

HI-FI CHOICE

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The **Diamond 8** series offers a level of specification, performance and style never before seen in a speaker at this price. The woven KEVLAR bass/mid drive unit integrates seamlessly with a highly refined 25mm silk dome tweeter to produce an exceptionally enjoyable listening experience.

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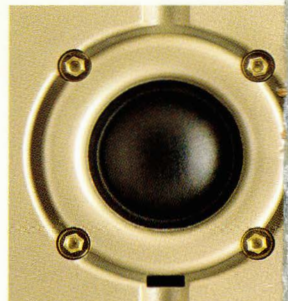
WHAT HI-FI?

Diamond 8.1, What Hi-Fi?
April 2001.



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Wharfedale Diamond 8



The Art of Sound

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



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



Christian House is our site Editor. He claims to be on the verge of taking a system home, but we're not holding our breath!



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



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



Alvin Gold prefers serious classical music and has a predilection toward Krell electronics and JM Lab speakers.

HOW WE TEST THE PRODUCTS

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

■ BENCH TESTS Our main group test each month concentrates on a key area, with products from across the separates market. The testing consists of three stages: 'blind' listening, hands-on subjective testing and scientific measuring. The latter phase is conducted by our Technical Editor using computerised measuring equipment custom designed for the purpose. He is recognised as the leader in his field.

■ GROUP TESTS Each issue features a number of additional tests aimed at narrowing the field in a specific product area. Here the testing involves just the reviewer concerned with no lab or panel testing, but plenty of comparisons.

■ SOLO REVIEWS As well as group tests we also review single components. In our First Impression section, you'll find brand new products that warrant early exposure, while High Performance concentrates on the latest aspirational, high tech components.

AWARD TAGS



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



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



A third award, **EDITOR'S CHOICE**, is reserved for those products reviewed solo and awarded where the Editor is convinced that a product offers exceptional quality for the price.

"The watermarking of high resolution discs has yet to be proved to be either totally effective or sonically inaudible."



Spring is finally here and we are celebrating with an upgrade for the magazine: heavier cover stock and an even more sumptuous image to go with it. Who'd have thought that budget speakers could look that good? Of course all

this luxury costs money and we have had to pass some of that on to you, but I'm sure you'll agree that another 25p is not a lot to ask for the quality you get with *Hi-Fi Choice*. And it's been over a year since the last rise. Just look at the array of comprehensively reviewed products we've got lined up for you, not to mention features, reviews and columns from the best writers in the field.

The two Pauls (Messenger and Miller) have reviewed a group of impressive budget speakers, among which is an Infinity Alpha 30. The Brand Director at Harman Europe, where this speaker was conceived, is none other than British speaker designer extraordinaire Robin Marshall, one time regular *Choice* blind panellist, founder of Epos, and designer for half the big names in loudspeakers today. We've managed to extract Robin from his *chateau* in the south of France and got him together with David Vivian to chew the speaker fat, so to speak. See what's he's got to say on page 20.

Richard Black has been looking into the controversy behind software watermarking. This is an anti-piracy technology that the makers of high resolution discs have at their disposal, but which has yet to be proved either totally effective or sonically inaudible. As someone who has gone to the expense and effort of creating his own recordings, Richard can see the copy protection issue from both sides and his piece makes good reading. Oh, and Richard Knights' illustration is excellent too.

I have been having a bit of 'fun' with a new listening room this month. There are those that say you shouldn't blame the room for bad sound but get better speakers instead. I'm inclined to think that some proportions are better than others and my new room is a bit too close to square for comfort. I now appreciate how much difference there can be between wooden floors – even with suspension between speaker and floor, the new one is very lively! So that's my project for the next few months – turn a boom box into a listening room – I feel another room acoustics feature coming on...

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HI-FI CHOICE

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FIRST IMPRESSIONS

TIM BOWERN, DAN GEORGE AND JASON KENNEDY CHIP OUT THE DIAMONDS FROM THE COALFACE OF HI-FI.



"THERE'S NOT A LOT OF PUNCH, BUT THEY'RE ALWAYS LISTENABLE."

TECHNICS RP-FDA100 HEADPHONES

★★★★★ £329.00

If you believe Technics' marketing blurb, these are no ordinary headphones. Rather, they were designed and implemented specifically to cater for DVD-Audio, the new two and multichannel music format. But they do nothing to create a multichannel experience, being instead a fairly conventional pair of cans dressed in futuristic clothing. They do, however, claim a frequency response of 3Hz to 100kHz via twin drive units – one full range, the other a supertweeter – mighty impressive, if there's truth in those figures, and in keeping with DVD-A's sonic abilities.

Styling, as ever, is a matter of taste, but we quite like it. They look striking but avoid crass, their natty silver and blue colour scheme attractive to anyone with disdain for the dull and conventional. And though build quality isn't on a par with several others at the price, their open pad design helps them feel light and airy on the ear. People with big lugs should watch out, however – the metal mesh covering the drive units can end up touching skin, which is rather disconcerting.

Sonically, these are decent and well-meaning 'phones. They possess strong midband qualities and come across as clear, even and inoffensive. If that sounds like we're damning with faint praise then, yes, to a degree we are, but treading an relaxed road with multiple forms of music is a tricky thing for headphones to achieve. Bass and treble are restrained in balance and there's not a lot of punch, but they're always listenable, never obstreperous and generally quite refined. There is an appealing 'naturalness' about them, particularly with the high-resolution recordings we tried. But one can't help escape the feeling that they're more than a bit dull.

Ultimately, one has to ask the following: is an "ideal for DVD-Audio" legend on a product's box an indication of exceptional quality or a marketing cash-in for top-line but essentially rather ordinary products? On this evidence one is tempted to believe the latter, though the RP-FDA100 is undoubtedly a worthy product. Dull-sounding, but worthy. **TB**

DATASTREAM

OPEN PAD DESIGN, 57mm full range driver, 20mm super tweeter, detachable 3m cable, weighs 325g with cable

TECHNICS

☎ 0990 357357

KEF KMS 2002 SUB/SAT SPEAKER SYSTEM

★★★★★ £499.99

Purists may scoff, but sub/sat systems do good business out there in the wider world of audio. Just ask Bose, or any of the dozens of readers who regularly ask us what we think of their sub/sat packages. The company has sold tanker loads over the years, trading on its reputation for cool, discrete products that make a big, big sound.

Given that we're living in a multimedia, multi-format age, it's not really surprising to find 'quality' British brands getting in on the act. Ruark has a sub/sat package available, so does Mission. And now it's KEF's turn. The Maidstone-based brand's cute little speaker system comes in two forms. There's the KHT 2005, an £800 combo for multichannel applications consisting of five tiny speakers plus an active sub. And for stereo music systems there's this, the paired down KMS 2002, a two-satellites-plus-sub combo.

KEF's satellites are a beauty to touch and behold, each one featuring a 100mm version of KEF's patented Uni-Q driver, encased in aluminium and set on a pivoting stand. The PSW 2000 augments these, a compact active subwoofer with an integral 150 Watt amp and a good degree of adjustability. Tuck this away, and the visual result is stylish and discreet.

As is the sonic result. Stylish – though thankfully not overly discreet. This is truly one of the best of its kind: a well-scaled sound with an effusive mid-band and a subwoofer that actually blends. It's not particularly fussy about the music you feed it, and it makes an unusually good stab at actually portraying instrumental detail as well as doing the 'big sound, small box' thing.

True, if you can stomach a larger, traditionally shaped box you could obtain better cohesion, improved dynamics and better performance at the frequency extremes – the Epos or Dynaudio speakers tested this very issue, say. But the KEF remains an exceptional example of its particular breed, both in terms of its styling and its sound. **TB**



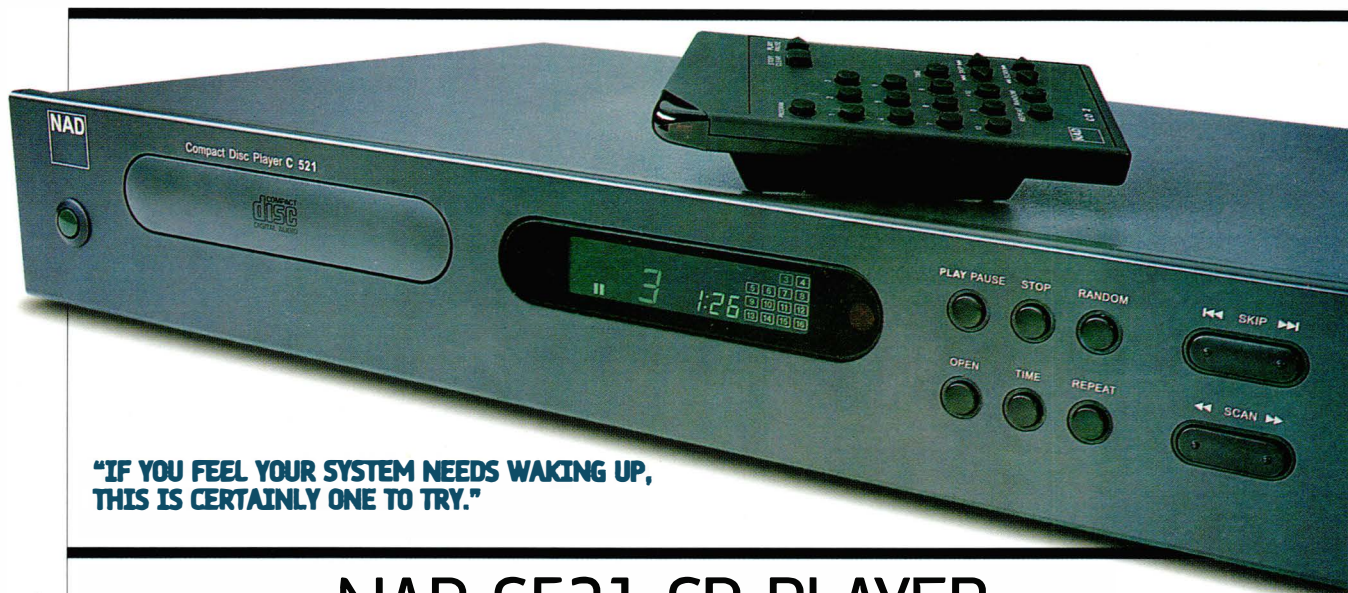
DATASTREAM

SATELLITES: measure 13x19.8x15cm (WxHxD), 100mm Uni-Q drive unit with integral 12mm tweeter, 8 Ohm impedance, 88dB sensitivity;
SUBWOOFER: measures 32x36x32 (WxHxD), built-in 150 Watt amp, 210mm downward firing drive unit, adjustment of input level/crossover frequency/phase
CONTACT ☎ 01622 672261



"THE KEF KMS 2002 SYSTEM HAS A WELL-SCALED SOUND WITH AN EFFUSIVE MIDBAND."

Swish and stylish looks – just like the sound.



"IF YOU FEEL YOUR SYSTEM NEEDS WAKING UP, THIS IS CERTAINLY ONE TO TRY."

NAD C521 CD PLAYER

★★★★★ £200.00



You shouldn't let the NAD C521's terribly sloooooow drawer put you off.

NAD was possibly the first example of what is becoming an increasingly successful breed: British design combined with Far Eastern manufacture. The combination of technical expertise and cost effective production makes for some landmark budget products. The C521 is the latest CD player from the brand, usurping the C520 that was recommended in June last year – a short lifespan by today's standards. The price has climbed £30 since then to what seems to be the minimum asking price for a serious CD player these days.

The C521 is a no-frills machine that doesn't even claim compatibility with CD-RW discs but rather puts its money where it hopes to gain maximum sonic impact – in the electronics. Digital-to-analogue conversion is 20-bit Burr-Brown, a chip that can be found in a variety of high end machines, and you will find metal film resistors and polypropylene capacitors in the more sensitive areas.

On test this player had the slowest drawer mechanism we've seen in a while, but we won't hold that against it. The C520 was considered to be slightly dull in our group test, a description that is unlikely to be used with the C521 which is a lively and enthusiastic machine. It's possible that the 'challenging' mains quality in our office-based listening room provoked this balance, but not impossible that NAD took our comments onboard. This balance is manifest in its timing, which is probably the player's best suit, lending all manner of material a cohesive quality that encourages extended listening. The bass was likewise appealingly dynamic and shapely, stopping and starting right on the button and rendering hip hop tracks with no shortage of drive.

I used two other similarly priced players for reference with the NAD, and it seemed to fit between the two. The Denon DCD-655 made it sound energetic and gung ho, while a Cambridge D500 SE made it sound a little lightweight. So if you feel your system needs waking up, this is certainly one to try. **JK**

"THE LIVELY BALANCE IS MANIFEST IN ITS TIMING, WHICH IS PROBABLY THE PLAYER'S BEST SUIT."

DATASTREAM

BURR-BROWN Sigma-Delta 20-bit DAC, coaxial digital output, CD-R compatible
NAD ☎ 01908 319360

the Cyrus r'evolution



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B&W CM 4 LOUDSPEAKER

★★★★★ £900



A tasteful design for some seriously tasty sound.

Nice, isn't it? Blonde wood, plain anodised aluminium and light grey rubber have been combined to produce a highly contemporary speaker for B&W's CM range. Loudspeakers

either have to be extremely compact or artfully conceived, so as not to jar the modern aesthetic. Whether CM has succeeded or not is a matter of taste, however it certainly makes a better stab at it than most.

The CM 4 is the bigger of the two CM designs and incorporates both Kevlar (midrange) and aluminium (bass) drivers underneath a metal dome tweeter. These units are driven in the popular two-and-a-half way configuration via twin bi-wire connections that sit helpfully at the bottom of the cabinet.

The box itself is divided into two sections, each with its own port on the rear, which means that unless you use the supplied bungs, the speaker needs a bit of room to breathe. B&W recommends half a metre to the front of the speaker, which was a little tight for our room.

The CM 4 comes across as a refined and fairly analytical beast with decent bandwidth and not a little character. Initially it can seem a little staid and restrained but with judicious placement the speakers start to sing, responding particularly well to music with plenty of ambience. They are revealing of source and amplifier quality, both of which were upgraded during the session to good effect – this is not a speaker for budget electronics. But with the Arcam A85 amp and NAD Silverline CD player the result was very gratifying: good timing, better imaging and rather appealing bass and treble all being on the menu. And the midband isn't exactly shabby either.

This is a precise yet evenly balanced speaker which has little difficulty in convincing you that its version of events is closer to the real thing than most. It has an authority that doesn't stamp its mark on the music but imbues everything with a solidity and presence that inspires you to keep on playing. It's not exactly made for butt kicking, the balance is a little forward for that, though it can do so without too much fuss.

A speaker this stylish does not need to sound this good, but it's nice to find one that does. **JK**

"IT HAS AN AUTHORITY THAT DOESN'T STAMP ITS MARK ON THE MUSIC."

DATASTREAM

SIZE 91x20x29.3CM (HxWxD), sensitivity 90dB, drive units 25mm metal dome HF, 165mm Kevlar cone bass/midrange, 165mm aluminium cone bass, weight 18kg, minimum impedance 4.4 Ohm

B&W ☎ 01903 524801



"THE CONCEPT AIMS TO BRING CD RECORDING TO A BROADER CROSS SECTION OF CONSUMERS."



PHILIPS CDR785 CD-R/RW RECORDER

★★★★★ £350.00

We've had a few CD recorders come our way over the last few months, but none quite match the new Philips CDR785 for sheer size and features. The chunky recorder is one of five machines from the current Philips range, and is the only one with a multi-disc facility. The concept aims to bring CD recording to a broader cross section of consumers, allowing users to record CDs from one box – useful if you don't have a digital output on your existing CD player.

The usual crop of recording facilities is available including high speed recording, CD text and a synchronised recording function that automatically finalises the disc once it has finished recording. Recording levels can be controlled manually or you can leave it to an automatic level system, but we wouldn't recommend it.

Although the machine is feature bound, the fascia isn't too overwhelming – unlike the 375 page

European manual! Some of the buttons are a little fiddly, and there is a frustrating mountain of stages to go through to burn a disc (common with such comprehensive recorders).

Unfortunately, we encountered a number of problems while simply trying to quickly clone a couple of tracks, forcing us to refer repeatedly to the manual. We suspect the CD-RW that came with our sample model was more of a necessity than a courtesy. When a freshly burnt disc finally emerged, the fidelity to the original was impressive, suggesting decent quality technology within. CD replay is very much an issue with twin tray machines, as they offer the chance to do without a separate CD player. But replay was a bit disappointing: despite a pleasing neutrality, the machine failed to excite with a rather blurred presentation. The CDR785 will definitely appeal to a certain kind of consumer looking for convenience and features all in the one box. **DG**

DATASTREAM

CD-R/RW ABILITY, two pairs of analogue outputs (CD AND CD-R), Optical and coaxial digital inputs, two coaxial digital outputs, CD text, CD sync, high speed recording, microphone recording, headphone socket
PHILIPS ☎ 020 8689 4444



ROTEL RC1070/RB1070 PRE/POWER AMP

★★★★★ £850.00

Rotel's pre and power amps from the new 10 series give you the chance to acquire some serious power. Matched with some pretty serious looks, Rotel has managed to produce a respectable powerhouse for an agreeable £850.

The RB1070 power is specced to dish out 130 Watts per channel into an 8 Ohm load, and can be bridged internally to give a whopping 330W in mono! There have been some developments in the preamp too. The remote RC1070 has what Rotel calls a contour control. This upmarket tone control offers a choice of four settings of bass and treble modulation, in place of traditional controls – it's claimed to result in a cleaner signal path.

Rotel has achieved, perhaps not unintentionally, quite a professional look and feel to the combo. Both machines have recesses behind the



front panels which act as 'handles' to simplify rack positioning and the solid, black, no-nonsense feel indicates a degree of restraint in the design. The casework has an unusual black finish, like it's had a mist of lacquer sprayed over it.

Making Rotel's RA-971 MkII integrated sound unusually smooth by comparison, this combo was immensely revealing of the source material and could almost be described as bright. Bass was powerful, punchy and extended well, retaining all of the quickness and pace of the music. There was plenty of control and it easily handled the dynamics of the source material. This is a transparent and forthright amplifier that shines a revealing light on what's going on in the music. **DG**

**"BASS WAS POWERFUL,
RETAINING ALL OF THE QUICKNESS
AND PACE OF THE MUSIC."**

DATASTREAM

RATED 130 WATTS into 8 Ohms, five line inputs, MM phono stage; twin outputs, headphone socket, 12 Volt trigger output.
ROTEL ☎ 01908 322704

The CD Player that Records



Philips 3 CD Changer with built-in CD Recorder.

- Double speed recording (CD to CD)
- Make your own compilation CDs from built-in 3 CD Changer
- Perfect, digital quality recordings

Model featured: CDR785. For more information call 020 8665 6350 or visit www.ce.philips.co.uk



PHILIPS

Let's make things better.

BROUGHT TO YOU BY TIM BOWERN AND DAN GEORGE

MULTICHANNEL SACD PHILIPS AND SONY LAUNCH FIRST PLAYERS

It looks like Philips has won the race to launch the world's first multi-channel SACD player. The Dutch giant has been vying with SACD co-developer Sony in a bid to be the first to market, and as we head for press a launch is imminent. Priced at £1,299, the SACD 1000 was launched on April 1st, so it should be in the shops now.

It's a multi-format machine, compatible with both two-channel and multichannel SACDs, along with CDs, CD-Rs, CD-RWs and even DVD-Video and Video CD discs. The only format of note not currently covered is DVD-Audio. The DAC board is said to draw on Marantz know-how and sound quality from all sources is claimed to be of the highest quality.

Sony's first multichannel SACD effort won't reach UK shops until June, and it won't play back the video formats supported by the SACD 1000. However, it will be substantially less expensive – around £450. It's set to form part of Sony's mid-range QS Series and incorporates a new Super Audio D/A Converter, developed to handle the complexities of multichannel Direct Stream Digital (the coding system employed by SACD). It also adds a 'multichannel management' function so users can make adjustments to suit their individual speaker set-ups. An even more affordable multichannel machine is due to join Sony's entry-level line-up later in the year.



Philips has beaten Sony to the shops with the first multichannel SACD player.

All multichannel SACD players employ a newly developed loss-less compression technology called Direct Stream Transfer. Unlike DVD-Audio, it's claimed that sound quality remains consistent channel-for-channel, whether a disc employs two, six or any number in-between. The first multichannel SACD title was recently released – a four-channel version of Mike Oldfield's *Tubular Bells*. More are expected in the next few months.



CD SIZZLER DIGITAL EXPERT MERIDIAN ANNOUNCES HIGH-TECH HIGH-END PLAYER

Meridian has unveiled its latest dedicated CD player. The 588 is built around a PC-style ROM drive, which Meridian claims makes error correction ten times more effective. The quality-sapping problem of jitter is tackled by a triple buffer memory, together with precision re-clocking of the digital output. Much is also made of the 24-bit/192kHz capable DACs and direct-coupled

amplifier, and the net result is said to be "clear, open, authoritative sound".

Meridian claims much of this technology evolved from its exceedingly costly and reputedly excellent Reference 800 CD/DVD Machine. Thankfully, the 588 is priced at a much more reasonable £1,950.

Meridian Audio ☎ 01480 52144



TWIN TWEAKS SPECIAL EDITION DVDS FROM MARANTZ

Marantz claims to have made great strides in audio quality with the new OSE versions of its entry-level DVD-Video players. The brand has been making performance-tweaked versions of its standard CD players for years, but this is the first time these techniques have been applied to its DVD machines.

First up comes the DVD3100 OSE at £400. It employs a faster op-amp in the output stage, with copper shielding for the audio circuit board and a copper plated heatsink for the regulators. This use of copper is aimed at reducing the effect of interference – even the screws are copper plated, something which Marantz has long maintained makes a worthwhile difference to sound. The £500 DVD4100 OSE takes this concept further still, with a copper plated shield for the transport mechanism and various other audio component changes. Both products are in the shops now. Marantz Hi-Fi UK ☎ 01753 680868



Marantz's DVD4100 OSE (top) and DVD3100 OSE (above).

ALTERED IMERGE

NEW HARD DISC SOUND SERVER FOR SINGLE ROOM SYSTEMS

Imerge has launched a new single room version of its SoundServer device, which incorporates PC-style hard disc storage to allow immense amounts of music to be held in one box. The previous unit was developed for multi-room use, but the S1000 is intended as a straightforward playback device like any other stereo source.

Inside it houses a 30GB hard disk, with enough space to store up to 560 hours of music in MP3 form (depending on the compression rate). A CD drive is also incorporated, so tracks can be converted to MP3 and stored on the hard drive without needing a computer. Tracks may then be sorted according to the user's specification and called up via remote control to suit a required mood, style and so on. The unit is also fully Web-enabled.

Imerge ☎ 01954 783600



The Imerge S1000 – CD player and hard disc in one box.



In the listening room, no one can hear you scream.

WHEN SPEAKERS ATTACK!!!

OHEOCHA'S NEW HIGH-END SPEAKERS TOUCH DOWN

The weird and wonderful family of Oheocha Design D2 speakers has found a new queen. The D2-ISO-5 is the new flagship of the range, incorporating no less than five drive units into its extraordinarily extra terrestrial-like form.

From the top, a soft dome tweeter rests in a solid piece of machined aluminium bar. Then come 'double hybrid' midrange units, followed by two 215mm bass drivers in a close coupled isobaric arrangement at the speaker's base. The result, claims its maker, is the sort of earth-trembling bass performance normally only associated with sub-woofers. Price is £2,335 – tune in next month for a review. Oheocha Design ☎ 01564 782502

RUARKING ALL OVER THE WORLD

NEW STAND-MOUNT AND FLOORSTANDER FROM ESSEX-BASED SPECIALIST

Ruarks' recently launched CL-20 is now straddled by two new models which make up the Classic range – the two-way CL-10 and three-way, floorstanding CL-30. Priced at £900 and £2,500 respectively, both models share an innovative new silk

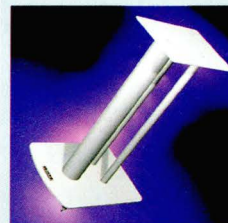
dome tweeter and benefit from a revised cabinet design. The strengthened enclosures are claimed to provide an ideal acoustic and mechanical environment for the drivers to do their stuff.

Ruark Acoustics ☎ 01702 601410



Ruark's Classic range is now complete with the arrival of the CL-10 and CL-20.

IN BRIEF



MISSION has introduced the Stancette speaker stand (above), to compliment the current m70 range. Priced at £60, the stands use a triangulated column principle to maintain rigidity.

☎ 01480 423700

TEAC has launched a three disc CD player into its Reference Series 300. The £179 PD-H303 continues the mini sizing theme and has CD-R/RW compatibility. ☎ 01923 819630



QED has launched a hi-fi standard interconnect for PC applications. The Qunex J2P uses a brass 3.5mm stereo jack, to two QED Qunex phono plugs. Price is £18 for a 1.5m stereo lead set.

☎ 01276 451166

CEEDIA EXPO, which showcases the latest in Smart House technology, is open to the public this year for the first time in the events' history. The show takes place at the Brighton Centre and features custom installation products from over 50 exhibitors. Passes cost £20.

☎ 01462 627377

www.ceedia.org.uk

THE MANCHESTER HI-FI show offers 43 rooms of audio pleasure – so save a place in your diary for the 17th and 18th of November. Venue is the Hilton, Manchester Airport. ☎ 01829 733238

NXT has got into Eton! Flat panel NXT based Mission speakers, have been installed into the Eton College Chapel for speech reinforcement in what is a tricky acoustic environment. Using Mission's FS2-AV system, each NXT satellite has its own ampli-

IN BRIEF CONTINUES ON P.16



NAD's latest CD player, clad in traditional grey – the C541.

NAD NEWCOMER

LATEST ADDITION TO BRAND'S BUDGET CD PLAYER RANGE

NAD continues to revamp its CD player line-up with the new C541, hot on the heels of the recently launched C521. The company claims to have incorporated some serious electronics under the lid – high-grade capacitors and so on – and it is one of the few players at its price point to boast HDCD decoding. It's remote controllable, employs a 24-bit

Burr-Brown DAC and has both optical and coaxial digital outputs. In addition, separate power regulators are used for the digital and analogue sections to help keep RF interference in check and so aid sonic performance. It's in the shops now, priced at £329.

Lenbrook UK ☎ 01908 319360

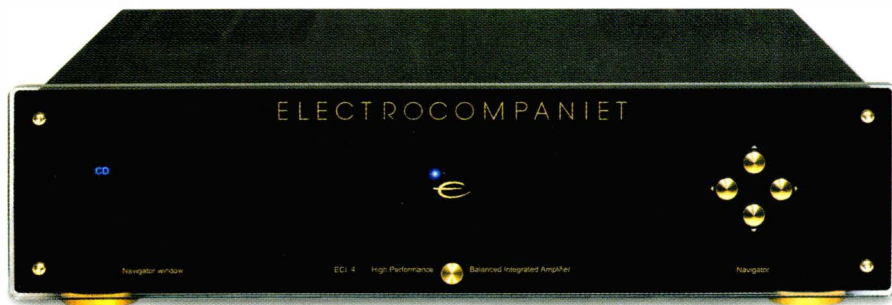
NORWEGIAN'S WOULD. WOULD YOU?

NEW AMPLIFIER INTEGRATED INTO ELECTROCOMPANIET'S RANGE

Norwegian hi-fi manufacturer Electrocompaniet has launched an integrated two-channel amplifier through UK distributor Castle. The remote-controllable ECI-4 is DC coupled and priced at £1,899. It has six inputs, two of which are balanced, and may be used alone or in a bi-amp configuration. Volume is adjusted by a balanced motorised control,

which is said not to compromise sonic performance. It also uses Electrocompaniet's "unique" Floating Transformer Technology (FTT) power supply and delivers a substantial 120 Watts into 8 Ohms. You can check one out now at your nearest Electrocompaniet dealer.

Castle Acoustics ☎ 01756 795333



Electrocompaniet's new ECI-4 integrated amp delivers 120 Watts per channel

IN BRIEF CONTINUED

fier and is time aligned for distance.

www.nxtsound.com

PERSONAL JUKEBOX PJB-1100 is the latest MP3 player to hit the UK. It features a whopping 20GB storage capacity, translating to 5000 tracks, or 320 hours playback time. A regular CD can be downloaded using the supplied software in approximately 10 minutes. £750 should get you one. ☎ 0870 0660407

SONY has produced its first mobile phone to incorporate Memory Stick technology. This

enables users to replay two hours of MP3 music, downloaded from the Internet.

☎ Sony 01932 816417

TDK has launched the CD-R Audio Pro, a professional quality CD-R for consumer use. TDK claims the discs are smoother and more analogue like, without 'the digital edge'. The CD-R Pro is out now at £4.99 each.

☎ 01737 773773

DOLBY has taken one small step into Space by providing

DVDs for astronauts! Allied with Warner Home Video, Dolby labs has provided NASA with 12 DVD titles, the first Dolby 5.1 experience outside the Earth's atmosphere! www.dolby.com

PANASONIC has produced the smallest and lightest MiniDisc player in the world! The SJ-MJ88 boasts 65 hours playback and a 40 second anti-shock system. A 'train' mode allows commuting without annoying noise leakage, and the LCD transparent remote is easily clipped to any belt or lapel.

Expect to pay around £180 for one, they're out now.

☎ 08705 357357

KEF has pioneered a new speaker technology called Acoustic Compliance Enhancement (ACE). KEF has used an activated carbon compound, which actually absorbs air within the speaker cabinet, effectively increasing the cabinet volume. The claimed result is improved bass extension and sensitivity. For more details see Paul Messenger's column on p130.

☎ 01622 672261

THE VERY LATEST LAB CREATIONS

FRANCE'S BIGGEST SPEAKER BRAND HAS TWO NEW RANGES

JMlab has revamped its speaker range and introduced sweeping changes to its Cobalt and Chorus line-ups. Both product lines now use a new inverted titanium dome tweeter, made by the brand's parent company Focal, it's claimed to produce maximum detail and wide dynamics.

These changes come as part of complete restructure, which sees the brand setting up its own UK base. The 12-strong Cobalt 2001 range is first to emerge, with prices starting at £529 per stereo pair. The Chorus range starts at £169 and includes multi-channel and stereo systems.

Focal-JMlab UK ☎ 0121 616 5126

JMlab Chorus 710, £319.



S Q A R T

DUAL SCREENED SILVER REFERENCE A/V INTERCONNECT

The first cable in the world to deliver
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WHAT HI-FI?



"This is an excellent cable,
with outstanding colour
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"... every group test needs
a winner: the QED SQART"



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New Blue Series

Blue

A Statement of
Style and Power



The first impression of a tiger is its powerful roar, intended to strike fear deep in the heart. But observe the tiger a little longer, and you begin to notice gentler qualities and subtler nuances. You discover that the tiger is more than the roar.

Loud and Proud?

When you listen to music and watch movies, something similar happens. At first, we may be bowled over by the roar of a loud and proud home entertainment system. In technical terms, the "roar" is wide dynamic range and high maximum sound pressure level. Both are key elements in recreating the live-ness of recorded music and the

impact of movie surround sound. But in the long run, we demand more than the roar for a fully satisfying listening and viewing experience.

Loud and Clear!

Fortunately, like the tiger, the DALI Blue Series has much more to offer. Not just loud and proud, but also loud and clear. As one independent audio journal recently described it: "DALI loudspeakers take your mind off technology and let you focus on the musical experience."



Dali UK: 13 Daly Avenue, Hampton Magna, Warwick, CV35 8SE. Tel: 01926 400944

Dali DK: Dali Allé 1, DK-9610 Noerager, Tel: +45 96721155, www.dali.dk, E-mail: info@dali.dk

ALL THE HITS ALL THE TIME

YOU MIGHT CHOKE ON THE OUTPUT OF MAGIC AND HEART FM, BUT WES PHILLIPS RECKONS WE BRITS SHOULD BE THANKFUL.

Your American cousin is cranky this month. It's a slow news month, except for the eternally amusing Napster ruckus. I'll spare you that, however, since its sell-by date will be long since passed 'ere this sees print. Oh, it'll still be on-going, but surely the cast of characters charging and counter-charging will have changed.

A few months ago, I wrote about the impending debut of digital radio in the US. Personally, I'm enthusiastic about it – in large part, no doubt because of my experiences with digital broadcasting as it exists in the UK.

The problem is, the US is not the UK – and the difference is never so great as when it comes to radio. To begin with, you'd be hard-pressed to find a decent-quality broadcast signal in this entire country. They do exist, but they're the exception to the rule and usually indicate a tiny feeder-station for National Public Radio (NPR) – which is so different from the Beeb that it would require an essay of its own – or a college-affiliated station too poor to afford the 'latest' broadcast equipment (ie, compressors).

THE PRICE OF AIR-TIME

But the real impediment to digital radio working here is the whole smarmy system that connects the record labels and the radio conglomerates. It's part of a pervasive pattern of petty corruption that pretty much dictates that everything over here is a commodity to be sold, including every minute of programming on a station's airwaves.

For a detailed account of how promoters control what the public hears on American radio stations, you should read Eric Boehlert's "Pay for Play" at Salon's website – www.salon.com.

Boehlert says that, of the 10,000 commercial radio stations in the US, record labels rely upon a scant 1,000 to create buzz and sell their records. Each of those stations adds, on average, just three new songs per week to its playlist.

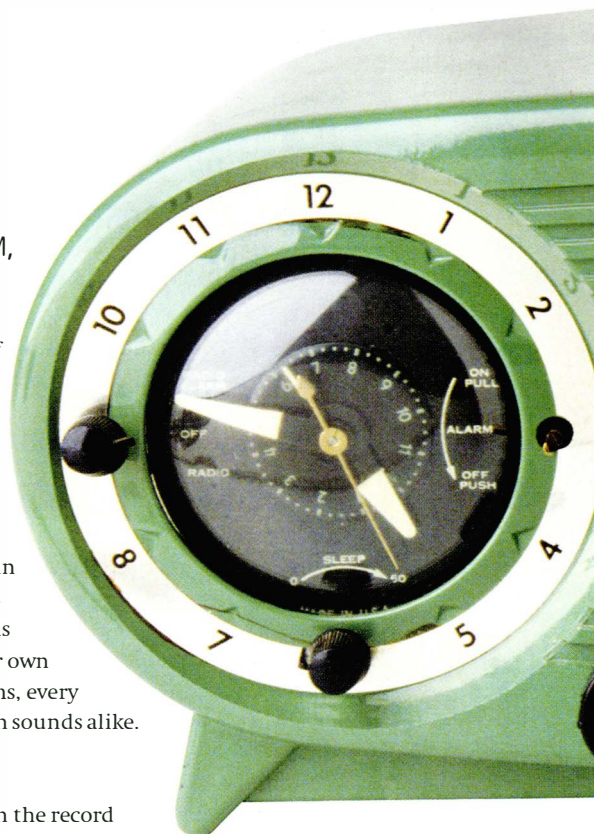
If you think that any of those slots gets filled on merit, there's a bridge not far from my house you might consider buying. Filling those slots is a \$3 million per week industry. Which is why, in a country as large as this one, with distinct regions which have created their own indigenous musical forms, every commercial radio station sounds alike.

PAYOLA

The middle man between the record industry and the radio stations is the "independent promoter." In the bad old days of payola, independent promoters were hustlers who formed personal relationships with influential regional DJs – sometimes showering them with tokens of appreciation, which could range from T-shirts to cash to hookers. (Frederick Dannen's *Hit Men* provides a fascinating overview of the old school of payola. Dannen reported that record execs weren't surprised that they could buy DJs, but they were stunned by how cheaply they could be bought.)

Even after the payola scandals of the 50s, the indies remained influential. Then, deregulation of the radio industry in the 90s removed the barriers to station ownership that dictated the amount of the market that a single corporation could own. The mega-conglomerates gobbled up stations like M&Ms – three companies now control 60 per cent of the broadcasting in the top 100 markets. This meant that the indies no longer had to deal with thousands of radio station program directors – a handful of regional directors controlled access to the airwaves.

It gets worse, Boehlert reports. A new alliance between a huge independent promotion firm and a radio chain could institute a new concept in promotion – they plan on selling a package that



“RECORD EXECs WEREN'T SURPRISED THAT THEY COULD BUY DJs, BUT THEY WERE STUNNED BY HOW CHEAPLY THEY COULD BE BOUGHT.”

would charge a fee for “back-announcing,” otherwise known as letting the audience know the name and performer of the single they just listened to. This would appear to create a new ‘preferred’ status within the small number of songs that manage to get airplay at all.

Maybe it is naive of me to believe that digital radio will change everything. The record labels probably carp about paying \$200 million per year for access to the airwaves, but it buys them market dominance and all but total control over the ears of the radio-listening public. While the thought of free access to all forms of music thrills me, it probably terrifies them. Over here the freedom of the airwaves belongs to the guy who owns them – or, to be more precise, the guy who pays for them.

Wes Phillips is our US news correspondent, but he'd much rather be listening to radio in the UK.

THE MARSHALL SOUND

DAVID VIVIAN LISTENS TO DESIGN SUPREMO ROBIN MARSHALL
TALK ABOUT SPEAKERS, SPEAKERS AND, ER, SPEAKERS...



“IT’S MORE INTERESTING TO MAKE HALF A PER CENT OF THE POPULATION ORGASMIC ABOUT YOUR PRODUCT.”

What you really need to know about Robin Marshall is this. He’s designed so many loudspeakers for so many manufacturers that, as The Rock said of Wycleff Jean’s 50 Bentleys in the West Indies, it doesn’t matter.

The names? *Who’s Who* stuff. Classics? Modesty prevents him, but I’ll nominate the ES14 – first fruit of his own speaker company and design consultancy, Epos, which he sold to Tannoy Goodmans Industries (TGI) in 1986. Before that he worked for Monitor Audio, before that the BBC and before *that* he was a bass player in an R&B band. In the time since Epos he has worked for many of the big names in speaker manufacture, including Mission, Sendor and Mordaunt-Short.

Consolidating the stock of his long consultancy career with the newly formed operation, Harman Consumer International, though, hasn’t just got him out of bed but brought him to London’s cavernous, celeb-encrusted Atlantic restaurant to talk to me. There’s the new range of Marshall-designed Infinity Alpha speakers to discuss, after all. It’s not every day you get to interrogate a living, breathing loudspeaker designer deity about something that, to most of us, is as mysterious as the workings of quantum gravity: speaker sound. I craved pearls of wisdom with minimum waffle. So listen, learn and impress your friends down the pub. Here’s Robin...

ON WHY IDENTICAL SPEAKERS SELDOM SOUND THE SAME IN DIFFERENT ROOMS

“When you listen to a speaker in a room, you’re not listening to the speaker but to the integrated response of the speaker and the room. It’s how you energise the room that matters. You’ll say speaker A is fantastic, and I’ll say it’s rubbish. It’s not a question of our different judgements, because we all hear in the same way. It’s the way the speaker is driving the room. Rooms have different characteristics.

“The living proof is I can take a speaker into five different rooms and it sounds like five different speakers. The best speakers are the ones that are consistent. If you measure their response at different points in the room it doesn’t change much. Conventional on-axis measurement gives

David Vivian talks to the movers and shakers in the hi-fi industry about the subjects close to our hearts.

a very narrow view of real world performance. In fact it tells you absolutely nothing. You do not listen to the on-axis pressure response of a speaker, you listen to the integrated power response of the speaker plus the room.”

ON SPEAKERS DESIGNED BY COMMITTEE

“Realistically, for a major brand, you have to have a committee decision. I accept that. Personally, it’s more interesting to make half a per cent of the population orgasmic about your product and I think that can only come from a one man speaker.” (Like the Epos ES14).

ON THE BEST CONE MATERIAL

“Ultimately it’s paper. When you speak to a designer who doesn’t say paper is the best material, you’ve got a problem. It’s light, it’s stiff and it’s cheap. The only trouble with paper is that any experimentation with the shape of the cone or the pulp is expensive. That’s why the BBC went for plastic cones like Bextrene and polypropylene. If you want to try 15 different cone profiles, it’s very easy to vacuum form some polypropylene. To do that in paper, it would cost £800-£1,000 each time you changed the profile.

“There are certain advantages with metal. It’s cheaper to make a new cone shape from metal than it is with paper and the stiffness is higher. But so is the mass. That can be overcome but not without some expense.”

ON WHY TWEETERS ARE A PAIN IN THE...

“Most tweeters sound horrible. The problem with a dome tweeter is when it goes into the first break-up resonance, it’s finished. If the first bending resonance is at 15kHz, beyond that point the tweeter is completely worthless. That’s the problem with fabric domes; they start to break up at about 13kHz.

“With a cone driver that’s not the case. What happens is the radiation area becomes smaller and smaller and smaller.

“So if you’re going to make dome tweeters you need the very stiffest material you can get to move that first break-up resonance up to a point where you hope it doesn’t matter. Aluminium domes do this pretty well. You have to anodise them and turn the aluminium into ceramic. Aluminium is better than titanium.”

ON BOXES AND HOLES

"The best speaker must be a closed box because it's the simplest, and simplicity always works best. In the time domain, it's the best performance speaker. But you don't get much bass, so in many ways a vented box becomes a necessity.

"Transmissions lines are a non-starter. What's a transmission line? It's a complicated reflex enclosure; a reflex enclosure with damping. Whatever you do with a transmission line you could do better with a straightforward vented enclosure. You remove one level of complexity. What you leave out of a product is always more important than what you put in.

"Horns are potentially good if you have the space but, to sell them, you have to fold them up and that adds coloration that sounds terrible."

ON FOOT TAPPING

"One of the joys of small loudspeakers – the original Linn Kan is perhaps the archetype – is they can be made to time superbly. But the Kan didn't have any bass to contend with. The more you extend the bass, the harder it is to make it time. I have to say I don't know the answer to that."

ON WHY FLOORSTANDERS HAVE MORE FUN

"If you buy a pair of Alpha 20s – a 6.5-inch bookshelf system – it's going to cost you £199. Add £100 for decent stands and that's £300. If you buy a pair of floorstanding Alpha 30s, it's still £300. There are some small compromises in the midrange (it's not quite as clear as an Alpha 20's) but it has another half an octave of bass. And there's nothing wrong with the bass: it times well, it pitches properly, it's perfectly good bass."

ON WHY DAMPING SUCKS

"It's fixing a problem you shouldn't have had in the first place. BAF wadding is the kiss of death to sound. In fact, all damping materials are frequency selective. When you look at absorption, there's none whatsoever at low frequencies, it peaks at about 800 Hz and then falls away. So it's better to design the enclosure not to have too many standing waves inside it."

ON THE BEST SPEAKER EVER MADE

"The Spondor BC1. Listen to a BC1 now and compare it with today's speakers; it's still better than 99.9 per cent of them. Of course it has limitations (bass, loudness). But just listen to the accuracy, the lack of coloration, the timing. Every designer has one great product in them and, for Spen Hughes, the BC1 was it."

ON THROWING THE BABY OUT WITH THE BATH WATER

"We're making cleaner and cleaner sounding speakers. We're engineering speakers that, in absolute terms, are more accurate. The frequency response is flatter, the tonal balance is better. We use better materials. It's easier to design technically superior products.

"But maybe we've lost something, too. If you listen to speakers from the 60s and 70s, they did have an ability to boogie that many modern products don't. They were coloured, they had problems, but there was something about them.

"It could be lack of complexity. Every time you add one more degree of complexity, you take away one degree of communication with the music. In searching for perfection we've added more and more layers of complication.

"The truth is that when you go to a live concert, you hear some very, very crude equipment – but it doesn't half work. You go to the average rock concert and you're hearing old JBLs, old Fenders and old Marshall amps. This is technology from the 50s, but it works. Every musician knows that if you want to make a good sound, you don't buy the latest whizz-bang technology."

ON THE REVOLUTION

"I hope it's coming. The loudspeakers we're working on at the moment are archaic. There's a huge need for a re-think. I think NXT has a bright future in many areas. Maybe it isn't going to become an audiophile speaker, but the tweeters can sound incredibly good; much nicer than any I've ever heard before. The limitations NXT has at the moment are the same ones electrostatics have: power handling limitations at low frequencies. The NXT system works by being modal. At very low frequencies instead of being modal, the panel has one single mode, it's just a piston. Just pure excursion, and then it falls to pieces.

"We're getting to a stage now where people can have seven channels of audio. Do they really want seven loudspeakers? We need to start being able to reproduce bass from small enclosures. We need to be able to truly control directivity so that we can use multichannel properly. We need to make good products cheaper.

"The trouble is that the basic technology is so basic, none of the really bright guys are interested coming into it. It's like the bicycle, we're just remaking the same thing with better materials and nicer engineering.

"Inevitably change is going to be driven by the large companies. Who else has the money?"

"EVERY TIME YOU ADD ONE MORE DEGREE OF COMPLEXITY, YOU TAKE AWAY ONE DEGREE OF COMMUNICATION."



Top: Marshall's Epos ES14 speaker designs.
Above: Robin 'Speakers' Marshall.

t

REVIEW DAN GEORGE

annoy's early days saw the company concentrating on PA systems, hence the term 'over the Tannoy'. Its speakers could even be found in circus tents in those days, but Tannoy is far from a circus act today - in fact, it's one of the biggest speaker exporters to Japan. As Tannoy enters its 75th year, it brings to the UK a product that will no doubt strengthen the brand as the audio industry embraces the latest developments of the digital era.

Until recently Tannoy's really serious engineering has gone into the Kingdom range (*HFC 213*), and for nearly five years now these mighty designs have been available almost solely in Japan, a market that loves big speakers, especially British ones. Kingdoms were originally introduced to meet the requirements of Tannoy's Japanese distributor, Teac, who requested a wide bandwidth speaker to fully utilise the potential of forthcoming high resolution audio formats, such as DVD-A and SACD. Tannoy responded to the wide bandwidth requirement by introducing supertweeters into the design. The demand for, and success of, the standalone Prestige Super Tweeter in Japan also inspired this integration. Although ostensibly beyond the audible range of human hearing (considered to be 20Hz-20kHz), supertweeters are used to resolve high frequency detail and 'lubricate' the dispersion of other frequencies in the range - well that's the theory!

The evolution of the Kingdom technology led to the new Dimension range, which consists of three floorstanders. The £5,000 TD10 reviewed here, sits in the middle, sided by a larger TD12 and smaller TD8. A centre channel and active sub are expected this year. The TD10's proportions (101.5x35.5x37cm) might have presented problems with unpacking but the boxes have been well designed so that they open like a fridge door. This also allows you to easily fit spikes into the fat, solid aluminium, conical feet.

Despite their 35kg weight the cabinets are easy to manoeuvre thanks to the big spiked feet, so long as your carpet is up to the abuse that is. They're made from birch ply, which is internally braced bass and reflex ported. A quick tap from the knuckles suggests the bracing is to a high standard. Tannoy has used offset angles in the TD10's enclosure to combat internal standing waves and resonance. You'll find the top of the cabinet slopes downward beneath the supertweeter, while the sides taper heavily backwards. The baffle is two-thirds covered with a very black, acoustically inert (and very tactile) velvet, which was implemented to avoid reflecting high frequency energy off the cabinet.

The hefty grilles continue the velvet theme and sport a polished aluminium surround, which is vertically strung with elastic cords. As is standard practice I left the grilles off for the majority of the listening. Perched right at the top of the cabinet is the polished alloy supertweeter, which is machined from a solid billet of aluminium and looks wonderful. I've even grown to like the vertical aluminium side rails which jarred somewhat to begin with.

Attention to detail is a bit of a theme with the TD10s it would seem. Round the back the neat and well-engineered speaker terminals are arranged in a star configuration, which though it hinders quick connection, allows the use of large diameter cables. A fifth grounding terminal means you can earth the cabinets to your amp, the theory being that you can effectively 'shield' the main driver chassis and supertweeter and stop the voice coils picking up RF interference. Foam bung-able twin bass ports also reside at the rear and some time was definitely needed to experiment with positioning to get the best bass performance.

The TD10 uses Tannoys' latest 25mm titanium supertweeter design, which, crossing over at 12kHz, is capable of reproducing frequencies up to 54kHz (-6 dB). The midband and treble information is handled by a 254mm dual concentric drive unit, which uses a paper composite cone, ▷

**"SUPERTWEETERS
'LUBRICATE' THE
DISPERSION
OF OTHER
FREQUENCIES IN
THE RANGE - WELL
THAT'S THE
THEORY!"**

ANOTHER DIMENSION

WHAT DO YOU GET WHEN YOU CROSS TANNOY'S OUTSTANDING KINGDOM SPEAKERS WITH SUPERTWEETER TECHNOLOGY? READ ON...

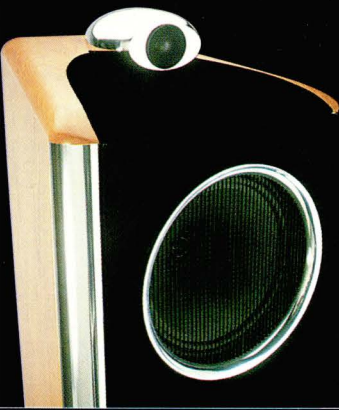
TANNOY TD10 LOUDSPEAKER HIGH PERFORMANCE



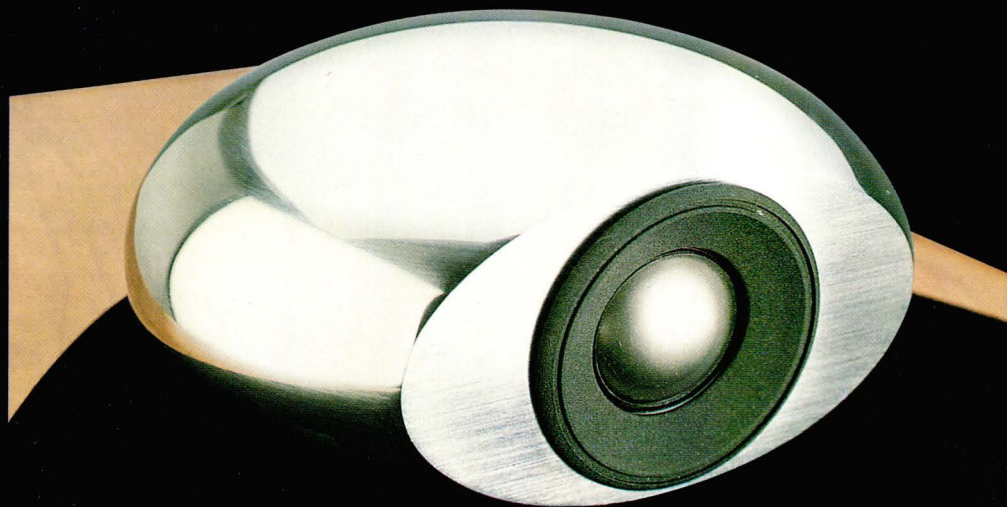
EDITOR'S CHOICE
HI-FI CHOICE
magazine
★

The TD10 with and without its unusually strung, velvet-covered grill.

HIGH PERFORMANCE TANNOY TD10 LOUDSPEAKER



Above: the black area is actually velvet for minimal cabinet reflection of the super-tweeter's output. Right: the device itself sits in a solid aluminium billet that is earthed to the fifth terminal (below) in order to reduce the effects of RF interference on voice coils.



◁ blended with a variety of fibres for the midrange and bass and a magnesium/aluminium alloy dome for treble. Dual concentric drivers are by nature time aligned and have the advantage of being a point source. On this occasion Tannoy decided to use paper, creating a stiff and light cone, which it predicted, would improve the midband and retain bass power.

Sensitivity is claimed to be a respectable 91dB, and the TD10s will present your amplifier with a nominal 6 Ohm load. To fully test the sonic potential of the TD10s we used both standard CD and DVD-Audio discs, using the Denon DVD3300.

SOUND QUALITY

The TD10s have a distinctly up front character when listened to after my B&W Matrix 801s. The balance is slightly forward and the Dimensions have tremendous impact; a word which almost summarises their whole style. The first thing that hits you is the immediacy and the attack of the music. Fortunately, it's done well and both the treble and midband are incredibly informative and transparent.

Detail and resolution are in abundance, with each layer of the music wonderfully separated yet with a harmonious coherence. There seems to be a lot of treble focus in the presentation, which may be down to the supertweeters. A lot of fine detail is resolved in complex material as a result of its fine low level resolution, a state of affairs that is shared by the midband, making percussion come alive and giving voices huge realism. At high volumes, this virtue coupled with the attacking presentation and slightly forward balance, can make some recordings fatiguing,

but careful positioning can ameliorate this as presumably would a bit more running it. But, there's no denying the TD10s skill in uncovering formerly unheard depth and detail, which is very impressive.

Bass is distinctly punchy, with good depth and enough rhythmic drive to keep great time. I was expecting greater extension and weight, but despite trying a variety of positions in the room this did not quite come through, yet the slam and impact was very good. All that performance from straight CD, so what of DVD-A? Well, take that ability to resolve detail and give it a detailed high resolution format and you've got a recipe for sonic success. The portrayal of strings on guitar was marvellous, to hear the plectrum at work and then be able to guess at its thickness was most impressive. Voices, especially female, have an angelic quality and fantastic solidity in a genuinely three-dimensional soundstage.

CONCLUSION

Tannoy has succeeded in producing a remarkable loudspeaker that entertains with its passion for resolving detail and information. Its ability to drive the music along with a wonderful sense of rhythm and drive only adds to its appeal. The design will fox you for a while, but I expect you'll grow to love it, as much as I did. They're clearly going to be sensitive to partnering electronics, and anything on the lively side of neutral should be avoided. However, the performance might just compel you to drive away from your dealer with a pair in the boot (if you own a van!).

£5,000 Tannoy ☎ 01236 420199

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REVIEW JASON KENEDY

ops, I did it again – let someone send me a high-end cartridge to review, that is, not listened to some dodgy pop music. Steady on! We all have our weaknesses and one of mine happens to be these ridiculously delicate devices that are designed to measure the minute variations in the form of a V-shaped groove that has been cut into a piece of lacquer and transferred to vinyl. It's highly encouraging that, in these software driven days, you can still buy precision-engineered needles with which to trace the grooves in your record collection. You certainly can't hook a moving coil cartridge up to the internet and download an upgrade. But with luck, when you've worn the precious stone at the tip of its cantilever out you'll be able to send it back to its manufacturer and have a master of the stylus art revive it for continued use.

Lyra has, after some 10 or so years, finally replaced its Clavis and Clavis DC models with the Helikon, a medium compliance moving coil design that sits in an aluminium body with the

when I review a cartridge I'm telling you what that cartridge sounds like in the context of specific ancillaries – changing those elements will always effect the outcome.

In this instance the ancillaries are an SME Model 20A turntable with Series V arm and Tom Evans' The Groove phono stage. The turntable and arm are pretty steady devices with a character that is extremely subdued. The phono stage is a resolution scourer that's yet to find any serious competition in my experience. It's also set up for a half millivolt output and high input impedance, which is what the Helikon prefers – the data suggesting 100 Ohms upwards.

Not only do you need to learn – or find someone who has learnt – the ancient art of cartridge set-up, for best results you need to specify that cartridge's output and preferred impedance to your phono stage designer. I suspect that DAC management is considerably more straightforward than this!

Under these circumstances and the small matter of a completely new listening room, the Helikon proved to be a rather good transducer for my black disc collection, in fact marvellous would seem a more appropriate term. It had the

“I COMPARED ITS BALANCE WITH MY CD PLAYER AND WAS PLEASED TO HEAR VERY LITTLE DISCREPANCY.”

bare minimum of protection from the elements. That bare minimum consisting of 'wash' paper which the instructions describe as “a lot more sturdy and lasting than it looks”. You are discouraged from removing this in no uncertain terms! If you have ever looked at the coils of an open-bodied MC cartridge under a microscope, you'll realise why this piece of paper has been employed – it's not a pretty sight.

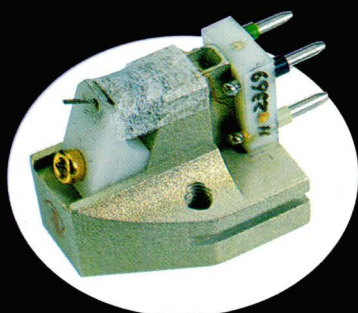
SOUND QUALITY

No pun intended, the sound of a cartridge is a bit like the sound of the digital-to-analogue converter chip in a CD player; highly dependent on the other components it works with. But you can't mix and match DACs, you get one along with the disc drive, filters, power supplies and output stages that the designer chooses to use. The cartridge alone can't do anything. It's reliant on a turntable, a tonearm and a phono stage, to equalise and amplify its minuscule output. And being a transducer (something that changes mechanical action into electrical signal, or vice versa like a loudspeaker) it is designed to be as sensitive as possible to its environment. So

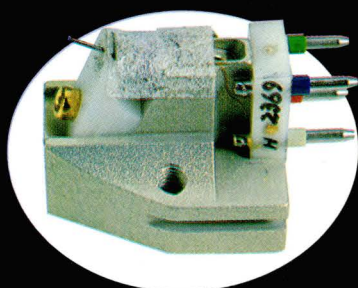
advantage of not following my usual (over twice the price) reference cartridge into the sonic arena but this was more than offset by the under-furnished room and hard-to-access record collection (note: must go to Ikea again!).

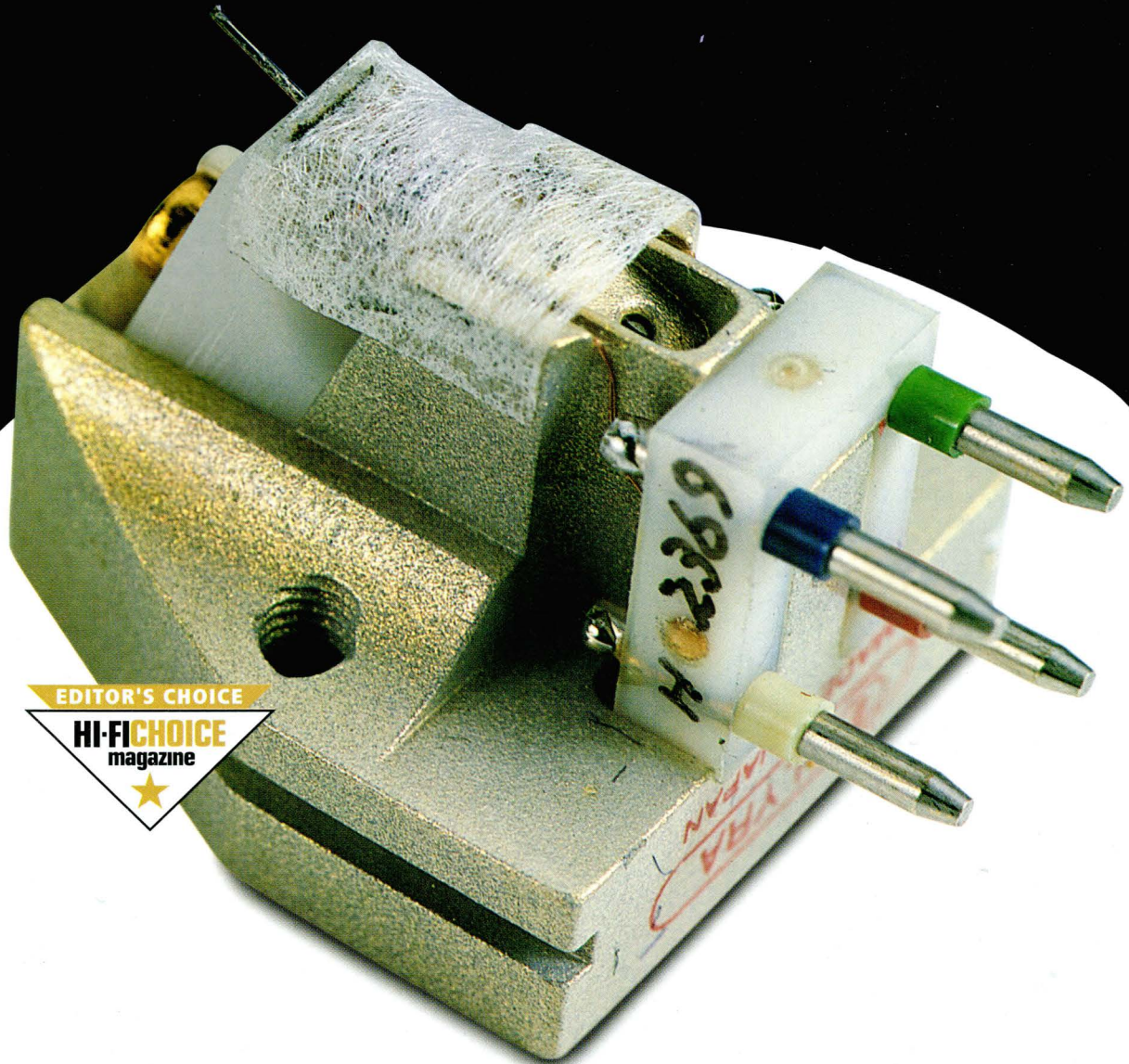
Being a brand new sample I left it running in various run-out grooves for a number of hours before use, but still wondered whether the lively balance that it produced might be down to a lack of run-in. As it persisted for the duration of the review I'm forced to assume that it probably does have a sparkling treble, though not, I hasten to add, a bright or abrasive one. Still, put on a live recording and you'll not find it lacking in ambience, a couple of fabulous example's being *Domino Theory* by Weather Report and The Grateful Dead's *Reckoning*, through which you are transported to the concert and the era.

Acoustic guitar was equally well resolved, John Fahey's *Let Go* was shining in the room, the strings ringing in utterly convincing fashion. The Helikon is not all about presence, however. I spent one session delving into its bass qualities with the aid of the Prodigy and Leftfield, and the



The Helikon is built with the minimum of conductive material, hence the synthetic front magnet carrier and output pin plate, the pins are rhodium plated for maximum hardness.





SILVERTONGUE

JAPANESE NEEDLE MEISTER LYRA HAS BUILT A NEW CLAVIS, THAT CARTRIDGE IS THE HELIKON, A GROOVE TRACER OF THE FIRST ORDER.

results were equally gratifying. Not only can it delve right down and get the floor joining in with the fun, but it does so without losing control of leading edges, so that timing remains on the money however many lines it has to reproduce. Nimble seems an apt term to describe it.

I compared its balance with my CD player and was pleased to hear very little discrepancy, save for some extra veiling and a slight loss of naturalness from the digital medium.

CONCLUSION

It's a lot to spend on a cartridge, and I wouldn't encourage it if you haven't spent at least as much on your turntable. But, that said, the Helikon is clearly in the Premier League and Lyra deserves to be congratulated. If you are after a romantic sound, look elsewhere, but if you want to extract nuance from the smallest variations in the groove, then the Helikon deserves your attention.

£1,095 Path Premier ☎ 01844 219000

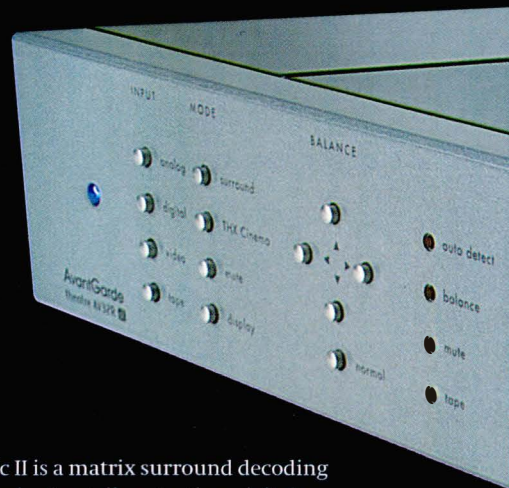
W

ith multichannel music now firmly on the agenda, and the hi-fi universe moving inexorably towards a new, multi-format age of high performance audio and video, people are rebuilding their systems with products like the TAG McLaren AV32R in the driving seat. The AV32R is

REVIEW **TIM BOWERN**

a preamp/processor, the link between your audio and A/V sources and the multiple channels of amplification that lie beyond. Like any preamp, it controls volume and source selection, but it also incorporates a number of multi-channel processing modes. Exactly which depends on specification.

Two basic versions are available. The straight 5.1-channel AV32R costs £2,299 and includes Dolby Digital, dts and Dolby Pro-Logic as standard, along with TAG McLaren's proprietary music-oriented TM Surround for stereo sources. For an additional £450 you can buy the fully loaded EX version – this caters for those who want to stretch to six and seven channel formats like THX Surround EX and dts-ES 6.1 Matrix. Processing is included, along with a new seven-channel version of TM Surround and the requisite additional output sockets.



Pro-Logic II is a matrix surround decoding format, derived not discrete, though it does have plenty of uses in a world now adjusted to hearing sounds in surround. Multichannel doesn't just apply to DVD – you can hear radio and TV broadcasts that way too. And while original Pro-Logic was strictly a video format, its successor has been engineered by US industry legend Jim Fosgate with music specifically in mind. Fosgate who did all the work prior to joining forces with Dolby has even built an all-valve DPL II processor because he wanted to get the best surround results from his record collection.

SOUND QUALITY

As DPL II is the primary thrust of this review, we'll start there. Two modes may be engaged:

"A SPOT OF PROGRESSIVE HOUSE SOUNDED ABSOLUTELY BLINDING - ALL-ABSORBING IN A WAY TWO SPEAKERS SIMPLY CAN'T ACHIEVE."



Above: Logic-controlled steering responds dynamically to changing music signals. Below: New processing modes give extra control over the position of the soundfield.



We've looked at the AV32R before, in conjunction with the DVD32R and CDT20R transport components. In both cases it emerged as a flexible and exceptionally transparent performer, so why do it again? Because of TAG McLaren's latest optional extra. The AV32R has become the first product in the UK to incorporate Dolby Pro-Logic II, available as an £80 upgrade to all users.

THE MATRIX

As surprise comebacks go, this one would rank alongside a reformation of The Beatles – Lennon, Sutcliffe et al. Even home cinema aficionados had assumed Dolby Pro-Logic was old hat, a surround sound relic of an analogue age long since superseded by the delights of Dolby Digital and dts. But no. Pro-Logic has hit back in MkII form.

For a more detailed explanation of how Pro-Logic II works, check the box on the opposite page. Basically it's surround sound processing that can derive five full-bandwidth channels from any stereo source, be it analogue or digital. Other surround sound formats can supply 5.1 (or more) discrete channels, but the source material has to be encoded that way in the first place.

DPL II Music and DPLII Movie, both tailored to their particular tasks. Original Pro-Logic was dire with music but DPL II creates a well-balanced, full-range soundfield with relatively subtle rear information and a smooth spread across the front three speakers.

Dolby has published a list of demo recommendations stretching from The Who to Madonna, and also makes reference to "almost any classical or jazz recording". It does indeed work OK with these music types – the effect is engulfing, but imaging and instrumental character become more vague. Personally, I found it most at home with something electronic and artificial, where there's no natural reference point. A spot of progressive house sounded absolutely blinding – all-absorbing in a way two speakers simply can't achieve.

If you prefer to hear stereo recordings the way they were intended, the AV32R's Direct mode bypasses all the processing so it acts like an ordinary preamp. This is another area where it scores heavily – it might miss some of the grip of a top-notch, high end preamp but it still acts like a thoroughbred, amazingly transparent for a



LOGICAL PROGRESSION

WITH THE AID OF TAG MCLAREN'S AV32R PROCESSOR, TIM BOWERN INVESTIGATES WHETHER PRO-LOGIC II IS A SURROUND FORMAT FOR THE MUSIC LOVER.

product of such complexity. Few processors can match it and none at the price come close.

It's equally at home with non-music media. Dolby Digital and dts film soundtracks whizz precisely around the room, and there's plenty of detail and attack to ensure the blood is properly stirred. What's more, with DPL II engaged, TV movies will never sound the same again.

CONCLUSION

One could argue that Dolby Pro-Logic II is a touch unnecessary here given the existence of the operationally similar TM Surround format, but as TAG got there first it makes for an impressive boast. DPL II aside, the AV32R is a quite superb multi-channel product. Music is the great leveller, rather than exaggerated film soundtracks, and that proves this box is a star.

From £2,299, Dolby Pro-Logic II upgrade £80 extra
TAG McLaren ☎ 0800 783 8007

DOLBY PRO LOGIC II – HOW IT WORKS

With new, high-end multi-channel formats like THX EX and DTS ES grabbing all the home cinema headlines, it's easy to forget the impact that Dolby Pro-Logic had when it was introduced in 1987. By employing the principles of matrix decoding, DPL would compare the relative level and phase of signals in a two-channel input and 'steer' in-phase sounds towards a derived centre channel while ushering anti-phase components towards a monophonic surround channel.

Nowadays, analogue Pro-Logic has been superseded by digital surround carriers that employ data-reduction techniques to deliver multiple and entirely discrete channels of sound and movie effects. Dolby Pro-Logic II still uses matrix stages to derive its centre and surround channels, but the technique employed is very much more sophisticated and enables full-bandwidth 'stereo' surrounds with far superior separation between rear, centre and front channels. Closer, in fact, to the performance of Dolby Digital.

A new logic-controlled steering process responds dynamically to the changing content of music or movie signals, so it'll handle music, dialogue and fast-moving special effects without the confusion, crosstalk and distortion suffered by the old Pro-Logic. New processing modes give extra control over the front-to-back position of the soundfield (Dimension Control), the breadth of imaging (Centre Width Control) and the extent of any 'wraparound' effect between front and surround channels (Panorama Mode). In short, Dolby Pro-Logic II is a new entry-level decoder format that takes advantage of all stereo delivery formats.

CONNECTIONS

AUDIO: 6 x analogue inputs (inc. 1 x record loop), 5 x digital inputs, 2 x digital outputs, 7.1 channel analogue output
VIDEO: 4 x composite inputs, 4 x S-Video inputs, 2 x composite outputs, 2 x S-Video outputs

A 5.1-channel analogue audio input, necessary for DVD-Audio/multi-channel SACD playback, is not currently fitted

FORUM LETTERS

LETTER OF THE MONTH WINS A TDK GOODIE BAG

Send us your views of the magazine
and the world of hi-fi:

Forum: Letters

Hi-Fi Choice

99 Baker Street

London W1U 6FP

dan.george@futurenet.co.uk

**"IS IT LOGICAL TO ASSUME
THAT THE COPY OF A DCC DISC
WILL ONLY BE AS GOOD AS THE
STANDARD RELEASE?"**

TIM GROVES – BURNING ISSUE

**"AS FAR AS I'M CONCERNED,
DOWNLOADED MUSIC IS PAY-
BACK FOR ALL THE MONEY I'VE
BEEN OVERCHARGED ON CDs."**

J SAYERS – EASY SKANKING

**"I'VE ALWAYS ASSOCIATED
DEUTSCHE GRAMMOPHON
PRODUCTS WITH QUALITY."**

MARTIN WOOD – DEUTSCHE GRAMMOPHON GRIPE



LETTER OF THE MONTH

EASY SKANKING

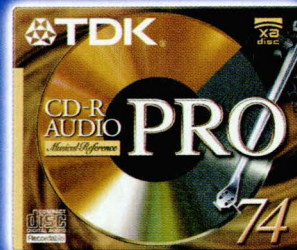
Strange, isn't it, how the leviathan that is the music industry can so swiftly mobilise to bring an end to free music on the internet from the likes of Napster, yet finds it so difficult to getting around to bringing down the cost of CDs in this country to match American and European prices! Personally I've never felt any pangs of guilt when I've downloaded music. As far as I'm concerned I see it as payback for all the money I've been overcharged on CDs for the past 15 years.
J Sayers, via e-mail.

P.S. How much money did Elton John spend on flowers?

The Editor replies... The danger with copying your music off the net, or anywhere else for that matter, is that it reduces the record industry's ability to experiment with less commercial material and could eventually lead to only populist music being available on a decent medium. The thought of only being able to get unusual music on MP3 is pretty terrifying.

If you don't want to be overcharged for CDs shop around. High street chains are as much to blame for high prices as record companies.

Audio CD-R Range





DEUTSCHE GRAMMOPHON DENIED

The problem – I was so impressed with your glowing report of the merits of the Toshiba SD900E DVD-A player that I purchased the player the following day. However, when I play any of my Deutsche Grammophon CDs the player makes a mechanical noise similar to that created by a cheap CD-ROM on a PC when a CD has been misaligned on the tray.

This noise continues as the CD is being played. On classical music this can be disconcerting during the quiet passages. I was so concerned that it might be causing damage to the player I contacted Toshiba. They suggested I take some of the discs to the shop where I purchased the player and see if the fault occurred on any other player. Indeed the same fault occurred on the other players we tried in the shop. I must stipulate that any other label works fine and when I made a copy from one of the DG labels, the copy was fine. I am very reluctant to ask for a refund since it is a stunning product and plays any other than a DG label well.

The solution – I have found the cause of the problem. It appears that all the DG CDs I own have the 15mm diameter centre hole positioned approximately 0.2mm off centre. The out-of-balance force generated by this small eccentricity is sufficient to excite the sensitive mechanism on the SD900E into resonance. I have attached a 'faulty' CD onto a mandrel, and reduced the (overall) 120mm diameter just sufficiently, so that it becomes concentric with the bore. When this 'faulty' CD is played in the Toshiba SD900E DVD-A/V player, it no longer creates any unwanted noises. I was surprised to discover the manufacturing errors on the Deutsche Grammophon CDs, since I have always associated their product with quality.

Martin Wood, via e-mail

BURNING ISSUE

Thanks for the much-needed review on blank CDs – it's comforting to know that I already use the TDK RXGs. As a Traxdata CD-R user myself, I copy quite a lot from my Linn Genki using a van den Hul

digital cable. What I would like to know I could probably work out for myself, but I would be interested in your comments. If I copy using the above equipment, will HDCDs be copied with the HDCD encoding intact? And also if I

Toshiba DVD-A player in fussy about CD disc precision shocker!

copy, say, from a DCC or Mobile Fidelity Gold disc onto a blank CD, will I still have the same quality on the copy or is it more logical to assume that the copy of a DCC disc will only be as good as the standard release? I hope I am making sense.

Tim Groves, via e-mail

The Technical Editor replies... Early CD recorders included sample-rate conversion to accommodate 32kHz (DBS) and 48kHz (DAT) digital sources and ensure compatibility with CD's 44.1kHz format. Nevertheless, despite the vast majority of copies originating from a CD source in the first place, these recorders still performed a 1:1 sample-rate conversion. This unnecessary step also scrambled any form of encoding on the CD, be that HDCD, dts or Dolby Digital. Sample-rate conversion also has the effect of increasing digital jitter and, following a campaign in HFC (see issue 174), was gradually phased-out by most manufacturers. As a result, most contemporary CD-R decks (from Pioneer, Marantz and Philips) will now bypass sample-rate conversion at 44.1kHz and provide a truly transparent copy from HDCD, DD or dts-encoded source material.

YOU GUYS

I admire *Hi-Fi Choice's* opinions because you guys use a variety of music genres and a variety of amplifiers when, for instance, you test a CD player, as CD players can sound good with one amplifier yet not as good with another. Still, I'm confused as to why the Arcam CD72 was so highly regarded by your magazine in your first review and did relatively badly in your second review when compared to other CD players. Did you guys give your opinion based on the fact that it was compared to CD players costing many times more? Many people have discussed this on your forum.

Jerry Zapantis, via e-mail

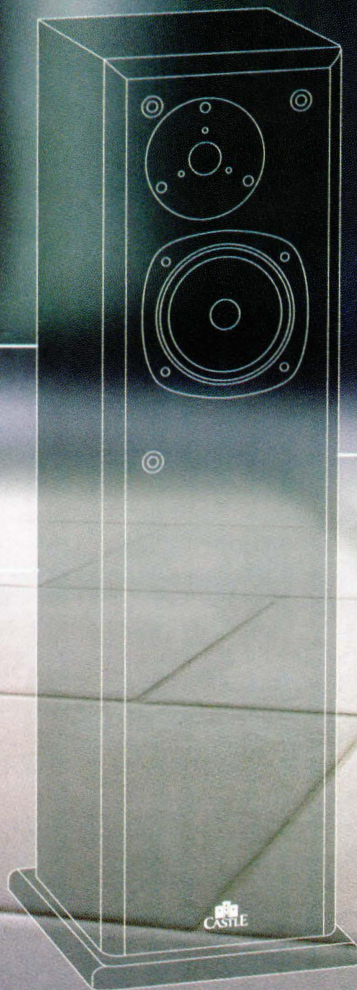
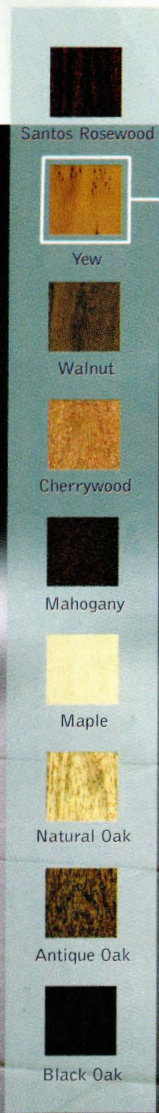
The Editor replies... There's always a danger that *First Impressions* reviews will end up being at odds with *Bench* and *Group* test reviews when the same product appears in both. The explanation lies in the way each test is done. *First Impressions*, as the name implies, are a snapshot of a product usually with only one of its peers available for reference. *Group* and *Bench* tests are much more comparative, there are usually half a dozen or so alternatives at a similar price, and therefore it's possible to arrive at a definitive rating for the component. The Arcam CD72 is not fundamentally a bad CD player, it's clearly capable of entertaining results, it's just that by the standards of its peers it doesn't give you quite as much fidelity for your buck.

Letters Page Sponsored by TDK

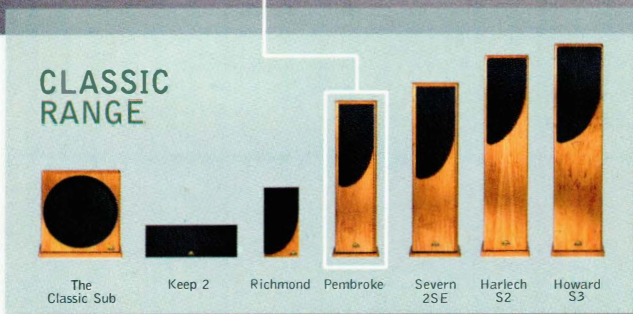


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COMPETITION RESULTS

Thanks to everyone who entered our most recent online competition to win a year's journey on the good ship *Hi-Fi Choice*. Congrats then to Jane Wells, Michael Scoates, Paul Vincent, Richard MacNeil, Diana Vigrass and Irene Hunter, who all receive a year's free subscription. Keep checking for competitions at www.hifichoice.co.uk/competition.asp

SYSTEM SUGGESTIONS

In an attempt to understand what crazy, cracking or cautious systems our readers are putting together, we'd like our online readers to post up their dream system suggestions and explain why they're the business. We'll publish the most inspiring on this very page. Just register at www.delphi.com/hifichoice and click on the 'System Suggestions' box.

POLL NEWS

Our latest online poll asked users to select which music awards influence them. The majority of voters, with 54% of over 600 votes, actually decided that they were *all* irrelevant. Of the awards noted, the Brits won through with 36%, followed by Grammys (6%), MTV awards (3%) and the Brats (1%).

LIVE FEEDBACK

THIS MONTH'S HOT TOPICS ON THE CHOICE WEB FORUM

There have been creative forces at play on the forum. One member, a musician, sought advice on how to digitally copy his demo CDs, concerned that a computer based CD-R wouldn't render them perfectly. "I've personally never perceived differences between originals and copies," reassured one user. Another referred to our very own Paul Miller's blank media tests in which "one blank CD-R was subjectively found to sound better than the original". More inspiration has come from several members' wish to start up some 'live' hi-fi chat. If you're frustrated by those old software delays you can get some present-tense pondering by

clicking on 'Chat' at the top left hand side of the forum page and start up a new chatroom dedicated to the hi-fi topic of your choice.

The following are some of the latest forum conversations. For these and dozens of others log on to www.hifichoice.co.uk and click on the forum to join the chat...

YOUR MP3 FUTURE: Will you be collecting your music from the Internet in the near future?

FLOORSTANDERS vs. SMALL SPEAKERS: Which provide the best sound?

MULTICHANNEL MAYHEM: Should we stick to two channels and leave multichannel to the home cinema arena?



WEBSITE HI-FIVE

IF LAST MONTH'S VINYL-FEST GOT YOU GOING, CHECK THESE SITES OUT...

www.dancetarium.com

Huge US site dedicated to all things dance music. Take the time to virtually flick through their selection of vinyl beats or you can purchase turntables, cartridges and needles with which to spin your collection.

www.firstvinyl.co.uk

A brand new vinyl label? In 2001? If you doubted the vinyl revival then this will draw you into the new groove – 5,000 titles freshly re-released from the annals of music history.

www.hifiheaven.com/vinyl-heaven.htm

Great reference site which acts as a portal to dozens of other specialist vinyl sites. Use them as a signpost to anything from vinyl cleaning advice to dealer details.

www.vinytap.co.uk

An online mail order store with heaps of records and a simple, fast and efficient search facility. Also deals in CDs, T-shirts, cassettes, videos, tour programmes and memorabilia.

www.reckless.co.uk

This London-based record dealer's site possesses a huge database of rare vinyl stock, as well as other formats and store's details (the shop in *High Fidelity* is rumoured to have been based on its Islington branch).

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CD & SPEAKERS

CONTROLLED AND TIGHT

I want to upgrade my CD player and speakers to match my Audiolab 8000A amplifier. I've got a budget of around £500 for each component and I've already done some listening, but so far only the Roksan Kandy comes close on the CD side, and I haven't a clue about the speakers. I mainly listen to indie rock and dance, and I want a sound that's controlled and tight with a deep bass.

What would you suggest?

Michael Kalinowski, via e-mail

At £500, our Best Buy CD player is the Marantz CD6000 KI Signature (pictured), a sophisticated beast with no small measure of punch to boot. However, given your music taste, you may find the Rotel RCD-971 a more lively performer.

On the speaker side, Dynaudio's Audience 42 would ensure a tight, punchy end result, with plenty of weight and drive to suit your music. Alternatively the Epos M12 also reviewed this month would be a good choice. And finally, don't forget the importance of good stands and cables.

BUDGET SPEAKERS

WHAT GOES WITH WHAT?

I want to buy Denon's D-M30 (pictured) but I can't decide which speakers to buy with it. Should I go for the matching SC-M50 speakers or would Mission's m71s be better, or even the m72 or m73? In general, how can I tell which speakers go with what?

Pete Tong, via e-mail

When matching speakers to a relatively low powered system like the Denon it's vital to ensure they're reasonably easy to drive (see our lab reports). Beyond that you need to consider the sound of your system and the overall effect you want to achieve. Do you want an up front sort of sound or would you prefer something more laid-back?

Denon's SC-M50 speakers are made by Mission and make a good visual and sonic match for the D-M30 - detailed and punchy without going over the top. However, if you can stretch to a different pair of speakers like the Mission branded models you mention you could create a sound that's broader, deeper and more detailed still.



TURNTABLE

PITCH SHIFTER

I'm not a DJ, but I'd like to buy a turntable with pitch adjustment like the Technics SL1200. Thing is, my budget's only £200-£250 and I'm concerned that the sound quality of DJ-oriented decks won't be up to scratch.

Alex Feather, Huddersfield

You're right to be wary. The Technics is the DJ's favourite thanks to its robust build and facilities. However, its sound does not compare favourably with hi-fi decks at the same price. There are very few good quality pitch-controlable turntables still made, we can only think of one, the SME Model 20 which is nearly five grand with arm.

So ask yourself, do you really need pitch control? A turntable like Rega's P2 (pictured) will give you much more musical satisfaction if all you want to do is listen to records at 33.33 rpm.

EQUIPMENT SUPPORT

DO THEY MAKE A DIFFERENCE?

I'm looking for a storage rack for my Marantz CD player and recorder, and NAD amp and turntable. There's a huge choice – do they really make much difference? I like the look of Soundstyle's XS105 (pictured) but you don't seem to rate its smaller brother.

Kevin Burke, via e-mail

Specialist equipment supports do make a difference, some more than others. At one extreme we have Townshend's air suspended Seismic stands, at the other Mana's many layers of steel, wood and glass. In between are less drastic solutions to isolating your kit from the energy speakers create.

Soundstyle's 'XS' range perhaps isn't the best option sonically, but it does a solid job and it's certainly visually attractive. You should also check out racks from Atacama, Custom Design and Optimum, and note that our next equipment support group test is scheduled for the August issue.



SPEAKERS

DATELINE

I own a Marantz CD6000 KI Signature CD player and PM6010 KI amp, and I want a pair of speakers to go with it. I like the B&W DM602 S2 but is there a more ideal partner?

Alex Fui, Malaysia

Tannoy's mX range of speakers tends to match with Marantz's 'Range Series' products, like the components you own, very well. Consider the floorstanding mX3 (pictured), along with Dynaudio's stand-mounting Audience 42. Then again, the B&W you've already looked at is an excellent speaker and if your auditioning continues to point you in that direction, then go for it.



CLASSIC KIT

TUBE REVAMP

I own a 30 year old Quad II amp and would like to change the transformers as well as one or two other parts. Does Quad have a Website?

Ang Kwok Ann, Singapore

You'll find Quad's Website at www.quad-hifi.co.uk. Your best bet is to contact Quad's local distributor, Electrades Inter, on Singapore 744 2306. Alternatively, you can e-mail Quad's Robert Flain at info@quad-hifi.co.uk.

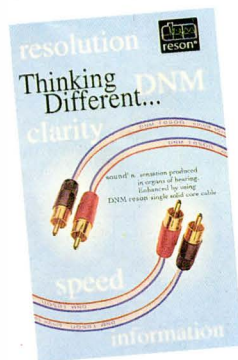
CABLE

GET CONNECTED

I'm looking for a pair of interconnects to go with my Arcam Alpha CD player, Pioneer A-400X amp and Mission 751 Freedom speakers. My speaker cabling is DNM Reson.

GM Finnerty, Lancashire

For a lively and rhythmic sound, and cabling consistency throughout your system, why not try DNM's Reson interconnect? Alternatively, if you want to encourage a neutral and perhaps more laid-back type of sound consider van den Hul PB5 or Kimber PBJ cable.



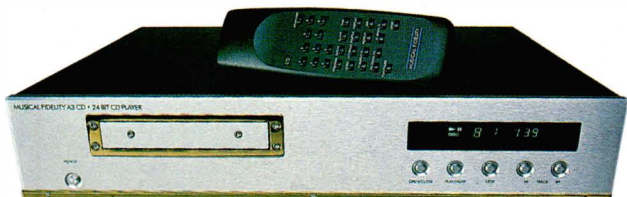
SYSTEM

COINCIDENCE

I want to buy a complete system – CD, amp and speakers – and I'm considering partnering Musical Fidelity's A3 CD (pictured) with the same company's A3 pre/power amp combo and a pair of PMC FB1 speakers. However, the Musical Fidelity system pairing in your December issue didn't fare too well and that's put me off a bit. What do you think?

Michael O'Connor, Ireland

You're right, the Musical Fidelity A3 CD and amp didn't do quite as well as combinations from the likes of Roksan and Sugden. However, the piece did conclude that the A3 CD is a stunner, as did our individual review of that product, so you can buy with confidence. The A3 pre/power combination you're considering is likely a stronger amp, and it has the potential to form an exciting partnership with the FB1 speakers. Alternatively consider the pairings that did well in that test where the PMCs were used for reference.



AMPLIFIER

DO SPECS MATTER?

I'm buying a Sony SCD-XB940 SACD player (pictured) and now I need a new amp. I've looked at the specifications of British designs – power and frequency response – and I'm disappointed. My dealer says these specifications don't matter. Is he right?

Amanda Hugankis, via e-mail

In context, specifications such as these do actually matter. For example, wide frequency response and low distortion would suggest a good sound, and some speakers need an amp of reasonable power to drive them properly.

But you cannot pinpoint sound simply by looking at figures, and so your dealer has a good point: when you're looking for new kit, listening is the most important part of the decision making process. See the Directory (page 104) for our amplifier recommendations.



FB1



Stars

HI-FI CHOICE	SOUND	★★★★★
BEST BUY	BUILD	★★★★★
HI-FI CHOICE	VALUE	★★★★★
EDITOR'S CHOICE	PRICE	£1,275.00



PMC

01707 393002
www.bryston.ca/PMC
sales@promonitor.co.uk

Ashford (Kent)	Soundcraft HiFi	01233 624441
Aylesbury	Northwood Audio	01296 428790
Birmingham	Griffin Audio	0121 622 2230
Bournemouth	Suttons HiFi	01202 555512
Brighton	The Powerplant	01273 775978
Bristol	Radfords	0117 944 1010
Chellenham	Audio T	01242 583960
Chelmsford	Rayleigh HiFi	01245 265245
Chester	Audio Excellence	01244 345576
Dunstable	Technosound	01582 663297
East Grinstead	Audio Designs	01342 314569
Edinburgh	Loud & Clear	0141 221 0221
Glasgow	Stereo Stereo	0141 248 4079
Enfield	Audio T	020 8367 3132
Epsom	Audio T	01372 748888
Guildford	PJ HiFi	01483 504801
Hitchin	David Orton	01462 452248
Hull	The Audio Room	01482 891375
High Wycombe	Audio T	01494 558585
Ipswich	Signals	01473 622866
Kingston	Infidelity	020 8943 3530
Lakeside	Rayleigh HiFi	01708 680551
Leeds	Image Audio	0113 278 9374
Leicester	Leicester HiFi	0116 253 9753
London (W1)	The Cornflake Shop	020 7631 0472
London (NW)	Audio T	020 7794 7848
London (SE)	Billy Vee	020 8318 5755
London (SW)	Auditorium	020 7384 3030
London (SW)	Oranges & Lemons	020 7924 2040
London (SW)	SMC	020 7819 1700
London (W)	Thomas Heinitz	020 7229 2077
Margate	LMD Audio	01843 220092
Newcastle Upon Tyne	Lintone Audio	0191 477 4167
Milton Keynes	Technosound	01908 604949
Nottingham	Nottingham HiFi	0115 924 8320
Norwich	Basically Sound	01508 570829
Oxford	Audio T	01865 765961
Rayleigh	Rayleigh HiFi	01268 779762
Sheffield	Moorgate Acoustics	0114 275 6048
Southampton	Audio T	023 8025 2827
Southend	Rayleigh HiFi	01702 435255
St Albans	Radlett Audio	01727 855577
Swansea	Audio Excellence	01792 474608
Taunton	Mike Manning	01823 326688
Tunbridge Wells	Audio T	01892 525666
Worthing	Phase 3	01903 245577
Worcester	Seven Oaks HiFi	01905 612929
Yeovil	Mike Manning	01935 479361

the Monitor Audio Bronze Series



What Hi-Fi
Monitor Audio Bronze 2
'Beautiful build and finish with both power and finesse. Plenty of detail and bags of bass, the Monitor Audios put the music first. A great buy.'
Verdict ★★★★★

HiFi Choice
Monitor Audio Bronze 2 'Best Buy'
'A real corker, which looks good and combines solid material value for money with a fine all round sonic performance.'

MONITOR AUDIO

As close as it gets

24 Brook Road, Rayleigh SS6 7XL
Tel: 01268 740580 Fax: 01268 740589
email: info@monitoraudio.co.uk
web: www.monitoraudio.co.uk

visit our web site for details of your nearest dealer

Oxygen Free Conversion

JIMMY TELLS THE TALE OF THE JOURNEY ALONG HIS VERY OWN ROAD TO A WIRY DAMASCUS...

The growth of the specialist cables market is one of the strangest phenomena in hi-fi. 25 years ago there was no such thing as specialist loudspeaker wires or interconnects; you just used whatever was to hand, only taking care to ensure adequate thickness for speaker cables and putting screened leads in situations where hum pick-up was possible. Beyond that, all cables were the same...

Back in the early 70s, I (like everyone else) connected my speakers and amplifier using thin bell wire. Nevertheless, I remember wondering if a thicker heavier gauge speaker cable might improve the sound – lower resistance increasing amplifier damping factor perhaps. So, I tried it, substituting beefy ‘twin and earth’ solid core mains cable in place of my bell wire.

The result? Diddly squat. Nothing. There seemed to be no difference whatsoever! Then Reality kicked in. Of course there was no difference – how could there be? A cable’s a cable, right? What was I thinking? At that point I sort of lost interest in cables as an avenue worth exploring. Which just goes to show how wrong you can be...

Sometimes I think back to those early trials, trying to figure out why so little change was apparent. Perhaps there was a difference and I just didn’t hear it. Possible. But I don’t think so. It’s almost as though equipment and systems were much less sensitive to cables then – maybe because the mains environment was ‘cleaner’, less plagued by RF nasties.

In my view, ‘cable sound’ has as much to do with the way such RF disturbances are handled, as how the signal itself is carried. After all, however wonderful a conduit your super-cable is, the signal still starts and ends its journey on a printed circuit track. If the only benefit of special cables is minimising loss through purity, surely printed circuit tracks and plug-socket interfaces will erode any gains obtained?

Nowadays, cables are big business. Choosing good cables is an essential part of the fine-tuning process your hi-fi system has to go through to sound at its best. And

not just speaker cables and interconnects, mains cables too. Of course there’s hype involved. But I believe specialist cables have stayed the course because most people find there are real differences.

For example, I’ve several sceptical friends who initially bought one or two specialist mains cables to test the water (Kimber Power Kords). They subsequently went right through their systems replacing every power cable with Power Kords. Why? Because the difference was worthwhile. Agreed, it was people like me that got them interested. But after that, the product did all the talking.

So – what makes the perfect cable? What are we looking for? Something that spices up the sound, or something that neither adds nor subtracts? If it’s the latter, how do you gauge true neutrality? It’s a daunting task. The range of cables offered is huge. Confused? You will be. Thick, thin, solid, stranded, spaced, twisted, braided, plaited, screened, unscreened. And that’s just the packaging...

Next, choose your conductor: copper, silver, silver plated copper, rhodium, carbon fibre. Then select materials, natural or synthetic, for insulation purposes. The permutations are almost endless. The wide variation between cable types indicates fundamental conceptual disagreements between designers. Given such disparity, who has actually got it right?

Actually, it doesn’t work like that. Cables must be evaluated in context. What works in one situation won’t necessarily work in another. Me? I listen for clarity, separation; a sense of the music being focussed and crisply defined. To this end I’ve settled on Kimber interconnects and mains cables, with Goertz for the loudspeakers.

This combination works for me. It delivers the clarity and naturalness required for classical music, while having the sharpness, detail, and drive important for rock and jazz. Moreover, I believe there’s good scientific rationale behind the design of these cables. And who knows – had such cables been around in the 70s when I did my original tests, perhaps the improvement would’ve been huge.

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



“CHOOSING GOOD CABLES IS AN ESSENTIAL PART OF THE FINE-TUNING PROCESS YOUR SYSTEM HAS TO GO THROUGH TO SOUND ITS BEST.”



LOUDSPEAKERS

PAUL MESSENGER (EARS) AND PAUL MILLER (LAB) CHECK OUT A DOZEN PAIRS OF THE LATEST SUB-£500 LOUDSPEAKERS.

A dozen pairs of loudspeakers costing £500 or less didn't sound too daunting a load for the carriers or yours truly. But I was a little shocked to find that two thirds of the total – eight in all – were floorstanders, with all that implies in terms of bulk, weight and perceived value for money.

It's a fashion thing of course. Slim floorstanders seem to be the people's choice right now, largely because they look more 'all of a piece' than the stand-mounts, even though, in a number of cases a good part of the box volume merely acts as a stand.

Taking an overview of the different sizes, the tiny two litre NHT is a special case – the smallest here by some margin. The Dynaudio is the only traditional 'miniature' here, while the Epos is just a little larger in both main driver diameter and box size.

Next step up come the two-way (dual drive unit) designs based on nominal 6.5-inch (165mm) frame main drivers, loaded by ported enclosures around 15-25 litres in size. Six models – half of the total test group – follow this configuration, which is very much the stereotype budget loudspeaker. It has been this way for a great many years: 8-inch (203mm) frame main drivers were common back in the 1970s, but are hardly ever encountered today, probably because everyone wants slim looking speakers. Among this particular half dozen, the floorstanders outnumber the stand-mounts five to one, probably the reverse of the situation 10 years ago. But the difference is largely cosmetic – these floorstanders rarely use the whole volume of the box acoustically, usually blanking off the lower section so that they're effectively stand-mount speakers with integral stands.

The final three in our group are what we call 'two-and-a-half ways'. These are essentially two-way speakers but with an extra driver to add some more welly at the bottom end. You need good driver area to do the bass thing, but small drivers are better at integrating with the tweeter at the top of the midband. The two-and-a-half way is therefore a clever attempt to get the best of both worlds, while avoiding the crossover network complexities of a full three-way design.

ON TEST

Acoustic Energy Aegis 3 £349.99
 Audio Note AZ-One £449.99
 AR Status S20 £160.00
 Dynaudio Audience 42 £400.00
 Epos M12 £429.99
 Infinity Alpha 30 £300.00
 KEF Q35.2 £350.00
 Mission m73 £200.00
 Monitor Audio Bronze 3 £270.00
 NHT Super Zero £200.00
 Tannoy mX4 £350.00
 Wharfedale Pacific Pi40 £500.00

OTHER EQUIPMENT USED

Linn LP12 turntable
 Naim AR0 tonearm
 Linn Arkiv B cartridge
 Dynavector XV-1 cartridge
 Naim CDS II CD player
 Naim NATO1 tuner
 Naim NAC52 preamp
 Naim NAP500 power amp
 Naim NACA5 speaker cables
 Kudos S100 speaker stands

THE LISTENING PANEL

Dan George (*Hi-Fi Choice*)
 Danny Haikin (*B&W*)
 Guy Sergeant (*AGI*)

MUSIC USED DURING TESTS

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

ACOUSTIC ENERGY AEGIS THREE

SOUND ★★☆☆☆☆

VALUE ★★☆☆☆☆

£349.99

CONTACT 01285 654432

www.acoustic-energy.co.uk

GUARANTEE 5 years

Acoustic Energy's Aegis Three has already enjoyed two bites of the *Hi-Fi Choice* cherry, first as two elements in a five-channel surround sound system (*HFC 198*), then subsequently as one of our short First Impressions reviews (*HFC 200*). This, however, is the first time it's been subjected to the full rigour of our Bench Test regime.

A compact 'two-and-a-half-way' floorstander, it uses the same main and treble drivers as the stand-mount two-way Aegis One (Recommended, *HFC 187*), underpinned by an extra, and rather larger, bass-only driver. It's an arrangement that makes good sense, as the smaller (5.25-inch frame, metal cone) bass/mid driver promises better integration with the tweeter through the crossover region, while the larger (6.5-inch frame, paper cone) bass driver provides the greater air-moving capabilities needed at low frequencies. Consider the fact that both cone drivers operate in their own reflex-ported enclosures, so the two ports will make their own further contributions, and it all adds up to a complex amalgam of sources with various phase relationships

"IT HAS A SOLID, POWERFUL BASS, A GOOD DYNAMIC RANGE, AND AN OPEN AND CLEAR MIDBAND."



through the bass region. The one disadvantage is that the small main driver, which operates full range, will be a limiting factor on power handling and loudness capability, especially with music that's relatively heavy on the bass.

Unusually, the Aegis Three comes already fitted with mass-loading material, contained within the lowest box cavity. It's also supplied with a plinth and decent 8mm spikes, to improve the stability and further enhance the appearance. When I checked the Aegis Three's in-room balance a year ago, it gave an averaged trace of unusual smoothness and extension when sited clear of walls. I checked these new samples and was disappointed to find that the bass alignment was significantly different, with less ultimate extension and some midbass excess. A measure of wall reinforcement may well be beneficial with current production.

SOUND QUALITY

Analysing the different elements in the Aegis Three's sound quality leads one to the conclusion that it's a pretty good speaker. It has a solid, powerful bass with plenty of weight, a good overall dynamic range, and an open and clear, well-voiced midband. The trouble is, the whole doesn't quite seem to match up to the sum of the parts on this occasion.

The panel rating was slightly above average, which is respectable enough, reflecting the fine midband coherence, but the sound is also a little thickened and ponderous – male speech has a slightly 'chesty' quality, and dance beats don't really capture the tension and drama the musicians are trying to create.

CONCLUSION

This isn't the same Aegis Three as the one I endorsed so enthusiastically early last year. The bass alignment of the current samples is sufficiently different from the original examples to upset what was previously a decidedly superior balance. In current form the Aegis Three is competent rather than exceptional.



The Aegis Three comes ready mass-loaded, improving sound quality from the moment you press play.

THE LAB REPORT

THE AEGIS THREE IS REALLY TWO loudspeakers in one: these being a two-way Aegis One perched atop a subwoofer that works up to around 350Hz where, coincidentally, there's a cone misterrmination that shows up on nearfield, impedance and phase plots. Like most Acoustic Energy speakers we've measured, its axial response is smooth but gently declining from 200Hz-8kHz before the soft-dome treble unit really gets into its stride and provides a little extra bite. Off-axis, the response becomes pro-

gressively more shut-in. Acoustic Energy has also underestimated the sensitivity of the Aegis Three which is capable of 90.2dB/2.83V/1m (88dB is claimed) with a decent loudness capability of some 107dBA before gross distortion sets in. Distortion is low through bass and treble but increases >1% prior to the 3.2kHz mid/treble crossover point (where there is an additional swing in phase and impedance). The main port output is clean at 50Hz and only slightly misaligned with the driver itself.

AUDIO NOTE AZ-ONE

SOUND ★★★★★

VALUE ★★★★★

£449.99
CONTACT 01273 220511

www.audionote.co.uk
GUARANTEE 5 years

Audio Note is the most iconoclastic of hi-fi brands, and seems to take a delight in breaking the rules and stereotypes which set the industry agenda. That's certainly the case with the AZ-One, a compact two-way floorstander which looks conventional enough, but in fact uses what AN calls a 'quasi parabolic horn' to load the main driver and improve the room coupling. The simple vertical partition and large rear mouth could also be interpreted as a tuned column or transmission line, but the high sensitivity highlighted in the Lab Report, and the impedance characteristic, both point towards a degree of horn loading. Which makes good sense for a speaker that's largely intended to partner Audio Note's low-power 'budget' Zero-series valve amps.

Though attractively compact, it's a rather plain, hair-shirt sort of speaker, with no attempt to soften the lines or edges, and no provision for any form of grille. Our samples came in rose-wood vinyl, which is not the height of current UK fashion, but cherry, beech and black ash woodprint alternatives

"THE BASS IS LIVELY AND QUICK, AND IT BRINGS CONSIDERABLE AGILITY TO THE PARTY."



offer plenty of choice. The chipboard casing feels very solidly built, and sits on well-founded 6mm spikes.

The main driver has a generous 130mm paper cone, while the tweeter uses a small 19mm fabric dome. A single pair of silver-plated terminals is sited conveniently near the floor. Unusually, Audio Note offers upgrade kits for its crossover components and internal wiring, replacing copper with silver. This speaker proved rather sensitive to changes in position within the room, and should be kept close to a wall or corner, with some angling, as the maker suggests.

SOUND QUALITY

A very mixed bag, the AZ-One suffers from quite obvious colorations, which inevitably upset the panellists – some more than others – but it also delivers an exciting and involving dynamic experience, which is arguably more than fair compensation.

Speech is not well served, the depressed presence giving a sound that is rather 'shut in' and nasal. But music came through with impressive solidity and authority, especially through the bass region. The AZ-One does indeed tend to heighten and highlight dynamic contrasts in the manner of a horn system, and I was surprised at how well it coped with subtle shading and detailing, especially through the lower registers. There's perhaps a little too much warmth and richness through the upper bass, and the occasional audible 'honk', but it's lively, quick and refreshingly free from 'overhang', bringing considerable agility to the party.

CONCLUSION

Cleverly conceived as a low cost, high sensitivity design to partner low power valve amps, by those lights it's an undoubted success, delivering music with sufficient gusto and enthusiasm to deserve Recommendation. The down side, however, includes those hair-shirt aesthetics and coloration levels, especially on speech, which might alienate some people.



The fuss-free styling might not be to everyone's taste, but at least it doesn't affect the entertaining sound.

THE LAB REPORT

CONCEIVED FOR USE WITH

Audio Note's range of very low output power amplifiers, the AZ-One is very sensitive, offering 91.5dB/2.83V/1m. This is sufficient to provide appreciable sound levels with amps rated below 30W/8 Ohm. The flipside includes a less-than-flat response with a slight notch at the 2.8kHz crossover frequency, followed by a very prominent (bright) treble above 8kHz. Off-axis, the presence region collapses to 6-8dB below the mean midband level while, even without near-wall reinforcement,

there's also some lumpiness to the bass from 200-400Hz. Described as a 'quasi quarterwave horn' the transmission line bass loading is complex to resolve, providing a peaky output from 70Hz-270Hz which coincides with peaks from the bass driver itself at 190Hz and 90Hz. The driver null and LF system resonance is much lower at 50Hz, suggesting more than a little misalignment. The minimum 5.6 Ohm loading is easy enough, but the 8 Ohm mean is still pretty current hungry. Sensitive then, but untidy in execution.

AR STATUS S20

SOUND ★★★★★

VALUE ★★★★★

£160.00

CONTACT 01423 359054

www.acoustic-research.com

GUARANTEE 5 years

AR is one of the great names in US hi-fi loud-speaker history, though the company has gone through many changes in the intervening years. We reviewed several models in the early 90s, then there was a large gap all the way from mid-1993 until last year, when, with the brand now operating as part of the large and diverse Recoton group, we received a new AR15 (HFC 201).

That was part of a 10-strong Hi-RES range, and was a very competent design, with high class drive units but a rather hefty £275 pricetag for a vinyl-covered compact stand-mount. A year later another vinyl-covered compact stand-mount has arrived. Called the Status S20, it's almost the same size as the AR15, but sells for a considerably more competitive £160.

It's the second model up a five-strong range of magnetically shielded stereo pairs – the smaller S10 received First Impressions coverage some time ago. Its vinyl woodprint finish – cherry in our samples, with black ash as an alternative – is innocuous enough, if not exactly convincing, but perhaps this speaker's most distinguishing feature is its very glossy and textured black front panel. To achieve the contouring and finish, the front is made from MDF, but the rest of the box is actually built from a high density chipboard.

The main driver has a 6.5-inch moulded ABS frame, and a 120mm doped paper cone, while the tweeter has a 25mm fabric dome, and both are flush-mounted into the front. A single pair of terminals and a port are fitted at the rear. Room measurements gave somewhat ambiguous results on positioning – a little lean in free space, somewhat heavy at the wall. Experiment *in situ* to obtain the best results.

SOUND QUALITY

Reflecting the panel's apparent preference for stand-mounts over floorstanders, the S20 did rather well in the listening tests, despite its modest price. "How nice to get away from thick, turgid bass," commented



The AR contrasts a glossy front baffle against a vinyl woodprint wrap to good aesthetic effect.

one panelist, while another went so far as to vote it the best of the day, though, to be fair, individual reactions did vary somewhat.

In truth, it's a bit soft dynamically, and might have a little more projection and texture through the presence region in particular. But the whole thing bounces along nicely and coherently, with little apparent boxiness and quite modest levels of coloration. This is not a punchy loud-speaker with a driving sound, but it does manage to extract and present rather more musical information than many of its competitors.

CONCLUSION

A good all round performer at an attractive price, the S20 might not have the smoothest or most dynamic sound around, but it's an honest and effective musical communicator. The styling is pleasingly distinctive and vinyl woodprint is somehow more acceptable in the smaller doses used on a stand-mount than in the much larger expanses used by floorstanders.

"THE WHOLE THING BOUNCES ALONG QUITE NICELY, WITH LITTLE BOXINESS AND QUITE MODEST COLORATION."

THE LAB REPORT

TO ENSURE AN APPROPRIATE sense of immediacy and treble bite, it is important to orientate the AR S20s directly at your listening position. Off axis, you'll appreciate much less of their 89.8dB sensitivity and certainly less of the speaker's presence and treble detail. A narrowband response analysis shows some prominence from 1.8-4kHz, bracketed by a slight 'notch' either side, coinciding with a delayed output from the rear-firing port. Otherwise the low frequency tuning seems very clean

with both the port resonance, main driver null and phase/impedance minima all occurring within a few Hz of 40Hz. The anticipated room extension is around 46Hz. There's a slight cone misterrmination at 225Hz, moderate +/-40 degree phase angles and a 3.7 Ohm dip in impedance at 210Hz for the amplifier to cope with. Otherwise, distortion just dips below 1% over much of the bandwidth up to 96dBA, but it is typically to be found at its highest through the more irregular midband.

DYNAUDIO AUDIENCE 42

SOUND ★★★★★

VALUE ★★★★★

£400.00

CONTACT 01732 451938

www.dynaudio.com

GUARANTEE 5 years

A well established Danish company originally known for its unusual main drivers, Dynaudio has become increasingly successful with its relatively upmarket complete speaker systems, and enjoyed very good results in recent *Hi-Fi Choice* reviews. The Audience 42 is the company's smallest and least expensive model, and the immediate successor of the Audience 40, which received a Best Buy rating in *HFC* 189. It actually looks exactly the same as its predecessor, from the outside at least, though apparently there are significant crossover changes, a strengthened enclosure and minor driver improvements. Matching centre and surround channel variations on the 42 theme, plus a subwoofer, are now available for multichannel installations.

Given its tiny size, and the vinyl finish, £400 seems rather hefty – Dynaudio justifies this on engineering grounds, not only with its proprietary driver technology, but also in the solidity of the cabinetwork – arguably an even more important ingredient in maximising all-round performance. Happily, the vinyl woodprint looks better than most, even from close up, though it still fails the strokeability test. Ours came in an attractive reddish cherry, but rosewood and black ash are also available.

This is a classic two-way 7-litre 'miniature' stand-mount. The main driver has a combination cone/dome 100mm plastic diaphragm, driven from an oversize (75mm) voice coil, and built on a cast chassis. The tweeter is Dynaudio's own design, with a 28mm plastic dome. The rear carries a port, and a pair of foam bungs are supplied to tune the ports if desired. Although the in-room measurements confirm the expected lack of deep bass, the Audience 42 still has sufficient midbass output to avoid the need for wall assistance – so use the bungs if you want to place them close to a wall.

SOUND QUALITY

Like its predecessor, the Audience 42 was a firm favourite in the listening



The Audience 42 builds on the qualities of its predecessor without significantly affecting the appearance.

tests, in part it would seem because the panel had become somewhat disenchanted by the box colorations of a string of floorstanders. The 42 might not have had as much bass as the preceding models quantitatively, but it left them for dead qualitatively (assisted, it must be pointed out, by high quality, quite costly stands).

Because the bottom end is so well controlled, the speaker has an impressively wide dynamic range, and considerable midband clarity, and even though it doesn't pack a great deal of genuine dynamic punch, it seems forgivable in view of the fine midband voicing.

CONCLUSION

The Audience 42 might be expensive for a vinyl-covered miniature, but I'd be surprised if there's a better small speaker around for the price. The small size does limit the bass grunt and loudness capabilities of course, but that's true for any small speaker. The Audience 42 therefore clearly deserves to carry the Best Buy rating

“BECAUSE THE BOTTOM END IS SO WELL CONTROLLED, THE SPEAKER HAS AN IMPRESSIVELY WIDE DYNAMIC RANGE.”

THE LAB REPORT

THOUGH THE NARROWBAND response shows a slight prominence after the (1.8kHz) crossover point at 2.5kHz, the in-room 3rd-octave trend is typically flat but slightly depressed through much of the upper bass, mid and lower treble. Taking the overall sensitivity from 500Hz-8kHz yields a figure of 86.9dB but extending this from 200Hz-20kHz gives 88.0dB, reflecting the increase in bass and upper treble energy. In this regard, the Audience 42 bears more than a little resemblance to the Audience 40

(*HFC* 190) which possessed a similar response, sensitivity and very high Q port tuning at 60Hz. In-room extension remains unchanged at ~50Hz though there is a slight increase in bass/midrange distortion (re. 96dBA) from typically 0.6% to 1.2%. This could be explained by changes in crossover component selection as much as changes in the driver construction, for example. The speaker load is easy enough through mid and treble despite dipping to 3.7 Ohm at 245Hz – an improvement over earlier Dynaudio speakers.

EPOS M12

SOUND ★★★★★

VALUE ★★★★★

£429.99

CONTACT 0208 361 8864

www.epos-acoustics.com

GUARANTEE 5 years

A highly respected British audiophile brand, Epos has been on a bit of a hiatus recently. It spent most of the '90s as Mordaunt-Short's premium brand, but when The Audio Partnership purchased Mordaunt-Short from TGI, it didn't really want the Epos bit. Noted amplifier maker Mike Creek stepped in, and has since spent the last year or two sorting out the purchase, getting everything together and putting Epos speakers back into production.

The M12 is little different to the popular ES12, which we reviewed back in 1996. The three most obvious changes are that the back panel is now veneered wood composite rather than moulded plastic, a grille is now supplied (though not actively encouraged), and the price has actually been reduced by 15 per cent.

It's a classic – some might say *the* classic – compact two-way stand-mount, about 10 litres in volume, with a very classy real wood veneer (available in light or dark cherry options), which looks that much better for nicely rounded edges around the front and back. It's also remarkably solid, being built from a 25mm MDF substrate.

Unusually, and probably uniquely, the front panel is a plastic moulding which also incorporates the chassis or basket on which the main driver is built, ensuring immaculate mechanical integrity. This driver has a flared plastic cone 115mm in diameter, and is fitted with a fixed phase plug. The tweeter has a 25mm metal dome under a mesh protective cover. The crossover network here is deliberately minimalist, with just a single component protecting the tweeter from low frequencies, while relying on the natural acoustic roll-off of the main driver. Room measurements show well balanced in-room bass down to around 45Hz with the speakers mounted well clear of walls.

SOUND QUALITY

The M12 was well liked by the listening panel, which appreciated its agility, the lack of cabinet coloration



This classic standmount has a new lease of life thanks to the efforts of Mike Creek.

and its fine coherence. Imaging is particularly clear, well-focused and precise, though its slightly laid-back presence does rob the sound of some immediacy, excitement and a sense of attack.

It might be just a little too polite for some tastes, and the bass could do with a touch more weight and authority. But through the broad midband this is such a thoroughbred, with such fine communication skills, it simply grabs your attention and sucks you into the music.

CONCLUSION

The M12 might be a new Epos under a new owner, but it's fully in line with the spirit of the originals, and retains the same beguiling midband coherence that made the ES12 such a favourite, and which remains just as relevant today. It might seem pricey compared to some of the floor-standers, but this is a genuine class act, sonically and aesthetically: with its real wood finish its arguably the smartest model on test.

"A THOROUGHbred, WITH SUCH FINE COMMUNICATION SKILLS, IT SIMPLY SUCKS YOU INTO THE MUSIC."

THE LAB REPORT

DERIVED FROM THE ORIGINAL

EPOS ES11, but without the injection-moulded rear panel, the M12s still use the natural (acoustic) roll-off of the bass/mid driver. As a result, there's no escaping the acoustic phase cancellation (i.e. a hole) in its forward response at 3kHz. This reduces its 500Hz-8kHz sensitivity to just 86.0dB, a far cry from the claimed 89dB. Even if a figure is taken at 1kHz only (which is of little practical relevance), the sensitivity rises to a maximum of 87.9dB/2.83V/1m. Whether this

effects the immediacy of the speaker's sound must be traded against the benefits of no crossover phase distortion (and improved amplifier control) with the constant inductance offered by the extended bass/mid pole piece. Harmonic distortion remains high through the midrange at typically 1.8%, but is much lower through bass and treble while there's a clear cone mis-termination at 760Hz. Otherwise, the M12 is easy on the amplifier with a safe 6.8 Ohm minimum and 10.8 Ohm average.

INFINITY ALPHA 30

SOUND ★★★★★

VALUE ★★★★★

£300.00
CONTACT 01438 718007

GUARANTEE 5 years

I attended the European launch of this new range of Infinity loudspeakers last Autumn, and have been wanting to try them out ever since – especially as the engineer in charge of the design team is one Robin Marshall, who attended many *Hi-Fi Choice* listening panels prior to moving to France with Harman International. A delay was inevitable, however, as Harman had just decided to set up its own distribution operation for Infinity hi-fi speakers and Harman Kardon electronics, in place of the previous importer. A new temporary telephone number for this can be found above.

Although Infinity and Harman are both US brands, the Alpha range is very much a European creation, consisting of five stereo pairs – two stand-mounts and three floorstanders – plus a centre and a powered sub-woofer. The Alpha 30 is the smallest floorstander, a simple two-way front-mounted design in a chunkily compact enclosure, vinyl finished in beech, cherry or black ash woodprint.

It's a strikingly good looking speaker, partly due to the very hi-tech

drivers and trim, and partly thanks to the heavily post-formed edges around the front panel. The core driver technology is something Infinity calls CMMD (ceramic metal matrix diaphragm), which uses deep-anodising to convert the skin of a metal diaphragm into a ceramic oxide layer deep enough to provide worthwhile extra stiffness to increase the working bandwidth. The main driver here has a 120mm cone, while the tweeter has a 25mm dome, both in CMMD alloy.

The Alpha 30 feels very solidly built, sits on neat reversible spike/ball feet and is equipped with twin terminals for bi-wiring. The listening room measurements indicate that some wall reinforcement will be beneficial. Try them about one foot from a wall for starters.

SOUND QUALITY

The Alpha 30 drew a mixed reaction from the listening panel, reflecting some reservations about the rather bright and shiny presentation, and a touch of hardness and 'edge'. But of all the floorstanders gathered here, this one came closest to providing the sort of agility and coherence that the stand-mounts tend to supply as a matter of course.

It also has a better idea about dynamics than most, and this plays an important part in getting the expression and intentions of the musicians across to the listeners. A degree of nasality can be initially off-putting, and the slight sharpness might not sit well with some budget systems, but the fine dynamic range, good timing and seductive coherence come together to make a satisfying musical experience.

CONCLUSION

No £300 floorstander is going to get anywhere near perfection, and the Alpha 30 does have some sharpness and nasality. But fine musical literacy and coherence plus an ability to bring a measure of dynamic expression to the party all adds up to a high class all round compromise, and a deserved Best Buy.



Distinctive cabinet work and high tech drivers combine to make a very convincing budget floorstander.

“FINE MUSICAL LITERACY PLUS AN ABILITY TO BRING A MEASURE OF DYNAMIC EXPRESSION TO THE PARTY.”



THE LAB REPORT

THE AVERAGED, IN-ROOM

3rd-octave trace for the Alpha 30 is very flat and even indeed, suggesting that an axial listening position will be ideal. Just as remarkable is the fact that this linear response has meant no sacrifice in overall sensitivity which, at 89.3dB, remains one of the higher values in our test. High sensitivity aids low distortion through the bass (typically <0.4% @ 96dBA) though there's a marked increase in 3rd harmonic distortion through the midrange to 1.5-2%. The Epos

speaker also has this trait which contributes to a similar midband character despite their responses being very different. Bass tuning is sharp, with a high-Q port resonance at 50Hz just slightly mis-tuned against the driver null at 43Hz and impedance/phase minima. The latter show a cone misterrmination at 190Hz, moderate swings in phase and with an impedance minimum of 4.3 Ohm at 9.3kHz. With an average 9.5 Ohm impedance, the Alpha 30 won't be a challenge for most amps.

KEF Q35.2

SOUND ★★★★★ **VALUE** ★★★★★ **£350.00** **CONTACT** 01622 672261 www.kef.com **GUARANTEE** 5 years

KEF's mainstream Q-series models have now been around for something like a decade. Today in '.2' form, this vinyl finished range reaches far and wide, including three floor-standers, a stand-mount, a centre front and a surround speaker. All feature the company's proprietary Uni-Q drive unit technology, a variation on the coaxial theme which places the tweeter on the magnet pole-piece in the middle of the main driver cone. The '.2'-series has a larger and more powerful tweeter magnet than its predecessors, while the main driver's polypropylene cone has been stiffened and given an attractive silver finish.

The Q35.2 is an attractively compact floorstander, standing less than 80cm off the deck, and quite chunkily proportioned to accommodate the 6.5-inch frame Uni-Q main driver. The 'dark apple' vinyl woodprint of our samples looks more convincing than most, with 'light cherry' and 'black ash' available as alternatives. There's a decent stability footprint, and a set of chunky 8mm spikes to boot.

Like the Q15.2 reviewed and Recommended in *HFC* 207, it's a

"THE MIDBAND IS IMPRESSIVE, WITH GOOD COHERENCE AND DECENT ARTICULATION WITH SPEECH."



two-way design with just a single co-axial driver, essentially the same driver as that used by the 15.2, loaded by a front port incorporated into the trim that conceals the driver mounting hardware. Said driver has a pressed steel frame, magnetically shielded magnets, and a 125mm diameter metalised plastic cone, while the compact coaxial tweeter has a small 19mm diaphragm. Indeed, the most substantive difference between the 15.2 and 35.2 lies in the latter's box volume of 28 litres, up from the stand-mount's 11.5 litres. Twin bi-wire terminals are fitted close to the floor, helpfully avoiding potential trailing wire syndrome.

Room measurement indicates the need for some – but not too much – wall assistance, but it's less clear-cut than with the Q15.2, and the 35.2's trace is less smooth too, probably because its driver is significantly closer to the floor.

SOUND QUALITY

The Q35.2 performed respectably enough in the listening tests, but it didn't particularly stand out amid a rather strong budget selection. The midband is its most impressive feature, with good coherence and decent speech articulation, but that's made more obvious because the top end is rather more restrained than average. The bass proved a tad problematic too, as it was tricky to site the speakers to achieve the best compromise between weight and thump-avoidance. The end result tended to retain some residual thumpiness, and could have been tauter and crisper.

CONCLUSION

The Q35.2 is a very decent and good looking compact floorstander, and a capable all-rounder in musical terms. But it does carry quite a significant £150 price premium over its stand-mount equivalent, the Q15.2, and it isn't the most expressive performer around for that kind of money. In pure performance terms, a pair of Q15.2s plus £150 stands is likely to have the edge.



It's a compact and attractive floorstander, but sonically the Q35.2 fails to really stand out from the crowd.

THE LAB REPORT

BASED ON THE Q15 (see *HFC* 187) but benefiting from a larger 28 litre cabinet, the Q35.2's in-room 3rd-octave response looks admirably flat from 400Hz-5kHz with some slight treble emphasis at 8kHz and bass lumpiness around 200Hz. The characteristic cancellation notch at 11.5kHz is still in evidence as is the progressive loss in treble output as the boxes are toed off-axis. Sensitivity remains high at 89.7dB, though this is about a 1dB lower than expected. More concerning, from the QC point of

view, was a colouration emanating from the bass driver's plastic surround that increased bass distortion from a low 0.5% to 2-3% at resonance (~200Hz). The complex crossover yields a relatively high +64 degree phase angle at 2.6kHz where the impedance is just 8.5 Ohm, falling to a tough minimum of 2.8 Ohm at 5.5kHz. Otherwise, mid/treble distortion is low at <0.8% and bass alignment is good with a clean port reinforcement at 40Hz bringing the anticipated in-room extension to 42Hz.



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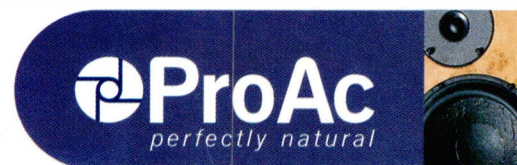
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Who can have missed the rollercoaster ride of online retailers over the past few years? 'Start-ups' appeared by the score out of nowhere, armed with a

fervent belief in the 'new paradigm' and the desire to spend whatever it took to get noticed. Regrettably, all too many of them disappeared as quickly as they arrived. Unbeatable.co.uk, the photographic and electronics web retailer, is the exception that proved the rule.

Unbeatable is one of the biggest success stories in online retailing. The Consumers' Association thinks so - Unbeatable was one the first Which? Web Traders and is the Consumers' Association approved photographic retailer. The press thinks so - publications including the Sunday Times have sung Unbeatable's praises. And, most importantly, Unbeatable's customers think so too. From a standing start three years ago, their sales figures have increased from £100,000 in 1998, to an amazing projected £10,000,000 for 2001.

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treating customers with respect. Second, doing everything possible to ensure they are always delighted. And third, always striving to provide the very best value for money.

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PRODUCTS FROM ALL OF
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JVC to British hi-fi specialists such as KEF and Tannoy. Indeed, often Unbeatable.co.uk will be the only place to buy certain in-demand items.

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Unbeatable also has a wealth of experience of mail order. Capital Sound & Vision has run a mail order service for over 23 years, supplying to all parts of the UK and even overseas. So, when an Unbeatable customer requests overnight delivery, subject to availability, that is what they get. And should a hiccup occur, Unbeatable has the experience to put things right speedily, effectively and with good humour!

Following a major redesign last autumn, the Unbeatable.co.uk site runs more efficiently and is now more popular than ever. There are even plans afoot to move into new product areas, such as home installation and white goods.

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MISSION M73

SOUND ★★★★★

VALUE ★★★★★

£200.00
CONTACT 01480 451777

www.mission.co.uk
GUARANTEE 2 years

Choice has tested a large number of Mission speakers over the years, usually with pretty good results.

But rather than concentrate on the budget price points at which it made its name, the ones we've seen recently have tended to be more costly. The 'm7' range changes all that, and following hot on the heels of a couple of First Impressions reviews comes this, the first such product to receive the full Bench Test treatment.

Manufactured in Malaysia, the m73's perceived value is clearly exceptional, because this is a floorstander, and seemingly gives nothing away in size or weight to others costing at least 50 per cent more. It's a classic two-way configuration, based on a 6.5-inch frame main driver, port-loaded at the rear and following Mission's long established techniques of placing the main driver above the tweeter, and using attractive mouldings to make everything look neat and tidy.

The enclosure comes in beech or graphite black finish, and is deep enough to provide good stability when spiked up, despite the slim

"THIS IS A SURPRISINGLY REFINED DESIGN, ESPECIALLY IN ITS CONTROL OF BOX COLORATIONS."



front view. There's a touch of individuality in the slightly convex front panel, which should aid rigidity with assistance from the moulded sub-baffle trim. Although this looks like a floorstander, in truth it's really a stand-mount with integral stand, as only the top two thirds of the enclosure is acoustically active, leaving a blanked-off compartment in the lower third. You can add some mass loading here if you're so inclined.

The main driver is magnetically shielded and uses a moulded woven glassfibre cone some 125mm in diameter, mounted in a nominal 6.5-inch frame. The tweeter has a 25mm fabric dome, fed via a simple crossover with audiophile components and twin terminal pairs. Listening room measurement favours free space siting, though bungs are supplied to block the port if the speaker is placed close to a wall.

SOUND QUALITY

The M73 did well in the listening tests, albeit with some disagreement amongst the panellists. Considering its modest price, this is a surprisingly refined design, especially in its control of box colorations, where it's amongst the best in the test. The midband could be smoother, but it's well balanced and essentially neutral, though both the top and bottom ends of the spectrum sound a tad exposed, adding a touch of thump and shine to the proceedings.

Its weak spot is some lack of dynamic verve and expression, which reduces the excitement and tension to a degree. But a touch of understatement can also be a strength, and over the longer haul it proved a relaxing experience that was commendably free of sonic nasties.

CONCLUSION

It's hard to argue with a £200 floorstander, especially one that looks as good as this. Although its dynamic expression might be a little limp, in other respects the M73 sounds pretty decent, with a good overall balance and very well controlled box colorations. Best Buy.



You get a lot of loudspeaker for your money, both visually and sonically, with Mission's m73.

THE LAB REPORT

NEW CABINET AND A NEW '160mm bonded woven glass composite' bass/mid unit, but Mission is still over-rating the sensitivity of its loudspeakers. The M73 is claimed to offer 90dB whereas, in practice, it provides 88.1 dB/2.83V/1m over the 3rd-octave bands spanning 500Hz-8kHz (where the presence region is a little depressed). Extending the range to 200Hz-20kHz lifts this to 89.2dB because the M73 shows the same peaky bass and treble that we've seen in earlier models. The polar

uniformity is good, however, because this general trend is maintained as far as 30 degrees off-axis. Other positive features include the low and uniform 0.6% distortion, maintained over the bulk of its range up to 96dBA and the accurate alignment of its bass with both rear port, driver null and impedance/phase minima all coinciding at 43Hz. And the M73 is moderately tame in the ease-of-drive stakes, offering an average 10.2 Ohm load with an acceptable minimum of 3.6 Ohm at 180Hz.

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SOUND ★★★★★

VALUE ★★★★★

£270.00
CONTACT 01268 740580

www.monitoraudio.co.uk
GUARANTEE 3 years

One of the stars of last November's round-up of budget loudspeakers was a £180 Bronze 2 from

Monitor Audio, and that success bodes well for this new £270 Bronze 3, because the two models are very similar indeed. They share the same drive units and also the same two-way configuration.

The front panel styling cues are typical Monitor Audio, with the familiar shiny metal dome tweeter in an appropriate copper/bronze colour here. The main driver has a 120mm cone in a new material, codenamed MMP for 'metal matrix polymer', which gives a nice shiny finish, and is also claimed to improve the sonic performance by reducing a degree of self-damping.

Vinyl finish is probably inevitable at the price, but the woodprint wrap used here – black oak or cherry – is prettier than most. However, both back and front panels are textured black right down to the floor, so the speaker will always look a little severe. Twin ports on the front add symmetry to the styling, and permit close-to-wall siting. The main driver's moulded frame looks like it's intended for surface-mounting, but both

drivers are inset into the double-thickness front panel, which uses two different grades of MDF to reduce resonance and improve damping. Twin terminals on the rear encourage bi-wiring.

There's remarkably little difference between the Bronzes 2 and 3. Although the latter is configured as a floorstander, it's really a stand-mount with integral stand, as only two thirds of its height is used acoustically, and the lower section is blanked off, allowing users to add their own mass-loading material (none is supplied). Though properly spiked, the limited depth does compromise footprint stability, while a high bi-wire terminal block will leave cables trailing. Like the Bronze 2, in our listening room the Bronze 3 has a dry-sounding bass alignment well suited to close-to-wall siting.

SOUND QUALITY

A decent 'average' score in the listening tests seems fair enough for the price, and reflects the fact that the Bronze 3 is not without its fair measure of coloration. But it also does a rather better job than most at reproducing dynamic expression.

As is so often the case amongst budget speakers, there's something of a dichotomy here. There's some boxiness in the midband, and speech sounds a little hooded and shut in, but the other side of that coin is that there's no tendency to sound edgy or shouty. And the real bonus with the Bronze 3 is simply that it does a rather good job of getting the musical message across, which is basically more important than the character of the sound.

CONCLUSION

There's not a whole lot to choose between the Bronze 3 and its older brother. On balance, the scales are tilted slightly in favour of the Best Buy stand-mount Bronze 2, for its lower box coloration and marginally better close-to-wall bass alignment. Nevertheless, the £90 extra charged for this floorstander seems reasonable enough, so the Bronze 3 clearly deserves a Recommended flag.



The Bronze 3 trades evenness of response for musical coherence - which seems like a fair exchange.

"THE REAL BONUS IS SIMPLY THAT IT DOES A RATHER GOOD JOB OF GETTING THE MUSICAL MESSAGE ACROSS."



THE LAB REPORT

ACCURATELY RATED AT

90dB/2.83V/1m (well, 89.9dB to be precise), the Bronze 3 floorstander features a metallised polymer bass/mid unit and gold anodized metal dome tweeter. The latter has the lowest distortion we've measured from a speaker at <0.1% (re. 96dBA above 10kHz). Its averaged, 3rd-octave response is not unlike that of the Mission M73 with a slightly depressed presence region and peakier bass and treble though, in this instance, you will get a smoother balance by toeing the

speakers in by 10-20 degrees. The dual ports yield a broad, low-Q reinforcement that extends from 28Hz-100Hz (-3dB) but successfully dragging the in-room bass extension down to 40Hz or so. Reflecting the order of the treble crossover, phase angles are quite high at +/- 50 degrees from 900Hz-4.4kHz while the impedance rises from a minimum of 3.6 Ohm to a high 34 Ohm at 2.15kHz. This pushes the average impedance to 11 Ohm, partially concealing the speaker's more current-hungry bass.

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GUARANTEE 5 years

Now Hear This is, I suppose, the sort of name you'd expect a bunch of Californians to call a speaker company, so in the interests of decorum we'll keep to the acronym NHT. The company now operates in the Recoton group, retaining the individuality that has served it well in recent *Hi-Fi Choice* group tests. However, the Super Zero might well struggle. I'm not sizeist by nature: I particularly liked the little Super One (*HFC 170*), and sort of expected that a Super Zero would be one step down in size.

It's the sort of step that could easily break a leg. Surely one of the smallest speakers we've seen in the past decade, the two litre Super Zero is more like the larger 'satellites' used in three-box sub/sat speaker systems, and the main driver's 95mm diameter paper cone looks more like a midrange unit. It's hard not to jump to the conclusion that this pair of speakers would just love to meet and make friends with a lonely subwoofer.

The all-over shiny black laminate surface seems to be an NHT trademark. It doesn't quite match up to a genuine piano lacquer finish, but still looks sharp, with no attempt to soften the edges or corners. The speaker operates in sealed-box mode, with just a single terminal pair on the rear, along with a screw socket hole presumably for attaching to a wall bracket. The in-room measurement shows the expected lack of bass, which seems pretty well unaffected by siting. In truth, the balance is actually smoother with free space siting, though such a tiny speaker does look a bit daft perched on a stand.

SOUND QUALITY

It might well be that no bass is better than indifferent quality bass, since there's no denying the Super Zero acquitted itself surprisingly well in the listening tests, notwithstanding its obvious physical limitations. The mid-band is very nicely voiced indeed, and the Super Zero's decent performance only goes to confirm that the mid-band is considerably more important



Shown actual size, well almost. The Super Zeros appear to be satellites in search of a subwoofer.

than the bass when it comes to getting the musical message across.

If there's very little box, there's pretty well bound to be very little boxiness or 'overhang', and the Super Zero does indeed sound very clean, articulate, and quick. On some material, such as speech and the lighter, more acoustic types of music, one hardly notices the lack of bass. But over the longer haul and across a broad range of material, I did begin to find the lack of weight frustrating, because of the way it robs the sound of any real scale and authority.

CONCLUSION

If tiny is top of your priority list, the Super Zero is well worth considering. It looks nice, sounds clean, clear and articulate, and is quite competitively priced. While it could find a useful place in small rooms, the more obvious conclusion is to add a subwoofer (or two), bearing in mind that loudness capabilities will be limited by that little main driver.

"IF THERE'S VERY LITTLE BOX, THERE'S PRETTY WELL BOUND TO BE VERY LITTLE BOXINESS OR OVERHANG."

THE LAB REPORT

THERE ARE SMALL SPEAKERS, going for the amplifier with mere mini-monitors and then the Super Zero from NHT with its diminutive, sealed 2 litre cabinet volume (about the size of a small PC speaker). Axially, there's a broad depression centred on 4kHz that's some 5dB below the mean mid-band output, reducing the practical sensitivity to 83.9dB. Even taking into account the enhanced bass/treble levels, a figure of 84.8dB is as close to NHT's claimed 86dB/2.83V/1m as it's possible to get. At least the load is very easy-

going for the amplifier with mere +30/-20 degree phase angles and *minimum* of 8 Ohm. However you look or listen, the Super Zero will never go 'loud' (about 98dBA seems reasonable before gross distortion sets in) though the ideal balance is obtained by perching the boxes at the edge of a shelf and toed inward by 10-20 degrees. The infinite baffle bass alignment is also slightly peaky, giving a 'kick' to the bass at 180Hz, prior to the LF roll-off. Do not expect much bass below 95Hz or so!

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GUARANTEE 5 years

The mX-series is Tannoy's budget range, a comprehensive selection catering either for stereo or multi-channel customers with two stand-mounts, two floorstanders, a centre speaker and a subwoofer. The mX2 stand-mount and mX3 floorstander have already received Best Buy recognition in *Hi-Fi Choice* reviews, as has the complete mX4/mX1/mXC surround sound system, which would seem to be powerful omens in favour of the mX4.

This floorstander was part of that £500 surround sound system, but is also available as a £350 stereo pair. Manufactured in Taiwan, it's the largest of the range and normally comes in a light coloured vinyl wood-print with an attractive light silver-grey grille cloth, though black-on-black is also an option. The vinyl looks good from a distance, but doesn't feel so convincing close up.

A two-and-a-half-way floorstander and a logical development from the mX3, the mX4 has a slightly taller enclosure on a similar footprint, plus an extra main driver operating over

just the bass frequencies. It's quite tall, considering its limited footprint, and never seemed particularly stable on its 6mm spikes. If Tannoy was to make an optional plinth available, this would improve both stability and appearance.

The enclosure uses tongue-and-groove joints, with internal bracing and mass damping sections, and the two main drivers each have a modest 110mm treated paper cone. This is strikingly white in colour, mounted in a moulded plastic frame. The tweeter is a 25mm soft dome device, and twin terminals permit bi-wire operation. Room measurement indicates free space siting should be favoured, though foam plugs are supplied for blocking the ports if you want to put it close up to the wall.

SOUND QUALITY

Two separate presentations to the panel were received with impressive consistency and reasonable unanimity, though the verdict wasn't too strongly in the Tannoy's favour. It's by no means a poor loudspeaker, and does most things pretty well, with a commendably even-handed balance, subtle voicing and no serious coloration or boxiness.

It has a pleasing transparency with precise and well focused stereo images, but the sound is also a little bland and lacking in dynamic drive and purpose. The result is a speaker which is good at getting out of the way and avoiding any offensive nasties, but less effective at breaking down the barriers between musicians and listeners.

CONCLUSION

The omens might have been firmly in the mX4's favour, and it certainly performed very capably in a surround sound system context when we looked at it last. But it just didn't stand out to the same extent in this head-to-head with its stereophonic competitors. Its sound is clean and unboxy, with quite respectable transparency, but it lacks the dynamic grip and drive that always plays an important part in making music sound interesting and involving.



The MX4 didn't turn out to be as convincing in stereo mode as it was in a multi-channel system.

"THE TANNOY MX4 HAS PLEASING TRANSPARENCY WITH PRECISE AND WELL FOCUSED STEREO IMAGES."



THE LAB REPORT

THE BASS QUALITY OF THE MX4 is less tidy than its appearance might lead you to think. Its averaged 3rd-octave response shows a slightly prominent mid and upper treble with some loss in 'presence' – that increases off-axis – but this hardly dents the generous 89.2dB sensitivity. The bass shows a distinct 'step' in the nearfield bass response at 160Hz that's duplicated on the MX4's impedance and phase plots. This is due to a strong quarter wave resonance escaping the rear port,

notionally tuned to some 40Hz. Otherwise, conventional harmonic distortions are very low indeed, falling to <0.2% through the bass and <0.6% through the midrange where the two bass/mid cones are at greatest stress. Phase angles hit +56 degrees at 2.8kHz and –34degrees at 740Hz between which the impedance stays above 8 Ohm. The sub-5 Ohm minima occur above 4kHz and below 250Hz, reducing the *average* load to a fairly tough 8.35 Ohm.

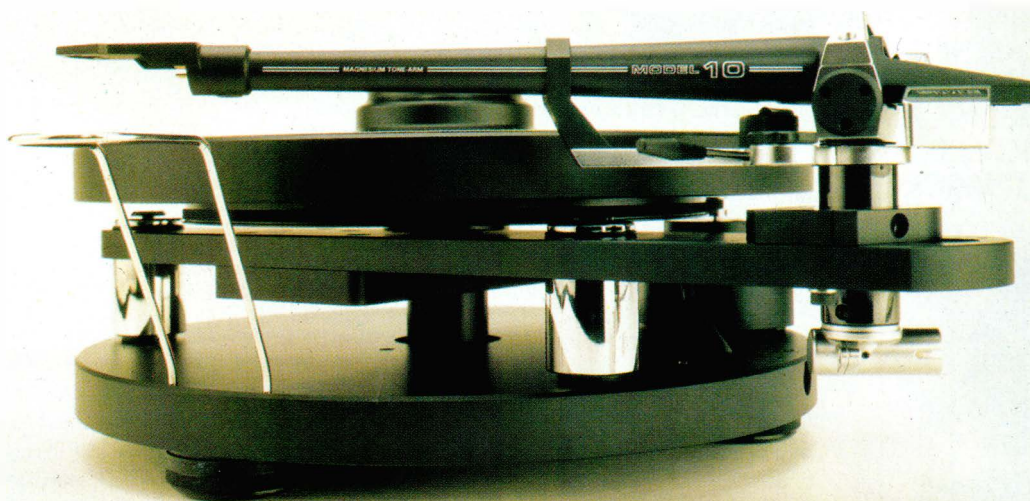


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Wharfedale might be Britain's best known hi-fi speaker brand, but it's actually owned by Chinese interests these days. The design team still works in the UK, but manufacturing is actually carried out in the company's own Chinese factories. Which goes some way towards explaining how the company manages to create such a large, substantial and elaborately finished loudspeaker for £500. It even features real wood veneer, though I had to be told that was the case because it looks and feels quite like vinyl.

The Pacifics are Wharfedale's new prestige range. We covered the £449 Pi30 in our April First Impressions, while this Pi40 is the largest of the five models. All are clearly distinguished from the herd by their use of an external tweeter mounted on the top of the enclosure in a moulded plastic pod. It's a technique that B&W has applied to its upmarket models for many years, but this is the first

"THE Pi40 SOUNDED QUITE PLEASANT IN THE HANDS-ON WORK, IF A BIT SOFT, WARM AND LAID-BACK."



time to my knowledge that such a feature has appeared in the budget sector. It not only looks distinctive, but potential benefits include improved treble distribution, an opportunity to time align the drivers, an avoidance of baffle-edge diffraction effects and a measure of mechanical decoupling from main driver vibration. The tweeters may be rotated too, so their direction can be adjusted to preference while leaving the box square with the room boundaries.

The two cone drivers both have 130mm Kevlar cones. The lower one, loaded by the front-ported bulk of the enclosure, operates just through the bass region. The upper one covers both bass and midrange, and works into a small sealed chamber. Room measurement strongly indicates free space siting.

SOUND QUALITY

The listening panel was not taken by the Pi40. It might be the largest and most expensive model in the test, but its rating here languished behind the rest, largely because of its bass performance. In the first place there's rather too much bass, but that excess in turn tends to highlight its qualitative deficiencies, which one panellist described as "bloated" and another as "lacking crispness", even though the speakers were sited well clear of walls in a larger-than-average room.

While the panel had a point, I do think the judgement was a little harsh. The Pi40 actually sounded quite pleasant in the hands-on work, if a bit soft, warm and laid back. Coloration is low, the top end sounds transparent, there's little midband boxiness, and imaging is firm and commendably stable.

CONCLUSION

The Pi40 is a lot of speaker for the money, but perhaps that might be part of the problem from a performance point of view. The bottom end would appear to be the limiting factor here, and in truth it seems more than likely that the smaller Pi30 would give a better bass balance, in our room at least.



With its unusual tweeter enclosure and substantial box, the Wharfedale is an impressive looking speaker.

THE LAB REPORT

REALISTICALLY SPECIFIED AT a sensitivity of 89dB (I measured 88.8dB/2.83V/1m), a narrowband analysis of the Pacific Pi40 nonetheless reveals a rather untidy response, particularly around what I presume is the crossover region at 3.3kHz. The averaged room response shows some slight emphasis through the 1-2kHz midrange and certainly a treble 'sting' once the isolated treble unit gets into its stride above 10kHz but, considering the difficulty in integrating a multi-way box of this size, it remains

smooth enough. Incidentally, the treble is easily 'sweetened' by toeing the adjustable tweeters 10-20 degrees off the listening axis. The bass driver and port are slightly de-tuned and while the latter reinforces strongly at 40Hz it also lets slip a pipe resonance at 220Hz that also appears on the Pi40's forward response, impedance and phase plots. The latter also reveal a more serious misterrmination at 455Hz with a moderate phase swing of +56 degrees (2.4kHz) and minimum load of 3.25 Ohm at 7.25kHz.

CONCLUSIONS

PAUL MESSENGER STANDS AND DELIVERS.

This Bench Test could well be described as the Revenge of the Stand-Mounts, simply because the listening tests showed them to be generally superior to the floorstanders.

The qualification is that the cost of the stands is not factored in – if extra money has to be found for stands, it's difficult to resist the value-for-money attractions of the floorstander, not to mention the visual appeal. No stand-mount-plus-stand can easily compete on such terms with something like Mission's £200 M73. But the little Dynaudio and slightly larger Epos – quite distinct from each other in

SPEAKERS AT A GLANCE



MAKE MODEL	ACOUSTIC ENERGY AEGIS 3	AUDIO NOTE AZ-ONE	AR STATUS S20	DYNAUDIO AUDIENCE 42	EPOS M12	INFINITY ALPHA 30
PRICE	£349.99	£449.99	£160.00	£400.00	£429.99	£300.00
SOUND VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
CONCLUSION	Clean and capable 2.5-way budget floorstander with fine dynamic range but some mid-bass excess.	A fine partner for low power valve amps. It delivers music with gusto and enthusiasm, but some coloration.	Might not have the smoothest or most dynamic sound, but it's an honest and effective musical communicator.	Expensive, but an aristocrat amongst the breed. Is there a better small speaker around for the price?	Retains the beguiling mid-band coherence that made the ES12 such a favourite. A genuine class act.	Some sharpness, but fine musical literacy and coherence adds up to a high class all round compromise.
GUARANTEE	5YRS	5YRS	5YRS	5YRS	5YRS	5YRS

THE LAB REPORT

	ACOUSTIC ENERGY	AUDIO NOTE	AR	DYNAUDIO	EPOS	INFINITY
SENSITIVITY RATING	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★
EASE OF DRIVE	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★
BASS EXTENSION	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★
LOW DISTORTION RATING	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★
OVERALL RATING	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★	★★★★★★

MEASUREMENTS

	ACOUSTIC ENERGY	AUDIO NOTE	AR	DYNAUDIO	EPOS	INFINITY
SENSITIVITY (2.83V @ 1M)	90.2dB	91.5dB	89.8dB	86.9dB	86.0dB	89.3dB
TYPICAL MAX SPL, 2M	107dBA @ 150W	107dBA @ 100W	105dBA @ 100W	104dBA @ 150W	102dBA @ 120W	106dBA @ 150W
IMPEDANCE, NOMINAL/AVERAGE	80HM / 9.570HM	60HM / 8.090HM	4 OHM/8.55 OHM	60HM / 9.310HM	80HM / 10.80HM	60HM / 9.550HM
IMPEDANCE, MINIMUM	4.630HM @ 228HZ	5.560HM @ 11KHZ	3.65 OHM @ 210HZ	3.690HM @ 245HZ	6.80HM @ 250HZ	4.280HM @ 9.25KHZ
MAXIMUM PHASE ANGLE	+38 DEGREES @ 38HZ -38 DEGREES @ 845HZ	+28 DEGREES @ 95HZ -31 DEGREES @ 70HZ	+44 DEGREES @ 110HZ -41 DEGREES @ 725HZ	+33 DEGREES @ 120HZ -47 DEGREES @ 995HZ	+41 DEGREES @ 110HZ -34 DEGREES @ 70HZ	+47 DEGREES @ 2.75KHZ -32 DEGREES @ 665HZ
PROJECTED IN-ROOM EXTENSION (±5DB)	35HZ	40HZ	46HZ	50HZ	50HZ	40HZ

“THE MESSAGE IS THAT SIMPLICITY REMAINS A VIRTUE.”

character, but equally worthy – were clearly the sonic class of the group. Since these were amongst the smallest, the simplest and the most expensive of the participants, it's logical that larger, more ambitious yet less expensive models would show more obvious sonic compromises.

The message is that simplicity remains a virtue, and what you see is not always what you get. All too often prospective purchasers are seduced by what their eyes interpret as high perceived value, where the real value of a speaker can only be properly assessed by ignoring any visual impressions and listening to it instead.

These comments shouldn't be seen as critical of budget speakers per se. The leading manufacturers have done a remarkable job of keeping costs down and prices consistent over the years, despite steady inflation in the economy as a whole, and it's impressive and that none of the test speakers could be considered poor. But, ultimately, precision engineering costs money, and you're more likely to find it where the manufacturer isn't trying to provide the biggest box and most drivers for your cash.

SPEAKERS AT A GLANCE

KEF Q35.2	MISSION M73	MONITOR AUDIO BRONZE 3	NHT SUPER ZERO	TANNOY MX4	WHARFEDALE PACIFIC P140	
£350.00	£200.00	£270.00	£200.00	£350.00	£500.00	MAKE MODEL
★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	PRICE
★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	SOUND VALUE
A very decent compact floor-stander, but a pair of stand-mounted Q15.2s is likely to have the performance edge.	Dynamics are a little limp, but it has a good overall balance and very well controlled box colorations.	Similar to, though not quite better than, the Bronze 2. Still good value, with better dynamic expression than most.	Worth considering. It looks nice, sounds clean, clear and articulate, but definitely needs a subwoofer.	Clean sound with respectable transparency, but lacks the dynamic grip and drive to make the music involving.	Good for the money, but the bottom end was rather unruly. The smaller P130 might give a better bass balance.	CONCLUSION
5YRS	2YRS	3YRS	5YRS	5YRS	5YRS	GUARANTEE
						THE LAB REPORT
						SENSITIVITY RATING
						EASE OF DRIVE
						BASS EXTENSION
						LOW DISTORTION RATING
						OVERALL RATING
						MEASUREMENTS
89.7dB	88.1dB	89.9dB	83.9dB	89.2dB	88.8dB	SENSITIVITY (2.83V @ 1M)
105dB @ 100W	103dB @ 100W	105dB @ 100W	98dB @ 100W	106dB @ 150W	107dB @ 200W	TYPICAL MAX SPL, 2M
40HM / 8.74OHM	60HM / 10.20HM	80HM / 10.98OHM	80HM / 11.70HM	60HM / 8.36OHM	60HM / 8.33OHM	IMPEDANCE, NOMINAL/AVERAGE
2.78OHM @ 5.5KHZ	3.60HM @ 180HZ	3.57OHM @ 195HZ	7.95OHM @ 270HZ	3.60HM @ 38HZ	3.25OHM @ 7.25KHZ	IMPEDANCE, MINIMUM
+64 DEGREES @ 2.6KHZ -41 DEGREES @ 56HZ	+42 DEGREES @ 3.2KHZ -49 DEGREES @ 760HZ	+49 DEGREES @ 4.35KHZ -53 DEGREES @ 950HZ	+30 DEGREES @ 4.35KHZ -23 DEGREES @ 785HZ	+55.8 DEGREES @ 2.8KHZ -34 DEGREES @ 760HZ	+56 DEGREES @ 2.35KHZ -38 DEGREES @ 45HZ	MAXIMUM PHASE ANGLE
42HZ	40HZ	40HZ	95HZ	45HZ	35HZ	PROJECTED IN-ROOM EXTENSION (EQE)

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BURIED TREASURE

RICHARD BLACK GOES DIGGING FOR THE TRUTH ABOUT DIGITAL COPY PROTECTION.

The concept of copyright goes back nearly three centuries. Once printing had become well established as a means of making multiple copies of a book or piece of music, it was recognised that the person who created the original should have some rights over it, rewarding the work put in to create it. Laws were enacted in most countries to enforce this.

Fast forward to 2001. 5p-a-sheet photocopiers are on every street corner, and blank CD-Rs cost well under a quid. But making the original master tape for a CD costs a minimum of £2,000, and that's for a tiny-scale, no-profits-for-anyone, solo classical recording. Recording an opera or a large-scale pop album starts from six figures and goes upwards. For most recordings issued today, the origination costs considerably exceed the manufacturing costs of the disc – which have come down to next-to-nothing, while artistic endeavour has pretty much kept pace with inflation.

FINGERPRINTS ALL OVER

No wonder, then, that record companies are keen to stamp on any kind of piracy as hard as possible. Recognising that asking people not to do it may be of limited efficiency (remember those 'Home taping is killing music' LP sleeves?), the recording biz has come up with various anti-copying schemes over the years. The most infamous was Copycode, which put a recognisable fingerprint or 'watermark' on the recording: unfortunately it was easily audible and everybody objected, so it was dropped. We currently have Serial Copyright Management System (SCMS) built into all domestic digital recorders, a simple system that doesn't interfere with the audio as such and allows only limited digital copying.

Trouble is, SCMS is a bit too simple and too easy to defeat – not least by the expedient of analogue, rather than

digital, copying. Even cheap digital gear these days has pretty good analogue-to-digital and digital-to-analogue converters and an analogue copy need hardly be much lower quality than a direct digital dub. So watermarking is once again on the agenda. The concept is simple, and closely analogous to printed watermarks: embed a specific signal in the audio, a signal which (ideally) has no effect on what one hears but which is detectable by the replay or copying equipment and can be used somehow to control and/or trace copying.

So far so good. But two interesting points arose from a recent seminar on watermarking organised jointly by various professional audio bodies. First, not surprisingly, that bit about 'no effect on what one hears' is subject to heated debate. Can that really be done? In short, you can fool most of the people

rise to a serious problem: how do you make a watermark which is subtle enough not to degrade the fine performance of DVD-A and SACD but robust enough to survive 64kbps Internet transmission? Evidently the record companies have not taken long to realise that if they are to succeed in selling DVD-A and SACD it will be on the basis of sound quality, and if that is hampered by audible watermarks the whole system will bomb. But since copying via the Net is the fastest-growing area of violation, any watermark that fails to control that is as good as useless. So far, few public demonstrations have been given of watermarks, and the most widely publicised was a disaster, denounced by almost every 'name' in audio who attended.

But the bombshell was dropped by that indefatigable scourge of woolly-

“JUST EXACTLY HOW WILL WATERMARKING PREVENT THE MAKING OF MULTIPLE COPIES? IF THE TRUTH IS OUT THERE, IT AIN'T HALF WELL HIDDEN.”

most of the time... Astonishingly, though, the second point is that there doesn't even seem to be agreement on exactly what the watermark is supposed to achieve or how it will achieve it.

WATER OFF A DUCK'S BACK

Let's look at the audibility question first. Copycode used 1970s technology, all analogue, and was fairly crude. Modern watermarks use digital techniques to create subtly hidden, noise-like, patterns which can be made much less audible but even so can survive such signal-mangling regimes as copying to cassette, manipulation of dynamics, even speed and pitch variations – and also of course MP3 and similar coding schemes. It's a matter of common sense though (and provable mathematically) that the more robust you want your watermark to be, the more audible it is likely to become. This immediately gives

thinking consumer electronics bodies (and sometime HFC contributor), Barry Fox who pointed out that none of the official bodies campaigning for watermarks seems to have defined exactly how a watermark will prevent copying. (And in fact no watermark system currently on the table will have any effect on any current CD, MD or cassette recorder or player.) Putting watermarks on and reading them off again is not the problem, it's what to do with the information contained in the watermark. Will it allow one copy, like SCMS? Supposedly, yes. But just exactly how will it prevent further copies? If the truth is out there, it's well hidden.

So do watermarks actually solve any problems? So far, not obviously – and they seem likely to create problems of their own. Protecting intellectual property is all well and good, but it seems this may not be the ideal way to do it after all.



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MULTICHANNEL AMPLIFIERS

WITH DVD-A AND SACD BRINGING MULTICHANNEL TO HI-FI, RICHARD STEVENSON CONSIDERS THE MUSICAL ABILITY OF SOME TOP-NOTCH AV AMPS.

Like it, love it or loath it, multichannel sound is here to stay. Home cinema might have started the surround sound ball rolling, but high resolution music formats like DVD-Audio and SACD are set to pick it up and run. The good news is that today's top-flight AV amps are designed to shine with both music and movies. But how does the minimalist approach to hi-fi sit with digital processing, video switching and a multitude of channels?

The seven models lined up here represent some of the most musically aware multichannel amps on the market. In addition to the digital wizardry, each makes a conscious effort to be a hi-fi amplifier when the TV is switched off. They all use hi-grade components and analogue inputs are routed directly to the pre and power stages to keep the signal path as clean as possible. Some models shut down the digital processing and video circuits completely, effectively simulating a traditional, purist analogue design.

Flexibility is another prerequisite. On CDs and DVDs alone there are around 15 separate digital sound formats, each requiring different processing algorithms. (You can't beat an amp with good rhythms!) And the proliferation of formats is not over yet...

One facility essential for anyone who wants to hook up a DVD-Audio player, or one of the forthcoming multichannel SACD machines, is a 5.1 channel analogue input. For copy protection reasons, full resolution digital hook up has not yet been applied, so analogue connection for each channel is currently the only way. All the amps and receivers (amps with tuners) assembled here have such a facility, some with a 5.1 channel input while others stretch to 7.1 for the latest six or seven channel formats. These are currently more applicable to movies, but the relevance of more than five channels will increase for music too.

From the few discs we have heard so far, DVD-Audio has a lot of multichannel potential and surround sound SACD could be absolutely blinding. These formats have the potential to revolutionise music replay and create a demand for flexible, high quality amplifiers to form the heart of multichannel, multi-format systems for both audio/visual and audio-only software. Our contenders here have all the right basic ingredients but can they cook up a sonic delight pleasing to all palates?

ON TEST

Arcam AVR100	£799.90
Denon AVC-A1SE	£2,499.99
Kenwood KRF-V9993D	£1,299.99
Marantz SR-14EX MKII	£3,249.90
Myryad MDP500/MA240/MA360	£3,800.00
Rotel RSP976/RMB1075	£1,700.00
Technics SU-C1010/SE-A1010 x3	£1,349.80

OTHER EQUIPMENT USED

Denon DVD-3300 DVD-A/V player
 Sony DSP-9000ES DVD-V/SACD player
 Tannoy S10 main speakers
 Tannoy D750 centre speaker
 Tannoy 631 rear effect speakers
 Tannoy 622 surround back speakers
 Tannoy M2 rear corner speakers (for the Denon)
 REL Stadium subwoofer
 Ixos & Gale cabling

SOFTWARE USED DURING TESTS

Stereo Music

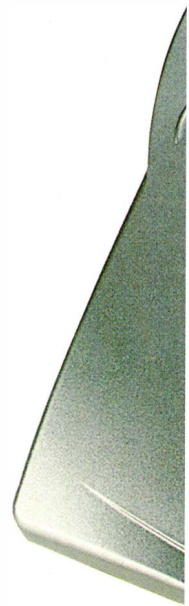
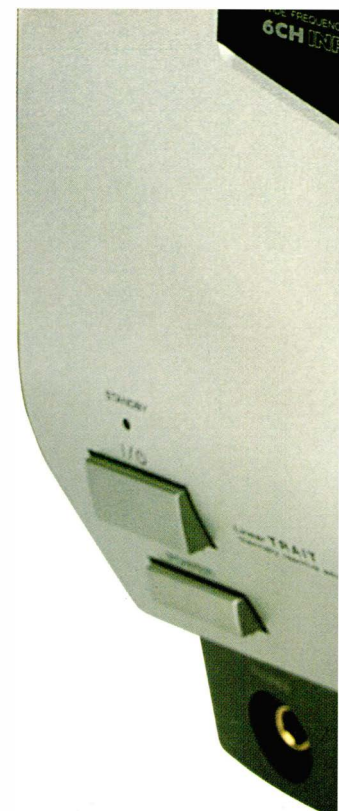
Eric Clapton - *Reptile* (CD)
 Papa Roach - *Infest* (CD)
 Coldplay - *Parachutes* (CD)
 Beverly Craven - *Beverly Craven* (CD)
 Yo Yo Ma - *Appalachia Waltz* (SACD)
 Wynton Marsalis - *At the Octaroon Balls* (SACD)

Multichannel Music

Larisa Stow - *Moment by Moment* (DVD-A/MLP)
 Steve Stevens - *Flamenco A Go Go* (DVD-A/MLP)
 Stone Temple Pilots - *Core* (DVD-A/MLP)
 Chopin - *Piano Concerto No. 2* (Dolby Digital 5.1)
 Underworld - *Everything, Everything* (Dolby Digital 5.1)
 The Eagles - *Hell Freezes Over* (dts 5.1)

Film

Titanic (dts)
Gladiator (dts ES 6.1)
The Abyss (Dolby Digital 5.1)
Mission: Impossible 2 (Dolby Digital 5.1)
Austin Powers 2 (Dolby Digital EX)





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DTS
96kfs
HDCD

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DOOR OPEN/CLOSE

music
movie
edit
setup
listen mode
sound

ENTER
FIRM
VOLUME UP/DOWN

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SYS. POWER I/O
CONTRAST
AUDIO VIDEO 2WAY LCD REMOTE CONTROL SYSTEM
BACKLIGHT



ARCAM AVR100 5.1 RECEIVER

“IT TAKES JUST A NEW YORK MINUTE TO SEE THAT THE ARCAM HAS SONIC POTENTIAL.”

SOUND ★★★★★ **VALUE** ★★★★★ **£799.90** **CONTACT** 01223 203203 www.arcam.co.uk **GUARANTEE** 2 years

Despite being a fraction of the cost of many contenders here, Arcam's latest AV receiver makes it into this multichannel test by dint of the company's enviable hi-fi pedigree. Simplicity of design has always been an important Arcam strategy, so the AVR100's feature list is distinctly frugal and the connectivity basic. However, what you do get is £800 worth of solid engineering.

The battleship quality (and battleship grey) casework is smooth and stylish, and the fittings from the aluminium volume knob to the BFA speaker terminals are inspiringly solid. Inside is equally stark, marrying Dolby Digital and dts processing with five channels of a claimed 70 Watts each, rising to 90 Watts in stereo. Less is more, apparently. Even the handset is simple – although sonic grounds cannot be claimed for this particular piece of minimalism.

On the downside, this frill-free approach does not benefit the set-up and installation procedure. The rudimentary on-screen display guides you through easily enough, but there are simply too few adjustable parameters to balance the AVR100 in anything but a nicely symmetrical room. Speaker size selection, which influences low frequency effects (LFE)

routing in Dolby Digital, is particularly limited. It offers only three pre-sets, none of which ideally matched our test system.

Is this a step too far for minimalism? Selecting the nearest pre-set (large front, small centre, small rear, no sub) we pressed on to see if the proof of purity was in the pudding of playing.

SOUND QUALITY

It takes just a *New York Minute* to see that the Arcam has some sonic potential. The Eagles' DVD comes across with a good degree of poise and passion, and well-detailed dts surround. Bass is lightweight but articulate, potentially because of the 'no sub' setting. The upper frequencies have similarly good clarity and extension, although Henley's voice has a tad more sibilance than it should.

Switching to the Larisa Stow DVD-A produces another admirable performance. At sensible volumes, the balance across all channels makes for seamless integration of the soundstage and an enjoyable musical experience. However, get a little reckless with the volume control and this twee sonic pastiche collapses into acerbic treble and flapping bass drivers. A multichannel, powerhouse party animal, the Arcam is not.

Conversely, the stereo performance of this little amp packs considerably more punch and potential for boogying on down. Coldplay's *Spies* is expressive and open, while the rolling bass line on Eric Clapton's *Got You On My Mind* washes over you in waves.

Film soundtracks reveal the Arcam's power shortage when all channels are driven, experiencing the audio equivalent of a brownout when the going gets tough. In trying to fill a large room with the launch of Dr Evil's spaceship, for example, it slips from well-poised to woollier than an Aran sweater.

CONCLUSION

Considering its relatively affordable price tag, Arcam's AVR100 gives a good account of itself. It is at its best with stereo, while its multichannel sound is ideally suited to low volumes or smaller rooms – circumstances for which it can be confidently recommended.



The minimalist remote control matches the main unit's swish styling.

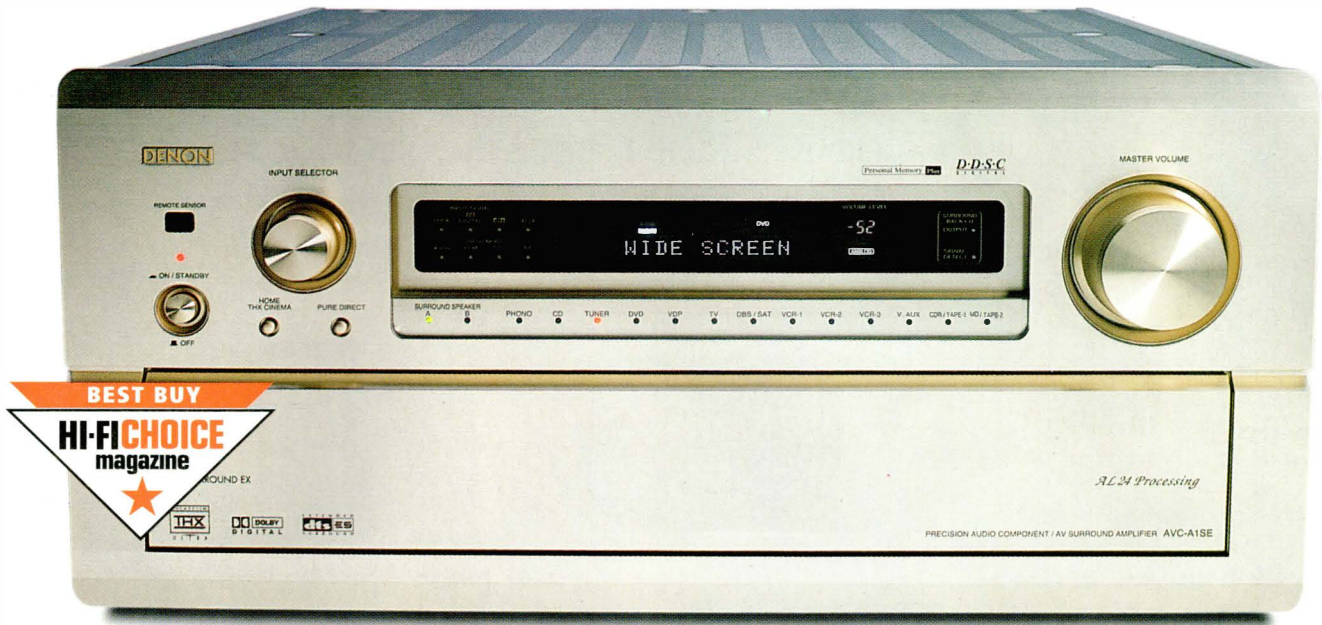
CONNECTIONS

AUDIO

- 6 x stereo analogue inputs
- 3 x stereo analogue outputs
- 3 x digital inputs
- 5.1 channel input
- (DVD-A/SACD multichannel ready)
- 5.1 channel output

VIDEO

- 4 x composite video inputs
- 2 x composite video outputs
- 3 x s-video inputs
- 2 x s-video outputs



DENON AVC-A1SE 7.1 AMPLIFIER

SOUND ★★★★★ **VALUE** ★★★★★ **£2,499.99** **CONTACT** 01753 888447 www.denon.com **GUARANTEE** 2 years

In an AV market beset with more sound formats than you can shake a 12cm plastic disc at, Denon's approach is much like our Underworld test DVD – everything, everything. Crammed inside this behemoth are seven channels claiming 170 Watts a piece (that is nearly 1.2kw of power!) and decoding for all of the digital formats in domestic use. This includes THX surround EX 7.1, dts-ES 6.1 discrete and full 24-bit/192kHz conversion.

The rear panel of the AVC-A1SE is almost as sexy as the sumptuous gold fascia, as it sports probably the most comprehensive and logically laid-out array of socketry ever to grace an AV amplifier. A feature unique to Denon is the tertiary set of rear-effect speaker terminals for additional speakers mounted in the rear corners of the room. This channel switches power from the standard surround rear output for, claims Denon, more accurate 5.1 channel music reproduction – so that is how we set it up for the tests.

This complex beast is operated by a whopping great LCD touch-screen remote control and comprehensive on-screen display. The remote is far removed from the toy-town design of previous Denon kit, being a positive joy to use, although still not as slick as the Kenwood device.

SOUND QUALITY

Being eminently familiar with the house sound of Denon's integrated AV amplifiers of recent years, the AVC-A1SE comes as quite a surprise. Gone is the slightly gung-ho enthusiasm of previous models, replaced by a lucid, open soundstage and an entire gym full of well-polished muscle.

The title track of Steve Steven's *Flamenco A Go Go* multi-channel DVD-Audio disc bristles with clarity and passion. The timing of the rapid Spanish beat is impeccable and soon gets you pirouetting around the room looking for a bottle of Sangria and a neighbour who can play the castanets.

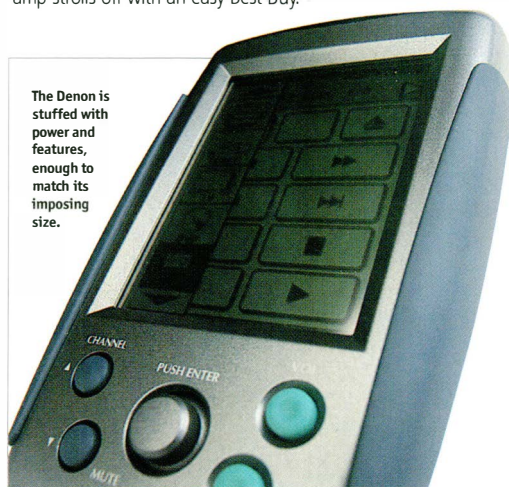
The supremely well recorded dts version of the Eagles' *Wasted Time* sounds distinctly compressed after the revelation of DVD-Audio. In fact, the presentation is superb but it underlines the highly revealing nature of the Denon.

Stereo music on CD and SACD has a similarly insightful presence. The upper frequencies demand special praise for sheer clarity and transient attack without stepping into forwardness. Bass is potent and tightly controlled, albeit not quite as detailed or depth plumbing as the Myriad. And does this amp ever go loud. In a mad, bad, reckless *Push Upstairs* moment from the Underworld DVD, the average sound pressure hit the high side of 110dB with stunning, concert-realistic grace.

The AVC-A1SE's Achilles heel, albeit a minor one, emerges with movie material. While its neutral balance, thunderous bass and open soundstage make for awesome large-scale home cinema, especially with all seven channels driven, its ruthlessly revealing nature is less than sympathetic to poorly recorded soundtracks – rubbish in, rubbish out.

CONCLUSION

This price is far from bargain basement, but Denon's AVC-A1SE comfortably justifies the cost in specification and future-proofing alone. Add to this awesome home-cinema sound and musicality miles ahead of the integrated AV herd, and this amp strolls off with an easy Best Buy.



"IN A MAD, BAD, RECKLESS PUSH UPSTAIRS MOMENT FROM UNDERWORLD'S DVD, THE SOUND PRESSURE HIT THE HIGH SIDE OF 110DB."

CONNECTIONS AUDIO

13 x stereo analogue inputs (inc. turntable)
5 x stereo analogue outputs
9 x digital inputs
2 x digital outputs
2 x 7.1 channel input (DVD-A/SACD multichannel ready)
7.1 channel output
2 x multi-zone outputs

VIDEO

3 x component video inputs
1 x component video output
8 x composite/s-video inputs
5 x composite/s-video outputs

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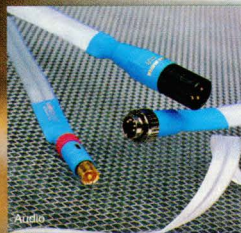
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Digital



KENWOOD KRF-V9993D 5.1 RECEIVER

SOUND ★★★★★ **VALUE** ★★★★★ **£1,299.99** **CONTACT** 01923 816444 www.kenwood-electronics.co.uk **GTEE** 1 year

Kenwood has always been a company to forge its own path and the KRF-V9993D AV receiver is no exception. From the outside, the curvaceous casework, vivid blue lights and lacquered side panels are distinctly 1970s Doctor Who-esque.

On the inside, Dolby Digital and dts processing go without saying but the core technology is Kenwood's DRIVE circuit, which provides 32-bit processing and switches filtering depending on the digital input. Other neat functions include automatic video input conversion, allowing a single monitor output irrespective of input (s-video, composite or component), superb connectivity and an RDS tuner.

The remote control is pure class, being a sexy, touch-screen, two-way device that eliminates the need for a complex display on the amp itself. It could probably stand a review in its own right, as it's a masterpiece of ergonomics. There is more than a passing nod towards multi-room applications, the rear panel offering assorted bi-directional remote control extensions. All in all, Kenwood's flagship package is a solid and well thought-out bit of kit.

SOUND QUALITY

After a few test discs to get the channel set-up spot on, the Kenwood quickly made a name for itself as a well balanced and level headed performer. The cosy *Living in Your Eyes* from the multichannel Larisa Stow DVD-A comes across smooth and silky with admirable neutrality in the vocal range. Bass is fulsome and round and, though a little thuddy in nature, it never dominates the mix.

The bluesy Eric Clapton CD similarly benefited from Kenwood's Sunday afternoon attitude at low volumes. After a few minutes, *Don't Let Me Be Lonely Tonight* finds you swaying along with the honeyed rhythm, craving a smoky room and a bourbon on the rocks. The sound is more congested than most and tends to get caught up inside the speakers, but it retains an essential musicality that is hard to dislike.

Upping the ante somewhat, the funky *Life in the Fast Lane* from the dts Eagles DVD fairs okay, with plenty of drive and

gusto but little in the way of detail or depth. Upping the volume yields impressive swings in scale and sound pressure, but hardens the treble without gaining much air or space in the soundstage. Unfortunately the more subtle and taught the music becomes the less fun the Kenwood has reproducing it. The rich cello on the Yo-Yo Ma SACD for example sounds notably lifeless and shut-in.

About five seconds into *Mission: Impossible 2*, it is clear where the Kenwood's heart really lies. Action sequences positively explode out of the speakers and bass effects have sofa-shaking scale. The smooth presentation of this amplifier allows you to get to serious volumes without the treble becoming violent, and the overall cinema-esque ambience will sit well with the dedicated popcorn fan.

CONCLUSION

The Kenwood amplifier's inoffensive nature, potent dynamics and many useful features will no doubt win it friends in the home cinema fraternity. However, as a high performance, all-round home entertainment package, its poor musical resolution sadly lets it down.



"ACTION SEQUENCES EXPLODE OUT OF THE SPEAKERS AND BASS EFFECTS HAVE SOFA-SHAKING SCALE."

CONNECTIONS

AUDIO
 8 x stereo analogue inputs (inc turntable)
 5 x stereo analogue outputs
 14 x digital inputs
 2 x digital outputs
 5.1 channel input (DVD-A/SACD multichannel ready)
 5.1 channel output
 1 x multi-zone output

VIDEO
 2 x component video inputs
 1 x component video outputs
 4 x composite/s-video inputs
 3 x composite/s-video outputs



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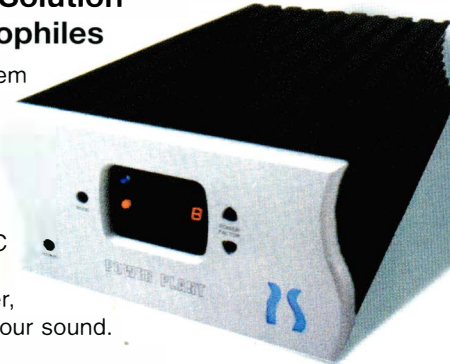
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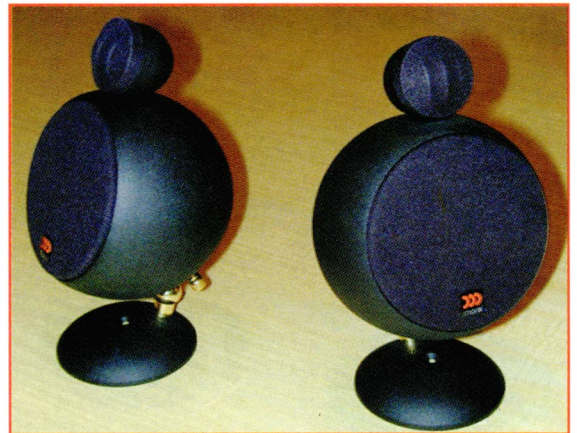
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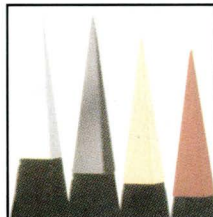
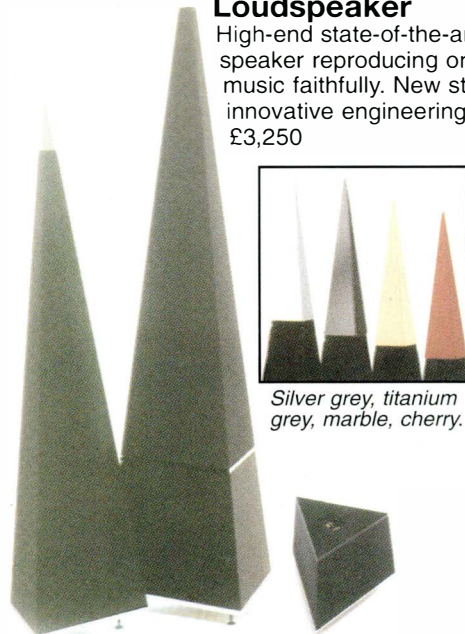


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MARANTZ SR-14EX MKII 5.1 RECEIVER

SOUND ★★★★★ **VALUE** ★★★★★ **£3,249.90** **CONTACT** 01753 680868 www.marantz.co.uk **GUARANTEE** 2 years

Integrated multichannel receivers do not come much more serious than Marantz's SR-14EX MkII. Sporting a price ticket that would not look out of place on a low-mileage small car, the technical specification, build quality and finish are absolutely first class.

Under the matt gold bonnet is a THX Ultra design, offering Dolby Digital EX 7.1 and dts-ES Matrix 6.1 decoding. Bizarrely, despite handling these six/seven channel formats, the SR-14EX MkII only has five channels of amplification, with two pre-outs for the surround back speakers. Considering this amp packs 140 Watts a channel, a similarly specified stereo THX power amp is going to add, at the very least, another £500 to the bill if you want the full seven channel spec.

The connection line-up covers most angles, although not in the quantity of some, and the inclusion of a fully equipped RDS tuner is a bonus. Best of all, the SR-14EX MkII comes supplied with the superb RC5000 remote control as standard. Not only is this PC-programmable, touch-screen device rather nifty to use, it has a recharging holster that means defunct batteries mid-movie are a thing of the past. It is also available as a stand-alone product for around £300.

The Marantz is far from the easiest machine to set up as the on-screen menus seem to go on forever and the 5.1 channel inputs either bypass the volume control completely or disable all other inputs. However, time spent fine-tuning early on reaps significant rewards.

SOUND QUALITY

The Marantz's sound is large scale all the way, fusing a clean top-end with weighty and sumptuous bass lines. The leading edge of Steve Stevens' guitar has a great sense of realism and the timing is excellent. The soundstage has not quite the breadth or clarity of the Myriad, but it certainly creates a wholly believable presence in the room.

The same is true of the Chopin concerto in Dolby Digital 5.1. Piano notes have a wonderfully percussive sound and the work's crescendos fire off with serious dynamic aplomb. The bass-orientated Underworld disc comes at you like a power-

hammer and engaging more of the SR-14EX MkII's copious power simply turns the event into a full-on house party.

With stereo CD, solid lower frequencies allow natural vocal warmth and timbre to shine through. Beverly Craven's sensuous tones are rich and characterful although, ultimately, not as well projected or detailed as they might be.

Films with drama and passion are a strong favourite of the Marantz. The emotionally charged meeting of Cruise and Newton across the dance floor in *M:I-2* is absolutely scorching. As the action hots-up, with something like the arena scenes in *Gladiator*, the fulsome bass can get a bit heavy – so judicious use of the LFE control is essential.

CONCLUSION

The SR-14EX MkII is a well-specified amplifier that looks fabulous and does a fine job of immersing you in the heart of both music and home cinema – although there is the expense of finer detail to bear in mind. It comes close to a recommendation then, but it's just overshadowed by the Denon, which quite simply offers better all-round performance for significantly less moolah.



The flashy remote is rechargeable – no more dodgy battery problems.

“ENGAGING MORE OF THE COPIOUS POWER SIMPLY TURNS THE EVENT INTO A FULL-ON HOUSE PARTY.”

CONNECTIONS

AUDIO

- 8 x stereo analogue inputs
- 5 x stereo analogue outputs
- 6 x digital inputs
- 2 x digital outputs
- 7.1 channel input (DVD-A/SACD multichannel ready)
- 7.1 channel output
- 1 x multi-zone output

VIDEO

- 3 x component video inputs
- 1 x component video output
- 5 x composite/s-video inputs
- 4 x composite/s-video outputs

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“SUBLIME 3D REALITY FROM JUST TWO SPEAKERS, REMINDING YOU JUST HOW GOOD STEREO CAN BE.”

MYRYAD MDP500/MA240/MA360 5.1 AMP

SOUND ★★★★★ **VALUE** ★★★★★ **£3,800.00** **CONTACT** 0800 652 5002 www.myryad.co.uk **GUARANTEE** 3 years

Coming in as the most expensive amplifier in this line up, the three-box Myryad was going to have to be a bit tasty to justify its price ticket. Thankfully, even as you remove the weighty components from the packaging, the fundamental engineering quality is obvious. From the brushed aluminium fascias to the huge, gold-plated speaker terminals, the Myryad is in another league.

The MDP500 processor is a marvellously understated design with minimal front panel clutter and a cool blue display. Internal processing is limited to standard Dolby Digital and dts formats, although there is a full 7.1 channel throughput to hook up an EX/ES processor (or DVD player). To implement this would also require another MA240, which elevates the total cost into bank-manager scaring territory.

The MA240 is a two-channel power amp sporting balanced inputs (for use with a stereo preamp) and the potential to bridge into mono, tripling the power into a single channel. The MA360 is near identical, save it gains a third channel and loses the balanced connection and bridging ability. The upshot of all this gives five channels rated at 120 Watts.

The programmable remote control and set-up interface work exceptionally well together, and the most complex part of the procedure is deciding which one of the 30 on-screen display colours to use!

SOUND QUALITY

From the very first strains of the Ray Charles blues classic, *Come Back Baby* on the Eric Clapton CD, the Myryad establishes itself as something quite special. Clapton's crooning leaps out into the room via an immense and superbly detailed

soundstage. This creates the most sublime three-dimensional reality from just two speakers and reminds you just how good stereo can be.

The Steve Stevens DVD-A fared equally well, and with all channels driven the Myryad's sheer transparency leads this group test by a sizeable margin. Upper frequencies are supremely articulate and lavished with oodles of detail and extension, while the midband is open and airy. But it is the lower registers that really take some getting used to. Bass initially sounds lean in comparison to other powerhouses in this test, but it is simply better balanced and has far greater extension. Although a little short on warmth, its sheer depth will rattle windows all over the building.

This veil-free honesty could so easily be the downfall of a compressed movie soundtrack but the Myryad seems to simply step up a level of brawn and kick cinematic butt. From the power and passion of *Titanic* to the claustrophobic atmosphere of the *Abyss*, the Myryad combo manages to sound right for whatever genre you throw at it.

What it can't do, irrespective of the format, is make a silk purse out of a sow's ear. Edgy, sibilant recordings like Coldplay's *Parachutes* come across wholly abrasive, and dynamically challenged material such as the Papa Roach album sound, well, dynamically challenged.

CONCLUSION

Wallet-wrenching ticket aside, the Myryad pre/power combo is a star performer all round. Its open and spacious sound makes for top flight music in any format and its gut-churning bass depth turns every movie into a very physical treat.



The programmable remote is invaluable when setting up a complete system.

CONNECTIONS

AUDIO
 9 x stereo analogue inputs
 5 x stereo analogue outputs
 6 x digital inputs
 1 x digital output
 7.1 channel input
 7.1 channel output
 (DVD-A/SACD multichannel ready)
VIDEO
 6 x composite/s-video inputs
 2 x composite/s-video outputs



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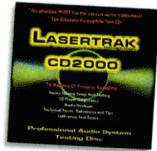


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Ross CD & DVD Lens Cleaner

This recommended component is a must for all digital playback systems. Utilising a unique wet/dry cleaning process, the rotating cleaning brush whisks away the dirt, dust and other contaminants. The 'on disc' talking voice guides you through the cleaning process.



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Manufactured from double stitched nylon with 'UltraStiff' Foamex inner lining these travel cases represent the best in soft storage. Each pocket is also lined with 'SureSafe' preventing discs from slipping or scratching. Ideal for transporting discs to equipment auditions.



SA013 (12) £4.95
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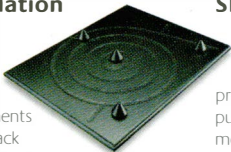
The Orbitrac TM 2

"...the Orbitrac system, used in conjunction with the vacuum-cleaning process, yields cleaning results beyond the abilities of either system individually. Buy an Orbitrac, clean your records, and listen to them with the confidence that you're hearing them at their best." - John Upton Soundstage

ORBTM2 £39.95

RDC SPP Isolation Platform

"The platform drops the noise floor to a point where the instruments hang in an inky black space, further adding to the attack and dynamic improvements generated by the cones." - Roy Gregory Hi-Fi+ Magazine



010848 £99.95

Shure Stylus Force Gauge

Although the Shure SFG-2 tracking force gauge works on the simple see-saw principle, it does it with such precision that we feel you'll be hard pushed to find a better gauge for this modest amount of money. Adjustments may be set in 0.05g increments, the Shure also offers a handy mirror for optical checking.



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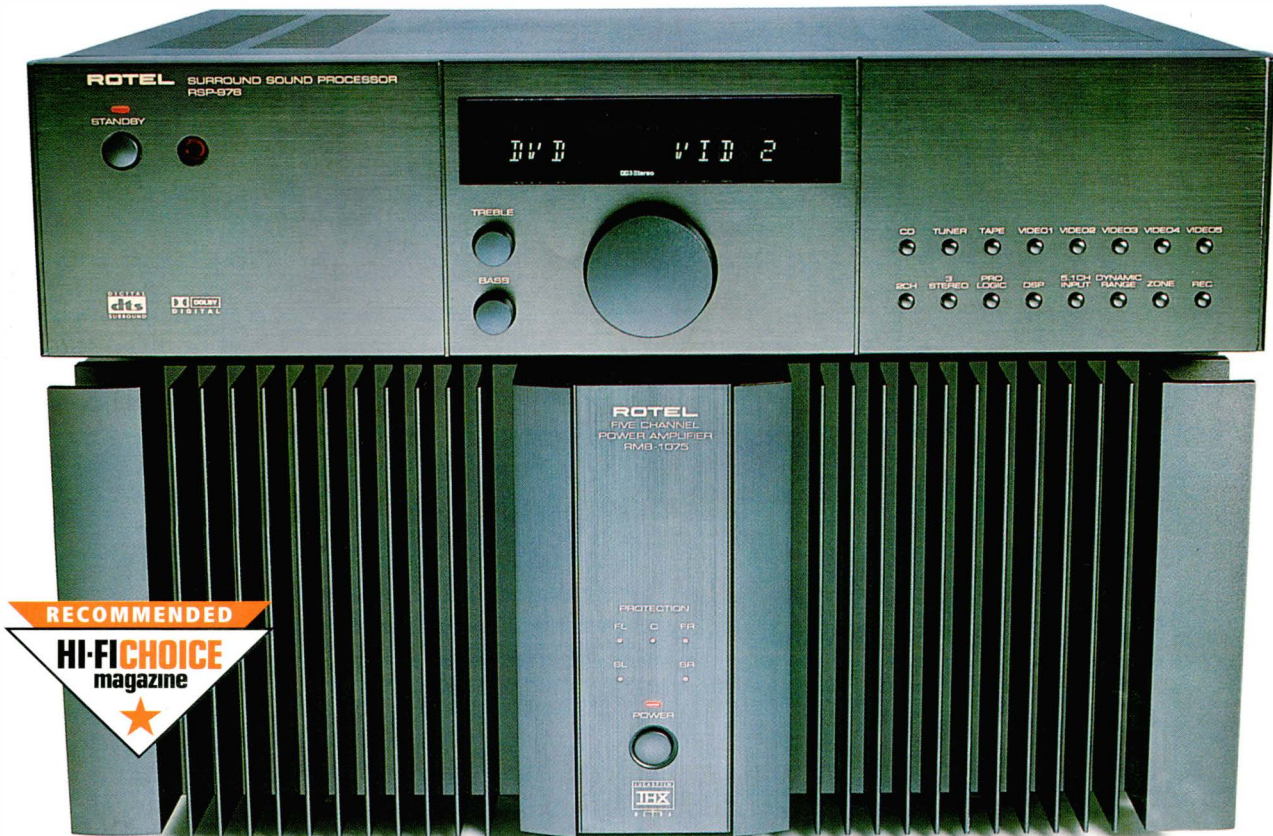


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ROTEL RSP976/RMB1075 5.1 AMPLIFIER

SOUND ★★★★★ **VALUE** ★★★★★ **£1,700.00** **CONTACT** 01903 524813 www.rotel.com **GUARANTEE** 2 years

If you are looking to make a tough nut statement in the living room, then the Rotel pairing is the Vinnie Jones of amplifiers. It's big, powerful, aggressively styled and holds no truck with frilliness or niceties.

The beastly RMB1075 power amplifier is a very solid THX Ultra design offering five times 120 Watts and protection relays for each channel. The menacing rib-rack of cooling fins look the part but will bite the skin off your knuckles every time you pass too close.

Meanwhile, the RSP976 processor's specification is standard Dolby Digital and dts decoding, with an analogue direct function for stereo. Thankfully, this minimalism does not extend to the back panel where a comprehensive array of connections will cater for most eventualities – often in triplicate.

Front panel controls are slightly quirky. Most of the inputs are labelled 'video' and the volume knob does several complete circuits between minimum and maximum. The remote control is well laid out but incredibly sluggish in operation.

Powered up, the Rotel looks mean and moody, and ready to give your entire Iron Maiden back catalogue a thoroughly gung-ho workout. But judging amps by cases, like books by covers, is always a mistake.

SOUND QUALITY

Chopin's Piano Concerto in Dolby Digital is tightly focused and expressive, and going large with the volume affords huge multichannel dynamic swells. On the more delicate piano sections, a mild electronic softening tends to mask the very

edges of the notes but the piece loses none of its ability to get you air conducting (that's air guitar for classical music).

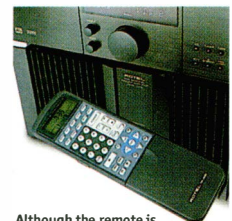
This is eminently true of the Rotel's stereo performance as well. The eclectic Wynton Marsalis SACD emerges sprightly and enjoyable but just fails to extract the last 'nth' of detail. The latter is not such a problem with Papa Roach's in-ye-face *Last Resort* and the Rotel smoothes this raw recording into a high-energy masterpiece of rock/rap fusion.

Input sensitivity via the 5.1 channel terminals is somewhat higher than the digital inputs and can catch you (and your cat!) unawares as you switch to DVD-A. Steve Stevens' *Flamenco A Go Go* cracks off with pace and passion aplenty although the soundstage is relatively bijou compared to the most revealing of amps here. The bass is richly rounded and, while not perhaps as tight as it could be, never gets too overblown or out of shape.

Movie performance is very much the same recipe of well-balanced poise and warm bass. While this suits the subtle ambience of the *Abys*s and the funky soundtrack of *Austin Powers*, it lacks the aggression, or indeed THX post processing, to set the heart racing like the with *M:I2* or *Gladiator*.

CONCLUSION

The RSP976/RMB1075 pairing forms a potent package, capable of cutting to the chase and simply making music. You could list the little sonic foibles until The Who re-form, but if you listen with your heart and not just your ears, then the Rotel hits all the right notes.



Although the remote is comprehensive, its operation tends to be a bit slow.

SPECIFICATIONS

AUDIO

- 8 x stereo phono inputs
- 4 x stereo phono outputs
- 5 x digital inputs
- 2 x digital outputs
- 5.1 channel input (DVD-A/SACD multichannel ready)
- 5.1 channel output
- 1 x multi-zone output

VIDEO

- 2 x component video inputs
- 1 x component video output
- 5 x composite/s-video inputs
- 4 x composite/s-video outputs

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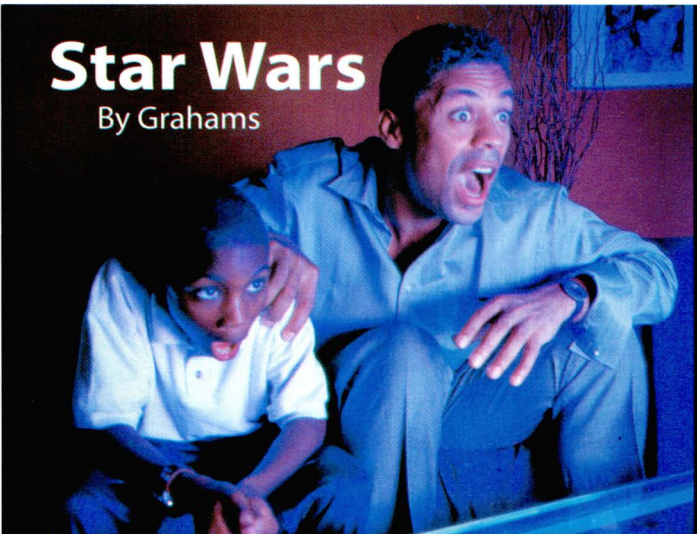
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TECHNICS SU-C1010/SE-A1010 X3 6-CH AMP

SOUND ★★★★★ **VALUE** ★★★★★ **£1,349.80** **CONTACT** 01344 862444 www.technics.co.uk **GUARANTEE** 1 year

This Technics combo tackles multichannel sound from an altogether different angle. The SU-C1010 is actually a stereo preamp with a (volume controlled) 5.1 channel throughput. There is no on-board digital trickery at all, so a DVD player with built-in decoders and a 5.1 channel output is essential. Add to this a trio of 70 Watt stereo power amplifiers and – hey, presto! – you’ve got multichannel amplification.

Theoretically at least, this solution could offer the ultimate in minimalist multichannel audio. The low-voltage digital processing is far removed from high-voltage business of amplification and the set-up procedure is greatly simplified. In addition, you can bi-wire every channel and, if you have an active subwoofer, use the spare sixth channel to bi-amp the centre speaker – always a worthwhile exercise.

On the down-side, control over the speaker set-up is limited to what the DVD player has on offer. This usually amounts to no more than relative volume adjustment. Speaker size, placement and delay settings cannot be tweaked, although this should not prove a major obstacle unless you have an odd assortment of speakers or an oddly shaped room.

Certainly for £1,350, the Technics package offers a whole lot of kit for the money. The four-box approach is going to take up a major chunk of living space and the cosmetic retro-madness of six analogue power meters is a matter of personal taste (but I love it). Despite having effective cooling fans on the power amps, don’t be tempted to stack them up. The heat still builds up and the somewhat mass-market build quality creaks alarmingly under the weight.

SOUND QUALITY

For multichannel sound, the Technics set-up is very much at the mercy of the source equipment’s processing ability. Sure enough, the Denon DVD-A player’s solid bass and up-front approach (see issue 213) shines through. At normal listening levels, the Larisa Stow DVD-A is sparkingly portrayed, tuneful and tonally accurate, if lacking in detailed separation of individual instruments.

This penchant for the delicate extends to stereo, as both the Beverley Craven CD and Wynton Marsalis SACD have good projection and bite. Bass is punchy, but warmth is definitely not on the menu. But picking up the pace further reveals the Technics’ limitations and the humble power on tap struggled to fill our large-ish listening room. Even with all channels driven, the thunderous Underworld DVD falls well short of the full Glastonbury experience.

Movie soundtracks in either Dolby Digital or dts formats retain this lightweight sonic character, being essentially neutral but well short on detail and oomph. The bigger the film soundtrack the more obvious the lack of grunt becomes.

CONCLUSION

If you already own an SU-C1010 and single SE-A1010 partnership, then the gawk-inducing visual assault of the triple power amp version certainly has multichannel merit. It is a clean sounding set-up, potentially at its best in a smaller-sized rooms and systems. However, against the powerful competition lined up for this test, the Technics package just doesn’t cut the full sonic mustard.



Such an unassuming remote control – for such an enormous set-up!

“THE TECHNICS SET-UP IS VERY MUCH AT THE MERCY OF THE SOURCE’S PROCESSING ABILITY.”

CONNECTIONS

AUDIO
6 x stereo analogue inputs
2 x stereo analogue outputs
5.1 channel input
(DVD-A/SACD multichannel ready)
5.1 channel output

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CONCLUSIONS

RICHARD STEVENSON ROUNDS UP...

High-resolution multi-channel music has moved the goalposts for the AV amplifier market.

Simply churning out a respectable film soundtrack is no longer going to win awards, and musical ability has become a prerequisite of AV amp design – in theory.

Of the kit missing the musical angle, the Technics 1010 package is simply too cool and delicate for its own good. Kenwood's KRF-V9993D similarly falls short of greatness when portraying music, but makes up for this deficiency with an enthusiastic cinema sound.

The Rotel, Marantz and Arcam offerings all show a great deal of potential with multichannel sound. Rotel's pre/power combination is the thinking man's muscle amp and can knock out a great tune. Meanwhile, the Marantz is a very classy amplifier indeed and would comfortably make a recommendation – were it about a grand cheaper. In a small listening room, Arcam's hi-fi heritage shines through the AVR100. It is by no means the perfect home enter-










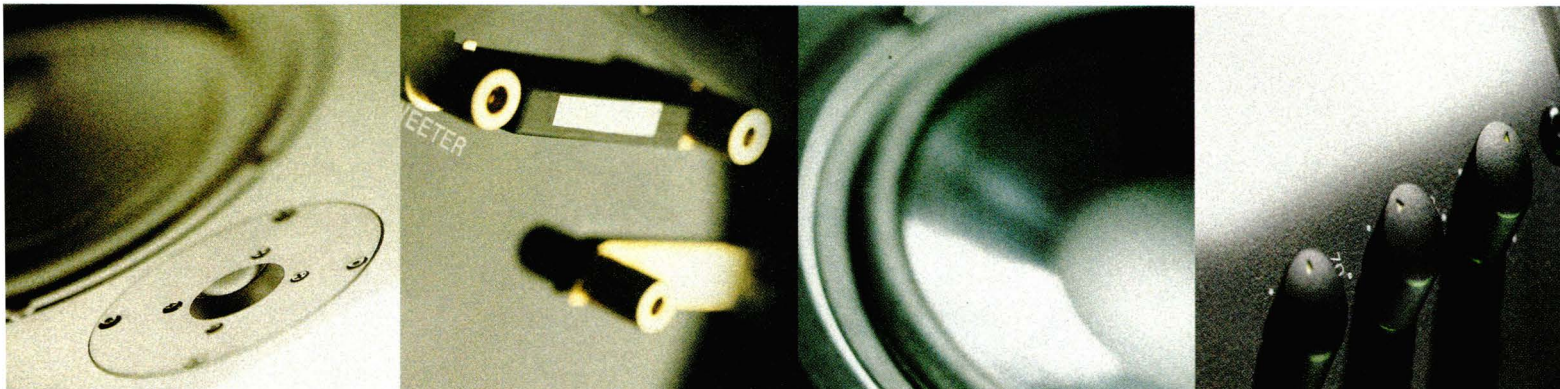
“MULTICHANNEL MUSIC HAS MOVED THE GOALPOSTS FOR THE AV AMPLIFIER MARKET.”

tainer but makes most of the right noises for a very affordable price. Denon's AVC-A1SE takes a holistic view of the AV genre by incorporating everything you need for both movies and music in a single, sumptuous case. Its accolades include most powerful and best equipped integrated AV amp on the market, and now it adds best sounding too. However, if you need convincing of the merits of multichannel

music, then Myriad's superb M-series package is a revelation. Imagine all that is good about high-end stereo, from the breathtaking clarity to the rock solid bass. Add in a huge soundstage, three-dimensional instrument positioning and a sprinkle of venue-realistic ambience. Brew it all for an hour or two with multichannel DVD-Audio and the result is, quite simply, the future of hi-fi.

MULTICHANNEL AMPLIFIERS AT A GLANCE

							
MAKE MODEL	ARCAM AVR100	DENON AVC-A1SE	KENWOOD KRF-V9993D	MARANTZ SR-14EX MK2	MYRYAD MDP500/MA240/MA360	ROTEL RSP-976/RMB-1075	TECHNICS SU-C1010/3XSE-A1010
PRICE	£799.90	£2,499.99	£1,299.99	£3,249.90	£3,800.00	1,700.00	£1,349.80
SOUND VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
CONCLUSIONS	Solid sounding and well-engineered AV amplifier, best for small rooms.	Powerful, articulate, feature-laden and equally at home with music and movies.	Complex amp that rocks with home cinema but loses out on music.	Weighty and expensive beast, capable of immersing you in music and movies.	Awesome detail and timing make this a definitive AV amp, bank manager willing.	Potent and eminently enjoyable amp, which gets right to the heart of music.	Visually stunning four-box amp, but short on grunt and detail.
GUARANTEE	2 YEARS	2 YEARS	1 YEAR	2 YEARS	3 YEARS	2 YEARS	1 YEAR
LAB REPORT							
POWER OUTPUT, 8 OHM, 2ch	100W	200W	100W	195W	155W	160W	90W
POWER OUTPUT, 8 OHM, 5ch	75W	160W	85W	165W	145W	130W	90W
DYNAMIC OUTPUT, 8 OHM, 2ch	130W	230W	130W	225W	195W	195W	100W
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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.

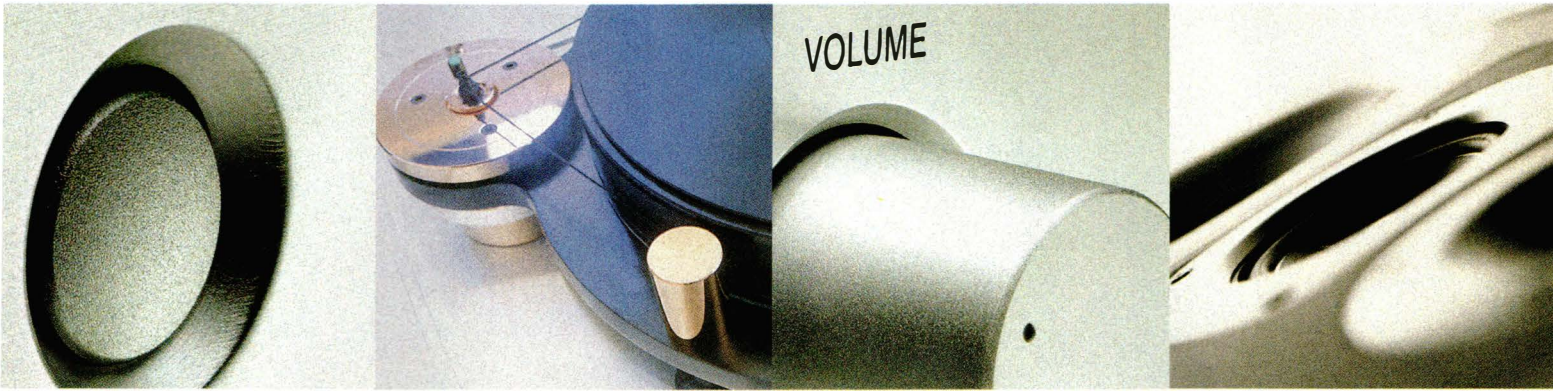
The Role of the Dealer

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

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61/63 Webbs Road, Battersea
020 7924 2040

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020 8400 5555

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Dansk International
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RAYLEIGH HI-FI
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Ringwood, Hampshire
PHONOGRAPHY
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132/4 London Road
01702 435255

Uxbridge **MARTIN-KLEISER**
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01895 465444

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

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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

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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





SPEAKER CABLES

RICHARD BLACK GETS WIRED FOR SOUND AS HE TRACKS DOWN THE LATEST SPEAKER CABLES.

Collected in this group are eight loudspeaker cables, spread over a fairly narrow price range and, despite appearances, representing a similarly narrow range of construction types. Still, there are not really all that many changes one can ring on the theme of speaker cables and many of the 'revolutionary improvements' heralded over the years are in reality rather tiny modifications.

Despite that, there is still plenty of scope for cables to have quite an effect on the overall sound of a system. The reasons may remain obscure, but there is little doubt among most of those who have actually tried it that cables do contribute their own sound signature. It may not be the make-or-break point for most systems, but it's worth a little experimentation and expenditure.

What sort of differences can cables make? Most often, subtle shifts in tonality and/or degree of detail in some or all of the frequency range. As with any hi-fi hardware, it's best if a cable can be auditioned in a familiar system, with well-known recordings. It's always a good sign if you start hearing things in the recording that you hadn't previously noticed, and indeed it's often more productive to listen to the music rather than trying to listen to the hardware itself, which can be misleading. And do swap back and forth between cables: because the differences are often quite subtle, one may tend to prefer one version over all others just on the basis of increasing comfort and familiarity.

These tests were carried out with a fairly esoteric system, but a much less sophisticated amplifier (an old model but broadly representative of decent integrated amp practice over the last decade or so) took a turn and showed that differences by no means disappear with less fancy systems – sometimes, even, they are more obvious. There will inevitably be some degree of variation in results with different amps and even with different speakers, but experience shows that there is also a strong thread of consistent performance with almost all cables – as long as they are not cables which might upset amplifiers. A few amplifiers go wobbly when asked to drive high capacitance cables, a category which doesn't include any of the current suspects.

ON TEST

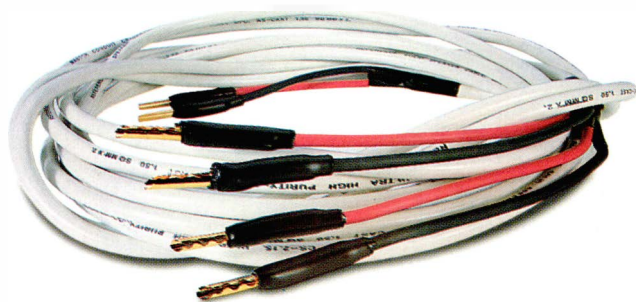
MONSTER CABLE Z1	£12.50/M
QED PROFILE SILVER 12	£15.00/M
ECOSSE REFERENCE CS-2.15	£70.00 (3M pr)
SONICLINK REBEL	£7.50/M
SUPRA CLASSIC 6.0	£4.95/M
TARA LABS PRISM NEXA	£9.95/M
VAN DEN HUL THE SNOWLINE	£5.49/M
XLO PRO 600	£16.50/M

OTHER EQUIPMENT USED

Rotel RCD-971 CD player
 EAR 802 preamp
 EAR 519 monoblock power amps
 Harman/Kardon HK6500 integrated amp
 Custom interconnects
 ATC SCM20 speakers

MUSIC USED DURING TESTS

Miles Davis - *Porgy and Bess*
 The Mavericks - *Trampoline*
 Guzman - *Ambrosio*



ECOSSE REFERENCE CS-2.15

CONTACT: 0141 353 0509 www.referencecables.com G'TEE: 10 YEARS

SOUND ★★☆☆ VALUE ★★☆☆ £70.00*

Nothing too fancy going on here. CS-2.15 is a straightforward solid-core cable, the two cores being quite close together (by contrast with DNM-style wide-spaced pairs) and twisted together under an overall sheath. It is normally supplied in terminated pairs, and Reference fits 'O-Z' type banana plugs which give a good grip in any socket. With a fairly modest conductor size, resistance is moderate while capacitance is fairly low (though dielectric loss is particularly high). Although the cable is hardly very flexible it is happy to stay where it's put, if firmly bent into place.

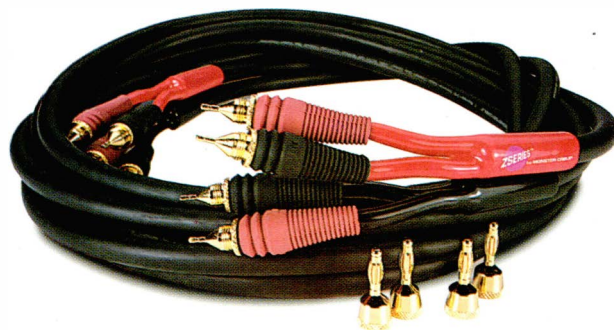
SOUND QUALITY

This cable did quite well in the listening tests, without ever really making a unique mark. Yes, the essentials are there, but while the bass, for instance, is well enough extended and quite clear it doesn't have that effortless authority one might wish for. Maybe that's splitting hairs for a cable at this fairly modest price. But there is also a persistent dryness, which deadens ambience and has a slight hardening effect on voices, and dramatic build-ups of sound can easily become harsh.

There are areas to praise, all the same. Although dryness often implies poor stereo, that is not the case here and lateral localisation proved to be among the better examples in this group. Rhythmic energy seems well preserved as long as your music doesn't rely on the deepest bass (Cuban music, for instance, which tends to use smaller percussion instruments), and treble tonality has a good degree of precision to offset against its occasional slightly hard quality.

Taking the above into consideration, this cable may prove to be one of those that works much better in some circumstances than others: older, slightly 'soft', loudspeakers might appreciate it but it could prove rather brittle with modern, brighter-sounding models. Give it a try by all means, but no gong.

*Price for 3m terminated pair



MONSTER CABLE Z1

CONTACT: 01908 319360 www.monstercable.com GUARANTEE: LIFE

SOUND ★★☆☆ VALUE ★★☆☆ £12.50/M

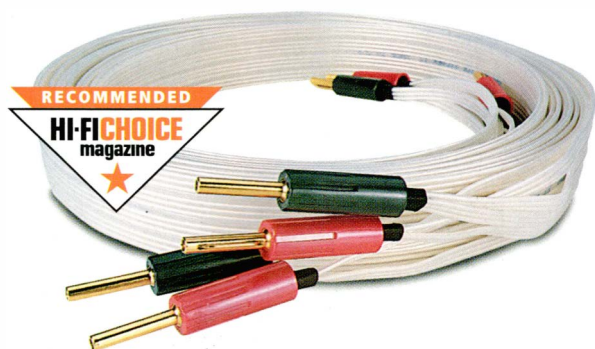
Monster claims to have started the whole high-end cable scene, and the company certainly offers a vast range of products. Despite its high profile in the USA, Monster has been only intermittently available in the UK but it is now once again on dealers' shelves.

One of the Monster trademarks is its proliferation of exactly that, trademarks: here we get Time Correct™ windings, MultiTwist™ construction, a Magnetic Flux Tube™ and PEX™ dielectric. All very exciting, I'm sure. Ultimately, this cable is a figure-8 type with two tightly twisted cores of stranded copper, under a flexible jacket. Despite the large size, resistance is moderate and capacitance likewise. The cable is available off the reel or terminated with 'Monster Lock' interchangeable connectors – adaptors for banana or spade terminals are available separately.

SOUND QUALITY

A middling performance, which gave rise to a lot of occurrences of the word 'quite' in listening notes: quite natural tone, quite exciting, and so on. In fact there are no gross flaws but the sound never seemed to stand out from the crowd or give any wonderful new insights into well-known recordings. Bass and lower midrange are probably the best areas, with decent extension and pleasing detail which help with male voices, for instance, but there could usefully be a bit more bass drive and kick to help pumping rhythms along. Upper midrange and treble can sometimes be a bit recessed, and as a result, while the tonality of individual instruments is good, large ensembles can seem slightly dull. A mild veiling of detail leads to rather compromised stereo depth (though lateral placing is good) and some splashiness at climaxes. Acoustic decay is good but not outstanding.

Overall this cable produces a sound that is certainly not distressing, but it's perhaps not the ultimate that could be achieved for the price.



QED PROFILE SILVER 12

CONTACT: 01483 747474 www.qed.co.uk GUARANTEE: 2 YEARS

SOUND ★★★★★ VALUE ★★★★★ £15.00/m

Normally sold off the reel, this cable presents a multitude of possibilities for anyone with patience, because it effectively has 12 separately insulated cores which can be connected in many different ways (with care!). Bi-wiring is certainly an option, but the review sample was configured in what is probably the most common way, with the two outer pairs of three wires commoned together and the two inner pair likewise. A couple of millimetres thick, it can just about go under a carpet or be fairly well concealed against a skirting board. Despite that, it has quite low resistance, and low capacitance too in this configuration. The conductors are silver plated and the insulation is low loss, low density polythene.

SOUND QUALITY

This is a cable that repays a good careful listen rather than snap decisions, because its sound doesn't immediately reach out and grab you. It's just the tiniest bit laid back and occasionally there is a slight softness on 'bass transients' like plucked double bass, but extended listening shows that it is very neutral and revealing overall. In fact, it simply doesn't get in the way or force itself on the listener's attention – surely a virtue in any hi-fi product! So while that softness might count against it if you like your music really aggressive and up-front, with almost any acoustic music the natural and unforced dynamics, and the high degree of detail, are most welcome.

Yes, there are improvements above what this cable has to offer, and its image depth, for instance, is good rather than excellent in the wider scheme of things. Its portrayal of ambience is just a little dry too. But for its price – which most people would probably describe as only mid-range, although it's second highest in this group – it seems to offer a very fair performance and I can't instantly think of a better cable for less money. Thus, it's Recommended.



SONICLINK REBEL

CONTACT: 01332 361390 www.audiocables.co.uk G'TEE: 2 YEARS

SOUND ★★★★★ VALUE ★★★★★ £7.50/m

Although the review sample came terminated for bi-wiring, this cable could just as easily be used for tri-wiring or conventional single wiring, since it consists of nothing more than six identical colour-coded wires twisted together. Each wire contains stranded conductors of tinned copper, insulated with SonicLink's favourite silicone rubber. That makes for a very flexible cable with a fair amount of copper overall (quite low resistance, at least when configured for single wiring) and medium capacitance with very low dielectric loss. A bit hard to make it disappear visually though!

SOUND QUALITY

Bi-wiring brings its own set of complications. For a start, is it necessarily any better than just running all the cores in parallel? (Not always, in my experience.) And then should one run one wire for treble and two for bass, or the other way? Suck it and see. In fact I ended up simply paralleling the lot.

That said, this is a great cable for fat bass. Not only fat either: there is more definition than one might expect. So far, so good – especially for use with smaller speakers, which typically need all the help they can get in the bass. But the treble seems to be a touch recessed in the low treble/upper midrange region. That's noticeable chiefly as a change in tonal quality of melody instruments and isn't necessarily unpleasant. Indeed, it may be a positive advantage with some speakers, if perhaps disconcerting with others. Detail is good, especially given the price, and stereo imaging is generally very believable. Finally, dynamics are unconstrained and there's a pretty good 'dance factor'.

All things considered, and with a small rider to the effect that performance may be a little inconsistent (try before you buy!), this cable seems to offer one of the best in the group and certainly the most strongly differentiated, and I think just makes the grade for a Best Buy.



From Formula One to your front room. The inside story of TAG McLaren

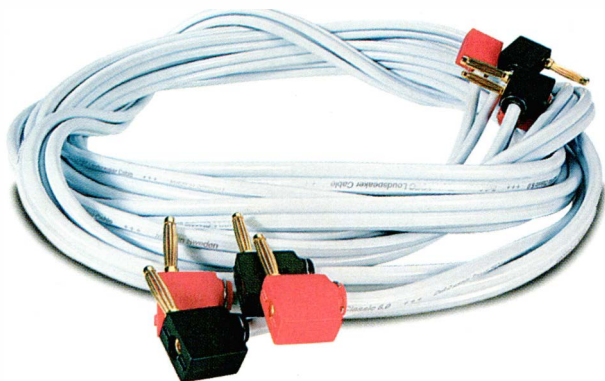
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SUPRA CLASSIC 6.0

CONTACT: 01788 556777 www.supracables.co.uk **GUARANTEE:** LIFE

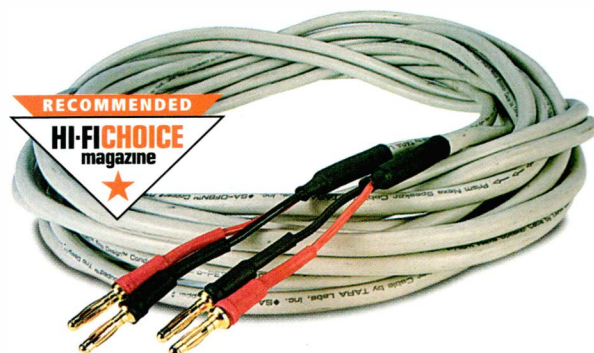
SOUND ★★★★★ **VALUE** ★★★★★ **£4.95/m**

Not much to distinguish this cable from that old favourite 79-strand, except that Classic 6.0 has an unusually large amount of copper (6mm², in fact). That immediately makes it the lowest resistance cable in the group by quite a margin, and marks it out as a good candidate for very long runs. It's obligingly flexible, too, with 756 (count 'em!) very thin strands, each of tin-plated high purity copper, insulated with 'ion stable' PVC which gives a modest but rather lossy capacitance – lower than that of Supra's top 'Ply' cables.

SOUND QUALITY

Many people have pontificated on the usefulness or otherwise of very low resistance in speaker cables, but on the evidence of this test it clearly isn't the only important factor. That's largely on the basis of this cable's rather irritating lack of detail. Irritating because it's like a cloud that just refuses to lift and reveal a view, although one never quite gives up hope that it will. Tonality is not at all bad and bass goes down quite impressively low, but it's still hard to dig out all the little subtleties that distinguish one instrument from another, or indeed the end of one note from the beginning of the next.

Stereo imaging is disappointing too, with a tendency to 'ping-pong' placement in one speaker or the other, or at best a clump bang in the middle. There is always a feeling of plenty of sound being there – a strong presence, if you like – and as long as one isn't listening too closely the whole effect is not unconvincing, but the harder one concentrates the more muddled it all seems to be. Changing amps and speakers made little difference to the overall sensation. It's a shame, because material value for money looks good at first sight, but it's possible to get more insight from cables even below this one's admittedly low price.



TARA LABS PRISM NEXA

CONTACT: 020 8255 6868 www.taralabs.com **GUARANTEE:** LIFE

SOUND ★★★★★ **VALUE** ★★★★★ **£9.95/m**

Like many US-based cable companies, Tara sets great store by its special ways of stranding and twisting conductors. There is little or no scientific evidence to support most of this, but it's hard to see how it can do any harm... Anyway, this particular model employs conductors made up of three strands of very high purity copper, with the conductors in turn twisted together under the sheath – a perfectly normal twisted-figure-8 geometry, in effect. There's not all that much copper in the conductors and resistance is slightly on the high side, while capacitance is quite low and lossy. Nexa handles like a solid core cable and is quite springy, but it can be persuaded to lie flat.

SOUND QUALITY

There's something of a soft balance to this cable which is likely to polarise opinion strongly. At its worst, it makes the bass a little weak and takes some of the bite out of treble-rich instruments like trumpet. At best, though, it can be really quite beguiling. In fact, despite that softness, tonal qualities are generally well preserved, and both treble and bass are pretty well extended. Detail and clarity are good and there's very decent stereo imaging with all but the toughest tracks – just occasionally the tone hardens slightly but dynamics are good and the overall effect is often exciting. In addition, the soft balance is useful with complex sounds like orchestral violins, which often start sounding synthetic with many cheaper cables: here, they show no such tendency and maintain good detail and purity.

Although there is no area in which this cable could be said to be outstanding, it offers an attractive overall performance and should suit many listeners well – lovers of 'phat' beats possibly excepted. Recommended.



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VAN DEN HUL 'THE SNOWLINE'

CONTACT: 020 8997 4280 www.vandenhul.nl **GUARANTEE:** LIFE

SOUND ★★★★★ **VALUE** ★★★★★ **£5.49/m**

Think of this cable as a tweaky version of 79-strand – it has similar parameters in terms of conductor cross-section and geometry. But there are 98 strands, of silver-plated copper, and the insulation is 'Hulliflex' rather than PVC, giving slightly lower capacitance and lower dielectric loss than cheap figure-8 cables, while resistance is fractionally higher. It's flexible and easy to terminate: for review it came with standard 'O-Z' banana plugs.

SOUND QUALITY

The first impression of this cable was that it has an unusual tonal balance, with slight prominence given to the upper bass and low midrange. On closer listening, deep bass is not half bad – greater extension can be found, though not easily or cheaply. And the warmth imparted by what is technically an imbalance is certainly not unpleasant in most circumstances, the only exception I found being a few close-miked male vocal recordings which became just a bit too chesty for comfort.

There's a good degree of midrange detail and a commendably natural treble which never once deteriorated to harshness. Stereo imaging is quite good though not class-leading, with relatively little depth information, and dynamics sometimes seem a little squashed, making for some hardness at climaxes. The decay of sounds in an ambient setting is fairly well preserved, though it is perhaps a little too rapid. Meanwhile the good bass extension makes low-lying melody lines easy to follow and maintains clear pitching on low plucked notes and tuned percussion.

It's hard to summarise the performance of this cable succinctly. It's civilised, like all vdH products, but it seems to have sacrificed something in achieving that. At its price there are a few other interesting cables (from Ixos and QED, for instance) which would be worth comparing, if possible in your own system. But it has its own virtues which seem to justify a Recommendation.



XLO PRO 600

CONTACT: 0115 928 4147 www.xlousa.com **GUARANTEE:** LIFE

SOUND ★★★★★ **VALUE** ★★★★★ **£16.50/m**

This is another twisted-figure-8 cable, as the transparent sheath makes obvious. Each conductor consists of high purity copper strands tightly twisted together, with a good quality insulation which imparts quite low capacitance with low loss. Resistance is low too. Handling qualities are rather awkward. XLO has marked the cable for direction, which is technically controversial but can make a difference.

SOUND QUALITY

As one of the dearer cables in this group, Pro 600 might have been expected to offer at least a distinctive performance. In fact it turned out to be disappointingly middling in most areas of sonic achievement. It has good bass as long as there isn't too much going on above it, but as often happens the addition of many instrumental strands makes for muddle and confusion, with a consequent seeming loss of bass extension too. Likewise, stereo imaging is fine as long as the music is simple – two or three instruments, say – but loses extremes both at the sides and in depth when there a lot going on.

Treble goes up a long way and stays clean, and as a result there is a good feeling of clarity and precision. Occasionally this may seem to err on the bright side, but it at least keeps things lively. Again, it's best with simple textures, and the classic test of orchestral violins fell foul of some artificial sheen. Dynamics are generally natural and unforced, with just a little hardness at high levels, probably related to the general lack of bass and midrange detail.

All things considered this cable has relatively little to recommend it, apart from raw excitement (which admittedly it does well). But it would greatly benefit from more all-round virtues, generally seeming to lack the qualifications for a formal pat on the back.

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CONCLUSIONS

RICHARD BLACK SITS BACK AND UNWINDS THE BEST OF THE CABLES.

I hinted in the introduction that this was an uncommonly close group, and performance certainly didn't span wide extremes. In the end, the SonicLink seemed the most outstanding cable – not necessarily the best in every respect but the one that had the most distinctive sound while not departing far from the 'core values' of neutrality and detail. Such character as it has should be a useful foil to the compromises inherent in many smaller speakers, while at worst it is unlikely to do more than add a bit of fruitiness to larger ones.

Of the three recommended cables, each has its own unique attraction. QED's Profile Silver 12 is expensive by the standards of the group but is one of those products that achieves its status by what it doesn't do rather than what it does,

and is a fine choice for long-term, enjoyable, listening. Its tendency to laid-back rather than upfront presentation is of course something of a matter of taste, but it is mild and for many listeners probably not unwelcome.

“OF THE THREE RECOMMENDED CABLES IN THE GROUP, EACH HAS ITS OWN UNIQUE ATTRACTION.”

Tara's Prism Nexa is not wholly unlike the QED but rather than laid-back, it's a little soft – but a common complaint (about all sorts of components) being the opposite, it will probably please as many as it irritates. The price is moderate (termination is a little expensive at £60) and it is well worth a try in many systems.


Finally, van den Hul's Snowline offers an intriguing mix of virtues for hardly

more than a budget price. Compared with real budget cables like QED 79-strand, it has considerably improved detail and, on the whole, bass, though it is not the most dynamic sound going. But it has an uncommon degree of high-end

sophistication, despite the limitations, where most true budget cables major on excitement and hope for the best with everything else, and so makes its own case with conviction.

None of the other cables is bad and each has something to say: there are also, of course, many other models around – see our Directory and back issues for a start! And have fun choosing...

SPEAKER CABLES AT A GLANCE

				
MAKE MODEL	ECOSSE REFERENCE CABLES CS-2.15	MONSTER CABLE Z1	QED PROFILE SILVER 12	SONICLINK REBEL
PRICE	£70.00 (3M TERMINATED)	£12.50/M	£15.00/M	£7.50/M
SOUND VALUE	★★★★★ ★★★★★	★★★★★ ★★★★★	★★★★★ ★★★★★	★★★★★ ★★★★★
CONCLUSION	Stereo and rhythm are good, but persistent dryness detracts.	Very slightly laid-back, but good tone and detail – wears its achievements lightly.	Slightly bass-rich balance, and could do with a bit more detail.	Plenty of bass, but without sacrificing upper frequency clarity or dynamics.
GUARANTEE	10 YEARS	LIFE	2 YEARS	2 YEARS
				
MAKE MODEL	SUPRA CLASSIC 6.0	TARA LABS PRISM NEXA	VAN DEN HUL THE SNOWLINE	XLO PRO 600
PRICE	£4.95/M	£9.95/M	£5.49/M	£16.50/M
SOUND VALUE	★★★★★ ★★★★★	★★★★★ ★★★★★	★★★★★ ★★★★★	★★★★★ ★★★★★
CONCLUSION	It's all there, but a persistent lack of detail mars the view.	Slight softness affects both bass and treble, but it's very listenable overall.	A hint of high-end civilisation with a few rough edges and a slightly warm balance.	Decent bass and good treble, but confused with densely-scored music.
GUARANTEE	LIFE	LIFE	LIFE	LIFE

Driver control for beginners

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"TWO SIMILAR AMPS MIGHT BEHAVE VERY DIFFERENTLY WHEN FACED WITH THE 'REACTIVE' LOAD OF A REAL LOUDSPEAKER."



While it's convenient to test the power output, response and distortion of an amplifier into a standard 8 Ohm resistor (as is industry practice), there are no loudspeakers that behave so predictably. In practice, two similarly-specified amplifiers could behave – and sound – very differently when faced with the 'reactive' load of a real loudspeaker.

Despite a label on the back of your speakers denoting their '8 Ohm' or '6 Ohm' status, for example, in practice your amplifier is faced with a load impedance that can swing from, say, many tens of Ohms to just a few. All courtesy of reflex port and driver resonances, crossover networks and bass/treble driver coils. These provide a mix of inductance and capacitance, a so-called *reactive* load that the amplifier must deal with. By comparison, the non-reactive 8 Ohm loads used for test purposes are an electrical tip-toe through the tulips.

FIRST PRINCIPLES

Let's break this down into fundamentals. The amplifier drives the speaker's voice coil, typically via a crossover network, which might also include coils (inductors), resistors and capacitors. The current flowing through the coil generates a fluctuating field that works against the fixed field of the speaker's magnet, driving the cone in and out to produce the sound. But this coil is really an inductor in its own right, and the impedance of an inductor varies with frequency, which is why they're used in filter networks like a speaker crossover...

Unlike fixed inductors which are either wound around a ferrite core or air-spaced, the voice-coil of a speaker moves along a pole-piece within a magnet. The impedance, as seen by the amplifier, is constantly modified by the mass and compliance of the driver as a whole. Which is why the biggest changes in impedance are experienced as the cone passes through different points of resonance.

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

Fig (1) demonstrates this quite clearly. Here, the impedance of Audio Note's AZ-One speaker (page 41) rises to a maximum of 18-19 Ohm at the lower and upper system resonance frequencies, (1) and (2) respectively. The dip to around 6.3 Ohm (3) occurs at the resonance of the port (about 50Hz) where the driver is, theoretically at least, not moving at all. At this point, the impedance is determined almost solely by the DC resistance of the static bass unit's voice coil.

Because a speaker's impedance has both resistive and reactive components, the current and voltage drawn from the amplifier move out of step with one another, resulting in a phase shift called a 'phase angle'. Back in the lab, the 8 Ohm resistor often used to test amplifiers has no reactive component so the amps and volts remain in-phase. It's just *too* easy. Real life phase angles place greater strain on the amplifier's output stage which, typically, becomes less efficient and dissipates more heat. If a substantial phase angle happens to coincide with a dip in the speaker's impedance trend then distortion will increase and the amplifier may even fail to achieve its rated output power.

In fig (1) we can see a swing in phase angle (blue trace) between the two bass resonances, though this intersects the 0 degree line at the point where the AZ-One hits its port-tuning frequency of 50Hz. At this critical juncture both voltage and current drawn from the amplifier are perfectly in-phase.

A MOVING PERFORMANCE

This combination of physical resonance and sweeping changes in impedance also influences the purity or 'linearity' of the current drawn from the amplifier. For example, as the voice coil moves further out of the magnetic gap, the flux (the strength of the magnetic field) it experiences is reduced along with the force by which it propels the cone. The further out it extends, the less movement is obtained for a given increase in current. It's easy to see a point at which, no matter how much current is dumped into the speaker coil,

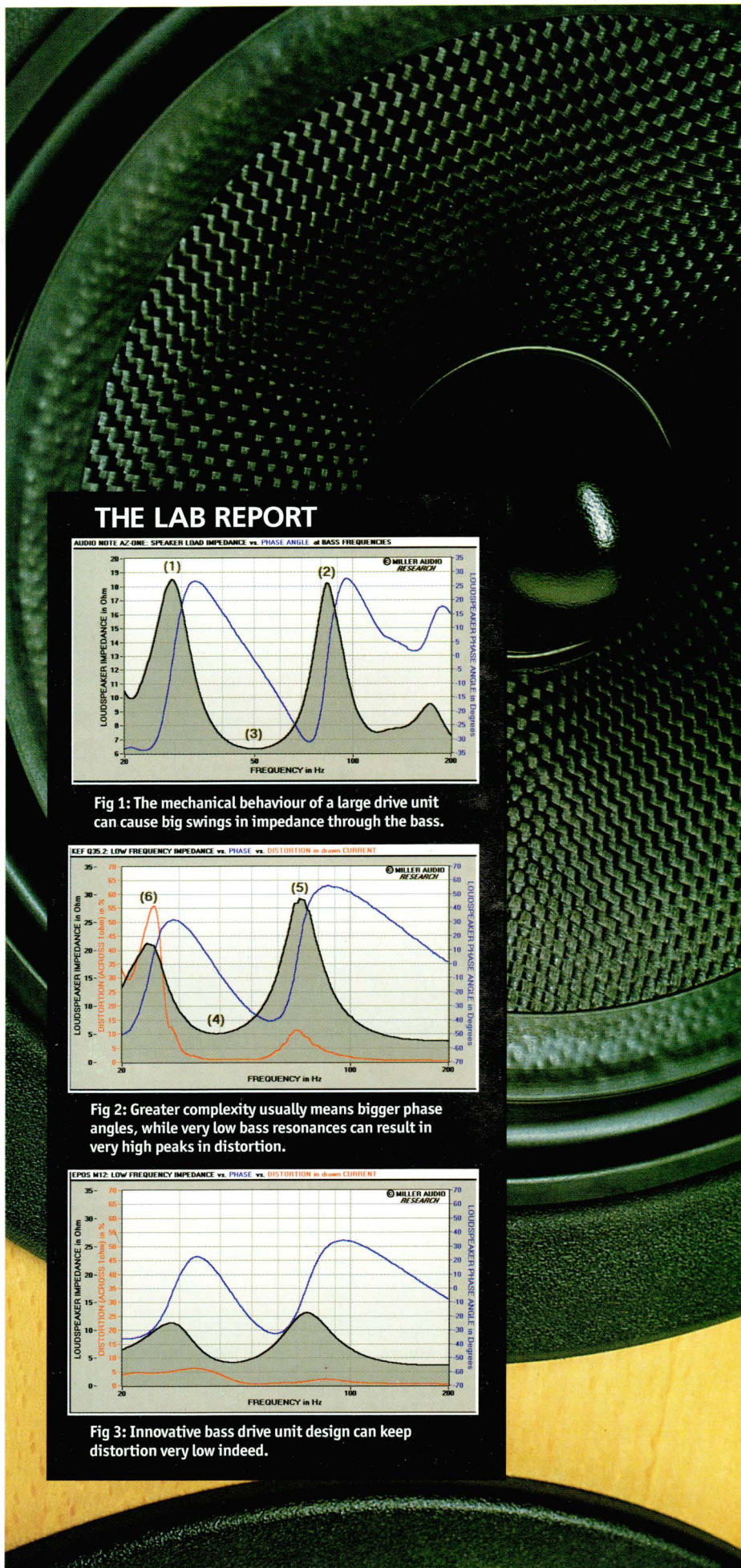
the cone will move no further. As more current is delivered, the distortion rapidly rises. Of course, this situation is compounded by the restriction of the cone surround and spider (its suspension).

By placing a 1 Ohm sensing resistor in the return path of the speaker, it's possible to measure *relative* trends in distorted current. In this way, the red trace added to the impedance (black) and phase (blue) traces (fig 2) from KEF's Q35.2 loudspeaker (page 46) show a correlation between the movement of the bass cone and levels of distortion in the current being drawn. Distortion is less than 1% as the cone almost stops moving through the port resonance (4) but picks up to ~11% with the potential to vibrate more vigorously at the upper system resonance (5). Nevertheless, it's at the very low frequency resonance (6) where the driver's behaviour draws current at 55% distortion!

These figures are magnified through the 1 Ohm sensing resistor placed in the speaker feed for the purposes of measurement. Nevertheless, the voltage was maintained at 2.83V (or just 1W into a nominal 8 Ohm impedance), so the speaker was never driven excessively loud. The actual value in practice will be 10-100x less but will vary according to both speaker and output impedance of the amplifier. Either way, the bass performance of KEF's Q35.2 will be very sensitive to your choice of amplifier.

ANY OLD AMP

Drawn to the same scale(s) as the KEF, fig 3 shows the variations in impedance (black trace), phase angle (blue trace) and distortion (red trace) derived from the Epos M12 (page 44) are far less violent. One crucial factor in the more linear performance of the bass driver is its use of an extended pole piece which allows the cone a decent 'throw' without it extending too far out of the magnetic gap. As a result, even through the bass resonant frequencies, the smooth behaviour of the cone ensures that distortion in drawn current remains very low indeed. As a result, the Epos M12 is much *less* fussy about your choice of amp than many of its competitors.



THE LAB REPORT

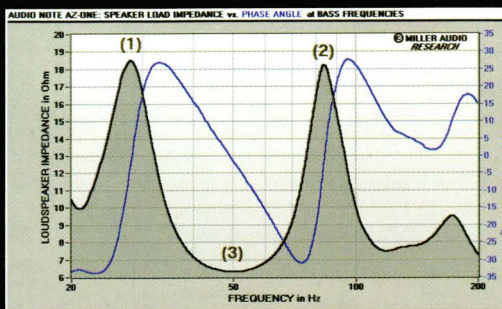


Fig 1: The mechanical behaviour of a large drive unit can cause big swings in impedance through the bass.

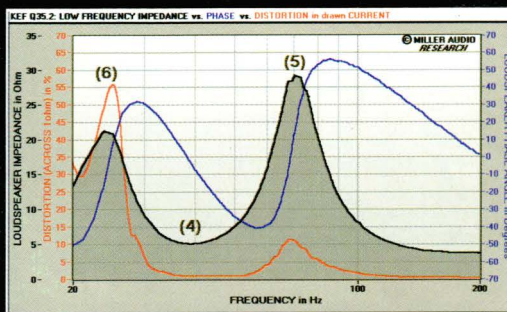


Fig 2: Greater complexity usually means bigger phase angles, while very low bass resonances can result in very high peaks in distortion.

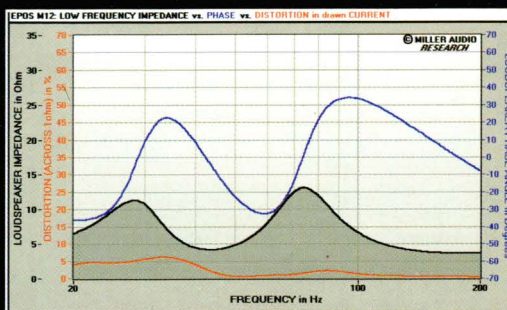


Fig 3: Innovative bass drive unit design can keep distortion very low indeed.



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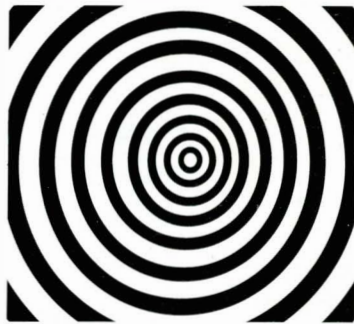
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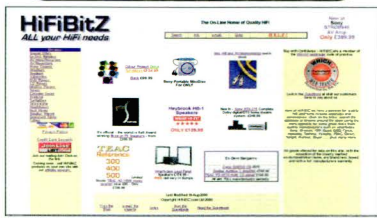
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CAMBRIDGE AUDIO Discmagic transport/Dacmagic 2i DAC, boxed, as new, £70 each. Heybrook HB1 speakers and HBS1 stands, £85. Call 01706 345418.



BUYING TIPS

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

THE DIRECTORY

THE *HI-FI CHOICE* DIRECTORY ROUNDS UP 1,000 PRODUCTS REVIEWED IN OUR PAGES. HERE YOU'LL FIND OUR OPINIONS ON THE BEST HI-FI COMPONENTS, ALONG WITH ALL THE INFORMATION YOU'LL NEED TO DECIDE WHICH ONES ARE RIGHT FOR YOU.

THE ART OF SYSTEM BUILDING

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

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

So once you have shortlisted some components, the next step is to track down a knowledgeable dealer to take you through the options available. As well as getting the basic hardware right there is the question of which cables to use; should you stick with what comes in the box or pay extra for interconnects and speaker leads? Once you've established that the latter is the way, listen to a dealer's recommendations as to the right cable for your system.

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

MAKING CONNECTIONS

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

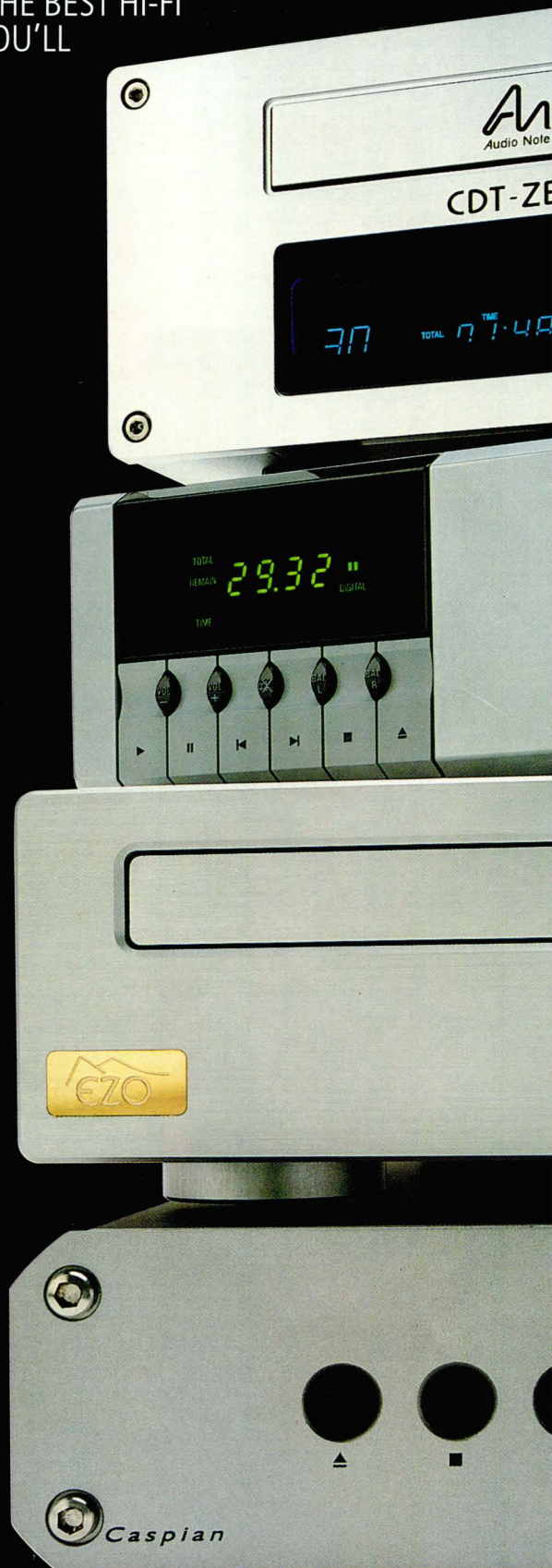
- When bi-wiring with speaker cable you will sometimes need to connect two plugs to one socket on the amp. If the amp has a binding post connection you can usually put one plug through the hole that goes across the post and one in the end. If this is not possible you may need to get both pairs of cables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

AWARD TAGS

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

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

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



GLOSSARY

5.1 CHANNEL AUDIO: Six discrete channels, typically front left and right, centre, surround left and right, and LFE (Low Frequency Effects) for a subwoofer.

BALANCE: Most loudspeakers have a characteristic frequency balance resulting from emphasising parts of the audio range and/or de-emphasising others.

BASS: The lowest three octaves of the audio band – hence 'low bass' refers to the bottom octave (20-40Hz); 'mid-bass' the middle octave (40-80Hz); and 'upper bass' the 80-160Hz octave.

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

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

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

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

CLASS A: Operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to give lower distortion.

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

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

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

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

DAC OR DIGITAL-TO-ANALOGUE CONVERTER: The stage at which incoming 16-24 bit digital data is used to reconstruct a recognisable analogue (music) waveform.

DOLBY DIGITAL DD (AC3): A compressed (10:1) digital audio format that typically contains five or more entirely discrete channel, eg 7.1 EX where discrete side channels are used.

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

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

DSP OR DIGITAL SIGNAL PROCESSOR: Integrated circuit that handles the decoding of digital audio streams. In 5.1 processors it separates the left from right and front from rear while managing the various bass options.

DTS OR DIGITAL THEATRE SOUND: Competitor to Dolby Digital with a reduced 4:1 compression ratio that, ostensibly, promises higher quality.

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

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

FINALISE (CD-R): The process of copying the Table of Contents from its temporary area on CD-R and RW where it is ignored by CD players, to the final position where it is recognised by CD players.

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

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

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

LINE-LEVEL: Practically every modern source component (except phono cartridges) give an output in the region of 1-2V, commonly referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are usually interchangeable.

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

LOSSY COMPRESSION: Reduction in data density by recourse to a psycho-acoustical model that predicts what is, and what is not, 'audible' within a sequence of music.

MASKING EFFECT: The audibility of distortion and/or quieter instruments in a mix depends upon the intensity of the music as whole.

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

NETWORK: see Crossover.

OUTPUT IMPEDANCE: A measure of resistance to alternating current, a low output impedance (say, below 100 ohms 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 eight kOhms, although the standard is 47 kOhms) can result in audible treble losses.

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

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

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

SAMPLE RATE: The rate at which the musical waveform is sliced up into discrete chunks. For CD this is 44.1kHz or once every 0.023msec. DVD will also support 48kHz and 96kHz.

SENSITIVITY: The relative loudness that a speaker generates for a specific voltage input. Expressed in decibels per watt (dB/W).

THX: Standards system for home cinema set-ups which includes amplifier power and speaker dispersion characteristics. THX Ultra being more stringent than Select.

TOSLINK: The proprietary name given by Toshiba to the optical fibre signal transmission system it invented for consumer applications. The system includes dedicated connectors, transmitters and receivers.

TRANSISTOR/MOSFET: the two main types of power semiconductor used in amplifier output stages. Differences are subtle and much argued over!

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

TWEETER: Treble driver.

WATTS (PER CHANNEL): the Watt is the unit of electrical power and the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, speaker sensitivity variations can make more difference than amplifier output in many cases.

WOOFER: Bass driver.

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AMPLIFIERS

STEREO AMPLIFIERS – INTEGRATED



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	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
	Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●		●	●	45	196
	Arcam Alpha 8R	350	Workmanlike amplifier is well thought through, but is now beginning to show its age.	5	●		●	●	50	208
R	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
ES	Arcam Diva A85	700	Much enhanced design topology give a more hard hitting, engaging sound than previous Arcams	7			●	●	85	214
R	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
BB	Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7			●	●	100	201
EC	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
BB	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
R	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
R	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
R	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
	Chord CPM 3300	5,495	Very powerful yet compact amp with rather complex ergonomics and transparent sound. Oh, and a lovely blue glow	5			●		220	214
R	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
R	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
R	Cymbal CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6					40	178
	Creek 4330	279	Diminutive but classy amp will drive anything, and can be specified in various configurations	4	●				40	192
	Creek 4330SE	499	Somewhat perplexing, though always interesting, miniature audiophile amplifier, needs careful system matching	5			●		50	208
	Creek 5350SE	799	Smooth, open and articulate sound and quality build, but bass is a tad heavy handed	6			●	●	85	214
R	Cyrus 5	500	A enjoyable amp that is assured and unflappable, although detail is unremarkable	7			●	●	45	205
R	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6			●	●	60	196
BB	Denon PMA-255UK	140	Great beer-budget buy, with everything necessary for basic but decent high fidelity operation	5				●	30	208
	Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●	●	●	70	181
R	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
	Exposure 2010	599	Neatly turned out amplifier, with mainstream appeal but bland with it	6			●		50	214
	Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6			●		75	201
	Ezo Aria HE	449	Quick, detailed but aggressive and sometimes coarse sounding amp. Beautifully turned out, though	5				●	40	208
	Graaf Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6					25	202
	Hoffi 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
	Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	●		●	●	70	186
BB	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 TRAIIR 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
	Linn Majik	845	Slightly rough and ready power amp modules, but capable preamp that can be expanded into a multiroom system	5	●		●		33	214
	Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5					23	196
	Marantz PM-6010 OSE	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 PM6010 OSE Ki Sig	400	Well-made, but somewhat ill-balanced amplifier that doesn't slot into most systems comfortably	6	●		●	●	50	208
	Marantz PM-17 Mk II	999	Big, bold, but over-fruity balance – the 'fat uncontroller' as one put it	6	●		●	●	60	214
	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
	Mark Levinson No383	5,500	Extremely versatile design that thinks and acts like a serious pre/power. Sounds superb	5			●		100	212
	Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility	5					55	178
R	Musical Fidelity X-A2	500	A chip off the old block; sounds very similar to the X-A1 and XA-100R	6					75	208
	Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some	5	●	●	●		85	196
	MVL A2	970	Curiously designed, and curious sounding amplifier with Sound Sentinel circuits to address perceived weaknesses	9	●			●	100	201
	Myryad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse	6	●		●	●	50	192
S	Myryad MI120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle	6			●	●	60	175
BB	NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build	6			●	●	40	186
R	NAD C340	270	A classic NAD amplifier copes with any speaker, delivers plenty of power, and does so with calm decorum	6	●		●	●	50	192
BB	NAD C350	300	A typical NAD: refined, warm tonality, adequate detail, and a strong power yield	7			●	●	60	208
R	NAD 317	400	Build quality aside, the current improved version is a real powerhouse, but smooth and detailed too	6			●	●	80	196
	NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong	5			●		100	189
	Naim Nait 5	799	As always with the Nait, less is more, and the Nait 5's 30 watts seem to go a lot further with some sources	5					30	214
	Opera Aida	795	Low power (in practice) minimalist integrated amp, but the mahogany wings don't help it to fly	5	●	●			60	201
	Pathos Classic One	995	Unusual looks and even more unusual electronic design, but compromised musical potential	5			●		55	202
R	Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build	5	●		●	●	45	186
R	Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	●		●	●	60	192
	Pioneer A07	999	Curious blend of high-end attributes and inconsistent, though undeniably detailed sound	5	●		●		80	175
	Plinius 8100	1,450	Slightly rough and ready, but plenty of balls from this stripped down antipodean.	6					100	214
R	Pràcisa Acustica Sonoro	1,800	It is not of en that transistor amplifiers are made to sound so palpably valve-like	5			●		100	189
R	Primare A10	500	Beautifully made, smooth and easy sounding, and though not overtly detailed or dynamic, is well organised musically	6			●		50	208
R	Primare A20 MkII	799	Everything except packaging has changed in Mk II version: but ballsier model has lost none of its refinement	5			●		70	181
BB	Primare A30.1	1,500	Smooth, detailed singing quality, elegant appearance, and healthy power yield	6			●		100	214
BB	Primare A30.1	1,499	Superb build and aesthetics, and undemonstrably musical down to its smallest screw	6			●		100	189
	Restek Fantasy II	1499	Muscular, but ultimately rather strident amplifier which needs careful system matching	6			●		100	189
R	Roksan Kandy KA-1	475	Power with control, barely compromised by a small degree of dryness	6	●		●	●	120	205
R	Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6			●		70	201
	Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	●	●			65	168
BB	Rotel RA-931 Mk II	189	Simple, non-remote amp majors on clarity and transparency, without sounding over-analytical	4	●			●	35	208

STEREO AMPLIFIERS – INTEGRATED (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
BB	Rotel RA-971 MkII	275	Improved RA971 is a chip off the old block: bags of power, but with added precision and clarity	6				●	60	196
	Rotel RA-972	400	Better in the treble than the bass, which is a little too rounded and woolly	6			●	●	90	205
	Sharp SM-SX1	3,300	Jewel like 1-bit digital amplifier with limited power reserves but offering glimpses of sonic magic	5					50	211
	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
R	Sony TA-FB740R	200	Very open and clear sound, comfortable with a wide range of musical styles	5	●		●	●	60	205
	Sony TA-FB940R	300	Technically innovative amplifier fails to cut the mustard with complex material	5	●	●	●	●	70	208
	T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality	7			●	●	100	189
	TACT Millennium MkII	7,000	This digital class D amplifier represents a bold declaration on the future expansion of digital audio in the home	n/a			●		150	194
	TAG McLaren 60i	500	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement	6				●	60	189
	TAG McLaren 60iRv	1,000	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive	6			●	●	60	184
R	Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6					50	162
	Talk Electronics Cyclone 1	550	Much improved build quality and silver finish, but the sound lacks physicality and can sound strained	6			●		65	196
R	Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall	6			●		50	175
	Teac A-E2000	180	Has the potential to cause significant damage in the budget amp sector once the wrinkles are ironed out	6					50	195
	Technics SU-A660 Mk 3	200	Plenty of wellie for the price, but the sound can be a tad coarse and lacking in fine detail	5	●			●	37	186
	Technics SU-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat	6	●		●	●	55	196
	Thule IA60B	700	Dry, edgy and glassy sounding amplifier, though the balanced input may appeal to some.	6			●		60	214
R	Token Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic	5					50	186
	Tube Technology Unisis Sig	2,400	A very attractive product which combines many classic valve attributes to good effect	5	●				30	202
	Yamaha AX-496	179	Lacklustre, if well equipped and powerful, amplifier shows some improvements over previous amps, but not enough	6			●	●	85	208
R	YBA Intégré	1,550	Careful system matching is essential, but this is definitely one of the good guys	6			●		50	214

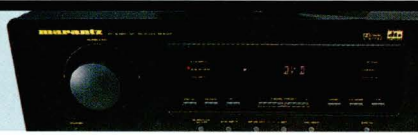
STEREO AMPLIFIERS – PRE/POWER AMPLIFIERS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent	5			●	●	50	187
	Alchemist Kraken APD7A/8A II	1,098	Unusual looks and unusual sound too, rather rough and lacking detail	6					55	187
R	Arcam Alpha 9C/10P	1,000	Well specified and flexible preamp with sound only just lacking in greatness	6			●	●	100	187
BB	Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1					60	165
	Audio Note M Zero/P Zero	998	Neat shoe box-size components. Able to impart music with real life and soul when partnered with P Zero power amps	5					8	191
EC	Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1					8.5	186
R	Bryston BP20/3B-ST	2,850	Recommended for pretty much any demanding application	8			●	●	120	212
	Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1					5	196
	Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear	1					410	202
	Copland CTA-301MkII/505	2,498	Sweet sounding, but never gets bogged down in audio treading. Refined yet never over civilised	4	●				67	151
BB	Creek P43R/A52SE	949	Excellent sound, remote control operation and upgrade options from fine value preamp.	6			●	●	100	187
BB	Creek P43R/A43	1,148	Great value and a podium performance earning a best buy	6			●		140	212
	Crimson 620C	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1					50	181
R	Crimson CS610/CS630	1,250	Good, clear sound, including a decent phono stage, but flexibility is limited. Slimline monoblocks with grunt and finesse	3	●	●			100	187
	Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1					50	183
R	Cyrus aCA7.5/Smart Power	1,250	Great for classical, jazz, and existing Cyrus owners, recommended	7				●	60	212
	Cyrus aCA7/aPA7	2,694	Low feedback power amp design that's a positive departure from the transistor norm, preamp is functional but not as impressive	5			●	●	150	190
	Densen Beat B-200	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	●	●				191
R	Densen B-300	800	Expensive but highly musical. Colourful and warm sound with strong timing and listener involvement	1					100	183
EC	Gamut D200	2,995	Single MOSFET pair per side gives tremendous resolution and timing (balanced only). Formerly Sirius	1					200	183
EC	Levinson 380/334	9,490	Preampifier combines precision and warmth with unusual configurability, power has refinement, authority and transparency to spare	6			●		125	195
	LFD Mistral Linestage/Power	898	Strong ergonomics, generally decent sound, but a little lacking in detail	6					60	165
	Linn Kolektor/LK85	990	Beautifully tuned out machine, yet slightly bland, aimed at an all Linn system	9	●	●			62	212
	Meridian 502	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation	7			●			162
	Michell Orca/Alecto mono	3,600	Line-level design with a gorgeous remote and focused, spacious sound	6			●		100	187
R	Moth 30 Series Monoblocks	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1					100	155
	Moth 30 Active LS/60 Stereo	948	Excellent-sounding ultra-simple miniature preamp, power amp lacks finesse and control, however	4					60	165
	Muse Model Three-	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5			●			166
R	Musical Fidelity X-P100	800	Good long-term listening prospects; detailed and a little fruitiness (tested with X-A200 power amp)	6	●		●			200
	Musical Fidelity NuVista 300	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfil the demands of the most dynamic material	1					350	199
	Myryad MA120	450	Based on M120 integrated – see latter for comments, but sounds significantly better when bi-amped with M120	1					60	165
R	Myryad MP100/MA240	1,600	Smart finish and impeccable manners, smooth, clean performance	6			●	●	120	212
R	NAD 114	270	Beer-budget preamp which sounds focused, detailed and consistent	6	●	●		●		165
R	NAD Silverline S100/S200	2,000	Beautifully built kit that sounds as good as it looks with heaps of power	7			●		200	200
EC	Naim NAC112/NAP150	1,375	Clean, clever simplicity, plus a very well balanced sound that's much sweeter than earlier Naims	6			●		50	213
	Naim NAC112/NAP150/FLATCAP 2	1,800	Adding a FLATCAP 2 brings a very worthwhile sonic upgrade to the basic NAC112/NAP150 combo	6			●		50	213
	Naim NAC102/NAP180	2,122	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety	6			●		60	200
EC	Naim NAP500	10,000	Wonderful neutrality, bandwidth and dynamic range, plus Naim's traditional leading edge definition	1					140	208
	Quad QC-twenty four + 2 x II – forty	4,000	A classic valve amplifier in circuitry and sound, but with modern ingredients and gorgeous retro styling	7					40	213
R	Rega Hal/Exon	2,194	Passive line stage dedicated to Exon monoblock power amps, bold outgoing, in-command sound	6	●	●	●		125	165
BB	Roksan Caspian Power	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1					70	183
	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
	Samuel Johnson pca100	1,800	Stylish wood and metal fascia - precise, clean sound with an emphasis on leading edges	6			●			201
	IAG McLaren PA20R/125M	1,500	Clean, detailed sound but limited thrill power	6			●	●	145	184
	Talk Hurricane 2L/Tornado 2	1,249	Design of integrity which gets to the heart, if not the soul, of the music	6					65	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
	Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1					100	187

PHONO STAGES

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
	Clearaudio Symphono	740	Slightly inconsistent balance mars the performance of this lively performer	0		●				201
R	Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character	0		●				189
	Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough	0	●					189
	Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality	0		●				189
R	Electrocompaniet ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise	0	●	●				189
BB	Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage	0	●	●				189
	NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too	0	●					189
R	Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	0	●	●				201
R	Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer	0	●	●				201
R	Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	0	●					201
R	QED Discsaver DS-1	35	It's cheap, it's cheerful, it's OK – perfectly adequate for use with a phono-less integrated, though not very refined	0	●					189
	Roksan Artaxerxes X/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components	0	●	●				189
	TAG McLaren PPA20	1,500	One of the best-equipped phono stages available. Resolution is excellent, but timing is marginally behind the best	0	●	●				187
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

AMPLIFIERS



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	ISSUE NUMBER
R	Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5			●	●	110	198
BB	Arcam FMJ A22 DAVE/P25	2,850	Powerful, authoritative, great stereo, excellent home cinema - what more can you want?	7			●	●	100	210
	Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4			●		N/A	201
	Cyrus AV5/SmartPower	2,650	Refined, detailed and attractive, but ultimately lacking in balls.	3			●		60	210
BB	Denon AVC-A150E	1,200	State of the art sound quality, a strong feature set and reasonable pricing. What more could you want?	11	●		●	●	125	210
R	Denon AVR-3300	800	Not as powerful as Denon claims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			●	●	75	198
	Kenwood KRF-V7773D	800	Bold, detailed presentation, but there are some technical limitations and a slightly mannered quality, especially with music.	10	●		●	●	120	210
BB	Marantz SR5000	500	Something of a rough diamond, but a powerful and entertaining package	5			●	●	105	198
BB	Marantz SR7000	700	Excellent at the price, and almost equally effective with 2-channel music and multichannel AV.	9			●	●	100	210
	Musical Fidelity HTP/HT600	3,998	A very well matched pairing with considerable musical talents	8			●		100	207
BB	NAD T760	650	More than adequate home cinema receiver that unusually doesn't muck up the music	7			●	●	60	210
	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
R	Onkyo TX-DS989	2,500	Authority personified, excellent AV signal processing, but sound quality a tad unsubtle.	9	●		●	●	160	210
	Pioneer VSA-E08	1,300	THX circuitry gives home cinema material a boost, but this is not an obvious first choice for music.	10	●		●	●	100	210
	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
	Primare P30/A30.5	3,700	No 5.1 channel input for DVD-A/SACD but capable of almost uncomfortable realism with real solidity and drive	8			●	●	120	210
R	Roksan DSP/5 ch amp/VSU	2,440	Clean, powerful stereo expanded seamlessly, if without distinction, to 5.1 channels.	4			●	●	80	210
	Rotel RSP976/RMB1075	1,700	Works well with music and has no shortage of power but lacks THX processing	8			●		120	213
	Rotel RSP976/RMB1075	1,700	Works well with music and has no shortage of power but lacks THX processing	8			●		120	214
R	Rotel RSP-985/RPB-985 MkII	2,400	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3			●		130	198
	Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5			●	●	110	198
R	Sony VA777ES	1,500	Smart circuitry gives this model unusual precision and transparency, and it is a fine all rounder 9	9			●	●	100	210
	Technics SA-DA10	500	Lower mid-market AV amp has all the right ingredients, but fails to stir the soul	5	●		●	●	80	210

CABLES



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
	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 Sidewinder	40	Suppresses the sound. At this price it's a disappointment	●	●		●	●			211
R	Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail	●			●	●			200
R	Cable Talk Advanced 3	35	Good sound and great detail, but a slight brashness in the treble	●			●	●			211
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
R	Chord Calypso	30	Informative, clear sound at a decent price	●			●	●			211
	Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces	●			●	●			176
	Chord Chameleon 2	90	Deep bass is fine but despite that the sound can be a bit hard and lacking body and resonance	●			●	●			188

SYMMETRICAL
COAXIAL
STRANDED
SOLID CORE
COPPER
SILVER
DIG CABLE TYPE
ISSUE NUMBER

ANALOGUE INTERCONNECTS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
R	Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	●		●		●			160
R	DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried	●			●	●			200
BB	Ecosse The Composer	29	A high degree of realism and delicacy, and a fantastic price		●	●		●			211
	Goertz M1 Interconnect	145	Soft sound-lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)	●			●	●			176
	Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness			●		●			176
R	Insert Audio Image 5.1	85	Very good detail and imaging; perhaps a touch bass-light		●			●			200
BB	Ixos Gamma Audition II	30	Detailed and neutral, with just a hint of pleasant mellowness	●		●		●			211
	Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though	●				●			176
	Ixos 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price	●		●		●			200
BB	Kimber PBJ	68	Assured sound, solid and natural bass and clear treble — excellent performance all round	●		●		●			188
R	Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed	●		●		●			176
R	Moth Ley Line Black	100	Offers a full sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●		●		●	●		108
	Moth Ley Line Grey	200	Detailed, but there's a sense of distance between music and listener: vocals are coarse rather than liquid	●		●		●	●		108
	Nordost Black Knight	60	Flat black cable that is distinctive but slightly coloured — but not in a wholly negative manner	●		●		●			160
R	Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music	●			●	●			188
R	Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable	●			●	●			176
	Precious Metals SS35	50	Extended bass, but dry character suits electronic music better than acoustic		●	●		●			188
	Profigold PGA301 MkII	40	Mellow and well rounded, but can seem a little heavy		●	●		●			211
R	Prowire VHQ	10	This crisp cable lacks a little refinement, but it's great for the price		●	●		●			211
R	Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness		●	●		●	●		176
R	QED Qunex 1	20	Well balanced, and easily rivals more expensive cables		●	●		●			211
BB	QED Qnec 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value			●		●			176
R	QED Qnec 45	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid	●		●		●			188
R	QED Qnec Silver Spiral	90	A great cable for lovers of big sounds	●		●		●			200
	Reference CS1	75	A moderate performer, with a little coloration and a tendency to lose bass at climaxes	●		●		●			188
	Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight		●	●		●			160
BB	SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. We're unsure about the flesh-coloured finish, though...	●		●		●	●		160
R	SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	●		●		●			176
	SonicLink Lilac	65	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	●		●		●			188
	SonicLink Violet	85	Better bass than treble — a little dry in the upper octaves	●		●		●			200
R	Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss		●	●		●			176
R	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
BB	Supra EFF-ISL	80	Excellent sound in all areas — nothing to criticise			●		●			188
R	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
BB	TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	●		●		●			200
BB	van den Hul PB5	50	A highly neutral cable with fine dynamic and rhythmic performance too — excellent		●	●		●			188
R	van den Hul Source HB	65	Price for 0.8m. Hybrid carbon-fibre/copper cable that is a paragon of naturalness	●		●		●			160
R	van den Hul D102 MkIII HB	80	A fine cable, but the competition has crept up and it no longer leads the pack	●		●		●			200

DIGITAL INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
R	Audioquest Digital One	35	A neutral and capable cable that adds little or no character to the sound		●			●	●	E	207
	Chord Optilink	40	Beautifully made, but performance is practically indistinguishable from other, cheaper, Toslink leads			●		●	●	O	207
R	Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz			●		●	●	E	131
	Ixos 1051-100	39.95	Plenty of bass, and detail seems good, but there's a loss of involvement			●		●	●	E	207
	Moth Leyline Datalink	120	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive		●	●		●	●	E	108
BB	QED Qunex P75	25	A superbly capable interconnect that's highly detailed and well balanced		●			●	●	E	207
R	Ross OP004	19.99	Sounds much like most other Toslink leads: slightly lacking detail, but good value			●		●	●	O	207
	SonicEink Digital Optical	30	Possibly slightly more detailed than other opticals, but still no match for a decent electrical digital link							O	207

WINNER: BEST CABLE OF THE YEAR
WHAT HI-FI? Awards 2000/01

7 BEST BUY AWARDS
"Sonically they amaze, high end owners take note"
The Maestro MA2 WHAT HI-FI? October '99

WHAT HI-FI? HI-FI CHOICE
Home Entertainment
ECOSSE REFERENCE CABLES

"Outstanding..."
MS2.15 HI-FI NEWS Sept. '98

"Uncannily clear..."
The Composer HI-FI CHOICE Feb. 2001

"Ecosse is fast becoming synonymous with everything that's quality about cable..."
Conductor CA1 WHAT HI-FI? Awards 2000/01

"Astounds..."
MS2.3 WHAT HI-FI? Awards '99

"It's a steal at the price..."
CS2.3 WHAT HI-FI? Oct. '99

CHOICE ESTIMÉ

★ **USD 3 SPEAKER CABLE OF THE YEAR**
★ **THE COMPOSER BEST BUY INTERCONNECT**
★ **MS2.3 SPEAKER CABLE BEST BUY £20+**
★ **THE CONDUCTOR CA1 INTERCONNECT OF THE YEAR**
★ **THE MAESTRO MA2 BEST BUY INTERCONNECT £80+**
★ **THE PRODUCER BEST BUY COAX DIGITAL**

DIGITAL INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
R	SonicLink Green	60	Spacious, positive and engaging if a bit over-crisp at times — very compelling, however							E	131
	Straight Wire Info-Link	300	A good cable, but bass seems a little light and detail suffers a little at climaxes							E	207
R	van den Hul Optocoupler	49.95	Noticeably has the edge over other optical leads, but still second best to electrical types							O	207
BB	van den Hul The First	140	Exceptionally natural albeit slightly cautious compared to some. Plenty of subtle information and integration							E	131

LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
	ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative								183
R	Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical								133
R	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
R	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
R	Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable								203
R	Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings								157
R	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
R	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
BB	DNM LSC8500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire								133
R	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
BB	Gale XL315	2	A little lacking in detail but plenty of life and excellent value								157
R	Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative								157
R	Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility								168
R	Hitachi LC-OFc	7	Very crisp, very clear and very confident. In the right system would be very expensive to better								109
BB	Ixos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price, strong and consistent								203
R	Ixos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant – though only slightly								192
BB	Kimber 4PR	4.90	Considering the price, this cable's very slight dryness is forgivable when everything else is so right								192
R	Kimber 4VS	8.50	A good mix of virtues including particularly fine bass								183
R	Kimber 4TC	18.80	A well-balanced cable with good performance in all areas								168
BB	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 AS	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
R	Ortofon SPK200	4.99	Good strong bass and fair detail, only slightly marred by a little dryness								183
R	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
BB	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
R	SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced								157
R	SonicLink AST75	2.95	Unusual materials and rather unusual performance too, strong on excitement and with plenty of bass								203
R	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
BB	Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience								183
R	Supra Ply 3.4	6.95	Clean sound which stays together well at high levels, with full bass – perhaps a touch of treble restriction								183
R	Supra Ply 3.4/S	7.95	Good in all areas with rich bass and just a touch of treble roughness								203
R	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
R	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

MAINS CABLES AND CONDITIONERS

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
	Clearaudio Accurate Power Gen	1,090	Compact and beautifully finished unit that offers positive sonic benefits that justify the price								206
R	Lynwood Electronics Mega Power	295	Reasonable price model that improves focus while producing a sweet, tight and clean bass								206
R	PS Audio Power Plant	1,200	Power Plant improves the cleanness and separation of individual voices and instruments, giving an impressive 3-D quality								206

MAINS CABLES AND CONDITIONERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
	GTA PHY-HP board	299	Oozing style and quality, the board generates an extremely natural and truthful sound								206
BB	Russ Andrews Kimber/Power Block	350	Improved version that elevates music to a cleaner and more three-dimensional experience with greater stereo imagery								206
	Russ Andrews The Purifier	250	More ambitious version of the Silencer that gives a cleaner, quieter background, allowing more low level detail								206
BB	Russ Andrews Silencer	40	A cost effect solution to noise-free mains supply that reduces 'hash' without losing brilliance and immediacy								206
	SonicLink S-Gold mains	225	Delivers a clean incisive sound with excellent detail, clarity and with no increase in noise								206
R	Trichard Research Powerblock500	300	Isolation transformer that bolsters clarity, openness and gives an increased refinement making for a purer and natural sound								206

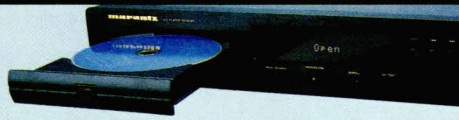
CASSETTE DECKS



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN DECK	AUTO REVERSE	AUTO CALIBRATION	ADJUSTABLE BIAS	ISSUE NUMBER
BB	Aiwa AD-F450	120	Basic but well-designed deck. Astonishing value; only the poor metering gives the game away									136
BB	Aiwa AD-WX727	170	High-class twin for those who want bells, whistles — and music									146
	Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design									140
	Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass									164
BB	JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced									158
BB	JVC TD-V662BK	270	Assured, clean and agile-sounding recorder, if not quite the most refined in its class									146
	JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable performance									171
R	Kenwood KX-W6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass									171
	Marantz SD455	170	Works well as a single deck, especially on replay, but dubbing at high/low speed compromises sound									184
	NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise									158
	NAD 616	300	Twin deck with basic features. No Dolby setting memory, transport is too unstable for audiophile use									171
	Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD									195
R	Onkyo K-611	460	Cute drawer-loading mini-size component with 3 heads and dual capstan transport									146
R	Pioneer CT-5550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality									164
	Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended									171
	Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound									184
BB	Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head									164
BB	Technics RS-AZ7	270	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in state-of-the-art									158
R	Yamaha KX-490	200	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter									158
R	Yamaha KX-580SE	250	Subtle, engaging and transparent deck, with a lightweight tonality, but stability and strong detail									171

CD PLAYERS



SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AES/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
BB	Acurus ACD11	899	First-rate if costly player, which combines a delightful transparency with an uncontrived naturalness										166
	Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass										165
	Advantage CD15	3,995	A CD player of some stature — what it lacks in dynamics it makes up for in subtlety and flow										193
	Alchemist Kraken	1,249	Distinctive looking player likely to suit a Alchemist system, but will result in variable results elsewhere										190
R	Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation										169
	AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable										172
BB	AMC CD9/DAC8	200	Beer-budget two-box system (player plus DAC) is smooth, attractive and easy on the ear										179
	Anthem CD1	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy										178
BB	Arcam Alpha 7SE	300	Sharper, clearer Alpha 7 SE, and more affordable than before										207
	Arcam CD72	400	Easy going, slightly soft-centred reworking of Alpha 7 in new, svelte DIVA clothing										212
R	Arcam Alpha MCD	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer										178
BB	Arcam Alpha 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder										176
R	Arcam Alpha 9	800	Refined, articulate player which employs new DAC technology to great effect										188
R	Arcam CD92	850	High resolution player needs a touch of spit and polish to be completely convincing										212
R	Arcam FMJ CD23	1,100	World class presentation allied with innovative technology to deliver an engaging standard of music making										206
	Audio Analogue Paganini	750	Basically good, but sometimes heavy-handed player										191
	Audio Note AN-CD1	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured										188
	Audio Note AN-CD2	999	High output impedance makes performance unduly system fussy										195
	AVI S2000MC2	899	A chip off the old block. This model's in-yr-face balance obstructs an otherwise finely detailed sound										176
R	AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system										169
	Balanced Audio Tech VK-D5	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety										194
	Cambridge Audio D100	120	Hard, clanky and coloured sounding, and with suspect control logic										200
BB	Cambridge Audio D500	200	Clean and highly articulate player wears well in extended use										202
R	Copland CDA 266	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution										176
	Copland CDA 289	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000										194
R	Symbol CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings										176
R	Cyrus dAD1.5	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality										191

ONE-BOX CD PLAYERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUT	ASSEMBLY ELEC DIG OUT	OPT DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
R	Cyrus CD7	800	New Cyrus player has strong all-round attributes to match its good looks	•									212
R	Cyrus dAD3 Q24	900	Bold, lean and lively player demands sympathetic system matching			•							200
R	Denon DCD-435	130	Good low cost player, and a step up from the DCD-425, its predecessor			•			•				191
R	Denon DCD-655	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems			•			•	•			200
	Denon DCD-1550AR	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player	•		•			•	•			179
	Densen B-400	1,280	Bold, purposeful sound, but lacks subtlety, and has some ergonomic flaws	•									212
	EZO Fog Stage 3	1,170	Curious player is difficult to drive, and has sound quality that both enchants and sometimes confounds					•					212
	JVC XV-D723GD	500	Convincing DVD-Audio player that is ultimately let down by poor CD performance	•			•	•					206
R	Kenwood DVF-3030	180	Solid CD player with straightforward features			•			•	•			207
BB	Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music — and has CD Text too	•					•	•			172
	Kenwood DP-5090	300	Disappointing senior brother to the excellent DP-4090, but surface interface is good	•					•	•			179
	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	•			•	•	•		•		206
R	Linn Genki	995	Explicit, rather bright sounding player with strong multi-room appeal								•		212
	Marantz CD5000	150	Well equipped budget player sounds thin and rough at times			•			•	•			202
	Marantz CC3000	150	Ragged sounding multidisc player, but it is cheap and well equipped						•	•	•		204
BB	Marantz CD6000	250	Great package with all mod cons, and eminently listenable too	•					•	•			207
BB	Marantz CD6000 OSE	300	Superbly constructed, slightly emasculated sounding, but smooth and articulate	•					•	•			200
BB	Marantz CD6000 KI Signature	500	Excellent all rounder, a well appointed good value package	•					•	•			212
R	Marantz CD-17 MkII	800	Sophisticated player with a short but attractive feature set, and a new found bounce in its step	•			•	•	•				206
R	Marantz CD-17KI Sig	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland	•							•		176
	Marantz CD-7	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure	•							•		194
EC	Marantz SA-1	5,000	The brand's first SACD player is a stunning machine that's equally as strong with conventional CD	•				•	•			•	208
R	Meracrus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics — but it's not cheap	•									169
BB	Meridian 506	1,100	Revised 506 includes MSR remote and a new DIA chip, which makes it livelier and more detailed	•		•							176
	Monrio Asty	695	Well built player has solid, propulsive sound quality that deteriorates towards HF	•									200
	Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	•									166
	Musical Fidelity X-RAY	799	Brilliantly packaged and clean but slightly antiseptic sounding player	•		•							184
	Musical Fidelity A3 CD	800	Excellent player has few faults apart from a slight loss of EHF detail	•									200
BB	Myryad T-10	400	Rather ordinary player fails to shine with good music recordings	•									184
	M ad T-20	600	Matter of fact styling and sound quality, a tad bright for some systems	•									195
	Myryad MCD500	1,300	Well-built, attractive player, showing much promise, but can be a little heavy-going on audition	•									176
R	NAD C520	170	Significantly improved entry level NAD is smooth and dynamic, if slightly dull	•									202
R	NAD 524	250	Clean, clear and essentially musical player in the NAD mould	•									191
	NAD 523	250	Lacklustre musical presentation was disappointing on test; so was the absence of a digital output									•	204
	NAD C540	330	Not cheap, and disc handling is pedestrian at best, but the C540 is smooth & elegant with just a hint of aggression	•									200
	NAD Silverline 5500	1,100	It sounds as good as it looks, which is notably refined and easy on the ear	•	•	•			•				195
R	Naim Audio CD5	1,120	Recommended subject to audition, a dynamic machine, yet some physical minuses	•									212
R	Naim Audio CD2	2,000	Provides bags of detail with a solid stereo focus but not all the romanticism we know to be possible	•									163
	Nakamichi MB-10	400	Jewel of a multi-disc player, with crisp sound and superb fuss-free compact packaging	•		•			•		•		204
EC	Naim NAC5II/XPS	5,625	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results	•									188
R	Onkyo DX-7222	150	Competitive following recent price cut, and on the whole a strong performer musically	•					•				200
	Onkyo DX-7511	300	Earthbound mid-price CD player fails to excite	•		•			•	•			207
	Parasound C/DP-1000	499	Comes on like a high end player, but ultimately sounds a bit weak and soft-centred	•									184
	Philips CD751	150	Inconsistent and occasionally opaque and scrawny sounding cheapie	•					•				172
	Pioneer PD-5507	200	Low cost Legato Link implementation sounds gentle but slightly muddled	•			•		•				191
	Primare D20	799	Well presented player doesn't quite cut the mustard, though it performs promisingly	•									188
	Revox Exception E426	2,250	Very stylish with a light, agile sound that extends superbly and has fine timing	•				•					182
	Roksan Kandy	475	Slightly old-fashioned sound quality player available in various colour schemes	•									200
	Roksan Caspian	895	Improved Caspian (retested for 2001) is still bold, dynamic player, but rather more subtle and expressive	•									212
	Rotel RCD-951	300	Disappointing chopped-down RCD-971 — buy the original	•									191
BB	Rotel RCD-971	450	Odd disc handling logic, but bold, detailed and refined sound make this a must	•									184
R	Rotel RCD-991	825	Strong midrange player with switchable dither levels to provide some system tweaking ability	•	•								212
	Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	•		•							163
	Sharp DX-SX1	2,700	Stylish player with a slightly forward but extremely nimble sound. Connects to matching digital amp via dedicated umbilical	•		•			•	•	•		211
R	Sony CDP-XE330	100	Unrefined, but lively, detailed and highly affordable	•					•	•			202
	Sony CDP-XE530	140	Well equipped, but raw, scrappy sounding player lacks depth and weight	•					•	•			200
BB	Sony CDP-XB930E	300	Yet another first rate UK optimised player with all the bells and whistles	•									195
R	Sony SCD-XB940	550	First mainstream SACD player that easily outstrips comparable CD players at this price	•			•	•	•	•	•		206
BB	Sony SCD-555ES	1,200	Fabulously built with superb sound using both CD and Super Audio software, you'll be hard pressed to find a better CD player at the price	•								•	213
EC	Sony SCD-777ES	1,700	Beautifully built SACD player that looks like a bit of a CD player bargain	•								•	198
EC	Sony SCD-1	2,500	The first SACD player sounds fabulous but there's not much competition and limited software as yet	•								•	194
	T+A CD1210R	1,185	Intriguing player with rather pushy basic sound, but has switchable digital filters	•									188
	Talk Electronics Thunder 1	550	Entry level upgradeable Talk Electronics player sounds slightly muted	•									200
	Talk Electronics Thunder 2	699	Fine player, slightly lacking in dynamics, but readily, if expensively upgradable in various ways	•									191
	Talk Electronics Thunder 3	1,000	Clean, fast, and availability of a complete upgrade path make this a good long term proposition	•									195
R	TAG McLaren CD20R	1,249	Dry and unatmospheric, but plenty of presence — recommended with caution	•									188
	Teac VRDS-9	700	Well-presented. This Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	•		•					•		176
	Teac VRDS-25x	1,000	Excellent, individualistic player with bold, colourful sound, but test sample had iffy CD-R compatibility	•					•	•			195
	Technics SL-PG390	90	It's very cheap. Very, very cheap	•									202
	Technics SL-PS7	200	Strong, but ultimately rather opaque and hard-sounding, high tech CD player	•					•				207
R	Technics SL-MC7	300	Maximum storage capacity for a minimum price, and presentable sound too (multidisc)	•							•	•	204
	Thule Spirit CD100	600	Definitely a try before you buy machine, but the bass and mid are excellent	•									188
	Trichord Genesis	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority	•						•	•		169
	Trichord Revelation	799	Well-ordered and clean sound that may be a little too refined for some, images well	•									166
	Tube Technology Fusion MkII	1,350	Improvements over the original model but still remains too inconsistent for its own good	•		•	•	•					206

ONE-BOX CD PLAYERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AS/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
	Tube Technology Fulcrum	2,800	An imaginative two-box player with a smooth sound that lacks some lustre	●	●	●							194
	Yamaha CDX-493	180	Open and lively, but this player is also messy and lacking resolving power			●			●	●			191
	Yamaha CDX-596	230	Well-priced and attractive-sounding, this player can read CD-RW	●		●							207
	Yamaha CD-X993	400	A bit of a lush, though the sound is singularly free of grain, and equipment levels are strong	●		●			●	●			184
	YBA Spécial	695	There is nothing here to justify the pricing or the high-end parentage. Avoid										195

CD TRANSPORTS

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AS/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
R	Audio Note CDT Zero	550	Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with DAC1)	●	●								212
	Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●		●							144
	Roksan Attessa ATT-DP3	1,295	Not the most detailed or refined but capable of sounding exciting with the right material	●		●							162
	Theta Carmen	3,299	A well equipped and extremely upgradable CD/DVD transport. Right now, the finest of its type	●									203
	Theta Data Basic II	2,397	Uses a Philips CDM9 Pro mechanism and works a treat with more lively DACs	●									130
	Thorens TCD2000	999	Lively presentation not helped by rather loose bass and splashy treble. (Tested with TDA 2000 DAC)	●		●							162
R	Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●									162

DACs

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AS/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	SACD COMPATIBILITY	ISSUE NUMBER
	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										187
	Audio Note DAC Zero	369	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)										191
R	Audio Note DAC Zero1x	750	Although ominously esoteric on paper, it's smooth, open and easy on the ear in practice (Tested with CDT Zero)										212
	Audionote DAC 5	18,500	Astonishingly natural and realistic in the right system, the only problem being the extravagant price										203
EC	dCS Delius	5,000	State-of-the-art resolution with considerably greater flexibility than anything else, hard to beat	●	●			●	●	●			207
	dCS Purcell	3,500	The first upsampler on the market adds significant depth and increased bass resolve with a suitable DAC	●	●			●					207

DVD PLAYERS**SPECIFICATIONS**

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUTPUT	AS/EBU ELEC DIG OUT	OPT DIG OUTPUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DVD-A COMPATIBILITY	ISSUE NUMBER
R	Alba DVD103	150	Good value for money but not much of a CD player, crude and serviceable but remarkably inexpensive	●		●				●			207
R	Arcam DIVA DV88	899	A DVD-Video player built with non-obsolescence in mind, but picture quality exceeds musical quality as a CD player	●		●							213
R	Denon DVD-1500	400	Colourful and engaging (if lightweight) sound, with excellent picture quality	●		●			●				207
R	Denon DVD-3300	999	Sometimes slightly inconsistent and strident sounding in all modes of use, but it pulls a little more off disc too.	●		●			●			●	213
R	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	●		●			●		●		204
EC	Denon DVD-5000	1,600	The first DVD-V player that ain't bad as a CD player. A fine musical device	●		●			●				187
R	Encore DV-450	200	Superb value for money, though mainly of interest to the videophile on a shoestring	●		●			●				207
	Hitachi DVP-505	300	DVD player has rather dark, unexpansive sound, but good picture quality	●		●			●				207
	JVC XV-D701	500	Good video player, but rather undeveloped musically – CD Text is neat, though	●		●			●				198
	JVC XV-523	280	Looking impressive on screen, but lacks resolution and consistency when pushed hard	●		●							207
	JVC XV-515GD	300	Musically soft as a baby's bottom, and as surprising as yesterday's news	●		●							202
	JVC XV-D723	500	The first DVD-A player is more of a DVD-V with A added rather than the next generation of hi-fi	●		●							205
	Kenwood DVF-R9030	899	The first multi-disc DVD-Audio player is physically large and ergonomically obstructive, but it is a smooth, slick operator	●		●			●		●	●	213
R	Kenwood DVF-9010	1,000	DVD player with brilliant picture and clean, lively sound	●		●			●				190
	NAD T-550	500	Soft-centred but likeable player in the classic NAD mould	●		●							202
	Nakamichi DVD-10	800	Not the most compelling model in the resurrected Nakamichi line-up	●		●			●				198
	Panasonic DVD-RV40	350	Modestly equipped, gives good pictures, but is musically unengaging	●		●							207
	Panasonic DVD-A360E	580	Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best	●		●			●				198
	Panasonic DVD-A7EB	699	Chopped down Technics DVD-A10 retains most of the flagship's headline features with well balanced, but less refined and less articulate sound	●		●			●			●	213
BB	Philips DVD750	400	Clever DVD with CD-R/CD-RW compatibility and surprisingly keen sound	●		●			●				198
BB	Pioneer DV-525	399	Lean, clean and lively sound quality. CD-R and 24/96 compatible, too	●		●							202
BB	Pioneer DV-626D	450	Superbly equipped, and more than respectable sound quality	●		●			●				198
	Philips DVD960	530	DVD-V player has strong sound quality and good, though slightly washed out, pictures	●		●			●				207
BB	Pioneer DV-717	550	Superb DVD player with good picture quality and which really knows how to play 24/96 discs	●		●							190
R	Pioneer DV-939A	1,200	Fine player with near state of the art video performance and attractive, easy on the ear music making, from CD and DVD-Audio alike.	●		●			●			●	213
R	Primare V20	1,000	Elegant and well built DVD performer that possess a strong picture quality and decent CD player	●		●							206
	Samsung DVD-907	500	DVD player with below average picture, and lacklustre sound quality	●		●							190
	Sony DVP-CX850D	600	Lacklustre sound quality is a disappointment, but the price is appealing for a 200-disc DVD player	●		●						●	204
R	Sony DVP-S7700	950	Powerfully endowed player offers articulate and believable sound	●		●			●				198
	Sony DVD-S9000ES	1,200	First DVD machine to play SACD has a 'Lexus' sound style that never really gets its hands dirty	●		●							210
	Sharp DV-760	500	Reasonable picture, but sonically brings new meaning to the term rough and ready.	●		●			●				202
	TAG McLaren DVD32R	3,995	A tour-de-force of engineering, albeit with matching price tag. But picture quality is second to none	●		●							212
	T+A DVD 1210R	1,699	Ergonomically a mess, but detailed, dynamic and emphatic, though there is no guarantee of a DVD-audio upgrade path	●		●			●				213
	Technics DVD-A10	899	Well built, early generation DVD-A player with full in-board DVD-Video decoding and a more than workmanlike sound.	●		●			●			●	213
	Theta DaVID	4,650	A top-notch CD transport, that also plays DVD-Video discs well. Pricy for a DVD transport, but worth it	●	●	●	●						191

DVD PLAYERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	ELEC DIG OUT	AES/EBU ELEC DIG OUT	OPT DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DVD-A COMPATIBILITY	ISSUE NUMBER
	Toshiba SD-100E	250	Mainstream player offers so-so features, performance and pricing	●		●							207
	Toshiba SD-3109	380	Defocused and soft-edged, this is more attractive for its picture than its sound quality.	●		●							202
	Toshiba SD500E	599	OK DVD-Video player, but lacklustre with music, especially when reproducing high resolution DVD-Audio material.	●		●					●	●	213
	Toshiba SD9000	800	Costly, high tech player with stunning pictures and crisp, slightly lightweight sound	●		●			●				198
BB	Toshiba SD900E	1,299	Top class DVD-Audio player and also a superb DVD-Video player; in this context pricing is competitive	●		●						●	213
	T+A DVD-1210R	1,699	Ergonomically a mess, but detailed, dynamic and emphatic, though there is no guarantee of a DVD-Audio upgrade path	●		●							213
	Yamaha DVD-S795	529	Fare price, and an unconstrained digital output, but otherwise unexciting	●		●			●				198

DIGITAL RECORDERS



SPECIFICATIONS

MINIDISCS

STATUS	PRODUCT	£	COMMENTS	FORMAT	PORTABLE	OPTICAL IN/OUTPUTS	ELEC IN/OUTPUTS	ISSUE NUMBER
	JVC XM-448	220	An hidden keyboard is a great idea, but musically it sounds rather cool and strident	MD		●	●	205
	Kenwood DMF-5020	250	it may be high-tech but nothing conceals the caricatured sound	MD		●	●	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		●	●	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		●	●	191
	Onkyo MD-121	450	Midi-sized deck that sounds slightly coloured at times, though immediate and lively	MD		●		177
R	Pioneer MJ-D508	200	Well equipped but musically sleep inducing player that deserves its recommendation due to price	MD		●	●	205
R	Pioneer MJ-D707	250	A handy set of features for the price, though sound is not outstanding	MD		●	●	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		●	●	184
R	Sony MDS-JA555ES	650	Powerful demonstration of Sony's proficiency, it delivers the best MD can offer	MD		●	●	205
	Yamaha MDX-793	300	Nice machine to use and has some useful features, but sound quality a little wanting	MD		●	●	191

CD RECORDERS

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

HEADPHONES



SPECIFICATIONS

HEADPHONES


STATUS	PRODUCT	£	COMMENTS	ELECTROSTATIC	SUPRA-AURAL	CIRCUM-AURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	ISSUE NUMBER
R	AKG K100	36	Leather clad groover with bags of power and clarity, for a respectable asking price		●		●		190	100	●	205
	AKG 301	70	Big 'phones with even and detailed sound but lacks sufficient bass weight			●			230	100	●	194
	AKG K 240 DF	100	Inoffensive 'phones that are very laid back, if lacking in grunt			●			240	600	●	186
R	AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs			●			270	120		99
R	Audio Technica ATH910PRO	80	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found		●			●	280	40		55
R	Audio Technica ATH-D40fs	100	Detailed and involving sound with a professional 'studio' quality appeal			●			250	66		194
R	Audio Technica ATH-M40	120	Incredible detail and honesty from these classically designed studio 'phone			●		●	250	60		186
	Beyer DT311	50	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone		●				124	40	●	133
	Beyer DT411	63	A reasonable but not very thrilling headphone that doesn't really offer enough at the price		●				120	250		111
	Beyer DT331	65	Clear and extremely detailed sound with rather thin bass			●			210	40	●	194
	Beyer DT431	81	Nice looking 'phones that may not be the best players on the field, but will always give 100 per cent			●			210	40	●	186
	Beyer DT531	105	Average performer from an established player. Lacks punch and bite			●			245	250		205
R	Beyer DT511	106	Superb midband clarity and speed slightly at odds with soft bass. Even so, high tingle factor			●			200	250		172
BB	Beyer DT831	140	These provide silky, smooth textures in abundance and we're not just talking about the velvet ear pads			●	1/2		295	250	●	186
	Beyer DT100	160	Rugged, modular professional design, but bass is woolly and treble lacks detail			●			350	600		157

HEADPHONES (CONTINUED)			ELECTROSTATIC	SUPRA-AURAL	CIRCUM-AURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS								
	Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable					120	32		172
BB	Grado SR-60	79	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste					200	32		194
	Grado SR-80	100	Open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes					60	8		157
R	Grado SR-125	150	What these 'phones lack in style they make up for ten-fold in musical quality					200	32		186
R	Grado SR-225	200	Warm, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music					200	32		163
	Grado SR-325	300	Elegant sound across the frequency spectrum; let down by old fashioned ear-piece design					200	32		205
BB	Jecklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness					400	200		55
	JVC HA-W60	49	Remarkable lack of interference and hiss ameliorates adequate sound of this cordless design					165	VR		172
R	JVC HA-W200RF	75	Distinct lack of hiss from these FM cordless 'phones ensures that detail and depth are easily heard					280	20,000		186
R	JVC HA-DX3	200	Great headphone with a rich bass, careful mid-range and high comfort factor					340	90		205
	Koss TD/80	50	Oodles of bass but with a recessed midband; tiresome on the head with prolonged wearing					250	60		194
	Koss R/100	100	Rather cheap looking 'phones that supply good detail but are severely lacking in midrange excitement					215	60		186
	Precide Ergo Model 2	140	Still has much of the spaciousness of the Float from which it is derived, but coarse mid/top					380	100		163
	Philips HP910	80	Ergonomically good but suffers from a muffled mid-range and over excited bass					247	32		205
	Sennheiser IS 380	55	As close as you'll get to real hi-fi with infra-red phones at this price. Inevitable hiss spoils the illusion					192	VR		172
R	Sennheiser HD 570 Symph	90	Comfortable, light-weight 'phones with a detailed and open sound but lacks bass depth on weightier music					210	64		194
R	Sennheiser HD 545	125	Fine all-rounder that takes all styles of music in its stride. Ear-clamping headband					255	150		172
BB	Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable					255	150		157
	Sennheiser HD590	160	Assured and confident player with very low colouration and great comfort					270	120		205
	Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with a pure midband, but top end is sibilant and edgy					260	N/A		163
	Sony MDR-V700DJ	100	Great looking fold-away 'phones with exceptional build quality. Kickin' bass					300	24		194
	Sony MDR-CD 2000	200	Large pads make for sweaty listening. Pure mid-tones, but weightless bass					300	32		205
BB	Technics RP-F800	50	Comfortable budget model that sounds sublime with great dynamics					160	40		205
	Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof					230	32		172
R	Stax System II	400	Luxury option at its price, but the sound delivery is five star quality all the way					295	50		205
BB	Stax Lambda Nova Basic	395	Refined, articulate, yet with real presence – and a notable bargain by electrostatic standards					347	N/A		163
	Vivanco SR322	30	Weak design and uncomfortable, but redeems itself with substantial sound quality					248	32		205
	Vivanco Cyberwave FMH3000	40	The only cordless 'phone to offer genuine walkabout freedom, but sounds like a cheap FM tuner					210	FM		172
	Vivanco IR5800	50	Consistently musical infra-red design. Doesn't reach for sonic heights so hiss can be forgiven				1/2	226	VR		172
R	Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive					175			157
BB	Vivanco SR750	60	Cosseting physical design, attractive sound, though suffers overhang and lacks ultimate dynamics					188			157
R	Vivanco SR 950	80	Cuddly feel and sound make these an enjoyable pair of 'phones					252	32		194
	Vivanco FM7980	80	A fair amount of whine and crackle detracts from 'phones which are otherwise very listenable					280	9,000		186
	Vivanco FM8180	99	Well thought-out features and a better than average sound are, at times, marred by intrusive hiss					240	9,000		186

LOUDSPEAKERS

STEREO SPEAKERS

SPECIFICATIONS



HEADPHONES (CONTINUED)			ELECTROSTATIC	SUPRA-AURAL	CIRCUM-AURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS								
				SIZE (WxHxD) (cm)	FLOORSTANDER	SENSITIVITY (dB/m)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	
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
	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	21,98,30		91	3	25			190
	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
	ALR Jordan Note 3	1,000	Very substantial, with tuneable ABR for better room matching. Sounds good but could be more neutral	24,5,37,32		89	5	30			211
	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
	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	Arcadyis Concept 2	1,200	Solid oak floorstander is a little lazy sounding, but is well balanced and smooth with modest coloration	19,90,26		86	7	25			211
	ATC SCM10	1,000	A compact speaker with good transparency but lightweight bass	18,38,25,5		80	8	65			192
	ATC T16	1,750	Compact active 'home studio monitor' in colourful cast box, with considerable loudness potential	27,45,33		A	A	45			214
	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
	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
	Audiovector M2	1,399	High-class, smooth and slightly laid-back performer has driving bass. It's upgradeable, 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 Biggatron Red Spot	600	Good bass coherence and timing, but the lean and decidedly forward balance won't be to every taste	19,5,37,30		88	7	30			211
	AVI Positron	899	This 'mini-floorstander' is capable of great precision and delicacy, but in a rather small-scale way	17,5,74,24,5		85	6	40			174
R	B&W 601 S2	200	A smooth and sophisticated stand-mount combines good drive with fine neutrality	20,5,36,23		89	4	30			207
BB	B&W 602 S2	300	Large stand-mount has fine dynamic literacy and good communication skills at a very competitive price	23,5,49,29		90	5	28			201
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
	B&W CDM-1NT	750	An uncommonly stylish and sonically self-effacing stand-mount that should be very easy to live with	22,40,29		89	7	30			208
	B&W CDM-7NT	1,250	A very classy floorstander, in sound as well as looks, with fine bass drive, authority and overall neutrality	22,95,29		90	6	20			208
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
	B&W Nautilus 803	3,500	Classy looking three-way with impressively deep bass, wide dynamic range and a laid-back balance	29,108,42		89	3	20			210
	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
EC	B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art, needs real power but gives real sound	39,111,55		91	8	34			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	Bluroom 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	21,92,30		94	3	40			204

STEREO SPEAKERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	SIZE (WxHxD) (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	Cabasse Farella 400	950	Exciting but very upfront-and-in-er-face sound. High sensitivity, fine build and good dynamic drive	26,92,32	●	92	5	28	●	●	180
	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 Richmond	250	Tiny real-wood miniature has a lightweight but very coherent sound, a bit in-er-face but plenty of fun	17,33,20	●	90	5	50	●	●	201
	Castle Inversion 15	425	This striking looking standmount is a good all-rounder, commendably free from boxiness	22,42,25	●	91	4	30	●	●	193
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
BB	Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	●	88	8	28	●	●	160
	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 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
BB	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
	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
	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
EC	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
	Cyrus CLS70	800	Wonderfully striking styling, but presence is very laid back; likes playing loud	22,33,32	●	87	8	40	●	●	211
BB	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
	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	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	4	20	●	●	167
	Dynaudio Audience 72	1,100	Very competent in most respects, but doesn't quite grab the attention; could be more communicative	20,97,26	●	89	3	20	●	●	211
	Elac CL 102 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
	Elac CL 310i Jet	800	It's pricey, and you can buy better performance for the money. Small speaker, good sound	12,3,0,8,28,2	●	86	4	42	●	●	191
	Eltax Liberty 3+	150	Bright, bassy, laid back and attractively evenhanded, but dynamically challenged. Big box for your dosh	20,5,38,34	●	86	4	25	●	●	187
	Eltax Linear Response	249	A curiously dumbly shape, but smooth, laid-back performer is easy on the ears, with fine tonal accuracy	25,35,32	●	85	4	40	●	●	177
	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
R	Energy e:XL 25	400	Neat slimline design delivers a fine all round performance for the price, but could sound smoother	15,87,31	●	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
R	E cel 202A	1,795	Very Pro-styling, a compact active monitor in BBC tradition - neutral, unboxy and laid-back	15,21,5,36	A	A	25	●	●	●	214
	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
	Genelec HT206	1,400	Baby active monitor goes very loud for its size. Very neutral but a tad boxy	20,31,24	A	A	40	●	●	●	214
R	Heybrook Prima 2	159	Great openness, speed and timing. Sounds fresh and vital, though sometimes lacks scale and weight	20,29,18	●	87	6	50	●	●	179
	Heybrook HB1	180	Good value but an uneven performer, the HB1 provides plenty of fun with the volume turned well up	21,38,25	●	88	3	50	●	●	207
BB	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
BB	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
BB	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
R	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
R	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	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	26,96,27	●	87	4	25	●	●	204
	Jamo E800	200	Nicely voiced, open midband but bottom end is a bit strong and amorphous	17,5,33,29	●	87	3	30	●	●	207
	Jamo D830	1,400	Dynamically exciting and communicative, but lacks both smoothness and neutrality. Pricey too	24,5,38,32	●	88	5	30	●	●	211
BB	JBL LX2	250	Invigorating, if a touch crude, this good-hearted speaker reproduces music with enthusiasm	22,40,27	●	87	8	40	●	●	170
	JBL T1200	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
R	JBL L20	700	Pricey, heavy and a bit laid-back, but this is a fine rock'n'roll which is dynamic and communicative	26,42,28	●	86	8	30	●	●	138
	JBL SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, with a fun sound, enlivened by a juicy bass thump	17,5,51,31	●	86	8	40	●	●	174
R	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
R	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
R	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
BB	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
BB	JBL Xt140	500	Real wood and a cute shape, with a punchy driving bass, and a restrained overall balance	23,82,31	●	88	6	40	●	●	210
R	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
R	JMLab Electra 905	1,200	Compact but massively engineered, delivers a very classy sound with exceptional dynamic range	23,5,47,28	●	90	4	40	●	●	204
	JMLab Electra 915	1,795	Fine headroom and bass and classy engineering too, but also a tricky amp load which lacks delicacy	26,5,106,36	●	92	4	20	●	●	195
R	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
BB	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
R	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
	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
R	KEF Q15.2	200	A vigorous and entertaining compact speaker that remains particularly well aligned for close-to-wall siting	20,5,31,27	●	89	3	30	●	●	207
	KEF Q-55.2	500	Beefy vinyl-finished UniQ delivers loads of bass, but might have more control	21,87,29	●	90	4	25	●	●	210
R	KEF Reference One-Two	1,350	Limited low bass but bags of headroom. Coherent and lively sound, but could be more transparent	22,5,87,35	●	89	3	40	●	●	211
	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
BB	Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24	●	89	8	20	●	●	148
R	Keswick Audio Torino	999	Good value, lively contender with distinctive styling. Goes loud and deep but could be smoother	26,9,9,28	●	90	4	20	●	●	167
R	Linn Kan	295	Great bass discrimination from size, ensuring a very informative, if slightly shut-in experience	19,31,19	●	86	4	45	●	●	187
R	Linn Katan Aktiv/LK140	2,325	Too small to have much grunt or loudness, but bright top is very sweet, clean and detailed	17,34,23	A	A	40	●	●	●	214
BB	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
EC	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	●	89	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
	MagnatVintage 710	800	Very competent but didn't particularly stand out; distinctive styling and slightly shiny sound	20,27,42,32	●	90	5	25	●	●	211
R	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
BB	Meridian M33	1,495	Compact active wall-mount packs remarkable dynamic vigour into a very discreet package	15,38,22	A	A	45	●	●	●	214

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/m)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
	Mirage FRX7	550	Neat slim floorstander has a heavy, laid back balance, probably better suited to movie than music reproduction	17.5,95,32	●	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
	Mirage OM-10-1	2,000	Tall black omni-bi-pole has plenty of bounce and dynamic vigour, but is more room sensitive than most	23,118,30	●	88	4	20	●	●	210
R	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
R	Mission 771e	200	Beautifully styled miniature has a delightfully voiced midband, and real wood finish too	17,31,22	●	86	6	45	●	●	207
	Mission 780	299	Gorgeous miniature has a fine midband and clean, bright treble, slightly odd bottom end	16,5,28,27	●	86	6	40	●	●	201
R	Mission 773e	400	Beautifully designed slim floorstander could be more neutral but still delivers an all-round entertaining sound	17,5,88,26	●	92	4	30	●	●	193
R	Mission 774	500	Gorgeous floorstander is an entertaining communicator, despite some balance oddities (bright treble)	18,95,31	●	90	4	40	●	●	183
R	Mission 782	699	UI ra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	16,5,82,28	●	86	9.5	25	●	●	199
R	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
	Mission 783	1,000	Plenty of bass weight, and a clean, articulate midrange, but the two don't quite seem to gel	20,5,97,33	●	87	5	20	●	●	211
BB	Monitor Audio Bronze 2	180	A real corker, which combines solid material value for money with a fine all round sonic performance	18,5,35,27	●	89	3	30	●	●	207
	Monitor Audio Silver 5i	450	Great looking, sharply priced real wood floorstander, but bottom end lacks drive and tension	20,81,21	●	87	5	30	●	●	210
	Monitor Audio GR20	1,500	Solid and confident design with all metal drivers and neutral if slightly uninspiring sound	20,92,5,30	●	89	6	30	●	●	212
	Mordaunt-Short MS902	200	Gorgeous metal-finished budget stand-mount has a shiny sound to match its looks	18,31,25	●	87	4	45	●	●	207
BB	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
R	Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	●	86	8	25	●	●	152
R	Musical Technology PM15	450	A subtle, understated but very involving example of the 'classic' luxury-finish compact standmount	20,41,27	●	88	5	38	●	●	183
BB	Musical Technology Falcon	680	Big speaker has a big but also surprisingly smooth and civilised sound. Fine material value too	33,117,30	●	89	4	22	●	●	190
R	Musical Technology Condor	1,000	Lots of clever ideas in a floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	●	85	4	28	●	●	174
BB	Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	●	164
R	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
R	Naim SBL Passive	1,970	Lively and punchy – smoother but more upfront than before	27,89,27	●	88	6	25	●	●	143
EC	Naim NBL	6,648	Elegant, large floorstander is exceptionally informative with an awesome dynamic range and dry, forward balance	29,116,47	●	89	4	20	●	●	200
R	Neat Critique 2	445	Contemporary standmount has a clean, crisp sound with lovely natural midband voicing	22,32,24	●	86	6	50	●	●	183
BB	Neat Mystique Mk2	575	This elegant package delivers a fine overall sound quality; some might find the top end too insistent	20,86,18	●	85	6	23	●	●	177
R	Neat Neat Petite III	795	The treble is peaky, but this is still one of the most coherent and communicative miniatures around	20,30,5,20	●	86	5	30	●	●	211
R	Neat Elite	1,195	A highly entertaining all-rounder, has a planar tweeter that sounds sweet, if not particularly smooth	20,88,18	●	88.5	6	25	●	●	195
BB	NHT Super One	250	A fine compromise between size and performance, sensitivity and hence loudness capability is modest	18,5,29,23	●	85	8	30	●	●	170
BB	NHT 1.5	400	This compact standmount sounds much bigger than it has any right to. Good timing and communication skills	18,42,26	●	85	6	40	●	●	177
R	NHT Super Two	550	Black and shiny compact three-way floorstander has marvellously even balance and good coherence	18,5,100,26	●	87	8.5	25	●	●	199
	Opera Prima	495	Good-looking hardwood enclosure, plus fine mid and treble, but less satisfactory bass	19,34,31	●	90	4	40	●	●	190
	Origin Live Conqueror	1,650	Chunky floorstanding three-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	●	88	8	30	●	●	167
R	Orelle Swing	1,200	A superb example of what an essentially small loudspeaker can do, with bags of brio and enthusiasm	18,101,28	●	87	8	45	●	●	195
BB	PMC TB2	600	A worthy and prettier successor to the TB1, which sets a high standard in its size/type class for neutrality and transparency	20,40,5,31	●	88	8	30	●	●	211
	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
BB	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
R	PMC AML1	3,525	Sparkling active Pro monitor with serious attitude: 'in yer face' balance, with great dynamics	20,40,32	A	A	25	●	●	●	214
	Polk RT16	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91	4	22	●	●	160
	ProAc Response 2.5	2,700	For aspirant high-enders looking for seriously good boxes, this speaker should be first port of call	22,107,25	●	86	8	30	●	●	149
	ProAc Tablette 2000 Sig.	899	Beautifully veneered compact stand-mount is classically balanced, if a little on the bright side of neutral	19,36,26	●	87	6	30	●	●	204
	ProAc Studio 125	1,000	Pretty if pricey compact floorstander with a beautifully natural and neutral midband, and some bass thump	20,94,28	●	87	8	28	●	●	192
	QLN Signature	1,000	Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	27,37,36	●	83	4	25	●	●	167
	QAD ESL-989	4,600	A very 'different' speaker experience, with magnificent midband transparency and imaging, but limited loudness capability	67,134,32	●	83	3	38	●	●	213
R	Rega Jura	450	Beefy sounding, chunky floorstander sounds very 'direct coupled' to the music, if a touch 'boom'n'tizz'	22,5,92,26	●	90	5	25	●	●	193
R	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
R	Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic coherence	34,42,27	●	95	8	55	●	●	167
	RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	●	167
	Roksan ROKone	595	Large standmount is musically very communicative, if a little coloured	21,45,33	●	89	6	30	●	●	160
R	Roksan OJ3X Black	995	Innovative low-line, two-way floorstander with decoupled tweeter, great bass and fine dynamic range	28,79,46	●	84	8	20	●	●	167
BB	Royd Doublet	485	Great value compact floorstander; lively and very informative, if a little uneven	18,93,19	●	90	4	28	●	●	160
R	Ruark Epilogue	269	Beautifully finished miniature with a lively balance and plenty of charm; best suited to smaller rooms	17,29,23	●	87	8	47	●	●	183
	Ruark Sceptre	599	'Traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by rather wayward sound balance	21,38,31	●	87	8	40	●	●	174
	Ruark Prologue One R	949	Strikingly contemporary compact floorstander is well voiced but a little lean in overall balance	17,5,93,28	●	88	5	25	●	●	204
R	Ruark Excalibur	7,000	A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom	30,125,53	●	90	4	30	●	●	186
R	Sequence 400	329	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	●	86	8	45	●	●	164
	Silverado Raider	695	Beautifully built audiophile compact: neutral if bright, tough work for amps	20,40,25	●	83	3	30	●	●	164
	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
BB	Snell E.5 Mk2	1520	Large floorstander has serious deep bass extension, and also a delicate midband with low coloration	22,109,30	●	89	4	20	●	●	211
	Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration.	28,117,50	●	91	6	25	●	●	194
	Soliloquy SM 2A3	1,095	Fine match in balance, coherence, transparency and speed. Intended for use with Cary CAD 2A3SE	35,5,19,30	●	91	8	45	●	●	196
	Sonus Faber Concertino	599	A beautifully neutral loudspeaker in a beautiful Italian suit of clothes. Classy, if quite pricey	21,32,29	●	87	5	30	●	●	193
	Sonus Faber Grand Piano Home	1,589	Classy walnut'n'leather floorstander with fine engineering and lovely midband voicing	23,5,29,108	●	90	3	25	●	●	214
	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
R	Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●	●	160
EC	TAG McLaren F1	15,000	Oddball aesthetics with accurate, unflappable, controlled and consistent sonic neutrality	40,127,48	●	87	8	25	●	●	202
BB	Tannoy mX2	150	Surprisingly refined considering its very modest price: very communicative with outstanding midband delicacy	18,5,33,25	●	89	4	45	●	●	207
	Tannoy Revolution 1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22	●	86	4	30	●	●	187
BB	Tannoy mX3	300	A great all-round compromise at a very modest price, combining good looks with fine midband voicing	18,5,82,26	●	90	5	40	●	●	201
R	Tannoy mX4	350	Lacks dynamic grip and authority, but delivers great bass extension and a classy overall balance at a sharp price	18,5,96,26	●	88	4	20	●	●	210
BB	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
	Tannoy Revolution R3	550	Handsome real-wood floorstander does a decent job, but lacks the evenness of its smaller R2 brother	18,5,103,28	●	89	8.5	28	●	●	199
R	Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	24,85,23	●	87	6	26	●	●	167
	Tannoy ST-100	1,200	This supertweeter adds a subtle and delicate effect while also broadening the soundstage at a price	15,10,5,6	●	95	8	N/A	●	●	206
	Tannoy Kingdom 12	6,000	Something of a throwback, but great fun, with fine dynamics and authority, but a tricky amp load	54,106,46	●	92	3	28	●	●	213
	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
	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
BB	Triangle Zephyr II	599	Loads of fun. Dramatic dynamics and righteous timing will give any hi-fi system a wake-up call	22,94,29	●	91	4	25	●	●	191
EC	Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	●	104	4	50	●	●	190

STEREO SPEAKERS (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
R	Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid-back but very charming, and musically literate	17,97,30	●	88	7.5	25	●	●	199
EC	Wilson benesch Discovery	5,500	Innovative three way with built-in stand, combines great subtlety with weight and headroom	23,47,38	●		6	45	●	●	212
EC	Wilson benesch Bishop	20,000	Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too	23,161,561	●	89	4	S20	●	●	189
	Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29,5,23		88	4	45	●	●	169

SUBWOOFERS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
	Acoustic Energy AE108S	299	Lots of loud subwoofer for your money, though ultimately more film than music oriented	50,42,43				20		●	179
R	B&W ASW1000	499	Bulky heavyweight is a high quality item, able to generate more bass output than music is likely to need	54,47,50	●	A		A20	●	●	198
	Jamo D8SUB	950	Pretty but pricey, the D8SUB packs plenty of punch (for movie fans), but doesn't delve deep enough for music replay	45,541,45,5		A		30		●	210
R	JPW SW60	349	A real heavyweight, sounds clean and transparent, if perhaps a little understated. Usefully flexible	55,47,39				20		●	179
	M&K MX70	795	Cutely compact and entertaining too, but lacks the ultimate extension to justify its high price	37,32,30	●	A		25		●	210
	Mission 7AS2	399	Ugly if very effective at supplying very low bass, but filter could do with more flexibility higher up	56,30,31	●			<20	●		198
R	Paradigm PDR-10	150	Not much grip, drive or authority, but it doesn't get in the way and it is very cheap	34,5,36,42	●	A		25		●	210
	Polk PSW430	400	A lot of subwoofer for your money, but lacks deep grunt and is more movie than music oriented	38,5,45,46	●	A		25		●	210
R	REL Q50	375	This good looking if bulky sub does the business with impressive flexibility and sonic self-effacement	42,53,31				20		●	210
R	Ruark Log-Rhythm	775	Adds weight and scale with commendable discretion, making a positive contribution to the whole musical exposition	43,43,43	●	A		<20		●	210
	Soliloquy S10	1,050	(Active) Pretty subwoofer, cosmetically matching SM ZA3 speakers, pricey and mid-bass a bit strong	51,30,5,46	●	A		25	●	●	196

LOUDSPEAKERS

MULTICHANNEL SPEAKERS & PACKAGES

SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
BB	Acoustic Energy Aegis Three	350	High value floorstander has deep and even bass and a smooth neutrality thereafter	19,90,25	●	90	5	22	●	●	198
R	B&W LCR6	349	Large, gutsy standmount intended for all-round AV use delivers fine performance as a stereo pair too	20,5,55,32		90	5	20	●	●	198
	B&W Nautilus package	6,500	This classy, laid-back package is arguably too good for current programming. Very bulky centre speaker	var	var	n/a	3	20		●	210
	Definitive Technology BP2X	595	Pricey but effective bi-polar surround speaker, with unusually high sensitivity	23,37,15		94	4	120		●	198
	Definitive Technology BP2004	1,700	Pricey bi-polar floorstander has a fine midband, let down by its built-in powered subwoofer	19,104,31	●	91	5	28	●	●	198
	Dynaudio LIRC 120	439	Slim centre and front standmount, has an evenhanded but rather laid back balance but lacks drive	16,5,57,31		89	5	25	●	●	198
	Jamo Concert package	2,500	Lovely main speakers sonically overshadow the centre, while surrounds are a bit obvious too	var	var	n/a	5	30		●	210
BB	JBL Xti-series package	1,100	Hexagonal boxes all round, this package has decent authority and all round tension	var	var	n/a	5	40		●	210
	KEF Q-series package	880	Cleverly designed, vinyl-finished UniQ package packs a goodly thump but centre and surrounds stand out	var	var	n/a	3	25		●	210
	Mirage OM-series package	2,000	Big black and bouncy package with omni fronts has plenty of vigour but some coloration var	var	var	n/a	4	20		●	210
R	Mission 77DS	199	Neat flush-mount surround speaker has no bass but a smooth midband and nicely restrained treble	34,26,12		92	4	120		●	198
	Mission Cinema 8 package	1,400	Beautifully styled and cleverly designed package, but could have more grunt and drive for the price	var	var	n/a	4	30		●	210
	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
	Monitor Audio Silver series	1,000	Great looking conventionally styled package lacks something in dynamic drive and tension	var	var	n/a	4	30		●	210
R	Mordaunt-Short Declaration 500	1,600	Good value vinyl THX Select package with Power Towers. Good authority but must be 5.1-connected var	var	var	n/a	3	25		●	210
R	PMC FB1/TB2 package	2,200	Classy if bulky and pricey package has good transparency, coherence and weight	var	var	n/a	6	20		●	210
R	Rega Jura/Ara/Senta	920	Classy real wood package does a good all round job, but sounds bright and might have more surround weight	var	var	n/a	4	25		●	210
BB	Tannoy mXAV4 package	500	Lacks grunt, grip and authority, but smooth and refined with seamless surround coherence	var	var	n/a	4	20		●	210
BB	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
BB	Tannoy Saturn S6	500	Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension	21,89,29	●	91	4	20		●	198

CENTRE CHANNEL SPEAKERS

STATUS	PRODUCT	£	COMMENTS	SIZE WxHxD (cm)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	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
	B&W Nautilus HTM1	1,500	Very bulky for a centre speaker, though very capable too - a little less laid back than its siblings	76,37,30		89	4	30		●	210
	Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,29		88	8	45		●	198
R	Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55,5,17,5,31		90	4	40	●	●	198
	Jamo Concert Center	550	A decent balance match but lacks the class and grip of the Concert 8s, and is bulky and pricey too	55,22,30		87	5	100		●	210
BB	JBL Xti10C	200	An elegant, cleverly designed centre and a good match for the 40s. Better value than most too	51,19,5,27		88	5	50		●	210
	KEF Q95C	200	This artfully designed UniQ centre looks much better than most on top of the TV set	40,17,17		89	3	120		●	210
	Mirage OM-C2	600	Large but discreet omni-bi-pole matches OM-10-1 well but lacks tight focus, and seems expensive	64,18,5,31		88	4	50		●	210
R	Mission 77C	199	A good centre-front match for 77-series, the triple tweeter might be a curiosity, but voicing is very good	42,17,21		91	4	100		●	198
	Mission 78C	350	Makes a good visual and sonic match for the 782, but quite pricey by comparison, given the ingredients	45,17,19		86	3	100		●	210
	Monitor Audio Silver Centre 10i	300	Neat and good looking partner to the Silver 5is, but a little more forward, and quite expensive too	50,17,21		87	4	100		●	210
R	Mordaunt-Short MS 504	200	Smart yet discreet and a good match for the 502. Sounds clean and expressive, and is well priced	50,19,20		88	3	120		●	210
R	PMC TB2M/C	325	This bulky centre speaker is quite pricey, but it combines good transparency with some authority	40,20,31		87	6	50		●	210
	Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35		92	4	25		●	198
R	Rega Senta	185	The very compact Senta is sensibly priced, a bit bright maybe, but articulate and expressive	32,16,21		89	4	120		●	210
BB	Tannoy mXC	100	Could be more exciting, but a very impressive centre speaker at an unusually reasonable price	42,16,21		88	4	120		●	210
BB	Tannoy Saturn S6C	200	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	38,21,29		89	6	25		●	198

PERSONAL / INTERNET

PERSONAL STEREOs

SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	STORAGE FORMAT	RECORDING	IN-LINE REMOTE	CODEC	PC CONNECTION	STANDARD CAPACITY	ISSUE NUMBER
	Aiwa HS-PX307	30	So-so sound but an impressive features roster. Decent value overall	Cassette		●				204
R	Aiwa AM-HX50	180	Neat play-back only personal with an impressively full-bodied sound, though short on detail	MiniDisc		●				204
	JVC XL-PG7	100	Undistinguished CD model, with tacky build and below-par sound	CD		●				204
R	Panasonic RQ-SX71	70	A sleek aluminium body, decent sound and superb features	Cassette		●				204
	Panasonic RQ-SX91	80	A super-slick personal for well-heeled cassette users. Sound is rather bright	Cassette		●				204
	Panasonic SJ-MR100	250	Well built and nicely appointed, though performance is unremarkable at the price	MiniDisc	●	●				204
R	Philips ACT7582	115	A splash-proof body and an entertaining sound – the perfect CD personal for holiday japes	CD						204
BB	Sharp MD-MT831H	250	Smart design, sprightly sound and a well featured package	MiniDisc	●	●				204
	Sony WM-EX404	35	Super-stylish but sonically flawed, with particularly uncomfortable earphones	Cassette						204
R	Sony D-EJ815	140	High-tech build and features, including super-effective shock protection. Sound is soft but substantial	CD		●				204
BB	Sony D-EJ915	150	A beauty to behold – the most portable CD player yet and a good performer to boot	CD		●				204
BB	Sony MZ-R91	250	A petite and sexy beast with good sound and excellent facilities	MiniDisc	●	●				204

INTERNET AUDIO

STATUS	PRODUCT	£	COMMENTS	STORAGE FORMAT	RECORDING	IN-LINE REMOTE	CODEC	PC CONNECTION	STANDARD CAPACITY	ISSUE NUMBER
	Aiwa MM-VX100	130	Aiwa's expertise in the personal stereo field is visible, but performance is only average	Solid State	●	●	MP3	PRL	32MB	204
	Audio ReQuest ARQ1	568	Full size separate containing CD player, hard drive and PC connection. Sign of things to come?	CD/HDD	●		MP3/WMA	APR/USB	17GB	208
BB	Creative Labs Digital Jukebox	349	Smartly designed high-capacity portable with storage for over 1,000 tracks	Hard Drive	●		Agnostic	USB	5.7GB	208
R	DigMedia Music Store	350	Innovative CD/hard drive combo with optional solid state portable. MP3 with or without a computer	CD/HDD	●		MP3	USB	5.4GB	208
	JazPiper MV32P	125	First wave player that looks good but sounds bright. Includes voice recording and phone book features	Solid State	●		MP3	PRL	32MB	195
	LG MF-PD360	130	Good looking and temptingly affordable, but features and performance are nothing special	Solid State	●		MP3	USB	32MB	208
	LG AHA-FD770	200	Cassette and solid state personal in one – novel idea, poor execution	SS/Cass	●	●	MP3	PRL	32MB	204
	Logix Evzone	219	Novell MP3 player that uses Omega Klik! discs for storage. Chunky but quite effective, and discs are much cheaper than memory cards	Klik! Discs	●		MP3/WMA	USB	40MB	213
R	Neo-25	420	Sparsely equipped but efficient hard drive portable with an exceptionally high potential capacity. Average in the sound department	Hard Drive	●		MP3	USB	10GB	213
R	Philips eXpanium EXP103	190	The best MP3-CD personal, at least at the time of writing... An effective solution for MP3 on the move	CD			MP3			213
R	Pine D'Music	120	Good build, solid sound and a voice recording mode make this a good first-time buy	Solid State	●		MP3	PRL	32MB	195
	Pontis SP504	158	Not the best aesthetically, but exceptionally good MP3 sound	Solid State	●		MP3	USB	32MB	204
R	Rio 500	190	Well featured and a strong performer, though new generation Rios have now arrived	Solid State	●		MP3	USB	64MB	195
R	Rio 600	169	Neat design, strong future-proofing, good features and sound. Only its memory lets it down	Solid State	●		Agnostic	USB	32MB	208
	Sanyo SSP-PD7	250	Cute but pricey with limited supplied memory, but sound is good and it's one of the first to employ AAC coding	Solid State	●		MP3/AAC	USB	32MB	213
	Schneider MPMan F20	99	The world's first MP3 personal. Basic but still good value	Solid State	●		MP3	PRL	32MB	195
	Smart Portable MP3 Disc Player	119	CD personal that also plays MP3 tracks burnt onto CD-R discs	CD			MP3			208
	Sony NW-M57	249	A gorgeous little personal using Sony's Memory Stick storage. Good but pricey	Solid State	●		MP3/ATRAC-3	USB	64MB	208
R	Sony MDC-PC3	350	A MiniDisc deck which hooks to a PC. Introduces cheap and flexible MD media to the world of MP3	MiniDisc	●		MP3/ATRAC	USB		213

RECORD PLAYERS

TURNTABLES

SPECIFICATIONS

STATUS	PRODUCT	£	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH ARM	SUPPLIED WITH CART	ISSUE NUMBER
BB	Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high end performance at an affordable price	●			33/45	●	●	●		203
	Avid Acutus	4,995	Extremely capable design with no apparent shortcomings, don't sell your vinyl 'til you've heard it on this!	●			33/45	●	●			194
	Clearaudio Reference	3,990	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail, but can sound bold	●			33/45					144
R	DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table	●			33/45	●		●	●	144
	Dual CS 455.1	220	Neat record player with automatic convenience (and 78rpm), but doesn't match simpler manual rivals sonically	●	●		33/45/78	●	●	●		203
R	Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph		●		33/45	●		●	●	103
R	Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●			33/45	●	●	●		91
R	Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc. still top rank	●			33	●		●		103
R	Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●			33/45	●	●	●		91
R	Michell Gyrodec	875	Sweet and natural-sounding player, well matched to Rega RB300 arm	●			33/45	●	●			55
EC	Michell Gyro SE	775	A stunningly desirable combination of looks, solidity and sound make this a tempting turntable	●			33/45	●				190
	Michell Orbe SE	1,725	A superb turntable, able to mix it with the best at virtually any price	●			33/45	●				192
BB	NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	●			33/45		●	●	●	203
BB	Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●			33/45		●	●		159
BB	Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound	●			33/45		●	●	●	164
	Pro-ject Classic Cherry	450	A great looking turntable with a generous and dynamic sound, but lacks something in overall coherence	●			33/45		●	●		203
	Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best	●			33/45	●				192
R	Pro-ject 6/Sumiko	850	Don't think of this as a deck with a good arm, but as a scaled-down Oracle Delphi — it's that good	●			33/45	●	●	●		138

TURNTABLES (CONTINUED)

STATUS	PRODUCT	£	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP SUBCHASSIS	EXTERNAL PSU	SUPPLIED WITH ARM	SUPPLIED WITH CART	ISSUE NUMBER
BB	Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●			33/45			●		48
R	Rega Planar 3	274	Sounds musical in a balanced manner, needs decent isolation and suffers a little pitch instability	●			33/45				●	164
BB	Rega Planar 25	619	Great looking turntable has a silky smooth sound with exceptional midband coherence	●			33/45		●			203
BB	Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●			33/45			●	●	159
R	Roksan Radius 3/Tabrzi zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●			33/45	●	●			159
EC	SME Model 10A	3,333	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	●			33/45		●	●		195
EC	SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	●			33/45/78	●	●	●		186
BB	Thorens TD166 VI/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget cartridges	●			33/45			●	●	103
	Thorens TD146 VI	550	Tonearm not quite up to turntable's potential; this semi-auto is much pricier than manual TD166	●			33/45		●	●		203
	Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●			33/45		●	●		159
R	VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	●			33/45		●	●		203
R	Well Tempered Record Player	850	Intriguing and challenging. Musically not ideal, but its limp quality and lack of artificiality set standards	●			33/45		●	●		136
EC	Well Tempered Reference	5,500	Superb mechanical stability and unflappability result in a clean reproduction	●			33/45		●	●		205
BB	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

CARTRIDGES

STATUS	PRODUCT	£	COMMENTS	MM	MC	REPLACEMENT STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER
EC	Allaerts MC1B	1,295	Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford		●		0.5		203
BB	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
BB	Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy		●		0.55	11.5	175
BB	Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well		●		1.0	6	48
	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
BB	Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether, and a bargain at the price		●				103
R	Dynavector DV-20X L	299	Articulate-sounding, with impressive treble resolve, though lightweight at times. Needs a high quality turntable and arm		●		0.25	8.6	192
	Dynavector Karat 17D2 mk2	450	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent		●		0.15	5.3	158
R	Dynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm		●		0.25	12	84
R	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
EC	Dynavector DRT XV-1	2,500	Capable of conjuring one of the most tactile, three dimensional sound stages on the vinyl planet. Extremely entertaining		●		0.3	13	208
R	Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body		●		5.0	7	67
R	Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency coloration apparent		●		6.5	7	85
R	Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved		●		6.5	7	85
R	Goldring Erica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative		●		0.5	8	84
R	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
BB	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
BB	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
R	Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed		●		0.3	7	158
BB	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
BB	Ortofon 510P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●		●	3.0	5	85
R	Ortofon 520P	65	Sensitive to load capacitance, but the 520P has a lively, effervescent sound	●		●	3.0	5	67
R	Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but subtle – take it as it comes		●		3.3	4	103
BB	Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up		●		0.35	7	103
	Ortofon MC25E	180	An excellent upgrade for a mid-price turntable		●		0.5	11	139
	Ortofon MC25FL	250	A bit too stark and honest, but faithful to what's on the LP		●		0.5	11	139
BB	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
BB	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
R	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
R	Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing		●	●	5.0	5	67
	Reson Reca	250	If you're after a high quality moving magnet cartridge, they don't get much better than this		●		6.5	6.3	192
R	Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised		●	●	6.5	5	91
BB	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
R	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
R	van den Hul MC-10	750	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass		●		0.4	6	60
R	van den Hul MC-One	900	This extends all the positive qualities of the 10, but adds greater authority and scale – worth all the extra money		●		0.4	6	60
R	van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal		●		0.4	6	72
R	van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals. This delicate and subtle performer has great charm		●		0.65	7	175
R	van den Hul G' hopper III/IIA	2,800	Undoubtedly one of the finest cartridges available. It has tremendous bandwidth, energy and finesse		●		0.4	6	122
R	Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive		●		0.58	6	158
R	Wilson benesch Carbon	1,573	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound		●		0.45	7	175

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

STANDS & SUPPORTS

EQUIPMENT SUPPORTS

EQUIPMENT SUPPORTS				HEIGHT	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
STATUS	PRODUCT	£	COMMENTS							
	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
R	Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6			4	Wood	193
BB	Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43			4	MDF	193
R	Avid Isoschelf	1,100	An enthusiasts equipment support stand free from coloration if a little fiddly to set up	87.5	48			5	MDF	193
R	Custom Design Aspect650	270	Smart looks and practical thanks to adjustable shelves. Sound is fair with some loss of detail	66	46		●	4	Glass	206
R	Elemental Isotube x 4/Ref	1,199	Blockbusting size and build. Super sound quality	92	45,49		●	4	Marb	181
R	Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49		●	4	Glass	193
BB	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
	Mana 4-tier	500	The ultimate statement in steel and glass; adds resonance in a way you'll love or hate	87	45		●	4	Glass	206
R	Optimum Int 2000 OPT490	299	25kg stand with shelves between variable-height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass	166
R	Optimum Int 2000 OPT660	349	Glitzy style isn't reflected in sound, which is wholesome	82	60,52			5	Glass	181
	Projekt Furniture A4	215	An elegant support stand that blends in to any home environment with a laid-back sound	56	48			4	Wood	193
R	Quadraspire Q4	280	Simple but modestly effective and very attractive	52	49			4	MDF	206
	Sonus System Elite	330	Rather ugly and seems to offer little over and above cheaper steel and glass stands	68	50		●	4	Glass	206
BB	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
R	Soundstyle X100	230	Looks lovely, sounds lively but slightly bright	64	49,28		●	4	Glass	181
	Soundstyle XS100	270	Less character than other similar strands, but sound is somewhat short on transparency	72.5	49.5		●	4	Glass	206
	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
BB	Standesign Design 4	190	An all-in-one support at a budget price with good sonic performance	88.5	50.8		●	4	Glass	193
R	Townshend Seismic Sink AV1-4	600	Gives significant isolation for turntables and seems to add little character otherwise	74.5	45			4	MDF	206
BB	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
BB	Wilson benesch Asside	590	Sounds even better than it looks. And it looks wonderful	72	37,50			4	Wood	181

SPEAKER STANDS										
STATUS	PRODUCT	£	COMMENTS							
	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 HDS	85	A reasonable stand with a smooth but rather bland sound balance. Good finish options	45-60	15.5, 15.5		●			189
	Apollo Olympus	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
BB	Atacama Nexus 6	50	An excellent all round performer and a genuine hi-fi bargain	60,50	14.5, 18		●			202
R	Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15, 17		●	●		189
R	Custom Design R/S300 MkII	100	A solid stand improving on the original with better focus and detail	61,56,51	16.5, 18		●			202
R	Elemental Isotube SZse	599	Stands of distinction, able to free the speaker's sound from its box in a way budget stands simply can't	61	23,27		●	●		189
R	JPW H51	120	A purposeful stand, a touch dry-sounding but particularly strong with bass. Great for rock and dance music	61	19,21		●			189
R	Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29,32					202
	Mission Stance	100	Detailed and open but needs a firm foundation to give its best	60	19, 15		●			202
BB	Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than almost anything below £150	50-100	19,22		●	●		189
R	Partington Dreadnought Ult.	299	Super heavyweight stand that is an open window to the speaker placed on it	63	20.5, 23.5		●			202
	Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33.5, 24					189
	Sonus Systems Excel	110	Strong performance when filled with sand but design flaws let it down	65,45	20,22.5		●			189
	Sound Organisation Z524	69	A coherent-sounding stand with particular strengths in the midband, though quality drops at the frequency extremes	61	16, 17					202
BB	Sound Organisation Z522	89	Easy going and likeable performer straight out of the box	59	16, 17		●			202
	Sound Style Select	95	OK but not as good as its cheaper brother the Z522	59	16, 17		●			202
	Target HM60	106	A solid and well-built stand laid-back to the point of coma	40-70	16.5, 19		●			202
R	Townshend Seismic Sink	499	Unique inflatable plinth that works well with decent floorstanders as well as standmounted speakers	4	38,48					202

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SPECIFICATIONS

ISSUE NUMBER	ROT TUNING KNOB	SIG STRENGTH METER	REMOTE CONTROL	RDS	PRESETS	WAVEBANDS
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ANALOGUE TUNERS

STATUS	PRODUCT	£	COMMENTS	FM, M, L	64					
R	Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM, M, L	64					193
R	Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM, M, L	64					193
R	Cyrus FM7.5	400	Beautifully made and presented, with sound that's a small but worthwhile advance over budget models	FM	7					211
BB	Denon TU-260L II	130	The return of the all-time favourite, now enhanced with RDS and sounding as fine as ever	FM, M, L	40					193
R	Denon TU-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM, M, L	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
BB	Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30					166
	Leak Trough Line - GTA	300	A renovated classic with a style all of its own coupled with an emotive and gutsy performance	FM	0					206
	Linn Pekin	545	Smart and high-tech tuner which integrates well with Linn systems but offers less appealing performance out of that context	FM, M	80					211
R	Linn Kremlin	2,600	Controversially good sound at a very high price	FM	80					142
BB	Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM, M	60					184
	Marantz ST6000	150	Another budget killer from Marantz, with sound well above its class and useful features	FM, M, L	90					211
R	Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29					193
	Myryad T-10	530	A very smart unit which works well and offers good rhythmic drive and vitality, albeit at a price	FM	20					184
	NAD C440	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM, M	30					193
	Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM, M	40					166
	Roksan Caspian	595	Neat 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
	Roksan Kandy KT-1	375	Well made but sound is a bit lacklustre and lags behind some budget models	FM, M, L						211
	Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M	20					166
	Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM, M, L	30					157
R	Sony STS-B920S	180	A little hiss and image compression don't detract from the clean performance of this feature-packed tuner	FM, M, L	30					184
	Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM, M	59					157

DIGITAL TUNERS

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

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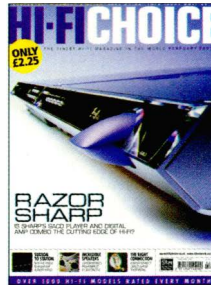
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- Multichannel speaker packages
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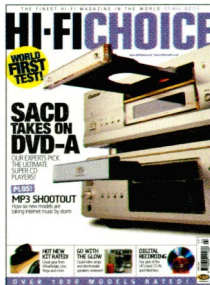
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NEXT MONTH...

MUSIC MEETS MOVIES

Is there anyone who's not considering buying a DVD player? It's the fastest growing home entertainment format of all time and a brilliant way to watch movies. But lest we forget, even low cost DVD-Video players also play your CDs, and an increasing number of DVD-V music releases are hitting the shops.

Next month's Bench Test is a comprehensive review of the latest DVD-Video players from £230-£700, including models from Pioneer, Rotel and Sony. This is the definitive guide to CD and DVD-V performance that won't worry your bank manager.

VALVES VS. TRANSISTORS

It's one of the oldest questions in hi-fi: which are better, valve amps or traditional designs? Our definitive Group Test gives you the lowdown once and for all. Eight high-end amps do battle, priced from £1,500 to over £3,000. Half are transistor based, and half use valves. Which will triumph?

ON THE ROAD

Aren't personals great? They may not represent the zenith of audio performance, but they ensure you're never far from your music. So which format should you go for – CD, MD or a new-fangled player which stores music on a microchip? All will be revealed...

PLUS...

Philips' multichannel SACD 1000 gets the full review treatment... Cyrus Icon – the first high-end application of NXT flat speaker technology... We shakedown Oheocha Design's latest outlandish creation.

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PLEASE PHOTOCOPY

A Pinch of Fairy Dust

SMALL SPEAKERS THAT SOUND TWICE THE SIZE? THAT'S GOT TO BE MAGIC...

One of the holy grails for speaker designers is to come up with an enclosure that behaves like a Tardis – bigger on the inside than the outside! Then at last we could have loudspeakers which were small yet which still delivered serious, deep bass. That's more or less what KEF is claiming for its new ACE technology. The acronym stands for Acoustic Compliance Enhancement, but KEF's engineers talk about the Magic Dust they put inside loudspeaker enclosures.

It's a substance called 'activated carbon', whose properties sit on the border between physics and chemistry. It's used in water filters and air purifiers, and it's full of tiny holes or pores, and these holes have the ability to adsorb* gas molecules.

SPRING TO MIND

The mechanism that 'expands' the inside of an ACE-equipped enclosure is intriguing, yet simple. Take the loudspeaker's simplest form: the sealed box. Without a box you get no bass, because the low frequencies from the front of the cone are cancelled by the out-of-phase bass coming off the rear. The prime purpose of the box is therefore to keep these apart. Once you completely enclose one side of a drive unit, the air inside the box acts as a spring, and this controls where the bass starts to roll off. A small box creates a 'tight' spring, so the bass therefore doesn't extend as deep as in a larger box.

We all want small boxes, but we'd like to have deep bass, and this is where the activated carbon comes in. When the cone moves backwards, it compresses the air inside the box – this causes the activated carbon granules to start adsorbing some of the air molecules, partly nullifying the increase in pressure, and making the box behave as if its larger than it really is. (The process reverses, so that when the cone moves forward, pressure is reduced and air molecules are released.) There's obviously a limit on how quickly the air molecules can

be adsorbed and released, and the effect only operates below 100Hz – but that, of course, is exactly the zone where it's needed.

In a White Paper (titled 'The Virtual Loudspeaker Cabinet'), KEF's Head of Research Julian Wright discusses some of the practical ins and outs. ACE is not a completely new idea – the patents actually go back to the late 80s – so it's presumably not particularly easy to put into practice. However, the pressure to 'down-size' loudspeakers as multichannel sound systems become more important would seem an ideal opportunity to exploit the technology, and while KEF doesn't actually have a product ready to hit the market yet, it hopes to launch something before the end of the year.

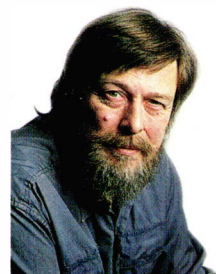
How big is the compliance enhancement? The White Paper claims that "Factors between 1.5 and 3 are readily achievable", which sounds useful, especially at the top end of that range. One obvious practical problem is figuring out a way to distribute the small carbon granules throughout the enclosure to get the best effect. Another is that activated carbon is hygroscopic (adsorbing and not releasing water vapour), which will also require special precautions.

HERE COMES THE SCIENCE BIT...

KEF's 'Thin 1' lab prototype is a cut down version of the miniature sealed-box RDM1. By adding 2.2 litres of 'Magic Dust', a 5-litre enclosure delivers virtually identical performance to the 8.8-litre original, and the company's listening tests slightly favoured the smaller version. However, that only represents an increase in effective volume of 1.8 times, which will drop in real terms when the thickness of the box itself is taken into account. Apparently, ACE works better with larger enclosures.

In the final analysis, we'll have to wait for the actual products to appear to assess the true effect and practicality of ACE technology. Purists might say that this innovation has more to do with convenience and presentation than performance, but it's a fascinating and original new technology nonetheless.

Paul Messenger isn't normally happy with dust in his loudspeakers – but this time, he'll make an exception.



"WE ALL WANT SMALL BOXES, BUT WE'D LIKE TO HAVE DEEP BASS, AND THIS IS WHERE THE ACTIVE CARBON COMES IN..."

* Adsorb - the ability of a solid (or liquid) to accumulate a thin film of molecules of a gas on its surface.

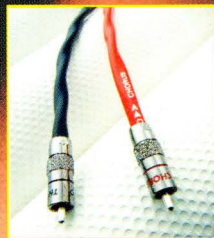
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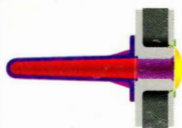


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