	●	184
JVC XM-448	220	An hidden keyboard is a great idea, but musically it sounds rather cool and strident											MD	BS	BS	●	●	205
Kenwood DMF-5020	250	It may be high-tech but nothing conceals the caricatured sound											MD	BS	BS	●	●	205
R Kenwood DMF-9020	500	One of the best MD decks yet for sound quality, and the first to make titling a practical proposition											MD	BS	BS	●	●	191
Marantz CM635	500	CD player and MD recorder in one box: a practical idea but sound and features don't really match the asking price											MD	BS	BS	●	●	191
Onkyo MD-121	450	Mid-sized deck that sounds slightly coloured at times, though immediate and lively											MD	BS	BS	●	●	177
R Pioneer MJ-D508	200	Well equipped but musically sleep inducing player that deserves its recommendation due to price											MD	BS	BS	●	●	205
F Pioneer MJ-D707	250	A handy set of features for the price, though sound is not outstanding											MD	BS	BS	●	●	191
Sharp MDR3H	300	Nifty machine combining a 3-disc CD changer with a MD recorder. Sound on both is rather below par, though											MD	BS	BS	●	●	184
E Sony MDS-JB920	300	One of the better MD decks, its sound is neutral and dynamic. European Audio Recorder of the Year '98-'99											MD	BS	BS	●	●	184
R Sony MDS-JA20ES	500	Sound quality about as good as it gets with MD to date, and a very comprehensive features set too											MD	BS	BS	●	●	191
R Sony MDS-JA55ES	650	Powerful demonstration of Sony's proficiency, it delivers the best MD can offer											MD	BS	BS	●	●	205
Teac MD-8	600	Womanlike choice, but sound-wise it is middle ranking, despite the price											MD	BS	BS	●	●	205
Yamaha MDX-793	300	Nice machine to use and has some useful features, but sound quality a little wanting											MD	BS	BS	●	●	191

CD RECORDERS

JVC XL-R5000	450	Flexible, rattly build, and attractive sound, but it's a little expensive compared to other rivals											CD-R(W)	BS	BS	●	●	205
LG ADR-620	350	A powerfully equipped machine with useful multi-room capabilities, but sound quality is rough and ready											CD-R(W)	BS	BS	●	●	205
Marantz DR700	600	Dearer than Philips and Traxdata equivalents, with apparently only a smarter front panel to show for it											CD-R	BS	BS	●	●	191
R Marantz DR-17	1,500	Highly recommended, but with a jitter problem that, resolved, would improve sound quality											CD-R(W)	BS	BS	●	●	205
E Philips CDR951	380	An improvement on previous models, it delivers the musical goods in some style											CD-R(W)	BS	BS	●	●	205
F Pioneer PDR-509	300	Straightforward design and excellent recording properties that are slightly dulled by the replay chain											CD-R(W)	BS	BS	●	●	205
F Pioneer PDR-W739	400	Flexible multi-disc that has everything including respectable sound and pricing											CD-R(W)	BS	BS	●	●	205
R Pioneer PDR-555RW	480	Competitor to Philips' CDR-880; can't make perfect copies but has the edge in replay and analogue record sound											CD-R(W)	BS	BS	●	●	184
Pioneer PDR-04	700	Scaled down version of the PDR-05 with auto level setting but all the socketry and features you need to make CDs											CD-R	BS	BS	●	●	171
Pioneer PDR-05	1,000	The first domestic CD-R deck - excellent sound quality											CD-R	BS	BS	●	●	152
TEAC RW-800	350	Capable recording tool, but a little rough and ready as a player											CD-R(W)	BS	BS	●	●	205
R Traxdata Traxaudio 900	499	Identical to Philips and Marantz models: it makes bit-perfect copies of CDs and has perfectly acceptable replay											CD-R	BS	BS	●	●	191



Headphones

There are several different ways of making a headphone. The most expensive models employ electrostatically-driven diaphragms within an open-backed earcup. Most mid-price designs feature dynamic, moving-coil-driven diaphragms in open, semi-open or closed-back designs. An open-backed headphone can sound remarkably transparent, but also permits the ingress of external noise. Closed-back designs keep out unwanted sound, but may be less comfortable to wear and more coloured. The latest development is the cordless headphone using either infrared light or, more recently, radio waves. Quality is improving, but has yet to match the best corded designs.

KEY TO SPECIFICATIONS

- **TYPE:** Operating principle: D - dynamic; E - electrostatic.
- **SUPRA-AURAL:** Where a flat pad presses on the outer ear.
- **CIRCUMAURAL:** Where the earcup encloses the ear.
- **OPEN BACK:** Offers an open sound but lets in noise.
- **CLOSED BACK:** Keeps out external noise.
- **MASS (g):** Mass in grams
- **IMPEDANCE (Ω):** Load offered to the headphone amplifier. Many headphones offer a significantly higher value than loudspeakers, for example, but this does not mean they will be incompatible with the majority of amplifiers.
- **3.5MM JACK ADAPTOR:** Compatible with mini-jacked components, eg personal stereos.
- **ISSUE NUMBER:** The issue of Hi-Fi Choice in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Headphones

SPECIFICATIONS



STATUS

PRODUCT	(£)	COMMENTS	D	E	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	ISSUE NUMBER
AKG K100	36	Leather clad groover with bags of power and clarity, for a respectable asking price	D	●	●	190	100	● 205
AKG 301	70	Big 'phones with even and detailed sound but lacks sufficient bass weight	D	●	●	230	100	● 194
AKG K 240 DF	100	Inoffensive 'phones that are very laid back, if lacking in grunt	D	●	●	240	600	● 186
AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D	●	●	270	120	● 99
Audio Technica ATH910PRO	80	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found	D	●	●	280	40	● 55
Audio Technica ATH-D40fs	100	Detailed and involving sound with a professional 'studio' quality appeal	D	●	●	250	66	● 194
Audio Technica ATH-M40	120	Incredible detail and honesty from these classically designed studio 'phone	D	●	●	250	60	● 186
Beyer DT311	50	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D	●	●	124	40	● 133
Beyer DT411	63	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D	●	●	120	250	● 111
Beyer DT331	65	Clear and extremely detailed sound with rather thin bass	D	●	●	210	40	● 194
Beyer DT431	81	Nice looking 'phones that may not be the best players on the field, but will always give 100 per cent	D	●	●	210	40	● 186
Beyer DT531	105	Average performer from an established player. Lacks punch and bite	D	●	●	245	250	● 205
Beyer DT511	106	Superb midband clarity and speed slightly at odds with soft bass. Even so, high tingle factor	D	●	●	200	250	● 172
Beyer DT831	140	These provide silky, smooth textures in abundance and we're not just talking about the velvet ear pads	D	●	1/2	295	250	● 186
Beyer DT100	160	Rugged, modular professional design, but bass is woolly and treble lacks detail	D	●	●	350	600	● 157
Denon AH-D550	80	A competent 'phone with integrity, but little panache or charisma. Hard headband causes brain strain	D	●	●	200	35	● 157
Denon AH-D750	130	Loud and gutsy, meaty bass, good with rock and dance. Can sound thick and clumsy	D	●	●	250	30	● 172
Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable	D	●	●	120	32	● 172
Grado SR-60	79	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste	D	●	●	200	32	● 194
Grado SR-80	100	Open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D	●	●	60	8	● 157
Grado SR-125	150	What these 'phones lack in style they make up for ten-fold in musical quality	D	●	●	200	32	● 186
Grado SR-225	200	Warm, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music	D	●	●	200	32	● 163
Grado SR-325	300	Elegant sound across the frequency spectrum; let down by old fashioned ear-piece design	D	●	●	200	32	● 205
Jacklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness	D	●	●	400	200	● 55
JVC HA-W60	49	Remarkable lack of interference and hiss ameliorates adequate sound of this cordless design	D	●	●	165	1/R	● 172
JVC HA-W200RF	75	Distinct lack of hiss from these FM cordless 'phones ensures that detail and depth are easily heard	D	●	●	280	20,000	● 186
JVC HA-DX3	200	Great headphone with a rich bass, careful mid-range and high comfort factor	D	●	●	340	90	● 205
Koss TD/80	50	Oodles of bass but with a recessed midband; tiresome on the head with prolonged wearing	D	●	●	250	60	● 194
Koss R/100	100	Rather cheap looking 'phones that supply good detail but are severely lacking in midrange excitement	D	●	●	215	60	● 186
Precide Ergo Model 2	140	Still has much of the spaciousness of the Float from which it is derived, but coarse mid/top	D	●	●	380	100	● 163
Philips HP910	80	Ergonomically good but suffers from a muffled mid-range and over excited bass	D	●	●	247	32	● 205
Sennheiser IS 380	55	As close as you'll get to real hi-fi with infra-red phones at this price. Inevitable hiss spoils the illusion	D	●	●	192	1/R	● 172
Sennheiser HD 570 SympH	90	Comfortable, light-weight 'phones with a detailed and open sound but lacks bass depth on weightier music	D	●	●	210	64	● 194
Sennheiser HD 545	125	Fine all-rounder that takes all styles of music in its stride. Ear-clamping headband	D	●	●	255	150	● 172
Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable	D	●	●	255	150	● 157
Sennheiser HD590	160	Assured and confident player with very low colouration and great comfort	D	●	●	270	120	● 205
Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with a pure midband, but top end is sibilant and edgy	E	●	●	260	N/A	● 163
Sony MDR-605LP	50	Funky looking headphones that have a very bold, but tiring sound, with coloured bass	D	●	●	145	40	● 186
Sony MDR-V700DJ	100	Great looking fold-away 'phones with exceptional build quality. Kickin' bass	D	●	●	300	24	● 194
Sony MDR-CD1700	200	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone	D	●	●	325	32	● 163
Sony MDR-CD	2000	200 Large pads make for sweaty listening. Pure mid-tones, but weightless bass	D	●	●	300	32	● 205
Sony MDR-F1	100	Natural, easy-going sound teamed with great looks and comfort. Shame about the lightweight bass	D	●	●	300	12	● 172
Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics	D	●	●	160	40	● 205
Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof	D	●	●	230	32	● 172
Stax System II	400	Luxury option at its price, but the sound delivery is five star quality all the way	E	●	●	295	50	● 205
Stax Lambda Nova Basic	395	Refined, articulate, yet with real presence - and a notable bargain by electrostatic standards	E	●	●	347	N/A	● 163
Vivanco SR322	30	Weak design and uncomfortable, but redeems itself with substantial sound quality	D	●	●	248	32	● 205
Vivanco Cyberwave FMH3000	40	The only cordless 'phone to offer genuine walkabout freedom, but sounds like a cheap FM tuner	D	●	●	210	FM	● 172
Vivanco IR5800	50	Consistently musical infra-red design. Doesn't reach for sonic heights so hiss can be forgiven	D	●	1/2	226	1/R	● 172
Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive	D	●	●	175	●	● 157
Vivanco SR750	60	Cossetting physical design, attractive sound, though suffers overhang and lacks ultimate dynamics	D	●	●	188	●	● 157
Vivanco SR 950	80	Cuddly feel and sound make these an enjoyable pair of 'phones	D	●	●	252	32	● 194
Vivanco FM7980	80	A fair amount of whine and crackle detracts from 'phones which are otherwise very listenable	D	●	●	280	9,000	● 186
Vivanco FM8180	99	Well thought-out features and a better than average sound are, at times, marred by intrusive hiss	D	●	●	240	9,000	● 186



Loudspeakers

As the last link in the hi-fi chain, loudspeakers are at the mercy of incoming signals. Nevertheless, distortions introduced by loudspeakers tend to be the most obvious. Inside the average loudspeaker is a simple electrical circuit (the crossover) which splits the incoming, full-frequency-range signal for the specific drive units to handle: highs to the 'tweeter', lows to the 'woofer'. For any speaker, designers must balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against bass extension (how low it goes). Subwoofers augment bass and are either passive (unamplified) or, preferably, active (self-amplified). Our 'bass from' figures are based on measurements in a particular room therefore results will vary in different environments.

KEY TO SPECIFICATIONS

- **SIZE WxHxD (cm):** Width by height by depth in centimetres.
- **FLOORSTANDER:** Requires no stand support.
- **SENSITIVITY (dB/W):** How much sound results for a given electrical input – the higher the figure, the louder the speaker. An % indicates active operation.
- **IMPEDANCE (Ω):** Impedance, measured in Ohms, indicates how much resistance the speaker presents to an amplifier. As impedance decreases, demands on an amplifier increase.
- **BASS FROM (Hz):** The lowest frequency that a speaker can reproduce effectively.
- **FREE SPACE:** Speakers which should not sit close to walls.
- **CLOSE TO WALL:** Speakers which should sit between 3 and 12cm from the rear wall.
- **ISSUE NUMBER:** The issue of *HI-FI CHOICE* in which an original review appeared.

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Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (dB/W) IMPEDANCE (Ω) BASS FROM (HZ) CLOSE TO WALL FREE SPACE ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	CLOSE TO WALL	FREE SPACE	ISSUE NUMBER
R Acoustic Energy Aegis Centre	140	Good value centre-front speaker but a tad shut in and with a slightly obvious top end (price per speaker)	46,17,20		89	5	50	●		198
R Acoustic Energy Aegis One	150	At a new low price, this has a very natural and transparent midband, erring a little on the dull side	19,36,5,24		87	6	40	●		187
R Acoustic Energy Aegis Two	250	Floorstanding variation on the Aegis One theme, with a neutral, even and detailed if slightly shiny sound	19,87,24		89	8	40	●		201
B Acoustic Energy Aegis Three	350	High value floorstander has deep and even bass and a smooth neutrality thereafter	19,90,25		90	5	22	●		198
R Acoustic Energy AE120SE	500	Attractive styling and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load	18,97,28		89.5	10	25	●		199
R Acoustic Energy AE520	1,000	Could be more neutral, but high-class build is reflected in a high-class sound. Very elegant too	21,98,50		91	3	25	●		190
R ALR Entry 2	250	Metal cone stand-mount has a generous performance envelope, but sound quality was controversial	20,33,29		90	4	22	●		201
R ALR Jordan Note 7	2,500	A beguiling Anglo-German collaboration delivers metal-cone precision with fine dynamic range	25,107,32		92	4	25	●		196
R AR 15	275	Neat and chunky wall/stand-mount certainly knows how to rock and roll, less convincing on the delicate stuff	22,37,22		90	4	45	●		201
R ATC SCM10	1,000	A compact speaker with good transparency but lightweight bass	18,38,25.5		80	8	65	●		192
R ATC SCM70ASL	10,500	Stylish aluminium casework disguises dynamic grip, tracking and precision that equals the very best	127,40,46		A	A	20	●		205
R Audio Gem Emerald	540	Pretty, compact floorstander with lively if lightweight sound	18,94,21		87	6	40	●		164
R Audio Note AN-E/D	1,520	This classic large stand-mount might have throwback aesthetics, but it delivers an exceptional allround sound	36,79,28		92	4	20	●		204
R Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47		88	8	28	●		143
R Audiovector C2	799	Elegant two-and-a-half-way has a big, full bandwidth sound, but midband seemed a little underdeveloped	19,106,27		90	4	20	●		190
R Audiovector M2	1,399	High-class, smooth and slightly laid-back performer has driving bass. It's upgradable, too	20,102,30		89	4	22	●		180
R AVI NuNeutron	500	A smooth and subtle though pricey sub-miniature, albeit with the inevitable limitations of the breed	14,27,23		86	4	50	●		190
R AVI Positron	899	This 'mini-floorstander' is capable of great precision and delicacy, but in a rather small-scale way	175,74,24.5		85	6	40	●		174
B B&W DM302	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22		88	4	45	●		156
B B&W 602 S2	300	Large stand-mount has fine dynamic literacy and good communication skills at a very competitive price	23.5,49,29		90	5	28	●		201
R B&W DM305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31		89	4	40	●		164
R B&W LCR6	349	Large, gutsy standmount intended for all-round AV use delivers fine performance as a stereo pair too	20.5,55,32		90	5	20	●		198
R B&W CDM2SE	400	Beautifully styled and finished, respectable midband. Lacks definition towards frequency extremes	22,32,25		87	6	40	●		183
R B&W 603 S2	550	Capable of being driven seriously loud, but the cautious balance seems less happy playing at low levels	23.5,87,29		91	4	22	●		193
R B&W CDM1SE	600	A great looking standmount with one of the best midbands around, and a subtle blend of other qualities	22,37,29		88	5	40	●		177
R B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31		89	12	28	●		199
R B&W Nautilus 804	2,500	The prettiest Nautilus has tremendous clarity and imaging but lacks the welly of bigger models	24,101.5,24.5		89	8	38	●		200
E B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art, needs real power but gives real sound	39,111,55		91	8	34	●		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		91	8	34	●		186
R Blueroom Minipod	249	The Minipod can show its competitors a thing or two about freedom from boxiness and looks fab	18,34,+17		91	4	50	●		193
R BC Acoustique Araxe	1,300	Neat compact floorstander is a very lively communicator, if a little short of deep bass grunt	21,92,21-30		94	3	40	●		204
R Cabasse Farella 400	950	Exciting but very upfront-and-in-yer-face sound. High sensitivity, fine build and good dynamic drive	26,92,32		92	5	28	●		180
R Carlsson OA52.2	1,500	Ultra-discreet design integrates cleverly with the listening room. Impressively unboxy, but sounds a bit thin	41,54,37		90	8	20	●		195
R Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,27-29		88	8	45	●		198
R Castle Richmond	250	Tiny real-wood miniature has a lightweight but very coherent sound, a bit in-yer-face but plenty of fun	17,33,20		90	5	50	●		201
R Castle Inversion 15	425	This striking looking standmount is a good all-rounder, commendably free from boxiness	19-22,42,25		91	4	30	●		193
R Castle Kendal	500	A beautifully finished compact floorstander with a decidedly forward but communicative sound	17,76,20		86	6	45	●		177
R Castle Severn 25E	700	Pretty little floorstander is lively and communicative, if a little coloured in the voice band	21,84,24		88	6	28	●		204
B Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33		88	8	28	●		160
R Castle Inversion 100	1,975	Large semi-omni design with gorgeous Art Deco styling, sounds open but bass alignment is ill-tuned	26.5,111,45		91	8	20	●		195
R Celestion 12i	119	Not without virtue, but the relentless enthusiasm and mid-band colorations can become wearing	19,31,21		88	6	45	●		179
R Celestion 23i	300	Cosmetically flawed, but the bottom end has fine get-up-and-go, and works well with dance tracks	24,86,27		89	6	30	●		177
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		90	3	45	●		193
R Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35		88	6	25	●		164
R Celestion A2	1,500	Full-scale, big sound from ultra-elegant floorstander. Smooth and slightly laid back presentation	24,93,39		89	6	22	●		180
R Chario Syntar 100	249	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27		87	6	45	●		170
R Chario Hiper 1000	300	Classy looking standmount has a sweet, easygoing sound with fine midband voicing	18,35,28		87	4	45	●		187
R Chario Constellation Lynx	550	Beautiful near-miniature is let down by a midband too laid back for its own good	20,36,26		87	3	40	●		190
E Chario Academy Millennium 2	2,100	Price includes stands. A showy speaker that lives up to its own hype	22,53,35		90	4	55	●		190
B Dali 606	400	A big bruiser at a tempting price. Sounds refined and polite, but also packs some punch	22,97,32		91	4	25	●		174
R Dali Royal Menuet MkII	400	Classy sub-miniature with a beautiful box and fine ingredients, but a little lacking in subtlety and excitement	16,26,18		87	3	50	●		190
R Dali Evidence 870	1,300	A real heavyweight, sonically and physically, and good for movies as well as music	24.5,106,36		93	2.5	20	●		204
R Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55.5,175,31		90	4	40	●		198
R Definitive Technology BP2X	595	Pricey but effective bi-polar surround speaker, with unusually high sensitivity	23,37,15		94	4	120	●		198
R Definitive Technology BP2004	1,700	Pricey bi-polar floorstander has a fine midband, let down by its built-in powered subwoofer	19,104,31		91	5	28	●		198
R Dynaudio Audience 5	400	Follows the Dynaudio tradition for fine midband transparency, but the overall timbre is a bit thin	20,31,26		85	4	40	●		177
B Dynaudio Audience 40	400	Classy engineering content creates a winning combination of neutrality, dynamic range and involvement	17,28,25		87	4	40	●		190
R Dynaudio LR/C 120	439	Slim centre and front standmount, has an evenhanded but rather laid back balance but lacks drive	16.5,57,31		89	5	25	●		198
B Dynaudio Audience 50	577	Understated in looks and finish, this compact stand-mount can mix it with floorstanders at more than twice the price	20,33,25		88	4	30	●		204
R Dynaudio Audience 70	1,100	A highly competent and neutral speaker, but pricey for vinyl finish, and doesn't quite drag you into the music	20.5,93,25		88	6	20	●		199
R Dynaudio Contour 1.8 MkII	1,842	Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	21,95,29		85	6	20	●		167
R Elac CL102 II	599	Chunky floorstander with classy drivers has a neutral, slightly 'shiny' character, and could have more punch	20,95,28		88	9	23	●		199
R Elac CL 310i Jet	800	It's pricey, and you can buy better performance for the money. Small speaker, good sound	12.3,20.8,28.2		86	4	42	●		191
R Eltax Liberty 3+	150	Bright, bassy, laid back and attractively evenhanded, but dynamically challenged. Big box for your dosh	20.5,38,34		86	4	25	●		187
R Eltax Linear Response	249	A curiously dumpy shape, but smooth, laid-back performer is easy on the ears, with fine tonal accuracy	25,35,32		85	4	40	●		177

CONTINUED

Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (dB/W) IMPEDANCE (Ω) BASS FROM (Hz) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
Eltax Chroma Front	300	Gorgeous shiny styling package at an ultra-competitive price, suffers from an excess of rather flabby bass	19,98,28	●	87	4	25	●	●	201
Energy e.XL 25	400	Neat slimline design delivers a fine all round performance for the price, but could sound smoother	15,87,31	●	90	4	25	●	●	201
Epos ES12	499	High quality luxury standmount has great midband and stereo imaging	20,38,25	●	85	8	45	●	●	160
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	●	88	6	22	●	●	143
Gale 2i	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27	●	88	7	40	●	●	170
Heybrook Prima 2	159	Great openness, speed and timing. Sounds fresh and vital, though sometimes lacks scale and weight	20,29,18	●	87	6	50	●	●	179
Heybrook Heylette	200	Attractive traditional-style near-miniature with classy main driver now has fine overall balance to match	19,5,30,22	●	88	4	45	●	●	187
Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	●	94	4	30	●	●	193
Heybrook Heylios	269	Classically styled stand-mount has a fine balance of smoothness and dynamics, plus real wood veneer	23,5,36,27	●	89	6	25	●	●	201
Heybrook Ultima	649	Has the bass wallop to justify its dual hi-fi/home cinema roles, but doesn't excite	22,97,29	●	89	6	45	●	●	174
Heybrook Duet	750	Looks slightly old-fashioned, sounds a bit coloured but its fine timing and liveliness serve music well	23,43,30	●	88	11	27	●	●	199
Heybrook Octet	1,800	Good-looking but pricey floorstander with novel drivers and a fine ceramic-enclosure midband	24,97,31	●	90	6	25	●	●	180
Indigo Three	500	Cute 'n' chunky standmount is an entertaining communicator. Great fun, despite some sonic weirdness	23,30,5,32	●	86	17	24	●	●	199
Infinity Delta 60	700	Striking and massive floorstander, lots of speaker for the price, but seems a victim of its own complexity	16-29,115,41	●	90	4	25	●	●	183
Infinity Kappa 70	795	Fine material value. Sonically big, smooth and even, but lacking in coherence and dynamics	16-26,96,27	●	87	4	25	●	●	204
Jamo BX100A	350	Offering a cracking output for their size, these rock boxes can be a bit bright but have decent bass	31,5,54,28	●	91	8	40	●	●	155
Jamo Classic 8	400	A lot of speaker for the money, good when playing quietly, but boom'n'tizz character sounded crude	22,90,29	●	90	4	28	●	●	152
Jamo Cornet 195	350	Loads of bass, should have plenty of yooof-appeal – it looks the business, and is priced attractively	20,5,91,31	●	90	3	26	●	●	183
Jamo 477A	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	●	88	4	40	●	●	138
Jamo 507A	700	Imaginative styling keeps the front view super slim yet still it packs a punch. Glass top is a nice touch	22,94,37	●	88	3	40	●	●	174
JBL L2	250	Invigorating, if a touch crude, this good-hearted speaker reproduces music with enthusiasm	22,40,27	●	87	8	40	●	●	170
JBL Ti200	400	Very substantial standmount knows how to rock and roll, but can sound uncouth on more delicate material	21,41,30	●	92	5	40	●	●	193
JBL L20	700	Pricey, heavy and a bit laid-back, but this is a fine rock'n'roller which is dynamic and communicative	26,42,28	●	86	8	30	●	●	138
JBL SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, with a fun sound, enlivened by a juicy bass thump	175,51,31	●	86	8	40	●	●	174
JBL L40	1,000	Classic, large, three-way standmount is full of vim and vigour, with a superb sense of balance	30,65,31	●	88	4	23	●	●	167
JBL 4312 II	1,000	Crude but startlingly effective dynamics. The original party animal knows just how to rock'n'roll	36,60,30	●	94	4	25	●	●	190
JBL SVA 2100	1,250	Monstrously large and brutish styling, goes very loud as well as deep. Fine focus but some boxiness	37,114,52	●	91	8	<20	●	●	180
JBL L90	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a bit crude	24,94,35	●	91	6	23	●	●	143
JBL LX70	550	Bassmeister supreme, shame the rest doesn't match up. Fine sensitivity but an itchy, scratchy treble	26,5,94,30	●	91	4	33	●	●	183
JMLab Tantal 507	295	Competent all-rounder, this compact standmount has a good heart and sweet treble, but sounds a bit small	21,38,27	●	93	4	40	●	●	193
JMLab Tantal 515	495	Lively and open if bright. Sound is entertaining and informative, but presentation is nondescript	20,94,26	●	92	5	32	●	●	183
JMLab Cobalt 815	999	Hefty real-wood floorstander has a slight 'boom'n'tizz' character but delivers big speaker grip and dynamics	22,100,31	●	90.5	9.5	22	●	●	199
JMLab Electra 905	1,200	Compact but massively engineered, delivers a very classy sound with exceptional dynamic range	23,5,47,28	●	90	4	40	●	●	204
JMLab Spectral 909.1	1,375	Multi-driver array in a large and very substantial enclosure. Good scale but lacks delicacy and sweetness	27,107,35	●	90	4	20	●	●	180
JMLab Electra 915	1,795	Fine headroom and bass, and classy engineering too, but also a tricky amp load which lacks delicacy	26,5,106,36	●	92	4	20	●	●	195
JMLab Mezzo Utopia	7,250	Looks good and sounds even better. A genuinely big speaker with fantastic coherence	35,115,47	●	92	4	30	●	●	186
JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,175	●	86	8	50	●	●	156
JPW Gold Monitor	80	More informative than Mini Monitor – but fiercer, too	18,27,175	●	86	8	50	●	●	156
JPW ML510	130	Lots of good quality speaker for the price, but not an ideal match for cheap budget components	20,34,22	●	88	5	50	●	●	169
JPW ML910	330	Loads of speaker for the money, plenty of headroom and loudness capability, but sounds dull	23,104,30	●	91	4	43	●	●	183
JPW ML1010	400	A seriously substantial speaker for the price, and an obvious choice for those who like their music loud	22,5,115,40	●	91	6	25	●	●	170
JPW Ruby 1	400	Very pretty but pricey luxury metal-cone miniature has good if slightly edgy balance	19,32,21	●	87	6	55	●	●	139
JPW Ruby 4	1,000	Twin metal-cone main drivers improve the dynamic performance and bass extension, with little sacrifice	22,94,26	●	88	8	25	●	●	174
KEF Coda 7	129	Lovely open voice reproduction, but bass could be more taut and build tougher	18,30,23	●	88	6	50	●	●	156
KEF Cresta 2	149	A good looking/value package but sonically disappointing, and no match for the Q15	20,5,37,24	●	91	4	40	●	●	195
KEF Coda 8	189	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	●	86	6	28	●	●	156
KEF Q15	200	Beautifully balanced and voiced standmount, but a potentially tricky amplifier load at high frequencies	20,5,31,27	●	90	2.5	30	●	●	187
KEF Coda 9	299	Uneven budget three-way floorstander with poor bass definition	20,86,28	●	89	6	30	●	●	156
KEF Q65	799	Dumpy-looking three-way has loads of bass and a laid-back midband; goes loud but lacks poise and impact	23,95,31	●	92	2.5	25	●	●	190
KEF RDM Three	1,500	Definitely a speaker aimed at long-term satisfaction rather than immediate impressiveness. Nice	24,100,27	●	90	4	40	●	●	189
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass	23,103,34	●	89	4	30	●	●	167
Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24	●	89	8	20	●	●	148
Keswick Audio Torino	999	Good value, lively contender with distinctive styling. Goes loud and deep but could be smoother	18-26, 93,28	●	90	4	20	●	●	167
Linn Kan	295	Great bass discrimination from size, ensuring a very informative, if slightly shut-in experience	19,31,19	●	86	4	45	●	●	187
Linn Keilidh Passive	750	Stunning timing and coherence, awesome bass drive	20,83,28	●	87	4	22	●	●	138
Living Voice Auditorium	1,500	Pretty, compact floorstander has wonderful coherence, high sensitivity and fine dynamic integrity	21,5,98,29	●	91	4	25	●	●	180
Living Voice Avatar OBX-R	4,000	Discreet but extremely fine design with external crossover and an affinity with valves	21,5,104,27	●	89	8	45	●	●	196
Magnat Vintage 320	350	Loads of speaker for your money, but the sound is thick, heavy and lacking in presence and authority	25,102,30	●	90	4	20	●	●	201
Magnat Vector 77	450	Tall, dark and a lot of speaker for the money. Beautiful balance, but lacking in subtlety and transparency	22,115,29	●	89	5	30	●	●	183
Magnat Vintage 720	1,200	Slightly crude in some respects but lots of heart, fine scale, decent dynamic coherence and integrity	29,113,32	●	88	4	20	●	●	180
Martin-Logan Prodigy	8,967	Combines the finesse of an electrostatic with the grunt of cleverly engineered cone bass to good effect	42,179,71	●	91	4	28	●	●	204
Mirage FRX7	550	Neat slim floorstander has a heavy, laid back balance, probably better suited to movie than music reproduction	175,95,32	●	90	4	25	●	●	204
Mirage OM-5	3,000	A meaty model that goes loud without distortion, digs deep with aplomb and creates plenty of depth of image	133,30,42	●	90	6	22	●	●	206
Mission 700	130	A lot of speaker for the money. Good bass weight and extension and goes loud with ease	18,34,26	●	87	8	40	●	●	179
Mission 771	170	Beautiful standmount miniature has a delightfully well balanced and voiced sound, and real wood finish	17,31,22	●	86	7	45	●	●	187
Mission 77C	199	A good centre-front match for 77-series, the triple tweeter might be a curiosity, but voicing is very good	42,17,21	●	91	4	100	●	●	198
Mission 77DS	199	Neat flush-mount surround speaker has no bass but a smooth midband and nicely restrained treble	34,26,12	●	92	4	120	●	●	198
Mission 780	299	Gorgeous miniature has a fine midband and clean, bright treble, slightly odd bottom end	16,5,28,27	●	86	6	40	●	●	201
Mission 773e	400	Beautifully designed slim floorstander could be more neutral but still delivers an all-round entertaining sound	175,88,26	●	92	4	30	●	●	193
Mission 774	500	Gorgeous floorstander is an entertaining communicator, despite some balance oddities (bright treble)	18,95,31	●	90	4	40	●	●	183
Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	16,5,82,28	●	86	9.5	25	85	●	199
Mission 775e	800	Lots of speaker for the money, and musically involving too, if a little short of serious weight and authority	23,115,30	●	93	3	25	●	●	204
Monitor Audio 702PMC	700	A good all-round standmount with intimate midband focus	20,40,25	●	87	8	30	●	●	174
Monitor Audio MA703PMC	800	Lovely but pricey floorstander has upfront, coherent, 'shiny' sound	20,89,27	●	88	8	50	●	●	160
Musical Tech Kestrel Evolution	315	Cute styled, cleverly compact and a smooth, subtle and coherent performer, best suited to smaller rooms	20,85,19	●	86	4	40	●	●	201
Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	●	86	8	25	●	●	152
Musical Technology PM15	450	A subtle, understated but very involving example of the 'classic' luxury-finish compact standmount	20,41,27	●	88	5	38	●	●	183
Musical Technology Falcon	680	Big speaker has a big but also surprisingly smooth and civilised sound. Fine material value too	33,117,30	●	89	4	22	●	●	190
Musical Technology Conдор	1,000	Lots of clever ideas in a floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	●	85	4	28	●	●	174

CONTINUED

Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (dB/W) IMPEDANCE (Ω) BASS FROM (Hz) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS							
P Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	164
P Naim Credo	1,060	Involving sound, but rather forward and cold. Good clarity, but some coloration and a lack of richness	24,89,30	●	88	8	28	●	180
P Naim SBL Passive	1,970	Lively and punchy – smoother but more upfront than before	27,89,27	●	88	6	25	●	143
F Naim NBL	6,648	Elegant, large floorstander is exceptionally informative with an awesome dynamic range and dry, forward balance	29,116,47	●	89	4	20	●	200
P Neat Critique 2	445	Contemporary standmount has a clean, crisp sound with lovely natural midband voicing	22,32,24	●	86	6	50	●	183
P Neat Mystique Mk2	575	This elegant package delivers a fine overall sound quality; some might find the top end too insistent	20,86,18	●	85	6	23	●	177
P Neat Elite	1,195	A highly entertaining all-rounder, has a planar tweeter that sounds sweet, if not particularly smooth	20,88,18	●	88.5	6	25	●	195
P Neat Petite II/Gravitas	2,000	Beautifully presented miniature/subwoofer combo with ribbon tweeter gives smooth, laid-back sound	23,105,40	●	85	6	25	●	167
P NHT Super One	250	A fine compromise between size and performance, sensitivity and hence loudness capability is modest	18,5,29,5,23	●	85	8	30	●	170
P NHT 1.5	400	This compact standmount sounds much bigger than it has any right to. Good timing and communication skills	18,42,19-26	●	85	6	40	●	177
P NHT Super Two	550	Black and shiny compact three-way floorstander has marvellously even balance and good coherence	18,5,100,26	●	87	8.5	25	●	199
P Opera Prima	495	Good-looking hardwood enclosure, plus fine mid and treble, but less satisfactory bass	19,34,31	●	90	4	40	●	190
P Origin Live Conqueror	1,650	Chunky floorstanding three-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	●	88	8	30	●	167
P Orelle Swing	1,200	A superb example of what an essentially small loudspeaker can do, with bags of brio and enthusiasm	18,101,28	●	87	8	45	●	195
P PMC TB1S	430	Pro-audio version of TB1, cheaper because of black paint finish	20,41,30	●	87	6	40	●	177
P PMC TB1	482	A classy, laid-back performer that likes going loud and loves the bass guitar	20,40,31	●	87	8	45	●	160
P PMC LB1	999	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic	17,5,53,26	●	87	6.5	40	●	199
P PMC FB1	1,275	Handsome floorstander has the lively coherence of a simple two-way alongside impressive bass weight and extension	20,105,31	●	88	6	20	●	204
P Polk LS50	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	●	89	8	25	●	138
P Polk RT16	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91	4	22	●	160
P Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35	●	92	4	25	●	198
P Polk RTE 1000p	1,300	Tall elegant tower with built-in powered bass 'subwoofer' that needs using with discretion. Bright but engaging	20,110,35	●	91	4	25	●	198
P ProAc Response 2.5	2,700	For aspirant high-enders looking for seriously good boxes, this speaker should be first port of call	22,107,25	●	86	8	30	●	149
P ProAc Tablette 2000 Sig.	899	Beautifully veneered compact stand-mount is classically balanced, if a little on the bright side of neutral	19,36,26	●	87	6	30	●	204
P ProAc Studio 125	1,000	Pretty if pricey compact floorstander with a beautifully natural and neutral midband, and some bass thump	20,94,28	●	87	8	28	●	192
P QLN Signature	1,000	Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	27,37,36	●	83	4	25	●	167
P Rega Jura	450	Beefy sounding, chunky floorstander sounds very 'direct coupled' to the music, if a touch 'boom'n'tizz'	22,5,92,5,26	●	90	5	25	●	193
P Rega ELA Mk II	498	Pretty and smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	●	87	8	40	●	139
P Rega XEL	1,040	Looks and sounds great: balance bright but even, with delightful coherence and timing	20,82,30	●	89	6	40	●	132
P RHdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic coherence	34,42,27	●	95	8	55	●	167
P RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	167
P Roksan ROKone	595	Large standmount is musically very communicative, if a little coloured	21,45,33	●	89	6	30	●	160
P Roksan Ojan 3 Black	795	Squat, stylish and black, great bass extension and somewhat uneven balance	28,76,46	●	88	8	20	●	132
P Roksan OJ3X Black	995	Innovative low-line, two-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	●	84	8	20	●	167
P Royd Minstrel	275	Not much welly or loudness, but fine coherence and timing; a bit bright	18,69,12	●	86	8	30	●	135
P Royd Doublet	485	Great value compact floorstander: lively and very informative, if a little uneven	18,93,19	●	90	4	28	●	160
P Royd The Sorcerer	595	Extremely musical and communicative speaker that's fun to listen to. Aesthetics could be better, though	20,31,18	●	86	8	35	●	139
P Ruark Epilogue	269	Beautifully finished miniature with a lively balance and plenty of charm; best suited to smaller rooms	17,29,23	●	87	8	47	●	183
P Ruark Sceptre	599	'Traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by rather wayward sound balance	21,38,31	●	87	8	40	●	174
P Ruark Prologue One R	949	Strikingly contemporary compact floorstander is well voiced but a little lean in overall balance	17,5,93,28	●	88	5	25	●	204
P Ruark Crusader	1,599	Elegant luxury three-way with wonderfully even-handed, if rather laid-back balance	24,94,31	●	85	6	25	●	167
P Ruark Equinox	1,849	The primary strength of this speaker is its ability to vanish behind the music	25,88,34	●	88	6	45	●	140
P Ruark Excalibur	7,000	A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom	30,125,53	●	90	4	30	●	186
P Sequence 400	329	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	●	86	8	45	●	164
P Silverado Raider	695	Beautifully built audiophile compact: neutral if bright, tough work for amps	20,40,25	●	83	3	30	●	164
P Snell K.5	795	Classy AV-ready stand mount is very solidly engineered. Sound is neutral but lacks excitement	22,46,30	●	87	6	25	●	190
P Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration.	28,117,50	●	91	6	25	●	194
P Soliloquy SM 2A3	1,095	Fine match in balance, coherence, transparency and speed. Intended for use with Cary CAD 2A3SE	35,5,19,30	●	91	8	45	●	196
P Sonus Faber Concertino	599	A beautifully neutral loudspeaker in a beautiful Italian suit of clothes. Classy, if quite pricey	21,32,29	●	87	5	30	●	193
P South Coast Speakers Lancelot	895	Pretty compact standmount has nice ribbon tweeter but sounds a bit soft and lacks dynamic vigour	19,36,26	●	84	8	45	●	199
P Sendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●	160
P System Audio 1130	499	Super-slim, super-smooth, involving experience, but not ideal if you like your bass deep and loud	3,100,21	●	89	4	43	●	183
P System Audio 1150	749	Pricy but persuasive, sonic subtleties sneak up to confound a dodgy first impression. Super-slim	16,105,26	●	90	4	30	●	190
P TAG McLaren F1	15,000	Oddball aesthetics with accurate, unflappable, controlled and a consistent sonic neutrality	40,127,48	●	87.5	8	25	●	202
P Tannoy Mercury M1	120	Sounds much bigger and expensive than it is. Solid, tuneful bass, wide open soundstage, excellent imaging	17,30,20	●	87	8	50	●	179
P Tannoy Mercury M2	140	A fine all-rounder with big box and deep bass for the price; could be sweeter and tighter	20,5,38,28	●	87	8	25	●	169
P Tannoy R1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22	●	86	4	30	●	187
P Tannoy Saturn S6C	200	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	38,21,29	●	89	6	25	●	198
P Tannoy Mercury M3	230	Good-looking floorstander; very neutral and even-handed, with fine midband but weak dynamics and drive	20,5,87,28	●	87	7	20	●	170
P Tannoy mX3	300	A great all-round compromise at a very modest price, combining good looks with fine midband voicing	18,5,87,26	●	90	5	40	●	201
P Tannoy Revolution R2	350	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24	●	90	4	20	●	193
P Tannoy Saturn S6LCR	400	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	21,38,29	●	89	6	25	●	198
P Tannoy Saturn S6	500	Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension	21,89,29	●	91	4	20	●	198
P Tannoy Revolution R3	550	Handsome real-wood floorstander does a decent job, but lacks the evenness of its smaller R2 brother	18,5,103,28	●	89	8.5	28	●	199
P Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	16-24,85,23	●	87	6	26	●	167
P Tannoy ST-100	1,200	This supertweeter adds a subtle and delicate effect while also broadening the soundstage at a price	15,10,5,6	●	95	8	NA	●	206
P Tannoy D500	1,999	Plenty of muscle and stereo, but short of poise and delicacy. Hard work for amps	31,93,34	●	91	6	20	●	143
P Technics SB-M20	200	Well-balanced with natural perspectives and fine midband coherence, but bass is a bit boxy and uneven	20,32,23	●	70	8	50	●	148
P Technics SB-M500	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	●	85	8	25	●	152
P Triangle Cometes	359	Communicative standmount has great midband dynamics, but the very bright top end might be intrusive	22,40,29	●	91	4	42	●	193
P Triangle Zephyr II	599	Loads of fun. Dramatic dynamics and righteous timing will give any hi-fi system a wake-up call	22,29,49	●	91	4	25	●	190
P Totem Model One	1,195	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	17,31,23	●	87	4	28	●	122
P Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	●	104	4	50	●	191
P Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid-back but very charming, and musically literate	17,97,30	●	88	7.5	25	●	199
P Wilson benesch Bishop	20,000	Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too	23,161,561	●	89	4	S20	●	189
P Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29,5,23	●	88	4	45	●	169
P Wdale Diamond 7.2 Anniversary	200	Lively and exuberant, but a tad untidy with it; can sound a bit cold and hard	19,29,5,24	●	88	4	40	●	187
P Wharfedale Valdis 400	200	Very loud with a minimum of amplification, but the sound is thick and uneven, with a heavy upper bass	25,80,26	●	91	8	30	●	148
P Wharfedale Valdis 500	300	These rock boxes can move plenty of air, albeit not as subtly as alternatives	25,108,26,5	●	91	4	40	●	155

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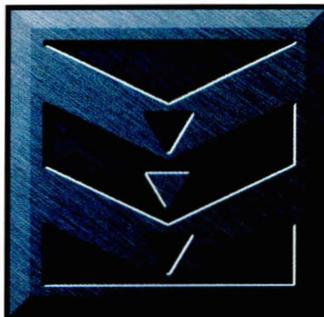
Loudspeakers

SPECIFICATIONS

SENSITIVITY (dB/W)
FLOORSTANDER
SIZE WxHxD (CM)
IMPEDANCE (Ω)
BASS FROM (Hz)
FREE SPACE
CLOSE TO WALL
ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	PRICE	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R Zingali Overture 2S	1,975	Gorgeous, pricey, imposing standmount has a horn tweeter of great delicacy. Impressively weighty	30,57,38	90	8	25	●	●	195
SUBWOOFERS									
Acoustic Energy AE108S	299	Lots of loud subwoofer for your money, though ultimately more film than music oriented	50,42,43			20	●	●	179
B&W ASW1000	499	(Active) Very competently engineered all round, and goes (unnecessarily) very loud	54,47,48		A	20	●	●	179
R JB&W SW1000	499	Bulky heavyweight is a high quality item, able to generate more bass output than music is likely to need	54,47,50	●	A	A20	●	●	198
R JPW SW60	349	A real heavyweight, sounds clean and transparent, if perhaps a little understated. Usefully flexible	55,47,39			20	●	●	179
KEF Model 30B	499	(Active) Commendably discreet with good sense of timing but limited extension	38,5,37,43	●	A	45			154
R M&M MX70	900	(Active) Justifies cost and belies its diminutive size, with an agility that makes sense of the toughest material	25,5,46,35		A	25	●	●	179
Mission 7AS2	399	Ugly if very effective at supplying very low bass, but filter could do with more flexibility higher up	56,30,31	●		<20	●	●	198
R REL Q50	375	(Active) Genuinely deep, clean bass from an attractively compact and cost-effective package	40,41,42		A	20	●	●	179
Soliloquy S10	1,050	(Active) Pretty subwoofer, cosmetically matching SM 2A3 speakers, pricey and mid-bass a bit strong	51,30,5,46	●	A	25	●	●	196



Stands & Supports

Hi-Fi supports are more important than you might imagine – they can have very subtle effects on the sound of your system! There are two kinds of support: those for equipment and those (stands) for loudspeakers. Equipment supports keep vibrations and resonances from affecting electronic components, while speaker stands hold enclosures stock-still and ensure they are at the correct height for your ears. Equipment supports may be rigid affairs fabricated from steel or more exotic materials; or they may have a form of suspension. Speaker stands come in a variety of sizes and styles to suit different models, and vary between open-frame and solid-pillar types. Always check with speaker and electronics manufacturers to see which supports they recommend.

KEY TO SPECIFICATIONS

- **HEIGHT (cm):** How tall is your support?
- **TOP PLATE SIZE (cm):** Dimensions of top surface on stand or equipment support.
- **FILLABLE:** Some speaker stands can be mass-loaded with sand or lead-shot to improve sound.
- **WELDED:** The better stands and supports are welded together rather than just bolted.
- **NUMBER OF SHELVES:** The number of tiers on an equipment rack or support.
- **SHELF TYPE:** The material from which shelves are made. Wood generally means Medium Density Fibreboard (MDF).
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Stands & Supports

SPECIFICATIONS

HEIGHT
TOP PLATE SIZE (cm)
FILLABLE
WELDED
NUMBER OF SHELVES
SHELF TYPE
ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	PRICE	HEIGHT	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
EQUIPMENT SUPPORTS										
Aavik C4	200	Attractive wood finish stand with a very large footprint but sound is a little coloured	77	47				4	MDF	206
R Aavik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47				4	Wood	193
Alphason GR 17/17-AS	275	Great looks but sound can be bettered for the money	36	60,39				4	Glass	181
Apollo Symphony	245	Simple steel and glass stand which majors in excitement factor but lacks precision	73	46.5			●	4	Glass	206
Apollo Soprano	275	Uninspiring looks and sonic performance that can be beaten at this price	68.5	45.5				4	Glass	193
Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6				4	Wood	193
R 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 enthusiasts equipment support stand free from coloration if a little fiddly to set up	87.5	48				5	MDF	193
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 Isotube x 4/Ref	1,199	Blockbusting size and build. Super sound quality	92	45,49				4	Marb	181
Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49				4	Glass	193
R Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel – made a spectacular impression on audition	70	52,34			●	3	Glass	166
Ixos Deadrock 704	250	Looks unassuming but sound is full and inviting		46,39				4	Resin	181
R Mana Acoustics Ref. Table	350	King of its type: angle iron, chipboard and glass combine to make a significant difference to sound quality	56	49,39			●	1	Glass	147
Mana 4-tier	500	The ultimate statement in steel and glass; adds resonance in a way you'll love or hate	87	45			●	4	Glass	206
Optimum Int 2000 OPT490	299	25kg stand with shelves between variable-height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40				4	Glass	166
Optimum Int 2000 OPT660	349	Clitzy style isn't reflected in sound, which is wholesome	82	60,52				5	Glass	181
Projekt Furniture A4	215	An elegant support stand that blends in to any home environment with a laid-back sound	56	48				4	Wood	193
Quadraspire Q4	280	Simple but modestly effective and very attractive	52	49				4	MDF	206
Sonus System Elite	330	Rather ugly and seems to offer little over and above cheaper steel and glass stands	68	50			●	4	Glass	206
R Sound Organisation Z560	160	Welded and bolted members give structural integrity. While performance is not up with the best, it's great value	90	46,36			●	5	Wood	166
Sound Organisation Z545	160	Budget price and great looks make this a great value stand	73	46			●	4	Glass	193
Soundstyle X100	230	Looks lovely, sounds lively but slightly bright	64	49,28			●	4	Glass	181
Soundstyle XS100	270	Less character than other similar strands, but sound is somewhat short on transparency	72.5	49.5			●	4	Glass	206
Soundstyle Radius SR100	280	Stylish looks and a smooth sound	63.5	49.5			●	4	Glass	193
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights. Delivers with classical material	82	48,27				4	Wood	166
R 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 AV1-4	600	Gives significant isolation for turntables and seems to add little character otherwise	74.5	45				4	MDF	206
R Townshend Seismic Stand	1,245	It's big, it wobbles and it's pricey. But this is the ultimate equipment support	72	58,45				3	Wood	181
R Wilson benesch Asside	590	Sounds even better than it looks. And it looks wonderful	72	37,50				4	Wood	181
SPEAKER STANDS										
Alphason Akros II	65	A well-specified budget stand but the sound is as subtle as a house party	60,45	16.5			●			202
Alphason HD5	85	A reasonable stand with a smooth but rather bland sound balance. Good finish options	45-60	15,5,15.5						189
Apollo Olympos	75	A popular stand and a decent performer, but unremarkable by today's standards	40-60	15,12.5						189
Apollo A4/6	82	A pretty and robust design that sonically fails to stand out from the crowd	51,40,51	18			●			202
R Atacama Nexus 6	50	An excellent all round performer and a genuine hi-fi bargain	60,50	14,5,18			●			202
Atacama BD21	55	Good looking and good value, but doesn't match the SE24's sound quality	56	15,17			●			159
Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15,17			●	●		189
Custom Design R/S300 MkII	100	A solid stand improving on the original with better focus and detail	61,56,51	16,5,18						202
Elemental Isotube SZse	599	Stands of distinction, able to free the speaker's sound from its box in a way budget stands simply can't	61	23,27			●	●		189
JPW H51	120	A purposeful stand, a touch dry-sounding but particularly strong with bass. Great for rock and dance music	61	19,21			●			189
Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29,32						202
Mission Stance	100	Detailed and open but needs a firm foundation to give its best	60	19,15			●			202
R Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than almost anything below £150	50-100	19,22			●	●		189
Partington Dreadnought Ult.	299	Super heavyweight stand that is an open window to the speaker placed on it	63	20,5,23.5			●			202
RMS/Stands Unique Vivus	349	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A						159
Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33,5,24						189
Sonus Systems Excel	110	Strong performance when filled with sand but design flaws let it down	65,45	20,22.5			●			202
Sound Organisation Z524	69	A coherent-sounding stand with particular strengths in the midband, though quality drops at the frequency extremes	61	16,17						189
R Sound Organisation Z522	89	Easy going and likeable performer straight out of the box	59	16,17			●			202

CONTINUED

Stands & Supports

STATUS

SPECIFICATIONS



PRODUCT	(£)	COMMENTS	TOP PLATE SIZE (cm)	HEIGHT	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
Sound Style Select	95	OK but not as good as its cheaper brother the Z522	59	16,17	●	●			202
Stands Unique HP	220	Real wood disguises high-performance tuned technology	59	22,23					159
Target HM60	106	A solid and well-built stand laid-back to the point of coma	40-70	16.5,19	●	●			202
Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack	53	15,21	●	●	●		146
Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than-audiophile-oriented, twin-column design	60	15,15	●	●			146
Townshend Seismic Sink	499	Unique inflatable plinth that works well with decent floorstanders as well as standmounted speakers	4	38,48					202



Tonearms

Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). However, hard-core vinyl fans should invest in a more expensive separate motor unit with specialist tone-arm — the only way to make the most of vinyl LPs. It is essential to achieve operational synergy between such components, so this is one area of hi-fi where the skills of a knowledgeable dealer are invaluable. The quality of a tonearm's construction and design affect sound quality significantly. There are three basic arm designs listed in the key, and each has strengths, but pivoted designs are the most popular, being usually the most practical and affordable.

KEY TO SPECIFICATIONS

- **EFFECTIVE MASS:** This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.
- **PARALLEL TRACKING:** An arm which allows the cartridge to track the disc in a linear fashion.
- **PIVOTED:** Arms which allow the cartridge to describe an arc as they traverse the record.
- **UNI-PIVOT:** Pivoted arms with a bearing that allows movement in two planes.
- **EFFECTIVE LENGTH (CM):** Length of the arm from bearing to cartridge mounting.
- **ADJUSTABLE HEIGHT:** Important for accurate cartridge set-up.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

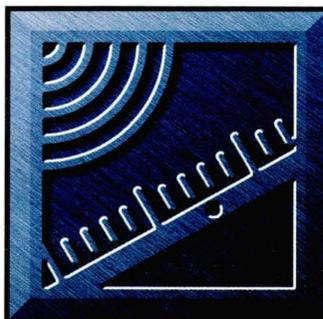
Tonearms

STATUS

SPECIFICATIONS



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



Tuners

TV has stolen radio's status as the foremost broadcast entertainment medium, but with its Radio Four plays and Radio Three music, the BBC still makes a potent case for audiophile reception equipment. For how much longer, under the cost-conscious Birtist régime, remains to be seen. Another new imponderable is the arrival of digital radio broadcasting, though reception apparatus is currently non-existent outside of the in-car market. These days tuners play second fiddle to hi-fi sources like CD, but in many ways they are a greater engineering challenge than digital equipment, and thus higher price-tags clearly equate to superior performance. High-quality, roof-mounted antennae are essential for audiophile listening, so factor them into your budget.

KEY TO SPECIFICATIONS

- **WAVEBANDS:** FM — (VHF), M — MW, L — LW.
- **PRESETS:** Number of station frequencies that can be stored.
- **RDS:** (Radio Data System) was originally designed for in-car applications. RDS tuners can identify and display the name of the radio station being received, traffic news and other information about broadcasts.
- **REMOTE CONTROL:** Infra-red control handset supplied.
- **SIGNAL STRENGTH METER:** Indicates strength of signal from aerial — useful for aligning your 'twig' during installation.
- **ROTARY TUNING KNOB:** Experience has shown that this analogue throwback is ergonomically far superior to the button-based approach.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Tuners

STATUS

SPECIFICATIONS



PRODUCT	(£)	COMMENTS	WAVEBANDS	PRESETS	RDS	REMOTE CONTROL	SIG. STRENGTH METER	ROT. TUNING KNOB	ISSUE NUMBER
AMC T7	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30		●			166
Arcam Alpha 7	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM,M,L	24					166
Arcam Alpha 10 DRT	800	The first DAB tuner and arguably still the best, but the system's still not perfect	DAB	7	●	●	●	●	199
Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM,M,L	64			●	●	193
Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM,M,L	64			●	●	193
Symbol C-DAB 1	1,000	The first 'high-end' DAB tuner, although format is the ultimate limitation. Gorgeous finish	DAB	8	●	●	●		199
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
Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●	●			166
Denon TU-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM,M	40	●	●			184
Magnum Dynalab FT11	499	All-analogue tuner: receives weak or tightly packed stations but loses out on noise and sonic neutrality	FM	3				●	184
Harmant/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM,M,L	30	●	●		●	166
Leak Trough Line	300	A renovated classic with a style all of its own coupled with an emotive and gutsy performance	FM	0				●	206
Linn Kremlin	2,600	Controversially good sound at a very high price	FM	80			●	●	142
Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM,M	60	●	●			184
Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29			●	●	193
Myryad T-10	530	A very smart unit which works well and offers good rhythmic drive and vitality, albeit at a price	FM	20				●	184
NAD C440	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM,M	30	●	●			193
Naim NAT01	1,730	There may be better sounding tuners in the world, but we have yet to hear one	FM						142
Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM,M	40	●	●		●	166
Pioneer F-504RDS Precision	300	Lots of features, plus a sound that's low on noise and high on communication, adds up to a good value package	FM,M	40	●	●		●	184
Roksan Caspian	595	Neat fascia with great ergonomics, but sound is not really any better than models at half the price	FM	50			●	●	184
Sony ST-SE500	140	A lot of features for the money, but sound lacks detail and has some coloration	FM,M,L	30	●	●			193
Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM,M	20					166
Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM,M,L	30	●	●		●	157



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CONTINUED

Tuners

STATUS

SPECIFICATIONS

WAVEBANDS PRESETS RDS REMOTE CONTROL SIG. STRENGTH METER ROT. TUNING KNOB ISSUE NUMBER

PRODUCT	(£)	COMMENTS	FM,M,L	30	●	●	●	●	184
Sony STS-B920S	180	A little hiss and image compression don't detract from the clean performance of this feature-packed tuner	FM,M,L	30	●	●	●	●	184
Technics ST-GT1000	500	Handy tuner that combines DAB, FM and AM in one unit and substantially lowers the price bar for DAB entry	DAB,FM,M	97	●	●	●	●	199
Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM,M	59	●	●	●	●	157

Turntables

Specialist turntables are at the heart of high-fidelity sound. CD players may offer ultra-low noise and a flat frequency response, but they can't match the dynamics and superlative rhythmic timing taken for granted by serious turntable users. Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). Still better quality is found at higher prices among the separate motor units and tonearms. Because turntables are mechanical devices, designed to retrieve micron-small modulations engraved into vinyl, engineering quality is of paramount importance. This is also the reason why turntables cost as much as they do, and require the finest equipment support systems.

KEY TO SPECIFICATIONS

- **MANUAL:** You do all the work.
- **AUTO:** The record player does all the work.
- **SEMI-AUTO:** You put the needle on, the turntable lifts it off at the end of the record.
- **SPEEDS:** In RPM to correspond with long-playing records or seven-inch singles.
- **SUSPENDED SUBCHASSIS:** Sprung suspension to minimise structural interference.
- **EXTERNAL PSU:** Outboard power supply, generally indicative of higher-quality performance.
- **SUPPLIED WITH ARM:** Many turntables do not come with a tonearm fitted, but if this category is checked, the deck is already thus equipped.
- **SUPPLIED WITH CARTRIDGE:** If a turntable comes complete with arm and cartridge.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Turntables

STATUS

SPECIFICATIONS

MANUAL AUTO SEMI-AUTO SPEEDS SUSP. SUBCHASSIS EXTERNAL PSU SUPPLIED WITH ARM. ISSUE NO. SUPPLIED WITH CART.

PRODUCT	(£)	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP. SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH ARM	ISSUE NO.
Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high end performance at an affordable price	●	●	●	33/45	●	●	●	203
Avid Acutus	4,995	Extremely capable design with no apparent shortcomings, don't sell your vinyl 'til you've heard it on this!	●	●	●	33/45	●	●	●	194
Clearaudio Reference	3,990	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail, but can sound bold	●	●	●	33/45	●	●	●	144
DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table	●	●	●	33/45	●	●	●	144
Dual CS 455.1	220	Neat record player with automatic convenience (and 78rpm), but doesn't match simpler manual rivals sonically	●	●	●	33/45/78	●	●	●	203
Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph	●	●	●	33/45	●	●	●	103
Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●	●	●	33/45	●	●	●	91
Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc. still top rank	●	●	●	33	●	●	●	103
Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●	●	●	33/45	●	●	●	91
Michell Gyrodec	875	Sweet and natural-sounding player, well matched to Rega RB300 arm	●	●	●	33/45	●	●	●	55
Michell Gyro SE	775	A stunningly desirable combination of looks, solidity and sound make this a tempting turntable	●	●	●	33/45	●	●	●	190
Michell Orbe 'SE'	1,725	A superb turntable, able to mix it with the best at virtually any price	●	●	●	33/45	●	●	●	192
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm	●	●	●	33/45	●	●	●	164
NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	●	●	●	33/45	●	●	●	203
Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●	●	●	33/45	●	●	●	159
Pink Triangle Tarantella II	850	A turntable that looks unlike any other, with rare ability too. Quirky, but sound is immensely likeable	●	●	●	33/45	●	●	●	192
Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound	●	●	●	33/45	●	●	●	164
Pro-ject Classic Cherry	450	A great looking turntable with a generous and dynamic sound, but lacks something in overall coherence	●	●	●	33/45	●	●	●	203
Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best	●	●	●	33/45	●	●	●	192
Pro-ject 6/Sumiko	850	Don't think of this as a deck with a good arm, but as a scaled-down Oracle Delphi – it's that good	●	●	●	33/45	●	●	●	138
Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●	●	●	33/45	●	●	●	48
Rega Planar 3	274	Sounds musical in a balanced manner, needs decent isolation and suffers a little pitch instability	●	●	●	33/45	●	●	●	164
Rega Planar 25	619	Great looking turntable has a silky smooth sound with exceptional midband coherence	●	●	●	33/45	●	●	●	203
Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●	●	●	33/45	●	●	●	159
Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●	●	●	33/45	●	●	●	159
SME Model 10A	3,333	Elegant and extremely capable design with Seres V/309 hybrid arm, superbly built	●	●	●	33/45	●	●	●	195
SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	●	●	●	33/45/78	●	●	●	186
Thorens TD166 VI/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget cartridges	●	●	●	33/45	●	●	●	103
Thorens TD146 VI	550	Tonearm not quite up to turntable's potential; this semi-auto is much pricier than manual TD166	●	●	●	33/45	●	●	●	203
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●	●	●	33/45	●	●	●	159
VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	●	●	●	33/45	●	●	●	203
Well Tempered Record Player	850	Intriguing and challenging. Musically not ideal, but its limpid quality and lack of artificiality set standards	●	●	●	33/45	●	●	●	136
Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in a clean reproduction	●	●	●	33/45	●	●	●	205
Wilson benesch The Circle	795	A beautiful turntable with a sumptuous sound, all at a very reasonable price – a clear Best Buy	●	●	●	33/45	●	●	●	192

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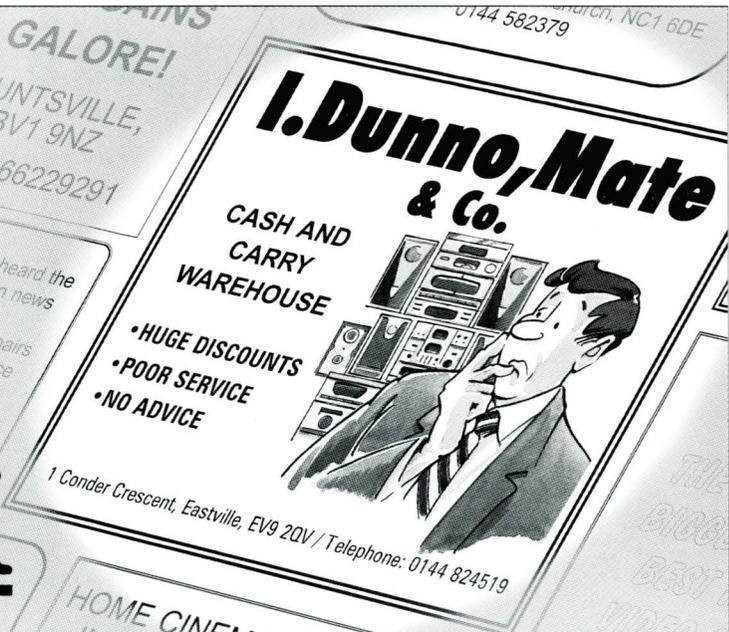
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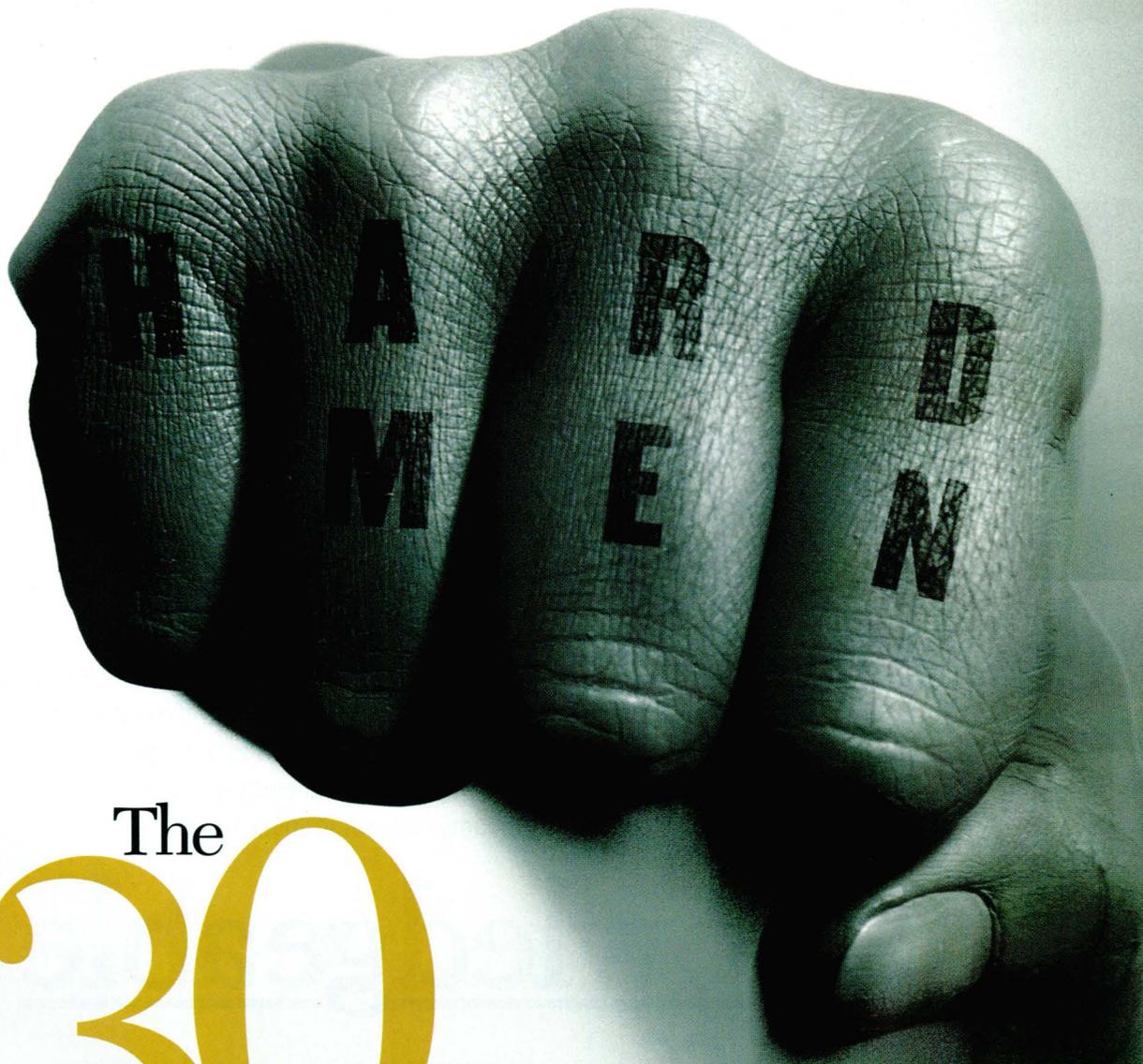
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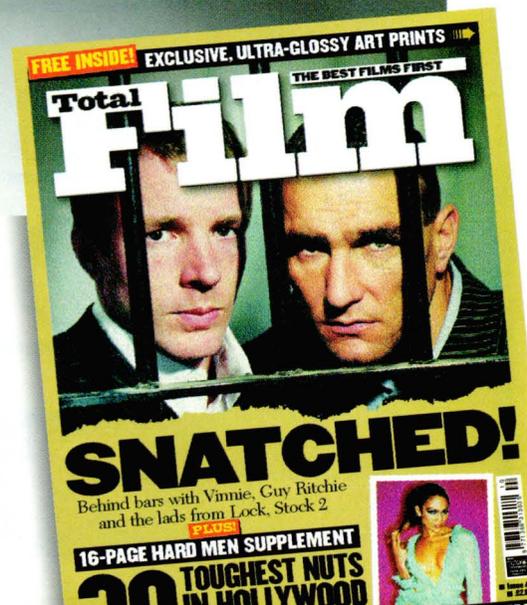
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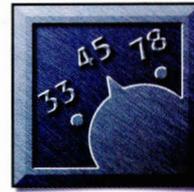
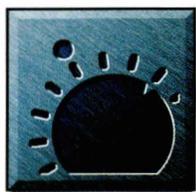
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JIMMY HUGHES

Super tweeters: hi-fi for dolphins, or useful new technology?

Jimmy has a theory about why they can make a big difference to your system.

It's nice to see the subject of super tweeters being given more space in UK hi-fi magazines – even if we're all seemingly a bit confused as to how and why the darn things actually work. I mean, what's the point of reproducing supersonic highs when most people's source material (CD) is limited to about 20kHz absolute maximum?

And how many of us can hear above 16kHz anyway?

But super tweeters work. For myself, having used a home-brewed super tweeter concoction based on a pair of Motorola piezo horns, it's been interesting to revisit the subject. I'd forgotten just how much improvement they made.

When a friend asked to hear my tweeters in his system, it was like going through the whole process again. Alas, my super tweeters were/are very experimental: the crossover components are on crocodile clips so I could add and subtract resistors and capacitors to alter volume levels and crossover frequencies. In other words, it's a lash-up: I experimented till things sounded right, then let it be – telling myself that one day I'd solder the whole caboodle together properly and finish off the job. Of course, that day never dawned.

My friend uses the Taylor-Hyde Model One full-range horn speakers I enthused about last month, and these are fitted with an extremely high-calibre titanium dome tweeter. So, theoretically, there should be little or no need for a super tweeter. The Model Ones sound detailed and vivid, with superb clarity, so why gild an already near-perfect lily?

Nevertheless, when the super tweeters were wired in there was an immediate increase in clarity and focus. Playing a CD of plucked acoustic guitar, there was more attack to the strings and greater hall ambience and space. It almost sounded as though we were there, listening live, such was the tactile immediacy of the sound.

Then came my *pièce de résistance*: trying the super tweeters on their own. I disconnected the main speakers and played the tweeters solo. Silence. I nervously glanced at the CD player to see if the disc was cued correctly, but alas it was playing. Silence.

I went over to check the connections – perhaps some wires broke during the journey over? – and then I heard a barely audible sound. The tweeters were working, it was just that the output was so low it was virtually inaudible!

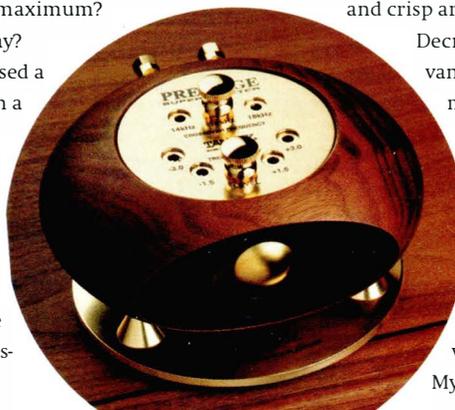
Unbelievable as it may seem, I found empirically that this very low level of contribution produced the best result; adding more actually seemed to dilute clarity and immediacy. When I first began experimenting, I used to play the finale of Bartok's sonata for two pianos and percussion as my test track – a piece notable for its angular rhythms and crisp articulation.

Decreasing the contribution of the tweeter almost to vanishing point subjectively enhanced the rhythmic clarity of this complex piece, allowing one to hear every detail clearly. Later on, it was difficult to resist the temptation to increase super tweeter levels simply on the logical basis that 'More Must Be Better'. However, each time I did, clarity suffered – though results were still better than they were minus the tweeters.

The question is, How can something that's virtually inaudible alter the sound so profoundly? My guess is the super tweeter may be acting as a sort of 'acoustic lubricant', helping the air to move when a transient strikes. It's nothing to do with supersonics as such, but it is related to air's resistance to sudden movement.

To draw a mechanical analogy, when the Teldec engineers first developed Direct Metal Mastering for LPs in the early '80s, they found to their horror that the cutting head assembly went into sympathetic resonance at about 80kHz as the copper blanks were cut. Steps were taken to try and eliminate the problem, without much success. Then someone realised the resonance was actually beneficial – it acted as a mechanical lubricant, aiding the cutting process. The fact that an 80kHz signal was being cut into the grooves along with the music was incidental, it had nothing to do with wide bandwidth capability. The 80kHz resonance simply meant the cutting stylus was already in motion...

Is it possible that components like subwoofers and super tweeters work in a similar fashion? Acting as a sort of 'magic carpet' for the main central frequencies to ride on? Could it be that separately reproducing high and low frequency extremes makes it easier for the main speaker units to move air? If so, it would explain much. Not least why limited bandwidth recordings still seem to benefit from wide bandwidth systems. And why added frequency extremes don't have to be heard as such to make a difference. A little goes a very long way.



The super tweeter may be acting as a sort of 'acoustic lubricant', helping the air to move when a transient strikes.

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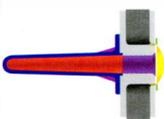


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